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EFFECTIVENESS OF PLANNED TEACHING PROGRAM ON KNOWLEDGE REGARDING MANAGEMENT OF HYPOGLYCEMIA AMONG PEOPLE WITH DIABETES MELLITUS IN SELECTED RURAL AREAS.

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ABSTRACT :

Background: Diabetes Mellitus is a major health problem in the world. It is one of the most prevalent metabolic diseases which can lead to enormous medical as well as socioeconomic consequences. The main objective of the study is to assess the effectiveness of planned teaching programme regarding management of hypoglycaemia among people with diabetes mellitus.

Materials and methods: quasi experimental one group pre- test and post-test research design was used in this study. Study was conducted in selected rural areas. 60 peoples with diabetes mellitus were selected by using simple random sampling technique. Self structured questionnaire was developed to collect socio demographic data and knowledge on management of hypoglycaemia.

Results: The finding of the study shown that in pre test majority 32(54%) had inadequate knowledge, 26(43%) had moderate knowledge and 2(3%) had adequate knowledge. Post test reveals that majority 36 (60%) had adequate knowledge, 20(33%) had moderate knowledge and 4(7%)had inadequate knowledge. The mean score of pre test was (11±4.01) and post test mean score was (20±4.8), obtained 't' value was 28.7. Chi square shown that there was no significant relationship between the post test levels of knowledge with their Age, Gender, Religion, Marital status, Educational status, Occupation, family income, Treatment of diabetes mellitus and any history of hypoglycemic attack.

Conclusion: The study concluded that the level of knowledge was improved after administration of planned teaching programmed. Thus planned teaching programmed is an effective strategy which can help in improving the level of knowledge among people with diabetes mellitus.

Key words: Management of hypoglycaemia, Diabetes mellitus, knowledge, structured teaching programme.

INTRODUCTION:

Diabetes is a group of metabolic disease characterized by increased levels of glucose in the blood resulting from defects in insulin secretion, insulin action or both. The effects of diabetes mellitus include long term damage, dysfunction and failure of different organs, especially the eyes, kidneys, nerves, heart and blood vessels.[1]

World diabetes day is the major campaign for patient with diabetes mellitus throughout the world. International Diabetes Federation and World Health Organization established world diabetes day in 1991, celebrated on 14 November every year, marked the birthday of Sir Fredrick Banting for the discover of insulin with Charles Best in 1922. The International

Diabetes Federation helps in this. It also promotes the role of the family in the management, care, prevention, treatment and education of diabetes.[2]

According to International diabetes federation diabetes atlas (9th edition) the global diabetes prevalence in 2019 is estimated to be 9.3% (463million people), rising to 10.2% (578 million) by 2030 and 10.9% (700 million) by 2045. The prevalence is higher in urban (10.8%) than rural (7.2%) areas, and in high income (10.4%) than low income countries (4.0%). The global prevalence of impaired glucose tolerance is estimated to be 7.5%(374million) in 2019 and projected to reach 8.0% (454 million) by 2030 and 8.6% (548 million) by 2045.[3]

India, the second most populous country of the world, has been severely affected by the global diabetes epidemic as per the international diabetes federation(2013), approximately 50% of all people with diabetes live in just three countries: China (98.4 million), India (65.1 million) and USA (24.4 million). There is evidence to show that diabetes prevalence is rapidly increasing, especially in urban India. The conventional risk factors of urbanization, unhealthy eating habits and physical inactivity, couple with inherent genetic attributes and difference in body composition are propelling the increase in cases of diabetes. Accordingly diabetes 2 related complications are also on the rise and contribute significantly to overall morbidity and mortality.[4]

Globally in 2013 it is estimated that almost 382 million suffer from diabetes hypoglycemia is at true medical emergency, which requires prompt recognition and treatment to prevent organ and brain damage.The short and long term complications includes neurologic damage, trauma, cardiovascular events and death. Severe untreated hypoglycemia can cause a significant economic and personal burden.[5] Normally, blood glucose levels are tightly controlled by insulin. Insulin is a hormone produced by the pancreas, controls the level of glucose in the body by regulating production and storage of glucose. Insulin hormone is produced by the beta cells in the islet of Langerhans of the pancreas. In normal conditions, insulin is continuously released into the blood stream. The normal glucose range of approximately 70 to 110mg/dl. The average amount of insulin secreted daily by an adult is approximately 40 to 50 units or 0.6U per kg of body weight.[6]

Hypoglycemia means low sugar in the blood and occurs when the blood glucose falls less than 70mg/dl. Severe hypoglycemia is when glucose levels are less than 40mg/dl. It can occur when having little foodor excessive physical activity and over dose of insulin. It may occur at any time of the day or night. It often occurs before meals, especially if meals are delayed or snacks are omitted.[7]Hypoglycemia is often related to diabetes treatment. When blood sugar levels are low, it needs immediate treatment. Hypoglycemia can also occur if eat less than usual after taking diabetes medication or if exercise more than normally do. Signs and symptoms include fatigue, pale skin, shakiness, anxiety, sweating, hunger, and irritability, numbness of lips, tongue or cheek. Worsen signs and symptoms include confusion, blurred vision, seizures, loss of consciousness. Immediate actions of getting blood sugar back to normal either with high sugar foods or drinks or with medications. Untreated hypoglycemia can lead to seizure, loss of consciousness and death.[8]

Hypoglycaemia leads to serious condition if delay inrecognizing the symptoms and treating.Therefore, the investigator felt the need for giving and assessing the effectiveness of structured teaching programme regarding management of hypoglycaemia among people with diabetes mellitus.

OBJECTIVES OF THE STUDY :

•To assess the existing knowledge level regarding management of hypoglycemia among people with diabetes mellitus.

• To assess effectiveness of planned teaching programme on knowledge regarding management of hypoglycemia among people with diabetes mellitus.

• To find out the association between the post test level of knowledge with their selected demographic variables.

HYPOTHESIS :

H1: There is a significant difference between pre test and post test level of knowledge scores regarding management of hypoglycemia among people with diabetes mellitus.

H2: There is a significant association between post test level of knowledge scores with their selected demographic variables.

MATERIALS AND METHODS :

Quantitative quasi experimental research design with one group pre-test and post-test research design was used in this study. The study was conducted at selected Rural Areas. 60 peoples (n=60) with diabetes mellitus were selected by using simple random sampling technique. Self structured questionnaire was developed to collect socio demographic data and knowledge on management of hypoglycaemia. It comprises of 30 multiple choice questions regarding management of hypoglycemia. Each question carries four options, each correct answer was given a score of "1" and "0" for wrong answer. Thus, a total of 30 marks were allotted for 30 items.

RESULTS :

The collected data were analyzed by using inferential and descriptive statistics.

TABLE 1: FREQUENCY AND PERCENTAGE DISTRIBUTION OF SAMPLES ACCORDING TO THEIR DEMOGRAPHIC DATA

(n=60)

Sl. No	Selected Demographic variables	Frequency (f)	Percentage (%)
1.	**Age in years**		
	a) ≤ 30	16	27
	b) 31 to 40	14	23
	c) 41 to 50	15	25
	d) 51 and above	15	25
2.	**Gender**		
	a) Male	28	47
	b) Female	32	53
3.	**Religion**		
	a) Hindu	37	62
	b) Christen	18	30
	c) Muslim	05	08
	d) Others	0	0
4.	**Marital status**		
	a) Married	45	75

	b) Single	0	0
	c) Widow	15	25
	d) Divorced	0	0
5.	**Educational status**		
	a) Non literate	25	42
	b) Primary education	21	35
	c) Secondary education	09	15
	d) Graduate and above	05	08
6.	**Occupation**		
	a) Home maker	28	47
	b) Unemployed	09	15
	c) Employed	08	13
	d) Business	15	25
7.	**Family income in rupees**		
	a) Below 5,000	28	47
	b) 5001 to 10,000	17	28
	c) 10001 to 15,000	09	15
	d) 15001 and above	06	10
8.	**Are you taking any medication for D.M?**		
	a) Yes	60	100
	b) No	0	0
9.	**Any history of hypoglycemic attack?**		
	a) Yes	15	25
	b) No	45	75

Table No 1 describe the socio demographic, Majority 16(27%) of diabetes mellitus peoples were in the age group of ≤30 years. Majority 32(53%) were females and 28(47%) were males. Majority 45(75%) of peoples were married.Majority60(100%) of peoples were in treatment. Majority 45(75%) of peoples were no history of hypoglycemic attack.

TABLE 2: FREQUENCY AND PERCENTAGE DISTRIBUTION OF SAMPLE ACCORDING TO PRE TEST AND POST TEST LEVELS OF KNOWLEDGE

(n=60)

SL. NO	KNOWLEDGE ON MANAGEMENT OF HYPOGLYCEMIA	LEVEL OF KNOWLEDGE					
		INADEQUTE (1-33%)		MODERATE (34-66%)		ADEQUATE (>67%)	
		f	%	F	%	f	%
1	PRE TEST	32	54	26	43	2	3
2	POST TEST	4	7	20	33	36	60

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Table No 2 Pretest level of knowledge regarding management of hypoglycemia among people with diabetes mellitus in selected Rural areas reveals thatmajority 32(54%) had inadequate knowledge, 26(43%) had moderate knowledge and 2(3%) had adequate knowledge. Post test reveals that majority 36 (60%) had adequate knowledge, 20(33%) had moderate knowledge and 4(7%)had inadequate knowledge.

TABLE 3: DIFFERENCE BETWEEN PRE TEST AND POST TEST LEVEL OF KNOWLEDGE

(n = 60)

S.No	Category	Mean	Standard deviation	Mean differ-ence	Paired 't'test		p Value	Inference
					Cal value	tab value		
1	Pre test knowledge	11	4.01	9	28.7	2.00	0.0001	P<0.05
2	Post test knowledge	20	4.8					

TableNo 3 shows that the obtained post test mean value (20±4.8) of knowledge was higher than the knowledge of pre test value (11±4.01) respectively. The mean difference was 9. The obtained calculated "t" value was 28.7, which is greater than the tabulated value i.e., 2.00, "p''value 0.0001. It shows that there was significant difference between pretest and posttest knowledge. Thus, indicating planned teaching programme was highly effective. Hence H1,There is a significant difference between pre-test and post-test knowledge scores regarding management of hypoglycemia among people with diabetes mellitus in selected rural areas was accepted.

TABLE 4: ASSOCIATION BETWEEN POST TEST LEVELS OF KNOWLEDGE WITH THEIR SELECTED DEMOGRAPHIC DATA

(n =60)

S.No	Demographic Variables	LEVEL OF KNOWLEDGE			Chi-square χ^2		df	Inference
		Inadequate	Moderate	Adequate	Cal. value	Tab value		
1	**Age in years**							
	a) ≤30	1	6	9				
	b) 31 - 40	1	4	9	0.88	12.59	6	NS
	c) 41 - 50	1	4	10				
	d) 51 and above	1	6	8				

2	**Gender** a) Male b) Female	 1 3	 9 11	 18 18	0.93	5.99	2	NS
3	**Religion** a) Hindu b) Christian c) Muslim d) Others	 1 2 1 0	 15 5 0 0	 21 11 4 0	5.45	9.49	4	NS
4	**Marital status** a) Married b) Single c) Widow d) Divorced	 3 0 1 0	 16 0 4 0	 26 0 10 0	0.41	5.99	2	NS
5	**Educational status** a) Non literate b) Primary education c) Secondary education d) Graduate and above	 1 3 0 0	 9 7 1 3	 15 11 8 2	7.27	12.59	6	NS
6	**Occupation** a) Home maker b) Unemployed c) Employed d) Business	 3 1 0 0	 8 3 4 5	 17 5 4 10	3.62	12.59	6	NS
7	**Family income** a)Below 5000 b) 5001 to 10000 c)10001 to 15000 d)15001 and above	 3 1 0 0	 8 6 2 4	 17 10 7 2	5.44	12.59	6	NS
8	**Treatment for diabetes mellitus** a) Yes b) No	 4 0	 20 0	 36 0	0	0	0	NS

9	**History of hypoglycemic attack** a) Yes b) No	1 3	5 15	9 27	0	0	0	NS

Table No 4 reveals that in order to find out the association between the post test levels of knowledge with demographic variables, chi square was computed. The results showed that there is no significant relationship between the post test levels of knowledge with their Age, Gender, Religion, Marital status, Educational status, Occupation, family income, Treatment of diabetes mellitus and any history of hypoglycemic attack. Hence H2there is a significant association between post test levels of knowledge with their selected demographic variables was rejected.

CONCLUSION

Hypoglycemia is a major limiting factor in overall glycemic management of diabetes and may lead to loss of consciousness or even death. Recognition of hypoglycemia risk factors, symptoms, management, prevention and blood glucose monitoring and educational programme for peoples with diabetes mellitus can be maintain glycemic control.

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