Research Paper

Volume : 5 | Issue : 1 | JANUARY 2016 • ISSN No 2277 - 8179

Health Profile and Quality of Life Before and After Hijama: A Population-Based Cross-Sectional Study in Madinah, Saudi Arabia

Medical Science

KEYWORDS : Cupping therapy, health profile, Quality of life, Saudi Arabia.

Muatasim Noorelahi	College of Medicine, Taibah University, Madinah, Saudi Arabia.
Abdulrahman Badawi	College of Medicine, Taibah University, Madinah, Saudi Arabia.
Khaled Kasim	Department of Family and Community Medicine, College of Medicine, Taibah University, Madinah, Saudi Arabia.
Hany M. Abo-Haded	Department of Pediatrics, College of Medicine, Mansoura University, Mansoura, Egypt.

ABSTRACT

Background: Cupping therapy (Hijama) is a conventional treatment method used for the treatment of many diseases in several contemporary societies. Despite its common use, little is known about its impact on health profile and quality of life (QoL), particularly in our region.

Objectives: This study aimed to assess the health profile and quality of life before and after Hijama in Madinah City, Saudi Arabia.

Subjects and Methods: A population-based cross-sectional study was implemented. A total of 359 subjects (175 males and 184 females) experienced Hijama in the previous three years in Madinah city, Saudi Arabia were included in the study analysis. A predesigned valid questionnaire was developed using the WHO-QoL assessment, short-term SF-36 Health Survey and the International QoL Assessment (IQOLA).

Results: The mean age of the studied subjects was 40.4 ± 12.7 years with an equal proportion of males and females. More than 90% of Hijama was of wet cupping type, with recorded very low complications (5.3%). About 80% reported an improvement of their health after Hijama, mainly among females (p= 0.002), with a higher percentage of improvement was found in physical health, mood and behavior. However, males show significant long-term improvement (> 6 months) compared to females (p= 0.04).

Conclusion: Cupping therapy, particularly wet type, was associated with an improvement of health in general with a few associated complications. There are need to increase and authorize cupping clinics in Madinah City, and to conduct more studies to address the long-term effect of cupping therapy and the underlying mechanisms.

Introduction

Cupping therapy is one of the oldest known medical techniques which has been used since ancient time.[1] Cupping therapy is a form of complementary and alternative Medicine utilized as a traditional medical technique in several contemporary societies in the Middle East, Asia and Europe, for the treatment of many diseases.[2] Several Muslim's societies using frequently this method of treatment, particularly the wet type of cupping therapy,[3] a technique involves using a suction glass or plastic cup over lacerated skin to letting out blood, that is believed to be harmful from the body. [4]while trials comparing cupping with other treatments of unproven efficacy were excluded. Trials with cupping as concomitant treatment together with other treatments of unproven efficacy were excluded. Trials were also excluded if pain was not a central symptom of the condition. The selection of studies, data extraction and validation were performed independently by three reviewers. Seven RCTs met all the inclusion criteria. Two RCTs suggested significant pain reduction for cupping in low back pain compared with usual care (P < .01)

Recently, cupping therapy has received a great interest as an alternative method of treatment of several conditions not responding to traditional medicine. Several studies have shown the potential benefit of cupping therapy for pain conditions, herpes zoster, cough, dyspnea, stroke rehabilitation and hypertension.[5-8] Lee et al.,[9] however, conducted an overview of five studies and concluded that cupping is only effective as a treatment for pain, and even this indication doubts remain. Although the wide use of cupping therapy in various condition such as acute/chronic inflammation, infectious diseases, and immune system disorders, its mechanisms of action is not fully understood and several theories have been published. In fact the health profile and quality of life after cupping therapy, both on short and long term, have received a little attentions as most of the above mentioned studies have stressed to determine the efficacy of cupping for treating a particular disease at short intervals after cupping procedure and trying to explain the mechanisms on the basis of biomedical measures such as enhancing blood circulation treating congestion and stop the inflammatory extravasations, removing blood and tissue fluids mixed with potentially harmful substances,[10] and the decreasing level oxidants agents.[11]

In addition, studies in Saudi Arabia about cupping therapy were about the prevalence stressing on knowledge, attitude and practice of Hijama among the studied subjects.[12,13] From these points of view, the present cross sectional study was enrolled subjects who experienced cupping therapy in the last three years in Madinah City, Saudi Arabia to assess the impact of cupping therapy on their health profile and quality of life (QoL) using QoL instrument questionnaire.

Subjects and Methods

The present cross sectional study enrolled subjects experienced cupping therapy in Madinah City, Saudi Arabia during October and November 2014 to assess their health profile and quality of life in relation to cupping therapy (Hijama). All recruited subjects of this study were submitted to Hijama during the last three years in Madinah City. Subjects experienced Hijama out of Madinah City and for a period more than three years were excluded from the study analysis. The effective sampling size of this study was based on the prevalence of Hijama in Riyadh City (35.7%) reported in a recent previous Saudi study,[14] assuming α value of 1.96 for 95% confidence level and precision of 0.05.

A predesigned structured Arabic language questionnaire was used in this cross sectional survey. The used questionnaire was formulated to include both socio-demographic and Quality of life (QoL) assessment data. The socio-demographic data include: age in years, subject's sex (male vs. female), nationality (Saudi vs. non Saudi), educational level (basic, university and higher than university), marital status (single, married, divorced and widow), residence (urban vs. rural), monthly family income (< 5000, 5000-20000 and > 20000 SR), and body mass index (< 25, 25-30 and ≥ 30 kg/m^2).

The questionnaires were distributed both manually and elec-

tronically on a large scale to get the effective sampling. Subjects with no previous history of Hijama and those with missing data more than 50% were excluded from the study analysis.

Health profile and Quality of life (QoL) was assessed according to the World Health Organization quality of life assessment, short-term SF-36 Health Survey and the International Quality of Life Assessment (IQOLA) items.[13, 15-19] These items were then translated and modified to suit the tradition and culture of the studied City. The translated items were then verified by back-translation performed by a different bilingual person who had not seen the original English language version. Any areas of disagreement in the translation were resolved by discussion between both translators and the research team. The validity of the used Arabic questionnaire was obtained from discussions with an epidemiologist and family and community medicine consultants.

Approval was taken from the ethics committee at faculty of medicine, Taibah University. Ethical consideration was considered to avoid physical or emotional harm in the study questionnaire. Written consent was granted from all participants. The confidentiality and privacy of the collected data were ensured through the use of anonymous questionnaire and during data entry and analysis. The collected data were analyzed using statistical analysis system SAS.[20] Data was presented using frequencies, mean and standard deviation as appropriate. Chi square tests were used to compare the studied outcome variable (Health profile before and after Hijama) with the studied independent factors. The level of statistical significance was defined as $P \leq 0.05$.

Results

A cohort of 359 subjects (175 males and 184 females) experienced Hijama in the previous three years were analyzed to study their characteristics, their health profile before hijama and improvement of their health and quality of life by their gender through a population-based cross-sectional study conducted during 2014. Table 1 presented the socio-demographic characteristics of the studied Hijama cohort. About half of this cohort was young below the age of 40 years with the mean age of all subjects was 40.4 ± 12.7. Nearly equal proportion of male and female was included in the sample. The majority of the subjects were Saudi (93.3%) and living in urban areas (99.4%). More than half of included subjects were married (74.4%), normal weight (59.1%), university educated (57.6%), and of moderate monthly family income (62.2%).

Table 2 showed the characteristics of Hijama by subjects' sex. More than 90% of Hijama was of multiple puncture type and was without complication in both males and females. About two-thirds of Hijama was done for once and in authorized place and for preventive purpose in all studied subjects with a significant difference between males and females regarding the place and reason of Hijama. Hijama done by authorized person was higher in females subjects (54.8) compared to male persons (45.2), although not significant.

Table 3 presented the health profile of the studied subjects before Hijama according to their sex. About 20% of the studied subjects submitted to Hijama were hypertensive and diabetics with more diabetes among female and more hypertension among males. Lower percents, however, were found for those subjects with cardiovascular, respiratory and metabolic diseases, and a much lower percent of less than 1% was encountered for cancer among the studied subjects. About one-fourth of subjects were submitted to Hijama because of musculoskeletal disorders with joint and low back pain showed the higher percents, particularly among female subjects with statistically significant differences.

Table 4 presented health profile and quality of life of the studied subjects after Hijama according to their sex. More than three-fourths of the studied (80.0%) reported an improvement of their health in general after Hijama with a higher percent improvement was found in female subjects with a statistically significant difference (p= 0.002). Also, physical health and emotion were improved in the majority of the studied subjects with no statistically significant differences between male and female subjects. Improvement of sexual and social life, however, was reported in about two-thirds of the studied subjects without any statistically significant differences between male and female subjects. The period of improvement in 78% of the studied subjects was only 6 months. More than 6 months improvement was reported in 30% of male subjects compared to only 18% among female subjects with statistically significant difference (p= 0.04).

Discussion

This study has assessed the health profile and quality of life in a cohort of 359 subjects experienced Hijama in Madinah city, Saudi Arabia in the previous three years. The subjects underwent Hijama were young with their mean age was 40.4 ± 12.7 with more than 50% were less than 40 years. The higher percent of Hijama in young age observed in this study might be attributed to dilemma introduced in recent years about the lower cost and benefit of Hijama, young people tends to experience this method of treatment. Inconsistent with these results, however, Elolemy and Albedah,[14] have recorded that most participants or one of their family members (84.6%) has used some form of CAM before, where the most common users of CAM practices were females, housewives, illiterates or those who could just read and write, as well as those aged 60 years and above. The inconsistency of these results may be attributed to the difference in culture and habits of people in the more urbanized Riyadh City.

The present study has also revealed a high percent of Hijama among Saudi, University educated, urban, married, middle family income and normal BMI subjects. All these findings appeared consistent with results of previous Saudi[12, 14, 21] and non Saudi studies,[4,5] where Hijama were prevalent among married, highly educated, urban, and high and middle family income subjects. Similarly, statistics from the Western countries indicate that Americans are increasingly replacing prescription medications with alternative and complementary medicine such as vitamin and mineral supplements, as well as medicinal herbs.[22] A secondary analysis in 2005 estimated that more than 38 million Americans use herbs and dietary supplements. Estimates have placed this number as high as 60 million.[22]

The majority of Hijama in this study was wet type (multiple puncture) cupping which was more than 95% among the studied subjects with similar distribution in both male and female. The interesting findings in this study were the observed high percent of subjects who reported that they had undergone Hijama in non authorized place and by unauthorized persons. These observed higher percents were more in male than female subjects with statistically significant differences. These unexpected findings necessitate the needs of establishing more cupping, alternative and complementary medicine (CAM) clinics, in Madinah city as well as in other Saudi cities, and to be authorized by Saudi ministry of health. These results were in agreement with the findings of Al-Faris et al.[21] who recorded that 86.9% of participants agreed on the need for clinics for CAM practices. Also, 93.8% of the participants in Elolemy and Albedah study[14] agreed that there is need for CAM practice regulation, and the need of specialized and authorized CAM centers and clinics.[14]

The health profile of subjects submitted to Hijama in this study showed high variation where about 20% of the studied subjects submitted to Hijama because of hypertensive and diabetics with more diabetes among female and more hypertension among

Volume : 5 | Issue : 1 | JANUARY 2016 • ISSN No 2277 - 8179

males. A very low percent of subjects with cardiovascular, respiratory and metabolic diseases, and less than 1% of subjects with cancer were observed. On the other hand, however, musculoskeletal disorders with joint and low back pain showed the higher percents among the studied subjects, particularly among female subjects with statistically significant differences. In an updated review of the efficacy of cupping therapy, Cao et al.[23] have recorded 56 diseases or symptoms were treated by cupping therapy. The most common diseases/conditions for which cupping was applied were related to pain and include the following diseases; herpes zoster, facial paralysis, lumbar disc herniation and cervical spondylosis. In that study, the use of wet cupping in respiratory and cardiovascular disease, the main purpose of treatment was to alleviate the associated symptoms such as cough and dyspnea.

The complications of cupping recorded by the studied subjects were relatively low (5.3%), with no significant difference between male and female subjects. The majority of complications, more than 98%, were related to skin infection after cupping. This finding may be the results of attending unauthorized place and persons where sterilization procedures are suspected to be low leading to such infection after cupping therapy. In this study, more than 50% of the studied subjects have had practiced cupping in unauthorized place and by unauthorized persons. In contrast to this complication, however, most of subjects have reported an improvement of general, physical health and mood and which lasts for 6 months. The improvement in social and sexual life, however, was lower than that of other health aspects. The mechanisms of improvement of health by cupping are still not fully understood. However, some researchers have explained cupping effect on the basis of biomedical measures such as enhancing blood circulation treating congestion and stop the inflammatory extravasations, removing blood and tissue fluids mixed with potentially harmful substances,[10] and the decreasing level oxidants agents.[11] It is pertinent here to note that Loukas et al.[24] attracted attention of researchers to the scientific values that can be gained from studying religious texts. Loukas et al. reported that prophetic medicine (related to Prophet Mohammad peace be upon him) recommended cupping therapy as a treatment: "If there is a benefit in any of your treatment modalities, benefit will be in the blade puncture in cupping therapy, a gulp of honey and cauterizing, but I do not like cauterization".[24]

The present study appeared to have a number of strengths that include being a population based study, which consolidate the study findings. According to the available Saudi literature about cupping therapy, this study is the first to assess the health profile and quality of life in a large cohort of population experienced cupping therapy on short and long-term outcome.

Of the study limitations, the fact that the study sample only represented the Madinah City means that the results cannot be generalized to all Saudi regions that have different cultures, habits and beliefs. Also, data collection depended on the memory and recall bias is a potential bias of this study and this may have decreased the accuracy of the collected data. However, this is the scientific method used to design these types of studies all over the world.

In conclusion, cupping therapy is a simple and economic treatment that still needs more scientific researches. Cupping therapy was associated with an improvement of many health aspects, including behavior and mood. However, the long term-improvement was low, particularly in females. There are need to increase and authorize cupping clinics in Madinah City, and more studies are needed to discuss the long-term effect of cupping therapy and to discuss the underlying mechanisms.

Competing interests
The authors declare that there is no conflict of interest and there was no fund taken from any institution to carry out this study.

Authors' contributions
Hany M. Abo-Haded conceived the idea, Muatasim NoorElahi and Abdulrahman Badawi wrote the initial draft of the manuscript. The rest of the authors participate in revising it critically for important intellectual content. All authors contributed equally in the literature review, conception and study design. The collector data team including Muatasim NoorElahi and Abdulrahman Badawi make substantial contributions to acquisition of data.

Acknowledgments
The authors would like to thank all participated subjects. The authors would like to express their gratitude to data collectors (Duoaa Abdoh, Nisreen Albouq, Kafaf Jalali, Moneer Mohammed, Fisal Abdulaziz and Anwar Nayyaz) participated in the study.

Tables of the study

Table 1. Characteristics of the studied subjects submitted to Hijama

Characteristics*	N= 359
Age in years, mean ±SD (range) < 40 yeas years >60 years	40.4 ± 12.7 (18-65 years) 183 (51.0) 157 (43.7) 19 (5.3)
Sex Male Female	 175 (48.7) 184 (51.3)
Nationality Saudi Non Saudi	 335 (93.3) 24 (6.7)
Education Basic University Higher than university	 123 (34.3) 207 (57.6) 29 (8.1)
Marital status Single Married Divorced and widow	 68 (19.0) 267 (74.4) 24 (6.6)
Residence Urban Rural	 357 (99.4) 2 (0.6)
Family income/month < 5000 SR 5000-20000 SR >20000 SR	 100 (27.9) 225 (62.6) 34 (9.5)
BMI, mean ±SD (range) < 25 kg/m^2 25-< 30 kg/m^2 ≥30 kg/m^2	24.5 ± 6.9 (16.5-46.2) 212 (59.1) 99 (27.6) 48 (13.4)

*Data are presented by mean ± SD or by n (%).

Table 2. Characteristics of Hijama by subjects' sex

Hijama characteristics*	**All subjects**	**Male** (n= 175	**Female** (n= 184)	**P value**
Type of Hijama Wet (Puncture) Not puncture	 344 (95.8) 15 (4.2)	 169 (96.6) 6 (95.1)	 175(3.4) 9 (4.9)	 0.48
Place of Hijama Authorized Not authorized	 215 (59.9) 144 (40.1)	 118 (59.9) 57 (39.5)	 97 (45.1) 87 (60.5)	 0.01**
Person did Hijama Authorized Not authorized	 219 (48.7) 140 (51.3)	 99 (45.2) 76 (54.3)	 120 (54.8) 64 (45.7)	 0.10
Reasons of Hijama Preventive Medical reason	 220 (61.0) 139 (39.0)	 129 (58.9) 41 (30.0)	 91 (41.1) 98 (70.0)	 <.0001**

Number of Hijama				
Once	242 (67.4)	134 (55.4)	108 (54.5)	
1-2 time	56 (15.6)	18 (32.1)	38 (67.9)	0.80
≥ 3 times	61 (17.0)	23 (37.7)	38 (63.3)	
Complications after hijama				
No	340 (94.7)	166 (48.8)	174 (51.2)	0.90
Yes	19 (5.3)	9 (47.4)	10 (52.6)	

*Data are presented by n (%).
**Significant

Table 3. Health profile of the studied subjects before Hijama according to their sex.

Health profile*	All subjects (n= 359)	Male (n= 175)	Female (n= 184)	P value
Diabetes Mellitus				
No	295 (82.1)	142 (48.1)	153 (51.9)	
Yes	64 (17.9)	33 (51.6)	31 (48.4)	0.60
Hypertension				
No	283 (79.0)	154 (54.4)	129 (45.6)	
Yes	76 (21.0)	21 (27.0)	55 (73.0)	<.0001**
Heart disease				
No	344 (96.0)	170 (49.5)	174 (50.5)	
Yes	15 (4.0)	5 (33.3)	10 (67.7)	0.22
Respiratory diseases				
No	336 (94.0)	166 (49.5)	170 (50.5)	
Yes	23 (6.0)	9 (39.2)	14 (60.8)	0.34
Gastrointestinal diseases				
No	332 (93.0)	162 (49.0)	170 (51.0)	
Yes	26 (7.0)	13 (50.0)	13 (50.0)	
Hypercholesteremia				
No	312 (87.0)	161 (52.0)	151 (48.0)	
Yes	47 (13.0)	14 (30.0)	33 (70.0)	0.01**
Musculoskeletal disorders				
Joint pain	96/359 (26%)	26/175(14.0)	70/184 (38.0)	<.0001**
Cervical pain	50/359 (14.0)	15/175 (9.0)	35/184 (19.0)	0.001**
Low back Pain	93/359 (26%)	33/175(19.0)	60/184 (32.9)	0.01**
Cancer				
No	358 (99.7)	173 (49.0)	183 (51.0)	
Yes	1 (0.3)	0 (0.00)	1 (100.0)	0.32

*Data are presented by n (%).
**Significant

Table 4. Health profile and quality of life of the studied subjects after Hijama according to their sex

Health profile and QoL*	All subjects (n= 359)	Male (n= 175)	Female (n= 184)	P value
Improvement of general health				
Improved	288 (80.0)	129 (74.0)	159 (86.0)	
Not improved	4 (1.0)	1 (0.5)	3 (2.0)	
Worsen	67 (19.0)	43 (25.5)	22 912.0)	0.002**
Improvement of physical health				
Yes	306 (86.0)	144 (83.0)	164 (89.0)	0.06
No	51 (14.0)	31 (17.0)	20 (11.0)	
Improvement of mood and emotion				
Yes	289 (81.0)	140 (80.0)	149 (81.0)	0.80
No	70 (19.0)	35 (20.0)	35 (19.0)	
Improvement of sexual life* **				
Yes	198 (64.0)	100 (64.0)	98 (64.0)	1.00
No	55 (36.0)	56 (36.0)	55 (36.0)	
Improvement of social life				
Yes	248 (69.0)	113 (65.0)	135 (73.5)	0.07
No	111 (31.0)	62 (35.0)	49 (26.5)	
Duration of improvement after Hijama‡				
≤ 6 months	175 (78.0)	62 (70.0)	113 (82.0)	0.04*
> 6 months	50 (22.0)	26 (30.0)	24 (18.0)	

*Data are presented by mean ± SD or by n (%).
**Significant
*** Analysis of only 309 subjects because of some studied subjects were not married.
‡Analysis of only 225 subjects because of some studied subjects were not diseased.

REFERENCE

1. Ullah K, Younis A, Wali M. An investigation into the effect of Cupping Therapy as a treatment for Anterior Knee Pain and its potential role in Health Promotion. Internet J Altern Med. 2007;4(1):1. DOI: 10.5580/796 2. Akbarzadeh M, Ghaemmaghami M, Yazdanpanahi Z, Zare N, Azizi A, Mohagheghzadeh A. The Effect Dry Cupping Therapy at Acupoint BL23 on the Intensity of Postpartum Low Back Pain in Primiparous Women Based on Two Types of Questionnaires, 2012; A Randomized Clinical Trial. Int J community based Nurs midwifery. 2014;2(2):112–20. 3. Rehman A, Ul-Ain Baloch N, Awais M. Practice of cupping (Hijama) and the risk of bloodborne infections. Am J Infect Control. 2014;42(10):1139. http://dx.doi.org/10.1016/j.ajic.2014.06.031 4. Kim J-I, Lee MS, Lee D-H, Boddy K, Ernst E. Cupping for treating pain: a systematic review. Evid Based Complement Alternat Med. 2011;2011:467014. DOI: 10.1136/acupmed-2012-010185 5. Cao HJ, Zhu CJ, Liu JP. Wet cupping therapy for treatment of herpes zoster: A systematic review of randomized controlled trials. Altern Ther Health Med 2010;16: 48–54. 6. Kwon YD, Cho HJ. Systematic review of cupping including bloodletting therapy for musculoskeletal diseases in Korea. Korean J Oriental Physiol Pathol 2007;21: 789–793. 7. Lee MS, Choi TY, Shin BC, Han CH, Ernst E. Cupping for stroke rehabilitation: A systematic review. J Neurol Sci 2010;294: 70–73. DOI: 10.1016/j.jns.2010.03.033. 8. Lee MS, Choi TY, Shin BC, Nam SS. Cupping for hypertension: A systematic review. Clin Exp Hypertens 2010; 32: 423–425. DOI: 10.3109/10641961003667955. 9. Lee MS, Kim JI, Ernst E. Is cupping an effective treatment? An overview of systematic reviews. J of Acupunct Meridian Stud 2011;4(1):1-4. DOI: 10.1016/S2005-2901(11)60001-0. 10. El Sayed SM, Mahmoud HS, Nabo MMH. Medical and Scientific Bases of Wet Cupping Therapy (Al-hijamah): in Light of Modern Medicine and Prophetic Medicine. Altern Integ Med 2013, 2:5 http://dx.doi.org/10.4172/2327-5162.1000122 11. Tagil S, Ciftci S, Kazanci F, Arslan M, Erdamar N, Fesik Y, dane S. Wet-cupping removes oxidants and decreases oxidative stress. Complement Ther Med. 2014; 22(6): 1032–1036. http://dx.doi.org/10.1016/j.ctim.2014.10.008 12. Albedah AM, El-Olemy AT, Khalil MK. Knowledge and attitude of health professionals in the Riyadh region, Saudi Arabia, toward complementary and alternative medicine. J Family Community Med. 2012;19(2):93-9. DOI: 10.4103/2230-8229.98290. 13. The World Health Organization quality of life assessment (WHOQOL): Position paper from the World Health Organization. SocSci Med. 1995;41(10):1403-1409. 14. Elolemy AT, Albedah A. Public Knowledge, Attitude and Practice of Complementary and Alternative Medicine in Riyadh Region, Saudi Arabia. Oman Med J. 2012; 27(1): 20–26. DOI 10. 5001/omj.2012.04 15. Aburuz S, Bulatova N, Twalbeh M, Gazawi M. The validity and reliability of the Arabic version of the EQ-5D: a study from Jordan. Ann Saudi Med.2009;29(4):304–8. DOI: 10.4103/0256-494755313. 16. Ware JE, Gandek B. Overview of the SF-36 Health Survey and the International Quality of Life Assessment (IQOLA) Project. J ClinEpidemiol. 1998;51(11):903–12. http://dx.doi.org/10.1016/S0895-4356(98)00081-X 17. Klevsgard R, Froberg B, Risberg B, Hallberg I. Nottingham Health Profile and Short-Form 36 Health Survey questionnaires in patients with chronic lower limb ischemia: Before and after revascularization. J Vasc Surg. 2002;36(2):310–7. 18. Van Straten A, de Haan RJ, Limburg M, Schuling J, Bossuyt PM, van den Bos GAM. A Stroke-Adapted 30-Item Version of the Sickness Impact Profile to Assess Quality of Life (SA-SIP30). Stroke. 1997;28(11):2155–61. DOI: 10.1161/01.STR.28.11.2155 19. Falcoz PE, Chocron S, Mercier M, Puyraveau M, Etievent JP. Comparison of the Nottingham Health Profile and the 36-item health survey questionnaires in cardiac surgery. Ann Thorac Surg. 2002 Apr;73(4):1222–8. 20. SAS Institute Inc. Proprietary Software Release 8.2., Cary, NC, SAS Institute Inc, 1999. 21. Al-Faris EA, Al-Rowais N, Mohamed AG, Al-Rukban MO, Al-Kurdi A, Balla Al-Noor MA, Al-Harby S, Sheikh A. Prevalence and pattern of alternative medicine use: the results of a household survey. Ann Saudi Med 2008;28,1(1):4-10. DOI: 10.4103/0256-4947.51761 22. Kennedy J. Herb and supplement use in the US adult population. Clin Ther 2005.;27(11):1847-1858. DOI: 10.1016/j.clinthera.2005.11.004 23. Cao H, Li X, Liu J. An Updated Review of the Efficacy of Cupping Therapy. PLoS ONE 2012;7(2): e31793. DOI: 10.1371/journal.pone.0031793 24. Loukas M, Saad Y, Tubbs RS, Shoja MM. The heart and cardiovascular system in the Qur'an and Hadeeth. Int J Cardiol 2010 140:19-23. http://dx.doi.org/10.1016/j.ijcard.2009.05.011