FAKULTAS KEPERAWATAN
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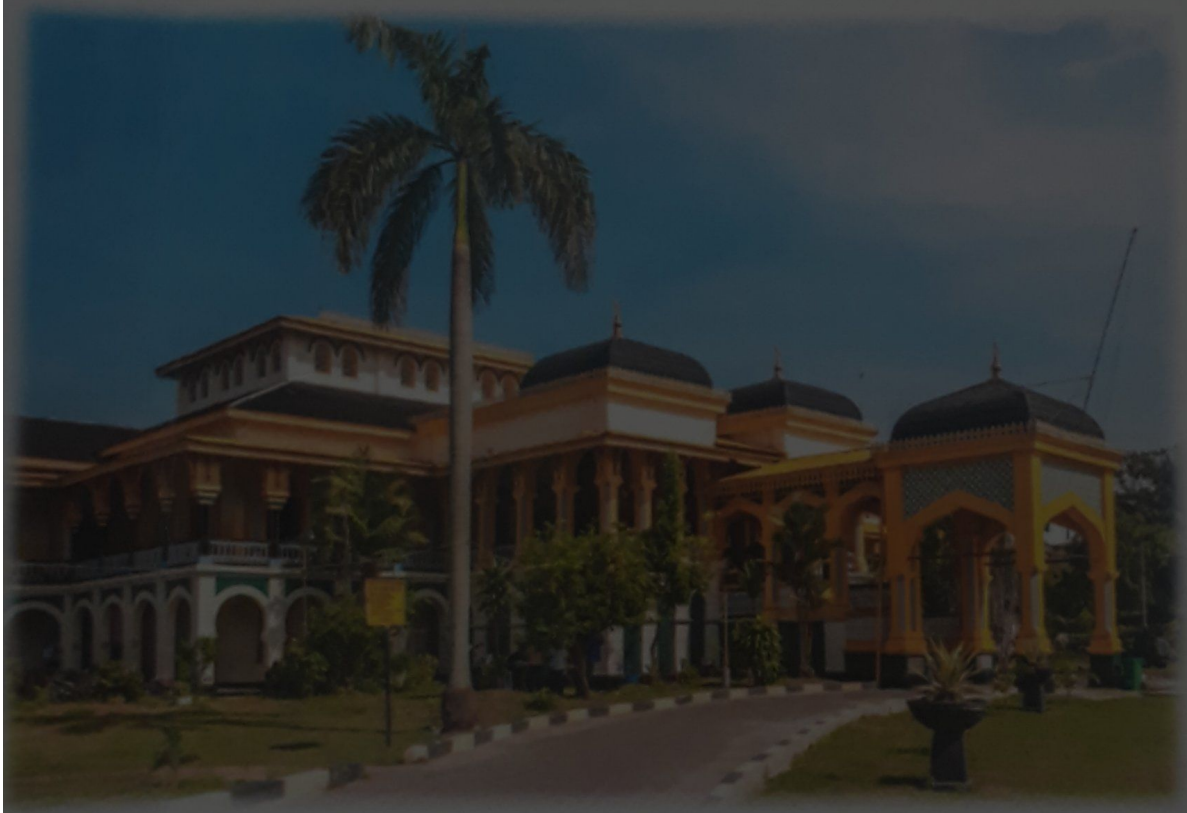
"Integrating Health Science and Technology to Enhance Quality Care World Wide"

September, 27-28, 2018 | Grandhika Medan Hotel



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IHETCSC 2018

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CONFERENCE BOOK

ORAL PRESENTATION SESION

Day 1 September 27, 2018

ORAL PERSENTATOR HARI KE1 DARI 5 RUANGAN ORAL PERSENTATOR BERJUMLAH 72 ORANG

No.	Time	Room-1 18 participants Moderator : Roxsana Devi Tumanggor,M.Nurs	Room-2 18 participants Moderator : Bina M.Girsang, S.Kep.,Ns.,M.Kep	Room-3 12 participants Moderator : Roymon Simamora,S.Kep.,Ns.,M.Kep
1.	15.00-15.10	**Yesi Hasneli Nazir-Yufitriana Amir (Unri)** Foot sensitivity improvement after apiyu foot massage in diabetes patients	**Lilis Novitarum-Pomarida Simbolon-Lena Kartika Mendrofa (STIKes Santa Elisabeth Medan)** Relationship Between Nurses' Competence In Triage With Response Time Of Nurses At Emergency Room Of Saint Elisabeth Medan Hospital	---
2.	15.10-15.20	**Linda Wati Simorangkir-Mestiana Br Karo-Lestariani Gea (STIKes Santa Elisabeth Medan)** The Laugther therapy on Anciety of The First Degree of STIKes Santa Elisabeth Medan	**Masdalifa Pasaribu-Sukma Yunita (Stikes Haji Medan)** Relationship of Family Support with Elderly Activities Following Gymnastics in Elderly Posyandu in Middle Village, Pantai Labu District, Labuhan Batu Regency, 2018.	---
3.	15.20-15.30	**Kardina Hayati-Rahmad Gurusinga-Setiawan (STIKes Medistra Lubuk Pakam)** Nurse Performance Appraisal System: A Systematic Review	**Murni Sari Dewi Simanullang-Samfriati Sinurat-Agustina Panggabean (STIKes Santa Elisabeth Medan)** Self-Efficacy And Public Speaking Anxiety In 4th Years Nursing Students	---
4.	15.30-15.40	**Walter P.H- Jenny Marlindawani Purba (RS USU Medan)** The Effect Of Spirituality Therapy And Cognitive Behavior Therapy On Quality Of Life Of Patient Undergoing Haemodialysis	**Mardiati Barus-Agustaria Ginting-Agnes Juliana Turnip (STIKes Santa Elisabeth Medan)** Cucumber Juice Therapy Reduce Blood Pressure On People With Hypertension	---
5.	15.40-15.50	**Dudut Tanjung-Ratna Sitorus-Agung Waluyo Besral (FKep USU Medan)** Barriers on performing postoperative ambulation In patients with lower extremity fractures	**Vani Olin Arysha-Heru Santosa Sri Rahayu Sanusi (FKM USU)** The Influence Of Extrinsic Motivation On Household Action In Iva Test Examination As An Early Detection Of Cervic Cancer In The Working Area Of Bandar Kalipah	---

CUCUMBER JUICE THERAPY REDUCE BLOOD PRESSURE ON PEOPLE WITH HYPERTENSION

*Mardiati Barus *Agustaria Ginting**Agnes Juliana Turnip
* STIKes Santa Elisabeth Medan

Abstract

Background : Hypertension is the condition where the blood pressure systolic is more than 120 mmHg and the pressure diastole more than 80 mmHg. Man and woman have the same condition to get risk of hypertension. Intake of modification of food stuff that contain by cilium and magnesium to be one of therapy complementary to reduce the blood pressure, one of them is cucumber. Cucumber is the vegetable that can be able to grow in many kinds of seasons and it is easy to find out in Indonesia and contain of cilium and magnesium. The aim of this research is to know the different rate of blood pressure before and after giving cucumber.

Method : This research is designed by Pre Experiment one group Pre-Post Test Design. There are 23 participants consisting of men and women by the blood pressure systemic are abnormal. The source data is using observation papers, the subject is given cucumber juice for 100 g for 7 days.

Result : Normality test is using Shapiro - Wilk and systematic analysis is using Wilcoxon rank test by p value is about 0,001 ($p<0,05$). In this research is shown that there is difference of blood pressure before and after giving cucumber.

Keywords : Hypertensions, cucumber

Background

Hypertension is a condition where a person has above normal blood pressure. The normal value of blood pressure is 120 mmHg for sistolik and 80 mmHg for diastolic (WHO, 2013). Hypertension is a health problem that commonly occurs in all groups of society both man and women at the age 45-59 years old (Fitriana, 2013). There are many factors that influence the occurrence of hypertension, including genetic, age, sex, ethnic, obesity and lifestyle.

WHO (2016) reports that the incidence of hypertension is reaches 839 million cases. It is estimated that the incidence will be increase to 1,15 billion in 2025, it is about 29% of total world population. *National Health and Nutrition Examination Survey* (NHNES) report the hypertension prevalence in America reached 56-65 millon in 2010-2013 (Cerry et al, 2015). Report of Depkes (2013) showed that 25,8% population in Indonesia get hypertension

High blood pressure can endanger sufferers, it can cause stroke and heart failure. Preventing an increase of blood pressure can be done by using the pharmacologic and non-pharmacologic therapies. The hypertension pharmacologic drugs often contains unwanted side effects such as fatique, increased of blood glucose levels and cholesterol. The way to avoid these side effects is reduce the used of pharmacological therapy (Kharisna, 2012).

Another alternative overcome the increased of blood pressure is used the non-pharmacological therapy. One of the non-pharmacological therapies that can be done is nutritional therapy or diet management. Consuming food that contain potassium and have diuretic effects an effort that recomended for the people with hypertension. Cucumber is a food that contain potassium and have diuretic effects Cucumber is the vegetable that can be able to grow in many kinds of seasons and it is easy to find out in Indonesia and contain of cilium and magnesium (Cherry et al, 2015).

Fitriana (2013) showed that there is an effect of consumtion of cucumber with a decrease of blood pressure.

The purpose of this study is to identify differences mean of blood pressure before and after cucumber therapy.

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Method

Based on the problem, this study used Pra Experiment One Group Pre-Post Test Design. Pre-test will be carried out before treatment so that it can be known the changes that are made. It si done by comparing the results of measurements before and after treatment. This study was conducted in Dusun IV Tanjung Anom Deli Serdang, North Sumatera Indonesia. There are 23 participants consisting of men and women with hypertension. The source data is using observation papers, the subject is given cucumber juice for 100 g for 7 days. Wilcoxon sign Rank Test was used for data analized.

RESULT

Respondents Characteristics

No.	Characteristics	f	%
1.	**Age**		
	50-57	10	43
	58-62	7	31

	63-70	6	26
	Total	23	100
2.	**Prefession**		
	Farmer	10	43
	Enterpreneur	2	9
	Housewife	6	26
	Private employees	3	13
	Retirement	2	9
	Total	23	100

Systole difference before and after treatmeant.

Respondent	N	Mean	Std Dev	Min Max	*P value*
Before	23	149	9,002	140-170	0,001
After	23	137	11,962	120-160	

Dyastole difference before and after treatment

Respondent	N	Mean	Std Dev	Min Max	Nilai *p*
Before	23	98	7,359	90-110	0,001
After	23	87	9,740	70-100	

DISCUSSION

Blood Pressure Before Intervention

Result of this study showed that there is significant differences between mean of blood pressure before and after treatment, cucumber juice therapy. Fitrina (2013) said that there was an effect of cucumber on the reduction in blood pressure. Her research on patient with stage II hypertensionshowed that 52,94% patient had decrease blood pressure after treatment.

Cerry, et al (2015), said that there was a difference in blood pressure after giving cucumber with an average of 113.13 mmHg and control group 123.75 mmHg and also the results of diastolic blood pressure research after treatment of cucumber juice in the intervention group there was a difference blood pressure with an average of 83.13 mmHg and a control group 84.38 mmHg.

Other studies also showed that the effect of giving cucumber juice to lower blood pressure in hypertensive patients showed that it could reduce blood pressure by an average of 14,561 in the intervention group and an average of 21,025 mmHg in the control group.

In controlling blood pressure cucumber can be given which can reduce blood pressure regularly, the content of cucumber consumed can reduce the risk of developing hypertension by helping reduce the muscle and emotional tension of respondents. The results of this study indicate that consuming cucumber juice has an effect or has a positive effect on blood pressure.

Effect of giving cucumber to a decrease in blood pressure in patients with hypertension

Based on the results of research conducted on 23 respondents obtained data that there was a change in blood pressure

before and after giving the cucumber administration intervention, at the stage before giving cucumber as many as 23 people (100%) who have blood pressure above normal. In the stage after the administration of cucumber there was 2 stage Hypertension Blood Pressure as much as 2 people (9%), Stage I Hypertension as many as 9 people (39%), Hypertension Pre were 10 people (43%), and normal was 2 people (9%) . Based on the results of Wilcoxon sign rank test, the results of the analysis of the value of $p < \alpha$ ($0.001 < 0.05$), which means there is a significant difference in the mean of cucumber administration to decrease blood pressure in respondents who experience hypertension in Dusun IV of Tanjung Anom Village.

In normal circulation, pressure is transferred from the heart muscle to the blood every time the heart contracts, and then the pressure is given by blood as it flows through the blood vessels. Hypertension can occur due to increased cardiac output, increased peripheral resistance (narrowing of blood vessels), or both. Many factors have been linked to hypertension, namely increased sympathetic nervous system activity related to autonomic nervous system dysfunction, increased sodium, chloride, and water reabsorption associated with genetic variation in the pathway by which the kidneys handle sodium.

According to Cerry (2015), empirically there are significant effects of cucumber juice on decreasing blood pressure, this is possible because cucumber contains potassium (potassium), magnesium, and phosphorus, where these minerals are effective in treating hypertension. The role of potassium has been widely investigated in relation to blood pressure regulation. Cerry (2015) states several mechanisms for how potassium can lower blood pressure as follows: potassium can lower blood pressure by causing a vasodilating effect which causes a decrease in total peripheral retention and increase cardiac output. Consumption of a lot of potassium will increase its concentration in the intracellular fluid so that it tends to draw fluid from the extracellular part and reduce blood pressure.

Clinical studies have shown that potassium supplementation can lower blood pressure with potassium supplementation 60-120 mmol / day can reduce systolic blood pressure 4.4 mmHg and diastolic 2.5 mmHg in patients with hypertension and 1.8 mmHg and 1.0 mmHg in normal people. In addition, cucumber is also a diuretic because of its high water content which helps lower blood pressure. Potassium is the main intracellular electrolyte, in fact, 98% of the body's potassium is in the cell, the remaining 2% is outside the cell, what matters is 2% for function neuromuscular. Potassium affects the activity of both skeletal muscle and heart muscle. For example, changes in concentration change the irritability and rhythm of myocardia. Calcium constantly moves into and out of the cell depending on the body's needs.

Correspondingly, Fitrina (2013) stated that the decrease in blood pressure after consumption of cucumber was not due to the influence of potassium on cucumber. With a high and balanced ratio of potassium and sodium, blood pressure will drop, where potassium works to regulate the work of the

heart which affects the contraction of the heart muscles and regulates body fluid balance.

Cucumber with a high potassium has properties to relieve hypertension, especially hypertension. Giving cucumber juice is more influential because it is accompanied by changes in a healthy and balanced lifestyle, one of which is by consuming foods low in fat and cholesterol but rich in fiber that can be contained in vegetables or fresh fruits.

In connection with the research of Kharisna (2012) states that the effect of cucumber content on blood pressure is clearly seen in the role of potassium, calcium. Potassium plays a role in maintaining the stability of the body's electrolytes through the potassium-sodium pump. Lack of potassium in the blood will interfere with the ratio of potassium-sodium so that sodium levels will increase. This can cause calcium deposition in the joints and spine which increases the workload of the heart and the accumulation of sodium in the blood vessels.

As a result the blood vessel walls can be eroded and peeled which eventually clogs up the bloodstream thereby increasing the risk of hypertension so that by consuming cucumbers this is likely to be avoided.

There are also researchers who say high amounts of potassium can protect individuals from hypertension. The function of potassium is with sodium, potassium plays a role in maintaining fluid and electrolyte balance and acid base balance. With calcium, potassium plays a role in nerve transmission and muscle relaxation. Inside the cell, potassium serves as a catalyst in many biological reactions, especially in energy metabolism and glycogen synthesis and protein. Potassium plays a role in cell growth.

The level of potassium in the muscle is associated with muscle mass and glycogen deviation, therefore if the muscle is in formation it requires sufficient amount of potassium. Normal blood pressure requires a comparison between sodium and potassium that are appropriate in the body. Estimated need for potassium in the body, because it is an essential part of all living cells, potassium is widely found in food ingredients, one of which is cucumber. Minimum requirement of 2000 mg of potassium a day. Fulfillment of potassium is less than the minimum, the heart will beat and beat the ability to pump blood. Increased potassium intake will reduce systolic and diastolic blood pressure (Prakoso, 2014).

Therefore most of the respondents in this study stated that they got calm after consuming cucumber juice and some stated that the headache and muscle tension in the neck that they experienced decreased. Someone who is in a depressed condition, adrenaline and cortisol will be released into the blood causing an increase in blood pressure. If this happens continuously, it can lead to hypertension.

This means that the content of cucumber consumed can reduce the risk of developing hypertension by helping to reduce the muscle and emotional tension of the respondent. The results of this study indicate that consuming cucumber juice has an effect or has a positive effect on blood pressure.

Thus in this study it can be concluded that cucumber has been shown to affect the heart workload, sodium potassium pump, and bring calmness which ultimately affects blood pressure. Therefore, consuming cucumber juice is effective to help lower blood pressure or control blood pressure to remain stable in hypertensive patients.

CONCLUTION

A study of 23 people with hypertension showed that there were significant differences of blood pressure bfore and after cucumber juice therapy. Statistic analize Wilcoxon Sign Rank Test showed the result of p-value= 0,001. It is expected that the people with hypertension can used cucumber therapy to be an alternative to maintain blood pressure.

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