

Psychosocial And Physical Improvements Among Chronic Pain Patients: The Case of Cupping As A Complementary Medicine

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Purpose of study: The main goal of this study is to determine if there are immediate psychosocial and physical improvements among chronic pain patients, as well to determine whether there are significant differences in those improvements, where it may provide insight and further understanding of cupping therapy as an alternative medical approach in health care settings.

Methods: A descriptive, analytical research design was employed, in which means, standard deviations, and percentages were calculated, in addition to carrying out t-test for paired data and correlation analysis. **Sample:** Data were collected from 76 patients suffering from chronic pain (i.e., neck and back pain). The sample was selected from 2 different settings: a) the Arab American University Community, and b) Al-Hayaat Medical Centre for Rehabilitation and Physiotherapy.

Results: Results indicate statistically significant improvements in all studied aspects, where positive effects were observed after, compared with before, cupping therapy. Paired t-test as well correlation analysis also revealed a significant outcome, where p values were found to be equal to 0.000.

Conclusions: The overall results lead us to conclude that cupping therapy is of great benefits in the immediate improvement of the psychological, personal and social, functional and physical aspects of chronic pain conditions. Furthermore, cupping therapy is found to be of great significant impact holistically, not merely on the physical domain and related aspects, but also on the psychological and social ones.

Keywords: Cupping therapy, psychosocial, physical aspects, and chronic pain.

INTRODUCTION

Chronic pain syndromes and related symptoms are prevalent, not merely in developing countries but in developed ones as well, such as Germany, US and England. In a study in North England where to establish the prevalence of chronic widespread pain (CWP) and associated symptoms in a general population sample (sample 2034 adults), the point prevalence of CWP found to be as 11.2%, and the symptoms were strongly associated with other somatic complaints as well with psychological measures of depression and anxiety.¹

Later, in a seven year follow up study on CWP, information was obtained for 1386 adults (originally out of 2334 patients), where prevalence was found similar for both the carried surveys at 11% and 10% respectively. Of

those with CWP initially, a third recorded CWP on the second survey and 15% were pain free. Only 2% of subjects with no initial pain had developed CWP at follow up. Of subjects with CWP on the initial survey who were aged over 50 years, reported dry eyes or mouth and daytime tiredness, and 77% of them reported a CWP seven years later.²

Other results showed that chronic pain have impacts upon working age population, and is strongly associated with markers of social disadvantage.³ When it comes to further impacts, prevalence, severity, and treatment issues, in a study of 46,394 respondents, in 15 European countries and Israel it was found that chronic pain from moderate to severe intensity occurs in 19% of the adult

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populations in those countries, and seriously affecting the quality of their social and working lives.⁴ In medical scientific literature, we find some pain theorists place the transition from acute to chronic state at a period of 12 months.⁵ Others do apply acute conditions to pain which lasts for less than 30 days, while they see chronic conditions as applied to situations extending more than 6 months duration, and in between comes the sub-acute condition that lasts up to 6 months.⁶

When it comes to cupping therapy, it is a method of using glass or plastic kind of cups to create localized pressure by creating a vacuum. The ancient Chinese had been doing this since ancient times thru inserting heat stuff inserted inside a glass or even via the implementation of bamboo tree cups. Whereby such cupping sets, suction of blood and dirt let out takes place thru the created pressure and vacuum. The induced vacuum inside the cups per se, causes the blood to flow out from the located cupped part of the body and ends with forming a kind of healing in that cupped area.⁷ Cupping therapy has been shown to be an effective modality in treating chronic pain and associated symptoms, for it facilitates the release of toxins from body, where the suction of blood due to cupping procedures is usually penetrates in its effect deep into the human tissues causing them to release their harmful toxins. Also, it triggers the lymphatic system, cleans the blood vessels, and stretches as well activates the skin. Though such a medical technique goes back to 3500 years, it is still used as an alternative and complementary method by many health care providers and practitioners.⁸

In the Arab society, mainly within the Muslim communities, cupping therapy is considered as an Islamic Tradition, where the prophet of Islam (PBUH) says: [Healing is in three things: a gulp of honey, cupping, and branding with fire (cauterizing). But I forbid my followers to use branding with fire (cauterization)].⁹ In some modern societies like Finland, cupping is found as a living traditional treatment, where its survival as said by Vaskilampi and Hänninen is attributed to its demonstrated physiological, psychological and social effects.¹⁰ As a specific complementary alternative medical intervention (CAM), cupping in countries like Germany and China has demonstrated significant therapeutic benefits for people suffering different pain syndromes, such as carpal tunnel syndrome and fibromyalgia.^{11, 12} In carpal tunnel for instance, it was shown by Michalsen et., al. that psychological, social and physical relieving effects are well established outcomes post cupping.

In Iran, Alireza Ahmadi with others in one of their distinguished works concluded that wet cupping therapy leads to clinically relevant benefits for primary care patients with headache, and he showed that with cupping, mean headache severity decreased by 66% and headache frequency per se decreased by 12.6% fewer days per month following treatment.¹³ Musial and colleagues found cupping (of course including other reflex therapies such as massage, Gua Sha, wet packs, acupuncture etc.) as that much helpful procedure in reducing symptoms associated with chronic pain. Further, it was concluded that such naturopathic therapies promote

relaxation and may be understood as a comforting social interaction.¹⁴

In a recent work on a Palestinian subjects, Nasrallah and Abu Hassan found in cupping therapy as an alternative medical technique as effective and fruitful enough either for the management of upper and lower back pain or the control of such annoying medical conditions.¹⁵

PURPOSE OF THE PRESENT STUDY

1. To determine whether there are differences in psychosocial and physical effects/aspects of chronic pain pre and post wet cupping therapy.
2. To examine evidence of psychosocial and physical improvements among chronic pain patients post, as compared to pre, wet cupping therapy.
3. To highlight insight into and further knowledge of wet cupping therapy as an alternative medical approach among the health community and patients.

Though, chronic pain and its complications being a common malady all over the globe, reviewing the medical literature in the Palestinian/Arab context showed a complete absence of such research works, which makes the present study a novel and possibly the first of its kind within local and regional concerned public health research communities. From here, researchers hypothesize that: a) wet cupping therapy has a positive effect on psychosocial and physical aspects of chronic pain, b) psychosocial and physical aspects pre and post cupping are not the same and a change in any domain may correlate positively with other domains.

METHODS AND PROCEDURES

Research Design

Descriptive analytical research design will be used, which is based on investigation of paired data and cross sectional correlation study. No any blinding in the data collection.

Sample

Data were collected from 76 patients, from North West Bank in Palestinian Territories, who are positively diagnosed as suffering from chronic pain for more than 6 months. The subjects were selected on the basis of convenience sampling procedures, from 2 different settings; the Arab American University Commune, and the Al-Hayaat Medical Centre for Rehabilitation and Physiotherapy Services. Patients, as their medical reports show, were suffering from chronic pain, mainly in the neck, and low back and headache, including migraine related symptoms, where all utilized medical interventions failed to improve their perceived psychosocial and physical issues. Subjects who already were cupped, suffering from anemia, hemophilia, homophobia, chronic pain other than neck, low back and headaches pain, and below 6 years and above 70 years of old were excluded from participating in the study.

The sample was distributed as follows: gender (males=49/ females=27); age groups (27 less than 30/ 49 more than 30); marital status (married 48/ single 28); employment (employed=32/ unemployed=44), (see figure (1) in results section). Though Institutional Review Board (IRB) was not obtained, for it is not available within our institution, and for cupping totally is not a risky procedure. Informed consent from each and every subject was signed and obtained.

Data Collection Tool

For the purpose of data collection, researchers developed a specific disability related tool for addressing the intended construct(s) (i.e., the psychosocial and physical aspects among chronic pain patients). The tool was reviewed by some expertise fellows in the field of research methods and rehabilitation sciences, where its content was judged as valid. The tool is consisted of two main parts, the demographic variables part, where names of subjects, their sex, age, etc., were taken, and the dependent representing variables part, which is made out of 39 items (18 represent psychological effects/aspects; 9 social and 12 physical). Scaling and scoring of items was as it follows: 1 indicates unnoticeable change, 2 don't know, and 3 noticeable and observed change, while response indicators were as follows:

1= low, 2= moderate, and 3= high change,

Procedure

After signing an informed consent, each and every participating subject was asked to rate his/her psychosocial and physical aspects in a pre-testing session, then a wet cupping therapy was performed, later followed with an individualized testing of the same aspects within 7 days period of time post cupping. The patient who decided to participate in the study was instructed to come to therapy as fasting for a 3 to 4 hour (to avoid any nausea or vomiting scenarios). Blood pressure is measured before any intervention (where hypo/hypertensions are turned). The subject is asked to lay down on a medical bed (size 180 cm x 80 cm) in a comforting position, where back is upward.

In the case of the neck and headaches pain patients, the muscles where C2 and C4 in addition to C7 in the cervical region are targeted for cupping, while in the case of low back pain, the lumbar region as well as the thoracic: L2 and L4 are targeted. Hair is removed by a medical razor from all targeted locations for cupping. Sterilizing follows, where a medical Alcoholic/Dettol is applied properly at all set regions/points to be prepared for cutting and cupping. The proper cups for cupping therapy are decided, where sets of 6 cups of different sizes/diameters are used (respectively in size: 5.4; 4.8; 4.1; 3.8; 2.8; and 2.1 cm of 7 cm height applied to all).

Then, incision is performed by a surgical blade (size-11) at a depth of 1 to 3 mm (depending on the region/point to be cupped), followed by a placement of the suiting proper cup. After 3 to 5 minutes, cups are removed to be cleaned from flown blood, then to be replaced at the same region/point. Such a process is repeated for 5 trials/times.

Cuts in number at each and every region/point are varied from 3 to 15 (depending on the nature of region/point per se and the size of the used cup); the more the targeted region is bulky/thick the more in numbers are the cuts. The whole process takes from 30 to 40 minutes.

Then, the subject is asked to relax for 5 to 10 minutes before he/she is given any sugary drink/juice to maintain appropriate blood sugar level. The amount/volume of the drained blood is usually between 100 to 150 ml. The whole process is done manually at specialized health care centers, of course, by certified professionals in cupping. All data was collected in a period of 16 months during the year 2013-2014. Such a procedure goes in assimilation with the revised STRICTA 2010 guidelines of MacPherson et al., 2010.16

Data Analysis

Recent version of SPSS (21) was used for analyzing the data. Pre and post data collection on the bases of piloting study (n=10 subjects) found the tool as reliable, where the value of Cronbach Alpha correlation before and after therapy found to be (0.87) and (0.91) respectively; a value that fulfills the requirements of achieving the purpose of the present research work. In both scenarios, the correlation was calculated by testing and retesting of the pre study subjects. Furthermore, calculation of frequencies, means, standard deviations, percentages, paired sample t-test and bivariate correlation were calculated to test the set hypothesis.

RESULTS AND DISCUSSIONS

Statistical analysis as figure (1) shows, indicate the distribution of subjects demographics, mainly of gender, age, marital status, and employment. To answer the set research questions and test related hypotheses, measurement of psychological aspects among chronic pain patients before cupping indicates that lack of patience (mean 2.22/74%/SD.974) was the most prevalent situation, while after cupping the scenario changed to become (1.32/44%/SD.716), which shows a clear cut positive effects and improvements in that aspect.

Such a finding indicates that cupping therapy is beneficial and fruitful when dealing or coping with painful conditions, an outcome which is in agreement with Kanodia, AK., Legedza, ATR., Davis, RB., Eisenberg, DM., and Phillips, RS., who reached the fact that majority of respondents who used CAM therapies for the treatment of back pain, perceived its benefit, though specific factors and therapies associated with such perceived benefits warrant further investigation.¹⁷ Looking at table (1), it is very clear that positive change effects took place in all investigated psychological aspects. The total mean score of those aspects found to be (1.89/63%/SD.537) before cupping, dropping to (1.38/46%/SD.372) after cupping.

When it comes to personal and social effects, table (2) shows that becoming more dependent on drugs and related medicines was reported to be the highest observed aspect among chronic pain subjects (mean=2.36/79%/SD.537) before cupping, changing to (mean=1.29/43%/SD.372) after cupping treatment.

Further, changes also were observed in all other personal and social aspects, with a total mean score of (2.02/67%/SD.675) before cupping and (1.36/45%/SD.399) after cupping. Such outcomes are clearly in agreement with Ndao-Brumblay and Green CR., where in one of their studies identified some kind of variable patterns of CAM usage based on socio demographic and health factors when it comes to chronic pain. Further, education, pain severity, and pain duration, as it was highlighted, are persistent correlates of CAM usage regardless of the therapy considered. Referring to psychological issues, mainly depression, the study findings did not support any related impacts, which goes in contradictory with our study finding, as well contradicting the findings of Kanodia, et al. (2010).¹⁸

Regarding functional and physical effects, a reduction in physical activity was observed to be the most prevalent aspect among patients before cupping (2.16/72%/SD.572), changing to (1.38/46%/SD.409) after cupping. All other effects/aspects, as table (3) shows, indicate changes and improvements, with an observed total mean score of (2.02/67%/SD.492) before cupping and (1.37/46%/SD.332) after cupping. Such findings may go in agreement with Andreas Michalsen et., al. (2009) results, which show that cupping therapy may be effective in relieving the pain and other symptoms related to "Carpal Tunnel Syndrome - CTS."¹⁹ True that the efficacy of cupping in the long-term management of CTS and related mechanisms is to be questioned and clarified as the researchers propose, a thing we share with them when it comes to our findings, for the studies effects where based on a short-term rather immediate outcomes.

In another study, which was conducted at the "Islamic Al-Hijama Centre" in Saudi Arabia, results produced high statistical significant differences in the observation of pain pre and post cupping therapy and the clients' ability to manage everyday life activities. Such outcomes may clearly suggest that cupping is an effective in relieving persistent non-specific lower back pain and related disabilities, in addition of some adverse effects that were reported by the subjects themselves before treatment.²⁰ Comparing such findings with ours, one may say that cupping therapy procedures may contribute effectively to physical and functional outcomes.

Thou in our case it needs a lot to know whether it works on the long run or not? Of 17 patients who completed a study analyzing the effects of Chinese cupping therapy as an adjunct treatment for patients with sub-acute lower back pain, Alycia Markowski et., al. reported significant post-treatment improvements, mainly in Visual analog scale (VAS) scores, strait leg rise (SLR) motion on the left side, and lumbar flexion range of motion, in addition to improvements in pain pressure threshold (PPT).²¹ Also, in the same study, significant relationships were identified between the improvement in lower back flexion and the improvement in PPT in bilateral lumbar para spinal muscles, particularly at lumbar-4 (L4) levels and left lumbar-2 (L2) levels. Simply, it is the functional and physical positive effects.

Referring to table (4), psychological, personal and social, functional and physical obtained means,

percentages and standard deviations show clearly the extent of improvements that took place after cupping, and when comparing means, percentages and standards standard deviations of all the studied effects and related aspects before and after cupping therapy we find an observed significant changes in all studied domains. Having a look at table (5) where a paired samples t-test was utilized to ascertain whether there were significant statistical differences in the studied aspects of chronic pain, the t-test revealed significant statistical outcomes in all studied aspects, where p values found to be (0.000). Such findings make it clear that cupping therapy is truly an effective and beneficial tool in dealing with chronic pain conditions and related issues. With reference to a recent systematic Chinese review, it has been found that qualitative and quantitative randomized controlled trials (RCTs) on cupping therapy in most of them are having potential benefits when it comes to pain conditions and other related and unrelated diseases.²²

In another research work, Khosro Farhadi et al., reported that wet cupping care is strongly associated with clinically significant improvements, mainly in lowering pain intensity, in pain-related disabilities, as well as other medication uses. Their findings also include the safe nature of the procedure and its acceptability to patients who are suffering nonspecific low back pain, as well its significant efficacy in reducing bodily pain, compared with normal care, and all within a three month period.²³

In addition, taking psychological, personal and social, functional and physical domains as major health-related quality of life components,^{24, 25} our findings may go in agreement with Romy et., al. pilot study, in which they reported reduced pain and better quality of life. On the basis of what they have mentioned, it may indicate that application of cupping therapy procedures could be an effective treatment factor for chronic specific and nonspecific pain scenarios, as well as bring significant improvement to quality of life.²⁶ Such findings go partially in an agreement with other findings reached to by Abu Hassan and Nasrallah (2014).²⁷

In other research works, where investigating the effect of cupping therapy at a patho-physiological levels for anterior knee pain and its impact on quality of life and well-being, researchers revealed statistically significant differences between levels of pain, wellbeing and range of motion pre and post cupping; an outcome which indicates the efficacy of cupping in producing improvements in participants.²⁸

Having a glance on reporting study correlations, we find via the provided bivariate correlation matrix tables (6) and (7) to how much extent domains of the present study are correlated with one another. It may indicate that the more patients have psychological complains due to their chronic pain status, the more possible they suffer personal and social troubles as well functional and physical complains, and the more their psychological complains are improved the more it affects their personal and social, as well their functional and physical aspects.

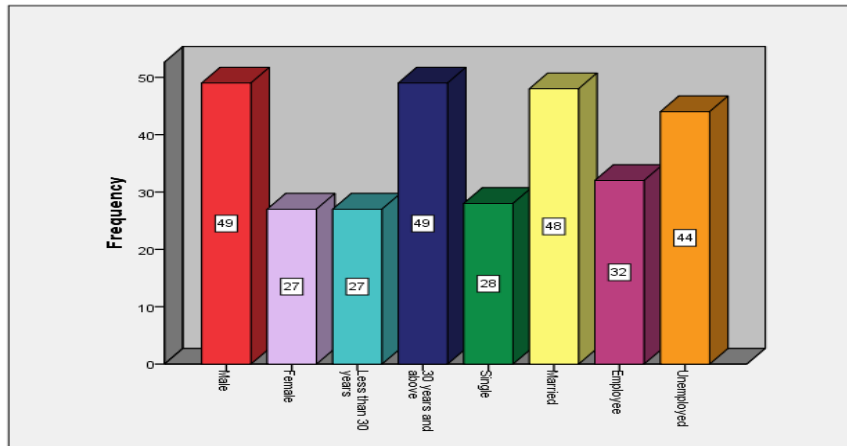


Figure 1: shows descriptive statistics of subjects distribution demographics.

Whatever, the very important thing to report, that there were no any adverse effects of the cupping treatment, an outcome that encourages us to got for it even benefits were not observed. Moreover, psychosocial and physical symptoms, particularly in musculoskeletal disorders, found as well established risk factor and causes of neck pain, shoulder pain, and lower back pain,^{29, 30} make our finding of great important in tackling, managing and improving chronic pain conditions.

LIMITATIONS OF STUDY

Several methodological limitations may be found in the present study, one of them, that our research design does not comply with RCTs (Randomized Control Trials), where it makes study findings incomplete when it comes to evidence and evidence-based outcomes. Outcomes could be due to expectancy factors and some beliefs. Also, if there were a control group to compare with it our findings, the picture could be more clear. Regarding the sample size (N=76) as well being a convenience sample, make it little difficult to generalize our finding on large populations. For that, further research works are needed to ratify such limitations, if we truly want to come out with a rigorous evidence for the use of cupping as a CAM, whether in chronic pain and related issues or in the management of hazarding health troubles.

CONCLUSION

The present study yields that cupping therapy is of great significance when it comes to immediate improvements of chronic pain situations and related psychological, social and physical issues. Findings clearly suggest that cupping is of great beneficial for such improvements of chronic pain conditions, particularly in neck, headache and low back pain. Furthermore, it may be concluded that cupping therapy as a CAM interventional modality is of great significance from a holistic perspective, for its effects not merely functionally and physically, but also psychologically and socially; an outcome which goes hand in hand with

the broad definition of health status as it has been given by the World Health Organization-WHO.

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Table (1): means, percentages and standard deviations of the psychological responses and related aspects in chronic pain patients before and after cupping.

Psychological effects/aspects	Before			After		
	\bar{x}	%	SD	\bar{x}	%	SD
Plenty of concerns (ruminations)	2.13	71%	.984	1.29	43%	.708
Frustration	1.80	60%	.966	1.33	44%	.719
Nervous and moody (mood swings)	2.07	69%	.998	1.28	43%	.685
Violent and aggressive	1.76	59%	.978	1.46	49%	.840
Tense and fearful	2.04	68%	.986	1.42	47%	.804
Fear of disease/ disorder consequences or complications	1.96	65%	.986	1.49	50%	.841
Feeling sad and depressed	1.87	62%	.971	1.37	46%	.727
Sensitive to criticism and blaming	1.78	59%	.947	1.61	54%	.910
Provocation	1.79	60%	.970	1.62	54%	.909
Less able to control emotions and nervousness	2.12	71%	.979	1.45	48%	.807
Lack of patience	2.22	74%	.974	1.32	44%	.716
Memory weakness	1.79	60%	.957	1.34	45%	.740
Less responsive and interactive	1.70	57%	.938	1.38	46%	.765
Less control over circumstances and difficult conditions	1.96	65%	.999	1.30	43%	.712
Morally weak	1.92	64%	.977	1.39	46%	.784
Low self-esteem/self-worth	1.70	57%	.924	1.22	41%	.624
Lack of love; for myself and others	1.61	54%	.881	1.28	43%	.685
Tendency to loneliness and isolation	1.78	59%	.947	1.30	43%	.712
Total score of psychological effects/aspects.	1.89	63%	.537	1.38	46%	.372

Table (2): means, percentages and standard deviations of the personal and social responses in chronic pain before and after cupping therapy.

Personal and social effects/aspects	Before			After		
	\bar{x}	%	SD	\bar{x}	%	SD
Decline in normal lifestyle and adaptability	2.13	71%	.984	1.29	43%	.708
Dependency on drugs and related medicines	2.36	79%	.934	1.29	43%	.689
Observed weakening of abilities and skills	2.32	77%	.941	1.28	43%	.685
Absence of social initiative	1.97	66%	.966	1.57	52%	.884
Less vitality	1.80	60%	.966	1.24	41%	.651
Less sociability	1.83	61%	.971	1.41	47%	.803
Less ability in social decision-making	2.13	71%	.943	1.39	46%	.767
Less able to solve social problems	1.79	60%	.957	1.29	43%	.689
Less enthusiasm for leisure activities	1.84	61%	.994	1.49	50%	.825
Total score of personal and social effects/aspects.	2.02		.675	1.36		.399
		67%			45%	

Table (3): means, percentages and standard deviations of the functional and physical responses in chronic pain before and after cupping.

Functional and physical effects/aspects	Before			After		
	\bar{x}	%	SD	\bar{x}	%	SD
Observed reduction in physical activity	2.74	91%	.681	1.54	51%	.886
Lack of a sense of capability and energy	2.42	81%	.913	1.54	51%	.886
Increasing signs and manifestations of the lack a of physical sense of relief	2.37	79%	.936	1.33	44%	.737
Increasing signs and manifestations of insomnia; inability to sleep	2.09	70%	.982	1.21	40%	.596
An increase in the signs and manifestations of extreme fatigue and exhaustion	2.46	82%	.886	1.28	43%	.685
Increase of headaches wholly/partly	1.91	64%	.996	1.38	46%	.765
Increase of dizziness	1.93	64%	.998	1.34	45%	.703
An observed increase in fainting	1.62	54%	.909	1.53	51%	.840
Less appetite for food and drink	1.83	61%	.944	1.43	48%	.806
Less physical activity	2.04	68%	.999	1.30	43%	.693
Observed general weakness and feelings of powerlessness	2.32	77%	.941	1.30	43%	.693
Observed reduction in physical activity	2.16	72%	.572	1.38	46%	.409
Total score of functional and physical effects/aspects.	2.02	67%	.492	1.37	46%	.332

Table (4): means, percentages and standard deviations of psychological, personal and social, functional and physical effects/aspects before and after cupping.

Total mean score of all mean scores of effects/aspects (i.e., psychological, personal and social, and physical and functional effects/aspects).	Mean	Percent	Std. Deviation	Mean	Percent	Std. Deviation
		2.02	67%	.492	1.37	46%

Table (5): shows the paired samples t-test and related paired differences of all studied effects/aspects and aspects of chronic pain before and after cupping.

Paired samples test	Paired differences	Mean	Std. deviation	t-test value	df	Sig. (2-tailed)
Pair 1	Psychological aspects and related effects before and after cupping.	.508	.639	6.929	75	.000*
Pair 2	Personal and social aspects and related effects before and after cupping.	.659	.737	7.798	75	.000*
Pair 3	Functional and physical aspects and related effects before and after cupping.	.776	.657	10.304	75	.000*

p < 0.05, * significant values.

Table (6): shows bivariate correlation matrix of study domains and related effects/aspects of chronic pain patients before cupping.

Study Domains	Psychological aspects and related effects /before	Personal and social aspects and related effects/before	Functional and physical aspects and related effects/before
<p>Pearson Correlation</p> <p>Psychological aspects and related effects /before</p> <p>Sig. (2-tailed)</p> <p>N</p>	<p>1</p> <p>76</p>	<p>.503**</p> <p>.000</p> <p>76</p>	<p>.672**</p> <p>.000</p> <p>76</p>
<p>Pearson Correlation</p> <p>Personal and social aspects and related effects/before</p> <p>Sig. (2-tailed)</p> <p>N</p>	<p>.503**</p> <p>.000</p> <p>76</p>	<p>1</p> <p>.000</p> <p>76</p>	<p>.428**</p> <p>.000</p> <p>76</p>
<p>Pearson Correlation</p> <p>Functional and physical aspects and related effects/before</p> <p>Sig. (2-tailed)</p> <p>N</p>	<p>.672**</p> <p>.000</p> <p>76</p>	<p>.428**</p> <p>.000</p> <p>76</p>	<p>1</p> <p>.000</p> <p>76</p>

Table (6): shows bivariate correlation matrix of study domains and related effects/aspects of chronic pain patients after cupping.

Study Domains		Psychological aspects and related effects /after	Personal and social aspects and related effects/after	Functional and physical aspects and related effects/after
Psychological aspects and related effects/after	Pearson Correlation	1	.628**	.595**
	Sig. (2-tailed)		.000	.000
	N	76	76	76
Personal and social aspects and related effects/after	Pearson Correlation	.628**	1	.492**
	Sig. (2-tailed)	.000		.000
	N	76	76	76
Functional and physical aspects and related effects/after	Pearson Correlation	.595**	.492**	1
	Sig. (2-tailed)	.000	.000	
	N	76	76	76

**Correlation is significant at the 0.01 level (2-tailed).