

# EFFECTIVENESS OF A COMMUNITY BASED DIABETES SELF MGT INTERVENTION FOR ADULTS WITH DIABETES

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**ABSTRACT:** **Background:** Metabolic disorder is a global health problem in this diabetes mellitus is an “ice berg” diseases posing a serious threat to be met within the 21<sup>st</sup> century. Diabetes mellitus is epidemic in both developed and developing countries. Every fifth diabetic patient in the world is in India and every fifth adult in Indian urban added is a diabetic around 150 million people suffer from diabetic in the world with the increasing incidence of diabetic India leads the world today with the largest number of diabetic. **Objectives:** 1) To assess the existing knowledge regarding community based self management intervention for adult with diabetes. 2) To evaluate the intervention of a community based self management intervention for adult with diabetes. 3) To associate the knowledge score with selected demographic variable. **Methods and Materials:** Experimental research design is used in this study. 40 diabetes patients were selected by non probability convenience sampling technique from residential area of study participants. Structured questionnaire used to assess knowledge. **Result:** 0% of the adults had poor level of knowledge, 11% of adults had average level of knowledge, 24% had good knowledge and 5% had excellent knowledge score. Mean knowledge score was  $12.15 \pm 2.48$  with a mean percentage score of 60.5%. **Conclusion:** The present study findings show that diabetes self management intervention improved the knowledge of the adults as well as health behavior of the adults suffering from diabetes mellitus. Therefore, it is necessary to initiate special educational programs for all the adults suffering from diabetes mellitus.

**Key Words:** effectiveness, self management intervention, diabetes

## Introduction

Metabolic disorder is a global health problem in the world. Diabetes mellitus is an “ice berg” diseases posing a serious threat to be met within the 21<sup>st</sup> century. Diabetes mellitus is epidemic in both developed and developing countries. Every fifth diabetic patient in the world is in India and every fifth adult in Indian urban added is a diabetic around 150 million people suffer from diabetic in the world with the increasing incidence of diabetic India leads the world today with the largest number of diabetic.<sup>1</sup>

By the most recent estimates, 18.8 million people in the U.S. have been diagnosed with diabetes and an additional 7 million are believed to be living with undiagnosed diabetes. At the same time, 79 million people are estimated to have blood glucose levels in the range of prediabetes or categories of increased risk for diabetes. Thus, more than 100 million Americans are at risk for developing the devastating complications of diabetes.<sup>2</sup>

Diabetes self-management education (DSME) is a critical element of care for all people with diabetes and those at risk for developing the disease. It is necessary in order to prevent or delay the complications of diabetes and has elements related to lifestyle changes that are also essential for individuals with prediabetes as part of efforts to prevent the disease.<sup>3,4</sup>

The National Standards for Diabetes Self-Management Education are designed to define quality DSME and support and to assist diabetes educators in providing evidence-based education and self-management support. The Standards are applicable to educators in solo practice as well as those in large multicenter programs and everyone in between. There are many good models for the provision of diabetes education and support. The Standards do not endorse any one approach, but rather seek to delineate the commonalities among effective and excellent self-management education strategies. These are the standards used in the field for recognition and accreditation. They also serve as a guide for nonaccredited and nonrecognized providers and programs.<sup>5,6</sup>

## Methodology

Experimental research design was used for this study. The study was conducted in the Wardha district. The population of the study was adults with diabetes mellitus who were fulfilling the inclusion and

exclusion criteria. The sample size was 40 adults suffering from diabetes. The sampling technique used was non-probability purposive sampling technique. The study was approved by the institutional ethical committee and the study was conducted in accordance with the ethical guidelines prescribed by central ethics committee on human research. The inclusion criteria of the study are, adults with diabetes those who can understand Marathi and those who are available during data collection. The exclusion criteria are adults those are absent during the period of study. A structured interview was used to collect the data. A structured questionnaire was used to assess the existing knowledge regarding community based self management intervention for adult with diabetes.

## Results

The analysis and interpretation of the finding were done under the five sections.

### SECTION A

**Table :1 Distribution of adults with diabetes according to their demographic variables**

n-40

Demographic variable	No. of participants	Percentage (%)
<b>Age(in years)</b>		
31-40years	8	20%
41-50 years	12	30%
51-60 years	11	27.5%
61-70 years	9	22.5%
<b>Gender</b>		
Male	21	52.5%
Female	19	47.5%
<b>Religion</b>		
Hindu	20	50%
Buddhist	14	35%
Muslim	3	7.5%
Christian	3	7.5%
<b>Educational status</b>		
Primary	5	12.5%
Secondary	17	42.5%
Higher secondary	12	30%
Graduate and above	06	15%
<b>Occupation</b>		
Housewife	14	35%
Daily wages	15	37.5%
Private employee	04	10%
Government	07	17.5%
<b>Income</b>		
5000	2	5%
5001-10000	21	52.5 %
10001-15000	10	25%
above 15000	07	17.5%
<b>Dietary pattern</b>		
vegetarian	13	32.5%
Mixed	27	67.5%
<b>Duration of illness</b>		
1-2	13	32.5%
2-4	23	57.5%
5-7	4	10%
8-10	0	05%
<b>Family history of diabetes mellitus</b>		
Yes	26	65%
No	14	35%

**SECTION B**

**Table 2: Assessment of knowledge score post test**

n=40

Level of knowledge score	Score Range	Percentage score	Knowledge Score	
			Frequency	Percentage
Poor	1-5	0-25%	0	0
Average	6-10	26-50%	11	27.5
Good	11-15	51-75%	24	60
Excellent	16-20	76-100%	5	12.5
Mean ± SD			12.15 ± 2.48	
Mean Percentage Score			60.5%	
Range			7 - 16	

The above table no.3 shows the frequency and percentage wise distribution of adults according to level of knowledge regarding a community based self management. The levels of knowledge were seen into 4 categories, poor, average, good and excellent. 0% of the adults had poor level of knowledge, 27.5% of adults had average level of knowledge, 60% had good knowledge and 12.5% had excellent knowledge score. Mean knowledge score was 12.15 ± 2.48 with a percentage score of 60.5%.

**SECTION C**

**Table 3: Significance of difference between knowledge scores in pre and post test**

n=40

Overall	Mean	SD	Mean Percentage	t-value	p-value
Pre Test	6.82	1.58	34.1%	12.12	0.000*HS p<0.05
Post Test	12.15	2.48	60.75%		

Table no 3 depicts the overall mean knowledge scores of pre test and post test which reveals that post test mean knowledge score was higher 12.15 with SD of ±2.48 when compared with pre test mean knowledge score value which was 6.82 with SD of ±1.58.

The statistical Student's paired t test implies that the difference in the pre test and post test knowledge score found to be 0.000 statistically significant at 0.05% level. Hence it is statistically interpreted that community based self management intervention for adults of diabetes was effective.

**SECTION D**

**Association of knowledge score in relation to their demographic variables.**

Findings shows that there is no significant association of knowledge score with their demographic variables such as age (p-0.40), gender(p-0.22), religion(p-0.83), education(p-0.43), occupation(p-0.91), income(p-0.13), dietary pattern(p-0.40), duration of illness(p-0.13) and family history(p-0.79).

**SECTION E**

**Table 4: Significance of difference between Random Blood Sugar before and after intervention**

n=40

Overall	Mean	SD	t-value	p-value
RBS before intervention	154.55	41.34	4.95	0.000*HS p<0.05
RBS after intervention	130.75	14.29		

Table no 4 depicts the overall mean scores of random blood sugar before and after intervention which reveals that RBS after intervention was decreased with mean score 130.75 with SD of ±14.29 when compared with before intervention mean score value which was 154.55 with SD of ±41.34.

**Discussion**

In this study we examined the level of knowledge regarding community based diabetes self intervention among adults. Result shows that the self management diabetes intervention will help to improve the knowledge and health behavior of adults suffering from diabetes.

A similar study conducted to examine the effects of an intervention on diabetes knowledge and self-management among adults with type 2 diabetes in Wuhan, China. A convenience sample of 29 adults with type 2 diabetes participated in a 6-week diabetes intervention in a community health center. Data on diabetes knowledge, diabetes self-management, fasting blood glucose level, blood pressure, body mass index

and waist circumference were collected pre- and post intervention and at 1-month follow-up. The level of diabetes knowledge was significantly greater after post intervention, increasing from a score of 12.97 ( $\pm 4.04$ ) to 17.14 ( $\pm 3.00$ ) and remaining at 17.03 ( $\pm 2.23$ ) at 1-month follow-up; Significant improvements in self-monitoring of blood glucose and medication adherence were not found after the intervention. However, fasting blood glucose levels showed a significant decrease from baseline to post intervention and 1-month follow-up. Diabetes self-management education was thus an effective way to improve diabetes self-care in this Chinese sample.<sup>7</sup>

### Conclusion

The present study findings shows that diabetes self management intervention improved the knowledge of the adults as well as health behavior of the adults suffering from diabetes mellitus. Therefore, it is necessary to initiate special educational programs for all the adults suffering from diabetes mellitus.

### Bibliography

1. Javed ansari. PV Books 2011 edition medical surgicalnursing p.p-977
2. Centers for Disease Control and Prevention. National Diabetes Fact Sheet: National Estimates and General Information on Diabetes and Prediabetes in the United States, 2011. U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2011 [Google Scholar](#)
3. Brown . Interventions to promote diabetes self-management: state of the science. *Diabetes Educ* 1999;25(Suppl.):52-61
4. Renders CM, Valk GD, Griffin SJ, Wagner EH, Eijk Van JT, Assendelft WJ, Interventions to improve the management of diabetes in primary care, outpatient, and community settings: a systematic review. *Diabetes Care* 2001;24:1821-1833 Abstract/FREE Full Text[Google Scholar](#)
5. Ratner RE, Diabetes Prevention Program Research. An update on the Diabetes Prevention Program. *Endocr Pract* 2006;12(Suppl. 1):20-24 [CrossRefPubMedGoogle Scholar](#)
6. Diabetes Prevention Program (DPP) Research Group. The Diabetes Prevention Program (DPP): description of lifestyle intervention. *Diabetes Care* 2002;25:2165-2171 Abstract/FREE Full Text[Google Scholar](#).
7. [Fu M](#)<sup>1,2</sup>, [Hu J](#)<sup>3</sup>, [Cai X](#)<sup>4</sup>Effectiveness of a community-based diabetes self-management intervention for Chinese adults with type 2 diabetes: A pilot study.
8. SPSS software.