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A STUDY TO ASSESS THE EFFECTIVENESS OF ALKALINE WATER CONSUMPTION TO REDUCE BLOOD GLUCOSE AMONG TYPE II DIABETES MELLITUS CLIENTS IN SELECTED AREAS OF DAMAN

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ABSTRACT

Background: Diabetes Mellitus type II, the most common type of diabetes, is a disease that occurs when your blood glucose also called blood sugar, is too high. Blood glucose is main source of energy and comes mainly from the food. Insulin, a hormone made by the pancreas, helps glucose get into calls to be used for energy. The Alkaline water is a great way to help neutralize free radicles because it is full of negative ions. These negative ions can help to bind with the free radicals and prevent them from causing damage to the cells. This is a great way to help protect the body from diabetes and other disease. **Objectives: 1.** To assess the pre-test and post-test level of blood glucose among clients with type II Diabetes Mellitus in both experimental and control group. **2.** To determine the effectiveness of alkaline water consumption on reducing blood glucose level among clients with type II Diabetes Mellitus in the experimental group. **3.** To find out the association betweenthe pre-test levelofblood glucose among client with type II Diabetes Mellitus with selected demographic variables. **Methodology:** A quantitative approach with Quasi experimental non-randomized control, two group pre-test post-test design through purposive sampling was adopted to assess the effectiveness of alkaline water consumption among 60 clients with Type II Diabetes Mellitus who satisfied the inclusive and exclusive criteria and attending selected areas of Daman. We divided equally into experimental and control group. Paire ‘t’ test to compare the pre-test and pos-test level of blood glucose among type II diabetes mellitus clients. The final study was conducted from 22/08/2023 in selected areas of Daman. **Result:** The present study assesses the effectiveness

of alkaline water consumption to reduce blood glucose level among Type II Diabetes Mellitus clients. The post test experimental group was lower than the control group score. The experimental mean score was 177.93(SD=9.46) and in control group means core was 207.37(SD=16.53). Tabulated value of the posttest was 1.672 and df was 58. The chi-square calculated value shows there was no any significance association with demographic variables. **Interpretation and conclusion**: Statistical significance was calculated by using paired t-test and chi-square. After the Alkaline water consumption, the blood glucose level has reduced among Type II Diabetes Mellitus clients. So, an alkaline water has significant impact in reducing the Type II Diabetes Mellitus.

KEYWORDS: Alkaline water, blood glucose, Type II Diabetes Mellitus.

INTRODUCTION

It is evident that humanity was endowed by God with the capacity for creativity, which can be harnessed to create art, music, literature, and technology. This creative in genuity has led to remarkable advancements in healthcare over the past five decades. In the 21st century, with the advent of advanced technology, the importance of taking care of one's own health is growing, as there is a heightened awareness of health among individuals worldwide.[1] Numerous non-communicable diseases, also known as silent killers, are prevalent due to unhealthy habits, undernutrition, and overnutrition. The 66th World Health Assembly recognized the global burden of non-communicable diseases and initiated a project to conduct free health camps for screening and treating affected clients.[2] Diabetes Mellitus(DM) is a significant and growing problem that incurs high healthcare costs and has a major impact on the lives and well-being of individuals, families, and societies worldwide.[4] The International Diabetes Federation (IDF) and World Health Organization(WHO) established World Diabetes Day on November14th to raise awareness of diabetes, its increasing prevalence worldwide, and the importance of prevention. This year's theme for World Diabetes Day is Family and Diabetes, which aims to increase universal awareness of the disease.[3]

Obese individuals are more prone to developing diabetes. Insufficient calcium ions can lead to a decrease in insulin production within our bodies, resulting in a significant rise in blood acidity. Excessive protein accumulation can harm the function of the pancreas. However, the formation of excess protein can be reduced and overall health can be improved by consuming alkaline water. There is a close relationship between alkaline water and Type II Diabetes Mellitus.[4]

Alkaline water has been proven to have various benefits. It is the cleanest and safest option for drinking water, sharing the same natural qualities as water from longevity springs and glacier streams.[5] Its alkaline nature helps neutralize acid waste produced by an unhealthy diet. Additionally, it is ionized, containing hydroxyl ions that reduce cellular stress and aid in the body's cleansing process, thereby significantly supporting diabetes recovery. Alkaline water, also known as pH water, refers to water that has a higher pH level compared to regular tap water. The pH scale is used to measure the acidity or alkalinity of a substance, with a pH of 7 being considered neutral. Alkaline water typically has a pH level above 7, usually ranging from approximately 8 to 10. One of the primary factors contributing to high blood sugar levels in the digestive process, as elevated glucose levels in the bloodstream stimulate the pancreas to produce insulin.[6]

A study was conducted to assess the effect of electrolyzed high-Ph alkaline water on blood viscosity in healthy adults. 100 healthy adults included in may sample in that 50 male and 50 female, age group is > 31 years of age. Participants were randomized to rehydrate with an electrolyzed, a mixed model analysis was performed. The result of the study revealed after exercise- induced dehydration, consumption of the electrolyzed, high-Ph water reduced high-shear viscosity by an average of 6.30% compared to 3.36% with standard purified water.[7]

A study was conducted to association of alkaline water with metabolic risk, sleep quality, muscle strength. A total of 304 community dwelling people were recruited with comparable proportion of regular drinkers of alkaline water. In that cross-sectional comparative study method was used in data collection. The result of the study 47.7% of participation met the criteria, no significance difference between factors of regular alkaline drinkers and non-drinkers.[8]

A study to assess the effect of alkaline water consumption on decreasing blood sugar levels of diabetes mellitus patients. The sample size was 50 peoples elected by purposive sampling techniques. The result of the study revealed the blood sugar level of the patient before being given the intervention were 285.58 g/dl after that 2L of alkaline water given for 1week, after the intervention blood glucose level was 233.34 g/dl. The average decline of the blood glucose level is 51.84g/dl.[9]

A study was conducted to assess the importance of exercise for glycemic control in type II diabetes. In that randomized collection method is used. The result of the study revealed 150

min/work of moderate to vigorous physical activity over 3-5 days(aerobic plus resistance exercise) is beneficial for cardiometabolic risk factor reduction, up to 3 min or 250 steps/hour may be equally effective for glycemia, particularly after meals.[10]

A study was conducted to a comparative study on success rates and outcomes of intervention features. It was calculated on the basis of effectiveness in improving HbA1c, physical activity or diet outcomes. The result of the study 38 intervention features in relation to their success with an outcome, 5 intervention features had positive rate difference across at least three outcomes; hospital-based intervention and incorporating dieticians as interventionists.[11]

OBJECTIVES

- To assess the pre-test and post-test level of blood glucose among clients with Type II Diabetes Mellitus in both experimental and control group.
- To assess the effectiveness of alkaline water consumption on reducing blood glucose level amongclients with Type II Diabetes Mellitus in selected community areas of Daman
- To find out the association between the pre-test score of blood glucose with selected demographic variables and clinical variables in experimental and control group.

HYPOTHESIS

H^1: The mean post-test score in significantly lower than the mean pre-test score in level of blood glucose among Type II Diabetes Mellitus clients in experimental group.

H^2: The mean post-test score in significantly higher than the mean pre-test score in level of blood glucose among Type II Diabetes Mellitus clients in control group.

H^3: There will be a significant association between the pre-test level of blood glucose with selected demographic and clinical variables in experimental group and control group.

DELIMITATION

The study is delimited to:

1 Type II Diabetes clients who were physically and mentally challenged.

2 Type II Diabetes clients who are not available at the time of data collection.

3 Type II Diabetes clients who have not given consent for the study.

METHODS AND MATERIALS

Research Approach: Qantitative Research Approach

Research Design: Quasi Experimental Research Design (Non- Randomized Control group

design)

Setting of the study: selected community areas of Daman

Population: Clients having Diabetes Mellitus

Sampling Technique: Non Probability Purposive Sampling Technique

Sample Size: 60 sample

Research Variables

Inclusion Criteria

1) Those whose age group was above 30to>60years.
2) Those who are diagnosed to have Type II Diabetes Mellitus.
3) Those who are available willing to participate in the study.
4) Those who can understand Hindi and Guajarati language.

Exclusion Criteria

1) Type II Diabetes clients who physically and mentally challenged.
2) Type II Diabetes clients who are not available at the time of data collection.
3) Type II Diabetes clients who have not given consent for the study.

DESCRIPTION OF THE TOOL

Section 1: Frequency and percentage on demographic variables of Type II Diabetes Mellitus clients in experimental and control group.

N=60

Demographic variables		Experiment Group (30)		Control Group(30)	
		Frequency	In%	Frequency	In%
Age	30-39years	7	23.33	5	16.67
	40-49years	11	36.67	5	16.67
	50-59years	8	26.67	12	40
	>60Above	4	13.33	8	26.67
Gender	Male	12	40	13	43.33
	Female	8	26.67	17	56.67
	Transgender	0	0	0	0
Educational status	Illiterate	4	13.33	5	16.67
	Primary school certificate	4	13.33	5	16.67
	Secondary school certificate	3	10	5	16.67
	Higher secondary certificate	8	26.67	5	16.67
	Graduate	6	20	4	13.33
	Profession	5	16.67	6	20
Dietary Pattern	Vegetarian	20	66.67	9	30
	Non-vegetarian/Mixed	10	33.33	21	70
If Vegetarian,	Daily	2	6.67	4	13.33

how often will you take fried items and sweet?	Weekly once	5	16.67	4	13.33
	Monthly twice	13	43.33	1	3.33
If non-vegetarian, how often will you take fried items and sweet?	Daily	2	6.67	8	26.67
	Weekly once	2	6.67	6	20
	Monthly twice	6	20	7	23.33
Do you Perform exercise	Yes	23	76.67	11	36.67
	No	7	23.33	19	63.33
If yes, How Often will you exercise	Daily	18	60	3	10
	Occasionally	5	16.67	8	26.67
Duration of Exercise	30 minutes	3	10	5	16.67
	45 minutes	9	30	3	10
	>1hours	12	40	3	10
Which type of Workout you are performing?	Secondary Work out	7	23.33	14	46.67
	Moderate work out	11	36.67	13	43.33
	Heavy work out	12	40	3	10
Type of Obesity	No obese	12	40	2	6.67
	Class1:BMI of30to<35	15	50	10	33.33
	Class2:BMI of35to<40	2	6.67	12	40
	Class3:BMI of>40	1	3.33	6	20

Section 2: Frequency and percentage on clinical variables of Type II Diabetes Mellitus clients in experimental and control group.

N-60

Clinicalvariables		**Experiment Group (30)**		**Control Group (30)**	
		Frequency	**In%**	**Frequency**	**In%**
Ageof on set of Type II Diabetes Mellitus	30-39years	10	33.33	7	23.33
	40-49years	11	36.67	12	40
	50-59years	7	23.33	8	26.67
	>60yeas	2	6.67	3	10
Duration of Type II Diabetes Mellitus	<1year	12	40	3	10
	2-3year	11	36.67	6	20
	4-5year	4	13.33	12	40
	>5year	3	10	9	30
Isthereany family history Of TypeII Diabetes Mellitus	Yes	19	63.33	18	60
	No	11	36.67	12	40

Ifyes, mentionthe relationship	Grandfather	1	3.33	5	16.67
	Grandmother	4	13.33	5	16.67
	Father	7	23.33	6	20
	Mother	7	23.33	2	6.67
Typeofmedicinefor Type II Diabetes Mellitus	Glimepiride	7	23.33	5	16.67
	Glipizide& combination	6	20	7	23.33
	Metformin	17	56.67	18	60
Time of medication consumption forType II Diabetes Mellitus	Onetimeina day	9	30	9	30
	Twotimein aday	20	66.67	7	23.33
	Threetimein aday	1	3.33	14	46.67
Are you on regular Treatmentfor Type II DiabetesMellitus	Yes	26	86.67	8	26.67
	No	4	13.33	22	73.33
Ifyes, Mentionthe Type of treatment taken for Type II Diabetes Mellitus	Ayurvedic	1	1	1	1
	Allopathic	21	70	5	16.67
	Homeopathic	4	13.33	1	3.33
	Anyother	0	0	1	3.33

Section 3: Frequency and percentage distribution of pre-test and post-test level of blood glucose among Type II Diabetes Mellitus clients in experimental group.

Bloodglucose level (experimental group)	**Low Blood Glucose(158-179)**		**NormalBlood Glucose(180-201)**		**BoderLine Blood Glucose (202-223)**		**High Blood Glucose(224-245)**	
	f	**%**	**f**	**%**	**F**	**%**	**F**	**%**
Pre-test	1	3.3333	7	23.3	9	30	13	43.3
Post-test	17	56.667	13	43.3	0	0	0	0

Section 4: Frequency and percentage distribution of pre-test and post-test level of blood glucose among Type II Diabetes Mellitus clients in control group.

N=30

Blood glucose level (experimental group)	**Low Blood Glucose (158-179)**		**Normal Blood Glucose (180-201)**		**BoderLine Blood Glucose (202-223)**		**HighBlood Glucose (224-245)**	
	f	**%**	**F**	**%**	**f**	**%**	**F**	**%**
Pre-test	1	3.3333	7	23.3	9	30	13	43.3
Post-test	17	56.667	13	43.3	0	0	0	0

Section 5: Comparison of Pre-Test And Post-Test Blood Glucose Level Among Type Ii Diabetes Mellitus Clients In Experiment And Control Group.

N-60

Group	Blood glucose level	Mean	Mean difference	SD	SE	Pair -ed "t" test	Table value	D F	Inference
Experimental group	pretest	216.6	38.67	18.19	3.32	14.26	1.69	29	
	Post test	177.93		9.46	1.73				S*
Control group	Pretest	215.83	8.47	20.55	3.75	2.69	1.69	29	S*
	Post- test	207.37		16.53	3.02				

Section 6: Effectiveness of Alkaline Water is Reducing Blood Glucose Level Among Client with Type Ii Diabetes Mellitus in Selected Areas of Daman.

Post test Blood glucoselevel	Mean	Mean difference	SD	SE	Unpaired "t" test	Table value	Df
Experimental group	177.93	38.67	9.46	3.476	16.04	1.67	58
Control group	207.37	8.47	16.53				

Section 7: Association of pre-test of blood glucose among Type II Diabetes Mellitus clients with selected demographic variables in experimental group.

N-60

Demographicvariables		Low Blood Gluc ose	Nor mal Blood Glucose	Bode r Blood Glucose	High Blood Gluc ose	d f	Chi-squere	Tabulated value	Significant
		f	F	F	f				
Age	30-39 years	0	1	0	6	9	0.6	16.92	NS
	40-49 years	1	3	5	2				
	50-59 years	0	2	2	4				
	>60 Above	0	1	2	1				
Gender	Male	0	1	5	6	2	0.35	5.99	NS
	Female	1	6	4	7				
	Transgender	0	0	0	0				
Educational status	Illiterate	0	2	1	1	15	0.43	24.99	NS
	Primaryschool certificaTe	1	2	1	0				
	Secondaryschoolcertificate	0	0	2	1				
	higherseconda rycertificate	0	3	2	3				
	Graduate	0	0	3	3				

	Profession	0	0	0	5				
DietaryPattern	Vegetarian	1	5	6	8	3	0.94	7.82	NS
	Non-vegetarian/Mixed	0	2	3	5				

If Vegetarian, how often will you take fried items and sweet?	Daily	0	0	0	2	9	0.66	16.92	NS
	Weeklyonce	0	1	3	1				
	Monthlytwice	1	4	3	5				
If Non-Vegetarian/Mixed, how often will you take fried items and sweet?	Daily	0	1	0	1	6	0.86	12.59	NS
	Weeklyonce	0	0	1	1				
	Monthlytwice	0	1	2	3				
Do you Perform exercise	Yes	1	5	7	10	3	0.98	7.82	NS
	No	0	2	2	3				
If yes, How Often will you exercise	Daily	1	5	4	8	3	0.53	7.82	NS
	Occasionally	0	0	3	2				
Duration of Exercise	30 minutes	1	1	0	1	6	0.15	12.59	NS
	45 minutes	0	2	1	5				
	>1hours	0	2	6	4				

Whichtype of Work out youareperforming?	Secondary Work Out	0	2	1	4	6	0.7	12.59	NS
	Moderate Work Out	0	2	3	6				
	Heavyworkout	1	3	5	3				
Tye of Obesity	Noobese	0	2	3	7	9	0.9	16.92	NS
	Class1:BMI of30 to<35	1	4	5	5				
	Class2:BMI of35 to<40	0	1	0	1				
	Class3:BMI of>40	0	0	1	0				

*Significant--p≤0.05

**Highlysignificant--p≤0.001

***Veryhighlysignificant--p≤0.0001

Section 8: Association of pre-test of blood glucose among Type II Diabetes Mellitus clients with selected demographic variables in control group.

N-60

DEMOGRAPHICVARIABLES		Low Blood Glucose	Nor mal Blood Glucose	Bod er Blood Glucose	High Blood Glucose	Df	Chi sqrere	Tabulate d value	Level of significance
		F	f	F	F				
Age	30-39 years	1	1	2	1	9	0.6	16.92	NS
	40-49 years	0	3	1	1				
	50-59 years	1	2	3	6				
	>60 Above	0	1	3	4				
Gender	Male	2	2	2	7	3	0.18	7.82	NS
	Female	0	5	7	5				
	Transgender	0	0	0	0				

Educationalstatus	Illiterate	1	0	2	2	15	0.71	24.99	NS
	Primaryschoolcertificate	0	1	2	2				
	Secondaryschoolcertificate	0	1	3	1				
	Highersecondarycertific Ate	0	0	1	4				
	Graduate	0	3	0	1				
	Profession	1	2	1	2				

DEMOGRAPHICVARIABLES		**Low Blood Glucose**	**Nor mal Blood Glucose**	**Boder Blood Glucose**	**High Blood Glucose**	**Df**	**Chi sqrere**	**Tabulate d value**	**Level of significance**
		F	F	f	F				
Dietary Pattern	Vegetarian	0	2	3	4	3	0.95	7.82	NS
	Mixeddiet	2	5	6	8				
IfVegetarian, howoftenwillyoutak efrieditems andsweet?	Daily	0	1	1	2	6	0.81	12.59	NS
	Weeklyonce	0	1	1	2				
	Monthlytwice	0	0	1	0				
IfNon-Vegetarian/Mixed, howoftenwillyoutak	Daily	1	1	3	3	6	0.93	12.59	NS
	Weeklyonce	0	2	1	3				
	Monthlytwice	1	2	2	2				

efrieditems andsweet?									
Doyou Performexercise	Yes	0	4	3	4	3	0.62	7.82	NS
	No	2	3	6	8				
Ifyes, How Often will you exercise	Daily	0	2	0	1	3	0.51	7.82	NS
	Occasionally	0	2	3	3				
Duration of Exercise	30 minutes	0	3	2	0	6	0.62	12.59	NS
	45 minutes	0	1	0	2				
	>1 hours	0	0	1	2				

DEMOGRAPHICVARIABLES		**Low Blood Glucose**	**Nor mal Blood Glucose**	**Boder Blood Glucose**	**High Blood Glucose**	**Df**	**Chi sqrere**	**Tabulated value**	**Level of significance**
		F	f	f	F				
Whichtype of Workout you are performing?	Secondary Work out	0	2	4	8	6	0.32	12.59	NS
	Moderatework out	1	5	4	3				
	Heavyworkout	1	0	1	1				
Tyeof Obesity	Noobese	0	1	0	1	9	0.8	16.92	NS
	Class1:BMI of 30 to <35	2	3	3	2				
	Class2:BMI of 35 to <40	0	2	4	6				
	Class3:BMI of >40	0	1	2	3				

Section 9: Association of pre-test of blood glucose among Type II Diabetes Mellitus clients with selected clinical variables in experimental group.

N-60

CLINICAL VARIABLE		Low Blood Glucose	Nor mal Blood Glucose	Bode r Blood Glucose	High Blood Glucose	D f	Chi-squere	Tabulated	Inference
		f	f	F	f				
Ageof onset of Diabetes Mellit us	30-39 years	1	1	1	7	9	0.42	16.92	NS
	40-49 years	0	3	4	4				
	50-59 years	0	2	4	1				
	>60 Yeas	0	1	0	1				
Duration of Diabetes mellitus	<1year	0	2	4	6	9	0.99	16.92	NS
	2-3year	1	3	3	4				
	4-5year	0	1	1	2				
	>5year	0	1	1	1				
Is there any family history	Yes	1	5	5	8	3	0.88	7.82	NS
	No	0	2	4	5				
If yes, mention the relations hip	Grandfa ther	0	0	0	1	9	0.9	16.92	NS
	Grandm other	1	1	1	1				
	Father	0	2	2	3				
	Mother	0	2	2	3				

CLINICAL VARIABLE		Low Blood Glucose	Nor mal Blood Glucose	Bode r Blood Glucose	High Blood Glucose	D f	Chi-squere	Tabulated	Inference
		f	f	F	F				
Typeof medicine for Diabetes mellitus	Glimepiride	0	1	1	5	6	0.46	12.59	NS
	Metformin	1	4	4	8				
Timeof medication consumption	One timein aday	0	2	2	5	6	0.72	12.59	NS
	Two timein a day	1	4	7	8				
	Three timein aday	0	1	0	0				
Areyou on regular Treatment	Yes	1	6	9	10	3	0.74	7.82	NS
	No	0	1	0	3				

If yes, Mention the Typeof treatment	Ayurvedic	0	0	1	0	6	0.82	7.82	NS
	Allopathic	1	5	8	7				
	Homeopathic	0	1	0	3				
	Any other	0	0	0	0				

Section 10: Association of pre-test of blood glucose among Type II Diabetes Mellitus clients with selected clinical variables in control group.

N-60

CLINICAL VARIABL ES		**Low Blood Glucose**	**Nor mal Blood Glucose**	**Bode r Blood Glucose**	**High Blood Glucose**	**Df**	**Chi square**	**Tabulated value**	**Inference**
		F	f	f	f				
Ageof onset of Diabetes Mellit us	30-39 yea rs	1	2	1	3	9	0.8	16.92	NS
	40-49 yea rs	1	4	2	5				
	50-59 yea rs	0	1	4	3				
	>60 yeas	0	0	2	2				

Duration of Diabetes mellitus	<1year	0	0	1	2	9	0.94	16.92	NS
	2-3year	1	2	2	1				
	4-5year	1	3	4	4				
	>5year	0	2	2	5				
Isthere any family history	Yes	1	5	6	6	3	0.77	7.82	NS
	No	1	2	3	6				
If yes, mention the relation ship	Grandfather	0	2	3	0	9	0.25	16.92	NS
	Grandm other	0	0	2	3				
	Father	0	3	1	2				
	Mother	1	0	0	1				
Typeof medication consumption	Glimepiride	0	2	1	2	6	0.89	12.59	NS
	Glipizide &combination	0	1	2	4				
	Metformin	2	4	6	6				

Timeof medication consumption	One timein aday	0	3	3	3	6	0.84	12.5	NS
	Two timein a day	1	1	1	4				
	Three timein aday	1	3	5	5				
Areyou on regular Treatment	Yes	0	2	1	5	3	0.44	7.82	NS
	No	2	5	8	7				
If yes, Mention the Typeof treatment	Ayurvedic	0	2	0	1	3	0.51	7.82	NS
	Allopathic	0	2	3	3				
	Homeo pathic	0	0	0	0				
	Any other	0	0	0	0				

DISCUSSION

In the present study the comparison of post-test level of blood glucose between experimental group and control group of clients with Type II Diabetes Mellitus attending in selected areas of Daman is evaluated.

This study was conducted using quasi-experimental non-randomized control group pre-test post-test design. 60 samples were selected based on selection criteria. The data was statistically analyzed and the findings were discussed under the objectives formulated by the researcher.

The result found that there is no any significant decreased in level of blood glucose among clients with Type II Diabetes Mellitus undergoing consumption of alkaline water in experimental group.

The data finding has been organized nd discussed under the following section:

Section 1: Frequency and percentage distribution of demographic and clinical variables of Type II Diabetic Mellitus clients in experimental and control group

1. AGE(inyear)

The data related to age of clients shows that, in the experimental group majority 11(36.67%) clients age group between 40-49 years and in the control group majority 12(40.00%) clients age group between 50-59 years.

2. GENDER

The data related to gender of clients shows that, in the experimental group majority 12(40.00%) belonged with male gender and in the control group majority 17(56.67%) belonged with female gender.

3. IF VEGETARIAN, HOW OFTEN YOU WILL TAKE FRIED ITEMS AND SWEETS?

The data shows that, in experimental group majority 13(43.33%) clients take fried items and sweets monthly once and in control group majority 4(13.33%) clients take fried items and sweets daily and 4(13.33%) were weekly once.

4. IF NON-VEGETARIAN, HOW OFTEN YOU WILL TAKE FRIED ITEMS AND SWEETS?

The data showsthat, in experimental group majority6(20.00%) client takefried items and sweet monthly once and in control group majority 8(26.67%) clients take fried items and sweet daily.

5. DOYOUPERFORMEDEXERCISE?

The data related to performed exercise shows that, in experimental group majority 23(76.67%) clients were performed exercise and in control group majority 19(63.33%) clients were not performed exercise.

6. IFYES, HOW OF TEN YOU WILL PERFORMED EXERCISE?

The data shows that, in experimental group majority 18(60.00%) clients performed daily exercise and in control group majority 8(26.67%) clients performe doccasionally exercise.\

7. DURATION OF EXERCISE

The data related to duration of exercise shows that, in experimental group majority 12(40.00%) were>1hourand in control group majority 5(16.67%) were 30 minutes of exercise.

8. WHICH TYPE OF WORK OUT YOU ARE PERFORMING?

The data related to type of work out performed shows that, in experimental group majority 12(40.00%) were heavy work out performed by clients and in control group majority 14(46.67%) were secondary work out performed by clients.

9. TYPEOFOBESITY

The data related to obesity shows that, in experimental group majority 15(50.00%) were class1:BMI of 30to<35 and in control group majority12(40.00%)wereclass2:BMI of 35 to < 40.

10. AGE OF ON SET OF DIABETES MELLITUS

The datarelated to age of onset of diabetes mellitus shows that, in experimental group majority 11(36.67%) belongs to age between 40-49year sand in control group majority 12(40.00%) belongs to age between 40-49 years.

11. DURATIONOFDIABETES MELLITUS

The data related to duration of Type II Diabetes Mellitus shows that, in experimental group majority 12(40.00%) belongs to <1 years and in control group majority 12(40.00%) belongs to 4-5 years.

12. IS THERE ANY FAMILY HISTORY OF DIABETES MELLITUS?

The data related to family history shows that, in experimental group majority 19(63.33%) belongs to yes and in control group majority 18(60.00%) belongs to yes.

13. IFYES, MENTION THERE LATIONSHIP

The data related to family relationship shoes that, in experimental group majority 7(23.33%) belongs with father and mother and in control group majority 6(20.00%) belongs with father.

14. TYPE OF MEDICATION FOR TYPE II DIABETES MELLITUS

The data related to type of medication shows that, in experimental group majority 17(56.67%) belongs with Table Metformin and in control group majority 18(60.00%) Tablet Metformin.

15. AREYOUONREGULAR TREATMENT

The data related to regular treatment shows that, in experimental group majority 26(86.67%) belongs with get regular treatment and in control group majority 22(73.33%) belongs with not get regular treatment.

16. TYPEOFTREATMENT

The data related to treatment shows that, in experimental group majority 21(70.00%) belongs with all opathic treatment and in control group majority 5(16.67%) belongs with allopathic treatment**.**

Section 2: Analysis of pre-test and post-test level of blood glucose among Type II Diabetes Mellitus clients in experimental group and control group

This section deals with the assessment of pretest and posttest level of blood glucose among Type II Diabetes Mellitus clients in selected areas of Daman.

In this experimental group the pre-test level of the blood glucose among client with Type II Diabetes Mellitus were checked. Among the samples, 1(3.33%) has low level of blood glucose, 7(23.3%) has normal level of blood glucose, 9(30%) has border line level of blood

glucose, 13(43.3%) has poor level of blood glucose.

In this control group the pre-test level of the blood glucose among client with Type II Diabetes Mellitus were checked. Among thesamples,2(6.66%)has low level of blood glucose, 7(23.3%) has normal level of blood glucose, 9(30%) has border line level of blood glucose, 12(40%) has poor level of blood glucose.

In this experimental group the post-test level of the blood glucose among client with Type II Diabetes Mellitus were checked. Among the samples, 17(56.66%) has low level of blood glucose, 13(43.3%) has normal level of blood glucose, 0(0.00%) has border line level of blood glucose, 0(0.00%) has poor level of blood glucose.

In this control group the post-test level of the blood glucose among client with Type II Diabetes Mellitus were checked. Among the samples, 1(3.33%)has low level of blood glucose, 9(30%) has normal level of blood glucose, 15(50%) has border line level of blood glucose, 5(16.7%) has poor level of blood glucose.

Hence the assessment of blood glucose level among TypeII Diabetes Mellitus client's pre-test and post-test level at 0.05 level of significance is rejected.

Section 3: Comparison of pre-test and post-test blood glucose level among Type II Diabetes Mellitus clients in experimental and control group

The calculate t- value (14.26) of pre-test of blood glucose among client with diabetes mellitus type II and t-value (2.69) of post-test of blood glucose among client with diabetes mellitus type II. Hence the research hypothesis there is a significant mean difference in the pretest and posttest blood glucose level among client with type II diabetes mellitus inexperimental group and control group at 0.05levelofsignificantis Accepted.

Section 4: Evaluate the effectiveness of alkaline water in reducing blood glucose among Type II Diabetes Mellitus clients in selected areas of Daman in experimental group

In the present study the calculated' value 16.04 is more than the table value 1.67. Therefore, researcher concluded that there is significant difference in the posttest score in experimental and control group. In experimental group the mean blood glucose score was 177.93 (SD=9.46) was less than control group mean blood glucose score 207.37(SD=16.53) and the't'value16.04(t0.5,58=1.67)shows the significant effect of alkaline water.

Section 5: Association of pre-test level of blood glucose among Type II Diabetes Mellitus clients with selected demographic variables and clinical variables in experimental group and control group

The variables such as age, gender, education status, exercise, diet has no any association with the level of blood glucose, family history, duration of diabetes mellitus, age of onset of diabetes mellitus has shown significant association with the level of blood glucose among Type II Diabetes Mellitus at 0.05 level of significant is rejected.

CONCLUSION

The study brought out the following conclusion.

1) The blood glucose level of Type II Diabetes Mellitus in the posttest was significantly lower than the pretest.
2) There was significance positive correlation between the pre and post test scores of blood glucose among the clients with Type II Diabetes Mellitus.
3) There was a not significant association between pretest blood glucose level and the demographic variable and clinical variable.

The study was conducted to find the effectiveness of alkaline water consumption on the clients with Type II Diabetes Mellitus. so the investigator concluded that the alkaline water consumption was an appropriate method to reduce Type II Diabetes Mellitus.

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