



Research Article

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A descriptive study to assess the awareness on management of hypoglycaemia among diabetic clients in PSG hospitals

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Abstract

Diabetes Mellitus (DM) is a foremost health problem in the globe. Diabetes mellitus describes a metabolic disorder of manifold etiologies characterized by chronic hypoglycemia with disturbances of carbohydrate, fat and protein metabolism. Creating alertness on signs and symptoms among diabetic clients may lessen the complications. The objectives were to assess the knowledge of diabetic clients regarding management of hypoglycemia and to find the association between the knowledge of diabetic clients on management of hypoglycemia and their selected demographic variable. The descriptive survey design was adopted by selecting 60 samples using purposive sampling technique. Out of sixty samples, 32(53.4%) were male and 28(46.6%) of the samples were female. Most of the samples 23 (38.33%) belongs to age group between 31-40 years. More than half of the samples, 40(66.66%) were using hypoglycemic agents. 33(55%) were taking medication once a day. 18 ((30%) samples were having the history of hypoglycemic symptoms. whereas, 7(11.66%) of them were not confident about the hypoglycemic symptoms. Only 24(40%) of them were conscious about the self-management of hypoglycemia. The study highlights that the diabetes mellitus clients 13(21.6%) were having adequate knowledge, 39(65%) were having moderately adequate knowledge and 8(13.3%) had inadequate knowledge on management of hypoglycemia. The study concluded that it helped to identify the knowledge regarding hypoglycemia on diabetes mellitus patients and created awareness on hypoglycemic conditions using information booklet will enhance the patients to reduce the complications.

Keywords: Diabetes Mellitus, Hypoglycemia, Management, Awareness, Information booklet.

INTRODUCTION

Diabetes Mellitus (DM) is the most prevalent metabolic diseases which can lead to massive medical as well as socio-economic consequences [1]. Diabetes mellitus describes a metabolic disorder of numerous etiologies characterized by chronic hypoglycemia with disturbances of carbohydrate, fat and protein metabolism resulting from defects in insulin secretion, insulin action or both. The effect of diabetes mellitus comprises long-term damage, dysfunction and failure of various organs. The number of adults suffering from diabetes in India is anticipated to increase threefold from 19.4 million in 2005 to 57.2 million in 2025. Diabetes is rapidly gaining the position of potential epidemic in India around 65 million people are currently being affected and by 2050 India's diabetes numbers are predicted to cross the 100 million mark and it is increasing to nearly 2 million in a year [2].

Hypoglycemia is a true medical crisis, which requires rapid recognition and treatment to prevent organ and brain damage. The variety of symptoms depended on duration and severity of hypoglycemia and varied from autonomic activation to behavioral changes to altered cognitive function to seizures or coma. The short and long-standing complications include neurologic damage, trauma, cardiovascular events and death. Severe untreated hypoglycemia can cause a considerable economic and personal burden. Nurses' roles in harmonizing glycemic control for preventing hypoglycemia is by providing optimum care for diabetes clients, such as recognizing precipitating factors or triggering events, ordering suitable scheduled insulin or anti-diabetic oral agents, monitor blood glucose at the bedside, educating patients, family, friends, and staff about symptom detection and appropriate treatment and provide appropriate nutritional requirements.

Statement of the problem

A descriptive study to assess the awareness on management of hypoglycemia among diabetic clients in view of preparing an information booklet, PSG hospitals, Coimbatore.

Objectives

1. Assess the knowledge of diabetic clients regarding management of hypoglycemia.
2. Find the association between the knowledge of diabetic clients on management of hypoglycemia and their selected demographic variable.

RESULTS

Table 1: Frequency and percentage distribution of diabetes mellitus clients with hypoglycemia according to demographic variables (n=60)

S. No	Demographic Variables	Frequency (f)	Percentage (%)
1	Gender		
	Male	32	53.4
	Female	28	46.6
2	Age		
	21—30years	6	10
	31-40 Years	23	38.33
	41-50 Years	21	35
	51-60 Years	9	15
	Above 60 years	1	1.66
3	Educational status		
	Primary education	24	40
	Secondary education	22	36.66
	Graduate	8	13.33
	Illiterate	6	10
4	Occupation		
	Unemployed	9	15
	Self employed	22	36.66
	Private employed	26	43.33
	Government employed	3	5
5	Income per month		
	Below `5000	2	3.33
	`5001-`10000	36	60
	`10001-`20000	20	33.33
	`20000 Above	2	3.33
6	Religion		
	Hindu	42	70
	Muslim	8	13.33
	Christian	10	16.66

MATERIALS AND METHODS

Descriptive survey design was adopted by selecting sixty samples using purposive sampling technique. The investigator assessed each client with diabetes within endocrinology and medicine OPD in selected hospitals and selected the clients who met the inclusion criteria for the study. The study was explained to samples and consent was obtained. Samples were asked to fill the questions given to them including demographic variables. After assessing the knowledge of awareness on management of hypoglycemia, the information booklet was issued to all the samples during their first follow up.

Table 2: Frequency and percentage distribution of diabetes mellitus clients with hypoglycemia according to extraneous variables (n=60)

S. No	Extraneous Variables	Frequency (f)	Percentage (%)
7	Using hypoglycemic agent		
	Yes	20	33.33
	No	40	66.66
8	Duration of diabetes mellitus		
	0-4 months	19	31.66
	5-8 months	12	20
	9-12 months	29	48.33
9	Treatment for diabetes mellitus		
	Oral hypoglycemic agent	40	66.66
	Insulin	20	33.33
10	Using any natural herbal medications for diabetes mellitus		
	Yes	13	21.66
	No	47	78.3
11	Frequency of taking medication		
	Once a day	33	55
	Twice a day	26	43.33
	Thrice a day	1	1.66
12	Experienced any hypoglycemia symptoms		
	Yes	18	30
	No	35	58.3
	Not sure	7	11.66
13	Knowledge of hypoglycemia		
	Yes	24	40
	No	36	60

Table 3: Frequency and percentage distribution of diabetes mellitus clients based on awareness of management and prevention of hypoglycemia (n=60)

S. No	Questions	Frequency (f) Answered	Percentage (%)	Frequency (f) Unanswered	Percentage (%)
Part A: HYPOGLYCEMIA;					
1.	Hypoglycemia	30	50	30	50
2.	Normal fasting blood sugar level	31	51.6	29	48.3
3.	Main causes of hypoglycemia	31	51.6	29	48.3
4.	Experience hypoglycemic episode	15	25	45	75
5.	Risk factor for hypoglycemia in diabetes	34	56.6	26	43.3
6.	Early symptoms of hypoglycemia	23	38.33	37	61.6
7.	Symptom of night time hypoglycemia	17	28.3	43	71.6
8.	Complication of hypoglycemia	38	63.3	22	36.6
PART B: MANAGEMENT OF HYPOGLYCEMIA:					
9.	Treat mild and moderate hypoglycemia	34	56.6	26	43.3
10.	Treatment for severe hypoglycemia	35	58.33	25	41.6
11.	Quick acting form of glucose	48	80	12	20
12.	Self-management for hypoglycemia	24	40	36	60
13.	Retest blood sugar level after the treatment of hypoglycemia	33	55	27	45
PART C: PREVENTION OF HYPOGLYCEMIA:					
14.	Precaution to take to avoid hypoglycemia while travelling	37	61.6	23	38.3

15.	Effect of weight lifting exercise in hypoglycemic patients	13	21.66	47	78.3
16.	Prevention of hypoglycemia	28	46.6	32	53.3
17.	Prevention of night time hypoglycemia	32	53.3	28	46.6
18.	Prevention of repeated hypoglycemia	32	53.3	28	46.6
19.	Duration of exercise of exercise for diabetic patients	24	40	36	60
20.	Beneficial for diabetic patients to avoid hypoglycemia	47	78.3	13	21.6

In table 4, frequency and percentage distribution of awareness of hypoglycemia indicates the majority 37(61.6%) samples were having the moderately adequate knowledge; whereas 14 (23.3%) samples were having inadequate knowledge and 9(15%) samples having adequate knowledge.

Regarding the management of the hypoglycemia, it indicates 25(41.6) samples were having inadequate knowledge whereas 22 (36.6%) samples were having adequate knowledge and 13(21.6%) samples were having moderately adequate knowledge. Regarding the prevention of the hypoglycemia, the majority 34(56.6%) samples were having moderately adequate knowledge, whereas 16(26.6%) samples were having adequate knowledge and 10(16.6%) samples having inadequate knowledge.

Table 5: Frequency and percentage distribution of Knowledge of diabetes mellitus clients regarding hypoglycemia (n=60)

Variable	Adequate knowledge (0-33%)		Moderately adequate knowledge (34-66%)		Inadequate knowledge (67 – 100%)		Mean	SD
	f	%	f	%	f	%		
Knowledge regarding Hypoglycemia	13	21.6	39	65	8	13.3	10.07	2.89

The table 5 shows among 60 diabetic mellitus clients 13 (21.6%) had adequate knowledge, 39 (65%) were moderately adequate knowledge, 8(13.3%) had inadequate knowledge

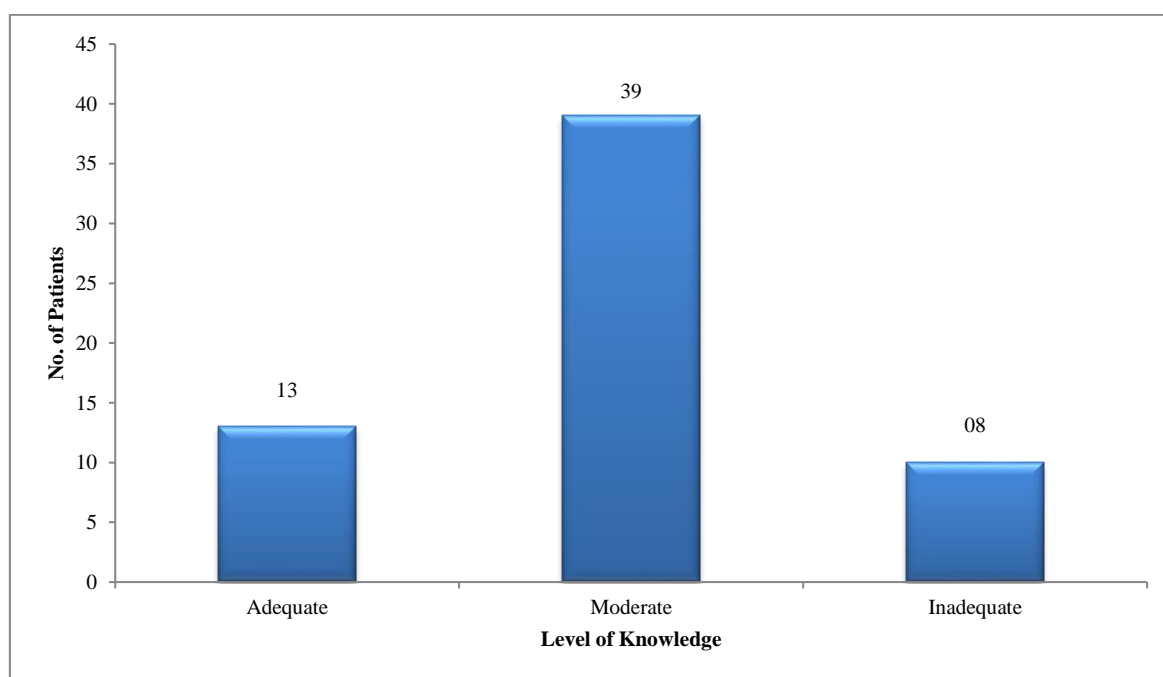


Figure 1: Percentage distributions of demographic variables of awareness on management of hypoglycemia among diabetic clients

Table 6: Association of knowledge regarding awareness on management of hypoglycemia among diabetes mellitus clients with selected demographic variables (n=60)

Demographic Variables	Inadequate Knowledge	Moderately adequate	Adequate knowledge	χ^2	Degree of freedom	Table Value χ^2
	f	f	f			
Gender				2.310 N.S	2	5.99
Male	9	17	6			
Female	4	20	4			
Age				16.76 S*	6	12.5
31-40 Years	2	4	0			
41-50 Years	10	8	5			
51-60 Years	0	18	4			
Above 60 years	1	7	1			
Educational status				5.77 N.S	6	12.5
Primary education	6	12	6			
Secondary education	4	16	2			
Graduate	2	6	0			
Illiterate	1	3	2			
Occupation				6.736 N.S	6	12.5
Unemployed	2	6	1			
Self employed	6	10	6			
Private employed	4	20	2			
Government employed	1	1	1			
Income per month				2.537 N.S	6	12.5
Below Rs.5000	1	1	0			
Rs.5001-Rs.10000	8	22	6			
Rs.10001-Rs.20000	4	12	4			
Above Rs. 20000	0	2	0			
Religion				3.46 N.S	4	9.48
Hindu	9	26	7			
Muslim	3	3	2			
Christian	1	8	1			

P<0.05, *=Statistically Significant, N. S= Not significant

H₁: There will be a significant association between the level of knowledge of diabetic clients on management of hypoglycemia and their selected demographic variable.

It was observed from table 6 that the $\chi^2(16.76)$ value was higher than table value (12.5) regarding awareness on management of hypoglycemia among diabetic mellitus clients. It shows age was associated for awareness on management of hypoglycemia among diabetic mellitus clients at (p<0.05). Hence the hypothesis is accepted.

It was observed from table 7 that the χ^2 value were lesser than table value regarding awareness on management of hypoglycemia among diabetic mellitus clients. It shows that there was no association between extraneous variables and awareness on management of hypoglycemia among diabetic mellitus clients were not significant.

Table 7: Association of knowledge regarding awareness on management of hypoglycemia among diabetes mellitus clients with selected extraneous variables

Extraneous variables	Inadequate Knowledge	Moderately adequate	Adequate knowledge	χ^2	Degree of freedom	Table Value χ^2
	f	f	f			
Duration since diagnosed				2.33 N.S	4	9.48
0-4 months	6	11	2			
5-8 months	2	7	3			
9-12 months	5	19	5			
Usage of any hypoglycemic agent				2.28 N.S	2	5.99
Yes	3	15	2			
No	10	22	8			
Treatment for diabetes mellitus				1.008 N.S	2	5.99

Extraneous variables	Inadequate Knowledge	Moderately adequate	Adequate knowledge	χ^2	Degree of freedom	Table Value χ^2
	f	f	f			
Oral Anti-hypoglycemic Agent	8	24	8			
Insulin	5	13	2			
On any natural herbal medications for diabetes mellitus				5.029 N.S	2	5.99
Yes	0	11	2			
No	13	26	8			
Experienced any hypoglycemia symptoms				1.25 N.S	4	9.48
Yes	3	11	4			
No	9	21	5			
Not sure	1	5	1			
Received the information on hypoglycemia				1.53N.S	2	5.99
Yes	7	14	3			
No	6	23	7			

N.S= Not significant

DISCUSSION

In the current study, majority of the samples (41.6%) were having inadequate knowledge and reduced awareness regarding management of hypoglycemia. A similar prospective study on reduced awareness on hypoglycemia in adults with IDDM was conducted in Vandes Bilt University, total of 78 IDDM adults were selected. Among 78 patients, 35(44%) had inadequate knowledge and reduced awareness regarding management of hypoglycemia [3].

The awareness on management of hypoglycemic condition, majority 34 (56.6%) of them aware about the risk factor of hypoglycemia in diabetes. These findings are also similar to another prospective study which was done among 60 patients, 30(50%) were found that they were aware found that they were aware about the risk factor of hypoglycemia [4].

Regarding the prevention of hypoglycemia 24 (40%) patients in this study had knowledge that exercise can reduce the risk of hypoglycemia. A similar study conducted on effects of hypoglycemia on counter regulatory responses to exercises reveals that physical exercise elicits a complex pattern of adoptive neuroendocrine and metabolic responses aimed at maintaining glucose homeostasis among 100 patients. Among 100 patients 32(32%) were aware about the knowledge about exercise to prevent hypoglycemia [4].

The current study shows, there was an association between age and knowledge regarding awareness on management of hypoglycemia. Similar study findings were reported by another study on association between hypoglycemia and age in type 2 diabetes mellitus.

There was no association between gender, educational status, occupation, income, religion, duration of diagnosis with knowledge regarding awareness on management of hypoglycemia. Similar study findings on reduced awareness of hypoglycemia revealed that there was no association between the knowledge and the gender and educational status.

CONCLUSION

Hypoglycemia is a major limiting factor in overall glycemic management of diabetes and may lead to other possible detrimental effects. Glycemic control should be individualized based on characteristics with some degree of safety. Recognition of hypoglycemia risk factors, blood glucose monitoring, selection of appropriate regimens, education programs by using information booklet for healthcare professionals and patients with diabetes are the major issues to maintain good glycemic control. Minimize the risk of hypoglycemia and preventing long term complications.

Conflict of Interest

None declared.

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