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Therapies Used in a Traditional and Complementary Medicine Outpatient Clinic: A Three-Year Experience

Geleneksel ve Tamamlayıcı Tıp Polikliniğinde Uygulanan Tedaviler: Üç Yıllık Deneyim

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ABSTRACT Objective: This study aimed to compare the number of patients and procedures by years in a traditional and complementary medicine (TCM) outpatient clinic serving at the university for 3 years. **Material and Method:** This retrospective study was performed by scanning the files of patients admitted to the TCM outpatient clinic between January 2017 and December 2019. The number of acupuncture, cupping and ozone therapies according to transaction codes, the year when the procedure was performed, gender and age of the patients who received the therapy and the information about whether they were a hospital worker or not were obtained. The data obtained were analyzed in IBM SPSS 25.0 software program. **Results:** A total of 1,848 individuals were admitted to the TCM outpatient clinic within 3 years. Of the patients who were admitted, 63.7% (n=1,178) were female, 36.3% (n=670) were male and 31.9% (n=590) were hospital workers. When we considered the procedures as acupuncture, cupping and ozone therapy regardless of the number of sessions it was found that a total of 1,848 people were admitted for 2,336 procedures. Of these 2,336 procedures, 30.7% (n=718) were held in 2017, 28.4% (n=663) in 2018 and 40.9% (n=955), in 2019. When the numbers of therapies were compared by years a significant difference was observed (p<0.001). **Conclusion:** An increase in the number of patients by years was observed in the TCM clinic of Meram Faculty of Medicine Hospital. We believe that it is important to meet the demand for these methods in competent hands and under ideal conditions for the health of those applying for TCM methods.

Keywords: Cupping; ozone therapy; acupuncture therapy; traditional and complementary medicine

ÖZET Amaç: Amacımız, üniversite bünyesinde 3 yıldır hizmet veren bir geleneksel ve tamamlayıcı tıp (GETAT) polikliniğinin hasta sayılarını ve yapılan uygulamaları yıllara göre kıyaslamaktır. **Gereç ve Yöntemler:** Retrospektif tipteki bu çalışma, GETAT polikliniğine Ocak 2017-Aralık 2019 tarihleri arasında giriş yapılan hastaların dosyaları taranarak yapılmıştır. İşlem kodlarına göre akupunktur, hacamat ve ozon tedavisi sayıları, işlemin yapıldığı yıl, uygulama yapılan hastanın cinsiyeti, yaşı ve hastane personeli olup olmadığı bilgisine ulaşıldı. Elde edilen veriler, IBM SPPS 25.0 paket programına aktarılarak analiz edildi. **Bulgular:** Üç yıl içerisinde GETAT polikliniğine toplam 1.848 kişi başvurmuştur. Başvuranların %63,7'si (n=1.178) kadın, %36,3'ü (n=670) erkekti. Hastaların %31,9'u (n=590) ise hastane personeli idi. Yapılan işlemleri, seans sayısına bakılmaksızın akupunktur, hacamat ve ozon tedavisi olarak ele aldığımızda, toplam 1.848 kişi 2.336 işlem için başvuru yapmıştır. İki bin üç yüz otuz altı tane başvurunun %30,7'si (n=718) 2017 yılında, %28,4'ü (n=663) 2018 yılında, %40,9'u (n=955) 2019 yılında idi. Yapılan tedavi sayıları, yıllara göre kıyaslandığında anlamlı fark var idi (p<0,001). **Sonuç:** Meram Tıp Fakültesi Hastanesi GETAT polikliniğinde, yıllara göre hasta sayılarında artış tespit edilmiştir. GETAT yöntemlerine başvuruyu yapan kişilerin sağlığı için bu yöntemlere olan talebin ehil ellerde ve uygun şartlarda karşılanmasının önemli olduğunu düşünmekteyiz.

Anahtar Kelimeler: Hacamat; ozon tedavisi; akupunktur tedavisi; geleneksel ve tamamlayıcı tıp

According to the World Health Organization (WHO), "traditional medicine is the sum total of knowledge, skill and practices based on the theories, beliefs and experiences indigenous to different cultures, whether explicable or not, used in the maintenance of health as well as in the prevention, diagnosis, improvement or treatment of physical and mental illness".[1]

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Acupuncture, wet cupping and ozone therapy are applied in our university's traditional and complementary medicine (TCM) outpatient clinic.

Acupuncture (Acus: Needle, Punctura: Puncture) meansthe insertion of a needle. According to Traditional Chinese Medicine, insertion of the needle into special points most of which are along linear meridians maintains optimum health and well-being by regulating Qi (vital energy) flow in the body.[2]

Wet cupping (al-hijamah) is a procedure that allows safe removal of residues in hemoglobin degraded with toxic material in the blood of mostly capillaries by making superficial skin incisions by means of regional vacuum instruments.[3]

Ozone is a gas (O_3) composed of three oxygen atoms and colorless at room temperature. It has a characteristic odor. The ozone used for medical therapies is generated by passing pure oxygen through a high-voltage field in special generators. The ozone concentration may range from 1 to 100 mg/mL depending on the procedure. The ozone for medical therapy can be used in more than one method. These methods are major and minor autohemotherapies, ozone introduced into body cavities (insufflation), local (intramuscular) injection, ozone bagging and applying ozone oil on the skin. The most common method used in our TCM outpatient clinic is major autohemotherapy. In this method, an amount of blood (100 mL generally) is drawn from the patient and mixed with oxygen/ozone for minimum 5 minutes in an ozone-resistant bottle and then the ozonized blood is returned to the patient (auto-transfusion).[4]

TCM outpatient clinics started to become widespread in our country with the regulation issued in 2014. Necmettin Erbakan University's TCM outpatient clinic started to serve in January 2017. We think it is important to put forward the request for the TCM outpatient clinic opened to develop policies regarding TCM applications. Most of the studies on this subject have been conducted in a certain group and question their perspectives and uses of TCM methods.[5-8] Literature could not be reached on a study showing the annual demand for TCM clinic in Turkey.

This study aimed to compare the number of acupuncture, cupping and major ozone therapies by years in a traditional and complementary medicine outpatient clinic serving at the university for 3 years.

MATERIAL AND METHODS

This retrospective study was performed by scanning the files of patients admitted to the Necmettin Erbakan University Meram Faculty of Medicine Hospital's TCM outpatient clinic between January 2017 and December 2019. The study was approved by the Necmettin Erbakan University Medical and Non-device Research Ethics Committee prior to the study (Approval number: 2020/2774, Date: 14.07.2020). The study was conducted in accordance with the principles of the Helsinki Declaration.

A transaction code for the patient is typed for each procedure performed in the hospital. The patient pays the fee determined by the Ministry of Health for each TCM procedure. As pricing is different for hospital workers in our hospital, their transaction codes are different. Moreover, package codes are also used to facilitate patient's compliance with the therapy. Patients can have 10-session package codes for acupuncture and 5-session package codes for ozone therapy if they prefer multiple sessions. When data of the study were collected from hospital system according to transaction codes, it was observed that more than one transaction code used for one patient caused repetition of the name in the list. Therefore, patients were rearranged according to their file numbers. A patient was added to the list only for once and total number of procedures was stated. Data about the number of cupping, major ozone, and acupuncture therapies, the year when the therapy was received, gender and age of the patients who received the therapy and the information about whether they were a hospital worker or not were obtained.

STATISTICAL ANALYSIS

The data obtained were analyzed on IBM SPSS 25.0 software program. Whether numerical data were normally distributed was analyzed with Shapiro-Wilk

test. Chi-square test was used in comparison of nominal data. While numerical data were expressed as mean±standard deviation, nominal data were shown with frequency values. Independent t-test was used in comparison of mean values between two independent groups and one-way analysis of variance (One-way ANOVA) test was used in comparison of mean values among more than two groups for normally distributed numerical data. After the analysis of variance, Post-hoc analysis was used in determining which groups were different from each other. Bonferroni test was used for equal variances and Tamhane's T2 test was used for unequal variances. Statistically significant value was accepted as $p<0.05$.

RESULTS

A total of 1,848 individuals were admitted to the TCM outpatient clinic between 1st of January 2017 and 31st of December 2019. Of these individuals, 26.5% (n=488) were admitted for more than one TCM method. When we considered the procedures as acupuncture, cupping and ozone therapy regardless of the number of sessions, it was found that a total of 1,848 people were admitted for 2,336 procedures. Of these 2,336 procedures, 30.7% (n=718) were held in 2017, 28.4% (n=663) in 2018 and 40.9% (n=955) in 2019. A significant difference was observed in the comparison of the numbers of therapies by years ($p<0.001$). Comparison of demographic data of the individuals admitted to the clinic by years was given in Table 1.

Out of 1,848 individuals admitted to the clinic, 31.9% (n=590) were hospital workers, 63.7% (n=1,178) were female and 36.3% (n=670) were male. There was a significant difference between gender and frequency of the procedures performed ($p<0.001$). Of the patients who received cupping therapy, 57.7% (n=721) were female while 75.3% (n=733) of the ones who received acupuncture therapy and 71.1% (n=81) of the ones who received ozone therapy were female. The rates of the procedures according to gender were given in Table 2.

TABLE 1: Comparison of demographic data of the patients according to years.

n=2,333	2017	2018	2019	p value
Procedure				
Cupping	337 (46.9%)	363 (54.8%)	549 (57.5%)	<0.001
Acupuncture	381 (53.1%)	285 (43.0%)	307 (32.1%)	
Ozone	0 (0%)	15 (2.3%)	99 (10.4%)	
Gender				
Female	433 (60.3%)	440 (66.4%)	662 (69.3%)	0.001
Male	285 (39.7%)	223 (33.6%)	293 (30.7%)	
Is he/she a hospital worker?				
Yes	292 (40.7%)	200 (30.2%)	279 (29.2%)	<0.001
No	426 (59.3%)	463 (69.8%)	676 (70.8%)	
Age				
	48.0±13.7	46.5±14.2	45.7±14.3	0.003[a]

[a]A significance level of p=0.002 was found on post-hoc analysis between 2017 and 2019. One way-ANOVA test.

TABLE 2: Number and rates of the procedures according to gender.

	Cupping		Acupuncture		Major ozone		Total		p value
Gender	%	n	%	n	%	n	%	n	
Female	47	721	47.8	733	5.3	81	65.7	1,535	<0.001
Male	65.9	528	30	240	4.1	33	34.3	801	
Total	53.5	1,249	41.7	973	4.9	114	100	2,336	

Chi-square test.

Mean age of the patients was 46.6±14.1. No significant difference was found between the genders in terms of mean ages (p=0.554). There was a significant difference between mean age and the procedure performed (F=8.681, p<0.001). On post-hoc analysis, this difference was found between ozone therapy and acupuncture (p<0.001) and ozone therapy and cupping therapy (p<0.001). Mean age of the individuals who received ozone therapy was 51.9±14.8, mean age of those who received cupping therapy was 46.6±13.6 and mean age of those who received acupuncture therapy was 46.1±14.5.

The individuals can purchase acupuncture therapy as ten-session package and ozone therapy as five-session package. The intervals between sessions of the procedure purchased are decided according to the patients and their complaints. As there were patients who did not complete their sessions although they purchased session packages the numbers given expressed the number of procedures purchased. Out of 7,283 procedures purchased, 75.6% (n=5,510) were acupuncture, 18.1% (n=1,312) were cupping and 6.3% (n=461) were ozone therapy. When assessed according to years, 25.3% (n=1,845) of the procedures were purchased in 2017, 33% (n=2,405) in 2018 and 41.6% (n=3,033) in 2019.

A total of 114 individuals received ozone therapy. Out of 461 ozone therapy sessions purchased, 32.5% (n=37) were single-session and 67.5% (n=77) were five-session package. A total of 973 individuals received acupuncture therapy. Out of 5,510 acupuncture sessions purchased, 52.6% (n=512) were single-session and 47.4% (n=461) were ten-session package. Some of the patients received a few of the packages on application. Therefore, the total numbers are higher than the packet x n values. The distribution of the number of procedures purchased by years was given in Figure 1.

DISCUSSION

TCM practices rapidly started to be common in Turkey after the regulation published in 2014. Scientific data showing the demand of public on these practices are limited. In our study, we tried to show the demand on TCM outpatient clinic serving at a university hospital.

TCM applications are increasingly used in our society. In some studies, it is seen that patients use TCM methods without referring to healthcare personnel, being affected by their immediate surroundings or the internet.[7,8] In the study conducted by Şaş et al., it was determined that more than half of the people who used Complementary and alternative medicine methods were people other than health personnel.[9] TCM methods, which are known to have many beneficial results, have many known side effects. Therefore, it is very important to apply TCM

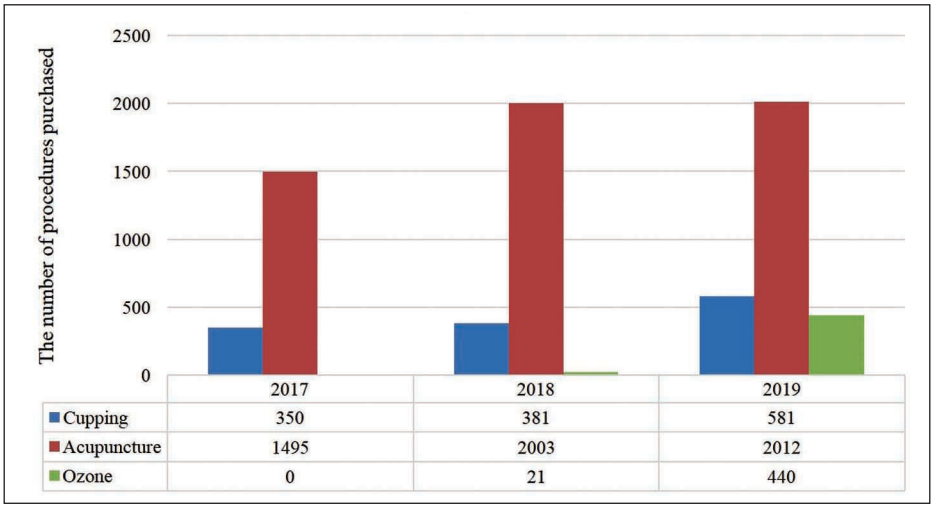

FIGURE 1: Distribution of the number of procedures purchased by years.

applications by healthcare professionals, especially physicians. In our study, we tried to reveal the demand for a TCM outpatient clinic where physicians treat.

Despite the increase in the total number of sessions purchased in our TCM outpatient clinic in 2018, there was a decrease in the number of TCM methods applied to patients. The reason for this may be the decrease in the number of physicians in 2018. Total number of admissions and therapies in our TCM outpatient clinic was higher in 2019 compared to the previous years. In the study performed in a TCM center of another university by Kılıç et al., it was found that satisfaction levels of the patients admitted were positive and that about two third of the patients thought recommending TCM practices to their relatives and friends.[5] The increase in the demand on our TCM clinic in our study may be due to patient satisfaction and consequently, the spread of information that TCM methods are used at university hospitals.

In our study, about one third of the patients admitted to the TCM outpatient clinic were hospital workers. This may be because hospital workers knew that TCM outpatient clinic was at the university, it was easy to access to clinic as it was in their own workplace and a discount was granted for hospital workers. Moreover, we believe that telling patient satisfaction of those who have received therapy among friends is effective in showing recognition level and benefit of the procedures.

Women apply traditional and complementary medicine methods more than men.[10,11] In the study by Kılıç et al., 57% of the patients admitted to the TCM center in Elazığ were women.[5] In a multicenter study in Germany, 80.5% of about 100 thousand patients admitted for acupuncture therapy were female.[12] The results in our study are consistent with those in literature and about two third of the individuals who received a therapy were female. The fact that women seek to meet their own health needs more than men is considered to be effective in preferring TCM methods.[5,10] In addition, diseases accompanied by chronic pain such as migraine and fibromyalgia are more common in women according to studies, which is also considered to be effective in the number of women preferring TCM methods.[13,14]

It is observed in studies on TCM practices that the interest in TCM methods increases by increasing age.[5,15,16] In our study, mean age of those who received major ozone therapy was higher. This may be because ozone therapy is more commonly preferred in chronic diseases increasing with age.

Cupping therapy is an old traditional and complementary medicine practice. There are increasing evidences on its potential benefits in treatment of some diseases, especially the ones associated with pain.[17] The kidney filters hydrophobic materials through glomeruli via normal pressure. In cupping therapy, both hydrophilic and hydrophobic materials are filtered through high-pressure. The filtered fluid collected contains substances that are related to the disease and that cause the disease as well as prostaglandins and inflammatory mediators.[3] The scratches made increase immunity by stimulating inflammatory cell migration and endogenous opioid release. This effect leads to improvement in blood flow, removal of toxins, restored neuroendocrine balance, improved oxygen supply and tissue perfusion.[3] Cupping is known as an Islamic tradition in society and demanded. Meeting this demand of society by trained physicians under ideal conditions is important. The Ministry of Health provides trainings on cupping therapy only for physicians and dentists. Contraindications of cupping therapy are thrombophlebitis, active wounds, surgical wounds, decompensated heart failure, hemophilia, history of coagulopathy, antiaggregant drug use, cupping directly on varicose veins, and anemia.[3] According to data from the WHO in Turkey in non-pregnant women of reproductive age estimated prevalence of anemia was 26.3%.[18] As anemia is so common in the society, especially among women, hemoglobin levels are measured before cupping therapy in our TCM outpatient clinic. According to our study, men preferred cupping therapy more than the other methods. Similarly, the number of men receiving cupping therapy was higher than that of women in the study by Kılıç et al.[5] This may be because anemia is more

common in women. Women with abnormal lab results do not receive the therapy and the cupping is recommended after the treatment of anemia. Moreover, a significant increase was observed in the number of cupping therapies by years. This may be because the cupping therapy is performed by physicians in hospital environment, which gives patients confidence and may result in increased demand. In addition, complications (scar, infection, ecchymosis) experienced so far during practices without a physician may have directed patients to a safe hospital environment.

In our TCM outpatient clinic, 973 patients purchased a total of 5,510 acupuncture sessions within 3 years. Acupuncture is one of the oldest therapy methods and has been used about 2-3 thousand years. Acupuncture both provides relief with its analgesic effect and shows therapeutic efficacy.[19] Acupuncture is used for the treatment of many painful diseases such as headache, migraine, osteoarthritis, post-operative pain, and trigeminal neuralgia.[19] The clinical indications for acupuncture are immune system disorders, gastrointestinal diseases, and gynecological and neurological dysfunctions.[20] Training standards and therapy indications and contraindications for acupuncture were determined in the Regulation for TCM Medicine Practices published by the Ministry of Health and a new era has begun in Turkey. The number of acupuncture training centers and physicians receiving acupuncture training has rapidly been increasing after this notice. In conclusion, acupuncture therapy is rapidly becoming popular and patients would like to try this therapy which has quite few side effects.

Major ozone therapy started to be used in our clinic in late 2018. Major ozone therapy increases the antioxidant capacity by inducing temporary oxidative stress in the body.[21] Inhibition of release of bradykinin and synthesis of inflammatory prostaglandins reduces edema and it shows analgesic effect. It increases the release of antagonists neutralizing the proinflammatory cytokines such as ozone IL-1.8,12.15 and tumor necrosis factor. It normalizes the release of immunosuppressive cytokines such as IL-10 and stimulates the synthesis of matrix proteins such as ozone collagen and glucosamine. In a study, reactive oxygen radical levels of patients with fibromyalgia decreased and serotonin levels increased with 10 sessions of major autohemotherapy.[22] Wound-healing effect of ozone and its effect on HbA1c are notable especially in diabetic patients. The presence of increased oxidative stress and reduced antioxidant capacity in pathogenesis of diabetes has been proven.[23] It is claimed that ozone therapy rebalancing the nitric oxide/O_2 ratio at endothelial level prevents the stages leading to diabetic foot at the very beginning as well as promoting wound healing.[24] Similar studies have also revealed that ozone prevents oxidative stress caused by diabetes.[23] In our clinic, the number of patients who prefer purchasing session packages for ozone therapy is higher. This is because major ozone therapy starts with low dose (10 mcg/mL) and periodically increases the dose and patients feel the major relief after the 3rd session. Moreover, a discount is granted for session package purchases.

Another important factor of the increase in the number of patients is that the physician practicing the therapy improves herself or himself and can assess the patient from many aspects. As the number of TCM methods learned by the physician increases the optimal therapy options for the patient increase as well. In integrated approach, the efficacy of the therapy is increased by combining the different approaches such as detox effect of cupping, acupuncture analgesia and regulation of autoimmunity by ozone in chronic diseases of the patient. After ozone therapy started to be used in our clinic, an increase has been observed in the number of patients. We aim to add other TCM practices in the future.

In the Regulation for TCM Medicine Practices, the Ministry of Health added the statement that "Practices cannot replace standard treatment of the disease or disrupt the ongoing treatment". Therefore, these therapies should be complementary to available modern medicine therapy modalities rather than being an alternative. Moreover, giving the authority to practice only to physicians, dentists and pharmacists only in their working areas aims to increase the quality and reliability.

CONCLUSION

An increase in the number of patients by years was observed in the TCM outpatient clinic of a university hospital. We believe that it is important to meet the demand for these methods in competent hands and under ideal conditions for the health of those applying for TCM methods.

LIMITATION

The limitation of our retrospectic study is that the reasons for application of the patients could not be reached and their satisfaction status after treatment could not be questioned. These situations can be examined in future studies.

Source of Finance

During this study, no financial or spiritual support was received neither from any pharmaceutical company that has a direct connection with the research subject, nor from a company that provides or produces medical instruments and materials which may negatively affect the evaluation process of this study.

Conflict of Interest

No conflicts of interest between the authors and / or family members of the scientific and medical committee members or members of the potential conflicts of interest, counseling, expertise, working conditions, share holding and similar situations in any firm.

Authorship Contributions

Idea/Concept: *Hatice Küçükceran;* ***Design:*** *Hatice Küçükceran, Hayriye Alp, Ezgi Ağadayi;* ***Control/Supervision:*** *Ezgi Ağadayi;* ***Data Collection and/or Processing:*** *Hatice Küçükceran;* ***Analysis and/or Interpretation:*** *Hayriye Alp;* ***Literature Review:*** *Hatice Küçükceran;* ***Writing the Article:*** *Hatice Küçükceran;* ***Critical Review:*** *Hayriye Alp, Ezgi Ağadayi;* ***References and Fundings:*** *Hatice Küçükceran;* ***Materials:****Hatice Küçükceran.*

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