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A COMPARATIVE STUDY TO ASSESS THE EFFECTIVENESS OF BITTER GOURD JUICE VS BOTTLE GOURD JUICE ON BLOOD SUGAR LEVEL AMONG DIABETES MELLITUS TYPE 2 PATIENT IN SELECTED AREA OF GREATER NOIDA, U.P.

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Abstract
The aim of the study is to assess the effectiveness of bitter gourd and bottle gourd juice on blood sugar level among diabetes mellitus patient. Quasi experimental research design was used to conduct the research study. The samples of 40 non-insulin dependent diabetes mellitus (type-2) patient were selected by purposive sampling. Assessment of blood sugar level done for both the groups. Administration of Bitter Gourd Juice and bottle gourd juice done for both the group and after 1hour blood sugar checked for both the group.

Result: The mean difference of the group 1 (bitter gourd) was -2.5150 and t value is 5.942 and the mean difference of the group 2 (bottle gourd) is -5.3000 and independent t value is 10.340. This shows that bitter gourd is more effective to lower the blood sugar level than bottle gourd.
Keywords: Diabetes mellitus, Bitter gourd, Bottle gourd, Blood sugar.

INTRODUCTION

A deficiency in insulin secretion, insulin action, or both is the cause of the metabolic condition diabetes mellitus (DM). Chronic hyperglycemia caused by an inadequate supply of insulin also affects the metabolism of fats, proteins, and carbohydrates. It is one of the chronic non communicable diseases (CNCDs) that has become a major issue for world health.[1]

Catalyst Research Volume 23, Issue 2, October 2023 Pp. 2806-2810

Type 1 diabetes mellitus is an autoimmune condition, which means that your body attacks itself. Your pancreas's insulin-producing cells are killed in this situation. Type 1 diabetes affects up to 10% of those who have it. Those who have Type 1 diabetes must take insulin daily. It is also known as insulin-dependent diabetes for this reason. Type 2 Diabetes mellitus, with this type, the body either produces insufficient insulin or the insulin is not well absorbed by body's cells. This form of diabetes is the most prevalent. Up to 95% of people with type 2 diabetes experience complications. People that are typically impacted are middle-aged and older. Additional terms for Type 2 diabetes include adult-onset diabetes and insulin-resistant diabetes. The body's tissues and organs may sustain severe harm if your blood glucose level is high for an extended length of time. Over time, certain issues can become potentially fatal.[2]

Diabetic management can be divided into two main groups: pharmacological and non-pharmacological ones. People have consumed bitter gourd, Knol-khol juices, etc. throughout history. A lectin found in bitter gourd (L. Momordica charantia) has a hypoglycemic impact that manifests after consumption and works by acting on peripheral tissues and stifling appetite, much like how insulin functions in the brain. Knol-khol (L. Brassica oleracea) is a vegetable that is high in dietary fibre and antioxidant vitamins C, E, and carotene. Additionally, they include sulphoraphanes and other isothiocyanates, which are thought to encourage the body to produce protective enzymes.In addition to calcium, phosphorus, iron, riboflavin, thiamine, niacin, and vitamin C, ash gourd (Benincasa hispida (Thunb).cogn) is a good source of hydration, protein, carbs, and fibre. It is perfect for diabetes individuals and people trying to lose weight because it has little calories.[3]

Review of literature:

Selvakumar G, Shathirapathiy G, Jainraj R, Yuvaraj Paul P was conducted a study to investigate the immediate effect of bitter gourd, Knol-khol, and ash gourd juices on blood glucose level among Type II diabetes mellitus patients. In this study researcher will assess the Effectiveness of Bitter Gourd Juice vs Bottle Gourd Juice on Blood Sugar Level among Diabetes Mellitus Patient. Result shows that the average blood sugar level in the bitter gourd group did not differ statistically between time points (P =.176). However, when compared to fasting levels, blood glucose levels are statistically significantly lower 90 minutes after consumption of bitter gourd juice (p =.049). The mean blood glucose level varied statistically significantly between time points after drinking Knol khol juice, as seen in (p =.029). However, the ash gourd group showed no statistical changes. As a result, bitter gourd juice lowers blood sugar levels right away, but Knol khol juice does it gradually over a 120-minute period.[3]

Methodology:

Quantitative research approach was used to conduct the study. Quasi-experimental research design was used. The study was conducted in Community area, Greater Noida. Type 2 Diabetes mellitus patient selected purposely for the research study.

Catalyst Research Volume 23, Issue 2, October 2023 Pp. 2806-2810

PLAN FOR DATA COLLECTION

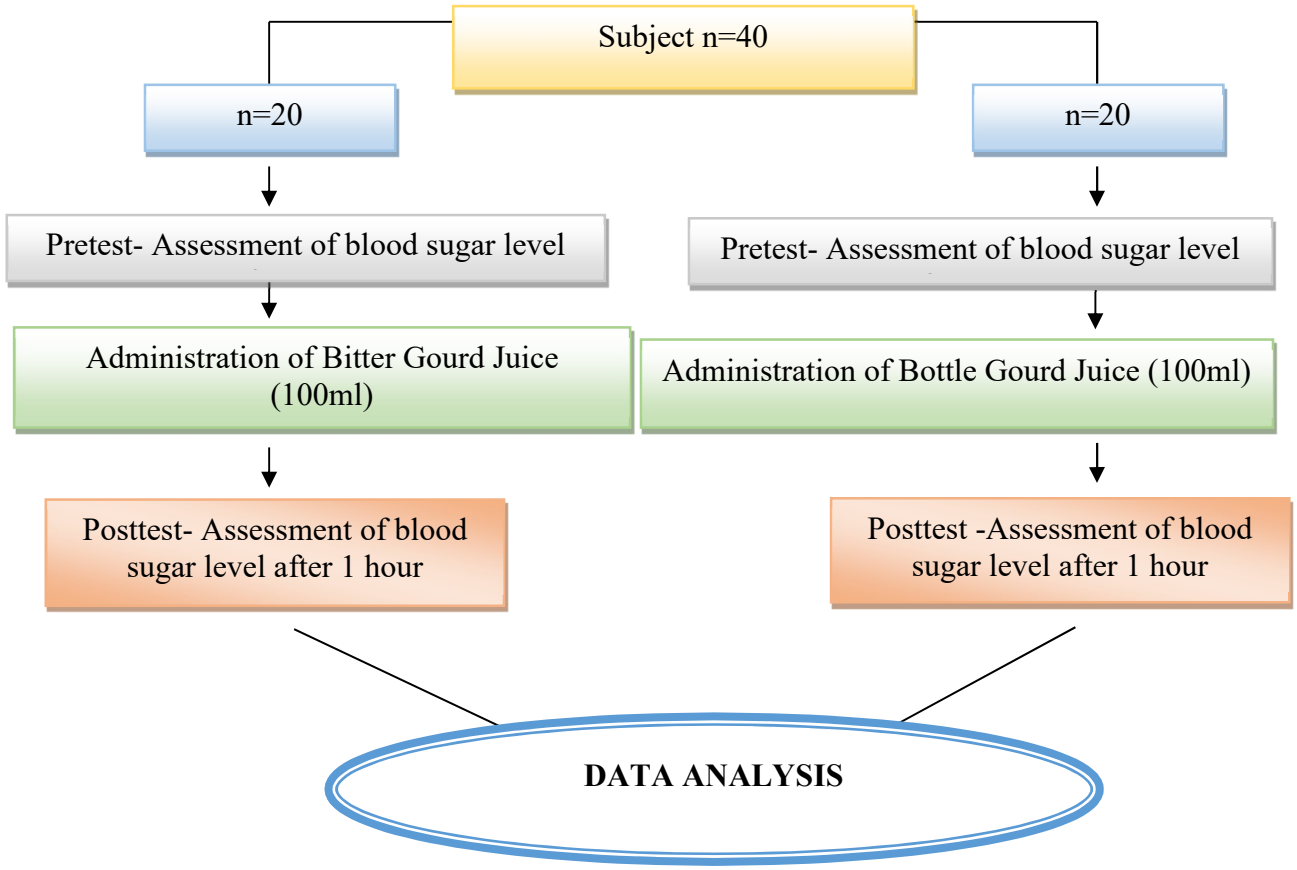

Fig. 1. Plan of Data Analysis

Result:

Table1. Frequency and percentage distribution of baseline characteristics N=40

S.N.	Demographic variables	n		%	
1.	Age in years	Bitter gourd (n=20)	Bottle gourd (n=20)	Bitter gourd	Bottle gourd
	30-35	03	03	15	15
	35-40	08	07	40	35
	45-50	04	05	20	25
	55-60	05	05	25	25
2.	Sex				
	Male	08	10	40	50
	Female	12	10	60	50

Catalyst Research Volume 23, Issue 2, October 2023 Pp. 2806-2810

3.	**Education**				
	Middle school	04	03	20	15
	Matric	07	06	35	30
	Graduation	07	08	35	40
	Post-Graduation	02	03	10	15
4.	**Dietary habits**				
	Vegetarian	11	10	55	50
	Non-vegetarian	09	10	45	50
5.	**Exercises**				
	Yes	11	10	55	50
	No	09	10	45	50

Table 1 shows that majority (40%) of patients belongs to 35-40 years of age and regarding gender (60%) are female (60%), regarding education of patient (40%) are graduated. Majority of them are vegetarian (55%) dietary habits. Most (55%) of them perform exercises.

Table2. Mean SD, and Homogeneity Comparison of the Baseline Measure
N=40

Group	**Bitter gourd**			**Mean difference**	**Independent t-value**	**Bottle gourd**			**Mean difference**	**Independent t-value**
	n	**M**	SD			**n**	**M**	SD		
Pre-test	20	132.840	18.2692	-2.5150	5.942	20	135.355	16.3940	-5.3000	10.340
Post test	20	112.470	7.5413			20	117.770	11.0792		

Table 2. Depicts that the mean difference of the group 1 (bitter gourd) was -2.5150 1nd t value is 5.942 and the mean difference of the group 2 (bottle gourd) is -5.3000 and independent t value is 10.340. This shows that bitter gourd is more effective to lower the blood sugar level than bottle gourd.

SUMMARY

The data analysis and interpretation divided into two sections. Distribution according to socio-demographic variables in Table 1. In Table 2 finding association between homogeneity comparison of Bitter gourd and bottle gourd were explained.

CONCLUSION

The following conclusions were drawn from the findings of the study. Comparing effectiveness of Bitter Gourd Juice Vs Bottle Gourd Juice on Blood Sugar Level among Diabetes Mellitus type

Catalyst Research Volume 23, Issue 2, October 2023 Pp. 2806-2810

2 Patient was effective way as from the study we came to know regarding the Homogeneity comparison of juices on the Type 2 Diabetes mellitus patients. Therefore, we are aware regarding its effectiveness and benefits.

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