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EFFECT OF NUTRITION TOMBONG COCONUT (KENTOS) NORMAL BLOOD SUGAR LEVELS ON THE ELDERLY IN THE VILLAGE PITU TOBELO DISTRICT NORTH CENTRAL DISTRICT HALMAHERA

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ARTICLE INFO

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ABSTRACT

Blood sugar is the simplest form of carbohydrate that are absorbed into the blood fluid through the digestive system. To determine the effect of nutrition tombong coconut (kentos) to normal blood sugar levels in elderly using non-probability way side. The samples used were 20 people, with a comparator 10 samples for the experimental group and 10 control group. Based on the known output value of significance (Sig.) For all data either on the Kolmogorov-Smirnov test and Shapiro-Wilk test> 0.05 it can be concluded that the research data is not normally distributed. Then do tests on non-parametric Wilcoxon statistical test known by output Asymp.Sig (2-tailed) worth 0,000. Because the value of 0,000 is less than <0.05, it can be concluded that there are significant nutritional coconut tombong (Kentos) to normal blood sugar levels in the elderly. The researchers advise these results can be discussion of scientific thought.

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INTRODUCTION

Blood sugar is the simplest form of carbohydrate that are absorbed into the blood fluid through the digestive system. The concentration of blood glucose is essential is maintained at high enough levels and a stable of about 70-120 mg / dl to maintain brain function optimally and supply network. Blood glucose levels

also need to be kept from rising too high given glucose also affect the osmotic pressure of the extracellular fluid. In normal circumstances such a blood glucose regulated by insulin, so that the levels are always within normal limits, the blood glucose level is always stable at about 70-140 mg / dl. When the blood sugar in the body increases and exceeds the normal limits will result in the risk of developing diabetes (Henrikson & Bech-Nielsen, 2009).

Blood sugar levels is a term that refers to glucose levels in the blood whose concentration is strictly regulated by the body. Glucose that circulate through the blood is the main source of energy for cells - the cells of the body. Generally, blood glucose levels persist in the limits of 4-8 mmol / L / day (70-150 mg / gl), these levels increased after meals and usually lowest level in the morning before people - those foods (Mayes 2001) ,

When blood sugar levels above or below the normal limit then the system will be disturbed metabolism in the body. Normal human blood containing glucose in an amount or a fixed concentration of between 70-100 mg per 100 ml of blood. This increased blood glucose after you eat carbohydrates, but approximately two hours after that, the amount of blood glucose will go back to the original condition. One example of a disease caused by abnormal glucose levels is diabetes mellitus. Diabetes mellitus or more commonly known as diabetes is a disease caused by a disorder of the pancreas, the organ that produces insulin regular and very important role in the metabolism of glucose to the body cells. Someone with diabetes mellitus are always marked by elevated blood sugar (hyperglycemia) and high levels of sugar in the urine. In people who suffer from diabetes mellitus or diabetes, the amount of blood glucose greater than 130 mg per 100 ml of blood (Soegondo, Soewondo and Subekti, 2009).

Sui and Chandra research results showed that coconut has ditunaskan for 30 days in the flesh of the fruit contains lipasae kentos and buds with a variety of interests. The highest activity contained in the bud then kentos and meat amounted to 0.4497: 0.4477 and 0.1862 μ mol / ml / hr. Results fractionated coconut kentos lipase showed that the highest activity in fractions 0-30% with the activity of 0,049 μ mol / ml / hr (Sui and Chandra, 2008)

Data prevalence of normal blood sugar levels in elderly age in the village sub-district Pitu Tobelo northern Halmahera district middle range anatara 10% aged 60-61 years and 10% aged 62-65 years.

METHODS

This research is a quantitative treatment by using quasy Experiment Design Control Group with the design of pretest and posttest Control Group is to divide the two groups of experiments. Measurements were made one measurement before (pretest) for the two groups, and then do the treatment in the first group (experimental group) and the second group (control group) was not treated. After it was measured again (posttest) in both groups to see the comparison of kolestrolemia in the treated group (experimental group) and the untreated group (control group). The study design is described as follows:

Pretest		Posttest
O_1	X	O_3
O_2		O_4

Information :

O1 = The measurement results of normal blood sugar levels before taking tombong coconut in the intervention group (Experiment).

O2 = Results of measurement of blood sugar levels in the control group.

X = Intervention tombong consumption of coconut.

O3 = Results of measurement of blood sugar levels after eating coconut tombong intervention group (Experiment).

O4 = Results of measurement of blood sugar levels in kelomppok control.

RESULTS

This study was conducted on 09 July to 15 July 2018 will be undertaken through direct interviews with respondents. This type of research that is used is an experimental study and were divided into two groups: the intervention group and the control group with a view to knowing apakaha No Effect of Nutrition tombong Coconut (Kentos) Against Blood Sugar Levels Normal On Elderly In Rural Pitu District of Tobelo Central North Halmahera, the data obtained from these results we can at present descriptively in bentk tables as follows:

Table 1. Distribution of Ferkuensi Characteristics of Respondents by Gender In the village Pitu Tobelo District of the Middle District of North Halamhera.

No.	Gender	Frequency	Presentation
1	Man	12	60%
2	Woman	8	40%
	Total	20	100%

The Primer 2018 data sources.

According to the table above, looks down respondents consisting of Man of 12 respondents (60%), while the Woman respondents 8 respondents (40%). These results showed lower number of respondents Man more than Woman.

Table 2. Distribution Ferkuensi Characteristics of Respondents by Age In the village Pitu Tobelo District of the Middle District of North Halamhera.

No.	Age	Frequency	Presentation
1	60-61	7	35%
2	62-63	6	30%
3	64-65	7	35%
	Total	20	100%

The Primary data source in 2018.

According to the table above, looks down the respondents aged 60-61 years as many as 7 people (35%), and the age of 62-63 years as many as 6 people (30%), while the age of 64-65 years as many as 7 people (35%).

Table 3. Distribution Characteristics of Respondents by education Ferkuensi In the village Pitu Tobelo District of the Middle District of North Halamhera.

No.	Education	Frequency	Presentation
1	SD	10	50%
2	SMP	7	35%
3	High School	3	15%
	Total	20	100%

The Primary data source in 2018.

Based on the above table, visible below the level of primary education as many as 10 people (50%), education level SMP as mach 7 (35%), then the level of high school education for 3 people (15%).

Table 4. Distribution Characteristics of Respondents by job Ferkuensi In the village Pitu Tobelo District of the Middle District of North Halamhera.

No.	Jobs	Frequency	Presentation
1	Farmer	10	50%
2	IRT	4	20%
3	Entrepreneur	6	30%
	Total	20	100%

The Primary data source in 2018

Based on the above table is the highest level of job Farmer 10 people (50%), IRT 4 people (20%), Entrepreneur 6 people (30%)

Table 5. Frequency Distribution of Respondents Group Experiments Pre and post test Pitu In the village of the District Central Tobelo 2018.

No.	code R	pre Post	Post Test
1	1	80 mg / dL	89 mg / dL
2	1	89 mg / dL	95 mg / dL
3	1	80 mg / dL	88 mg / dL
4	1	85 mg / dL	93 mg / dL
5	1	89 mg / dL	95 mg / dL
6	1	80 mg / dL	88 mg / dL
7	1	80 mg / dL	89 mg / dL
8	1	80 mg / dL	89 mg / dL
9	1	80 mg / dL	89 mg / dL
10	1	85 mg / dL	96 mg / dL

The Primary data source in 2018.

Based on the above table in the experimental group menunjukn presentation of the results of increased blood sugar levels, are: pre-test to 80 mg / dL post-test 89 mg / dL, pre-test 89 mg / dL post-test 95 mg / dL, pre-test to 80 mg / dL post test 90 mg / dL, pre-test 85 mg / dL, post test 93 mg / dL, pre-test 89 mg / dL post-test 95 mg / dL, pre-test to 80 mg / dL post-test 88 mg g / dL, pre test 80 mg / dL post-test 89 mg / dL, pre-test to 80 mg / dL post-test 89 mg g / dL, pre-test to 80 mg / dL post-test 89 mg / dL, pre-test 85 mg / dL post-test 96 mg / dL .

Table 6. Distribution of Respondents Frequency Control group Pre-test and post test in Pitu Rural District of Central Tobelo 2018.

No.	code R	pre test	Post test
1	2	80 mg / dL	83 mg / dL
2	2	80 mg / dL	83 mg / dL
3	2	80 mg / dL	82 mg / dL
4	2	81 mg / dL	82 mg / dL
5	2	80 mg / dL	83 mg / dL
6	2	80 mg / dL	81 mg / dL
7	2	80 mg / dL	82 mg / dL
8	2	80 mg / dL	83 mg / dL
9	2	81 mg / dL	82 mg / dL
10	2	80 mg / dL	81 mg / dL

The Primary data source in 2018.

From the above table can be seen in blood sugar levels in control groups: pre-test to 80 mg / dl post test 83 mg / dl, the pre-test to 80 mg / dl post test 83 mg / dl, the pre-test to 80 mg / dl post test 82 mg / dl , pre-test 81 mg / dl, post test 82 mg / dl, the pre-test to 80 mg g / dL post-test 83 mg / dl, the pre-test to 80 mg / dl post test 81 mg / dl, the pre-test to 80 mg / dl post test 82 mg / dl, 80 mg pre-test / post-test dl 83 mg / dl, 81 mg pre-test / post-test dl 82 mg / dl, 80 mg pre-test / post-test dl 81 mg / dl. Which blood sugar levels, pre-test and post-test is not much decreased.

Table 7. Table Statistical Result Normality.

		Tests of normality					
	Responden1	Kolmogorov-Smirnova			Shapiro-Wilk		
		Statistics	df	Sig.	statistics	df	Sig.
Hasil1	Experimental group (Pre-Test)	, 366	10	, 000	, 720	10	**.002**
	Experimental group (Post-Test)	, 482	10	, 000	, 509	10	, 000
	Control group (Pre-Test)	, 341	10	**.002**	, 792	10	, 012
	Control group (Post-Test)	, 245	10	, 091	, 820	10	**.025**

Based on the above output unknown significance value (Sig.). for all data either on the Kolmogorov-Smirnov test and Shapiro-Wilk test> 0.05 it can be concluded that the study data distribution IS NOT NORMAL. Because the research data is not normally distributed, then we can use to perform non-parametric statistical analysis of research data.

Table 10. Table Wilcoxon statistical test results.

Test Statisticsᵃ

	Post Test - Pre Test
Z	-3,932ᵇ
Asymp. Sig. (2-tailed)	0,000

a. Wilcoxon Signed Ranks Test
b. Based on negative ranks.

Based on statistical test known Asymp.Sig output (2-tailed) worth 0,000. Because the value of 0,000 is less than <0.05, it can be concluded that there are significant nutritional coconut tombong (Kentos) Against the Normal Blood Sugar Levels In Elderly.

DISCUSSION

Results of statistical test analysis (SPSS) using the non-parametric Wilcoxon test showed that the nutritional oil tombong (Kentos) has an influence Against Normal Blood Sugar Levels In Elderly in Rural Pitu.

Coconut tombong of nutritional compound (Kentos) are compounds2-Methyl-5-Furancarboxaldehyde, Oxiranes, Phenyli, 2,5 - anhydro - Dideoxyhexo 1-6 3-4, Duilose, 1-Methyl-2, Thionoxo 4.5, Dihydro - 4 Ooimidazole, 4h, Pyrans-4-One 3.5 dihydroxy - 6 - Methyl -, 4h - Pyrans - 4 One 3.5 - dihydroxy - 2 - Methyli, 5 - Formyli - 2 - Furfurylmethanoate, 2-Furancarboxaldehyde, 5 - (Hydroymethil) -, 2 - Furancarboxaldehyde, 5 (Hydroymethil), hexadecanoic acid the effect on blood sugar levels normal.

Experimental group (Pre-Test and Post-Test).
From the research results to an increase in blood sugar levels to normal in the elderly. It can be seen from the analysis of SPSS 25.0, with output-based statistical test known Asymp.Sig Wilcoxon test (two-tailed) worth 0,000. Because the value of 0,000 is less than <0.05, it can be concluded that there Effect of Nutrition tombong Coconut (Kentos) Against the Normal Blood Sugar Levels In Elderly.

CONCLUSION

Based on research, it can be concluded that:

Average - average in the experimental group before (pre-test) consumes tombong coconut (kentos) pre test blood sugar levels in a normal state, then after a given consumption tombong coconut for one week in the mornings and evenings it turns out after the re-examination (post-test) within one week of the blood sugar levels to increase.

While the control group showed no change much between pre- and post in the control group or groups without the administration of blood sugar palm tombong consumption will remain the same.

Then Ho accepted and Ha is rejected if α <0.05 in this research note that there is significant influence by giving tombong oil consumption in the elderly.

REFERENCES

1. Henrikson & Bech-Nielsen, 2009. Pdf. Pengukuran Kadar Gula Darah. http://www.google.com/guladarah.Id. (Accessed 08 Mei 2018).

2. Mayes, 2001.Pdf. Kadar Gula Darah Normal http://www.google.co/ idrepository. ump.ac.id.net

3. Soegondo, Soewondo dan Subekti, 2009.Pdf. http ://www.Jtpunimus-Gdl-Anggiwidya-8394-2 Bab 1 Pdf. (Accessed 08 Mei 2018).

4. Sui dan Chandra, 2008.Pdf. Amobilisasi enzim lipase dari kentos kelapa httpp://www.researshgate.net/publication/29830 5461. (Accessed 08 Mei 2018).

5. Al fady Moh. F. Pencegahan diabetes. http://www.google.co.id. (Accessed 08 Mei 2018).

6. Saraswati S, 2015 Diet Sehat Untuk Penyakit Asam Urat,Diabetes,Hipertensi, Dan Stroke/ Sylvia Saraswati-jokjakarta : A Plus. (Accessed 08 Mei 2018).

7. American Diabetes Association 2010. http://www.google.com. (Accessed 08 Mei 2018).

8. WHO,2015 Batas – Batas Lanjut Usia. http://bahantugas.blogspot.com. (Accessed 06 Juni 2018).

9. Suprihana,Pengaruh Konsentrasi Air Kelapa dan Lama Perendaman Terhadap Mutu Virgin Coconut Oil Dengan Metode Pengeringan,Lembaga Penelitian Universitas Widyagama,Malang 2016.

10. Warisno,Budi Daya Kelapa Genjah,Kanisus,Yonyakarta,2003,Hal 15-16

11. Suprihana,Pengaruh Konsentrasi Air Kelapa dan Lama Perendaman Terhadap Mutu Virgin Coconut Oil Dengan Metode Pengeringan,Lembaga Penelitian Universitas Widyagama,Malang 2016.

12. Tenda Et Al,Sifat Fisika Kimia Daging dan Air Buah Kelapa,Prosisiding Symposium Penelitian Dan Perkembangan Perkebunan 2009 (Cited 2017 November 03).

13. Rindangan B,Karakteristik Daging Buah Kelapa,Kesesuaian Dengan Produk Monograf Pasca Panen Kelapa,2009(Cited2017 November 03).

14. Chandra W,Aktivitas Lipase Kasar Dalam Buah Kelapa Yang Digerminasi (Ditunaskan). Laporan Penelitian Dosen Muda Dirjen DIKTI Depdiknas RI.2007.

15. Yunianta Dan Aulanniam. Aktivitas Hidrolisis Enzim Lipase Kentos Kelapa Terdapat Supstrat Minyak Kelapa.2010 Argintech 30(3): 164-167.

16. Tenda Et Al,Sifat Fisika Kimia Daging dan Air Buah Kelapa,Prosisiding Symposium Penelitian dan Perkembangan Perkebunan 2009 (Cited 2017 November 03).

17. Yisilia Hermina Latumahia. KTI. Identifikasi Senyawa Kimia Yang Terkandung Dalam Ekstrak Metanol Tombong Buah Kelapa Di Desa Wko Kecamatan Tobelo Tengah Kabupaten Halmahera Utara.2017.

18. Mapanawang Al. Riset di Bidang Kesehatan; Tobelo,Medika Mandiri Halmahera 2016.

19. Setiadi. Kosep Daan Praktis Penulisan Riset Keperawatan. Graha Yogyakarta: 2013.

20. Notoatmodjo S. Metodologi Penelitian Kesehatan: Rineka Cipta Pdf.Jakarta 2010. di Akses 17 Mei 2018.

21. Kudo S,Mapanawang Al,Sangaji A et al. Effects Of Gedi Leaves Steew On The Desrease Of Blood Sugar Level In Patients With Diabetes Mellitus International Journal Of Health Medicine And Current Research 2016 ; Vol.1 Issue 01:pp 39-43. DOI: 1,22301/IJHMCR. 2528-3189.39.

22. Aren L Mapanawang Et Al. Relationship Between Gas Aseton Concentration By Ages and Gender Types Of Diabetes Patients Using Photoacoustic Spectroscopy,International Journal Of Current Medical and Research Medicine 2018; Vol.3 Issue 01 :pp.72-776. DOI: 10.22301/IJHMCR. 2528-3189.772.

23. Kristina Febriani Kaya, Arend L Mapanawang, Santje Pangkey. Effect of Vegetal Wax (Sateria Palmifolia) Against High Blood Pressure Downstairs In Pregnant Women In Pustu Tolonuo International Journal Of Health Medicine And Current Research 2017: Vol.2 Issue 03: pp 553-557. DOI: 10.22301/IJHMCR.2528-3189.553.

24. Adrinoni Masipagunung, Averous Fabary Budiadji, Arend L Mapanawang Identification Of Docosahexaenoic Acid Compounds Contained In Methanol Laor (Polychaeta) Extract International Journal Of Health Medicine And Current Research 2017; Vol.2 Issue 02: pp 474-478. DOI: 10.22301/IJHMCR 2528-3189.474.

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