ISSN: 2581-3404 (Online) IF: 5.68 (SJIF)
IJIRTM, Volume-8, Issue-2, March-2024.

A Study to Assess the Effectiveness of Structured Teaching Program on the Awareness on the Knowledge among the Individuals Suffering from Diabetes Mellitus in Selected Urban Community of Delhi

Ms. Kirti Raj[1], Ms. Rohini Sharma[2]
[1](*Nursing Tutor, Apollo School of Nursing, Indraprastha Apollo Hospital, New Delhi-76*)
[2](*Vice Principal, Apollo School of Nursing, Indraprastha Apollo Hospital, New Delhi-76*)

Abstract: Diabetes in adults is a global health problem and is considered as one of the main threats to human health and its management requires a fundamental change in patient's lifestyle. **Aim**: The aim of this study to assess the effectiveness of structured teaching program on the lifestyle modification to control diabetes among individuals with type-2 diabetes mellitus in selected urban community of Delhi. **Methods:** A quantitative approach with pre-test post-test research design was implemented. Total 50 participant were selected from non-probability purposive sampling technique and data was collected by using closed ended structured questionnaire. **Result and Conclusion:** Descriptive and inferential statistics was used to analyse the data of the research. Thus, it shows that, individual suffering from diabetes mellitus gained knowledge about the lifestyle modification of diabetes mellitus after structured teaching programme. Hence the planned teaching programme was found effective in imparting knowledge on lifestyle modification among individual suffering from diabetes mellitus in selected urban community of Delhi.

Keyword: Structural teaching programme, Community, Individual, Lifestyle modification, Diabetes Mellitus.

Introduction

"Health is the greatest gift, contentment the greatest wealth, faithfulness the best relationship" Buddha

Diabetes mellitus is a group of metabolic diseases which is characterized by hyperglycemia resulting from defects in insulin secretion, insulin action or both. The basis of the abnormalities in carbohydrate, protein and fat metabolism in diabetes is the deficient action of insulin on the target tissues of skeletal muscle, adipose tissue, and liver. Diabetes mellitus may lead to long damage, dysfunction, and failure of various organs, especially the heart, kidneys, and eyes. There are three main types of diabetes: Type1, Type2, and gestational diabetes. Type1 diabetes mellitus also known as insulin dependent diabetes mellitus and juvenile diabetes mellitus. Type 1 diabetes results from failure of the pancreas to produce enough insulin due to loss of beta cells. The loss of beta cells is caused by an autoimmune response. Type-2 Diabetes mellitus also known as non-insulin dependent diabetes mellitus or adult-onset diabetes mellitus. Type 2 diabetes is

characterised by insulin resistance, which may be combined with relatively reduced insulin secretion. Gestational diabetes mellitus occurs in about 2–10% of all pregnancies and may improve or disappear after delivery.

The classic symptoms of untreated diabetes are unintended weight loss, polyuria (increased urination), polydipsia (increased thirst), and polyphagia (increased hunger). Symptoms may develop rapidly (weeks or months) in Type 1 diabetes, while they usually develop much more slowly and may be subtle or absent in Type 2 diabetes. The other symptoms include blurred vision, headache, fatigue, slow healing of cuts, and itchy skin. Uncontrolled DM can lead to serious complications such as cerebrovascular disease and coronary heart diseases, blindness, kidney failure and neuropathy diseases.

Diabetes is one of the largest global public health concerns, imposing a heavy global burden on public health as well as socio-economic development. Although incidence has started to decrease in some countries, the prevalence of diabetes has increased in recent decades in most other developed and developing countries.

Diabetes mellitus management concerns on keeping blood sugar levels as close to normal, without causing low blood sugar. This can usually be accomplished with dietary changes, exercise, weight loss, and use of appropriate medications (insulin, oral medications).

Knowledge is essential for adequate diabetes management and self-management of diabetes. Education is the cornerstone of treatment for all people with diabetes. Patients need the knowledge and skills to make informed choices and to facilitate self-directed changes in behavior and ultimately to reduce the risk of the associated complications.

Overwhelming evidence shows that lifestyle changes—namely, improvements in physical activity and diet, leading to weight loss, reduce diabetes risk significantly.

Making lifestyle changes for persons with diabetes can be challenging. However, to achieve metabolic control for many persons with diabetes, changes in nutrition and physical activity are essential. In the past, nutrition and exercise recommendations have been rigid and have allowed for little flexibility; however, there is no longer one set of guidelines that applies to all persons with diabetes. By individualizing treatment and focusing on metabolic outcomes, health care professionals can assist persons with diabetes to make lifestyle changes and to achieve metabolic goals. A range of physical activities and intensities are associated with 20% to 30% diabetes risk reduction, especially among high-risk individuals.

According to WHO (2016) report, globally, an estimated 422 million adults were living with diabetes in 2014, compared to 108 million in 1980. The global prevalence (age-standardized) of diabetes has nearly doubled since 1980, rising from 4.7% to 8.5% in the adult population. This reflects an increase in associated risk factors such as being overweight or obese. Over the past decade, diabetes prevalence has risen faster in low- and middle-income countries than in high-income countries.

India is an influential hub for the global diabetes epidemic with the second highest diabetes population in the world (69 million as of 2015). With this trend, India would be home to 123.5 million people with diabetes by 2040. Globally, the second largest number of children (<15 years) with type-I diabetes also resides in India (70,200) after the USA (84,100).

Hypothesis: The mean post-test knowledge score regarding lifestyle modification among individuals suffering from diabetes mellitus will be significantly higher than their mean pretest knowledge score.

Need of the study: Diabetes is one of the largest global public health concerns, imposing a heavy global burden on public health as well as socio-economic development. Although incidence has started to decrease in some countries, the prevalence of diabetes has increased in recent decades in most other developed and developing countries.

Hence the investigators felt to increase awareness and providing knowledge regarding ways of lifestyle modification to control diabetes and by minimizing the factors that had created an interest to conduct the study in urban community in Delhi. The individuals with diabetes can improve their knowledge and skills with the help of structured teaching program to control their diabetes.

Objectives: The objectives of the study is to assess the pre-test knowledge regarding lifestyle modification among individuals suffering from diabetes mellitus, to develop and administer a structured teaching programme on lifestyle modification for individual suffering from diabetes mellitus, to assess the post-test knowledge of the individuals regarding lifestyle modification of diabetes after administration of a structured teaching program and to assess the effectiveness of a structured teaching program by comparing pre and post-test knowledge scores regarding lifestyle modification.

METHODOLOGY

MATERIALS AND METHODS: A quantitative research approach was used to conduct research study with One group pre-test post-test research design was conducted at urban community of Delhi. The data was analyzed as per the objectives of the study in April 2022, to assess the pre-test knowledge regarding lifestyle modification, to develop and administer a structured teaching programme on lifestyle modification and to assess the effectiveness of lifestyle modification, with certain demographic variables like age, gender, marital status, education, family income, occupation, in selected urban community of Delhi. Permission from Principal and ethical clearance from Organizational Review Board was taken before starting the study.

VARIABLES: Research study included independent variable (the structured teaching program regarding lifestyle modification among individuals suffering from diabetes mellitus) and dependent variable (the knowledge of the individual regarding lifestyle modification). Total of 50 samples (community people) was taken. Nonprobability purposive sampling technique was used for data collection.:

SAMPLING CRITERIA: In this study sampling criteria was those who are suffering from diabetes mellitus, who are willing to take part in the research and who are present at the time of data collection. The samples were given close ended structured questionnaires. Before the interview, written consent was taken, aims and objectives were explained to them.

Tools: The Structured Questionnaire were used to assess the effectiveness of planned teaching programme on diabetes mellites comprised of demographic variables like age, gender, duration of illness, education qualification, family income etc and close ended structural questionnaire with 15 questions on knowledge of lifestyle modification with informative booklet.

RESULT

The study result based on the data collection through 50 participants.

Table no 1 depict that, 56% subject were in the age group of above 60 years, mostly female, married and illiterate. Most of them (46%) unemployed with family income between 10001-20000, above 40 years age

and visit clinic 3-4times in a year. Most of the subjects were using a homeopathy treatment and managing their diabetes with medication only.

Table 1: Distribution of pretests knowledge level among individuals suffering from diabetes mellitus N=50.

Sr. No.	Level of knowledge	Category	Frequency (N=50)	Percentage (%)
1.	**Inadequate**	≤50%	36	72%
2.	**Moderate**	51% - 75%	14	28%
3.	**Adequate**	76% - 100%	0	0%

Table 2: Distribution of post-test knowledge level among individuals suffering from diabetes mellitus N=50.

Sr. No.	LEVEL OF KNOWLEDGE	CATEGORY	FREQUENCY	PERCENTAGE
1	**Inadequate**	**≤50%**	**0**	**0%**
2	**Moderate**	**51%- 75%**	**10**	**20%**
3	**Adequate**	**76%-100%**	**40**	**80%**

A study reveals that, In Pre assessment 72% of patients are having average knowledge, 28% of them having below average knowledge and none of them having good knowledge regarding Diabetic Mellitus. However, post knowledge, 80% of them were having good knowledge about diabetic mellitic 20% were having average knowledge, and 0% of them were having below average knowledge.

Table 3: Overall Mean Median and S.D of pretest and post-test knowledge level among individuals suffering from diabetes mellitus N=50.

Study Variable	Mean	Median	S. D
Overall Mean, Median and S.D of pre-test knowledge level among individual suffering from diabetes mellitus	**6.58**	**7**	**1.73**
Overall Mean, Median and S.D of post-test knowledge level among individual suffering from diabetes mellitus	**11.3**	**12**	**1.65**
Differences between pre-test and post-test	**4.72**	**5**	**-0.08**

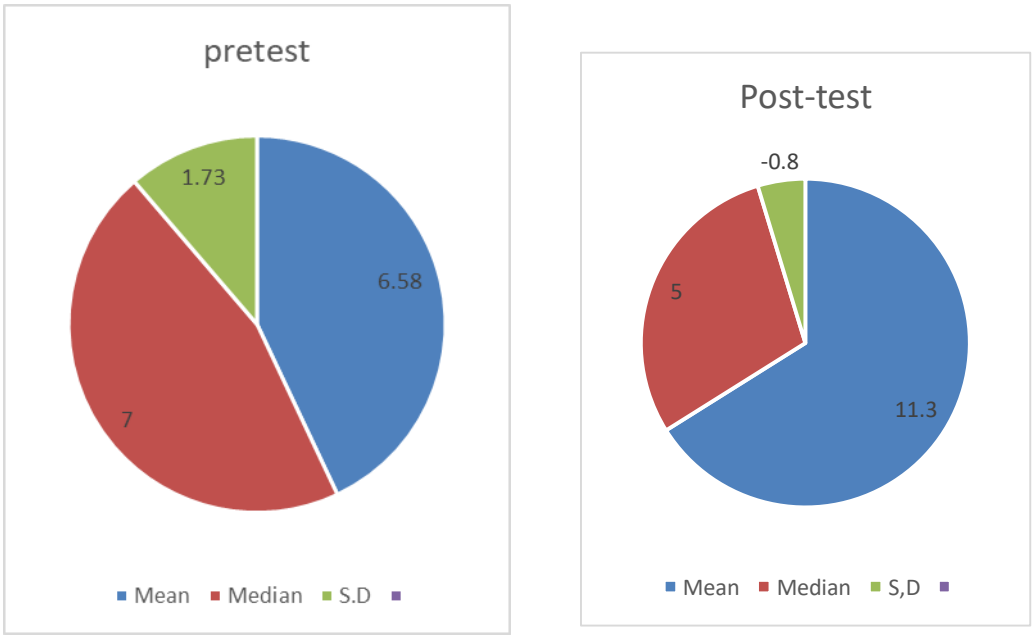

Figure 1: Showing the results of pretest and post-test.

Discussion

The present research findings were consistent with the findings of a study conducted at Adama hospital that the ethology of diabetes mellitus usually at old age, no formal education, low income among respondents could limit their accessibility and affordability of a well-balanced diet and healthy food and it was considered as the main factors (barrier) to their practice of lifestyle modification and proper use of their medications. This finding was in keeping with study conducted in Gondar; in which majority of the study participants 139 (43%) had very low monthly income.

The finding is consistent with the study conducted by Ganiyu *et al* and Ekpenyong *et al*. where majority of participants were females. It was found that married participants constituted 70% of the study population while 30% were single (widowed, divorced or separated). A similar study by Ganiyu *et al*. reported that 41.3% of participants were married, 14.4% co-habiting and 26% were single.

In terms of Knowledge Assessment, present study revel that, 80% of them were having good knowledge about diabetic mellitic 20% were having average knowledge, and 0% of them were having below average knowledge which is consistent with study conducted by Chilot Kassa Mekonnen et.al, the findings of this study showed that the knowledge and attitude toward lifestyle modification were found to be good.

Recommendations

- The similar study can be conducted on the rural community people.
- A comparative study can be done to assess the differences between Urban and Rural people lifestyle modification.

Conclusion

The mean score of post-tests is higher than the mean score of pre-tests with the difference of 10.8. Hence the planned teaching programme was found effective in imparting knowledge on lifestyle modification among individual suffering from diabetes mellitus in selected urban community of Delhi.

Reference

1. Thapa, Basaav. Endocrinological Nursing. Medical Surgical Nursing. 2nd ed., Jaypee Brothers Medical Publishers, 2009. p. 984.
2. Chen L, Magliano DJ and Zimmet PZ. The Worldwide Epidemiology of Type 2 Diabetes Mellitus--Present and Future Perspectives. Nat Rev Endocrinol, 2011. doi: 10.1038/nrendo.2011.183. PMID: 22064493.
3. A. Norman, H. Henry. Hormones, Elsevier,2015, p. 136–137. ISBN 9780123694447.
4. William's textbook of endocrinology,12th ed, Elsevier/Saunders, 2011, p. 1371–1435. ISBN 978-1-4377-0324-5.
5"Managing & Treating Gestational Diabetes | NIDDK" *National Institute of Diabetes and Digestive and Kidney Diseases*. Retrieved 2019-05-06.
6. Rockefeller JD (2015). *Diabetes: Symptoms, Causes, Treatment and Prevention*. ISBN 978-1-5146-0305-5.
7. Toumpanakis A, Turnbull T, Alba-Barba I (2018-10-30). "Effectiveness of plant-based diets in promoting well-being in the management of type 2 diabetes: a systematic review". *BMJ Open Diabetes Research & Care*. **6** (1): e000534. doi:10.1136/bmjdrc-2018-000534. PMC 6235058. PMID30487971
8. Schellenberg ES, Dryden DM, Vandermeer B, Ha C, Korownyk C. Lifestyle interventions for patients with and at risk for type 2 diabetes: a systematic review and meta-analysis. Ann Intern Med. 2013;159:543-551.
9. Gill JM, Cooper AR. Physical activity and prevention of type 2 diabetes mellitus. *Sports Med*. 2008;38:807-824.
10. MORAVCSIK A. Preferences and Power in the European Community: A Liberal Intergovernmental List Approach. JCMS: Journal of Common Market Studies. 1993 Dec;31(4):473–524.
11. Hansen, Anne Helen & Wangberg, Silje & Arsand, Eirik. (2021). Lifestyle changes among people with type 2 diabetes are associated with participation in online groups and time since diagnosis. BMC Health Services Research. 21. 10.1186/s12913-021-06660-5.
12. Farhana Faruque Zerin, Nasrin Akter, A.K.M Shafiul Kadir, Nishad Shahidullah, Jahidul Bari. (2021). Assessment of Lifestyle and Its Relation with Diabetes Mellitus in A Selected Under Privileged Community in Dhaka City, Bangladesh. Indian Journal of Public Health Research and Development. 12. 272. 10.37506/ijphrd.v12i1.13861.
13. Umeh, Andrew & Nkombua, Lushiku. (2018). A study of the knowledge and practice of lifestyle modification in patients with type 2 diabetes mellitus in Middelburg sub-district of Mpumalanga. South African Family Practice. 60. 45. 10.4102/safp.v60i1.4668.
14. International Diabetes Federation. IDF Diabetes Atlas, 8th ed. Brussels,
Belgium: International Diabetes Federation; 2017.
15. World Health Organization. Global Report on Diabetes 2016. WHO; Geneva, Switzerland: 2017.

16. International Diabetes Federation. IDF Diabetes Atlas, 10th edn. Brussels, Belgium: 2021.
17. International Diabetes Federation. IDF Diabetic Atlas 7th Edition 2015.
18. Sharma, Neetu Chandra. "Government survey found 11.8% prevalence of diabetes in India". Live mint . Retrieved 2020; 04-29.
19. Chhabra, Pragti & Sharma, Arun & Sv, Madhu & Honnakamble, Raghavendra. (2021). PREVALENCE OF DIABETES MELLITUS IN AN URBANIZED VILLAGE OF EAST DELHI. National Journal of Community Medicine.