



Cupping Therapy in Reducing Blood Pressure in Patients with Hypertension : A Literature Study

Ade Andrian^{1*}, Saima Putri Siregar¹, Riswani Tanjung¹

¹Master of Nursing Science Program, Faculty of Nursing, University of North Sumatra, Medan, Indonesia

*Corresponding author: ners.adeandrian@gmail.com

ARTICLE INFO

Article history:

Received April 16th 2023

Revised July 19th 2023

Accepted August 8th 2023

Available online August 30th 2023

E-ISSN: 2686-0848

How to cite:

Andrian A, Siregar SP, Tanjung R. Cupping therapy in reducing blood pressure in patients with hypertension: a literature study. Asian Australasian Neuro and Health Science Journal. 2023 August 05(02);34-47



This work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International.
DOI : 10.32734/aanhsj.v5i2.11846

ABSTRACT

Introduction: The World Health Organization (WHO 2022) states that the current global prevalence of hypertension is 22% of the world's total population, and less than one-fifth make an effort to control their blood pressure, I assume. In Indonesia it is estimated at 15 million, but only 4% are under control. Hypertension can be caused by lifestyle, obesity, alcohol, smoking, stress, age, and genetic factors. Hypertension can be treated nonpharmacologically, namely with cupping therapy. This study aims to determine the effect of cupping therapy on lowering blood pressure in patients with hypertension.

Method: using a *literature review* research design. International and national journal searches were obtained through several sources including: *Proquest, ScienceDirect, Emerald Insight, Ebsco, and Google Scholar*. There are 10 articles obtained that will be reviewed, the results of information about the application of complementary alternative therapy, namely cupping therapy, and analyzing the published literature so as to reduce blood pressure in hypertensive patients.

Results: The results of the literature review indicate the effect of cupping therapy between before and after cupping therapy on changes in blood pressure in patients with hypertension.

Conclusion: The provision of cupping therapy as a complementary alternative therapy or one of the non-pharmacological therapies that greatly provides an effect in lowering blood pressure in patients with hypertension.

Keywords: *Blood Pressure, Cupping Therapy, Hypertension*

1. Introduction

Hypertension is one of the leading causes of premature death worldwide. According to the World Health Organization (WHO), there were 839 million cases of hypertension in 2019 and an estimated 1.15 billion by 2025. It is estimated that around 1.56 billion adults live with high blood pressure. In 2019, the incidence of hypertension in Indonesia was 185,857. It is also estimated that 9.4 million people die each year from hypertension and its complications (WHO, 2019).

According to Basic Health Research data, the number of people with hypertension in Indonesia increased by 7.61% from 26.5% in 2013 to 34.11% in 2018. The 10 provinces with the highest percentage of people with hypertension in Indonesia are North Sulawesi (13.21%), DI Yogyakarta (10.68%), East Kalimantan (10.57%), North Kalimantan (10.46%) and DKI Jakarta (10.17%). Gorontalo (10.11%), South Kalimantan (9.98%), West Java (9.67%), Bali (9.57%), Aceh (9.32%) (Indonesian Ministry of Health, 2019). In North Sumatra, hypertension cases are known to have decreased by 1.18% from 6.7% in 2013 to 5.52% in 2019. However, in Medan City, the number of people with hypertension increased by 3.44% from 28.1% in 2013 to 31.54% in 2019 [1].

Hypertension is a widely recognized cardiovascular disease in which the patient's blood pressure rises above normal. Some of the risk factors that contribute to hypertension are age, family history of hypertension, obesity, high salt intake, and lifestyle habits such as smoking and drinking alcohol. In addition, there are

contributing factors to high blood pressure. Especially obesity followed by lack of exercise and intake of fatty and salty foods [2].

Hypertension is a disease called the silent killer. People with this disease are often asymptomatic because high blood pressure is one of the key factors causing NCDs. Hypertension that occurs continuously and uncontrolled is a major cause of death, causing myocardial infarction, heart failure, kidney failure, stroke, visual impairment, and peripheral vascular disease (Cholina., et al 2019).

Hypertension can be prevented by pharmacological and nonpharmacological treatment. Traditional medicine has been influential in the treatment of diseases since ancient times and is helpful in current medical treatments, such as hypertension and cardiovascular disease (CVD) [3].

Complementary therapy is the only non-pharmacological therapy, and cupping therapy is one of the complementary therapies to treat hypertension. The benefits of cupping therapy for high blood pressure are as a process of lowering the sympathetic nervous system and helping to control levels of the hormone aldosterone in the nervous system. The decrease in blood pressure then occurs because it stimulates the secretion of enzymes that function as the renin-angiotensin system, which can reduce blood volume, and secretes nitric oxide, which plays a role in vasodilation of blood vessels. In addition, its prophylactic therapeutic properties in hypertension are so strong that it is highly recommended as a complementary therapy in the prevention and treatment of hypertension [4].

In recent years, complementary therapies have been developed and attracted attention in various countries for the treatment of hypertension. Complementary therapies exist in today's society for various reasons, including being chemical-free and therefore people relatively choose complementary therapies, one of which is cupping in lowering blood pressure. To determine the efficacy of cupping therapy, the author hopes to examine the effects of cupping therapy in more detail so that it can reduce blood pressure in hypertensive patients through a literature review

2. Method

A systematic review was conducted by searching for studies published between 2019 and 2023. International and national journals were searched from various sources including Proquest, ScienceDirect, Emerald Insight, Ebsco, and Google Scholar. The method used was literature review, found 10 articles reviewed and analyzed the results of information on the use of complementary and alternative therapies, namely cupping therapy, published literature to determine its usefulness in reducing blood pressure in hypertensive patients. The framework used is PICOTT which is an acronym for 4 components: P (Population), I (Intervention), C (Comparison), O (Outcome), T (Type of time) and T (Type of study)

Table 1. PICOTT

PICOTT	Clinical Questions	Keywords
<i>Population</i>	Patients with hypertension	International keywords: " <i>cupping therapy</i> ", " <i>blood pressure</i> ", " <i>hypertension</i> ", " <i>high blood pressure</i> ".
<i>Intervention</i>	Cupping Therapy	National keywords: " <i>cupping therapy</i> ", " <i>blood pressure</i> ", " <i>hypertension</i> ", " <i>high blood pressure</i> "
<i>Comparison</i>	Cucumber Juice	
<i>Outcome</i>	Decrease in blood pressure	
<i>Type of Time</i>	2019-2023	
<i>Type of Study</i>	Experimental research	

3. Results

There were several inclusion criteria: Full text, last 5 years, English, clear description of the research methodology on the use of alternative and complementary therapies to cupping to lower blood pressure in hypertensive patients, and international research. Exclusion criteria were studies other than blood pressure lowering. After adjusting the inclusion criteria. Several databases were used when checking the selection of related articles, including 372 articles from ScienceDirect, 450 articles from Proquest, 14 articles from Ebsco, 27 articles from Emerald Insight, and 616 articles from Goggle Scholar.

Author	Title	Destination	Methods	Results
Rahman, et al 2020 [5]	<i>Wet cupping therapy ameliorates pain in patients with hyperlipidemia, hypertension, and diabetes: A controlled clinical study</i>	The aim of this study was to observe the clinical efficacy and safety of wet cupping treatment in relieving headache, chest pain and muscle pain in patients newly diagnosed with hyperlipidemia, diabetes and high blood pressure.	<i>A controlled clinical study</i>	Wet cupping therapy can reduce cholesterol, triglycerides, low-density lipoprotein, fasting blood sugar, ferritin, ureum, and creatinine, lower blood pressure but does not significantly affect the parameters of erythrocytes, leukocytes or platelet count in patients. The normal hematological parameters in patients after wet cupping therapy indicated that the treatment was not detrimental to health. Treated patients indicated significant headache, chest pain, and muscle pain could be verbally reduced indirectly.

Author	Title	Destination	Methods	Results
Syahruramdhani et al., 2021 [6]	<i>The Effect of Wet Cupping Therapy on Blood Pressure and Total Cholesterol in Healthy Young Male Adults</i>	This study aims to determine the effect of wet cupping on blood pressure (BP) and total cholesterol (TC) in healthy young adult men.	<i>Quasi-Experimental with A Control and Intervention Group</i>	In the post-test of the intervention group, the mean SBP and DBP were substantially different from the pretest (P = 0.01 and 0.03). Although there was no statistically significant difference in TC results, overall cholesterol decreased after the intervention. There was no statistically significant difference in the results between the control and intervention groups, except for TC, which was significantly lower at <i>post-test</i> than at <i>pre-test</i> .

Author	Title	Destination	Methods	Results
Muflih 2019 [7] et al.,	<i>Effectiveness of Blood Pressure Reduction Reviewed from Amount of kop, duration and location pf point bekam therapy</i>	Scientifically prove the effectiveness of the number of heads, duration and location of cupping therapy points on reducing blood pressure values in patients at the Klaten Migoenani Health Nursing Clinic.	<i>quasy experiment one group pre post test</i>	

Author	Title	Destination	Methods	Results
Patrick, 2022 [3] Et al	<i>Survey of the blood pressure lowering potential of medicinal drugs plants used in the management of hypertension in herbal homes in Zango Kataf, Kaduna, Nigeria</i>	The aim of this study was to determine the blood pressure (BP) lowering potential of some herbs used by the indigenous people of Zango Kataf, Kaduna	Study design A cross-sectional study was conducted in consultation with several healers. herbs and their hypertensive patients	

Author	Title	Destination	Methods	Results
Nuridah, et al 2021 [8]	Effect of Cupping Therapy on Blood Pressure in Patients with Hypertension: A <i>Quasy</i> Experimental Study	To determine the effect of wet cupping therapy on hypertensive patients in reducing blood pressure	The research design used in this study is <i>quasy</i> experiment with <i>Control Group Design pre-post test</i> approach.	After wet freezing for three consecutive months, <i>systole</i> blood pressure and <i>diastole</i> decreased significantly in the intervention group by 0.000 ($p < 0.05$). and the control group ($p > 0.05$) so it was concluded that there was a difference in mean blood pressure between the two groups. at all three measurement time intervals in the intervention group

Author	Title	Destination	Methods	Results
Sardaniah, et al 2019 [9]	The Effect of Cupping Therapy on Decreasing Blood Pressure in Hypertension Patients at Pondok Alternative Medicine Miftahusyifa Bengkulu City	The purpose of this study was to determine the effect of cupping therapy on blood pressure in hypertensive patients.	The research design used in this study was quasi experimental with one group pretest-posttest design.	The results of the study found a change in blood pressure, namely a decrease with the difference in mean values in systole (12.143) and diastole (8.265). Statistical tests using the skewness test on systole and diastole showed a value of ($p=0.000$) which means the p value <0.05 so that H1 is accepted which means it shows that there is a significant effect of cupping therapy on changes in blood pressure in hypertensive patients.

Author	Title	Destination	Methods	Results
Astuti, et al 2022	Effectiveness of Cupping on Systole Blood Pressure Reduction in Hypertensive Patients	To determine the effectiveness of cupping on reducing systole blood pressure in hypertensive patients.	This study used a quasi experiment research design with a pre-post test with control design model.	The research analysis used Wilcoxon test and Mann-Whitney test. The results of the analysis showed that there was a significant difference between the pre-test and post-test in the experimental group with a p-value of 0.000 and there was no significant difference in the control group with a p value of 0.317. Cupping therapy is effective as a nursing intervention for systole blood pressure in hypertensive patients at Posbindu PTM Wijaya Kusuma Taskombang Palbapang Bantul District, Bantul Regency, Yogyakarta Special Region.

Author	Title	Destination	Methods	Results
Alkausar Samsi, 2022	Effect of wet cupping therapy on blood pressure reduction in hypertensive patients	The purpose of this study was to determine the effect of wet cupping therapy on lowering blood pressure in hypertensive patients using a single group.	The study used a quasi-experiment with a "pre-post test design" design conducted in the working area of the Tanjongge Health Center, Soppeng, South Sulawesi between August.July	This study found that the classification of blood pressure before intervention with a mean value of 168.00 with a standard deviation of 12.065 for systole blood pressure, mean blood pressure diastole 93.50 with a standard deviation of 6.687, and the mean value of systole after intervention obtained 140.00 with a standard deviation of 13.33, and diastole obtained a mean value of 80.00 with a standard deviation of 0.000. The results of the bivariate test using the paired t test method obtained a p value of 0.000 (<0.05) indicating that there is an effect on blood pressure before and after wet cupping therapy.

Author	Title	Destination	Methods	Results
Zuraidah, et al 2020 [10]	Effectiveness of Cupping Therapy and Cupping Plus Murrotal on Blood Pressure Reduction in Hypertension Patients at Puskesmas Simpang Periuk Lubuklinggau City	Analyzing the Effectiveness of Cupping Therapy and Cupping Plus Murrotal on Blood Pressure Reduction in Hypertension Patients at Puskesmas Simpang Periuk Lubuklinggau City	Quasi-experiment design with two group pretest and posttests design. Statistical tests using the Marginal Homogeneity test	The results of the study using the paired t test found the mean value before and after complementary therapy Cupping and Cupping Plus Murrotal with P value. 0,000. There is a significant relationship that complementary therapy Cupping and Cupping Plus Murrotal to reduce blood pressure in patients with hypertension.

Author	Title	Destination	Methods	Results
Fauzan, 2021 Et al	The Effect of <i>Cupping Therapy</i> on Reducing High Blood Pressure (Hypertension) at Intermedica Pratama Clinic Bekasi City, West Java	to determine the effect of cupping therapy on blood pressure in hypertensive patients	<i>Quasi experimental with one group pretest-posttest design.</i>	

Table 2. Literature Search Matrix

4. Discussion

Data analysis shows that the use of alternative and complementary therapies for cupping is a suitable adjunctive therapy to achieve a positive effect that can lower blood pressure in hypertensive patients. 1479 articles were obtained from various sources and 10 articles containing information on the use of complementary treatment of cupping therapy to lower blood pressure in hypertensive patients, selected and analyzed the literature so as to obtain the benefits of lowering blood pressure in hypertensive patients.

Based on the results of research [7], cupping therapy effectively reduces systolic and diastolic blood pressure by an average of 20 mmHg in 18-24 dogs, with a treatment duration of 25-30 minutes. It was one minute. Cupping therapy can reduce blood pressure by stimulating nitric oxide so that vasodilation of peripheral blood vessels occurs.

These results are consistent with research conducted Fauzan., et al. 2021 To determine the effect of cupping therapy on blood pressure in hypertensive patients, it is known that blood pressure has changed. That is, a decrease due to the average difference in systolic (18.52) and diastolic (11.48). Statistical tests using the Wilcoxon test for systole and diastole showed a value of ($p=0.000$). This means that the value of $p < 0.05$ has a significant effect of cupping therapy on changes in blood pressure in hypertensive patients from the Intermedika Pratama Clinic.

Research Nuridah., et al 2021 [8] to determine the effect of wet cupping therapy on hypertensive patients in reducing blood pressure found that after wet cupping for three consecutive months, systole and diastole blood pressure decreased significantly in the intervention group by 0.000 ($p < 0.05$) and the control group ($p > 0.05$) so that there was a difference in average blood pressure at the three measurement time intervals in the intervention group.

According to the research article Zuraidah., et al 2022 [10] it was found that there were systolic and diastolic changes in the mean value, which meant that there was a decrease in blood pressure after cupping plus murrotal therapy. And there is also the effect of cupping plus murrotal therapy on blood pressure after cupping plus murrotal using the Quasi-experiment design test with the type of two group pretest and posttest design there is a significant difference in blood pressure values before and after cupping plus murrotal in the intervention group where the average systole and diastole blood pressure drops significantly after cupping plus murrotal intervention.

Cupping therapy is one of the complementary therapies that serves to reduce high blood pressure in patients with hypertension, the provision of wet cupping therapy can reduce blood pressure within 1 week or 7 days, cupping therapy can affect blood pressure in hypertensive patients even though it is not accompanied by pharmacological therapy. Wet cupping therapy is given for approximately 30 minutes and carried out during the day between 13.00-16.00, and 30 minutes of blood pressure measurement (Alkausar., 2022)

5. Conclusion

Cupping therapy as a complementary or alternative therapy or nonpharmacological therapy is very effective for lowering blood pressure in hypertensive patients. The results of this literature review are expected to be used as a learning resource by community nurses in implementing complementary therapies to improve nursing care so as to improve blood pressure stability in hypertensive patients. It is also expected that more in-depth research will be conducted so that this treatment can be used as evidence-based practice. Further research can investigate the frequency of cupping therapy and the parts of the body where cupping therapy should be performed in hypertensive patients.

Acknowledgements

None.

Conflict of Interest

The authors declare no conflicts of interest in preparing this article.

References

- [1] Ministry of Health Republic of Indonesia, *Data and information of Indonesia health profile 2018*. Jakarta, 2019
- [2] Diah Lestari, Fatwa Imelda, and Febrina Oktavinola Kaban, "Overview of health characteristics of blood pressure, cholesterol, uric acid and blood sugar levels in an-nur women's marindal village 1 kec. Patumbak kab. Deli serdang," *ABDIMAS Talent. J. Pengabd. Kpd. Masy.*, vol. 4, no. 1, pp. 45–54, May 2019, doi: 10.32734/abdimastalenta.v4i1.2383.
- [3] E. B. Patrick, S. O. Otimenyin, and B. B. Bukar, "Survey of the blood pressure lowering potential of medicinal plants used in the management of hypertension in herbal homes in Zango Kataf, Kaduna, Nigeria," *Nutr. Food Sci.*, vol. 53, no. 1, pp. 178–191, Jan. 2023, doi: 10.1108/NFS-11-2021-0326.
- [4] M. Erwin Rachman and A. Nur Rachman, "Cupping Therapy for Temporary Reduction of Blood Pressure in Hypertension Patients," *Green Med. J.*, vol. 2, no. 1, pp. 13–17, Apr. 2020, doi: 10.33096/gmj.v2i1.36
- [5] H. S. Rahman *et al.*, "Wet cupping therapy ameliorates pain in patients with hyperlipidemia, hypertension, and diabetes: A controlled clinical study," *Int. J. Surg. Open*, vol. 26, pp. 10–15, 2020, doi: 10.1016/j.ijso.2020.07.003.
- [6] S. Syahruramdhani, F. A. Yuniarti, T. E. Septiana, and E. Mustikasari, "The Effect of Wet Cupping Therapy on Blood Pressure and Total Cholesterol on Healthy Young Male Adults," *Open Access Maced. J. Med. Sci.*, vol. 9, no. T4, pp. 172–176, Mar. 2021, doi: 10.3889/oamjms.2021.5854.
- [7] . Muflih and M. Judha, "Effectiveness of Blood Pressure Reduction Reviewed from Amount of kop, duration and location pf point bekam therapy," *Nurseline J.*, vol. 4, no. 1, pp. 46–53, 2019.
- [8] N. Nuridah and Y. Yodang, "Pengaruh Terapi Bekam terhadap Tekanan Darah pada Penderita Hipertensi: Studi Quasy Eksperimental," *J. Kesehat. Vokasional*, vol. 6, no. 1, p. 53, Mar. 2021, doi: 10.22146/jkesvo.62909
- [9] S. Sardaniah, H. Nurhasanah, and F. Marlina, "Pengaruh Terapi Bekam terhadap Penurunan Tekanan Darah pada Penderita Hipertensi di Pondok Pengobatan Alternatif Miftahusyifa," *J. Vokasi Keperawatan*, vol. 3, no. 1, pp. 85–102, 2020, doi: 10.33369/jvk.v2i2.10697
- [10] N. Aprilyadi and Z. Zuraidah, "Efektivitas Terapi Bekam dan Bekam Plus Murrotal terhadap Penurunan Tekanan Darah pada Penderita Hipertensi di Puskesmas Simpang Periuk Kota Lubuklinggau Tahun 2020," *JKM J. Keperawatan Merdeka*, vol. 2, no. 1, pp. 96–101, May 2022, doi: 10.36086/jkm.v2i1.1306