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A STUDY TO ASSESS THE EFFECTIVENESS OF JAMUN SEED POWDER ON URINE SUGAR LEVEL AMONG PATIENTS WITH DIABETES MELLITUS AT SELECTED SETTINGS OF COMMUNITY AREA IN PUDUCHERRY

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ABSTRACT

Statement Of The Problem: A study to assess the effectiveness of Jamun seed powder on urine sugar level among patients with Diabetes mellitus at selected settings of community area in Puducherry. **Background:** Diabetes mellitus has been defined as a syndrome of abnormal carbohydrate metabolism, resulting in hyperglycemia with acute metabolic complications and chronic vascular, neurogenic and orthopedic complications affecting many organs of the body **Objectives of the Study:** To assess the existing level of urine sugar among diabetes patients. To determine effectiveness of jamun seed powder to control glucose level among diabetes patients. To associate the pre-test level of urine sugar with selected demographic variables. **Methodology:** A qualitative research design was adopted. The study was conducted at selected setting of community area in Puducherry, population comprised that Diabetic clients with age group of above 20 years, by adopting convenient sampling technique. 30 subjects who fulfilled the inclusive criteria was selected as samples and were assessed the pretest existing glycosuria and posttest level after administering 2.5 and 5.0 g/kg body weight for 2 weeks of time period. Monitored the glycosuria level for samples, on seventh day none of them having brick red and orange, 11 clients(36.7%) having yellow& green colour, 13 clients (43.3) having green colour and 6 clients (20%) having blue colour in strip and it is concluded that jamun seed powder is effective but it should done with blood for further effectiveness.

KEYWORDS: Jamun seed powder, Diabetes mellitus.

INTRODUCTION

Diabetes mellitus has been defined as a syndrome of abnormal carbohydrate metabolism, resulting in hyperglycemia with acute metabolic complications and chronic vascular, neurogenic and orthopedic complications affecting many organs of the body. This metabolic disorder is the result of a deficiency in insulin secretion or resistance to insulin action, or both (Jamil et at. 2001)

Globally, as of 2010 as estimated 285 million people had diabetes with type 2 making up about 90%of the cases. In 2013, according to International diabetes federation, an estimated 381 million people had diabetes.

Diabetes is currently the world's largest endocrine disorder, in India with more than 62 million diabetic individuals currently diagnosed with the disease. 12 in 2000, India [31.7 million] topped the world with the highest number of people with diabetic mellitus

In spite of the tremendous progress achieved in medical sciences in the last century, the alternative method to treat diabetic mellitus is Ayurveda, the Indian traditional system of medicine, is one of the world's oldest systems to have documented the diagnosis and treatment of diabetes.

Jamun tree is botanically named as Eugenia jambolana, scientific synonyms include Syzygiumjambolanum, Eugenia cumini and Eugenia jambolana. The chemical constituents of seeds of Eugenia jambolana are gallic acid, ellagic acid, corilagin, ellagitannins, isoquercetin, quercetin, caffeic acid, ferulic acid, guaicol, resorcinaldimethyl ether, lignaglucoside, veratrol, B sitosterol, palmitic acid etc.

OBJECTIVES

To assess the existing level of urine sugar among diabetes patients.

To determine effectiveness of jamun seed powder to control glucose level among client with DM.

To associate the pre-test level of urine sugar with selected demographic variables.

METHODOLOGY

Methodology of research organises all the components of the study in way that is most likely to lead to valid answer to the sub problems that has been posted.

This chapter deals with methodology adopted for the study. It includes research approach and research design, setting of the study, sampling techniques, criteria for sampling selection and procedure for data analysis.

RESULTS

Monitored the glycosuria level for samples, on seventh day none of them having brick red and orange, 11 clients(36.7%) having yellow& green colour, 13 clients (43.3) having green colour and 6 clients (20%) having blue colour in strip and it is concluded that jamun seed powder is effective but it should done with blood for further effectiveness

Data Collection Procedure

The study was conducted for the period of 2 weeks 30 samples were selected by using convenience sampling techniques at selected Kirumampakkam and Thavalakuppam of community area in Puducherry. Data collection conducted after obtaining consent from the patients who fulfilled inclusion criteria. The demographic data was collected there after done by pre test to the clients. Then the day of 2nd intervention was done Jamun seed powder were administered. After that the post test was done among the diabetic clients.

Plan for Data Analysis

The data collections from the subjects were compiled and analysis using descriptive and inferential statistics such as numbers and percentage and chu square is used to associative demographic variables.

Data Analysis and Interpretation

Table 1: demographic data.

Demographic data	N	%
1.Age (in years):		
20-40	9	30
41-60	13	43.3
61-80	8	26.7
81 and above	0	0
2.Sex:		
Male	13	43.3
Female	17	56.7
3.Residence:		
Urban	1	3.3
Rural	29	96.7
4.Religion:		
Hindu	28	93.3
Muslims	1	3.3
Christian	1	3.3
Others	0	0
5. Marital status:		
Married	21	70
Unmarried	0	0
Widow/widower	9	30
Divorced/separated	0	0
6.Educational status:		
No formal education	15	50
Primary school	9	30
Middle school	3	10
High school	2	6.7
Higher secondary	1	3.3
Graduate	0	0
7. Occupation:		
Farmer	1	3.3
Coolie	7	23.3
Private sector	5	16.7
Govt.Sector	2	6.7
Home maker	7	23.3
Pension	8	26.7
8. income:		
Below Rs.5000	19	63.3
Rs.5001-10000	9	30
Above Rs.10000	2	6.7
9.Type of family:		
Nuclear family	21	70
Joint family	9	30
10.Duration of Disease:		
1-5 years	16	53.3
Above 10 years	14	46.7

Table 1 shows that the maximum clients 13(43.3%) are belongs to the age group of 41-60 years and 9(30%) belongs to 20-40 years, 8(26.7%) belongs to 61-80 years. Regarding the gender17 (56.7%) clients were female and rest the 13(43.3%) were male. In residence 29(96.7%) are living with rural area only 1 (3.3%) were from urban area. Regarding the religion the majority of clients 28(93.3%) belonged to Hindu and 1(3.3%) belongs to both Muslim and Christian. Regarding the marital status 21(70%) were married and 9(30%) were

widow/widower. In educational status most of the clients 15(50%) are no formal education and 9(30%) belongs to primary school, 3(10%) belongs to middle school, 2(6.7%), belongs to high school, 1(3.3%) belongs to higher secondary. Regarding the occupation majority of clients 8(26.7%) getting pension and 7(23.3%) were coolie and home maker, 5(16.7%) were private sector,2(6.7%) were govt. sector,1(3.3%) were former. Regarding the income 19 (63.3%) earns below Rs 5000 and 9(30%) of clients earns Rs 5001-10000, 2 (6.7%) are above Rs10000. Their type of family, 21(70%) were nuclear family and 9(30%) were joint family. Regarding the duration of disease 16(53.3%) of clients has 1-5 years and remaining 14(46.7%) has above 10 years.

Table-2.

	Max score	Range	Pre test		
			Mean	SD	Mean %
Pre test	4	1-4	2.6	0.77	65

Shows that the pretest range between 1-4 and the mean score was 2. 6. SD was 0.77 and the Mean% was 65.

Table-3.

	Max score	Range	Post test		
			Mean	SD	Mean %
2nd day	4	1-4	2.5	0.77	63
3rd day	4	1-4	2.46	0.776	62
4th day	4	1-3	2.23	0.776	56
5th day	4	1-3	1.83	0.773	46
6th day	4	0-3	1.53	0.79	38
7th day	4	0-2	1.17	0.74	29

Table 3 shows that In post test the day of 2nd range between 1-4 and the mean score was 2.5,SD was 0.77 and the mean % was 63.where as the day of 7th the range between 0-2 and the mean score was 1.17,SD was 0.74 and the mean% was 29.

Table-4.

Day	Pre test			Days	Post test			Difference in Mean%
	Mean	SD	Mean %		Mean	SD	Mean %	
1st day	2.6	0.77	65	2nd day	2.5	0.77	63	2
				3rd day	2.46	0.776	62	3
				4th day	2.23	0.776	56	9
				5th day	1.83	0.773	46	19
				6th day	1.53	0.79	38	27
				7th day	1.17	0.74	29	36

In pretest (i. e) before the intervention the clients are having mean score 2.6, SD was 0.77 and the mean% 65.where as the post test on the day of 7th mean score was 1.17,SD 0.74,mean%29 and the difference in mean% 36.

Table-5.

Level of urine sugar	Pre test Score(1st day) and Post test score (2nd ,3rd ,4th ,5th ,6th ,7th day)													
	Day-1		Day-2		Day-3		Day-4		Day-5		Day-6		Day-7	
	F	%	f	%	f	%	f	%	f	%	f	%	F	%
Nil(blue)	-	-	-	-	-	-	-	-	-	-	2	6.7	6	20
+(green)	2	6.7	3	10	3	10	6	20	12	40	12	40	13	43.3
++ (yellow +green)	11	36.7	11	36.7	12	40	11	36.7	11	36.7	14	46.7	11	36.7
+++ (orange)	14	46.7	14	46.7	13	43.3	13	43.3	7	23.3	2	6.7	-	-
++++ (brick red)	3	10	2	6.7	2	6.7	-	-	-	-	-	-	-	-
Total	30	100	30	100	30	100	30	100	30	100	30	100	30	100

Shows that in pretest none of them were showed blue color, green 2(6.7%), yellow 11(36.7%), orange 14(46.7%), and brick red 3(10%). Whereas the post test the day of 7th client having blue 6(20%) green 13(43.3%), yellow 11(36.7%) and none of them were showed both orange and brick red. So my intervention was highly effective.

Table-6.

Day	Pre test			Days	Post test			Difference in Mean%	't'-value	p-value
	Mean	SD	Mean %		Mean	SD	Mean %			
1st day	2.6	0.77	65	2nd day	2.5	0.77	63	2	1.36	0.18
				3rd day	2.46	0.776	62	3	1.68	0.103
				4th day	2.23	0.776	56	9	3.003	0.005**
				5th day	1.83	0.773	46	19	6.18	0.000***
				6th day	1.53	0.79	38	27	9.13	0.000***
				7th day	1.17	0.74	29	36	11.57	0.000***

*P<0.05, significant and **P<0.01 &***P<0.001, highly significant

Shows that In pretest (i.e) before the intervention the day of 1st mean score was 2.6,SD 0.77 and the mean% 65. Whereas the post test the day of 2nd SD was 0.77, mean% 63,difference in mean% 2,t'-value 1.36 and p-value 0.18.In the post test the day of 7th SD was 0.7, mean%29, difference in mean%36, t'-value 11.57 and the p-value 0.000***.There is major difference between 2nd and 7th day. so our intervention was highly effective.

Table 7: Association between level of urine sugar 1st day in pretest and selected demographic data.

Demographic variables	Green		Yellow + Green		Orange		Red		χ^2	p-value
	f	%	F	%	f	%	F	%		
1.Age (in years):										
20-40	0	0	0	0	0	0	0	0	6.51 (df=6)	0.368 NS
41-60	1	3.3	5	16.7	4	13.3	0	0		
61-80	1	3.3	3	10	6	20	3	10		
81 and above	0	0	3	10	4	13.3	0	0		
2.Sex:										
Male	2	6.7	5	16.7	5	16.7	1	3.3	3.09 (df=3)	0.378 NS
Female	0	0	6	20	9	30	2	6.7		
3.Residence:										
Urban	0	0	0	0	0	0	1	3.3	9.31 (df=3)	0.025* S
Rural	2	6.7	11	36.7	14	46.7	2	6.7		
4.Religion:										
Hindu	2	6.7	11	36.7	12	40	3	10	2.45 (df=6)	0.874 NS
Muslims	0	0	0	0	1	3.3	0	0		
Christian	0	0	0	0	1	3.3	0	0		
Others	0	0	0	0	0	0	0	0		
5. Marital status:										
Married	0	0	9	30	9	30	3	10	6.9 (df=3)	0.075 NS
Unmarried	0	0	0	0	0	0	0	0		
Widow/widower	2	6.7	2	6.7	5	16.7	0	0		
Divorced/separated	0	0	0	0	0	0	0	0		
6.Educational status:										
No formal education	2	6.7	4	13.3	8	26.7	1	3.3	13.79 (df=2)	0.317 NS
Primary school	0	0	5	16.7	3	10	1	3.3		
Middle school	0	0	1	3.3	2	6.7	0	0		
High school	0	0	1	3.3	1	3.3	0	0		
Higher secondary	0	0	0	0	0	0	1	3.3		
Graduate	0	0	0	0	0	0	0	0		
7. Occupation:										
Farmer	0	0	0	0	1	3.3	0	0	17.73 (df=15)	0.277 NS
Coolie	0	0	4	13.3	2	6.7	1	3.3		
Private sector	0	0	1	3.3	3	10	1	3.3		
Govt.Sector	0	0	0	0	2	6.7	0	0		
Home maker	0	0	5	16.7	1	3.3	1	3.3		
Pension	2	6.7	1	3.3	5	16.7	0	0		
8. income:										
Below Rs.5000	2	6.7	6	20	9	30	2	6.7	7.02 (df=6)	0.319 NS
Rs.5001-10000	0	0	5	16.7	4	13.3	0	0		
Above Rs.10000	0	0	0	0	1	3.3	1	3.3		

9.Type of family:										
Nuclear family	2	6.7	7	23.3	9	30	3	10	2.57	0.467
Joint family	0	0	4	13.3	5	16.7	0	0	(df=3)	NS
10.Duration of Disease:										
1-5 years	0	0	6	20	8	26.7	2	6.7	2.59	0.460
Above 10 years	2	6.7	5	16.7	6	20	1	3.3	(df=3)	NS

*-P<0.05, significant and **-P<0.01 &***-P<0.001, highly significant exhibits there is no association between the level of urine sugar and various type of demographic variables except the Residence.

CONCULSION

Monitored the glycosuria level for samples, on seventh day none of them having brick red and orange, 11 clients (36.7%) having yellow& green colour, 13 clients (43.3) having green colour and 6 clients (20%) having blue colour in strip and it is concluded that jamun seed powder is effective but it should done with blood for further effectiveness.

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