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Simranjit kaur
Ass Professor, M.M. College of
Nursing, M.M. University,
Mullana, Ambala, Haryana,
India

Lifestyle modification among diabetes mellitus patients

Simranjit kaur

Abstract

Life style modifications have several beneficial effects in the form of improvement in glycemic control, reduction in the body weight and favourable alterations in lipid profile parameters. Life style interventions must become priority in health care if the epidemics of diabetes are to be reversed. Health care professionals and the public should be educated regarding life style modification for the prevention and treatment of diabetes. Objective of study is to assess life style modification of diabetes mellitus patients. Descriptive survey design was used for the present study. The study was conducted in OPDs of MMIMS&R Hospital, Mullana, Ambala. The target population of present study comprised diabetes mellitus patients attending OPDs of MMIMS&R Hospital, Mullana, Ambala. The sample of the present study consisted of Diabetes Mellitus patient attending medical OPDs of MMIMS&R Hospital. Criteria for sample selection is patients above 18 years of age, willing to participate in the study and able to communicate in Hindi or English. Structured lifestyle modification checklist was used to assess the lifestyle modification among Diabetes Mellitus patients. Result shows that 41.6% DM patients were having poor lifestyle modification followed by good (28.3%), average (21.6%) and excellent (8.3%) level of life style modification. Further in knowledge category 33.33% patients had good and in diet category 43.33% had fair life style modification whereas in activity and exercise as well as monitoring and treatment more number of patients had poor life style modifications i.e. 63.34% and 38.33% respectively.

Keywords: Lifestyle Modification; Diabetes Mellitus Patients

Introduction

Diabetes mellitus is an endocrine metabolic disorder in which there is an imbalance between insulin production, supply and demand. There are two major types of diabetes mellitus type 1 and type 2. In type 1 (insulin-dependent) diabetes mellitus, the body completely stops producing insulin, a hormone that enables the body to use glucose for energy. People with type 1 diabetes mellitus must take daily insulin injections to survive. In Type 2 (also called adult-onset or non insulin-dependent) diabetes mellitus the body doesn't produce enough insulin or the body is unable to use insulin properly (insulin resistance) ^[1].

Risk factors for diabetes mellitus include people who are over 40, overweight, and have a family history of diabetes, although today it is increasingly occurring in younger people, particularly adolescents, obesity, high cholesterol, high blood pressure and physical inactivity. The risk of developing diabetes also increases as people grow older. Diabetes is more common among Native Americans, African Americans, Hispanic Americans and Asian Americans/pacific islanders. Also, people who develop diabetes while pregnant (a condition called gestational diabetes) are more likely to develop full-blown diabetes later in life ^[2].

People with diabetes frequently experience certain symptoms. These include being very thirsty, frequent urination, weight loss, increased hunger, blurry vision, irritability, tingling or numbness in the hands or feet, frequent skin, bladder or gum infections, wounds that don't heal, extreme unexplained fatigue. In some cases, there are no symptoms this happens at times with type 2 diabetes. In this case, people can live for months, even years without knowing they have the disease. This form of diabetes comes on so gradually that symptoms may not even be recognized ^[3].

The American diabetes association (ADA), the North American association for the study of obesity (NASSO), and the American society for clinical nutrition (ASCN) jointly created a position statement that emphasizes the importance of lifestyle modification in weight

Correspondence
Simranjit kaur
Ass Professor, M.M. College of
Nursing, M.M. University,
Mullana, Ambala, Haryana,
India

management for both the prevention and treatment of type 2 diabetes. Behavioral and lifestyle interventions can provide lasting protection against type 2 diabetes in people at increased risk^[4].

Achieving weight loss through a combination of dietary changes and increased physical activity can prevent onset of diabetes mellitus. Physical activity is important aid in weight loss. Other benefits of regular physical activity include improvements in insulin sensitivity and glucose utilization. Thirty to forty-five minutes of moderate activity three to five times a week or more is recommended. The role of clinicians in facilitating lifestyle change involves helping patients to learn techniques and strategies to promote behavioural changes. As health care providers, we generally do not know how to help our patients to do this, nor do many of us have the time in our busy practices to provide much in the way of weight management. Many patients with or without diabetes will meet the criteria for the diagnosis of metabolic syndrome, the treatment of which is reimbursed and rightly includes weight management advice^[5].

Life style modification must become priority in health care if the epidemics of diabetes are to be reversed. Health care professionals and the public should be educated regarding life style modification for the prevention and treatment of diabetes^[4].

The global burden of diabetes, which was estimated to be 154 million in 2000, with the prevalence of 4.2% in the general adult population. There were estimated 37.76 million diabetics in India in 2004; 21.4 million in urban areas and 16.36 million in rural areas. Diabetes was estimated to be responsible for 109 thousand deaths, 1157 thousand years of life lost and for 2263 thousand disability-adjusted-life years (DALYs) during 2004. The estimates for disease burden due to diabetes vary from 23 million in 2000 to 41 million in 2007, the vast majority having type 2 diabetes mellitus. A substantial proportion of these patients will have diabetes related complications^[6].

The percentages of patients having diabetic retinopathy, micro albuminuria and peripheral neuropathy in the Chennai Urban Rural Epidemiology Study (CURES) were 17.6, 26.9% and 26.1% respectively. In the Chennai Urban Population Study (CUPS), 21.4% of diabetes patients had coronary artery disease, while 6.3% had peripheral vascular disease. The health system needs to be geared to tackle these huge numbers, while ensuring health care that is universally accessible and of acceptable quality. This paper looks at the challenges diabetes poses to the health system globally and particularly in India^[7].

There is need of the study to assess the lifestyle modifications in diabetes mellitus patients because primary prevention through promotion of healthy lifestyles and risk reduction as the most cost-effective intervention in resource-poor settings. However, India will need to also plan for the care of the sizeable number of people with diabetes, in order to prevent and decrease morbidity due to complications.

A health system strengthening approach with standards of care at all levels, thus nationally accepted management protocols and regulatory framework will help in tackling this challenge. Diet is the most important behavioral aspect of diabetes treatment. Education regarding basic principles of nutritional management should made understandable to both clinicians and their patients to cure diabetes.

Patients commonly fail to adhere to recommendations for diet and exercise, a source of ongoing frustration for clinicians in caring for their patients with diabetes. One study, as an example, found that fewer than 40 percent of patients with diabetes are within 20 percent of their prescribed diet. Noncompliance rates among patients with diabetes in another study were 62 percent for diet and 85 percent for exercise. Overall dietary compliance is a major factor in achieving glycemic control in diabetes^[8].

Methodology

Descriptive survey design was used for the present study. Variables under study are lifestyle modification of diabetes mellitus patients as well as age, gender, education, occupation, monthly income, food habit, lifestyle of diabetes mellitus patients.

The study was conducted in OPDs of MMIMS&R Hospital, Mullana, Ambala. The rationale for selecting the setting was availability of subject, feasibility of conducting the study and familiarity of investigators with setting.

The target population of present study comprised diabetes mellitus patients attending OPDs of MMIMS&R Hospital, Mullana, Ambala. The sample of the present study consisted of Diabetes Mellitus patient attending medical OPDs of MMIMS&R Hospital. Criteria for sample selection is patients above 18 years of age, willing to participate in the study and able to communicate in Hindi or English. Purposive sampling technique was used for present study which comprised 60 samples.

The 1st part of the tool consisted information about patients characteristics which includes: age, gender, education, occupation, income, lifestyle, food habits, relationship. The 2nd part of tool structured lifestyle modification checklist was used to assess the lifestyle modification among Diabetes Mellitus patients. The lifestyle modification checklist was divided into 4 areas i.e. knowledge; diet; exercise; monitoring and treatment. The maximum rating score is 40 and minimum is 0 with the assumption that higher the lifestyle modification score higher the lifestyle modification among Diabetes Mellitus patient. The level of life style modification was categorized into excellent (>80%), good (65-80%), average (50-64%) and poor (<50%).

The tool was circulated among nine experts. The content validity was judged and their suggestions were obtained and tool was modified. The final tool with forty items was finalized for the pilot study. The tool was tried out on ten diabetes mellitus patients. The items of tools were found clear and understandable to the study subjects. Average time taken for data collection from each subject was 20-25 minutes. The reliability coefficient was 0.82. Hence the tool was reliable. Pilot study was conducted to ensure the feasibility of the study. Data were collected from fifteen diabetes mellitus patients. It was feasible to conduct the study.

Formal permission was obtained from the Medical Superintendent and HOD of Medicine Department, MMIMS&R Hospital, Mullana, Ambala. Self introduction was given to study participants, nature and purpose of the study was explained to them and rapport was established. The confidentiality of their responses was assured and written consent was taken. Data was collected by using interview technique. At the end of data collection the researcher clarified the doubt of the subjects.

Results

Results shows that 43.33% patients were in age group of 31-45 years and majority of them (60%) were male, 31.67% were primary educated and 50% of them were self-employed. Majority of patients (73.33%) were having

income less than 5000 INR per month. 51.67% patients were non-vegetarian and 55% were having sedentary life style. Majority of patients (61.67) reported that any friend or relative having diabetes mellitus have not influenced them to modify their life style. (Table 1)

Table 1: Frequency and Percentage Distribution of Diabetes Mellitus Patients as per sample characteristics, N=60

Sample characteristics	f	%
Age (in years)		
a. 18-30	03	05.00
b. 31-45	17	28.33
c. 46-60	26	43.33
d. <60	14	23.33
Gender		
a. Male	36	60.00
b. Female	24	40.00
Education		
a. Illiterate	16	26.67
b. Primary	19	31.67
c. Secondary	16	26.67
d. Higher secondary	06	10.00
e. Graduate and above	03	05.00
Occupation		
a. Laborers	18	30.00
b. Non-health professionals	12	20.00
c. Self employed	30	50.00
Income per month (INR)		
a. <5000	44	73.33
b. 5000 – 10,000	10	16.67
c. >10,000	06	10.00
Food habits		
a. Vegetarian	29	48.33
b. Non-vegetarian	31	51.67
Life style		
a. Sedentary	33	55
b. Non-sedentary	27	45
Any relative/friend having diabetes mellitus influenced him/her		
a. Yes	23	38.33
b. No	37	61.67

Table 2 depicts that 41.6% DM patients were having poor lifestyle modification followed by good (28.3%), average (21.6%) and excellent (8.3%) level of life style modification.

Table 2: Frequency and Percentage Distribution of Diabetes Mellitus Patients as per Level of Lifestyle Modification

Level of life style modification	f	%
Excellent	05	08.33
Good	17	28.33
Average	13	21.67
Poor	25	41.67

Table 3: Frequency and Percentage Distribution of Diabetes Mellitus Patients as per Level of Life style Modification (category wise). N=60

Categories	Level of Life Style Modification			
	Excellent f (%)	Good f (%)	Fair f (%)	Poor f (%)
Knowledge	18 (30)	20 (33.33)	12 (20)	7 (11.67)
Diet	7 (11.67)	23 (38.33)	26 (43.33)	4 (6.67)
Activity & Exercise	5 (8.33)	2 (3.33)	15 (25)	38 (63.34)
Monitoring & Treatment	9 (15)	21 (35)	7 (11.67)	23 (38.33)

Table 3 depicts that in knowledge category 33.33% patients were having good life style modification followed by 30% excellent, 20% fair and 11.67% poor life style modification. In diet category 43.33% having fair followed by 38.33% good, 11.67% excellent and 6.67% poor life style modification. In category activity and exercise 63.34% patients were having poor followed by 25% fair, 8.33% excellent and 3.33% good life style modification. In

monitoring and treatment 38.33% patients were having poor followed by 35% good, 15% excellent and 11.67% fair life style modifications.

Conclusion

It is concluded that 43.33% patients were in age group of 31-45 years and majority of them (60%) were male, 31.67% were primary educated and 50% of them were self-

employed. Majority of patients (73.33%) were having income less than 5000 INR per month. 51.67% patients were non-vegetarian and 55% were having sedentary life style. Majority of patients (61.67) reported that any friend or relative having diabetes mellitus have not influenced them to modify their life style. 41.6% DM patients were having poor lifestyle modification followed by good (28.3%), average (21.6%) and excellent (8.3%) level of life style modification. Further in knowledge category 33.33% patients had good and in diet category 43.33% had fair life style modification whereas in activity and exercise as well as monitoring and treatment more number of patients had poor life style modifications i.e. 63.34% and 38.33% respectively.

Implications of the study

Nursing Administration: The nursing administrators can make effort to involve the lifestyle modification assessment tool with the treatment chart of the patients. Through in-service education program all the nurses can be trained to use and implement the lifestyle modification assessment checklist for the in patients. Nursing students should also be provided with opportunity to practice the assessment and preventive interventional measures under supervision.

Nursing education: Through in-service education program to all bedside nurses can be trained to use lifestyle modification assessment for all the admitted diabetes mellitus patients. The nurses and students can also be taught about the areas of lifestyle modification for early treatment and complication prevention in DM patients.

Nursing practice: The lifestyle modification assessment checklist can be used in different clinical areas to identify lacking areas and thereby helping in modifying patients' lifestyle. The lifestyle modification assessment tool can be made compulsory in each ward and can also be applied in treatment of various diseases such as hypertension, cardiac diseases etc.

Nursing research: The present study would generate specific literature for students as well as trained nurses and will serve as a baseline for developing intervention for lifestyle modification in DM patients.

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