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Research Article

The Effect of Cupping Ttherapy on Sleep Quality in Post Stroke Patients

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Abstract

Background: Stroke is the leading cause of disability and the fifth cause of death. In addition to death and disability, it turns out that other effects of stroke disease can experience sleep disturbances and problems, so the quality of sleep becomes poor and can affect the degree of disability in stroke patients, so it is necessary to undergo therapy with various modalities, such as cupping therapy.
Objectives: The purpose of this study was to identify the effect of cupping therapy on the sleep quality of post-stroke patients, identify the picture of sleep quality before being bought cupping therapy in post-stroke patients, and identify the picture of sleep quality after being given cupping therapy in post stroke patients.
Methods: The research design in this study used a quasi with a pre-test post-test group one design for 2 weeks without any control groups with the Pittsburgh Sleep Quality Index (PSQI) questionnaire.
Results: After 2 weeks of treatment, the respondents showed an increase in their ability to sleep, the average quality of sleep before being given intelligence, namely 9.200, and the average value of cells that were given intelligence, namely 3.733. The results of the effect test obtained a p-value <0.001 and the result of the effect size was 3.42 and it was obtained It was concluded that there was a significant difference between sleep quality before intelligence was given and sleep quality after intelligence was given.
Conclusion: A complementary therapy that can be used for stroke is cupping therapy. stroke sufferers can experience sleep disturbances so that the quality of sleep becomes poor and affects the degree of disability. then there is a takeover, the impact is that it can cause drowsiness and deep sleep.

Keywords: cupping therapy, sleep quality, stroke

Introduction

Stroke is a disease that ranks second out of 10 causes of death in the world after ischemic heart disease in 2012.[1] Meanwhile, in the United States, stroke is the leading cause of disability and the fifth leading cause of death. Approximately 795,000 people in the United States each year have a new (610,000 people) or recurrent (185,000 people) stroke.[2] According to the World Health Organization (WHO) throughout Indonesia, deaths from stroke 7.9% are 12.1 per 1000 population. In addition to death and disability, stroke can cause various neurological disorders, depending on the location of the lesion that is blocked by blood vessels.[3] The location of the blocked lesion can cause effects such as paralysis, disability, communication disorders, emotional disturbances, pain, sleep disturbances, depression, dysphagia, and so on.[4] Other impacts Strokes can cause sleep disturbances and problems so that sleep quality becomes poor and can affect the degree of disturbance in stroke patients.[5]

Sleep is a state of change in the consciousness or unconsciousness of each individual that can still be developed.[6] Based on the impact above, stroke has become a world concern because of its high prevalence.[1] The prevalence of stroke in the United States is around 7 million (3.0%).[2,7] China's stroke prevalence is around 1.8% (rural).[7] Based on Basic Health Research (RISKESDAS) data, the prevalence of stroke in Indonesia based on the diagnosis of health workers is 12.1 per 1000 population.[1] The highest prevalence of stroke based on diagnoses by health workers and symptoms was found in South Sulawesi (17.9‰), DI Yogyakarta (16.9‰)[1], stroke prevalence increased from 7% to 11%, stroke was quite high, namely 12%.[8] With the increasing prevalence of stroke and the impact of post-stroke causing sleep disturbances so that sleep quality becomes poor and affects the degree of disability, it is necessary to apply modalities such as cupping therapy.[5] Cupping therapy is a method of traditional medicine that has the working principle of removing blood in the back area so that it can cure diseases.[9] dizziness, convulsions, and cramps that occur in the muscles.[6] Related research that has been conducted on stroke patients who require palliative homecare treatment, shows that patients perceive their quality of life to be low in the domains of emotion, rest and sleep, cognition, communication, mobility, mental feelings, pain, and fatigue.[10] Wells et al. (2010) suggested that alternative medicine is often used in patients with neurological disorders such as stroke.[11] The reasons patients take into consideration in choosing complementary alternative therapy are the assumptions that alternative and complementary therapies are cheaper, natural, easy to access, and have patient confidence.[12]

Based on this description, The purpose of this study is to determine the effect of cupping therapy on the sleep quality of post-stroke patients at the BRC Cianjur Clinic.

Methods

This research is a quasi-experimental design with a total of 15 respondents at BRC Cianjur, the sample was taken by purposive sampling based on initial screening of sleep quality. This research lasted for 2 weeks from 15 to 21 January 2023. The variables in this study were the characteristics of the respondents consisting of age, gender, education, occupation, and cupping therapy as independent variables, and sleep quality as the dependent variable. The population in this study were all post-stroke patients. The sample in this study were post-stroke patients who did cupping therapy on sleep quality in post-stroke patients. The sampling technique in this study used purposive sampling which was adjusted to the inclusion criteria, namely patients who had post-stroke, were not doing other complementary therapies, were following complementary cupping therapy regularly (once a month), and did not consume caffeine, or alcohol, and drugs. drugs that make you drowsy such as antihistamines (promethazine), tryptophan during the research and cupping process. and the exclusion criteria in this study were suffering from chronic

diseases such as diabetes mellitus, kidney failure, cancer, patients with weak general conditions, and patients who were unable to communicate properly (very sick, mentally disturbed, and so on).

Based on the flow of research conducted by researchers, the first is the process of screening sleep quality using the PSQI (Pittsburgh Sleep Quality Index) questionnaire with 9 questions in the standardized questionnaire used. After that, the second stage was the implementation of cupping therapy interventions in the back area for 45 minutes and data collection. Implementation of the intervention in the initial patient session was measured pretest before therapy was given and a posttest in the final session of the intervention. The instrument used in this study was the PSQI, the PSQI assessment was carried out by making observations such as good or bad quality with ratings (1-5) Low, (6-11) High. Data analysis in this study used univariate and bivariate analysis. The statistical analysis application used in this study is JAMOVI 2.3.18, an open-source application that can be downloaded for free via the official website. Univariate analysis used descriptive analysis, and bivariate analysis used paired t-test which previously carried out the normality test.

This research has passed the research ethics protocol test by the Research Ethics Commission of the University of Indonesia Maju with number: No.3985/Ka-Dept/RE/UIMA/III/2023. The implementation of research is voluntary and there is no coercion. Researchers used informed consent as proof of participation in the research process.

Results

Respondent Characteristics

Table 1. Characteristics of Respondents Based on Age, Sleep Quality, Gender, Education, and Occupation

Variable	Category	Mean (SD) n (%)
Age, Mean (SD)	Age	57 (8,26)
PSQI, Mean (SD)	Sleep Quality	9,20 (1,03)
Gender, n (%)	Man	11 (73,3)
	Woman	4 (26,7)
Education, n (%)	Elementary School	n (%)
	Junior High School	8 (53,3)
	Senior High School	3 (20,0)
	University/College	4 (26,7)
Work, n (%)	Not working	9 (60,0)
	Working	6 (40,0)

Based on the results of the data from Table 1, it shows that most of the respondents were on average 57, the results of the data on respondents who did not work were 60.0%. Based on the education of the respondents, there were 53.3% junior high school. And based on the gender of the respondents there were 73.3% male.

Bivariate Analysis

Table 2. The Effect of Cupping Therapy on the Sleep Quality of Post-Stroke Patients

Variable	Measurement	Mean	SD	P-value[1]	P-value[2]
Sleep Quality	Before	9,200	1.207	0,118	0,001
	After	3,733	1,032		

*Significant Correlation at <0.118 = Normality test
*Significant Correlation at <0.001 = Paired t-test

Based on Table 2, the results of the bivariate analysis were obtained using the paired test. This test was used because the results of the normality test obtained data that were normally distributed with a p-value of 0.118. From the results of the static analysis with the paired test, significant results were obtained with a p-value of 0.001.

Discussion

The results showed that most of the respondents were elderly. This research is supported by previous research conducted.[13] Stroke is more common in the elderly with an average age of >55 years because physiologically there are physical changes associated with age including changes in blood vessels, in general, including brain blood. blood vessels that become less elastic and the accumulation of plaque in the branches of the blood vessels of the brain that lasts for years. The presence of plaque that occurs in the blood vessels of the brain will disrupt blood circulation to the brain so that the brain will experience metabolic disorders, if this happens continuously, ischemia will occur and eventually cerebral infarction.[14]

Increasing age has an impact on decreasing sleep periods, and a decrease in sleep efficiency can be seen from the age of 40, sleep efficiency has decreased by three percent every decade.[15] According to the theory put forward by Kasaah (2012), everyone's age is different. A person's sleep needs are not only seen from the number of hours of sleep but also from how well a person sleeps. Sleep quality itself is defined as an individual's ability to meet his sleep needs to fulfill the maximum amount of NREM & REM sleep.[16] In addition, the results of this study are also in line with research that the higher the age of the elderly, the worse the quality of sleep. Age is one of the determining factors for the length of sleep a person needs. The older you get, the less sleep you need. Individuals who are elderly sleep about 6 hours a day, and individuals who are elderly often sleep during the day so it becomes difficult to sleep at night besides that at night the individual often wakes up and usually wakes up too early making the individual experience quality bad sleep. This is also in line with the theory which states that one of the factors that affect sleep quality is age. less elastic and accumulation of plaque in the branches of the blood vessels of the brain that lasts for years. The presence of plaque that occurs in the blood vessels of the brain will interfere with blood circulation to the brain so that the brain will experience metabolic disorders, if this happens continuously, there will be ischemia, and eventually cerebral infarction will occur other than working age.

Workers in this respondent mostly do not work. Occupational status also has a relationship with economic status, while various types of diseases that often occur in the family are usually related to the type of work that can affect family income. The incidence of death due to stroke is closely related to work and income in the family, in general, the stroke mortality rate increases in patients who have low socioeconomic status.[17] Ischemia is most common in non-working patients. This supports Hartono's statement (2007) that stroke occurs in patients who don't work because they tend to live a more relaxed life, have irregular eating patterns, lazy to exercise, and have higher levels of stress when compared to people who work. As in research conducted by Hartono (2007) patients who do not have a job will experience stress because they think about how to find work and get a job. It can be concluded that patients who do not work support that stroke occurs in patients who do not work because there is a tendency to live more relaxed, irregular eating patterns, laziness to exercise, and higher levels of stress when compared to people who work. Patients who do not work this supports that stroke occurs in patients who do not work because there is a tendency to live more relaxed, irregular eating patterns, laziness to exercise, and higher levels of stress when compared to people who work other than age, work education, is also a factor of stroke.[17]

Education The characteristics of the respondents in this study were that almost all of them had junior high school education. In contrast to previous research which found

that the education of most stroke patients was > Junior High School. In this study, the highest distribution of respondents' levels of education was junior and senior high school education levels, which indirectly influenced the incidence of stroke. Education is an effort to increase a person's knowledge so that he is expected to be able to change his health behavior for the better and improve his health. Campus. This research is in line with the research of Nastiti (2012), that the majority of respondents have a higher level of education, namely at least graduating from junior high school. Education is one of the socio-economic factors. Education is an effort to increase a person's knowledge so that he is expected to be able to change his health behavior for the better and improve his health. Apart from age, occupation, education, and gender are also factors that cause stroke.[13]

The sex of the respondents in this study was male. Characteristics of the respondents according to gender were mostly male. This study is in line with research conducted by Nastiti (2012) that the majority of respondents were male post-stroke patients.[13] Gender is a stroke risk factor that cannot be changed. Several studies have shown that men are more at risk of stroke than women. However, women who have experienced menopause have the same stroke risk as men.[17] Apart from occurring in men, stroke also affects women even though men are at three times the risk compared to women.[18] Men are more susceptible to stroke because women have the hormone estrogen which can maintain a woman's immunity until the age of menopause as a protector from within.[17] It can be concluded that stroke often occurs in men because apart from smoking, the main cause of increased stroke in men is an unhealthy lifestyle and high levels of stress.

Data Distribution of Cupping Therapy Pretest and Posttest Results on Sleep Quality

From the research data that has been done, there is a significant difference between the quality of sleep before (pretest) the cupping therapy intervention and after (posttest) the intervention. From the results of the SPSS statistical test, the T-test obtained a p-value of 0.001 ($\alpha = 0.05$), so the p-value is smaller than $\alpha < 0.05$, which means H1 is accepted. So it can be concluded that there is an effect of cupping therapy on sleep quality in post-stroke patients. Meanwhile, based on research Mia Audina et al., (2020), concluded that the results of the marginal homogeneity statistical test obtained a value of $p = 0.000$ which is smaller than the value of α (0.05) meaning that there is a significant effect. This shows that cupping affects the sleep quality of stroke sufferers.[6] Based on research by M. Kim & Han (2021)[19] it was concluded that there was a significant effect with a p-value of 0.001 <0.05 from a randomized controlled trial (RCT). This is in line with the "Theory of Nitric Oxide" and "Reflex Zone Theory" which show that cupping therapy has a relaxing effect on the muscles followed by a calming effect on the patient so that the quality of sleep becomes better. In addition, this research is also in line with the "Pain Gate Theory" which has the effect of reducing pain or pain felt by patients so that pain that causes sleep quality disturbances can be resolved and is supported by Katherine Kolcaba's theory of comfort, which is based on a framework developed by Kolcaba said that pain and sleep quality are the need for comfort where comfort measures are planning nursing interventions that specifically provide comfort needs for patients including physiological, social, psychological, spiritual, and environmental.[20]

Sleep is a repetitive, regular, easily reversible state characterized by a relatively immobile state and a highly increased response threshold to external stimuli compared to the waking state (Harkomah, 2020) According to Potter, the system that regulates sleep cycles or changes is divided into two, namely the Reticular Activating System (RAS) and Bulbar Synchronizing Regional (BSR) which are affected by the presence of neurotransmitter activity such as systems in the brainstem. 12 Reticular Activity System (RAS) activity is highly serotoninergic, noradrenergic, cholinergic, and histaminergic. Increased serotonin, decreased noradrenaline, decreased cholinergic, and increased

histamine can cause a person to sleep easily and soundly. According to the Indonesian Wikipedia, cupping or hijama is defined as a treatment technique by removes dirty blood (dangerous toxins) from the body through the surface of the skin. Meanwhile, K. W. Kim et al., (2020)[21] state that cupping therapy is a treatment to remove toxins from the body by using a special cup to produce suction and absorption on the surface of the skin. In the cupping process substances will be released from the mast cells in the form of SRS/slow-reacting substances, histamine, bradykine, and serotonin.[22] The function of histamine is to stimulate the formation of reticuloendothelial cells thereby increasing the body's immunity and increasing body resistance. Another function of histamine is as an anti-inflammatory and helps the cell repair process.[23] Capillaries will widen as a result of various substances being released/out of the cupping mechanism which is affected by the negative pressure from inside the cupping cup.

Cupping therapy will stimulate the nerves on the surface of the skin, then proceed to the posterior horn of the spinal cord via the A-delta and C nerves and the spinothalamic tract to the thalamus which will produce endorphins. These endorphins will provide a relaxing effect that reduces stimulation. The stimulus is passed down to the Reticular Activating System (SAR) and then taken over by the Bulbar Synchronizing Region (BSR). the impact can cause drowsiness and deep sleep.

The pharmacological therapy that can be used for stroke is cupping therapy. Stroke sufferers can experience sleep disorders so that the quality of sleep becomes poor and affects the degree of disability. Cupping therapy will stimulate the nerves on the surface of the skin, and then provide a relaxing effect that reduces the stimulus. Then it takes over, the impact of which can cause drowsiness and sleep soundly

Limitations

The findings of this study indicate that patients with post-stroke conditions with poor sleep quality can be given interventional cupping therapy so that they can maximize rehabilitation therapy and restore the patient's ability to sleep quality. The limitation of this research is that the number of respondents who were taken is hoped that the next researcher will take more samples. This research can be used as a reference and can be used by the public to consider cupping therapy interventions as useful interventions for the recovery of post-stroke patients.

Conclusion

A complementary therapy that can be used for stroke is cupping therapy. Stroke sufferers can experience sleep disorders, resulting in poor sleep quality and an impact on the degree of disability. then it takes over, the impact can cause drowsiness and restless sleep. Thank you for all your support to respondents who have participated in this research activity.

Conflict of Interest Declaration

There are no relevant conflicts of interest in this research.

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