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# The Effect of Cupping Therapy on Cholesterol Levels in Elderly Patients

#### Kistan

Akademi Keperawatan Batari Toja Watampone, Indonesia  
Corresponding author email: [ners.kistan155@gmail.com](mailto:ners.kistan155@gmail.com)

#### Najman

Akademi Keperawatan Batari Toja Watampone, Indonesia  
Email: [Najman@bataritoja.ac.id](mailto:Najman@bataritoja.ac.id)

**Abstract**---High cholesterol levels can increase the risk of hypertension. Hypertension is called the silent killer because it often appears without symptoms and is the main cause of heart disease, stroke and kidney failure. The elderly are a vulnerable group to be diagnosed with cardiovascular disease. Cupping therapy is a popular alternative treatment option carried out by the community. As time goes by, it encourages nurses to fully prove the benefits of cupping therapy. To examine the effect of cupping therapy on reducing cholesterol levels in the elderly. This research uses a quasi-experimental method which is one group pretest-posttest. Researchers examined cholesterol levels before cupping therapy and measured again after 30 minutes after cupping therapy. The sample used was 15 elderly patients with cupping at Alghaffar Care, Bone Regency, which were selected using purposive sampling technique. After performing statistical analysis using the Paired sample t test, the Systolic Pressure was obtained a significant value ( $p 0.001 < 0.05$ ) with an average decrease in systolic pressure of 5.133 mmHg and a significant diastolic pressure was obtained ( $p 1,000 > 0, 05$ ). These results indicate that there is an effect of decreasing systolic pressure but no effect of diastolic pressure before and after cupping therapy.

**Keywords**---cupping, cholesterol, elderly patients, hypercholesterolemia, therapy

#### Introduction

Elderly (elderly) according to the Indonesian Ministry of Health is someone who experiences aging due to increasing age so that changes occur both biologically, physically, psychologically and socially (RI, 2013). According to the World Health Organization, the elderly begin at the age of 55 years and the aging experienced by the elderly affects health, including disorders of the cardiovascular system (Strasser & WHO, 1987). One of the risk factors for cardiovascular disease is high blood pressure and cholesterol levels (Félix-Redondo et al., 2013). High cholesterol levels increase the risk of increasing blood pressure (Tyas, 2021). According to Miller, in the elderly the buildup of atherosclerosis due to cholesterol has occurred since children and adolescents and increases at the age of 55 years or older which then accumulates in the arteries, plaque that has accumulated if it ruptures will be the cause of cardiovascular disease (Miller, 1995). Pharmacological treatment of hypertension can be done by giving antihypertensive drugs. The treatment depends on the patient's considerations including the cost. In addition, according to Price and Wilson, about 70% of patients with hypercholesterolemia in Indonesia fail to achieve treatment which results in frequent relapses and dangerous side effects (Price & Wilson, 2006).

The high number of side effects of drugs and the high cost of treatment so that alternative treatment is needed for people with cardiovascular function disorders for the community, one of which is cupping therapy. Cupping therapy or cupping therapy is an alternative therapy that is popular in Arab countries and even in China and has begun to be used in Indonesia for the treatment of various diseases such as fibrositis, pain in the spine, diarrhea including

cardiovascular diseases: hypertension and atherosclerosis (Mahmoud et al., 2013). The existence of various diseases that can be prevented and the incomplete proof with cupping therapy makes researchers interested in conducting further investigations about the benefits of cupping therapy in lowering blood pressure in the elderly who are a group of people who are vulnerable to cardiovascular disease (Lee et al., 2011; Aboushanab & AlSanad, 2018).

### Research Method

This type of research uses a quasi-experimental research design that is one group pretest - posttest which aims to determine differences in blood pressure in elderly patients before and after cupping therapy is given. The research was conducted at Alghaffar care, Bone Regency, from July 21, 2022 to August 17, 2022. The research instrument used a digital Omron tension meter. Blood tests were performed 30 minutes before and after cupping therapy. Data analysis was performed using IBM SPSS software version 21. Researchers conducted univariate analysis and bivariate analysis. This univariate analysis was conducted to obtain an overview of the research problem by describing each variable used in this variable, namely by looking at the description of the frequency distribution and a single percentage associated with the research objectives. This bivariate analysis was conducted to determine the effect of cupping therapy on blood pressure in elderly patients. In analyzing the data bivariately, the data was tested using a statistical test, namely the t-dependent test or T Paired, namely comparing the data before and after being given Cupping Therapy, and the mean difference between pretest and posttest was obtained. 95% significant level ( $\alpha = 0.05$ ). Guidelines in accepting the hypothesis if the probability value ( $p$ )  $< 0.05$  then  $H_a$  is accepted, if ( $p$ )  $> 0.05$  then  $H_o$  fails or is rejected. The data is presented in tabular form so that it can be easily seen the effect of cupping therapy on blood pressure and cholesterol levels. Before the data is t-dependent, the normality test must be carried out first, namely if the data is  $< 50$  then the Saphiro Wilk normality test is used and if the data is  $> 50$  then the Korlmogorov Smirnov normality test is used. Then if the data is not normally distributed, then the bivariate test uses the Wilcoxon test (Wilson & Rudel, 1994; Meyrier, 2006).

In this study, the sampling method used was non-random sampling with purposive sampling technique. This study used samples from all patients who met the inclusion criteria, namely Cupping Patients at Alghaffar Care Kab. Bone, Willing to be a research sample, Male or female, 55-59 years old, Hypertension with blood pressure 140/90 mmHg, a sample of 15 people where prior to data collection. This study has been through an ethical feasibility test by the University Health Research Ethics Commission. "Aisyiyah Yogyakarta No. 2190/KEP-UNISA/VII/2022 Respondents who are willing to participate in this study have signed an Informed Consent (Hajjar et al., 2007; Grundy, 1998).

### Result and Discussion

Table 1  
Frequency Distribution by Age

Characteristics	Frekuensi (f)	Persentase (%)
55 year	8	53,3
56 year	1	6,7
57 year	0	0
58 year	2	13,3
59 year	4	26,7
Total	15	100

Source: Primary Data, 2022

Based on the age group in table 1 shows that of the 15 samples there are 8 (53.3%) with the age of 55 years, as many as 1 (6.7%) the sample with the age of 56 years, as many as 2 (13.3%) the sample with the age of 58 years, as many as 4 (26.7%) samples aged 59 years and there was no sample with an age of 57 years.

Table 2  
Frequency Distribution by Gender

Characteristics	Frequency (f)	Percentage (%)
Male	11	73,3
Female	4	26,7
Total	15	100

Source: Primary Data, 2022

Based on the gender group in table 2 shows that of the 15 samples there were 11 (73.3%) male samples and 4 (26.7%) female samples. Based on these data, the largest number of samples were male.

Table 3  
Data Normality Test

Cholesterol	Shapiro-Wilk		
	Statistic	Df	Sig.
Before Cupping	0,889	15	0,064
After Cupping	0,932	15	0,295

Source: Primary Data, 2022

Based on the normality test of the data in table 3, the Shapiro-Wilk test is used, because the number of samples is  $<50$  with a significant value of 0.05. So that it is known that the significant value of cholesterol levels before cupping is 0.064 and after cupping is 0.295. Because the value is greater than 0.05, it can be concluded that the data on the value of the Pre Post Test cholesterol levels are normally distributed. Thus, the requirements or assumptions of normality in the use of the paired sample t test have been met.

Table 4  
The Effect of Cupping Therapy on Cholesterol Levels in the Elderly

Cholesterol	Rerata	Selisih mean	Min-Max	T	p Value
Before Cupping	243,47 mg/dl	14,800	0,265-29,335	2,184	0,046
After Cupping	228,67 mg/dl				

Based on Table 4 shows that the average difference (mean) between cholesterol levels before and after cupping therapy is 14,800 with the calculated t value of 2.1484  $>$  t table value of 2.145 with a significant value of  $p$  0.046  $<$  0.05 so that it can be concluded that hypothesis  $H_0$  is rejected and Hypothesis  $H_a$  is accepted, that is, there is a difference in cholesterol levels before and after cupping therapy (Gulati et al., 2022; Sakthi & Divya, 2022).

#### *Characteristics of Respondents*

After conducting research in July-August 2022, it was obtained data that the most samples were aged 55 years, namely 8 (53.3%). The increase in cholesterol levels occurs because of the relationship with receptors. Increasing age is in line with reduced receptor activity in the body. This results in a large number of LDL levels that are not absorbed properly so that they enter the blood circulation (Arozi & Wibowo, 2018). The results of this study indicate that the majority of the sexes in the sample are 11 men (73.3%). The results of this study are in line with previous research which explains that men are more at risk of hypercholesterolemia compared to women due to lifestyle factors such as smoking carried out by men (Nuridah & Yodang, 2021).

#### *The Effect of Cupping Therapy on Cholesterol Levels in the Elderly*

The results of this study showed that the average cholesterol level before cupping therapy was 243.47 mg/dl and the average cholesterol level after cupping therapy intervention was 228.67 mg/dl with an average decrease of 14.8 mg/dl. The results of the analysis of the Paired Test Sample t test obtained a t value of 2.1484  $>$  t table value of 2.145 with a significant value of  $p$  0.046  $<$  0.05 which means that there is an effect of cholesterol levels in elderly patients

before and after cupping therapy. The results of this study are in line with previous studies using a quasi-experimental research design, pre-post test nonquevalent control group with a sample of 51 people, it was found that the cholesterol levels of the elderly in the intervention group decreased by 42.9 mg/dl before and after cupping therapy with a p value.  $0.000 < 0.05$  which means that there is an influence on cholesterol levels in the elderly in Wedomartani Village before and after being given cupping therapy (Suwarsi, 2019).

The results of the study are also in accordance with previous studies using the t-test to 21 samples showing that there are differences in cholesterol levels between before and after cupping therapy. The average decrease in cholesterol levels was 16.62 mg/dl with a significant value of  $p 0.022 < 0.05$ , which means that there is an effect of cholesterol levels before and after cupping therapy (Sutriyono et al., 2019). This research is also supported by (Syahruramdhani et al., 2021). With a quasi-experimental method with a sample of 22 people conducted at the University of Muhammadiyah Yogyakarta hospital using the Mann-Whitney analysis test, the cholesterol level before cupping was 147 mg/dl and decreased to 142.50 after cupping. It is the same found by Arozi & Wibowo (2018), in the results of the study, cholesterol levels before cupping therapy were 264 mg/dl and after undergoing cupping therapy decreased to 218 mg/dl with a significant value of  $p 0.000 < 0.05$  meaning that there was an effect of cholesterol levels before and after cupping intervention (Mannarino et al., 2014; Raal & Santos, 2012).

Decrease in cholesterol levels after cupping therapy is given that this can occur due to the opening of the skin barrier which will affect the excretory function of the skin, including removing lipids and substances that are hydrophilic and hydrophobic, one example is lipoprotein in which cholesterol is one of the lipoproteins. blood. In this regard, it can be concluded that the release of cholesterol substances is caused by thin incisions in the skin and cupping or vacuuming in cupping therapy so that total cholesterol levels can decrease. KHL1, UN2, UN3, AK1, and AK2 (Al & Rukzan, 2012). Meridians are a system of longitudinal and transverse channels throughout the body. This system connects the surface of the body with the internal organs of the body, between organs and other supporting tissues so that the system forms a unit that reacts simultaneously if there is stimulation from the skin (Trialists, 2012; Blair et al., 2000). Therefore, giving the right meridian points in cupping therapy causes the occurrence of processes in the capillaries and arterioles, increased levels of leukocytes, lymphocytes, and the reticulo-endothelial system, the release of ACTH, enkephalins, cortisone, endorphins, and other humoral factors that cause anti-inflammatory effects, decreased serum triglycerides, phospholipids, total cholesterol, and LDL. and stimulate lipolysis of fat tissue and normalize blood glucose levels (Umar, 2008).

## Conclusion

This study showed a clear effect between cupping therapy and a decrease in cholesterol levels in hypercholesterolemic patients with an age range of 55-59 years.

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