



Hijama Practices and the Perceived Health Benefits among the People of Al-Qassim Region, Saudi Arabia

Khawla Al-luhaidan¹ and M. S. Prarthana^{1*}

¹College of Applied Medical Sciences, Qassim University, Buraydah, KSA.

Authors' contributions

This work was carried out in collaboration between both authors. Author KAI designed the study, performed the statistical analysis, wrote the protocol and managed the literature searches. Author MSP wrote the first draft of the manuscript and managed the analyses of the study. Both authors read and approved the final manuscript.

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ABSTRACT

Introduction: Hijama (wet cupping therapy) is a form of traditional alternative medicine that has been in practice for thousands of years and was adopted by many different cultures. Hijama practice in the Arabic medical literature has been reported to treat many diseases differing in etiology and pathogenesis. The aim objective of this study was to determine the knowledge, attitude, and practice of Hijama among the Qassim population in Saudi Arabia. To create awareness regarding good practices and to assess the effectiveness of Hijama.

Methods: This observational type of cross-sectional survey included 201 participants who were all practising Hijama and were from the Qassim region. Data was collected using the self-administered online questionnaire and entered in Excel and analyzed using EpiInfo7 statistical software.

Results: Most of the study participants were female 70%. About 39% of them have a bachelor's degree. 61% know Hijama contradictions. Hijama was performed by traditional healers in 14% of

*Corresponding author: E-mail: drprarthana.2017@gmail.com;

the participants and at Hijama centers by 64% of the participants. About 72% of the participants notice effectiveness by practising Hijama. Only 7% of them had suffered complications.

Conclusion: The study revealed Hijama can be a simple effective economic alternative treatment that can be used to treat many ailments like back, shoulder, neck pain, headache and migraine pain. It is associated with a minimal side effect. There is still a need to create awareness among the people to go for clinical centres to perform Hijama. Future research is needed to support its therapeutic benefits.

Keywords: Hijama; wet cupping therapy; alternative medicine; traditional medicine; Al-Qassim.

1. INTRODUCTION

Hijama the traditional Arabic name for wet cupping therapy means "to return to the normal size" [1]. It is a form of an alternative medicine whose practice can be dated back to 3500 B.C. This alternative medicine was practised by many different cultures such as Arabs, Chinese, Greeks, Turkish and Persians [2]. There are many different types of cupping therapy: dry cupping, wet cupping, moving cupping and fire cupping, where all of them involve suction with or without bloodletting. The health benefits of cupping therapy are many, it ranges from treatment of conditions including low back pain, neck pain, hypertension, migraine, polycythemia, drug intoxication, bronchial asthma, gout, hyperlipidemia, hypercholesterolemia, systemic lupus erythematosus, rheumatoid arthritis, etc. [1-4]. A lot of countries are now practising CT including China, Saudi Arabia, Norway, Denmark, Egypt, India, and others. There has also been a progressive increase in the use of CT and other types of complementary medicine in the United States [1].

Hijama is a type of wet cupping therapy where the skin is lacerated and the blood is drawn into the cups so that the morbid substances are evacuated through the scarified skin [5,6]. To date, there is no physiological mechanism in modern medicine to excrete excess unwanted substances in the blood and interstitial fluid causing disturbances in the physiological homeostasis and blood chemistry, which can lead to many disease states like iron overload, high serum cholesterol, high serum uric acid, etc. Therefore, Hijama can be beneficial as it can help in the excretion of these noxious substances [3].

In recent years the interest in traditional and complementary medicine has not only grown among the public, but also among the health professionals, decision-makers, and researchers in Saudi Arabia. As Hijama is an invasive

procedure if not done with aseptic technique can lead to transmission of blood-borne infection like HIV, HCV, HBV, etc. [7]. The National Center of Complementary and Alternative medicine (NCCAM) which is regulated by Saudi Ministry of Health in association with Saudi Food and Drug Authority (SFDA) has developed standard specifications for the use of Hijama equipment as part of the continuous efforts for ensuring the safety of the practice of Hijama. Only licensed SFDA Hijama devices can be used; only licensed NCCAM practitioners are allowed to practice Hijama [8,9]. Also, NCCAM has banned the Hijama therapy for children less than 12 years, cancer patients, those undergoing chemotherapy and radiotherapy and those infected with severe or chronic kidney failure, liver failure and blood diseases like Hemophilia, patients using an artificial pacemaker, patients with varicose veins and those using blood-thinning medicines, such as Warfarin and others [9].

However, some people still practice it at home, and many at times it are performed by quacks who lack the knowledge of specific contraindications and aseptic techniques. Therefore, the main objective of this study is to find out the knowledge, attitude, and practice of Hijama among the Qassim population. And to find out the perceived health benefits associated with the use of Hijama.

2. MATERIALS AND METHODS

2.1 Study Design

This observational, cross-sectional study was conducted from September to November 2019 in the Al Qassim region, KSA.

2.2 Study Sample

A total of 201 participants both males (60) and females (141) above the age of 18 years from Qassim region who were practising Hijama and

were willing to take part in the survey were included in the study.

2.3 Data Collection

The data was collected through an online self-administered questionnaire, which was translated to Arabic language and pretested through a small pilot study conducted on 15 residents to facilitate the easy understanding by the study participants. The questionnaire was divided into 2 sections. The first section included questions on demographic characteristics such as age, sex, education level, and monthly income. And the second section included questions on knowledge, attitude, and practice of Hijama.

2.4 Data Analysis Plan

The data collected was entered in Microsoft Excel 2016 and then analyzed by EPI INFO 7 to get descriptive statistics with mean, proportion, percent, and frequency distribution. The association between the predictor and the outcome variable was analyzed using the Chi-square test, with a level of statistical significance set at 0.05.

3. RESULTS

Out of the 201 participants who took part in the study, the majority of them were in the age group 21 to 30 years (33.8%), followed by 31-40 years (25.8%) and 41-50 years (21.39%). The majority of them were females (70%), with males being 30%. 39% of them had a bachelor's degree, 29% had a high school education and only 8% of them were illiterate. 13% of the participants had income less than 3000SR per month and the rest of the participants 31%, 26%, and 30% had income 3001-8000SR, 8000-13,000SR and more than 13000SR respectively as shown in Table 1.

All of these participants were practicing Hijama, but when further enquired about the understanding of Hijama by asking 'Hijama is an alternative medicine, which means the extraction of blood from the body, that is believed to be harmful, through a specific technique?', 92% of the participants said yes, only 4% said no and the remaining 4% said they were unaware of it. There was no significant association was found between the knowledge of Hijama technique and

the demographic characteristics except for the gender where it was significantly associated, as shown in Table 2. Females had a better understanding of the technique of Hijama than males.

Table 1. Description of the demographic characteristic of the study participants

Demographic characteristics	Frequency (%) N=201
Age in years:	
18-20	13(6.47)
21-30	68(33.83)
31-40	52(25.87)
41-50	43(21.39)
>50	25(12.44)
Gender:	
Female	141(70.15)
Male	60(29.85)
Education:	
High school	58(29)
University student	27(13.5)
Bachelor degree	78(39)
Masters or PhD	21(10.5)
Illiterate	16(8)
Income/month:	
<3000 SR	26(12.9)
3001-8000 SR	62(30.85)
8001-13,000 SR	53(26.37)
>13,000 SR	60(29.85)

When asked about the source of information about Hijama, 64% claimed it to be from family and relatives, followed by 18% of friends, 8% mentioned as other sources. 61% of the participants were aware of the conditions where Hijama was prohibited and 39% were unaware of it. Hijama was recommended to 19% of the participants by their physicians and 81% of them practiced Hijama without any physician recommendation. When asked for the reason behind Hijama practice, 52% did it as a mode of treatment, 40% believed it to be beneficial to health and the rest 8% did it as it was recommended to them by their relatives. On further questioning the participants about the underlying medical conditions or ailment for which they were using Hijama as a treatment modality, 46.7% mentioned back or shoulder or neck pain, 29.3% said headache and migraine, 22.9% said joint pain, 16.4% said hypersomnia, 7.96% agreed hypertension and a lesser percent were practicing Hijama to treat high blood sugars, facial paralysis, and gout as shown in Fig. 1.

Table 2. Association between demographic characteristics and knowledge of Hijama technique

	Knowledge of Hijama technique			Total frequency (%) N= 201	P-value
	Yes	No	Don't know		
Age:					
18 – 20	11(84.62)	0(0.00)	2(15.38)	13(100)	0.2601
21 – 30	60(88.24)	4 (5.88)	4 (5.88)	68(100)	
31 – 40	48(92.31)	3(5.77)	1(1.92)	52(100)	
41 – 50	42(97.67)	0(0.00)	1 (2.33)	43(100)	
51 or more	24(96.00)	0 (0.00)	1 (4.00)	25(100)	
Gender:					
Male	48(80.00)	6 (10.00)	6(10.0)	60(100)	0.0002*
Female	137(97.16)	1 (0.71)	3(2.13)	141(100)	
Education:					
High school	55(94.83)	0(0.00)	3(5.17)	58(100)	0.3539
University Student	25(92.59)	1(3.70)	1(3.70)	27(100)	
Bachelor	68(87.18)	6(7.69)	4(5.13)	78(100)	
Master or PhD	21(100.00)	0(0.00)	0(0.00)	21(100)	
Illiterate	15(93.75)	0(0.00)	1(6.25)	16(100)	
Income/month:					
<3000 SR	25(96.15)	0(0.00)	1(3.85)	26(100)	0.3438
3001-8000 SR	54(87.10)	4(6.45)	4(6.45)	62(100)	
8001-13,000 SR	50(94.34)	0(0.00)	3(5.66)	53(100)	
>13,000 SR	56(93.33)	3(5.0)	1(1.67)	60(100)	

* P < 0.05, Statistically significant

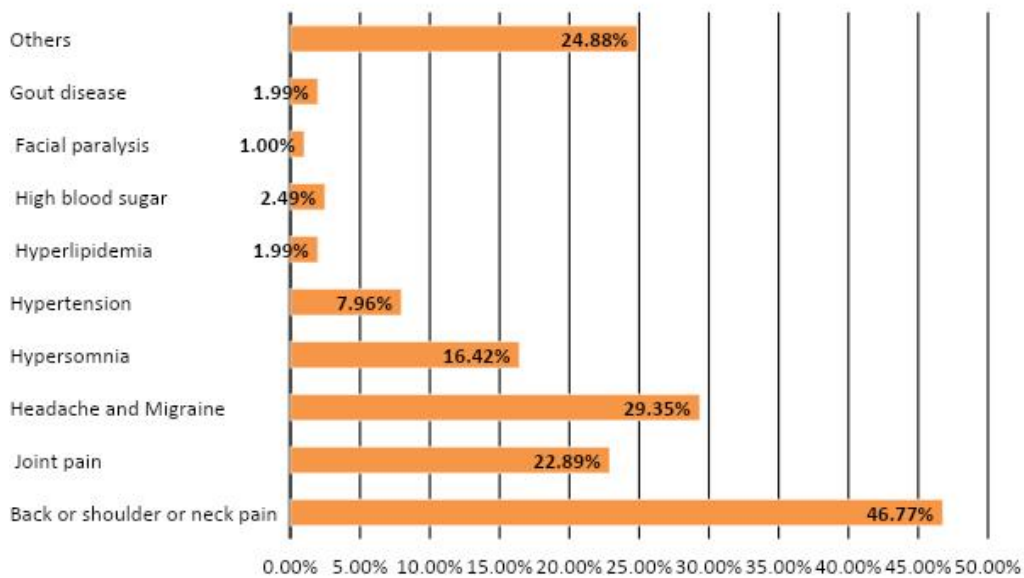


Fig. 1. *Disease conditions for which Hijama was practised as an alternative treatment by the participants
(*Multiple responses)

When asked for the effectiveness of the treatment, 72.14% agreed that it was effective, 17.41% said no and 10.45% were not sure of it. 63.7% of the participants were getting Hijama done at authorized clinical centers, 21.9% contacted a specialist at home to perform Hijama, whereas 14.4% got it done by a popular traditional healer. 40% of them had done Hijama only once in their lifetime, 16% twice, 14% thrice, whereas 30% had got it done more than 3 times in their lifetime. 17% of the participants practised Hijama regularly, whereas 83% said no. 7% of the participants had experienced complications, but 93% of the participants had not experienced any complications with Hijama practice. On further inquiry regarding the type of complication, 27% of them had experienced pain at the site of incision, 20% anemia followed by 13% suffered infection at the site of the incision. 51% of the participants were willing to continue Hijama, 11% said no, whereas 38% were not sure of anything.

88% of the participants agreed that they would recommend Hijama to others, but 12% said no. The association between Hijama complications and the place of practice as shown in Fig. 2 revealed that the frequency of complications associated with Hijama was twice as that of what was faced in an authorized clinical centre, even though the association was not statistically significant with $p=.35$.

The association between effectiveness and different types of diseases as shown in Table 2, showed that Hijama was 100% effective in treating hyperlipidemia, facial paralysis and gout, 87% effective in treating hyperlipidemia, 82 – 85% effective in treating back or shoulder or neck pain and joint pain and the association was statistically significant with $p=.014$ and $p=.027$ respectively. And it was 73% effective in treating headaches and migraines.

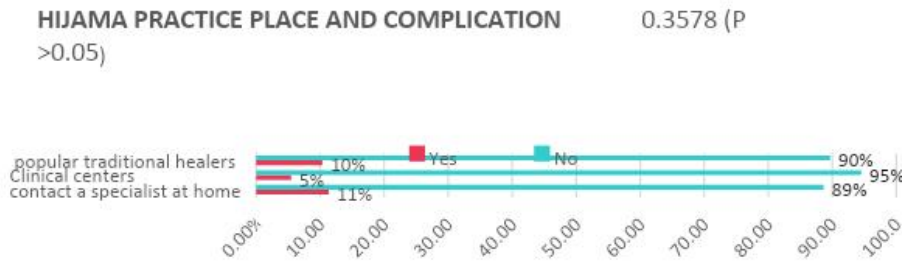


Fig. 2. Association between Hijama practice place and complication

Table 3. Association between effectiveness and different types of diseases

	Effectiveness Frequency (%)			Total Frequency (%) N= 201	P-value
	Yes	No	Don't know		
Back or shoulder or neck pain	77 (81.91)	11 (11.70)	6 (6.38)	94 (100)	0.0147* ($p < 0.05$)
Joint pain	39 (84.78)	2 (4.35)	5 (10.8)	46 (100)	0.0276* ($p < 0.05$)
Headache and Migraine	43 (72.88)	7 (11.86)	9 (15.25)	59 (100)	0.1892 ($p > 0.05$)
Hypersomnia	24 (72.73)	8 (24.24)	1 (3.03)	33 (100)	0.2082
Hypertension	14 (87.50)	1 (6.25)	1 (6.25)	16 (100)	0.3489 ($p > 0.05$)
Hyperlipidemia	4(100)	0 (0.00)	0 (0.00)	4 (100)	0.4547 ($p > 0.05$)
High blood sugar	3 (60)	2 (40.00)	0 (0.00)	5 (100)	0.3425 ($p > 0.05$)
Facial paralysis	2 (100)	0 (0.00)	0 (0.00)	2 (100)	0.677 ($p > 0.05$)
Gout disease	4 (100)	0 (0.00)	0 (0.00)	4 (100)	0.4547 ($p > 0.05$)

* $P < 0.05$, Statistically significant

ASSOCIATION BETWEEN THE EFFECTIVENESS AND HIJAMA PRACTICE FREQUENCY

P=.009

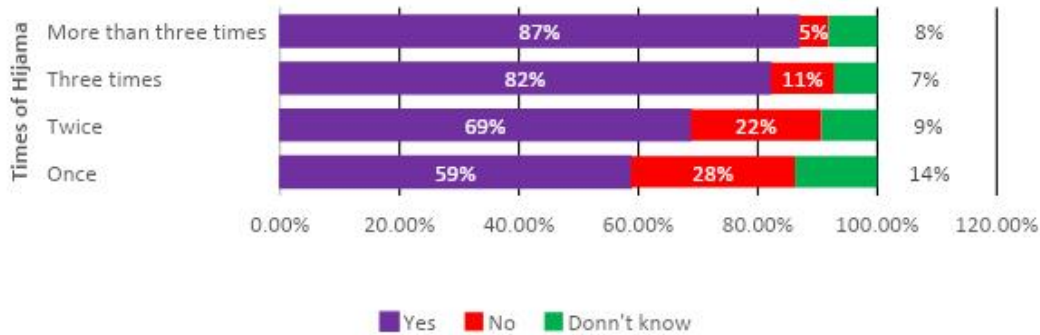


Fig. 3. Association between the effectiveness and Hijama practice frequency

Fig. 3 shows the association between effectiveness and Hijama practice frequency. 87% of the participants who practised Hijama more than three times found it effective, whereas 59% of the participants with Hijama performed once in a lifetime also found it effective. The effectiveness increased with more the times of Hijama performed and the association was statistically significant with $p=.009$.

4. DISCUSSION

This study was conducted to assess the knowledge, attitudes, practices and perceived health benefits associated with the practice of Hijama. The demographic characteristics signifies that Hijama as an alternative treatment modality is accepted by people with good educational background as only 8% of the study population was illiterate and people with good income source as only 12.9% of the population had income less than 3000SR per month and rest of them were more than 3000SR per month and also people with younger age group as maximum number of participants were from the age group of 21-30 and 31-40 years, which was also suggested in a study by Khalid et al. [10]. In M. Al-Yousef et al. [11] study, most of the participants were aged from 46 yrs to 60 yrs which they represent (38%). (85%) of the participants were female. While in this study, most of the participants are aged from 21 yrs to 30 yrs which they represent (34%). And similar to M. Al-Yousef et al. study most of the participants are female (70%).

In M. Al-Yousef et al. study [11], (60%) were using cupping therapy because it was recommended by their physician. (46%) of the respondents were aware of situations where cupping is prohibited. (76%) of the participant their reasons for using CT where treatment. While in this study, only (19%) were using CT because it is recommended by their physician, which highlights the fact that Hijama is still not accepted by many practitioners as a modality of alternative treatment. Fortunately, (61%) of the respondents are aware of situations where cupping is prohibited. And only (52%) of the participant their reasons for using CT is treatment, therefore many participants practice Hijama just as a measure for additional health benefits.

In Ghazi's study [12], (33%) of the participant performed Hijama to treat a headache. (18%) performed it to treat either back pain or joint pain. (26%) perform it to treat fatigue. Also, in M. Al-Yousef et al. [11] study, (31%) of the participant performed Hijama to treat headache, (51.7%) performed it to treat shoulder/back pain. While in this study, (29%) perform it to treat headaches similar to the previous studies. (46.77%) perform it to treat back, shoulder, neck pain and (22.89%) performed it to treat joint pain which they are more than the previous studies. This through a light towards using Hijama as an alternative medicine to treat chronic aches and pains is more beneficial when compared to the present use of non-steroidal anti-inflammatory drugs with relatively higher side-effects.

In M. Al-Yousef et al. study [11], (90%) of the participants noticed effectiveness by practising Hijama. Also, in Ghazi study [12], (89%) of the participants noticed effectiveness by practicing Hijama and the participants treated with Hijama for back pain, headache, joint pain, hypersomnia, showed improvement with percentage (98%, 97%, 92%, 89% respectively). In this study, (72%) noticed effectiveness by practicing Hijama. The participants treated with Hijama for back pain, headache, joint pain, hypersomnia, showed improvement with percentage (82%, 73%, 85%, 73% respectively). Which is slightly lower than the previous studies. Effectiveness is a subjective perception that can vary from person to person for the same kind of pains or illnesses so more investigative intervention is required to validate the effectiveness.

In Amany Mokhtar et al. study [13] 41.4% agreed that they would continue using Cupping therapy for treatment in the future, while, 47.5% said no. And 44.4% said that they would recommend CT to their family and friends. In this study 51% said that they would continue using Hijama as a treatment modality, only 11% said no. Whereas, 88% said that they would recommend Hijama to others, which is slightly higher than previously mentioned and highlights the fact that Hijama has good acceptance among the users.

Kim et al. study [14], found that cupping therapy is effective in patients with neck and shoulder pain which exhibited a significant reduction in pain and improvement in function. This is in agreement with this study as the patient with neck, shoulder and back pain shows improvement with percentage (82%) and also it was statistically significant. In the Sajed M study [15], which finds that the Hijama is an effective technique of reducing Low-density Lipoprotein (LDL) cholesterol and as a result, it may have a preventative effect against atherosclerosis. However, Aleyeidi et al. study [16], found that CT is effective for reducing systolic blood pressure in hypertensive patients for up to 4 weeks, without serious side effects. In this study, which is in agreement with the previous studies patients who were suffering from hyperlipidemia notice effectiveness with percentage (100%) by practicing Hijama. Also, the patient with hypertension shows improvement with a percentage (88%). However, in this study, there is a minimal side effect in which only 7% of the patients have a side effect.

In this study majority of the participants got Hijama done at an authorized clinical centre which signifies the awareness of the people regarding the measures taken by the government authorities towards making Hijama safe to practice. But a 22% and 14% of them practised at home by a trained person or by a traditional healer respectively, also the complication percentage was twice in these both situations like that of when it was performed in clinical centres. Not much information could be found in the literature regarding the places of the practice of Hijama.

In Al Jaouni et al. study [17], which is to assess the effect of Hijama on health-related quality of life (HRQOL) of adult patients with chronic medical conditions. The result found a significant improvement in HRQOL, which was noticed for almost all types of pain and other medical conditions. This study is in agreement with the last study as most of the patient's notice effectiveness by practicing Hijama which they represent (72%). And also, it was noticed that the effect increased with the number of times of Hijama.

5. CONCLUSION

Hijama in recent times is gaining more and more popularity around the world. It is adopted by people of all age groups, also by people with good educational background and with good household income.

Approximately two-thirds of the participants have sufficient knowledge about the contradictions and were practicing Hijama in the right place. The vast majority of the participants have no complications by practicing Hijama. Besides, the complications likelihood increases when Hijama was practised by popular traditional healers or by contact specialists at home instead of Hijama centers. A higher proportion of participants practice it as a mood of treatment, especially for back, shoulder and neck pain. Moreover, most of the participants notice effectiveness by practising Hijama and the effects increase as the times of practice increase. The majority of the participant will continue and recommend others to practice Hijama.

As the study revealed Hijama can be a simple effective economic alternative treatment. It can be used to treat many ailments like back, shoulder, neck pain, headache, and migraine pain. It is associated with minimal side effect as against the treatment of many conditions with the

available drugs can be associated with many side effects. Hijama holds good with the saying "Old Is Gold". Also, there is a need to create awareness among the people to go for clinical centres to perform Hijama as still a small number of them were carrying it out at home with the help of traditional healers. Future research is needed to support its therapeutic benefits.

CONSENT AND ETHICAL APPROVAL

Ethical approval for this study was obtained from the Department Research Review Committee, College of Applied Medical Sciences, Qassim University. The study participants were provided with a brief explanation of the study objectives and an informed consent was obtained before they filled the questionnaire, as only the participants who were willing to take part in the survey were included in the study. All the data collected in this study has been kept confidential and used for research purposes only.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. El Sayed SM, Mahmoud HS, Nabo MM. Methods of wet cupping therapy (Al-Hijamah): In light of modern medicine and prophetic medicine. *Alternative & Integrative Medicine*. 2013;1-6.
2. Al-Tabakha MM, Sameer FT, Saeed MH, Batran RM, Abouhegazy NT, Farajallah AA. Evaluation of bloodletting cupping therapy in the management of hypertension. *Journal of Pharmacy & Bioallied Sciences*. 2018;10(1):1.
3. El Sayed SM, Al-quliti AS, Mahmoud HS, Baghdadi H, Maria RA, Nabo MM, Hefny A. Therapeutic benefits of Al-hijamah: In light of modern medicine and prophetic medicine. *American Journal of Medical and Biological Research*. 2014;2(2):46-71.
4. Al-Bedah AM, Elsubai IS, Qureshi NA, Aboushanab TS, Ali GI, El-Olemy AT, Khalil AA, Khalil MK, Alqaed MS. The medical perspective of cupping therapy: Effects and mechanisms of action. *Journal of Traditional and Complementary Medicine*. 2019;9(2):90-7.
5. Aboushanab TS, AlSanad S. Cupping therapy: an overview from a modern medicine perspective. *Journal of Acupuncture and Meridian Studies*. 2018;11(3):83-7.
6. Nimrouzi M, Mahbodi A, Jaladat AM, Sadeghfard A, Zarshenas MM. Hijamat in traditional Persian medicine: Risks and benefits. *Journal of Evidence-based Complementary & Alternative Medicine*. 2014;19(2):128-36.
7. Rehman A, Baloch NU, Awais M. Practice of cupping (Hijama) and the risk of bloodborne infections. *American Journal of Infection Control*. 2014;42(10):1139.
8. Aboushanab T, AlSanad S. A brief illustration of the official national standards for the safe use of cupping therapy (Hijama) in Saudi Arabia. *Journal of Integrative Medicine*. 2018;16(5):297-8.
9. MOH News. MOH Approves Licenses for Cupping. Ministry of Health; 2015. Available: <https://www.moh.gov.sa/en/Ministry/MediaCenter/News/Pages/News-2015-02-17-002.aspx> Accessed: 23 January, 2020
10. Khalil MK, Al-Eidi S, Al-Qaed M, AlSanad S. Cupping therapy in Saudi Arabia: from control to integration. *Integrative Medicine Research*. 2018;7(3):214-8.
11. Al-Yousef HM, Wajid S, Sales I. Knowledge, attitudes, and perceptions of cupping therapy (CT) in Saudi Arabia—a cross-sectional survey among the Saudi population. *Biomedical Research*. 2018;29(17):3351-3355.
12. Ghazi SS. Knowledge, attitude and practice of cupping therapy among Saudi patients attending primary healthcare in Makkah, Kingdom of Saudi Arabia. *International Journal of Medical Science and Public Health*. 2016;5(05):966.
13. Mokhtar A, Hassan A, Fahmy A, Zeiada E, Hatem S, Anany N, Goda N, Salem N. Awareness, attitude and practice of outpatient clinics attendants in Ain Shams & Benha University hospitals towards cupping therapy (al-hijama). *Medical Integrated Student Research Journal*. 2018;1(1):19-29.
14. Kim S, Lee SH, Kim MR, Kim EJ, Hwang DS, Lee J, Shin JS, Ha IH, Lee YJ. Is cupping therapy effective in patients with neck pain? A systematic review and meta-analysis. *BMJ Open*. 2018;8(11).
15. Sajid MI. Hijama therapy (wet cupping)—its potential use to complement British healthcare in practice, understanding, evidence and regulation. *Complementary*

- Therapies in Clinical Practice. 2016;23: 9-13.
16. Aleyeidi NA, Aseri KS, Matbouli SM, Sulaiamani AA, Kobeisy SA. Effects of wet-cupping on blood pressure in hypertensive patients: A randomized controlled trial. Journal of Integrative Medicine. 2015;13(6):391-9.
17. Al Jaouni SK, El-Fiky EA, Mourad SA, Ibrahim NK, Kaki AM, Rohaiem SM, Qari MH, Tabsh LM, Aljawhari AA. The effect of wet cupping on quality of life of adult patients with chronic medical conditions in King Abdulaziz University Hospital. Saudi Medical Journal. 2017; 38(1):53.

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