



## EFFECTIVENESS OF POCKET REFERENCE REGARDING KNOWLEDGE ON CONTROL OF DIABETES MELLITUS AMONG DIABETIC CLIENTS IN SELECTED HOSPITAL GUWAHATI, ASSAM

### Nursing

**Leimapokpam  
Ranjita**

Msc N student Sankar Madhab College of Nursing, assam down town University

**Prof (Mrs) Manashi  
Sengupta\***

Dean In charge, Faculty of Nursing, assam down town University, Gandhinagar, Panikhaiti, Guwahati, Assam \*Corresponding Author

**Rikupar Iawin**

Lecturer, Sankar Madhab College of Nursing, Panikhaiti, Guwahati Assam

### ABSTRACT

**Background:** Diabetes mellitus has become a global epidemic with significant disability, premature death and enormous medical costs. According to Indian Heart Association 2016, reveals that, India is projected to be home to 109 million individuals with diabetes by 2035. It has been well established that data on knowledge on control of diabetes reveals aspects of education that need to be reinforced and addressed in order to improve diabetes control and management.

**Objectives:** The objectives of the study is :- To assess the pretest knowledge regarding control of diabetes mellitus among diabetic clients, to assess the effectiveness of pocket reference regarding knowledge on control of diabetes among diabetic clients and to find the association between pretest knowledge score with selected variables.

**Material& Method:** Diabetic clients were selected by convenient sampling technique from endocrinology ward and medicine wards who are taking treatment in this hospital who can read and write English and Assamese and available during the study. Diabetic clients who agreed to participate in the study were assessed by demographic proforma and self structured knowledge questionnaire. The collected data were analyzed by Statistical Package for the Social Science (SPSS) version 22.

**Result:** 43 clients with diabetes mellitus participated in the study. Majority 27.9% were in the age group of 41-45 years, maximum 53.5% belongs to economic weaker group, working less than 8 hrs 58.1%, 65.1% does not have family history of diabetes. The mean of the post-test knowledge score 35.39 was higher than that of the pre-test knowledge score 12.20 with a difference of 23.19 significant at the (p=0.05).

**Conclusion:** Diabetic clients seem to have less knowledge regarding control of diabetes. Keeping in view the findings of the present study, the following recommendation was made: A vast education programme is necessary for all the clients to control the disease and prevent complication. On the basis of the findings, the researchers conclude that the pocket reference was effective in improving the knowledge regarding control of diabetes among diabetic clients.

### KEYWORDS

Pocket reference, control of diabetes, diabetes mellitus

#### Introduction

Diabetes mellitus (DM) refers to a group of common metabolic disorders that share the phenotype of hyperglycemia. Several distinct types of DM are caused by a complex interaction of genetics and environmental factors. Depending on the etiology of the DM, factors contributing to hyperglycemia include reduced insulin secretion, decrease glucose utilization and increase glucose production. The metabolic dysregulation associated with DM causes secondary pathophysiological changes in multiple organ systems that impose a tremendous burden on the individual with diabetes and on the health care system.<sup>1</sup>

Diabetes mellitus is arising day by day as we have found many people are newly diagnosed and those with chronic diabetes are struggling to survive. It is a single most important metabolic disease, which can affect nearly every organ system in the body. So it is necessary for every individuals to take precaution, and need to encourage regular physical activity and improve dietary habits, give awareness regarding the disease condition and its preventive and control measure

#### Material and methods

The researcher used pre-experimental one group pre-test post test and quantitative research approach for the present study. The study was conducted in Guwahati medical college and hospital, Assam. The clients who are taking treatment in Medicine ward and Endocrinology ward diagnosed with diabetes mellitus were selected by convenient sampling technique on researcher criteria of inclusion and their willingness to participate during data collection time. A sample size of 43 was taken based on the review of literature at the time of data collection.

#### Tools for data collection:

The following tools are used for data collection:-

#### Tool 1: Demographic proforma

Twelve items structured questionnaire on demographic variables were used to collect the sample characteristics. The characteristics included

are age, gender, marital status, religion, type of family, educational qualification, annual income, occupational status, demanding in the job, working time/duration, family history of diabetes and history of diabetes.

#### Tool 2: Self administered structure knowledge questionnaire on control of diabetes

It consists of 40 structured questionnaires to assess the knowledge of diabetic clients on control of diabetes mellitus, the correct response of one or each question carries one mark and there is no negative mark for incorrect answer.

The maximum possible score was forty (40) and lowest possible score was (0). The score will be categorized arbitrary. The score between 40-28 will be considered as good knowledge, 27-14 average and 13-0 as poor.

#### Validity of tool

To ensure the content validity, the tools along with the objectives and criteria check list was given to five experts. The expert's comprises of one Diabetologist, two Physician and two experts from Medical surgical nursing department. The expert's are requested to gave their opinion and verify the items for relevancy, and accuracy and appropriateness.

#### Reliability

Reliability of the tools on structured knowledge questionnaire was calculated by split half method followed by Spearman Brown Prophecy formula and was found to be 'r' = 0.86. Thus, the tool was found to be reliable.

#### Pocket reference regarding knowledge on control of diabetes

A pocket reference regarding knowledge on control of diabetes was developed that includes the disease condition, causes risk factors types, diagnosis and treatment regarding lifestyle modification diet and exercise.

#### Data collection procedure

Data were collection after obtaining the ethical approval from the ethical approval from the Ethical clearance committee of Assam Downtown University, Panikhaiti, Guwahati. On the 1<sup>st</sup> week days, pretest was conducted by using self administered structured knowledge questionnaire and a week time is given to study the pocket reference and after a week post test was carried out.

**Result**

As depicted in table 1, shows the frequency and percentage distribution of demographic proforma, among 43 sample majority 27.9% were between the age of 41-45, majority 81.4% of the diabetic clients were male, majority 53.5% were belong to economic weaker section, majority 58.1% of the diabetic clients were working less than 8 hours, and 65.1% of the diabetic client does not have family history of diabetes.

The analysis presented in table 2 indicates the Mean ± SD of post test knowledge score (35.40± 2.392) is higher than the Mean ± SD of pre-test knowledge score (12.21 ± 4.115). Further the standard deviation of post test knowledge score seems to be less depressed than the standard deviation of on pretest knowledge score. So, post- test knowledge score remain higher than the pre test knowledge score. Data analysis was done in SPSS version 22.

The analysis presented in figure 1 shows frequency and percentage distribution of pre-test knowledge score and post-test score. Majority 79.1% of the diabetic clients scored poor knowledge, 20.9% score average knowledge and none of them score good knowledge. In post-test, majority of the clients scores 100% good knowledge and none of the client belongs to average or poor level of knowledge.

The result of chi-square analysis present in the table 4, indicate that there is no association between the pre test knowledge score of the diabetic clients with age, gender, marital status, religion, type of family, educational status, annual income, occupational status, demanding in job, working time/duration, family history and history of diabetes. Since the calculated  $\lambda^2$ -value is less than the tabulated value at the 0.05 level of significance. Hence the research hypothesis is rejected since there is no association between knowledge score with the selected variables.

**Table 1: Frequency and percentage distribution of demographic proforma n=43**

Demographic proforma	Frequency (f)	Percentage (%)
1. Age	11	25.6%
• <40	12	27.9%
• 41-45	7	16.3%
• 46-50	8	18.6%
• 51-55	5	11.6%
• >56		
2. Gender	35	81.4%
• Male	8	18.6%
• Female		
3. Marital status		
• Married	38	88.4%
• Unmarried	4	9.3%
• Widow	1	2.3%
4. Religion		
• Hindu	11	41.8%
• Muslim	12	32.6%
• Christian	11	25.6%
5. Type of family		
• Nuclear	25	58.1%
• Joint	17	41.8%
• Extended	1	2.3%
6. Educational Qualification		
• Primary School	14	32.6%
• High School	18	41.8%
• Higher Secondary	9	20.9%
• Graduate or above	2	4.7%
7. Annual income (in rupees)		
• Economically weaker section upto Rs. 25,200	23	53.5%
• Low Income Group Rs.25.201 to 25.201 to 54,000	15	34.9%
• Middle Income Group Rs. 54,00 to 90,000	5	11.6%

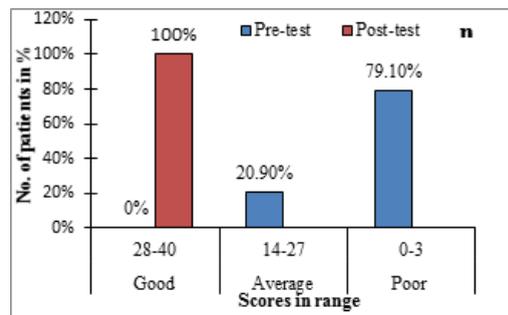
8. Occupational status		
• Service	4	9.3%
• Homemaker	6	13.9%
• Bussiness	15	34.9%
• Others	18	41.9%
9. Demanding in your job		
• Physically demanding	4	9.3%
• Psychologically	3	7%
• Both	36	83.7%
10. Working time duration (in hours)		
• Less than 8 hours	25	58.1%
• 8 hours	17	39.6%
• More than 8 hours	1	2.3%
11. Family history of diabetes		
• Yes	15	34.9%
• No	28	65.1%
12. History of diabetes		
• < 5yrs	38	88.4%
• 6-10yrs	4	9.3%
• 11-20yrs	1	2.3%

**Table 2: The mean, standard deviation and t-value of scores of knowledge of the diabetic client regarding on control of diabetes among diabetic clients.**

Knowledge score	Mean	Standard deviation	't' value	df	p-value	Inference
Pretest	12.21	4.115	32.799	42	2.02	Significant
Post test	35.40	2.392				

\*\* Significant p-value at 0.05 level

**Figure 1: Frequency and percentage distribution of pretest and post test regarding knowledge on control of diabetes among diabetic clients.**



**Figure:** Frequency and percentage distribution of pre-test and post-test scores of diabetic patients

**Table 3: Association of pre-test score regarding knowledge on control of diabetes among diabetic clients with selected demographic variables**

Demographic Variables	Pretest Level Of Knowledge		Chi Square	df	P value	Significance
	Average	Poor				
1.Age( in years)	2	9	2.32	8	15.51	NS
a.<40	3	9				
b.41-45	-	7				
c.46-50	1	7				
d.51-55	2	3				
e.>56						
2.Gender	7	28	1.77	2	5.99	NS
a.Male	1	7				
b.Female						
3. Educational Qualification	2	12	3.46	6	12.59	NS
a.Primary School	2	16				
b.High School	3	6				
c.HigherSecondary	1	1				
d.Graduate and above						

4. Annual income (in rupees)	4	19	1.80	6	12.59	NS
a. Economic Weaker section	2	13				
b. Low income group	2	3				
c. Middle income group						
5. Occupational status	-	4	1.45	6	12.59	NS
a. Service	1	5				
b. Home maker	2	13				
c. Business	5	13				
d. Others						
6. Working time/duration (in hours)	5	20	0.92	4	9.49	NS
a. Less than 8 hours	2	15				
b. hours	-	1				
c. 8 hours						
d. More than 8 hours						
7. Family history of diabetes mellitus	2	13	0.42	2	5.99	NS
a. Yes	6	22				
b. No						
8. History of diabetes	8	30	3.12	6	12.59	NS
a. <5yrs	-	4				
b. 6-10yrs	-	1				
c. 11-12yrs						

### Discussion

The present study attempted to assess the effectiveness of pocket reference regarding knowledge on control of diabetes mellitus among diabetic clients. In the present study the pretest it was found that 79.1% of the patients have inadequate knowledge on control of diabetes and similar study was reported by Santosh I, and Roshan B K, Tukaram Z (2015), where most of the subjects demonstrate unsatisfactory knowledge on diabetes.

### Conclusion

The present study was conducted to assess the effectiveness of pocket reference regarding knowledge on control of diabetes among diabetic clients in selected hospital, Guwahati. Data analysis was done by descriptive and inferential statistics through Statistical Package for the Social Science (SPSS) version 22. The findings of the study reveals that there was a marked increase in post-test knowledge. The knowledge, post-test mean was 35.40 and the pre-test was 12.21 which represent the effectiveness of pocket reference. The t-paired value was found to be 32.799 respectively which were highly significant at  $p < 0.05$  levels.

Thus, the pocket reference was effective in improving the knowledge regarding knowledge on control of diabetes among diabetic clients. On the basis of the findings, the researcher concluded that the pocket reference was very effective.

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### Reference

1. Kasper, Fauci, Hauser, Longo, Jameson, Loscalzo, 2015 Harrison's Principle of internal medicine, United States of America; McGraw-Hill Education [1]
2. Black M J, Jane H H, 2014 Medical surgical nursing, Clinical management for positive outcomes, Elsevier publication India; [2]
3. Lewis, Heitkemper, Dirksen, O'Brien, Bucher 2009, Medical Surgical Nursing Assessment and Management of clinical problems, Mosby company, Philadelphia 2009; [3]
4. Dasappa H, Fathima FN, Prabhakar R, Sarin S 2015. Prevalence of diabetes and pre-diabetes and assessments of their risk factors in urban slums of Bangalore; J Family Med Prim Care Jul-Sep; 4(3): 399-404. Doi: 10.4103/2249-4863.161336 [cited 2017 February 16]; [4]
5. WHO Health Organization, Global Report on Diabetes 2016, [cited on 2017 January 2] Available from : [www.who.int/diabetes/global-report/en/](http://www.who.int/diabetes/global-report/en/) [5]
6. Epidemiology of diabetes mellitus. Wikipedia [cited 2016 December 20]; Available from: [https://en.wikipedia.org/wiki/Epidemiology\\_of\\_diabetes\\_mellitus](https://en.wikipedia.org/wiki/Epidemiology_of_diabetes_mellitus) [6]
7. Raymon G. M, Olalekam A, Oduntan., 2016. Knowledge and practice related to Diabetes

Mellitus adult with diabetes in the Mopani District, South Africa. African Vision and eye health. AOSIS publisher 2016 April 21 [cited on 20 march 2017] DOI: <https://doi.org/10.4102/aveh.v75i1.324>. [7]

8. Edurne A M, Juan F Q, Jose I F E, Jose M A, M Luz M G, Nuria T P, et al., 2014., The prevalence of diabetes-related complications and multimorbidity in the population with type 2 diabetes mellitus in the Basque Country. BMC Oct [cited 2017 January 4] doi: 10.1186/1471-2458-14-1059. [8]
9. Farlex. The free Dictionary, Pocket reference (handbook) 2016. American Heritage Dictionary. Available from: <https://www.thefreedictionary.com/Pocket+reference>. [cited 2016 November 5]. [9]
10. Polit DE, Beck CH, Nursing research generating and assessing evidence for nursing practice, 10th edition; Wolters Kluwer India Pvt Ltd, New Delhi. 2016. p79 [10]