

## **Glycemic Alteration Awareness, Prevention, and Management Among Diabetic Patients**

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### **Abstract:**

**Introduction:** Diabetes is a group of metabolic disorders characterized by an increase in blood sugar level due to the inability of the body to either produce insulin or maintain its level in the blood. A descriptive study was conducted to assess the awareness regarding the prevention of glycemic alteration and glycemic alteration management among diabetic patients attending multispeciality hospitals. **Material and Methods:** The Descriptive design was adopted for this study. The main study was carried out on 100 diabetic patients. Non-probability sampling technique in that Purposive sampling method was used to select samples for diabetic patients attending pilot study and was carried out in the different setting A pilot main study population among

the ten-percentage population of the final study samples size. study tool content validity was obtained by experts from the nursing field. reliability of the tool was obtained through the test-retest method. Ethical clearance was obtained from the institutional ethical committee. Data analysis was done mainly using descriptive statistics. **Results-** Study results reveal that 22% of the subjects had a poor awareness while 78% of them had good awareness regarding the prevention of glycemic alteration. also, 54% of participants had poor awareness while 46% of them had good awareness regarding glycemic alteration and 18% of the total sample had poor awareness and 82% of them had good awareness regarding the prevention of hypoglycemia. **Conclusion-** Findings of the study reveal that there is a better half of the general population who needs awareness regarding diabetes and ways to prevent and manage this disease.

**Keywords-** Assess, Awareness, Glycemic Alteration, Diabetes Clients

### **Introduction:**

Diabetes Mellitus (DM) is a major health problem in the world. Diabetes mellitus describes a metabolic disorder of multiple

etiologies. The effects of diabetes mellitus include long-term

damage, dysfunction, and failure of various organs. Diabetes mellitus may be there with characteristic symptoms such as thirst, polyuria, blurring of vision, and weight loss. In its most severe forms, ketoacidosis or a non-kenotic hyperosmolar state may develop and lead to stupor and coma. The diabetes mellitus long time effect includes progressive development of the retinopathy with potential blindness, nephropathy is a specific complication that can lead to renal failure and neuropathy with risk of foot ulcers, amputation, features of autonomic dysfunction, sexual dysfunction, and including Charcot's joints. Two aspects of diabetes mellitus are hyperglycemia and hypoglycemia. Hyperglycemia is an increase in blood glucose levels. Hypoglycemia is a lower-than-normal level of blood glucose. It can be defined as "mild" if the episode is self-treated; "moderate" if assisted and "severe" if hospitalized and assisted by a physician.<sup>1</sup>

Diabetes Mellitus is currently the fastest-growing tending disease in the world. It is estimated that one out of five people aged 20 to 79 lives with this disease, while a similar percentage of the population is at risk of developing it.<sup>2</sup>

19.4 million in 2005 to 57.2 million in 2025. Diabetes is rapidly obtaining the status of a potential epidemic in India around 65 million people are currently being affected but by 2050, India's diabetes numbers are expected to cross the 100 million mark and it is increasing to nearly 2 million in a year.<sup>4</sup>

It is estimated in Globally in 2013, people suffering from diabetes are almost 382million. Hypoglycemia is a true medical

emergency, to prevent organ and brain damage it requires recognition and treatment. The spectrum depended on the duration and severity of hypoglycemia, and it varied from involuntary activation behaviorally changes to altered cognitive function to seizures or coma. The complications include neurologic damage, trauma, cardiovascular events, and death. A significant economic and personal burden can be caused if the hypoglycemia is untreated.<sup>5</sup>

The need to develop teaching or health education practice activities for diabetic clients and their families associated with the prevention of complications through self-management of the disease, which permits the patient to live with it better. Nurses' roles in balancing glycemic control for preventing hypoglycemia is by providing optimum care for diabetes clients, such as recognizing precipitating factors or triggering events, ordering appropriate scheduled insulin or anti-diabetic oral agents, monitoring blood glucose at the bedside, educating patients, family, friends, and staff about symptom recognition and appropriate treatment and providing appropriate nutritional requirements.<sup>6</sup>

The nurse researchers observed the diabetes mellitus clients whether had enough guidance and education regarding the awareness of management of hypoglycemia and were able to identify their knowledge on management. With the above aspect and background, the current study was planned to promote the awareness of the management of hypoglycemia among diabetic clients.

## Research Method:

This study took place in a multispecialty hospital with a quantitative research approach and d descriptive design that was used to

complete this study. The diabetes OPD has a daily. Outpatient with a daily turnover of approximately 20-30 are reporting for follow-

up visits. out of the 100 patients were selected through the probability purposive random sampling technique who have met the inclusion criteria. Patients with other chronic diseases were excluded from this study. The demographic variable sheet includes age, gender, educational status, occupation, diagnosed with diabetes from how many years, etc. and 8 items related to glycemic alteration, 5 items related to the management of hypoglycemic glycemic alteration, 7 items related to prevention of glycemic alteration tool were used for the data collection after the content validity and reliability. The pilot study was conducted after the validation of

tool content. Test-Retest reliability method was performed to check the reliability and the tool was checked by the “Karl-Pearson Correlation Coefficient” formula. According to Karl-Pearson Correlation Coefficient, the range lies between -1.00 to +1.00. as the “r” value” is more than 0.7, it is reliable. hence tool was found reliable for the main study data collection. the study data were analyzed by using descriptive statistics based on the objectives of the study and the Chi-square test was used to check the association of the knowledge score of samples with demographic variables.

### Research Findings:

#### Section-I: Demographic Data frequency and percentage distribution

**n=100**

Demographic Data			
	Parameters	Frequency	Percentage (%)
<b>Gender</b>	Male	60	60
	Female	40	40
<b>Age</b>	18-25 Years	00	00
	26-35 Years	30	30
	36-45 Years	50	50
	46-60 Years And above	20	20
<b>Education</b>	Primary Level	30	30
	Higher Secondary Level	40	40
	Graduation	20	20
	Post-Graduation	10	10
<b>Occupation</b>	Government Employee	10	10
	Private Employee	10	10
	Self-Employee	40	40
	Unemployment	20	20
<b>Duration of DM</b>	Less Than 1 Year	20	20
	1-3 Years	50	50
	4-6 Years	30	30
	More Than 7 Years	00	00
<b>Hypoglycemic Agent</b>	Yes	80	80
	No	20	20
<b>Family History</b>	Yes	60	60
	No	40	40
<b>Hypoglycemic Episode</b>	Yes	70	70
	No	30	30

<b>Medication</b>	Oral	70	70
	Insulin	30	30
<b>Source of information</b>	Mass media	30	30
	Family	20	20
	Friends	00	00
	Health team members	50	50

#### **Section-II: Awareness regarding glycemc alterations among diabetic patients.**

Awareness Score	Frequency (n=100)	Percentage	Mean	SD
Poor (0-4)	22	22 %	5.27	0.91
Good (5-8)	78	78%		

#### **Section-III: Awareness regarding hypoglycemia management among diabetic patients**

Awareness Score	Frequency (n=100)	Percentage	Mean	SD
Poor (0-3)	54	54%	3.36	0.65
Good (4-5)	46	46%		

#### **Section-IV: Awareness regarding glycemc alterations prevention among diabetic patients**

Awareness Score	Frequency (n=100)	Percentage	Mean	SD
Poor (0-3)	18	18%	4.7	0.97
Good (4-7)	82	82%		

**Section – IV: Association of demographic variables with awareness regarding glycemic alterations among diabetic patients.**

**n=100**

Demographic Parameters		Awareness		d.f	Chi-Square	Chi Table Value	P-value	Results
		Good	Poor					
<b>Gender</b>	Male	34	10	1	0.02	3.84	0.87	NA
	Female	44	12					
<b>Age</b>	18-25 Years	15	05	2	0.20	5.99	0.90	NA
	26-35 Years	43	11					
	36-45 Years	20	06					
	46-60 And above	27	08					
<b>Education</b>	Primary Level	27	08	3	0.54	7.81	0.90	NA
	Higher Secondary	35	09					
	Graduation	09	02					
	Post-Graduation	07	03					
<b>Occupation</b>	Government Employee	07	03	3	3.36	7.81	0.33	NA
	Private Employee	18	02					
	Self-Employee	37	14					
	Unemployment	16	03					
<b>Duration of DM</b>	Less Than 1 Year	13	05	2	0.51	5.99	0.77	NA
	1-3 Years	37	09					
	4-6 Years	28	08					
<b>Hypoglycemic Agent</b>	Yes	13	10	1	1.39	3.84	0.29	NA
	No	65	12					
<b>Family History</b>	Yes	38	08	1	0.07	3.84	0.78	NA
	No	40	14					
<b>Hypoglycemic Episode</b>	Yes	19	06	1	1.25	3.84	0.26	NA
	No	59	16					
<b>Medication</b>	Oral	24	76	1	0.09	3.84	0.75	NA
	Insulin	54	36					
<b>Source of information</b>	Mass media	22	09	2	0.53	5.99	0.76	NA
	Family	19	07					
	Health team members	37	09					

\* Association at 0.05 level of significance

**Section – V: Analysis related to the association of demographic variables with awareness regarding management of glycemic alterations among diabetic patients.**

**n=100**

Demographic Parameters		Awareness		d. f	Chi-Square	Chi Table Value	P-Value	Results
		Good	Poor					
<b>Gender</b>	Male	34	10	1	0.25	3.84	0.61	NA
	Female	44	12					
<b>Age</b>	18-25 Years	15	05	2	0.39	05.99	0.82	NA
	26-35 Years	43	11					
	36-45 Years	20	06					
	46-60 And above	27	08					
<b>Education</b>	Primary Level	27	08	3	5.30	7.81	0.15	NA
	Higher Secondary	35	09					
	Graduation	09	02					
	Post-Graduation	07	03					
<b>Occupation</b>	Government Employee	07	03	3	4.52	7.81	0.21	NA
	Private Employee	18	02					
	Self-Employee	37	14					
	Unemployment	16	03					
<b>Duration of DM</b>	Less Than 1 Year	13	05	2	1.45	5.99	0.48	NA
	1-3 Years	37	09					
	4-6 Years	28	08					
<b>Hypoglycemic Agent</b>	Yes	13	10	1	3.42	3.84	0.06	NA
	No	65	12					
<b>Family History</b>	Yes	38	08	1	4.16	3.84	0.04	A*
	No	40	14					
<b>Hypoglycemic Episode</b>	Yes	19	06	1	0.50	3.84	0.04	NA
	No	59	16					
<b>Medication</b>	Oral	59	16	1	4.41	3.84	0.03	A*
	Insulin	24	76					
<b>Source of information</b>	Mass media	22	09	2	0.73	5.99	0.69	NA
	Family	19	07					
	Health team members	37	09					

\* Association at 0.05 level of significance

**Section – VI: Analysis related to the association of demographic variables with awareness regarding the prevention of glycemic alterations among diabetic patients.**  
**n=100**

Demographic Parameters		Awareness		d.f	Chi-Square	Chi Table Value	P-Value	Results
		Good	Poor					
<b>Gender</b>	Male	34	10	1	27.93	3.84	0.000	A*
	Female	44	12					
<b>Age</b>	18-25 Years	15	05	2	15.65	5.99	0.004	A*
	26-35 Years	43	11					
	36-45 Years	20	06					
	46-60 And above	27	08					
<b>Education</b>	Primary Level	27	08	3	43.16	7.81	0.0003	A*
	Higher Secondary	35	09					
	Graduation	09	02					
	Post-Graduation	07	03					
<b>Occupation</b>	Government Employee	07	03	3	34.37	7.81	0.005	A*
	Private Employee	18	02					
	Self-Employee	37	14					
	Unemployment	16	03					
<b>Duration of DM</b>	Less Than 1 Year	13	05	2	20.46	5.99	0.0003	A*
	1-3 Years	37	09					
	4-6 Years	28	08					
<b>Hypoglycemic Agent</b>	Yes	13	10	1	5.14	3.84	0.0023	A*
	No	65	12					
<b>Family History</b>	Yes	38	08	1	0.0352	3.84	0.023	NA
	No	40	14					
<b>Hypoglycemic Episode</b>	Yes	19	06	1	8.11	3.84	0.004	A*
	No	59	16					
<b>Medication</b>	Oral	24		1	9.40	3.84	0.002	A*
	Insulin	54						
<b>Source of information</b>	Mass media	22	09	2	25.76	5.99	0.000	A*
	Family	19	07					
	Health team members	37	09					

\*Association at 0.05 level of significance.



Only one variable; family history was calculated less than the chi-square table value, so this variable was not associated with awareness regarding the prevention of glycemic alterations among diabetic patients. All other variable age, gender, education, occupation, hypoglycemic agent, and the hypoglycemic episode was calculated more than the chi-square table value, so these variables were associated with awareness regarding the prevention of glycemic alterations among diabetic patients.

#### **Discussion and Conclusion:**

The title of the study was to assess the awareness regarding the prevention of glycemic alteration and glycemic alteration management among diabetic patients attending multispecialty hospitals. A total of 100 samples were selected by using the non-probability sampling technique in the purposive sampling method was adopted. Using a self-structured questionnaire from different hospitals to study revealed that Awareness of glycemic alteration shows 22% shows participants had poor knowledge, and 78% of participants had good knowledge, Awareness related to the management of glycemic alteration shows 54% of participants had poor knowledge,

and 46% participants had good knowledge, Awareness on prevention of glycemic alteration shows 18% participants had poor knowledge, and 82% participants had good knowledge. The present study was carried out to assess the awareness about the glycemic alteration among the diabetes people in the study findings related to demographic variables, Majority of participants 60% belong to the male category and 40% belongs to the female category. About 50% belong to the age group 36-45 years of age group. 70% belongs to oral medication. Regarding the source of information, 50% was a source from the health team.<sup>7</sup> Similar findings are found in the studies which were conducted before the interest, Dr. Komal Suresh Gawande's research in 2015 Diabetes mellitus (DM) is a metabolic disorder, of multiple etiological factors which are characterized by chronic hyperglycemia with disturbance of carbohydrate, fat, and protein metabolism which resulted from either insufficient insulin secretion, resistance to the action of insulin or both. Out of 56 surveyed subjects, the mean age of study subjects was  $39.48 \pm 3.49$  (95% CI: 35.99-42.97); with the mean duration of diabetes being  $7.768 \pm 1.372$  (95% CI: 7.07-9.64). Most patients were males 64.29%.



Despite the limitations, this study can be used as a baseline to identify educational needs and formulate strategies to impart positive attitudes and beneficial practices among diabetics.<sup>8</sup>

**Implications:** The present study outcome has implicated Nursing Education, Nursing Administration, and Nursing Research.

**Recommendations:** A similar study can be done in a large population to generalize the research findings. An experimental study can be conducted to assess the effectiveness of the study. 3. Study can have been conducted to assess the management of nurses in providing care in different settings.

**Conflict of Interest:** there is no conflict of interest was raised in this study

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