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Effect of health promotion program among patients with newly diagnosed diabetes mellitus regarding lifestyle modification

G Jhansi Rani Ms
St Martha's College of Nursing, Bangalore, josncon@gmail.com

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Cover Page Footnote

The researcher acknowledges the institution for giving an opportunity to conduct the study

Original article

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G Jhansi Rani

Email: josncon@gmail.com

Abstract

Introduction: Diabetes Mellitus (DM) is a metabolic disorder. A change in lifestyle helps to control diabetes. **Objectives:** To find the knowledge and attitude on lifestyle modification among patients with newly diagnosed diabetes and effectiveness of health promotion program. **Material and methods:** Pre-experimental one group pre-test, post-test designs are adopted and purposive sampling techniques are used to select 30 newly diagnosed diabetic patients. The knowledge and attitude on lifestyle modification among diabetic patient was assessed by using structured questionnaire. Then the health promotion program was given after pre-test and post-test was carried out after two weeks (during next follow up). Results were analyzed using paired '*t*' test. **Results:** Finding of the study showed that the pre-test mean value for levels of knowledge was 15.8 and post-test mean value was 32. The mean difference was 16.2. The computed '*t*' value ('*t*'=14) was higher than the table value (3.66) at $p<.001$ level. The pre-test mean value for levels of attitude was 28 and post-test was 41. The mean difference was 13. The computed 't' value ('*t*'=14) was higher than the table value (3.66) at $p<.001$ level. The 'chi'-square value on levels of knowledge of demographic variables like age, gender, religion, educational status, occupation, residential area and sources of information were significant at $p<.05$ level. The 'chi'-square value on levels of attitude of demographic variables were not significant at $p<.05$ level. **Conclusion:** Thus, it can be concluded that the knowledge and attitude among patients with newly diagnosed DM can be improved by conducting health promotion program regarding lifestyle modifications which would make them competent enough to control their diabetes.

Key words: Diabetes, health promotion program, lifestyle, modification, patient

Introduction

Diabetes Mellitus (DM) is a chronic disorder, but people with diabetes can lead their life peacefully and like a common human being. The diabetes can be in control, if they change their life style. As we all know diabetes is a metabolic disorder, where the insulin level declines and glucose level increases in blood (Guariguata, Whiting. Hambleton, Beagley, Linnenkamp & Shaw, 2014).

Increase in population, obesity, ageing and sedentary lifestyle are the major causes for rising diabetes all over the world. Diabetic fact sheet reveals that young to middle age adults are highly affected with diabetes in Asian countries (Mathers & Loncar, 2006).

G Jhansi Rani,
St Martha's College of Nursing, Bangalore

The statistics show that world widely diabetic rate is increased to 422 million in 2014 from 108 million in 1980. In 1980, only 4.7% were diagnosed with diabetes in the age group of over 18 years, whereas it increased as 8.5% in 2014 (Mathers & Loncar, 2006).

In the year of 2015, 1.6 million deaths are because of diabetes, another 2.2 million deaths were attributable to high blood glucose in 2012. Diabetes will be the 17th leading reason for death in 2030.

Lifestyle is the major risk factor in developing countries. Also, there is more chance of getting secondary complications because of diabetes. If patient changes diet, ceases smoke and alcohol consumption, reduces weight by exercise and takes foot care, then it can prevent the risk of getting complications (Okonta, Ikombela & Ogunbanjo, 2014).

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In this contemporary world, most of the people do not give more attention to the life style. In the developing and developed countries, no one has time to understand their health and take care of it. Unaware about the ways to overcome diabetes is the leading reason for increasing diabetic rate and its complications. This study helps to provide information to people about lifestyle modifications and awareness of health, which will make the person to lead his remaining life satisfactorily.

Objectives

1. To assess the pre-test levels of knowledge and attitude regarding lifestyle modification among patients with DM.
2. To determine the effect of health promotion program on levels of knowledge and attitude regarding lifestyle modification among patients with DM.
3. To determine the association between post-test levels of knowledge and attitude regarding lifestyle modification and selected demographic variables among patients with DM.

Material and methods

Research approach used for the study was quantitative with evaluative research approach. The research design used was pre-experimental, one group pre-test and post-test design. Non-probability and purposive sampling technique was used for the study to select 30 samples for the study based on inclusion and exclusion criteria.

Inclusion criteria: Patients who

- Are attending master health checkup or other OPD's (medical & surgical),
- First time diagnosed as diabetes mellitus,
- Able to understand and communicate in Tamil or English and
- Willing to participate in the study.

Exclusion criteria: Patients who have

- Cognitive impairment,
- Hearing and visual impairment and
- Gestational DM.

The study was conducted at Sri Narayani Hospital and Research Center (SNHRC), Vellore, on the patients, who were diagnosed with DM for the first time at SNHRC as outpatient.

Description of tool

In this study the instrument consists of three sections.

Section - A

Deals with demographic variables, such as age, gender, religion, marital status, educational status, occupation, monthly income, type of family, type of work, residential area, dietary pattern, habits, any family history of diabetes mellitus, previous knowledge on diabetes mellitus and sources of information.

Section - B

It consists of structured interview schedule to assess knowledge regarding lifestyle modifications among patients with DM. It has 40 multiple choice questions.

Each question has four options out of which one is the correct answer. For each correct response a score of "1" (one) and for wrong response "0" (zero) score is given. The total score is 40.

Table 1:

Interpretation of Knowledge Level

Levels of knowledge	Score	Percentage
Adequate	27-40	67-100%
Moderate	14-26	34-66%
Inadequate	1-13	<33%

Section – C

It consists of five point Likert scale to assess the attitude regarding lifestyle modifications among patients with DM. Total score was 50.

Table 2:

Positive Attitude Score

Criteria	Scores
Strongly agree	5
Agree	4
Uncertain	3
Disagree	2
Strongly disagree	1

Table 3:

Negative attitude score

Criteria	Scores
Strongly agree	1
Agree	2
Uncertain	3
Disagree	4
Strongly disagree	5

Data collection

Ethical clearance and written permission was obtained from college research committee members and from the head of the institution respectively, to conduct the research at SNHRC.

The main study was conducted from (22 July to 22 August 2015). The patients with DM were informed regarding the research study and written consent was obtained initially.

O1 – Pre-test to assess the levels of knowledge and attitude regarding lifestyle modification among patients with DM at SNHRC.

X – Health promotion program.

O2 – After two weeks, the post-test was conducted to assess the levels of knowledge and attitude regarding lifestyle modification among patients with DM at SNHRC.

Results

1. Description of demographic profile of diabetic patient

The 43% of patients belonged to age 41 to 50 years, 57% of them were male (17), 57% were Hindu, completed higher secondary (17), 71% were married (21), 40% were unskilled workers (12), 47% member's monthly income was 5,001-7,500 Rs (14), 63% were from nuclear family (19), 43% were from rural area (13), 87% had mixed type of food (26), 83% had family history of DM (25), and 87% did not had previous knowledge on DM (26).

2. Knowledge and attitude of patients with DM regarding lifestyle modification

Mean knowledge score on pre-test was 15.8 and post-test mean value score was 32. The mean difference was 16.2. The computed '*t*' value (*'t'*=14) was higher than the table value (3.66) at $p<.001$ level. The pre-test mean value for levels of attitude was 28 and post-test was 41. The mean difference was 13. The computed 't' value ('*t*'=14) was higher than the table value (3.66) at $p<.001$ level.

Table 4:
Effectiveness of Health Promotion Program On Levels of Knowledge Regarding Lifestyle Modifications Among Patients with Diabetes Mellitus

N=30

Levels of knowledge	Mean	SD	Mean difference	df	Paired '*t*' test
Pre-test	15.8	7.34	16.2	29	14
Post-test	32	3.31			

Note - *statistically significant ($p<.05$)

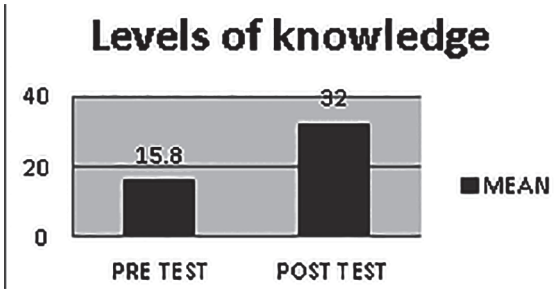

Figure 1: Bar graph shows the effectiveness of health promotion program on levels of knowledge regarding lifestyle modifications among patients with diabetes mellitus.

Table 5:
Effectiveness of Health Promotion Program On Levels of Attitude Regarding Modifications Among Patients with Diabetes Mellitus

N=30

Levels of attitude	Mean	SD	Mean difference	df	Paired '*t*' test
Pre-test	28	5.5	13	29	14
Post-test	41	3.5			

Note: *statistically significant ($p<.05$)

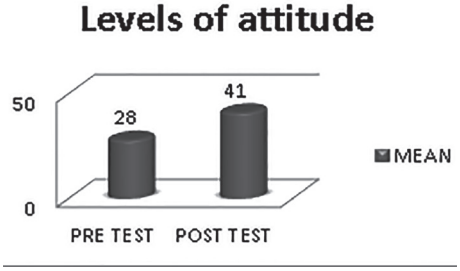

Figure 2: Cylindrical graph shows the effectiveness of health promotion program on levels of attitude regarding lifestyle modifications among patients with DM

3. Association between knowledge and attitude among patients with DM regarding lifestyle modification

The 'chi'-square value on levels of knowledge of demographic variables like age, gender, religion, educational status, occupation, residential area and sources of information are significant at $p<.05$ level. Whereas marital status, monthly income in INR, type of family, type of food, family history of DM and previous knowledge on DM are non-significant.

The 'chi'-square value on levels of attitude of demographic variables like age, gender, religion, marital status, education, occupation, monthly income in INR, residential area, type of family, type of food, any family history of DM, previous knowledge on DM and sources of information are non-significant at $p<.05$ level.

Discussion

The present study was designed to evaluate the effectiveness of health promotion program on levels of knowledge and attitude regarding lifestyle modification among patients with DM.

This study finding was supported by Vasudevan and Sara (2014) where he assessed the levels of knowledge regarding lifestyle modification among patients with DM. He used convenience sampling technique for selection of 50 diabetic patients from diabetic OPD, Rajah Muthiah Medical College Hospital (RMMCH). He conducted pre-test, then gave knowledge using STP and conducted post-test to find out the effectiveness of STP. Pre-test score shows 72% had inadequate knowledge and 28% had moderate knowledge. After the STP, the post-test score shows 50% gained moderate knowledge and 50% gained adequate knowledge. The paired 't' test was applied to compare pre-test and post-test mean and standard deviation. It shows the levels of knowledge was statistically significant ($p<.001$).

The study was supported by Okonta, Ikombela and Ogunbanjo, (2014) where knowledge, attitude and practice were assessed regarding lifestyle modification in type 2 diabetic patients. A cross-sectional study was done using a structured questionnaire amongst 217 type 2 diabetic patients seen at the diabetic clinic of Mamelodi hospital. Baseline characteristics of the participants were obtained and their knowledge, attitude and practice regarding lifestyle modification were assessed. Of the 217 participants, 154 (71%) were obese and 15 (7%) were morbidly obese. The majority of respondents (92.2%) had poor knowledge of the benefits of exercise, weight loss and a healthy diet. What is interesting is that the majority (97.7%) demonstrated bad practices in relation to lifestyle modifications, although over four-fifths (84.3%) had a positive attitude toward healthy lifestyle modifications. Therefore, it supports the present study.

Recommendation

A comparative study can be done on rural and urban patients.

A study can be conducted to evaluate the lifestyle intervention program on patient with DM complication such as diabetic nephropathy, neuropathy and retinopathy.

Conclusion

The majority of the patients undergoing health promotion program showed there was significant increase in the levels of knowledge and attitude on lifestyle modification among patients with newly diagnosed DM.

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