2024-1378 IJOI
https://www.ijoi-online.org/index.php

International Journal of
Organizational Innovation

APPLICATION OF PITHY FORMULA METHOD IN TEACHING SCRAPING THERAPY OF HEAD AND FACE MERIDIANS AND COLLATERALS

Shuo-Fei Chen[1*]
Bachelor's Program of Sports and Health Promotion, Fo Guang University
sfchen@gm.fgu.edu.tw

Ya-Ting Liang[2]
Tao Bian Eastern Esthetics Co., Ltd
shine7589@gmail.com

Abstract

As one of the important theories of traditional Chinese medicine (TCM), meridians and collaterals are considered to be the key to human physiology, pathology and clinical efficacy. The use of acupuncture and scraping therapy in TCM is of potential value in the health care and treatment of visceral diseases. As a traditional folk therapy, the scraping therapy can dredge the meridians and collaterals as well as regulate qi and blood through massaging the acupoints to achieve the effect of health and beauty. In the TCM theories, the scraping therapy can stimulate lymphatic circulation, promote the repair of body tissues, improve immunity, and achieve the effects of detoxification, repair and reconstruction. Teaching and learning is a process of mutual feedback. As an effective teaching strategy, the pithy formula teaching method is widely used in the medical field, which can help students memorize and understand knowledge more easily. The purpose of this study was to investigate the application and effect of the pithy formula method in the teaching of scraping therapy of the head and face meridians and collaterals, in order to promote the research and application of meridian and collateral healthcare theories.

Key Words: meridians, collaterals, scraping therapy, pithy formula teaching method

Introduction

As one of the important theories of traditional Chinese medicine (TCM), meridians and collaterals are considered to be the key to human physiology, pathology and clinical efficacy. The use of acupuncture and scraping therapy in TCM is of potential value in the health care and treatment of visceral diseases. As a traditional folk therapy, the scraping therapy can dredge the meridians and collaterals as well as regulate qi and blood through massaging the acupoints to achieve the effect of health and beauty. In the TCM theories, the scraping therapy can stimulate lymphatic circulation, promote the repair of body tissues, improve immunity, and achieve the effects of detoxification, repair and reconstruction. Teaching and learning is a process of mutual feedback. As an effective teaching strategy, the pithy formula teaching method is widely used in the medical field, which can help students memorize and understand knowledge more easily. The purpose of this study was to investigate the application and effect of the pithy formula method in the teaching of scraping therapy of the head and face meridians and collaterals, in order to promote the research and application of meridian and collateral healthcare theories.

Literature Review

Overview of Meridians and Collaterals

The theory of meridians and collaterals is a TCM theory based on books and medical experience, and it is considered that meridians and collaterals are related to the human physiology, pathology and clinical efficacy. Via the observation of the tendon musculature, primo-vessels (Bonghan ducts), areas of elevated temperature and low skin resistance are the approaches of representing or identifying the meridians and collaterals (Longhurst, 2010). The “meridians” or “pathways” represent the main channels that lead straight to various places, while the “collaterals” symbolize the intertwined webs. The medians and collaterals traverse each other throughout the body, inside and outside, front and back, left and right, and are closely connected to the internal organs, the head, the face, the trunk and the limbs of the body, forming an integrated system (Wu, 2012). In recent years, the science of meridians and collaterals has received more and more attention in many countries, and the research has been gradually providing empirical evidence of meridians and collaterals. Modern medicine uses isotopes and biochemical dyes to visualize the meridians and collaterals. When biochemical dyes are injected into the acupoints of the Pericardium Meridian,

the Sanjiao Meridian, the Kidney Meridian, the Heart Meridian, and the Lung Meridian, we can see fluorescein sodium or indocyanine green (ICG) forming fluorescent lines along the Pericardium Meridian or other meridians and collaterals, reflecting the complexity of the distribution of the meridians and collaterals along the body surface (Xiong et al., 2020, Li et al., 2021; Hu et al., 2023).

According to Huangdi Neijing (Huangdi's Internal Classic), the scope of meridians and collaterals includes twelve regular meridians, eight extra meridians, twelve divergent meridians, twelve muscle regions, fifteen collaterals, as well as a large number of collaterals and tertiary collaterals. These meridians and collaterals form a complete network throughout the body, connecting the internal organs, head, face, trunk and limbs to form an organic system. Among them, the twelve regular meridians are mainly responsible for the overall operation of qi and blood, while the eight extra meridians have the function of regulating the twelve regular meridians (Wu, 2012; Wu, 2015). Recent studies have scientifically identified the meridians, collaterals and acupoints in the body, and found that there are abnormally high or low conductivity at acupoints in the body. Utilizing the close relationship between the abnormal conductivity and the meridians and collaterals, it is possible to connect a map of the 14 meridians and collaterals, each of which corresponds to a different but specific organ system (Zhou & Benharash, 2014). Scientific studies have designed acupuncture and classical TCM theories based on the fact that meridians and collaterals are distributed longitudinally and horizontally across the surface of the body, integrating the body surface with the internal organs and making the whole body a complete organ, and various studies have also pointed out that acupuncture points may become sensitive in the case of internal organ diseases (Yu et al., 2015; Jiang et al., 2021). It has been pointed out by the literature that pericardium meridians and collaterals are closely related to the cardiovascular system, while TCM acupuncture uses Neiguan, Shenmen, Ximen, Zusanli, Sanyingjiao, Wuchi, Taichong, Renzhong, Chenjiang, Shixuan, etc. as acupoints for healthcare and treatment of cardiovascular diseases (Zhou & Benharash, 2014). The theory of meridians and collaterals, indicating the spatial and functional relationship between the body and the internal organs, is therefore the knowledge that people or healthcare practitioners have been eager to learn in recent years.

Meridians and Collaterals and Scraping Therapy

Scraping therapy has its origins in the "Bian-stone therapy", a method of health promotion using stone tools. In ancient times, the term "Bian" referred to the use of stone needles to prick the skin to achieve curative effects. But what has been passed down to the present day is the commonly practiced "Bian-stone therapy" of scraping, commonly known as the scraping therapy (Chen et al., 2019). The principle of relieving muscles and bones by meridians and collaterals is based on the TCM science of meridians and collaterals, which recognizes that the human body relies on the system of meridians and collaterals to connect the trunk with the internal organs to form a whole operation. By massaging acupoints, the meridians and collaterals can be unblocked, and qi and blood can be regulated to achieve health and beauty effects at the same time (Hsu, 2011). The scraping therapy is a traditional folk therapy that mainly uses instruments made of cow horn, stone, ceramics and other hard materials with smooth edges of blunt non-sharp shapes, supplemented with lubricating medium (vegetable oil, fresh water, etc.) to rub in the skin repeatedly to achieve conditioning and healthcare effects. The parts of the body where the scraping therapy is often used include the head, the neck, the shoulders, the back, the waist and the limbs. The order of scraping is to start with the head and face followed by the hands and feet, start with the back and waist followed by the chest and abdomen, or start with the upper limbs followed by the lower limbs, so scraping is carried out gradually according to this order. In TCM, the scraping therapy along the meridians and collaterals, accompanied by pressure acupoints, massage and other techniques, can stimulate the sympathetic nervous system through the lymphatic circulation to promote the repair of body tissue and improve immunity, to achieve detoxification, repair and reconstruction (Wang & Zhang, 2014).

Teaching and Pithy Formula Method

Teaching and learning is a reciprocal process that involves interactions between teachers and students. Effective instructional goals should be specific, measurable, attainable and time-sensitive, and the pithy formula method is an effective instructional strategy that can help students remember and understand knowledge more easily (Lin, 2015). According to the study by Oxford University, the memory strategy helps to improve the way new information is remembered and

stored, making it easier for students to remember and harder to forget (Oxford, R, 1990). This is seen as a purposeful activity that involves three main functions. Firstly, the memory strategy provides an organized structure that facilitates learning and obtaining information. Second, it can systematically store learning data in the memory organization, thus promoting the retention of learning data in memory without forgetting. Finally, this strategy can provide clues to help extract information in an easier way (Ashcraft, 1989).

The pithy formula method is considered an important strategy of pithy formulas, which is characterized by the use of the pithy formula by teachers to facilitate students' memorization and comprehension of the subject matter more effectively, transforming abstract or complex concepts into easy-to-remember forms through creative verbal structures and rhythms. Teachers can design vivid and rhythmic pithy formulas so that students can reinforce their memories through repetition, rhythm and rhyme, which helps them to better understand and memorize knowledge and to easily retrieve it when needed (Chen, 1989). There are many applications of pithy formulas in medicine to facilitate clinical work, such as PHARMACIST, which is effective in assisting clinical pharmacists in recognizing drug-related problems (Yu & Hsu, 2023). The pithy formula method has also been applied to the standard operation procedures of intra-aortic balloon pump (IABP), which allows nursing staff to gain good learning effect (Huang & Hsu, 2012).

In the field of healthcare by meridians and collaterals, the pithy formula method is also a useful tool for students and professionals to memorize complex knowledge and procedures. For example, although the following pithy formula for commonly used meridians and collaterals is a familiar one: “the following are all the acupoints of the Small Intestine Meridian of Hand-Taiyang (Small Intestine Meridian). Shaoze is the first at the end of the little finger, followed by Qiangu, Houxi and Wangu. Yanggu and Yanglao are close to each other, then there are Zhizheng, Xiaohai and Jianzhen further up, with Naoshu, Tianzong and Bingfeng at the shoulder. Then there are Quyuan, Jianwaishu and Jianzhongshu. There are Tianchuang and Tianrong in the neck, and Quanliao and Tinggong in the face. There are a total of nineteen acupoints”, there are few studies on the teaching practice of the pithy formula method.

Methods

Research Design and Sample

In this study, the teaching experimental method was adopted, and the research subjects were two classes of students who had not received any course on meridians and collaterals. The lecture teaching method was used for both classes, and then a class was randomly selected for the general teaching method, while the pithy formula teaching method was used for the other class. The demonstration teaching method and the practice teaching method were also used for both classes. At the beginning of the study, there were a total of 71 participants who had not received any course on meridians and collaterals in these two classes, including 35 participants taught by the pithy formula method and 36 participants taught by the general teaching method. Before the course, the researcher explained the content of the study, the process and the cooperation matters, and asked the participants to sign a consent form. Then the participants were randomly divided into two groups, the difference between the two groups was that the pithy formula method was implemented in Group A (the pithy formula group), and the general teaching method was implemented in Group B used (the general group), to explore the effectiveness of the pithy formula teaching method on the learning effectiveness of knowledge and skill operation. The course was held once a week, each time for 2 hours, for a total of four weeks. The participants were asked to fill out a scale before and after the course, and to take a test at the end of the course on academic and skill performance. The research process flow is as shown in Figure 1.

Head and Face Meridians and Collaterals, Acupoints and Pithy Formulas

In the study, the head and face acupuncture points and related meridians and collaterals were selected, and the scraping plate was used as the scraping tool (Figure 2) for acupressure and scraping therapy. The acupoints in the face included Tinggong and Quanliao of the Small Intestine Meridian, Yingxiang of the Large Intestine Meridian, Sizhukong and Yifeng of the Sanjiao Meridian, Chenqi and Dicang of the Stomach Meridian, Jingming and Cuanzhu of the Bladder Meridian, Tongziliao of the Gallbladder Meridian, and Chengjiang of the Conception Vessel.

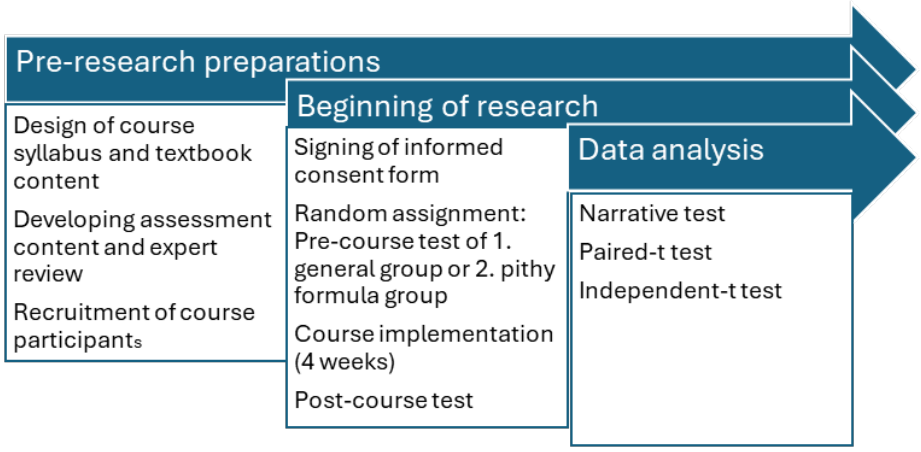

Figure 1. Research Process Flow

The pithy formula was based on the locations of the acupoints in the face and the meridian scraping directions. The first part of the pithy formula content was the acupressure positions of the scraping plate: “Point to the eyebrow and eyebrow tail; point to the eye head and eye tail; point to the nose, ear and mouth; point to under the eyes, under cheek bone, under the ear, and under the lips”. The second part was the meridian scraping directions: “from lips to under the ear, from the nose to the middle of the ear, from the end of the eye to the top of the ear, from the bottom to the top, from the inside to the outside, and from the bottom to the top to pull up neck”. The acupoints in the head were Fengfu, Tianzhu and Feng-chi. The pithy formula for head and face meridian scraping directions were “eyebrow head and eyebrow tail, eye head and eye tail, nose side, ear side and then mouth side, under the eye, under the cheek bone, under the ear and lips, pull lightly from the inside to the outside, mouth corner, under the ear then nose and ear center, pull up eye tail to the temple, without missing above the eyebrow and the hairline, lift the neck gently and caress the lines from the bottom to the top with a gentle touch”.

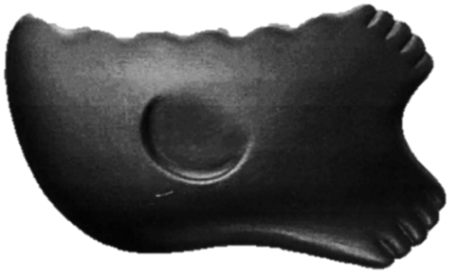

Figure 2 Scraping Plate

Assessment Tools

The learning effectiveness of this study was assessed by the academic assessment scale and the skill assessment scale with the conceptualized structure of meridian and collateral acupoints. The content of the assessment scales was revised by experts who provided valuable opinions on the necessity, appropriateness and completeness of the assessment content in order to meet the expert validity. The "academic assessment" included knowledge of head and face meridian and collateral acupoints and the concept of meridian scraping therapy, the "skill assessment" included the pressing of the head and face acupoints and scraping therapy with the ceramic scraping tool. The "course experience and feedback" measured the degree of benefit and satisfaction of this course. Questions 1-6 were scored on a five-point Likert scale, with five levels of "strongly agree, agree, fair, disagree, strongly disagree", and the last part was a suggestion for the pithy formula method of the recitation of meridians and collaterals, all of which were open-ended questions. After the questionnaires were collected and the correctness of the data was confirmed, the data were coded, processed and analyzed by SPSS 20 statistical package. The data were analyzed by descriptive statistics, including the maximum value, minimum value, mean value and standard deviation, and independent t-tests as well as paired t-tests for the pre and post-tests were conducted between the general group and the pithy formula group.

Research Results

At the beginning of the study, there were 71 participants who had not received any course on meridians and collaterals in the two classes, namely, the pithy formula method

(35 participants) and the general teaching method (36 participants). Since those participants who withdrew and did not complete the test were eliminated, the final number of valid participants was 67, with 34 in the pithy formula group and 33 in the general group. The age range was 31-73 years old, and the mean ages of the pithy formula group and general group were 53.7 ± 7.3 years and 48.2 ± 9.7 years, respectively (Table 1).

Table 1. Gender Distribution

Group	PFG (n=34)		GG (n=33)	
Gender	male	female	male	female
Number of participants (%)	3(8.8)	31(91.2)	2(6.1)	31(93.9)
Age	53.7 ± 7.3		48.2 ± 9.7	

Pithy formula group (PFG) n=34, General group(GG) n=33

Learning Effectiveness of Pithy Formula Group Was Better Than That of General Group in Learning Skills

The total number of points in the test questions of the skills was 33, with 8 points for the head and 25 points for the face. The pithy formula group had a higher mean score in the scraping therapy of head meridians and collaterals than the general group (6.56 ± 0.99 vs. 5.00 ± 0.83, p=0.000***), and the total score of the skills was also significantly higher than the general group (26.24 ± 3.43 vs. 24.48 ± 1.66, p=0.01**) (Table 2).

Pithy Formula Teaching Method Helped Academic Memorization

The academic test questions were divided into two groups: “key points for scraping with ceramic tool” and “cognitive concepts of meridians, collaterals and acupoints”. General lecture teaching was provided to both classes for the “key points for scraping with ceramic tool”, and there were a total of 7 test questions for the internal control of this study. The pithy formula method or the general teaching method was offered for the “cognitive concepts of meridians, collaterals and acupoints”, and there were a total of 14 test questions.

Table 2. Skill Assessment

Scraping of meridians and collaterals Assessment score	Group	Mean	S.D	Sig.
Head	PFG	6.56	0.99	0.000***
	GG	5.00	0.83	
Face	PFG	19.68	2.65	0.71
	GG	19.48	1.37	
Total score	PFG	26.24	3.43	0.01**
	GG	24.48	1.66	

1. Pithy formula group(PFG) n=34, General group(GG) n=33
2. Standard deviation (S.D), Significance(Sig.)
3. **p<0.01, ***p<0.001

At the beginning of the study, there was no significant difference between the pithy formula group and the general group in the pre-test. In the post-test, there was no significant difference in the number of questions answered correctly between the two groups (6.32 ± 0.73 vs. 6.36 ± 0.93, p=0.84), which proved that the teaching methods used were the same between the two groups. There was a significant difference (12.38 ± 1.13 vs. 7.91 ± 2.81, p=0.00***) in the scores of the total of 14 test questions on "cognitive concepts of meridians, collaterals and acupoints" by the pithy formula method and the general teaching method, which showed that the learning effectiveness of the group with the pithy formula technique was higher than that of the general group in the dimension of academic assessment (Table 3).

Participants' Recognition of Course of "Healthcare of Meridian Scraping by Ceramic Tool"

The feedback of the course was based on a five-point Likert scale, and the results showed that the scores of each single question were all higher than 4.5, which indicated that the participants had a high level of agreement with the course (Table 4). Through the open-ended feedback, it was found that the participants in both the pithy formula group and the general group had a good

Table 3 Academic Assessment

		Pre-test			Post-test		
Questions	Group	Mean	±S.D	Sig.	Mean	±S.D	Sig.
Key points for scraping with ceramic tool	PFG	5.82	1.45	0.7	6.32	0.73	0.84
	GG	5.70	1.26		6.36	0.93	
Cognitive concepts of meridians, collaterals and acupoints	PFG	5.74	3.89	0.76	12.38	1.13	0.00***
	GG	5.45	3.65		7.91	2.81	

1. Pithy formula group(PFG) n=34, General group(GG) n=33
2. Standard deviation (S.D), Significance(Sig.)
3. **p<0.01, ***p<0.001

learning experience in the course of Healthcare of Meridian Scraping by Ceramic Tool and expressed their interest in and understanding of what they had learned. However, it is worth noting that for the academic dimension, only participants in the general group mentioned that they "could not memorize what they learned in the class" (B25), and that they were still confused about the learning content. In addition, for the skill dimension, some participants mentioned such words as "unfamiliar, need to learn more" (B4, B11, B23, B24), as they felt unfamiliar with some of the techniques and needed to learn and practice them further. This kind of feedback was found in the general group, reflecting the difference in learning between different groups. Participants in the pithy formula group could deepen their understanding and memorization through pithy formula techniques, whereas participants in the general group might need additional time and support to master the course content.

Conclusions

The characteristics of the pithy formula teaching method is that the pithy formula is a kind of repetitive and rhythmic learning method, which can help to grasp the learning content and make the learning more vivid and interesting through repeating pithy formulas. Overall, it helps to improve memorization and con-

centration, activate classroom atmosphere, and enhance learning efficiency. The study of Di Santo et al. (2020) showed that the application of memory techniques had a beneficial effect on memory tasks, especially on more challenging tests, and the subjects trained in memory techniques performed better than the general group, and to a degree that exceeded the breadth of complex memory.

Table 4. Course Feedback

Question no. /content	Group	Average mean	±Standard deviation	Significance
I have benefited a lot from this course	PFG	4.82	0.39	0.31
	GG	4.91	0.29	
I feel that ceramic scraping tools are better than other materials for clearing meridians and collaterals.	PFG	4.85	0.36	0.96
	GG	4.85	0.36	
Participating in the course has a positive impact on my physical and mental health.	PFG	4.76	0.43	0.05*
	GG	4.94	0.25	
This course has helped me	PFG	4.79	0.41	0.30
	GG	4.64	0.78	
After attending the course, I would recommend this course to my friends and relatives.	PFG	4.68	0.47	0.47
	GG	4.76	0.44	
If there is a similar course, I would like to attend it.	PFG	4.65	0.49	0.88
	GG	4.67	0.54	

Pithy formula group(PFG) n=34, General group(GG) n=33

In addition to enhancing memorization, the pithy formula teaching method can activate the classroom atmosphere, make learning livelier and more interesting, and increase the interest in learning. Interest in learning is the construction of learning attitudes and can increase learners' intrinsic motivation (McWhaw & Abrami, 2001). In addition, as interest in learning increases, students will develop more strategies to help themselves learn (Chao & Yu, 2012, Huang & Yang, 2011), and the more active the learning process, the better the learning performance (Tsai et al., 2021).

This study helps to show that pithy formula teaching can bring positive performance in learning memory, and it is an effective teaching strategy that can improve learning effectiveness and is worthy of the application in teaching practice.

References

Ashcraft, M. H. (1989). Human memory and cognition. Scott, Foresman & Co.

Chao, P. C., & Yu, M. N. (2012). An empirical study of the relationships among self-regulated learning strategies, learning interests, and academic achievement. Bulletin of Educational Research, 58(3), 1-32.

Chen, H.C. (1989). Effective memory techniques. National Taichung University of Education Publishing. Retrieved from ntcuir.ntcu.edu.tw.

Chen, S.F., Kuo, C.-H., & Chan, W.-Z. (2019). The conditioning and health care of middle-aged and elderly individuals with shoulder and neck stiffness using structural acupuncture. Chinese Journal of Natural Medicine, 2(2), 25-31. https://www-airitilibrary-com.libers.fgu.edu.tw:8443/Article/Detail?DocID=P20200401001-201912-202006090009-202006090009-25-31

Craik, F.I.M., & Lockhart, R.S. (1972). Level of processing: A framework for memory research. Journal of Verbal Learning Verbal Behavior, 11, 671-684.

Di Santo, S., De Luca, V., Isaja, A., & Andreetta, S. (2020). Working memory training: Assessing the efficiency of mnemonic strategies. Entropy, 22(5), 577.

Hsu, S.L. (2011). Application of meridian muscle relaxation techniques in facial beauty. Journal of Aesthetic Technology, 8(3), 63-72. https://doi-org.libers.fgu.edu.tw:8443/10.30001/JIES.201109.0005

Hu, H., Jiang, Y., Li, X., Lou, J., Zhang, Y., He, X., Fang, J., Wu, Y., Shao, X., & Fang, J. (2020). The microcirculatory characteristics of the heart and lung meridians: Study protocol clinical trial (SPIRIT Compliant). Medicine, 99(14), e19594. https://doi.org/10.1097/MD.0000000000019594

Hu, Q., Li, T., Zhang, W. B., & Tang, B. Q. (2023). In vivo visualization of meridians with fluorescent dyes. Asian journal of surgery, 46(6), 2599–2600. https://doi.org/10.1016/j.asjsur.2022.12.129

Huang, R.P., & Su, C.-Y. (2015). Investigation of nursing students' knowledge, attitudes, and behaviors regarding Gua Sha therapy. Journal of Nursing and Health Care Research, 11(4), 287-297. https://doi-org.libers.fgu.edu.tw:8443/10.6225/JNHR.11.4.287

Huang, Y.C. & Yang, D. C. (2011).The research on mathematic learning interest and confidence of the disadvantaged students at the early stage of primary schools in Taiwan. Journal of Chiayi University Education Research 26, 113–145.

Huang, Y.-H., & Hsu, L.-L. (2012). Clinical teaching creation: Standard technical process of aortic balloon pump. Nursing Journal, 59(4), 88-93. https://doi-org.libers.fgu.edu.tw:8443/10.6224/JN.59.4.88

Jiang, Y., Hu, H., Li, X., Lou, J., Zhang, Y., He, X., Wu, Y., Shao, X., & Fang, J. (2021). Difference in Moxibustion-Induced Microcirculatory Responses between the Heart and Lung Meridians Assessed by Laser Doppler Flowmetry. Evidence-based complementary and alternative medicine : eCAM, 2021, 6644625. https://doi.org/10.1155/2021/6644625

Langevin, H. M., & Yandow, J. A. (2002). Relationship of acupuncture points and meridians to connective tissue planes. The Anatomical Record: An Official Publication of the American Association of Anatomists, 269(6), 257-265.

Li, T., Tang, B. Q., Zhang, W. B., Zhao, M., Hu, Q., & Ahn, A. (2021). In vivo visualization of the pericardium meridian with fluorescent dyes. Evidence-Based Complementary and Alternative Medicine, 2021.

Lin, J.-C. (2015). Teaching theories and methods. Taiwan: Wunan Publishing Company.

Longhurst J. C. (2010). Defining meridians: a modern basis of understanding. Journal of acupuncture and meridian studies, 3(2), 67–74. https://doi.org/10.1016/S2005-2901(10)60014-3

McWhaw, K., & Abrami, P. C. (2001). Student goal orientation and interest: Effects on students' use of self-regulated learning strategies. Contemporary educational psychology, 26(3), 311-329.

Oxford, R. (1990). Language learning strategies: whal every leacher should know. Engle-woodCliffS, NewJersey: NewburyHouse.

Tsai, M. H., Chang, L. Y., Chen, H. C., & Lin, C. L. (2021). Effects of key-image mnemonics on Chinese instruction for first-grade students' achievement and interest toward Chinese learning. International Journal of Educational Research, 109, 101856.

Wang, M., Liu, W., Ge, J., & Liu, S. (2023). The immunomodulatory mechanisms for acupuncture practice. Frontiers in immunology, 14, 1147718. https://doi.org/10.3389/fimmu.2023.1147718

Wang, M.-Y., & Zhang, M.-Y. (2014). Exploring the efficacy of Gua Sha in resolving qi stagnation

and blood stasis from the perspective of traditional Chinese medicine. Journal of Leisure and Tourism Industries, 6(2), 92-105. https://doi-org.libers.fgu.edu.tw:8443/10.6158/JLTIR.201411_6(2).0005

Wu, W. (2012). Meridians. Journal of Traditional Chinese Veterinary Medicine, 16(1), 39-42.

Wu, Y. (2015). Clinical application of meridian and tendon relaxation technique in the neck. Chinese Acupuncture & Moxibustion, 3(1), 128-133.

Xiong, F., Song, X. J., Wang, G. J., Jia, S. Y., Gu, X., Li, H. Y., & Zhang, W. B. (2020). Preliminary observation to the migration of sodium fluorescein along meridians on the limbs of mini-pig. Integrative Medicine Research, 9, 100566.

Yu, X., Zhu, B., Lin, Z., Qiao, H., Kong, J., & Gao, X. (2015). Acupoint Sensitization, Acupuncture Analgesia, Acupuncture on Visceral Functional Disorders, and Its Mechanism. Evidence-based complementary and alternative medicine: eCAM, 2015, 171759. https://doi.org/10.1155/2015/171759

Yu, Z.-Y., & Hsu, S.-H. (2023). PHARMACIST: A mnemonic to assist pharmacists in identifying drug-related problems. Taiwan Journal of Clinical Pharmacy, 31(3), 228-236. https://doi-org.libers.fgu.edu.tw:8443/10.6168/FJCP.202307_31(3).0008

Zhou, W., & Benharash, P. (2014). Effects and mechanisms of acupuncture based on the principle of meridians. Journal of acupuncture and meridian studies, 7(4), 190–193. https://doi.org/10.1016/j.jams.2014.02.007