

## Effect of Health Education on Self Care among known Diabetic Patients

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**Abstract:** Diabetes is a chronic illness that re-quires continuing medical care and patient self-management education to prevent acute complications and to reduce the risk of long-term complications. The prevalence of diabetes mellitus (DM) has increased enormously as there were an estimated 30 million cases in 1985 versus 177 million in 2000<sup>1</sup>. Based on these current trends, >360 million individuals will have diabetes by the year 2030 and the increased prevalence of type 2 DM is likely due to increased obesity and reduced activity levels. We conducted a study to find out the knowledge and practice related to self care among diabetic patients and to assess the improvement in knowledge and practice after health education. It was an Interventional (experimental) study by taking a pre-test, giving health education and later a post-test conducted in HUDCO colony, Peelamedu involving known Type 2 Diabetic patients. On anlysis we concluded that theknowledge and practice related to self care in diabetes among known Type 2 Diabetic patients was low and inadequate.

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### I. Introduction

Diabetes mellitus, or simply diabetes, is a group of metabolic diseases in whom blood sugar is high, either because the pancreas does not produce enough insulin, or because cells do not respond to the insulin that is produced.<sup>1</sup>

Globally, as of 2010, an estimated 285 million people had diabetes, with type 2 making up about 90% of the cases. Its incidence is increasing rapidly, and by 2030, this number is estimated to almost double.<sup>2</sup> In India prevalence of diabetes is more than any other country in the world, According to the International Diabetes Foundation, although more recent data suggest that China has even more. The disease affects more than 50 million Indians - 7.1% of the nation's adults - and kills about 1 million Indians a year. The average age on onset is 42.5 years .The high incidence is attributed to a combination of genetic susceptibility plus adoption of a high-calorie, low-activity lifestyle by India's growing middle class.<sup>3</sup>

Self care is important for the diabetic patients. The World Health Organization defines self-care as "activities individuals, families, and communities undertake with the intention of enhancing health, preventing disease, limiting illness, and restoring health. These activities are derived from knowledge and skills from the pool of both professional and lay experience. They are undertaken by lay people on their own behalf, either separately or in participative collaboration with professionals."<sup>4</sup>

### II. Aims And Objectives

1. To find out the knowledge and practice related to self care among diabetic patients
2. To assess the improvement in knowledge and practice after health education

### III. Methodology

- Design of the study: Interventional (experimental) study
- Study area: Hudco colony, peelamedu, Coimbatore, India
- Study population: known Diabetic patients
- Sample size: 50
- Sampling method: Convenient sampling
- Inclusion criteria: Diabetic patients willing to participate in the study
- Exclusion criteria: Diabetic patients not willing to participate in the study and not present during our house visit.
- Duration of study: Six months, from April to September 2013

- Study material: 1) Interview Questionnaire  
2) Health education materials
- a) charts
- b) diagrams
- c) photographs
- Data analysis: Using proportions
- Dissemination of results: In the seminar by students, in PSGIMSR

**During the field visit:**

Visit the houses, identify and talk to known Diabetic patients  
Get informed consent  
Interview (Pretest)  
Preparation of health education materials  
Health education sessions  
After one month (post test)

**Potential risks and benefits:**

Potential risks: Nil  
Benefits: Improvement in knowledge & practices regarding self care, among diabetic patients.

**Outcome measures:**

Improvement in knowledge and practices regarding self care, among the subjects.

**Statistical Data analysis:** Using proportions and ‘t’ test

**National significance with rationale:**

In India, knowledge and practices regarding ‘self care’ among diabetic patients are poor. So, by providing health education to them, there will be improvement.  
Hence this study is being carried out.

**IV. Results**

The study was conducted in Hudco colony, Peelamedu for a period of six months from April to September 2013. The sample size was 50 known diabetic patients who were interested to participate in the study and answer the questionnaire. The main aim of the study was to identify the knowledge and practices of known diabetic patients regarding self care in diabetes and to assess the knowledge and practice on self care in diabetes after health education.

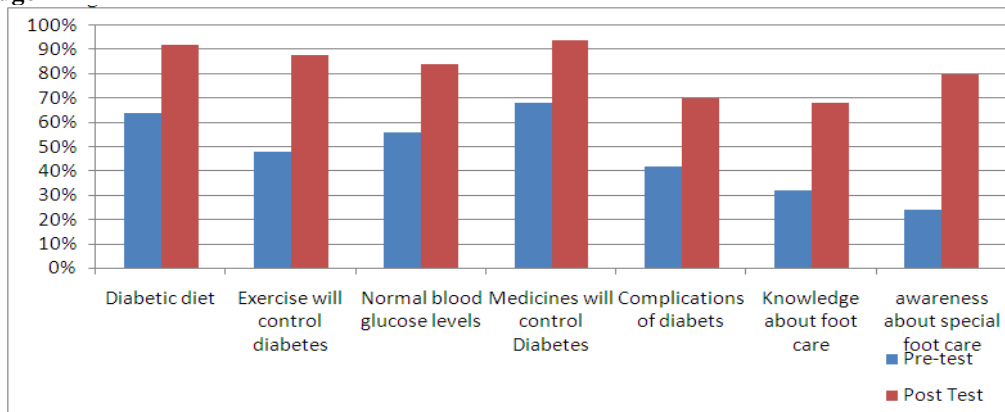
The questionnaire consisted of basic questions to assess knowledge in self care of diabetes like Diabetic diet, exercise, normal blood glucose level, medicines and complications and foot care in diabetes. The practices on self care in diabetes included Diabetic diet, exercise, self testing of glucose levels, treatment and foot care. The answers were marked based on the reply by the diabetic patients and they were scored. In the pre-test, participants had poor knowledge about self care in diabetes. Even though they were practicing some of the self care practices, they did not know the exact purposes for their practices. Hence, health education was made mandatory to increase the knowledge and practice regarding self care in diabetes following which the post-test was conducted to reassess.

The participants did not have any age limits. We divided the age groups in intervals of ten. The maximum participants of the study belonged to the age group of 50 and above. After the completion of the study, the results were compiled, which showed an improvement of 34% in knowledge and 21% in practices regarding self care in diabetes mellitus.

**Age and Sex wise distribution of subjects:**

Age group (years)	Male (N=24)	Female (N=26)	Total (N=50)
20-29	1	2	3
30-39	2	1	3
40-49	4	5	9
50-59	7	10	17
60 & Above	10	8	18
Total	24(100)	26(100)	50(100)

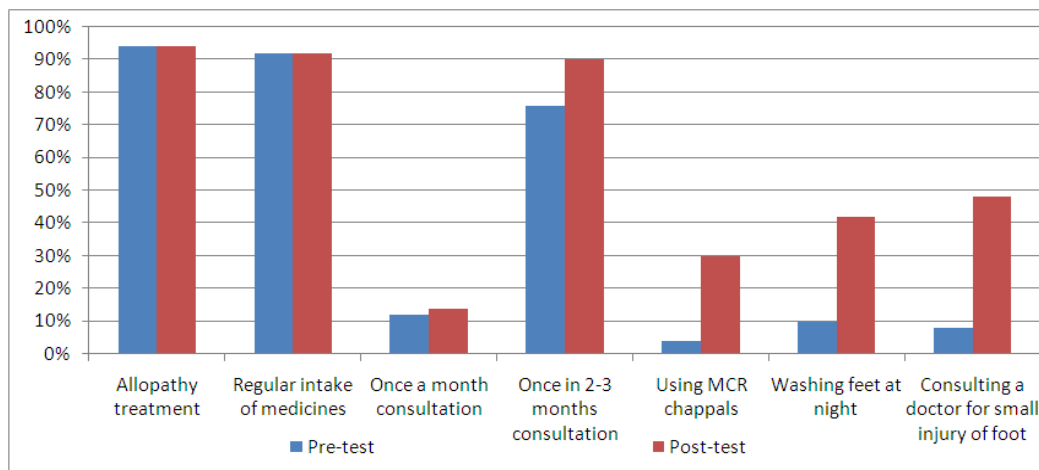
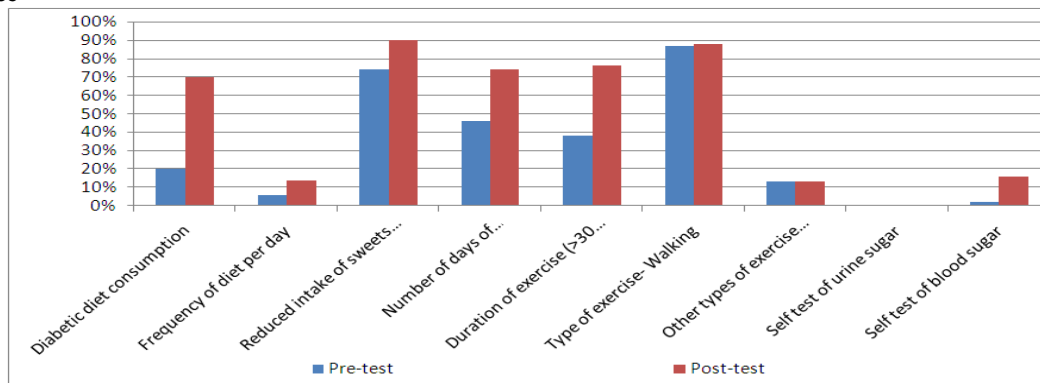
**Knowledge**



Knowledge about	Pre test	Post test
1. Diabetic diet	64%	92%
2. Exercise will control diabetes	48%	88%
3. Normal blood glucose level	56%	84%
4. Medicines will only control diabetes	68%	94%
5. Complications of diabetes	42%	70%
6. Knowledge about foot care	32%	68%
7. Awareness about special foot wear	24%	80%
Total	48%	82%

Total improvement = 82 – 48 = 34%

**Practice**



**Self care practices**

Practices	Pre test	Post test
Taking diabetic diet most of the time	20%	70%
Frequency of diet per day (>3 times per day)	6%	14%
Reduced the intake of sweets or sugars	74%	90%
Total number of days of exercise(>3 days per week)	46%	74%
Duration of exercise (>30 minutes)	38%	76%
Type of exercise	87%	88%
Walking		
Other types of exercise	13%	12%
Self test of urine sugar	0	0
Self test of blood sugar	2%	16%
Allopathy treatment	94%	94%
Regular intake of medicines	92%	92%
Once a month consultation	12%	14%
Once in 2-3 months consultations	76%	90%
Using MCR chappals	4%	30%
Washing feet at night	10%	42%
Consulting a doctor on small injury	8%	48%
Total	36%	57%

Total improvement = 57 – 36 = 21%

**V. Discussion**

Diabetes is a chronic illness that re-quires continuing medical care and patient self-management education to prevent acute complications and to reduce the risk of long-term complications.

The prevalence of diabetes mellitus (DM) has increased enormously as there were an estimated 30 million cases in 1985 versus 177 million in 2000 (1). Based on these current trends, >360 million individuals will have diabetes by the year 2030 and the increased prevalence of type 2 DM is likely due to increased obesity and reduced activity levels (1,2)

Diabetic care is complex and requires that many issues, beyond glycemic control, be addressed. uncontrolled diabetes can affect many parts of the body and can lead to serious complications such as blindness, kidney damage, and lower-limb amputations.

Diabetes self-management education (DSME) is a critical element of care for all people with diabetes and is necessary in order to improve patient outcomes. There are seven essential self-care behaviors in people with diabetes which predict good outcomes. These are healthy eating, being physically active, monitoring of blood sugar, compliant with medications, good problem-solving skills, healthy coping skills and risk-reduction behaviours .

Studies conducted in diabetes includes prevalence, complications, risk factors and predominant age group in that particular region. But in our study, we did not take complications of diabetes because it was a community based study, many people will not be interested in participating in the study when the method of study includes various tests being conducted and their costs involved.

In our study, we have assessed the knowledge and practices of self care in known diabetic patients in Hudco colony, Peelamedu by using a questionnaire. The pre test included questions for both the knowledge and practices regarding self care. After which a session of health education was given, followed by post test.

This study includes known diabetic patients who are interested to participate and they are people who can be educated about the self care knowledge and practices, so that this improvement in knowledge and practices can control diabetes and reduce the complications.

Gopichandran et al. conducted a community-based cross sectional survey on “Diabetes self-care activities” using a cluster design in an urban community in southern India. They found that dietary habit was good in 29%, good exercise behaviour in 19.5%, regular blood sugar monitoring in 70%, and drug adherence in 79.8%. Male and married persons had significantly good exercise behaviour.<sup>5</sup> In our study almost 64% were aware about dietary habits which increased to 92% in post test questionnaire.

Karam Padma et al. did a hospital based cross sectional study. They found that 61.68% were aware of importance of exercise for the control of disease. In our study it was observed that only 48% knew the importance of exercise, though 88% became aware after giving health education. Only 64% of the respondents had achieved glycemic control<sup>6</sup>, but in our study almost 88% had good glycemic control

FarzanaSaleh et al. did a cross sectional study in Bangladesh. They found that 16%, 66%, and 18% of respondents had good, average, and poor (GAP) basic knowledge respectively. They concluded that health education and motivation should create positive changes in diabetes-control-related self-care practices.<sup>7</sup> Even in our study around 56% had good glycemic control.

Wynn Nyunt et al. did a study among diabetic patients in Yangon, Myanmar. The prevalence of successful glycaemic control was 27.1% but in our study almost 56% had good glycaemic control suggesting that they were aware of the importance of glycaemic control. 30.8% had good self-care behaviour<sup>8</sup> in his study which was also better in our population with around 48%.

## **VI. Conclusion**

In the period of six months, the study was conducted among 50 known diabetic patients in Hudco colony, Peelamedu. A questionnaire regarding knowledge and practices about self care in diabetes was given for pre-test, a session of health education given and finally post-test. There was a striking change in results between knowledge and practices before and after health education. Health education on "Self care in diabetes mellitus" given to 50 diabetic patients has produced an improvement of 34% in knowledge and 21% in practice.

The limitation we had in our study was that Health Education was given only once. If it was repeated periodically, there might be more improvement.

It should be recommended that Health Education should be provided to diabetic patients for providing serious complications. The health education should be repeated periodically.

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