



Wet cupping therapy improved the quality of life in chronic Bell's palsy patients

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General Note



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ABSTRACT

Introduction: Bell's palsy, also known as idiopathic facial paralysis, is known to be a severe acute impairment of facial motor neurons. The idea of employing adjuvant therapy in managing subjects with Bell's palsy has been occasionally reported in the published research. **Aim:** This study aimed to assess the effect of wet cupping on the quality of life of patients with Bell's palsy. **Methods:** This is an interventional study which was conducted on fifteen patients with chronic Bell's palsy of different aetiologies diagnosed in the Neurology Clinic, King Abdulaziz University Hospital, Jeddah, Saudi Arabia. All patients were undergoing wet cupping in the Cupping Clinic in King Abdulaziz University Hospital, Jeddah, Saudi Arabia. The number of wet cupping therapy was between 2 to 10 sessions. The participants asked to complete the facial disability index (FDI) before (Pre-Cupp) and after cupping (Post-Cupp) therapy. **Results:** Wet cupping improved the physical, social, and combined physical and social scores in Bell's palsy patients compared with pre-cupping state. Furthermore, the cupping also ameliorated the compound motor action compared with pre-cupping state. On the other hand, the wet cupping did not exert any effect on the distal latency compared with the pre-cupping state. There was no correlation between gender, presence of physiotherapy, number of cupping, age, duration of Bell's palsy, and family history of Bell's

palsy and post cupping physical score, social score, compound motor action potential, and distal latency. *Conclusion:* Wet cupping may be a hopeful important adjuvant therapy for chronic Bell's palsy patients.

Keywords: Bell's palsy, wet cupping, physical score, social score, distal latency, compound motor action.

1. INTRODUCTION

Complementary and alternative medicine nowadays is the discipline of various researches. This approach used for treatment and prevention of many ailments and non-communicable diseases, as well as for improving the quality of life of patients with chronic disorders conditions or not satisfied with drugs outcomes (Bhalerao *et al.*, 2013; Adel Galal, 2014; Kummet *et al.*, 2015). Bell's palsy or facial palsy accompanying by difficulties and aesthetic disfigurement in conducting many daily life activities as speaking, eating, drinking, and walking (Togni *et al.*, 2016). The motor impairment resulting in communicative disorders which can impact patients' psycho-social status (Huang *et al.*, 2012). In addition, depression and anxiety increase the social and functional disability associated with neuromuscular impairment (Dobel *et al.*, 2012; Walker *et al.*, 2012).

Cupping therapy called al-hijama is a miraculous alternative remedy that promoted the symptomatic treatment of several ailments and diseases, as well as bodily disorders (Student *et al.*, 2019). It has employed therapeutically around the world for thousands of years, dating back to the ancient Egyptian civilization (Nickel, 2005). In Arabic, al-hijama therapy started around 3500 B.C. Prophetic medicine applying cupping therapy to cure and treat diverse and chronic diseases (Hasan *et al.*, 2014). Use of cupping as an alternative therapy for pain treatment elevating with increasing the severity of pain (Robinson, 2014). In patients with back pain al-hijama significant declining pain, functional disability, and use pain drugs (Farhadi *et al.*, 2009).

Cupping therapy can be conducted in two ways, wet- and dry-cupping, wet cupping is more common in Middle East countries (Ullah *et al.*, 2005). There are different theories to explain the mechanism of al-hijama action including pain-gate theory where capillary vessels work as a nociceptive stimulus, diffuse noxious inhibitory controls, reflex zone theory, release of nitric oxide, activation of immune system, and blood detoxification theories (Ullah *et al.*, 2005; Iqbal *et al.*, 2013; Tarique *et al.*, 2014; Student *et al.*, 2019).

Hijamah or wet cupping applied for the treatment of chronic and acute inflammation, haematological disorders, urinary tract infections, disabilities, immune system diseases, communicable diseases, sciatica, back pain, rheumatic and respiratory disorders (Ahmadi *et al.*, 2008; Lauche *et al.*, 2012; Mehta *et al.*, 2015). Furthermore, wet cupping proved to be effective for migraine, tension headaches, anxiety, post-herpetic pain, and other physical and mental conditions (Cao *et al.*, 2009; Lauche *et al.*, 2012).

To best of our knowledge, no studies have been conducted to evaluate the effects of wet cupping (al-hijama) on improving the health-related quality of life in Bell's palsy in Saudi Arabia. Therefore, this study aimed to assess the effect of wet cupping on the quality of life of patients with Bell's palsy.

2. METHODOLOGY

Study protocol

The participants in this study were from outpatients for Neurology Clinic, King Abdulaziz University Hospital, Jeddah, Saudi Arabia. The patients' files were relocated to the cupping clinic, King Abdulaziz University Hospital (KAUH), Jeddah, Saudi Arabia. This study duration was between April 2015 to December 2019.

The study protocol was approved and conducted in Prophetic Clinics of Yousef Abdul Latif Jameel Scientific Chair of Prophetic Medical application, KAUH.

Inclusion criteria

The inclusion criteria constitute patients from both genders who were diagnosed with chronic Bell's palsy.

Exclusion criteria

Patients who unable to answer the questions of questioners for cognitive impairment or linguistic problems were excluded.

Patients

An interventional study was conducted on fifteen patients with chronic Bell's palsy of different aetiologies diagnosed in the Neurology Clinic, King Abdulaziz University Hospital, Jeddah, Saudi Arabia. The patients were of both genders (8 male and 7 female)

with age from 20 to 85 years. The Bell's palsy persisted from 2 to 10 years in spite of medical care. All patients enrolled in this study were asked to sign a written consent form.

Assessment tools

All patients were undergoing wet cupping in the Cupping Clinic in King Abdulaziz University Hospital, Jeddah, Saudi Arabia. The number of wet cupping therapy was between 2 to 10 sessions. Cupping was performed until patient satisfaction was reached. The participants asked to complete the facial disability index (FDI) before (Pre-Cupping) and after cupping (Post-Cupping) therapy. This questionnaire in a brief composed of 2 to 5 item subscales. The first part assessed functional impairment through speaking, lacrimation, eating, drinking, and oral hygiene. The second part investigated the subjective perception of sleep disturbances, isolation, anxiety, irritation, and limitations in social participation. Each subscale ranges from 0 to 100, where 100 means unimpaired functional/social well-being status (VanSwearingen *et al.*, 1996; Ho *et al.*, 2012; Pavese *et al.*, 2014).

Statistical analysis

Data were presented as frequencies and percent. The quantitative data were compared before and after wet cupping using paired sample student t test. The correlations were compared using Fisher's exact test. ($p < 0.05$ was statistically significant). All statistical analyses were performed using GraphPad Prism software version 6.

3. RESULTS

Demographic and clinical characteristics of the patients included in the study

A total of fifteen patients enrolled in the study, the mean age of all patients was 40.87 ± 4.91 years, 11 (73.3%) of patients were ≤ 50 years, while 4 (26.7%) were ≥ 50 years. Eight patients (53.3%) were males, while seven (46.7%) were females. Ten patients (66.7%) have no family history for Bell's palsy, while five (33.3%) have family history for Bell's palsy. Duration of Bell's palsy before cupping was more than two years for 10 patients (66.7%), while 5 patients (33.3%) was less than two years. About half participants 8 (53.3%) had no chronic diseases, while 7 patients suffering from chronic disease: 3 had diabetes, 4 had hypertension, 1 had rheumatoid, 1 had cancer and 1 had heart disease. Regarding the number of cupping 8 (53.3%) underwent cupping less than 3 times, while 7 (46.7%) underwent cupping more than 3 times. Majority of participants showed onset improvement after 1st cupping (93.3%), while the rest of participants (6.7%) showed improvement after the 2nd cupping. Concerning the onset of satisfaction, 6 patients after the 2nd cupping and 5 after the 3rd cupping, while 2 after the 7th cupping, and only one after 8th and 10th cupping. Regarding the physiotherapy majority of participants (13) perform physiotherapy and only 2 do not perform physiotherapy (Table 1).

Effect of wet cupping on facial disability index (FDI)

Fig. 1 shows comparisons between pre- and post-cupping in physical, social and combined physical and social scores. The results revealed that cupping induced elevation in the physical, social, and combined physical and social scores; there were significant differences in these scores pre- and post-cupping.

Effect of wet cupping on compound motor action potential and distal latency

Bell's palsy patients post-cupping showed significant ($p < 0.05$) improved in compound motor action compared with pre-cupping, while in distal latency there was non-significant increase in patients pre-cupping compared with post-cupping (Fig. 2).

Correlation between patients' clinical characteristics and FDI

There was no correlation between gender, presence of physiotherapy, number of cupping, age, duration of Bell's palsy, and family history of Bell's palsy and post cupping physical score (Fig. 3). Besides, there was no correlation between gender, presence of physiotherapy, number of cupping, age, duration of Bell's palsy, and family history of Bell's palsy and post cupping social score (Fig. 4).

Correlation between patients' clinical characteristics and compound motor action potential and distal latency

The present study revealed that there was no significant correlation between gender, presence of physiotherapy, number of cupping, age, duration of Bell's palsy, and family history of Bell's palsy and post cupping compound motor action potential (Fig. 5). As well as, there was no significant correlation between gender, presence of physiotherapy, number of cupping, age, duration of Bell's palsy, and family history of Bell's palsy and post cupping distal latency (Fig. 6).

Table 1 Demographic and clinical characteristics of the patients included in the study

Character	Patients (n = 15)
Age (Y)	40.87 ± 4.91
≥ 50 Years (n)	4
≤ 50 Years (n)	11
Gender	
Male (n)	8
Female (n)	7
Family history for Bell's palsy	
Yes (n)	5
No (n)	10
Duration of Bell's palsy before cupping	
≥2 Years (n)	10
≤ 2 Years (n)	5
Chronic diseases	
No (n)	8
Diabetes (n)	3
Hypertension (n)	4
Rheumatoid (n)	1
Cancer (n)	1
Heart disease (n)	1
Number of cupping	
≤ 3 cupping (n)	8
≥ 3 cupping (n)	7
Onset improvement	
1 st Cupping (n)	14
2 nd Cupping (n)	1
Onset satisfaction	
2 nd Cupping (n)	6
3 rd Cupping (n)	5
7 th Cupping (n)	2
8 th Cupping (n)	1
10 th Cupping (n)	1
Physiotherapy	
Yes (n)/ No (n)	13/2
5-10 cupping(n)	7
10 cupping(n)	1
>10(n)	4
> 20(n)	1

Data are expressed as either mean ± SD or number (n).

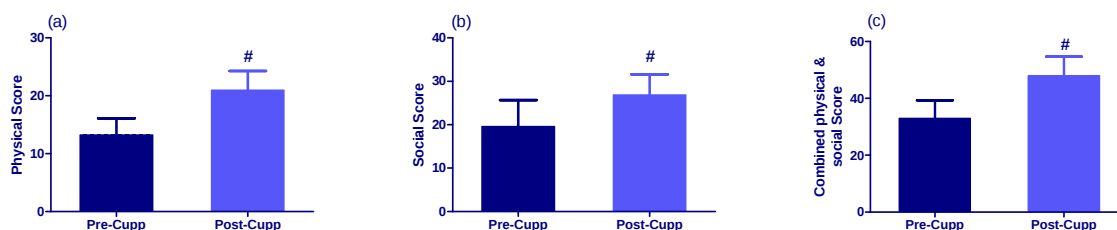


Figure 1 Effect of cupping on (a) physical, (b) social and (c) combined physical and social scores. The scores were compared before and after cupping. Data were presented as mean ± standard error. The statistics were compared using unpaired Student t test.

significant difference compared to pre-cupp.

Pre-cupp: Before cupping; Post-cupp: After cupping.

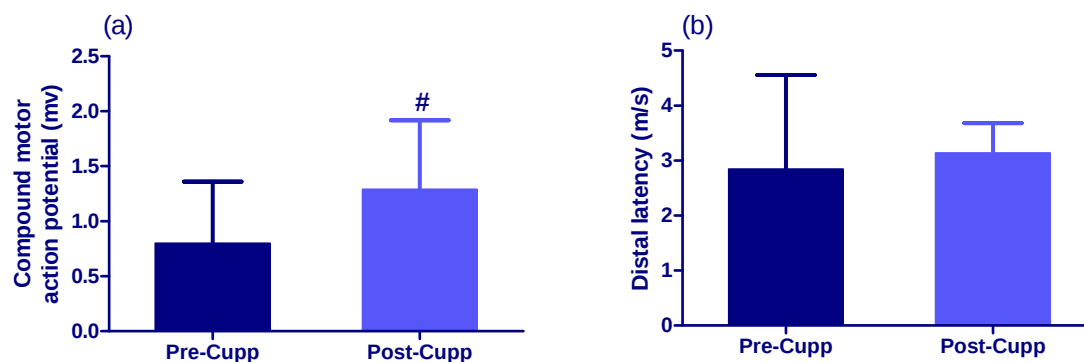


Figure 2 Effect of cupping on (a) combined motor action potential and (b) distal latency. The results were compared before and after cupping. Data were presented as mean $\pm$ standard error. The statistics were compared using unpaired Student t test.

significant difference compared to pre-cupping.

Pre-cupping: Before cupping; Post-cupping: After cupping.

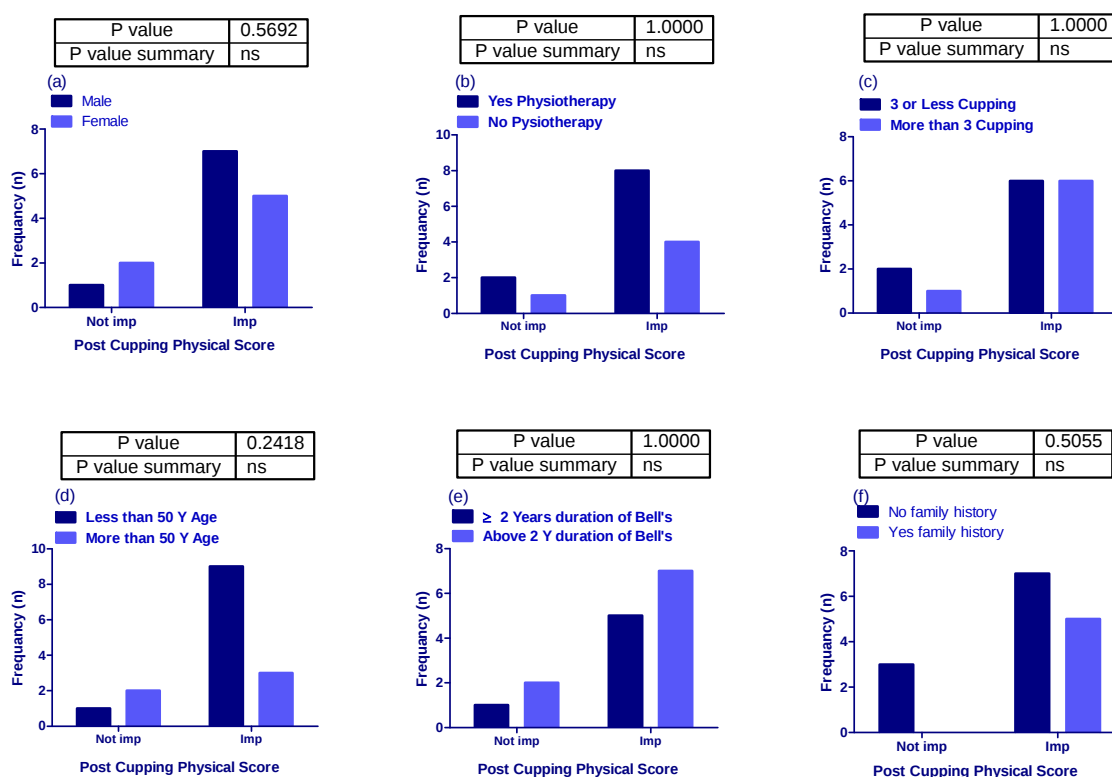


Figure 3 Correlation between (a) gender, (b) presence of physiotherapy, (c) number of cupping, (d) age, (e) duration of Bell's palsy and (f) family history of Bell's palsy and post cupping physical score. The statistics were compared using Fisher's exact test.

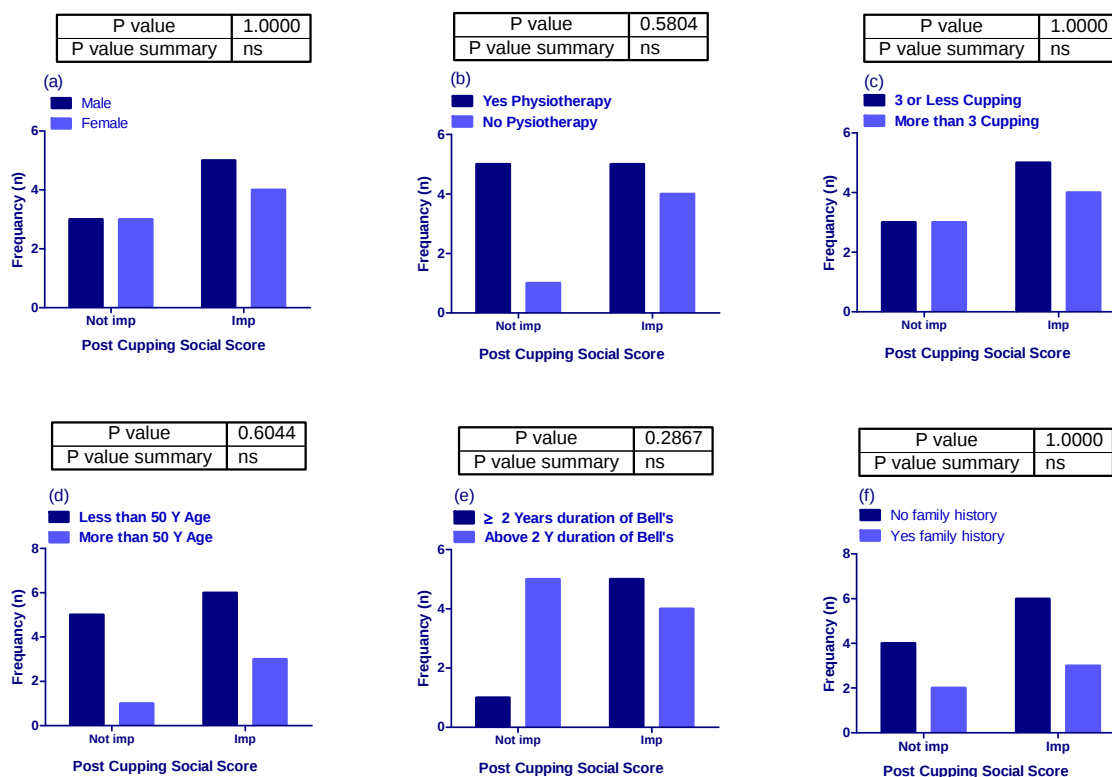


Figure 4 Correlation between (a) gender, (b) presence of physiotherapy, (c) number of cupping, (d) age, (e) duration of Bell's palsy and (f) family history of Bell's palsy and post cupping social score. The statistics were compared using Fisher's exact test.

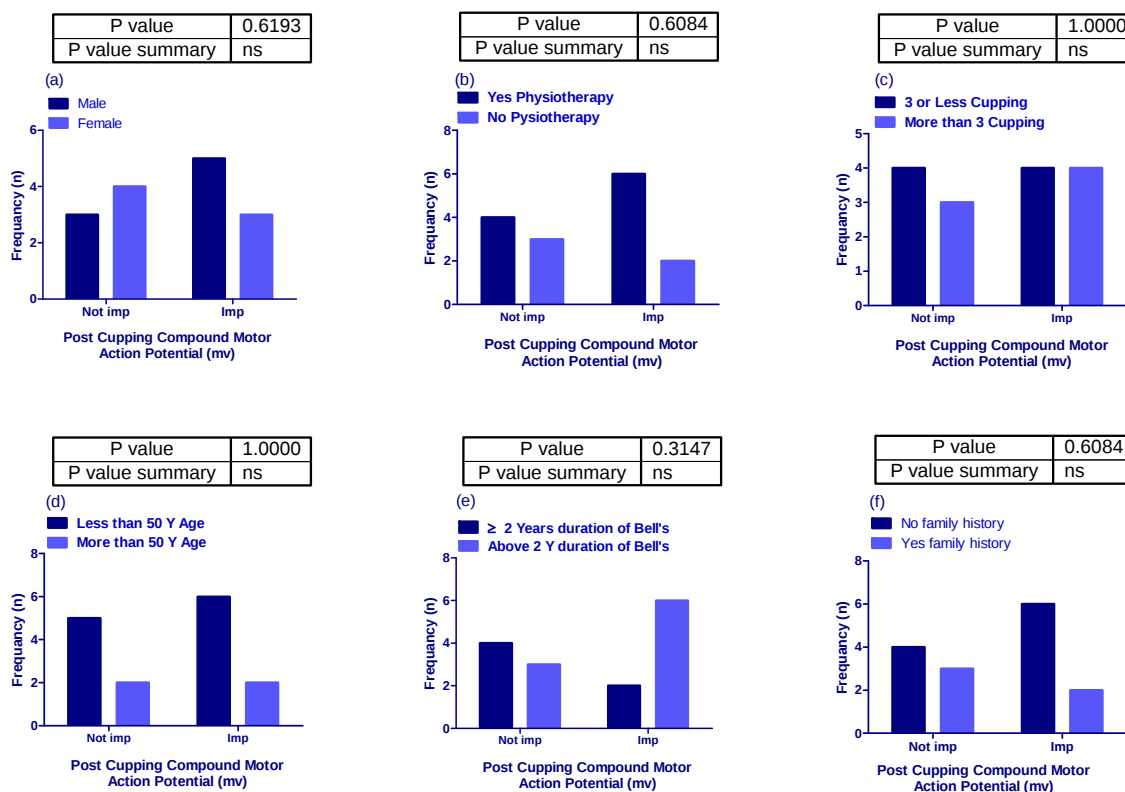


Figure 5 Correlation between (a) gender, (b) presence of physiotherapy, (c) number of cupping, (d) age, (e) duration of Bell's palsy and (f) family history of Bell's palsy and post cupping compound motor action potential. The statistics were compared using Fisher's exact test.

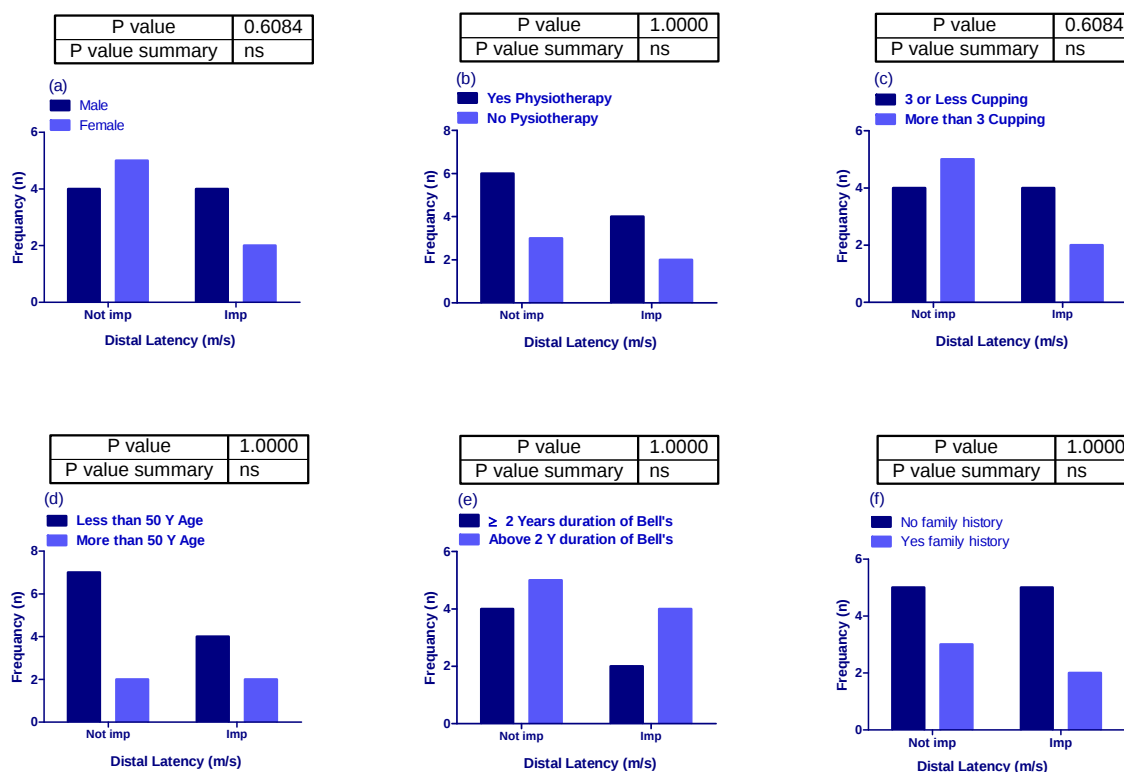


Figure 6 Correlation between (a) gender, (b) presence of physiotherapy, (c) number of cupping, (d) age, (e) duration of Bell's palsy and (f) family history of Bell's palsy and post cupping distal latency. The statistics were compared using Fisher's exact test.

4. DISCUSSION

Bell's palsy, also known as idiopathic facial paralysis, is known to be a severe acute impairment of facial motor neurons. The yearly rate of Bell's palsy fluctuated in various areas of the world, with estimates ranging from 11 to 40 per 100,000 subjects (De Diego-Sastre *et al.*, 2005). The disease is more popular among diabetics (Adour *et al.*, 1975). The main pathophysiology observed in the post-mortem case of Bell's palsy is swelling of the blood vessels, inflammation and oedema with ischemia of the facial nerve (Somasundara *et al.*, 2017). Physical treatments including specially designed facial exercises, acupuncture for influenced muscles, massage, thermal therapy and electrical stimulation were used to as non-drug treatment to accelerate healing. Even though, there is no proof of any notable benefit of this complementary therapy. However, early face physical therapy may hasten the onset of recovery and decrease the number of chronic conditions (Teixeira *et al.*, 2011).

The idea of employing adjuvant therapy in managing subjects with Bell's palsy has been occasionally reported in the published research, possibly due to the shortage of information regarding the true advantages of this therapeutic alternate or due to the inconvenient follow-up of those subjects treated with this type of medicine (Elolemy *et al.*, 2012). Wet cupping was utilized for the management of both acute and chronic inflammation (Cao *et al.*, 2014). The present study aimed to estimate the impact of wet cupping on the goodness of life of subjects with Bell's palsy.

The results of this study detect that wet cupping improved the physical, social, and combined physical and social scores in Bell's palsy patients compared with pre-cupping state. Furthermore, the cupping also ameliorated the compound motor action compared with pre-cupping state. On the other hand, the wet cupping did not exert any effect on the distal latency compared with the pre-cupping state. There was no correlation between gender, presence of physiotherapy, number of cupping, age, duration of Bell's palsy, and family history of Bell's palsy and post cupping physical score, social score, compound motor action potential, and distal latency.

In a case study of Bell's palsy, the researchers treated a patient with wet cupping once simultaneously with physiotherapy on the fifth day of the palsy appear. They observed the prominent advance of the Bell's palsy from grade V to grade II through a 3-month duration (Abouzeid, 2016). The results were coherent with another study that has recorded a marked cure from Bell's palsy, besides other neurological cases, treated with wet cupping (Cao *et al.*, 2012). Wet cupping integrated with acupuncture was significantly

superior to acupuncture single in treating facial palsy. Furthermore, wet cupping adjuvant with other therapy, like neurotrophic medications, was better than medicines alone in decreasing the mean cure period(Cao *et al.*, 2012).

The medicinal mechanism of how wet cupping was effective in the various diseases involves the general non-particular removal of blood, tissues, and interstitial fluids from various pathological materials (that differ from illness to illness). Cups used for cupping work like a kidney to clear toxic compounds utilizing a physiological technique (pressure-based filtration at the dermal blood vessels that look alike the renal blood vessels). Furthermore, cupping cleans the tissues from pathological products and reduces the interstitial pressure. The end results of wet cupping were healthy tissues and recovering physiological balance. Lately, wet cupping was notified to extremely minimize oxygen free radicals and markedly increased the antioxidant molecules (El-Shanshory *et al.*, 2018; Aboonq, 2019).

5. CONCLUSION

In conclusion, wet cupping may be a hopeful important adjuvant therapy for Bell's palsy. Wet cupping is substantially prescribed as an adjuvant to the medical treatment regimen in those subjects. Wet cupping may be a perfect choice for unsuccessful drug therapy for many Bell's palsy patients.

List of Abbreviations

FDI: Facial disability index, Pre-Cupp: Before cupping; Post-Cupp: After cupping.

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Conflict of interest: The authors declare that there is no conflict of interest.

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Study limitations

The small number of patients with chronic facial paralysis, as well as the lack of a method for performing cupping as a SHAM group to be used as a control group.

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