

The effects of Wet-Cupping on intensity of headache in Migraine sufferers

Amir Tabatabaee^{1*}, Mohammad Zarei¹, Seyed Ali Javadi², Ali Mohammadpour³, Ali akbarBidaki⁴

1. Department of Nursing, Quchan Branch, Islamic Azad University, Quchan, Iran.

2. Iran Institute of Research on Hejamat, Tehran, Iran.

3. Department of Nursing, Social Determinants of Health Research Center, Gonabad University of Medical Sciences, Gonabad, Iran.

4. Department of Neurology, Mashhad University of Medical Sciences, Quchan, Iran.

Abstract

Introduction: Migraine has a collection of symptoms characterized by recurrent and severe headaches. Complementary methods can reduce the use of analgesics and might be effective in reducing pain in patients waiting for analgesics. The purpose of this study was to determine the effect of wet-cupping on patients within 20 to 60 years of age diagnosed with migraine headaches.

Materials & Methods: This study was carried out before and after clinical trial; the samples were 47 patients diagnosed with migraine headaches. Inclusion criteria consisted of a confirmed diagnosis of migraine and all the patients had to be 20 years old or above. The pain severity was evaluated twice; at the beginning and after 14 days following two sessions of wet cupping with an interval of 2 weeks. The visual pain scale was evaluated in the patients. Data were analyzed by paired t-test and Fisher's exact test using SPSS, version 17.

Results: The means for pain intensity at the beginning and the end of the study were significantly decreased ($p=0.001$). In most patients pain was intolerable before wet-cupping (averagely 7.79%), however, after the first (53.1%) and second (48.9%) sessions of wet-cupping, pain respectively lessened (3.15%). There was no statistically significant correlation between pain, educational level, marital status, or employment in the statistics from the beginning to the end of the study. The mean of pain reduction in women was more than in men, but the difference was not significant.

Conclusion: Findings of the research indicates that using wet-cupping as a complementary method can influence the intensity of migraine pains. Due to the free count use of complementary medicine techniques, training competent qualified persons to provide services in traditional and complementary medicine is necessary. Yet further studies on larger number of patients are suggested by the results of this pilot study as the researchers commented.

Keywords: Alternative medicine, Wet-cupping, Headache, Migraine.

Introduction

Pain is one of the biggest concerns of human being from the very beginning stages of his existence to the last i.e. death (1). This phenomenon is the second reason why people frequently refer to healthcare clinics, which in turn, explains the length of treatment and admission to such places (2). Pain slows down an individual's activities and movements, and consequently, decreases the social interactions, and everyday routines ending in economic problems. All this causes feeling of

hopelessness, distrust, and desolation (3). Chronic pains may have a variety of causes and prevail in different parts of the body, e.g. the head (4). It is estimated that 2-15% of the world's population is affected by migraine headaches. This type of headache usually starts at puberty stage and is more frequent among women than in men. It is a series of symptoms accompanied with excruciating pain, acute and periodic headaches, which last 4 to 72 hours in adults. Studies in 50 countries suggest a prevalence of the disease 6% among men and

*Corresponding author:

Department of Nursing, Quchan Branch, Islamic Azad University, Quchan, Iran

Tel: +989153135849 Email: tabatabaeei.amir@gmail.com

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18% among women(2). Chronic migraine headaches last between 4 to 72 hours, along with relief intervals after each attack. According to a survey, Yousefi, monitoring 554 medical students and MDs at Zanjan University of Medical Sciences, there were 33 men (9.42%) and 28 women (13.72%) suffering from migraine headaches(5).

Controlling and relieving the pain is one of the major challenges for the members of the treatment teams. Comfort and relief are provided through either drug or non-drug treatments. In the former, three forms of addictive and non-addictive drugs and non-steroid treatments are applied. Addiction induced by drugs may cause adverse reactions in respiratory, nausea, constipation, and insufficient treatment (6). This may cause adverse reaction in GI, vertigo, vision disorders, tinnitus, and hematologic adverse reaction (2). Due to the side effects of these drugs, the application of less problematic ones is required. Currently, use of non-drug treatments is increasing (4). These non-drug interventions are usually called alternative or complementary treatments (complementary medicine). Alternative treatments are the non-traditional ones, whereas the complementary treatments are a combination of both modern non-drug treatments and the traditional ones. However, these two terms are interchangeably referred to (7). Recently, the supplementary treatments have become increasingly more popular. These treatments are community oriented and are considered to guarantee both physical and psychological comfort of the patients. Touch therapy, hypnotism, homoeopathy, reflexology, aromatherapy, acupuncture, and cupping are examples of complementary treatments. Complementary

medicine is generally considered as a means of treatment which is increasingly gaining popularity. As estimated, one out of three patients has taken complementary treatments for common diseases such as backache, headache, anxiety, depression, and the like (8). In Iran, there is no census available to illustrate the application of traditional medicine. However, a survey shows that in Teheran, half of the population has at least tried one traditional complementary treatment in the past year (9).

Hijamat or cupping has been applied for thousands of years and is now considered as a non-drug treatment in complementary medicine. The word hijamat is Arabic for suction-hajama (hajm) and the word mihjam describe the blood vessels traced by the person who does the treatment by means of certain equipment (10). Hijamat is a blood-letting method and a form of suction that is done to prevent and treat diseases. The word Hijamat is probably derived from the word tahjim in Arabic meaning 'expansion' through which blood vessels are locally expanded (12).

Hijamat dates 5000 years back in the history of the oriental medicine, as evident in the Hindi traditional book known as Ayurveda (11). It is one of the basic elements in Islamic and traditional medicine of the ancient Persia. At the time, people believed that it would remove poisons and wastes from the body ensuring the person's health. Avicenna prescribes hijamat as a remedy to all diseases. Imam Ali (peace be upon him) says, "Hijamat heals the physique and strengthens the mind" (13).

Traditionally, hollow tools and instruments were used in suction process to remove the blood from the scarred areas. Bamboo trees

were used in India. Africans used cabaz and the Germans instrumented animal horns for this purpose. (14) Today, old equipment is replaced by special glass or plastic cups, along with manual or electric suction, which are in accordance with cultural background of places they are being used (15).

In cupping, treatment is done on certain areas. It is said that cupping improves the function(s) of transplant tissue and recirculates the blood back to skin and muscles. It also reduces pain and hypertension, balances the immune, nervous and hormonal systems (16). Cupping influentially inactivates the functionality of muscles resulting in better lymph and blood circulation, and eases pain in shoulders at its best. Cupping can increase blood circulation in joints, enhance the synovial fluids secretion and eliminate the muscular spasm surrounding the joints, which would reduce the chronic pain in rheumatic joints (17). The cupping method applied in the studies decreased the cholesterol level in blood (18,19), and as a remedy to diabetes (20, 21), hypertension (22), asthma and allergy (23), controlling muscular-skeletal pains like osteoarthritis (24), and headaches (25) proved to be positive. Cupping in the world today, is utilized as an alternative treatment for those diagnosed with pain syndromes (26). Kim et al., in a systematic review, determined that backache was relieved much better by cupping than the common treatments and analgesic usually prescribed. It also has positive impacts on reducing the pain induced by cancer and neuralgia of trigeminal nerve as compared to other anti-cancer drugs and analgesic. However, cupping, compared to anti-virus drugs, failed to reduce the herpes zoster (27). Michalsen et al., showed that cupping

decreased the pain caused by the carpal tunnel syndrome (28). Niasari et al., showed a significant decrease in LDL and the LDL/HDL ratio after cupping was practiced(2). No significant change, however, was observed in the triglyceride, HDL, or total cholesterol (19).

Despite all studies, the effects of cupping still remain unknown and some physicians seem to be in doubt (29). Most of those who practice the complementary medicine, compared to those who do not, tend to report their worsened health (30). Nurses and other treatment team members, on the other hand, should be well aware of both alternative and complementary methods to take the patients' pain under control more effectively (3).

The present study was planned and carried out to determine the effect of cupping on migraine headaches among the adults aged 20-60 and to draw patients' attention to less expensive and less risky methods of treatment considering all the aforementioned advantages and also the prediction of the positive effects of cupping, prevalent migraine headaches, patients' tendency to these methods, lower costs and slighter side effects, lack of enough information, and also the need for such studies in the field.

Materials and Methods

The present study is a before and after clinical trial. Patients diagnosed with migraine headaches treated at Imam Hussein Specialist Clinic in the city of Quchan. This clinic is located in district 1 and is the only center for the traditional medicine in the region. The Inclusion criteria for the participants were as follows: migraine headaches confirmed by a neurologist, patients aged 20-60, since cupping was not recommended for ages under 2 and

over 60 (31). The subjects should have had no history diseases such as low blood pressure, anemia, or other cases of contraindication listed for cupping practice. The subjects should have been totally aware of the method of treatment and given consent before the practice.

In order to estimate the sample size an introductory survey was conducted. Considering the average reduction of the numbers related to the patients' pain at the beginning of the study, and the third session of the study, the standard deviation was 1.22, the precision sample size to show the variations with accuracy was .05 with 80% test ability and p-values less than 0.05 were considered significant, 47 people in total were calculated to convenience sampling.

In order to collect data, a questionnaire and a checklist (the registered form for pain) were exploited. The questionnaire contained two sections: first demographic data such as age, sex, marital status, education, and the type and dosage of the drugs used. The second section was about the characteristics of the headache. The registered form for pain was devised according to the Numerical Rating Scale (NRS). To determine the technical validity of the instrument, the content validity analysis was employed. Therefore, references were made to the latest sources such as books, articles, and published materials. The content was also examined by department members, the Cupping Research Institute of Iran, and the field specialists for final confirmation. In order to determine the reliability of the instrument test re-test method was done on a number of patients within 14 days and the results were compared and the correlation was measured ($r=0.8$). The pain visual analog scale was also a

confirmed standard means. Validity and reliability of such means were examined and accepted. (32)

The researcher, on everyday visits paid to the clinic, first sought the agreement of the units of the research, meeting the requirements for participation in the research, migraine diagnosis verified by the neurologist. This was done through collecting demographic data and pain characteristics through an interview and a questionnaire. Every time, before the treatment session started, the severity of pain was measured through a visual analog scale, i.e. a set of numerals 0-9 classified in rating scale. In this scale, the numeral 0 signified no pain while the higher numerals determined more pain. The numeral 0 signified no pain, thus, the higher the numeral, the more the pain, and the numeral 10 signified the worst pain imaginable. Then, the patients were treated by cupping therapy and after the treatment; the intensity of pain was measured. Throughout the study, the treatment process and the dosage of the administered analgesic drug medicine remained unchanged. The whole process of cupping therapy was monitored by two researchers. To get higher effectiveness, the process was implemented twice with an interval of fourteen days. The units were instructed to note down the pain they felt on day fourteen, that is after the second cupping therapy, in the forms provided showing the degree of pain from 0 to 10.

In general cupping therapy, a sterilized glass is placed between the patient's shoulder blade and the suction through a valve leaves some feeling of numbness and coldness. The glass is then removed and the skin is slightly given some scrape with a lancet. The suction cup is replaced on the cut, suction happens,

and the procedure is repeated three times so some blood is removed and as a result, some blood is extracted through suction. The body tissue would secrete the required amount and the healers do not decide on the amount. The secretion occurs through the pressure the suction enforces (33).

The data was analyzed through both descriptive and inferential statistics. To describe the quantitative and qualitative data, standard deviation and distribution were reported in percentage. In order to mark the relation between pain and an individual's personal information, and also to compare the pain severity before and after the cupping treatment sessions, appropriate tests, analytic census like paired t-test, and repeated measure plan were reviewed. To analyze the collected data, the SPSS was applied and the statistical tests at a meaningful ($p < 0.05$) were considered. In the current study, the researchers followed the medical ethics throughout the research while treating the subjects so they gave consent and presented their personal and confidential information they were asked for. The participants were completely aware of the study conditions and they were free to leave at any time they decided.

Ethical considerations

Participants declared their approval via signing a writing consent. Patients with migrant suffers were informed about the purpose of the research, as well as the data collection procedures in order to ensure privacy. Participants were assured that talking part in this study is voluntary, and they can cancel proceeding at any time

Results

According to the research findings, the highest percentage of the subjects, i.e. 66% were female participants. 27.66% of the subjects were between ages 30-39, the average of age was 34 ± 11.41 . Most of the participants enrolled had elementary level of education, i.e. 44.7% whereas 27% were academia graduates. The majority of the research units (07.4%) were housekeepers. 12.8% were bachelors, 78.7% were married, 8.5% were divorced or those whose spouse was deceased. Those without any children included 21.6% while the rest had 1 to 8 children. Most of the subjects (91.5%) had insurance coverage. Some were using herbal medicine (38%) but 68% used chemical or alternative methods of treatment to relieve their headaches. There was no change in their dosage and frequency of using their own methods during the study, i.e. the cupping therapy. The assessment of severity of the headache showed 8-10, i.e. 53.1% unbearable pain. None of the subjects were reported to have suffered a slightest pain, i.e. 1-2. Moderate pain affected 12.8% that is 3-4, whereas 38.3% suffered from severe pain, 5-7.

The results suggested that the majority of the patients, 59.6%, had more than 8 years' experience of battling migraine headaches. This time factor, of course, varied according to age (Table1).

The findings also showed a significant change in the severity of pain after the intervention ($p = 0.001$). The severity of the pain in the majority of the patients before cupping therapy was unbearable, whereas after the treatment, it lessened to a medium range. With respect to the mean and standard deviation of the changes in the pain severity

in the subjects at each session, the paired t-test results indicated that there was a significant difference between the mean scores before and after each session ($p < 0.001$). According to the findings, pain severity of migraine headaches was reported to decrease 14 days after the treatment sessions were over. On average, the pain severity showed a meaningful decrease after the sessions as compared to the early days of the 28 day treatment period (Table 2).

On the other hand, the findings showed an insignificant stability in the effects of cupping in easing the pain two weeks after the sessions ended (Table 3). According to table 3, the statistical test of repeated measure, except for the average pain severity in the last stage of the second session (14 days after the second cupping) expressed meaningful difference as compared to other stages.

Reviewing the findings, as mentioned earlier, pain severity of the majority of the subjects had been much stronger before they attended the sessions, however, this severity decreased considerably in the majority of the patients at the ending of the first two sessions and the next fourteen days. The pain turned to moderate and lessen after the sessions (Table 4).

As Table 4 indicates, the pain severity of the majority of the subjects was unbearable before the cupping therapy, however, after the first two sessions the average pain was (48.9%), and four weeks later, i.e. after the treatment ended, the average pain severity indicated (61.7%).

The results of the study, with respect to daily intervals the subjects took pain relievers, indicate that most of the subjects were taking analgesic drug only when they experienced pain which varied in different individuals. The results showed that the frequency of taking pain relievers by the subjects, i.e. 63.8%, occurred only once a day. While the research was in progress, no change on drug usage was reported.

According to the table, the severity of pain in most of the units was reported as unbearable before the cupping therapy. However, after the first two treatment sessions, it was reported to be average, i.e. 48.9% and fourteen days after the sessions ended, the severity indicated an average of 61.7%

The results of the study with respect to the number of times pain relievers were used indicate that the majority of subjects used them in time of pain but the frequency varied from one subject to another. Thus, the results suggest that the highest relative diversity and the maximum relative frequency of using analgesic drug by the research subjects (63.8%) was once a day. It is noteworthy to mention that there was no change in the frequency of using pain relievers during the study.

The decrease in the pain severity with respect to variables such as age, education, and marital status, was not significant. The results indicated that the average of the decrease in pain among women was higher, but not significant.

Table1: Frequency distribution for patients with respect to the length of time experiencing pain

Duration of pain	Number	Percentage
Less than 2 years	11	23.4
3-6 year	2	4.3
6-8 year	6	12.8
More than 8 years	28	59.6
Total	47	100.0

Table2: Comparison of pain before and after (changes in pain severity before and after) the cupping sessions in the subjects

Changes in pain intensity sessions	Means ± SD	Paired T-Test
Before and after session 1	0.73 ± 0.936	t=8.74 p= 0.001
Session 1&2	0.72 ± 0.553	t=5.29 p= 0.001
Session2 & 14 days later	0.71 ± 0.383	t= 3.71 p= 0.001
Before and 30 days after the plan	0.99 ± 1.872	t =12.94 p= 0.001

Table3: Comparison of pain before and after every single treatment session

	Before intervention (Step 1)	After the first Cupping (Step 2)	After the Second Cupping (Step 3)	After 14 days of treatments (Step 4)	Test results in different stages					
					Stage 3&4	Stage 4&2	Stage 2&3	Stage 1&4	Stage 1&3	Stage 1&2
Mean ± SD Severity of pain in each of sessions	7.79±1.91	4.81± 1.66	3.15± 1.55	2.94± 1.71						
p					0.375	0.000	0.000	0.000	0.000	0.000

Table4: Frequency distribution for patients with respect to pain severity according to separate sessions

Session Cupping Severity of pain	Before cupping		After first cupping		After second cupping		After 14 days of treatments	
	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
0 (No pain)	0	0.0	0	0.0	0	0.0	4	8.5
1-2(Mild)	0	0.0	0	0.0	12	25.5	12	25.5
3-4(Moderate)	2	4.3	23	48.9	23	48.9	29	61.7
5-7(Severe)	20	42.6	22	46.8	12	25.5	2	4.3
8-10(Unbearable)	25	53.1	2	4.3	0	0.0	0	0.0
Means pain score	7.79		4.81		3.15		2.94	
Standard Deviation	1.91		1.66		1.55		1.34	

Discussion

The present study was conducted to determine the effect of cupping therapy on migraine headaches on sufferers between ages 20-60. Majority of the subjects, who used chemical medicine before cupping treatment, indicated no change in dosage during the research. Consequently, according to the results, the method of the cupping in the subjects with severe migraine headaches experienced a meaningful decrease, with no specific side effect. Soo Lee et al following a systematic review in cupping articles claimed that the majority of reports indicated positive effects of cupping therapy (34). Michalsen et al., in the study on the effect of cupping on patients with carpal syndrome observed some decrease in pain and positive effects on the patients' quality of life (35).

Statistically, no significant relation was reported between the decrease in pain severity and variables such as age, sex, education, and marital status. The results reveal that the pain decrease in women was more evident than in men. These results are in accord with Sohan et al research that

reported a decrease in shoulder pain and fatigue among nurses after the cupping treatment. The same research also reported no significant relation between education and marital status and pain relief (36).

The research results indicated that after the first two cupping treatment sessions the average severity of pain was reported to be 48.9% and 61.7%, respectively. According to the results, this migraine headaches pain severity in the majority of subjects has decreased to two units after fourteen days of cupping therapy sessions as compared to the beginning of the treatment sessions, which lasted 30 days. These results show concordance with Ahmadi et al research. In a similar research, it was concluded that patients with tensional migraine headaches before and after treatment in one group method the pain severity decreased to a medium, i.e. 1.46. It was also claimed that a complete term of cupping therapy would be more effective than an only one-time cupping occurrence (25). Therefore, the present study considered a complete cupping therapy taking fourteen days.

Kheirandish in his research emphasizes on the positive and pain relieving effects of cupping therapy in Iran (37). The results of the statistical tests might indicate meaningful different pain severity at different stages of cupping therapy as compared to the average pain severity before the treatment, but the difference is reported to have had little meaningful difference two weeks after the treatment. Farahani et al., studied the effectiveness of cupping in relieving backaches and concluded that cupping has more short term clinical advantages than normal care leaving no side effects (38). With reference to the findings and the results of the present research, it can be concluded that despite the clear effectiveness of cupping therapy in reducing pain, this influence with respect to time shows considerable permanence within fourteen days. Therefore, a periodical frequency of cupping treatment biweekly sessions to induce long term effect is required.

Most of the study participants welcome the cupping therapy and are persistent to repeat the treatment, for it has positive effects and leaves no harmful symptom. Since the healthcare managers plan and operate the medical and nursing proceedings, they are also responsible for the quality of the treatments. Therefore, such arrangements should provide the best, the most beneficial, the most economical, and certainly the most effective treatment method that can be recommended to patients.

Relieving pain is one of the most important aims of caring programs. Majority of physicians and nurses depend on analgesic drug in treating their clients while

they are expensive and have dangerous side effects.

Therefore, with respect to the results of the current study, cupping therapy, based on the Islamic tradition, as the most economical method that has no side effect is highly considerable.

Conclusion

Chronic pain is a big challenge for both patients and those working in health systems, i.e. nurses. Therefore, considering the little study done on complementary medicine to relieve pain, greater attempts are still needed (39). As the prevalence of migraine headaches is relatively high, there is consequently a need for relieving it. Since the side effects of pain relievers are considerable, health personnel should apply nondrug treatments in total consistence with tradition and beliefs of the patients.

According to the present research findings and the relieving effects of cupping therapy on severe headaches, this treatment can be considered as an effective, a low cost, and a applicable one accepted by patients. Nurses, physicians, and other treatment team members are highly recommended to be aware of the skills and advantages of the techniques in applying cupping, and also the positive effects it has in relieving pain.

The researchers faced uncontrollable limitations in this study such as different threshold of pain in subjects, different ideas on headache and only one center for the study, and finally, only one authorized center for cupping therapy in the city of Quchan. The study results may be confined to this small size sample and lack of a control

group. However, a wider study with a bigger control group is recommended.

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