

Effectiveness of a Structured Teaching Programme on Home Management among Patients with Type 2 Diabetes Mellitus: A Pre-Experimental Study

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ABSTRACT

Type 2 Diabetes Mellitus (T2DM) is a chronic metabolic disorder that has emerged as a major public health concern worldwide, particularly in developing countries like India. Effective home management is essential to prevent long-term complications; however, inadequate patient knowledge often results in poor self-care practices and suboptimal disease control. Structured teaching programmes play a vital role in strengthening patients' understanding and promoting effective self-management behaviours.

Objective:

To evaluate the effectiveness of a structured teaching programme on home management among patients diagnosed with Type 2 Diabetes Mellitus in terms of knowledge at selected hospitals of Gurugram.

Methods:

A quantitative pre-experimental one-group pretest-post-test design was adopted for the study. Sixty patients diagnosed with T2DM were selected using purposive sampling from selected hospitals of Gurugram. Data were collected using a structured and validated knowledge questionnaire (reliability coefficient $r = 0.87$). A structured teaching programme covering dietary management, physical activity, medication adherence, blood glucose monitoring, and prevention of complications was administered after the pretest. Post-test assessment was conducted following the intervention. Descriptive statistics were used to summarize demographic variables, while inferential statistics, including paired t -test and chi-square test, were applied to assess effectiveness and associations.

Results:

The mean pretest knowledge score was 13.25 ± 2.01 , which increased to 18.93 ± 1.68 in the post-test, indicating a statistically significant improvement ($p < 0.001$). In the pretest, 30% of participants demonstrated inadequate knowledge, whereas in the post-test, 65% achieved adequate knowledge. Significant associations were observed between post-test knowledge scores and selected demographic variables such as education, marital status, health insurance, and presence of comorbid conditions.

Conclusion:

The findings demonstrate that the structured teaching programme was effective in improving patients' knowledge regarding home management of Type 2 Diabetes Mellitus. Incorporating structured educational interventions into routine healthcare services can empower patients, enhance self-care practices, and contribute to better disease management outcomes.

Introduction

Type 2 Diabetes Mellitus (T2DM) is a chronic metabolic disorder marked by insulin resistance and persistent hyperglycaemia, posing a major challenge to global and national health systems. India has witnessed a rapid rise in T2DM prevalence due to urbanization, lifestyle modifications, obesity, and genetic susceptibility. Poorly managed diabetes leads to serious complications such as cardiovascular disease, nephropathy,

neuropathy, and retinopathy, significantly affecting quality of life and increasing healthcare burden. Effective home management plays a pivotal role in controlling T2DM and preventing complications. However, several studies have reported that patients often lack adequate knowledge regarding dietary practices, physical activity, medication adherence, and self-monitoring of blood glucose. Studies by Sharma et al. (2020) and Santosh Indi et al. (2021) demonstrated that inadequate baseline knowledge among

diabetic patients was associated with poor self-care behaviours. Evidence further suggests that structured teaching programmes significantly improve patient knowledge and self-management abilities. Similar findings were reported by Anusree et al. (2024) and Juliyet et al. (2023), where structured educational interventions led to a marked improvement in post-test knowledge scores among patients with T2DM. In alignment with these findings, the present study aims to assess the effectiveness of a structured teaching programme on home management in terms of knowledge among patients with Type 2 Diabetes Mellitus. Evaluating such interventions is essential to strengthen patient education strategies and support effective diabetes self-management in clinical practice.

Methodology

A quantitative, pre-experimental one-group pretest–post-test research design was adopted to evaluate the effectiveness of a structured teaching programme on home management of Type 2 Diabetes Mellitus (T2DM). This design has been widely used in similar educational intervention studies to measure changes in patient knowledge following structured education (Sharma et al., 2020; Juliyet et al., 2023). The study was conducted at selected hospitals of Gurugram. A total of 60 patients diagnosed with T2DM were selected using purposive sampling technique. The inclusion criteria comprised adults diagnosed with T2DM who were willing to participate and

available during the period of data collection. Data were collected using a structured knowledge questionnaire developed after an extensive literature review and validated by subject experts. The reliability of the tool was established using the split-half method, yielding a reliability coefficient of 0.87, which is consistent with similar diabetes education studies (Anusree et al., 2024). Following the pretest assessment, a structured teaching programme was administered, focusing on essential aspects of home management including diet, exercise, medication adherence, blood glucose monitoring, and prevention of complications. Posttest assessment was conducted after the intervention. Data were analyzed using descriptive and inferential statistics, including paired *t*-test and chi-square test, to determine effectiveness and association with demographic variables.

Results

The findings of the present study revealed a significant improvement in the knowledge of patients with Type 2 Diabetes Mellitus following the implementation of the structured teaching programme. In the pretest assessment, a considerable proportion of participants demonstrated inadequate knowledge regarding home management practices. The mean pretest knowledge score was 13.25 ± 2.01 , indicating limited awareness about essential aspects such as diet control, physical activity, medication adherence, and complication prevention.

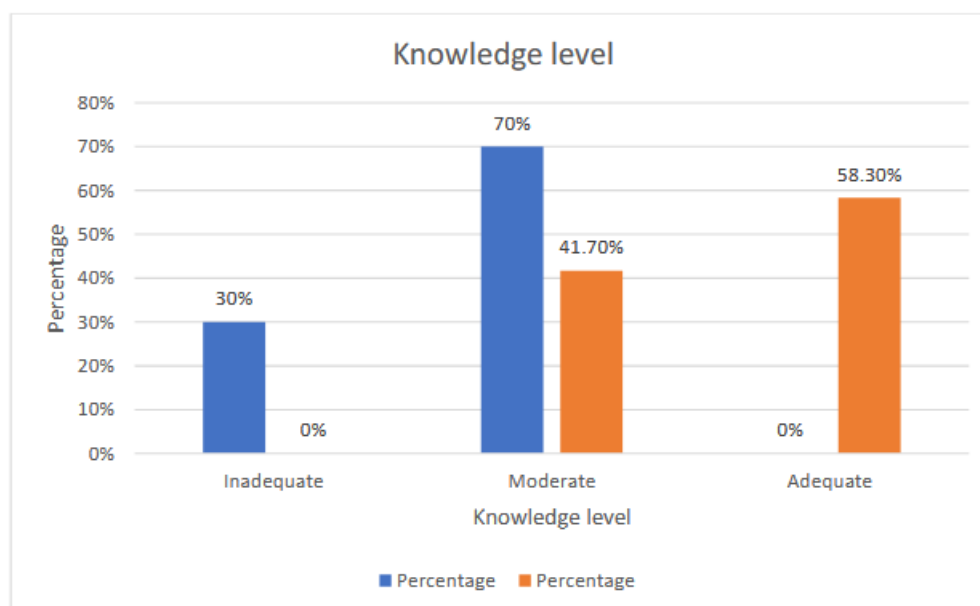


Fig: shows level of knowledge of diabetic patients regarding home management. In the pre-test 18 (30%) of participants have inadequate knowledge but in the post-test majority of participants 35 (65%) were having adequate knowledge.

After the structured teaching intervention, a marked increase in knowledge scores was observed. The mean post-test knowledge score increased to 18.93 ± 1.68 , and the difference between pretest and post-test scores was found to be statistically highly significant ($p < 0.001$). In the post-test, the majority of participants (65%) attained adequate knowledge, reflecting the effectiveness of the educational intervention. These findings are consistent with earlier studies conducted by Santosh Indi et al. (2021) and Sharma et al. (2020), which reported significant improvements in post-intervention knowledge scores following structured teaching programmes among diabetic patients. Similar results were also observed in studies by Anusree et al. (2024) and Juliyet et al. (2023), where structured education significantly enhanced patients' understanding of home management practices. The present study further supports the growing evidence that structured teaching programmes are effective tools for improving knowledge

among patients with Type 2 Diabetes Mellitus.

Discussion

The present study was undertaken to assess the effectiveness of a structured teaching programme on home management among patients with Type 2 Diabetes Mellitus in terms of knowledge. The findings clearly indicate that the structured teaching programme was effective in significantly improving patients' knowledge regarding diabetes home management. The significant increase in post-test knowledge scores highlights the importance of planned and systematic educational interventions in chronic disease management. The improvement observed in the present study is in line with findings reported by Sharma et al. (2020), who demonstrated a statistically significant rise in knowledge scores following structured teaching on diabetes management. Similarly, Santosh Indi et al. (2021) reported that structured education led to a shift from inadequate to adequate knowledge among the majority of diabetic patients. Studies conducted by

Anusree et al. (2024) and Juliyet et al. (2023) also revealed substantial post-intervention improvements in knowledge related to self-care and home management practices, reinforcing the effectiveness of structured educational strategies. The present study also identified significant associations between post-test knowledge scores and selected demographic variables such as educational status, marital status, health insurance, and presence of comorbid conditions. These findings are comparable to those reported by Sreedevi (2020), who observed that education level significantly influenced knowledge gain following structured teaching. However, no significant association was found with variables such as age and gender, which is consistent with observations made by Toijam Monika Devi et al. (2022). Overall, the findings suggest that structured teaching programmes enhance patient understanding and empower individuals to actively participate in diabetes self-management, thereby contributing to improved long-term health outcomes.

Conclusion and Implications

The present study concludes that the structured teaching programme was highly effective in improving the knowledge of patients regarding home management of Type 2 Diabetes Mellitus. The significant improvement in post-test knowledge scores demonstrates that planned and systematic educational interventions can successfully bridge knowledge gaps and enhance patients' understanding of essential self-care practices. Improved knowledge is a key factor in promoting better adherence to treatment regimens and preventing long-term diabetic complications. The findings of this study are consistent with previous research indicating that structured educational programmes significantly enhance patients' awareness and self-management abilities. By strengthening patients' knowledge related to diet, physical activity, medication adherence,

blood glucose monitoring, and complication prevention, structured teaching programmes empower individuals to actively participate in their own care. From a nursing perspective, the study highlights the critical role of nurses as educators in diabetes management. Incorporating structured teaching programmes into routine clinical practice can improve patient outcomes, reduce hospital visits, and enhance quality of life. Nurses can utilize such programmes during outpatient visits, inpatient stays, and community outreach activities to reinforce diabetes education. The study also has implications for healthcare administrators and policymakers, emphasizing the need to integrate structured patient education into standard diabetes care protocols. Future studies with larger samples and experimental designs are recommended to further validate these findings and assess long-term behavioural and clinical outcomes.

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