

Effect of wet cupping therapy on blood pressure in hypertensive patient

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Accepted: 2 December 2022; revision: 14 December 2022; published: 31 December 2022

Abstract

Background: Hypertension that is not well controlled has a bad impact on the sufferer. Non-pharmacological treatment tends to be preferred by the public to control hypertension. One of the alternatives chosen to treat hypertension is wet cupping therapy. This study aimed to determine the effect of wet cupping therapy on blood pressure in hypertension.

Method: This type of research is quantitative using a quasi-experimental design with one group design pre-test and post-test approach. The study was conducted at the Rumah Sehat Islamic Nurse (RSIN) Pekanbaru in May-July 2022. The number of samples used in this study was 15 respondents taken using accidental sampling techniques. The instrument in the study was in the form of a questionnaire containing the demographic data of respondents and a wet cupping device that was following the standards. Data were analyzed univariate and bivariate analysis using the Wilcoxon test.

Results: The results of the Wilcoxon statistical test found that there was a significant influence before and after wet cupping therapy on systole blood pressure (p -value = 0.026) and diastole blood pressure (p -value = 0.018). The results also showed a decrease in the average of systolic blood pressure by 3.07 mmHg and diastolic blood pressure by 4.97 mmHg.

Conclusion: Based on the results of the study, it can be concluded that wet cupping therapy affects systolic and diastolic blood pressure in people with hypertension. This therapy can be an alternative and complementary therapy in the treatment and control of hypertension.

Key words: blood pressure, hypertension, wet cupping

Abstrak

Latar Belakang: Hipertensi yang tidak terkontrol dengan baik berdampak buruk bagi penderita hipertensi. Pengobatan non farmakologis lebih diminati oleh masyarakat untuk mengontrol tekanan darah. Salah satu terapi yang menjadi pilihan untuk mengatasi hipertensi adalah terapi bekam basah. Penelitian ini bertujuan untuk menganalisis pengaruh terapi bekam basah terhadap tekanan darah pada pasien hipertensi.

Metode: Penelitian ini merupakan penelitian kuantitatif dengan desain quasi eksperimen menggunakan pendekatan one-group pre-test dan post-test. Penelitian dilaksanakan di Rumah Sehat Islamic Nurse (RSIN) Pekanbaru pada bulan Mei-Juli 2022. Jumlah sampel yang terlibat dalam penelitian ini adalah 15 responden yang diambil menggunakan teknik *accidental sampling*. Instrumen yang digunakan dalam penelitian ini adalah kuesioner yang berisikan data demografi responden dan alat terapi bekam basah yang sesuai dengan standar. Data dianalisis secara univariat dan bivariat menggunakan uji Wilcoxon.

Hasil: Hasil uji statistik Wilcoxon menunjukkan ada pengaruh yang signifikan sebelum dan sesudah dilakukan terapi bekam basah terhadap tekanan darah sistolik (nilai $p=0,026$) dan tekanan darah diastolik (nilai $p= 0,018$). Hasil penelitian juga menunjukkan terjadi penurunan rerata tekanan darah sistolik sebesar 3,07 mmHg dan tekanan darah diastolik sebesar 4,97 mmHg.

Kesimpulan: Berdasarkan hasil penelitian dapat disimpulkan bahwa terapi bekam basah berpengaruh terhadap tekanan darah sistolik dan diastolik pada penderita hipertensi. Terapi ini dapat dijadikan sebagai terapi alternatif dan komplementer dalam penanganan dan pengontrolan hipertensi.

Kata kunci: tekanan darah, hipertensi, bekam basah

INTRODUCTION

High blood pressure is a global health problem and is the number 1 killer in the world (1). The number of people with hypertension tends to increase from year to year. WHO said that in 2019, hypertension cases at the age of 30-79 years were recorded at 1.28 billion (2). In America, hypertension is the leading cause of death from cardiovascular disease with a prevalence of >50% (3). In Indonesia, the prevalence of hypertension has increased significantly from 25.8% in 2013 to 34.1% in 2018 (4). While in Riau Province, hypertension ranks 2nd out of the 10 most diseases in 2019 (5). Hypertension is a disease also known as the silent killer. Uncontrolled hypertension will adversely affect the patient. In Indonesia, heart disease, kidney failure, and stroke are mostly caused by hypertension as the sole and main contributors (6). In adult hypertensive patients, kidney problems can be microalbuminuria and a decrease in the glomerular filtration rate (LFG) which has an impact on an increased risk of chronic renal failure. In addition, high blood pressure is closely related to damage to blood vessels. Increased thickening of the intima lining and stiffness of arterial blood vessels (7) are common problems found in people with hypertension (8). These include cardiovascular diseases such as coronary artery disease (acute coroner's syndrome and angina pectoris), left ventricular dysfunction or heart failure, and left ventricular hypertrophy as a result of damage to the target organs of the heart (9). People with hypertension will experience damage and microvascular dysfunction due to the degradation of elastin and collagen, causing changes in arterial elasticity (10).

Several risk factors influence the incidence of hypertension including insufficient physical activity, high salt consumption, fruit and vegetable consumption, and stress (11). Other contributing factors are weight gain and obesity (12). Reducing smoking, facilitating physical activity, and reducing salt consumption are approaches taken to prevent hypertension (3). Seeing the magnitude of the effects and damage caused by hypertension, it becomes important for sufferers to be able to control blood pressure within normal ranges. The management and control of hypertension are crucial aspects of preventing cardiovascular complications and kidney disease. Awareness of blood pressure treatment and control needs to be considered by every person with hypertension (13). Although in the last decade there has begun to be an increase in consciousness, blood pressure control is still low (12).

Many people with hypertension find it difficult to lower their blood pressure either using medications or lifestyle changes. Even these two things are not enough to help control blood pressure. Data shows that of hypertensive patients who get treatment, there are as many as 35% with uncontrolled hypertension. Almost 50% of patients do not comply with the therapy administered within 1 year. The data also showed that the level of non-compliance of patients increased by 2 times in patients who received 2 to 3 hypertension medications (8). Riskesdas in 2018 stated that 32.3% of hypertensive patients did not take medication regularly and 13.3% did not take medicine. Only 14.5% of sufferers take traditional medicine to control hypertension (4). This shows that there are still low achievements in controlling hypertension both using pharmacological and nonpharmacological.

The use of complementary therapies is part of nonpharmacological therapies that can be complementary to controlling blood pressure. In Indonesia, the utilization of complementary therapies is quite high although there are still few that are done with the correct rules (14). Some of the complementary therapies that can be used include cupping therapy, meditation, traditional herbs, gymnastics, mural, acupuncture therapy, acupressure, foot massage, music therapy, and relaxation (14)(15). Other therapies that are also significant in lowering blood pressure are meditation, yoga, hydrotherapy, laughing therapy, and hypnosis (16). The selection of traditional and nature-based therapies is more in demand compared to medical therapies that usually provide side effects (12).

Cupping therapy is the oldest therapy commonly used by Muslims and in the Arab States (17). Cupping therapy has several advantages and benefits for health, including improving peripheral blood circulation, maintaining homeostasis (18) and improving immunity, and potentially controlling hypertension (17). Wet cupping therapy can help stimulate arterial baroreflex sensitivity, which can lower blood pressure, remove toxins, and prevent atherosclerosis (19). Wet cupping therapy is also a simple, inexpensive therapy, and an effective medical alternative treatment (20). In Indonesia, this therapy has been quite widely used as a complementary therapy for some complaints and health problems. This therapy is included in one of the forms of therapy services offered by Rumah Sehat Islamic Nurse Pekanbaru, which is the only complementary therapy-based health facility. By looking at the magnitude of the potential and efficacy of wet cupping therapy, it is necessary to research to see the efficacy and effect, and benefits of wet cupping therapy on blood pressure in people with hypertension. Therefore, this study aims to analyze the effect of giving wet cupping therapy on hypertension sufferers in Indonesia, especially those in Rumah Sehat Islamic Nurse Pekanbaru.

METHOD

This research is quantitative research with experimental quasi design and one-group pre-test and post-test design approaches. The research has been carried out from June to July 2022 at the Rumah Sehat Islamic Nurse (RSIN) Pekanbaru. The population of this study was patients who were treated in RSIN with a diagnosis of hypertension and received wet cupping therapy. The sample used in this study was 15 respondents taken by accidental sampling. The instrument used in this study was the form of a questionnaire containing demographic data of respondents including, age, gender, education level, and blood pressure before and after being given wet cupping therapy. Another instrument that is also used is the Omron brand digital sphygmomanometer which has previously been calibrated. Likewise, the instruments of wet cupping therapy devices have been standardized and are in good condition. Wet cupping therapy is given by a certified RSIN therapist and is also a health worker (nurse). Research is carried out starting from the preparatory, implementation, and final stages. Researchers took blood pressure measurements 10 minutes before wet cupping therapy was carried out by the therapist. The measurement results shown on the monitor are taken as pre-test values. Furthermore, the therapist provides wet cupping therapy using tools according to the existing Cupping Standard Operating Procedures (SOP) for 45 minutes. Researchers re-measured respondents' blood pressure 10 minutes after wet cupping therapy was completed by the therapist. The measurement results are taken according to the numbers listed on the monitor as post-test values. The data were analyzed univariately by looking at the frequency distribution of each respondent's characteristics. While the bivariate analysis was performed using the Wilcoxon test. This research has also been declared ethically feasible following criteria 7

of 2011 WHO standards by the Health Research Ethics Committee of STIKes Payung Negeri Pekanbaru with the number: 0061/STIKES PN/KEPK/VII/2022.

RESULT

The results of the study can be in the following table 1:

Table 1. Frequency Distribution of Respondents By Age, Gender, and Education Level (n=15)

No	Characteristic	Frequency	Percentage
1	Age		
	Early adulthood	4	26,7%
	Mid adulthood	9	60%
	Late adulthood	2	13,3%
2	Gender		
	Male	7	46,7%
	Female	8	53,3%
3	Education level		
	Junior high school	1	6,7%
	Senior high school	3	20%
	College	11	73,3%

Table 2. Respondents' Average Blood Pressure Values Before and After Wet Cupping Therapy (n=15)

Variable	Min	Max	Mean	SD
Average Blood Pressure Before				
Systolic	140	175	155,80	12,313
Diastolic	70	112	90,80	10,625
Average blood pressure after				
Systolic	139	165	152,73	9,779
Diastolic	80	95	85,93	3,900

Based on table 1 above, it can be seen that most of the respondents were in the middle adult age range of 9 people (60%). More than half of the respondents were

women, 8 respondents (53.3%). Respondents were mostly 11 with a college education level (73.3%).

Based on table 2 above, it can be seen that the average values of systolic and diastolic blood pressure before being given wet cupping therapy are 155.80 mmHg and 90.80 mmHg, respectively. Meanwhile, after being given wet cupping therapy, the average respondent's systolic and diastolic blood pressure was 152.73 mmHg and 85.93 mmHg, respectively.

Table 3. Differences in Average Blood Pressure Before and After Cupping Therapy

Variable	Before	After	Difference
Systolic	155,80	152,73	3,07
Diastolic	90,80	85,93	4,87

Table 3 shows that there was an average decrease in systolic blood pressure by 3.07 mmHg, while for diastolic blood pressure there was a decrease of 4.87 mmHg.

DISCUSSION

The results of this study are the same as those obtained by Rachman and Rachman in 2020 which also showed a decrease in systolic blood pressure after being given cupping therapy of 10.87 mmHg. Likewise, diastolic blood pressure decreased by 4.13 mmHg (21). The use of cupping therapy combined with black seed in other studies also had an effect in lowering systolic and diastolic blood pressure (23).

Table 4. Analysis of the Effect of Wet Cupping Therapy on Respondents' Blood Pressure (n=15)

Variable	p
Systolic pressure before and after	0,026
Diastolic pressure before and after	0,018

Table 4 above shows that based on the results of bivariate tests, there was a significant influence between systolic pressure before and after wet cupping therapy ($p=0.026$). The results of the analysis also showed a significant influence on diastolic blood pressure before and after wet cupping therapy ($p = 0.018$). Based on the results of the Wilcoxon test, it was also known that as

many as 13 respondents experienced a significant decrease in systolic blood pressure. In diastolic blood pressure, 12 respondents experienced a significant decrease. Sormin's research also obtained the same result, namely that there was a significant difference between blood pressure before and after wet cupping therapy ($p=0.000$) (24)(25).

The results of this study are in line with the research of Sutriyono, Robbina, and Ndi on the effect of wet cupping therapy on the blood pressure of people with hypertension. Wet cupping therapy lowers systolic ($p=0.001$) and diastolic ($p=0.001$) blood pressure in people with hypertension. Giving wet cupping therapy can increase HDL levels and reduce LDL levels in the blood. Thus it is beneficial in preventing cardiovascular disease (20).

The results of this study supported by those conducted by Aleyeidi in 2014 showed that wet cupping therapy given for 4 weeks affected blood pressure ($p = 0.046$). There was a decrease in the average systolic blood pressure in the intervention group compared to the control group in the absence of serious side effects for respondents (26). The results of the study obtained by Fatonah, Rihiantoro, and Astuti stated that there was an influence of cupping therapy on hypertension sufferers in Lampung. The results of statistical tests showed that there was a difference in the average arterial blood pressure (MAP) in systolic blood pressure after cupping therapy ($p=0.007$), while at diastolic pressure there was no difference (22).

The effectiveness of cupping therapy in hypertensive patients plays a role in the sympathetic nervous system. The agitation of the sympathetic nervous system stimulates the secretion of enzymes that act like the renin-angiotensin system. This mechanism will provoke a decrease in blood pressure. In addition, cupping therapy also controls the levels of the hormone aldosterone which functions in vasodilation and improves the supply of nutrients and blood to the body's cells. Cupping therapy also helps baroreceptor stimulation so that blood vessels can respond and increase sensitivity to factors causing hypertension [27]. The

therapeutic effect of cupping also has an impact on the cardiovascular regulation of peripheral prisoners [22]. In addition, the incision in wet cupping will trigger the release of substances such as serotonin, histamine, and bradykinin, and also trigger a flare reaction. This will result in capillary dilatation and general vasodilation as the body's response to microcirculation repair (24).

Cupping therapy is also effective in improving the quality of life of people with hypertension. Patients who are given cupping therapy feel that the pain complaints experienced are reduced, there is an improvement in sleep quality, and also reduces dependence on drugs. In addition, cupping therapy also provides a feeling of pleasure and comfort so that the stress and anxiety of the sufferer are reduced. Sufferers also feel that they have the support of their families and the use of cupping therapy is safer and more economical (28). This cupping therapy can be one of the holistic solutions in the treatment of hypertension (23).

CONCLUSION

Based on the results of the study, it can be concluded that wet cupping therapy affects systolic and diastolic blood pressure in people with hypertension. The use of cupping therapy periodically for at least 2 weeks is useful in helping people with hypertension to lower their blood pressure. This therapy can be an alternative and complementary therapy in the treatment and control of hypertension. In addition to its effectiveness and benefits in blood pressure regulation mechanisms, this therapy can also improve the patient's ability to utilize existing traditional therapies to help prevent side effects due to the use of medical therapy.

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