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The Effectiveness of Complementary "Cupping Therapy" On The Community's Routine Blood Hematology Status During The COVID-19 Pandemic

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ABSTRACT

Abstract
Cupping complementary therapy is a therapeutic approach that can improve health, cure disease and improve well-being that is very effective for the community during the COVID-19 pandemic. The purpose of this study was to determine the effect of complementary cupping therapy on changes in routine blood hematology status in healthy respondents. The design used is pre-experimental with one group pretest-posttest design. This research took place at the Medical Surgical Laboratory of the Nursing Department of the Health Polytechnic of the Kendari Ministry of Health. The number of research respondents was 26 samples of healthy male subjects aged 20-50 years. The results of the study using paired T sample statistical tests, before and after cupping therapy, there was a change in the routine blood hematology values of WBC, RBC, HB, HCT, MCH, significant values ($P < 0.05$), meaning that there was a significant difference after cupping therapy on the respondent. In conclusion, complementary cupping therapy is useful for improving health and as a recommendation for the community in improving health during the COVID-19 pandemic.

INTRODUCTION

COVID-19 is a new virus that is highly contagious and is spreading rapidly globally. This outbreak was declared by WHO as an emergency (PHEIC: Public Health Emergency from International Concern). The virus can be transmitted from human to human, and someone who has symptoms of the Covid 19 virus is the most frequent source of spreading COVID-19, because transmission will occur before someone has

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symptoms, so people who do not show symptoms can transmit the virus. Isolation is the best way to prevent epidemic transmission covid 19 (Cascella, Rajnik, Aleem, Dulebohn, & Di Napoli, 2021; Rosyanti & Hadi, 2020a)

Various ways and strategies for improving health have been implemented on an emergency basis by most countries affected by Covid 19, by limiting personal freedom (imposition of quarantine, mandatory isolation of suspected cases, diagnosis, contact tracing and monitoring). Restructuring of the health system, general uncertainty, threats to individual health, and quarantine measures can worsen the condition of the community, resulting in decreased health and psychological disorders. There is no specific antiviral treatment recommended for COVID-19, so complementary cupping therapy is one of the therapies of choice to improve public health during the Covid-19 pandemic (Rosyanti & Hadi, 2020a; Tanne et al., 2020)

Complementary medicine is a worldwide method of health care that is integrated into the modern medical system, including in the medical curriculum. Although modern medicine is more efficacious, traditional medicine is still practiced by the community. More than 70% of the world's population still uses complementary medicine systems. In rural areas, cultural beliefs and practices are often used by the community, especially in self-care, conventional medicine and consultation with traditional healers (Azaizeh, Saad, Cooper, & Said, 2010)

Cupping therapy, is part of the complementary therapy used throughout the world. Cupping therapy has many benefits, such as correcting internal biological imbalances by restoring and improving blood circulation. Cupping therapy is a traditional medical treatment to balance the organism's system. The use of cupping therapy methods comes from science, culture and religion in various countries (Aboushanab & AlSanad, 2018; Mehta & Dhapte, 2015)

Complementary cupping therapy is a therapeutic approach that is believed to prevent and treat disease and improve well-being. Cupping therapy is generally described as a technique that uses a cup that is placed on the skin to create negative pressure through suction, this technique can cleanse the body by releasing substances that contain toxins (Rosyanti, Hadi, Askrening, & Indrayana, 2020; Shahabinejad, Sirati-Sabet, Kazemi-Arababadi, Nabati, & Asadikaram, 2016)

Based on several research results, complementary cupping therapy can cleanse the blood of various substances that are harmful to the body, such as triglycerides, cholesterol (LDL), total cholesterol, uric acid, inflammatory mediators, and immunoglobulin antibodies (rheumatic factors).

In addition, cupping therapy can increase natural immunity, improve blood flow, reduce body pain, as a non-pharmacological treatment, and can treat various disease conditions. The cupping therapy procedure consists of several steps, namely suctioning the skin using a cup, scarification, and a second skin suction. Cupping therapy has more complete and better techniques and methods because it has two filtration stages that will clean blood plasma from excessive pathological substances (Abdullah M. N. Al-Bedah et al., 2018; Almaiman, 2018; El Sayed et al., 2014)

Based on the description above, the formulation of the problem in this research is How Effectiveness of Complementary Therapy "Cupping Therapy" Against the Routine Blood Hematology Status of the Community During the COVID-19 Pandemic. The purpose of this study was to determine the effectiveness of complementary cupping therapy on changes in the routine hematological status of the people in the city of Kendari during the Covid-19 pandemic. The novelty of this study is that there is still very little research on the benefits of complementary cupping therapy to changes in routine blood hematology status in improving public health during the COVID-19 pandemic.

METHODS

Types of research

The design in this study was pre-experimental with the research method using a one group pretest-posttest design.

Research Place

The research location is in the Medical and Surgical Laboratory of the Health Polytechnic of the Kendari Ministry of Health from February to April 2021.

Population and Sample

The population in this study were all Kendari City people who were actively working and doing activities outside the home during the COVID-19 Pandemic, adults living in Kendari City. The sample consists of professions: security guards, police, civil servants, as well as businessmen and students. The technique of taking respondents is purposive sampling. Recruitment of respondents through advertisements in the Kendari Ministry of Health Poltekkes group and whats up group by filling out a google form. The number of respondents as many as 30 samples, male gender, willing to be respondents, according to inclusion criteria, aged 20-50 years without chronic disease, blood disorders. There were 4 people who did not meet the requirements after a health examination before cupping therapy was carried out so that the sample was 26 people.

Cupping Procedure

This study protocol has been tested by the Kendari Health Research Ethics Committee. Each respondent was given an explanation and an informed consent form signed by the respondent before starting the study. Participants received wet cupping therapy while listening to the MP3 Quran murotal, the cupping tools used were disposable plastic cups measuring 5 cm and 1.5 cm and bisturi knife number 5 complete with the knife handle. There are 12 cupping points used, namely 2 al-katifain; 1 al-khahil; 2 al-warik; 2 al-dzohril qodami, 2 BL 18 liver, 1 inter scapula, and 2 lung meridians. (Boehm et al., 2018; Rosyanti et al., 2020)

Before the procedure, participants were asked to lie down by opening the area to be cupped, namely the back area and wearing the clothes that had been prepared. Each cupping therapy treatment procedure lasts about 40-50 minutes. Cupping therapy procedures were applied according to the prescribed aseptic technique. Each cupping session is performed in five steps (Rosyanti et al., 2020)

1. First step first suction. The therapist allocates a specific point or area for cupping and disinfects the area. Doing detoxification by doing cupping slides on the back area of the body until it turns red. Next, the cup is placed at the selected point and sucks the air in the cup with manual suction measuring 5 cm and 1.5 cm and left for 3-5 minutes.
2. The second step is scarification or stabbing. Superficial incisions are made in the skin using a No. Scalpel. 15
3. The third step is suction. The cup is placed back on the skin using a similar procedure described above for three to 5 minutes.
4. The fourth step is to lift the cup.
5. The fifth step is to clean the back area where the blood is coming out with sterile gauze. Then repeat the suction step 2-3 times, until the blood plasma comes out. After the procedure is complete, apply an FDA-approved skin disinfectant. Before, during and after the cupping therapy process, always pay attention to all procedures performed aseptically. Each cupping technique causes changes in cells, tissues or organs of the body, so that it can improve hormone function, modulate the immune system, remove harmful substances from the body, and can reduce body pain (A. M. N. Al-Bedah et al., 2019; Al-Rubaye, 2012; AlBedah, Khalil, Elolemy, Elsubai, & Khalil, 2011)

RESULTS AND DISCUSSION

Result

Characteristic data

Table 1. Characteristics of Respondents

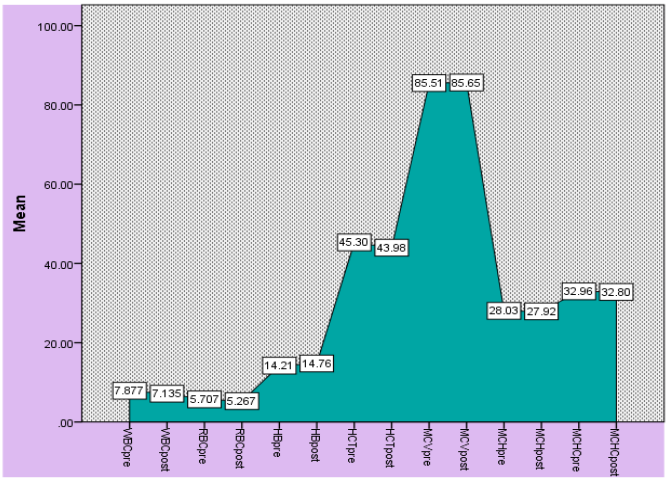
Characteristics	N=26	%
Age		
21 - 30	10	38,5
31 - 40	12	46,2
41 - 50	4	15,4
Level of education		
senior High School	8	30,8
Diploma	2	7,7
Bachelor	16	61,5
Work		
Student	5	19,2
civil servant	7	30,8
Police	5	19,2
Security	1	3,8
Private	8	26,9
marital status		
Not married yet	7	26,9
Marry	19	73,1

Source: primary data

Based on Table 1 above, the highest age group is 31-30 years, 46.2%, the highest education is SI as much as 61.5%, civil servants work 30.8%, married 73.1%.

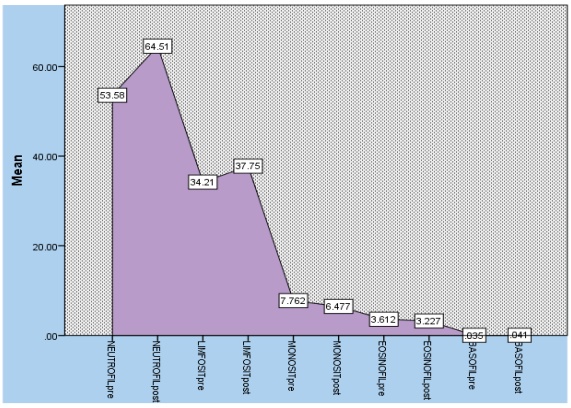
The mean (mean) of the hematological examination

Figure 1: Pre and Post Routine Hematology: WBC, RBC, HB, MCV, MCH, MCHC



Based on Figure 1 the average WBC, RBC, HCT, MCH, MCHC, pre and post in the community during the pandemic, generally the values are the same, there is a decrease, but the average hemoglobin value tends to increase from the value, HB 14.21 to 14.76 after cupping therapy , is the same as the MCV value from 85.51 after cupping therapy to 85.65

Figure 2. Pre and Post Routine Hematology: PLT, RDWSD, RDWCV, PDW, MPV, PLCR, PCT



The results of statistical tests on examination of hematological levels in the community during the Covid-19 pandemic.

Table 2.

Value of routine blood hematology statistical test

Variable	Respondent		
	Mean	SD	P-Value
WBCpre - WBCpost	.741	.908	.000*
RBCpre - RBCpost	.439	.626	.001*
HBpre - HBpost	-.547	.826	.002*
HCTpre - HCTpost	1.32	2.89	.028*
MCVpre - MCVpost	-.134	1.93	.725
MCHpre - MCHpost	.119	.236	.017*
MCHCpre - MCHCpost	.157	.610	.200
PLTpre - PLTpost	-13.2	44.3	.139
RDWSDpre - RDWSDpost	-.100	1.11	.652
RDWCVpre - RDWCVpost	.126	.753	.399
PDWpre - PDWpost	.173	1.40	.535
MPVpre - MPVpost	.084	.573	.459
PLCRpre - PLCRpost	.615	4.36	.479
PCTpre - PCTpost	-.014	.040	.086

*Paired sample T test; P value = 0.05 ; * = significant*

Based on Figure 2, the average RDWSD, RDWCV, PDW, MPV, PLCT, PCT in the community before and after the pandemic, generally the values are the same, some are decreasing, some are increasing, not too high. The mean value of PLT tends to increase from 236.00 to 249.27 after cupping therapy.

Based on Table 2 above, the results of the paired T sample statistical test, in healthy respondents during the Covid-19 pandemic was cupping therapy on five variables of routine blood hematology values from WBC, RBC, HB, HCT, MCH there were significant differences ($P< 0.05$), meaning that there is a significant effect before and after cupping therapy on these five variables. Meanwhile, for other variables, there are differences in the mean and standard deviation values, but they are not statistically significant.

Discussion

In several articles and research that complementary cupping therapy can improve health. In a study conducted by Ahmed et al., cupping therapy improved the clinical condition of patients. The study of El Sayedet al. showed that cupping therapy can treat the condition of iron overload in thalassemia. Cupping therapy has a strong scientific and medical basis (Taibah mechanism) which explains its effectiveness in treating many disease conditions that differ in etiology and pathogenesis. Cupping therapy uses

the physiological principles of pressure-dependent excretion, such as excretion through renal glomerular filtration and evacuation of abscesses. Cupping therapy functions as a percutaneous excretory function that purifies blood (via fenestrated skin capillaries) and interstitial fluid of pathological substances without increasing the metabolic or detoxifying load on the liver and kidneys. Cupping therapy is reported to significantly purify the blood, enhance natural immunity, enhance pharmacological treatment, and treat various disease conditions (Ahmed, Madbouly, Maklad, & Abu-Shady, 2005; El Sayed et al., 2014; Rosyanti et al., 2020)

Cupping therapy can improve a person's immune system. The presence of skin wounds (mild skin scarification) will increase the production of endogenous nitric oxide by regulating the expression of nitric oxide synthase (NOS). Neuronal NOS messenger ribonucleic acid (mRNA) is upregulated and neuronal NOS protein expression peaks in the late stages of skin wound healing. The induced NOS mRNA increased approximately tenfold, peaked 24 h after injury, and persisted for several days. Nitric oxide plays an important role, in antioxidant effects, vasodilator function, and antimicrobial effects. In addition, cupping therapy has functions in nonspecific biochemical clearance of serum and interstitial fluid, excretion, antinociceptive (analgesic) effect, anti-inflammatory effect, hemodynamic effect, antiviral effect, anticancer effect, antiallergic, respiratory, and neurological effects (Boissel et al., 2004; Cals-Grierson & Ormerod, 2004; El Sayed et al., 2014)

The stabbing performed in complementary cupping therapy becomes a stressor and signal for body tissues so as to stimulate the hypothalamus, pituitary, and adrenal medulla reactions to activate the sympathetic nervous system thereby releasing epinephrine and norepinephrine which in turn stimulates the kidneys to form new red blood cells (erythropoiesis). Erythropoietin production will begin to form within a few minutes and peak production within 24 hours. In this study, there were changes in routine blood hematology status in healthy communities during the Covid 19 pandemic, namely WBC, RBC, HB, HCT, MCH. With increasing HB and HCT values, MCH is the three main red blood cell indices that help measure the average size and hemoglobin composition of red blood cells. In the hematological system, cupping can regulate the coagulation and anticoagulation systems (eg lowering levels of hematological elements such as fibrinogen)(Hall & Hall, 2020; Reza et al., 2012; Rosyanti & Hadi, 2020b)

Red blood cells have many vital physiological functions in a person's body, including carrying oxygen and carbon dioxide and gas exchange between blood and tissues, due to their ability to change shape and flow in microvascular tissues.

Red blood cells, with mean corpuscular volume (MCV) are used to identify several diseases of the hematological system including iron deficiency anemia and bone marrow dysfunction. A clinical condition in which red blood cells increase or decrease, due to ineffective production of red blood cells. (Li, Zhou, & Tang, 2017)

Several studies on the effect after two weeks of cupping therapy, there was a significant reduction in HCT, Hb and viscosity and the number of red blood cells in venous blood; This shows that there is a decrease in viscosity following a decrease in the number of red blood cells which has an effect on reducing the burden on the heart. Red blood cells carry hemoglobin in the tissues and cells of the body, which in turn transports oxygen. The amount of oxygen in the tissue depends on the number and function of red blood cells and hemoglobin, in this study there was no significant difference in MCHC but the levels of HB and MCH were higher, meaning that there was an increase in the amount of hemoglobin and the concentration of hemoglobin in red blood cells in cupping therapy, while an increase in MCH reflects the hemoglobin content of red blood cells. MCH value was calculated from hemoglobin (Hgb), hematocrit (Hct), and RBC count(Reza et al., 2012; Zuckerman, 2007)

There are no serious health effects after cupping therapy. In addition, a review of 16 studies related to cupping therapy found that side effects are rare, and most can be avoided if performed by trained cupping therapy personnel. Complementary cupping therapy is a safe therapeutic procedure when performed properly by a qualified, trained, and licensed practitioner. It is very rare that there are side effects when the correct criteria for the application of cupping therapy are met. Strict sterilization is a must at the start, during the procedure, and at the end of therapy. In several studies, the effect of cupping therapy will have a significant effect when combined with Al-Quranic therapy.. (Kim, Kim, Hwangbo, & Yang, 2012; Rosyanti et al., 2021)

The mechanism of complementary cupping therapy that has a direct effect on hematological parameters is that during the cupping therapy process there will be negative pressure at the time of suction, causing hypoxia (decreased oxygenation) in the skin tissue. The body's cell reaction to hypoxic conditions is an increase in protein levels that cause hypoxia -1. HIP-1α is a transcription factor that plays an important role in maintaining oxygen balance at the cellular and systemic levels. HIP-1α stimulates the spinal cord to secrete hematopoietic stem cells thereby accelerating the production of red blood cells. In addition, hypoxia will also stimulate erythropoietin cells in the kidneys to accelerate the production of red blood cells. (Sharaf & Murtadlo, 2012; Wanandi, Dewi, & Paramita, 2010)

The results of Pranata L's study, showed a significant increase in hemoglobin levels, 8 hours after wet cupping was performed on healthy venous blood, the average hemoglobin level was 15.08 ± 0.63 increased to 15.45 ± 0.76. Cupping therapy affects venous blood hemoglobin levels of healthy people, so cupping therapy can be used in alternative and complementary therapies. As a therapy with the benefit of cleansing the body of blood containing toxins with thin incisions or small punctures on the surface of the skin, cupping therapy was developed as an alternative and complementary medicine. (Pranata, 2018)

Cupping therapy can help improve health and form the basis of immunity during the COVID-19 pandemic. There was an improvement in several variables from routine haematological examination after cupping therapy. The existence of scarification or incisions made to remove toxins, inflammatory agents so that there is an improvement in lymph and blood flow, providing balance to the body's internal systems. Studies on complementary therapeutic approaches are still limited and the use of cupping therapy in some developing countries has had a positive effect. Previous research on cupping therapy is still limited, and some of it is influenced by cultural, social, and religious factors so there is a risk of bias. Randomized clinical trials show variable risk and have methodological limitations. So it is important to continue to improve the cupping therapy research methodology. (A. M. N. Al-Bedah et al., 2019; Al Bedah et al., 2016; AlBedah et al., 2011; Almaiman, 2018)

CONCLUSION

Cupping therapy is beneficial in restoring the body's balance by strengthening the immune system, eliminating pathogenic factors, increasing blood circulation and reducing pain. Wet cupping therapy can improve routine blood hematological status, especially on the variables WBC, RBC, HB, HCT, MCH so that it becomes a recommendation to maintain health in healthy communities during the COVID-19 pandemic. Cupping therapy should be done in a trusted clinic, and with a professional therapist. Disadvantages of Research, Need further research with a wider randomized system and participants and stricter methodologies and variables

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