ISSN (Online): 2455-3662
EPRA International Journal of Multidisciplinary Research (IJMR) - Peer Reviewed Journal
Volume: 8| Issue: 3| March 2022|| Journal DOI: 10.36713/epra2013 || SJIF Impact Factor 2022: 8.205 || ISI Value: 1.188

ASSESS THE KNOWLEDGE ON HEALTH BENEFITS OF FLAX SEEDS TO MAINTAIN THE BLOOD GLUCOSE LEVEL AMONG TYPE II DIABETIC CLIENTS

[1*]Angelin Lavanya. P, [2]Shalini.D, [3]Shalini.V, [4]Sharmila.J

[1]Assistant Professor, Department of Mental Health Nursing, Saveetha College of Nursing, SIMATS, Chennai, India.
[2]B.Sc (N) IV Year, Saveetha College of Nursing, SIMATS, Chennai, India.

[*]Corresponding Author

ABSTRACT

Background

Diabetes is a group of metabolic diseases Characterized by the increased levels of glucose in the blood (hyperglycemia) resulting from defects in insulin secretion, insulin action, or both.India has the world's second largest number of individuals living with the diabetes. Type IIdiabetic is the extremely common problem in Indian population. Diabetic ketoacidosis is a serious condition that can lead to diabetic coma (passing out for a long time) or even death.Type 1 diabetic present in children and adolescents, type II Diabetic thought affected to middle- aged group and therefore each type has various etiological factors and treatments.Flax seeds can be a beneficial and nutritious addition to the diet of people with diabetes. Flaxseed is a good source of dietary fiber and omega-3 fatty acids. The fiber in flaxseed is found primarily in the seed coat.For diabetes there is 10-60 grams of whole or ground flaxseed have been taken daily for up to 48 weeks.

Objectives

- *To assess the level of knowledge on Diabetes mellitus.*
- *To assess the knowledge on health benefits of flax seeds to maintain blood glucose among diabetic clients.*
- *To find the association between level of knowledge on flax seeds among diabetic clients with elected demographic variables.*

Methodology

A descriptive research design with convenience sampling technique was adopted to conduct a study among 30 type II diabetic clients. Data was gathered by using self-structured questionnaires. Confidentiality was maintained throughout the procedure. Collected data were analyzed by using descriptive and inferential statistics.

Result

Among 30 type II diabeticclients the level of knowledge on general information, 3(10%) had inadequate knowledge, 18(60%) had moderate knowledge and 9(30%) had adequate knowledge. The results which shows that the demographic variables duration of illness had shown statistically significant association with level of knowledge on flax seeds among type II diabetes clients at $p<0.05$ level and the other demographic variables had not shown statistically significant association with level of knowledge on flax seeds among type II diabetic clients.

Conclusion

These studies concluded that there is statistically significant association with the level of knowledge on health benefits of flax seeds.

KEY WORDS: *Assess, Knowledge, flax seeds, Health benefits, Type II diabetic Clients.*

INTRODUCTION

"Prevent diabetes, protect our future"-WHO

Diabetes is a silent disease and is now recognized as one of the fastest growing threat to public health in almost all countries of the World. It is also called the disease of prosperities. Prevention is better than cure and is less expensive [1]. The long-term complications associated with diabetes are well-known; researchers today have found that long-term damage, especially to the cardiovascular system, starts early in the prediabetes period [2].

Around 150 Million people suffer from diabetes in the World out of which above 35 million are Indians the highest in any country. Every fifth person who suffers from diabetes in the world today is an Indian [3].

By 2030 Indian will have 79.4 Million diabetic projects the WHO (Word Health Organization) that's more than twice the current number over 35million cases. No wonder India is the Diabetic Capital of the World [4]. Furthermore, studies have shown that diets rich in omega-3 fatty acids improve insulin sensitivity (IS) and glycemic control [5].Effective and early

ISSN (Online): 2455-3662
EPRA International Journal of Multidisciplinary Research (IJMR) - Peer Reviewed Journal
Volume: 8| Issue: 3| March 2022|| Journal DOI: 10.36713/epra2013 || SJIF Impact Factor 2022: 8.205 || ISI Value: 1.188

interventions including lifestyle modification and medication prevent or delay the onset of diabetes [6].

Flaxseed is a well-known seed due to its excellent source of lignan and n-3 fatty acid. Its lignan, secoisolariciresinol diglucoside, is an active ingredient, with antioxidant effect [7].Flaxseed as a functional food [8].Could increase fiber content, antioxidants, and omega-3 and, thus, be an effective intervention in prediabetes [9]. Flaxseed is a promising alternative to reduce the risk of diseases associated with increased body weight [10].Few studies have demonstrated the positive role of flaxseed supplementation in improving inflammation, glycemic status, and oxidative stress among diabetic clients.[11].

Flaxseed influences control blood glucose levels and inflammatory biomarkers in obese glucose intolerant people [12]. In addition flaxseed contains soluble viscous fibers that lower the glucose response to carbohydrate containing food by delaying gastric emptying and glucose absorption [13]. Flaxseed is considered one of the "nutraceuticals" as it is a type of food and at the same time, has health benefits. Hat (hypoglycemic assessment tool) is in terms of controlling and regulating blood sugar and serum lipid when it is added to diabetic clients food regimen. Secondary to that, it can decrease the risk of developing cardiovascular disease. Many studies still need to find out the ideal dose that should be used for maximum benefit [14].

MATERIALS AND METHODS

A descriptive research design was used to assess the impact the covid 19 lockdown lifestyle behavior changes among school age children. This study was conducted in Edyarpakkam village located at sunguvachathiram inKancheepuram. The total sample size is 30 who all are met the inclusion criteria. Convenient sampling technique was used to collect the data from sample. The inclusion criteria clients with the age group of between 30 to 70 years. Those who are willing to participate in the study. Those who are available during the data collection. The clients who all are able to speak or read Tamil. Those who are not willing to participate in the study were excluded. Explained about the study and informed consent was obtained. Data was collected by self-structured questionnaires. Confidentiality was maintained throughout the study. Collected data were analyzed by using descriptive and inferential statistics. The project has been approved by the Ethics Committee of the Institution.

RESULTS AND DISCUSSION

SECTION 1: Description of sample characteristics

Majority of the type II diabetes clients out of 30 samples, 15(50%) were aged between 51 – 65 years, 18(60%) were male, 16(53%) were Hindu, 14(47%) were studied primary level, 13(43%) were daily wager, 12(40%) had type II Diabetes for 4 - 6 years.

SECTION II:ASSESSMENT OF LEVEL OF KNOWLEDGE ON FLAX SEEDS AMONG TYPE IIDIABETIC CLIENTS

Table I: Frequency and percentage distribution of level of knowledge on flax seeds among type II diabetic clients.

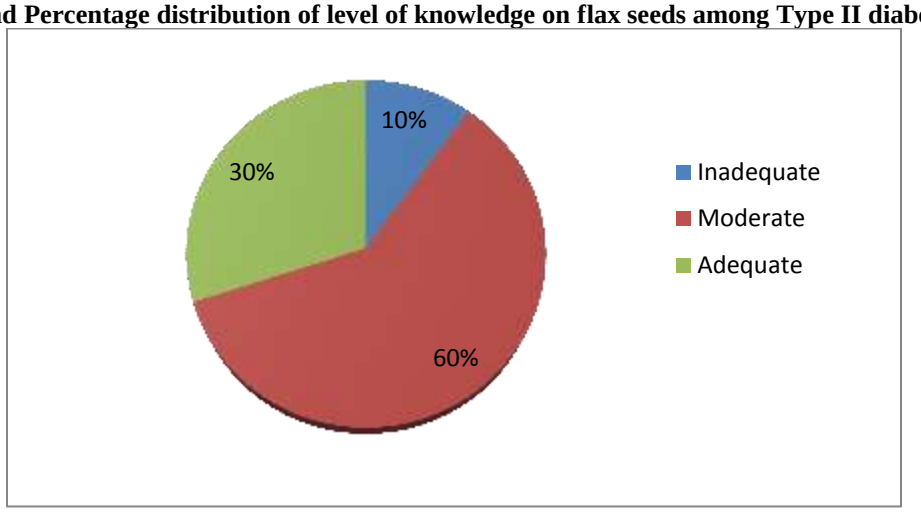
LEVEL OF KNOWLEDGE ON FLAX SEEDS	FREQUENCY	PERCENTAGE
Inadequate	3	10%
Moderately Adequate	18	60%
Adequate	9	30%

This data represented in the table 1 show that the level of knowledge on health benefits of flax seeds on Diabetic. Out of 30 samples 3(10%) have inadequate knowledge, 18(60%) have moderate knowledge and 9(30%) have adequate knowledge on level of knowledge on flax seeds among type IIdiabetic clients.

The present study was supported by **Thakur Goutam, Mitra Analava, pal kunal(2020)** conducted the study was the effects of ingestion of flaxseed gum on blood glucose and cholesterol, particularly low-density lipoprotein cholesterol, in type II diabetes were evaluated. Flaxseed gum was incorporated in wheat flour chapattis. The blood biochemistry profiles monitored before starting the study and at monthly intervals showed fasting blood sugar in the experimental group decreased from 154+/-8 mg/dl to 136+/-7 mg/dl (P=0.03) while the total cholesterol reduced from 182+/-11 mg/dl to 163+/-9 mg/dl (P=0.03). Results showed a decrease in low-density lipoprotein cholesterol from 110+/-8 mg/dl to 92+/-9 mg/dl (P=0.02). The study demonstrated the efficacy of flax gum in the blood biochemistry profiles of type II diabetes.

ISSN (Online): 2455-3662
EPRA International Journal of Multidisciplinary Research (IJMR) - Peer Reviewed Journal
Volume: 8| Issue: 3| March 2022|| Journal DOI: 10.36713/epra2013 || SJIF Impact Factor 2022: 8.205 || ISI Value: 1.188

Figure 1: Frequency and Percentage distribution of level of knowledge on flax seeds among Type II diabetic clients



SECTION III: To determine the impact of level of knowledge on Health benefits of flax seeds among Type II diabetic clients

To find out the significant mean difference between the level of knowledge on Health benefits of flax seeds among Type II diabetic clients

S. No.	Demographic Variables	Inadequate		Moderate		Adequate		Chi-Square Value
		No.	%	No.	%	No.	%	
1.	**AGE**							χ^2=2.446 d.f=2 p = 0.294 ***N.S**
	a) 26-40 years	0	0	3	10	0	0	
	b) 41-50 years	1	3.3	6	20	3	10	
	c) 51-65 years	2	6.6	11	36.6	4	13.3	
2.	**GENDER**							χ^2=0.257 d.f=2 p = 0.879 ***N.S**
	a) Male	2	6.6	12	36.6	5	16.6	
	b)Female	1	3.3	7	23.3	3	10	
3.	**RELIGION**							χ^2=2.909 d.f=3 p = 0.406 ***N.S**
	a) Hindu	2	6.6	11	36.6	4	13.3	
	b) Christian	1	3.3	7	23.3	3	10	
	c) Muslim	0	0	2	6.6	0	0	
4.	**EDUCATIONAL STATUS**							χ^2=5.878 d.f=4 p = 0.208 ***N.S**
	a) Primary	2	6.6	10	33.3	4	13.3	
	b) Secondary	1	3.3	7	23.3	3	10	
	c) Graduate	0	0	3	10	0	0	
5.	**OCCUPATION**							χ^2=6.553 d.f=4 p = 0.161 ***N.S**
	a) Daily wager	1	3.3	9	30	4	13.3	
	b) Government employee	0	0	5	16.6	0	0	
	c) Private employee	1	3.3	7	23.3	3	10	

ISSN (Online): 2455-3662
EPRA International Journal of Multidisciplinary Research (IJMR) - Peer Reviewed Journal
Volume: 8| Issue: 3| March 2022|| Journal DOI: 10.36713/epra2013 || SJIF Impact Factor 2022: 8.205 || ISI Value: 1.188

6.	**DURATION OF ILLNESS**							χ^2=10.474 d.f=4 p = 0.033 **S***
	a) <1 year	0	0	2	6.6	0	0	
	b) 1-3 years	1	3.3	6	20	3	10	
	c) 4-6 years	2	6.6	8	26.6	4	13.3	
	d) 7-9 years	0	0	4	13.3	0	0	

TABLE II: The distribution of mean and standard deviation of level of knowledge on flax seeds among type II diabetes clients.

N= 30

LEVEL OF KNOWLEDGE ON FLAX SEEDS	MEAN	STANDARD DEVIATION
Inadequate	7.82	2.88
Moderately Adequate	10.70	1.91
Adequate	8.90	2.49

This study shows the mean and standard deviation of level of knowledge on flax seeds among type II diabetes clients. The mean score for inadequate knowledge is (7.82), moderate knowledge is (10.72) and adequate knowledge is (8.90) and standard deviation score for inadequate knowledge is (2.88), moderate knowledge is (1.91) and inadequate knowledge is (2.49).

The present study was supported by **Balawi,Ree Diri, Mohsen et,al..,** (2020) September,conducted a study was Lack of clients education and knowledge about these complications can worsen the quality of a clients life. Hence, more efforts are needed to improve client's education especially in rural areas. Aim. Our objective is to explore the association between demographic variables and the knowledge of self-care practices in type IIdiabetes. Methods. We used observational cross-sectional descriptive study using a validated self-administered questionnaire both Arabic and English languages as well. A descriptive correlation design analyzed the questionnaire completed by a convenience sample meeting the inclusion criteria. Results. A total of 100 clients met the inclusion criteria for the analysis out of 3251 clients who completed the questionnaire. The study population has low moderate knowledge in diabetes, moderate knowledge in self-care practices, and good knowledge about complications of nephropathy and cardiovascular disease.

SECTION IV: Association of level of knowledge with selected demographic variables

Table 3: Association of level of knowledge on Health benefits of flax seeds among type II Diabetes with their selected demographic variables.

S: Significant: N.S: Non significant

Above table reveals that, chi-square analysis was done to find out the association between the level of knowledge on flax seeds with their selected demographic variables. The findings suggested that the demographic variables duration of illness had shown statistically significant association with level of knowledge on flax seeds among type II diabetes clients at $p<0.05$ level and the other demographic variables had not shown statistically significant association with level of knowledge on flax seeds among type II diabetic clients.

CONCLUSION

These studies concluded that there is statistically significant association with the level of knowledge on health benefits of flax seeds.

ACKNOWLEDGEMENT

We would like to extend our gratitude to the authorities of Saveetha College of Nursing and Saveetha Medical College and Hospital for this study.

AUTHORS CONTRIBUTION

All the authors actively participated in the work of study. All the authors read and approved the final manuscript.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

REFERENCES

1. *Suzanne C .Smeltzer, Brenda G.Bare. Text book of medical surgical nursing. 10th edition Philadelphia. Latin cott. 2004. 1194- 1195.*
2. *Pan A, Demark-Wahnefried W, et al., Effects of a flaxseed-derived lignan supplement on C-reactive protein, IL-6 and retinol-binding protein 4 in type II diabetic clients. Br J Nutr. 2009; 101:1145–9.*
3. *Lalitha Sridhar. A major health problem; with study establishing the overall prevalence of diabetes in India at 12.1 percent in adults. The Hindu business line 2009 August 04: Section A; 1 (CD -2)1-4.*
4. *Altaflal A. Defeat diabetes: 70% leg amputation due to diabetes. Us post 2010. May 2: Section A; 11 of 2.*
5. *Nettleton JA, Katz R. N-3 long-chain polyunsaturated fatty acids in type II diabetes: A review. J Am Diet Assoc. 2005; 105:428–40.*
6. *Zhang P, Engelgau MM, Valdez R, Benjamin SM, Cadwell B, Narayan KM. Costs of screening for pre-diabetes among US adults: A comparison of different screening strategies. Diabetes Care. 2003;26:2536–42*

ISSN (Online): 2455-3662
EPRA International Journal of Multidisciplinary Research (IJMR) - Peer Reviewed Journal
Volume: 8| Issue: 3| March 2022|| Journal DOI: 10.36713/epra2013 || SJIF Impact Factor 2022: 8.205 || ISI Value: 1.188

7. *Taylor CG, Noto AD, Stringer DM, Froese S, Malcolmson L. Dietary milled flaxseed and flaxseed oil improve N-3 fatty acid status and do not affect glycemic control in individuals with well-controlled type II diabetes. J Am Coll Nutr. 2010; 29:72–80.*
8. *Mazza G, Biliaderis C. Functional properties of flax seed mucilage. J Food Sci. 2006; 54:1302–5.*
9. *Mozaffari-Khosravi H, Javidi A, Nadjarzade A, Dehghani A, Eftekhari M. The effect of consumption of two various dose of flaxseed on anthropometric indices and oxidative stress in overweight and obese prediabetic individuals: A randomized controlled trial. TB; 2016; 14:68–78.*
10. *AM Machado, H Paulo, LD Cardoso et.al., " Effects of brown and golden flaxseed on the lipid profile, glycaemia, inflammatory biomarkers, blood pressure and body composition in overweight adolescents" Nutri 31;90-91.*
11. *Pan A, Sun J, Chen Y, Ye X, Li H, Yu Z, et al. Effects of a flaxseed-derived lignan supplement in type II diabetic clients: A randomized, double-blind, cross-over trial. PLoS One. 2007; 2:e1148.*
12. *Y Rhee, Brunt A (2011) Flaxseed supplementation improved insulin resistance in obese glucose intolerant: A randomized crossover design Journal of Nutrition10: 44.*
13. *M Baranowski, J Enns, et.al. (2012) . Dietary Flaxseed oil reduces adipocyte size, adipose monocyte chemo attractant protein -1 levels and T- cell infiltration in obese, insuling resistant rats. Cytokine 59:382-391.*
14. *P scicchitano, Cameli M et.al. (2014) Nutraceuticals and dyslipidaemia. Beyond the common therapeutics 6:11-32.*