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The Use of Artificial Intelligence, Tai Chi and Qigong to Treat Post Traumatic Stress Disorder (PTSD)

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ABSTRACT

This study illustrates how medical professionals can utilize artificial intelligence (AI) to gather basic information easily and quickly without first referring to a medical database such as PubMed. AI can be used as an efficient time-saving tool to gather information about a medical topic that might be unfamiliar. It can be the first step in a two-step process. This article also introduces the reader to the use of tai chi and qigong, two tools in the toolbox of Traditional Chinese Medicine (TCM) that are being increasingly incorporated into Western medical practices as supplements to traditional treatments for a wide variety of ailments. Microsoft Copilot gathered basic information about the use of tai chi and qigong in the treatment of post-traumatic stress disorder. Additional information was then obtained from the PubMed database and several studies were summarized. Prior studies have indicated that tai chi and qigong can be used as beneficial supplements to traditional Western medicine in the treatment of PTSD.

Keywords: Post Traumatic Stress Disorder; PTSD; Tai Chi; Qigong; Traditional Chinese Medicine; TCM

Introduction

This study examines the use of artificial intelligence (AI), tai chi and qigong [pronounced chee gong] to treat post traumatic stress disorder. As this article is being written, Microsoft Copilot [1] is one of the more popular chat bots. It can be used effectively to generate basic information about a wide range of topics and is a good first step in certain areas of medical research, especially when the researcher is unfamiliar with the topic being researched [2-28]. Such is often the case when a Western medical researcher is attempting to learn something about tai chi or qigong [29-60], which are two of the most popular tools of Traditional Chinese Medicine (TCM).

One of the main differences between TCM and Western medicine is the emphasis [31,61]. TCM focuses on prevention, whereas Western medicine focuses on cure. Qigong is much older than tai chi. It has been used for thousands of years, both as a general health practice and as a tool to treat and perhaps cure a wide range of ailments. It incorporates breathing techniques and meditation and is used to activate the body's natural healing powers. Tai chi has been in existence for a much shorter period of time, less than 1000 years, and is similar to qigong in some ways. It also incorporates breathing and meditation techniques. However, unlike qigong, tai chi is also considered to be a martial art.

Another difference is that tai chi consists of a series of postures or moves that are arranged in a set sequence and incorporate transition moves, whereas qigong often consists of just one or a few exercises that do not necessarily have transition moves between exercises and may or may not consist of a set pattern. Another difference between the two is that qigong exercises are much easier to learn than tai chi, as a general rule. It takes years to become proficient at tai chi, whereas basic qigong moves can be learned in a single morning or afternoon. However, it is not necessary to become proficient at tai chi in order to reap health benefits. Many medical studies that incorporate tai chi have found that significant improvements in health can occur in a matter of weeks or months. This paper summarizes the results of some studies that have incorporated tai chi or qigong in the treatment of PTSD.

The Study

A good first step in finding relevant articles and studies on the application of tai chi and qigong to treat PTSD would be to use Microsoft Copilot [1], an artificial intelligence (AI) chat bot. Using Copilot

or other AI chat bot as a first step has at least two advantages over going right to the PubMed [62] or other medical database. First, Copilot usually does a good job of finding relevant studies and other literature that it would take longer to find using a medical database. Second, the publications it finds might provide useful information that could not easily be found in a medical database because it often finds articles written to be read by both medical professionals and nonprofessionals alike. The search can start by providing a sufficiently detailed instruction such as the one below.

Instruction

Have any studies been done on the treatment of post-traumatic stress disorder (PTSD) using tai chi or qigong? If so, write an essay summarizing the studies and provide citations.

Reply

Title: Mind-Body Practices for Post-Traumatic Stress Disorder (PTSD):

Introduction: Post-traumatic stress disorder (PTSD) is a complex mental health condition that can significantly impact an individual's well-being. Researchers have explored various mind-body practices as potential interventions for managing PTSD symptoms. In this essay, we will focus on two specific practices: Tai Chi and Qigong.

Tai Chi and Qigong:

- Definition: Tai Chi and Qigong are mind-body practices that combine gentle movements, deep breathing, and meditation. They aim to promote physical and mental well-being.
- Research Findings:

o A literature review [63] analyzed 16 studies related to mind-body interventions for PTSD. Among these, Tai Chi and Qigong were investigated.

o Although most studies had small sample sizes, the findings suggested positive impacts on PTSD symptoms.

o Benefits associated with Tai Chi and Qigong included reduced anxiety, depression, and anger, increased pain tolerance, self-esteem, energy levels, and improved ability to cope with stress.

o These practices were found to be viable interventions for symptoms such as intrusive memories, avoidance, and emotional arousal.

- Conclusion

o Tai Chi and Qigong are increasingly used in PTSD treatment.

o Clinicians and patients can explore personalized treatment plans that incorporate mind-body practices as part of ongoing self-care.

Personal Testimonial: Tai Chi in Trauma Recovery:

- Case Study: Aurora Theater Shooting Survivors

o Jacqui Shumway, a Tai Chi instructor and exercise therapist, worked with individuals dealing with PTSD from the Aurora theater shooting.

o Kim Blair Woodruff, another Tai Chi instructor and a survivor of the Columbine shooting, started a Tai Chi program at the Aurora Strong Resilience Center.

o Their experiences highlight the potential benefits of Tai Chi in trauma recovery.

Additional Considerations:

- Yoga and PTSD:

o Yoga has also been studied in the context of PTSD.

o Self-reported PTSD symptoms significantly reduced, while perceived stress did not change significantly [64].

o Improvements in cognitive flexibility (set-shifting) predicted overall reduction in PTSD symptoms.

Conclusion: Mind-body practices like Tai Chi and Qigong offer promising avenues for managing PTSD symptoms. While more research is needed, integrating these practices into treatment plans may enhance overall well-being for those affected by trauma. Remember that individual responses to mind-body practices can vary, and it's essential to consult with healthcare professionals when considering any intervention for PTSD.

Author Comments

The Copilot essay provided useful information that could be understood by a nonprofessional. It provided a good starting summary as well as two useful citations to relevant studies where the reader can find more detail. Copilot also provided a link to another suggested reading [65], which provides some additional information.

Neither of the two cited articles disclosed any of the tai chi postures or qigong exercises that were used and did not provide sufficient information for a medical practitioner to replicate the study or apply the tai chi or qigong techniques to a medical practice. However, the suggested reading did provide some basic guidance and descriptions of some exercises that could be used to relieve stress, although the recommended number of repetitions and practice frequency were not given. A search of PubMed [62] would result in finding studies that might provide additional details about the techniques used, the number of repetitions and the recommended frequency of use. However, before going to the PubMed database, it might be worthwhile to ask Copilot what techniques and procedures were used in prior studies. If Copilot could provide this information and give the references, it would short-cut the search process, making it possible to find the needed information quicker. If Copilot is not able to retrieve the information needed, not much time would be lost, since one need only type out a brief instruction like the one given below and read the results, which only takes a few seconds or minutes. This methodology em-

ploys cost-benefit analysis. The cost of an unsuccessful search might be only 30-90 seconds, whereas the benefit of a successful search might be a reduction in search time of 10 minutes to two hours.

Instruction

What tai chi postures and qigong exercises have been used in prior studies to treat PTSD? Be specific. Include the number of repetitions, time commitment and duration, as well as results and citations to the relevant studies.

Reply

Certainly! Let's delve into the specific Tai Chi and Qigong exercises studied in the context of treating PTSD. While the exact details may vary across studies, here are some insights based on existing research:

Tai Chi and Qigong Exercises for Adolescents:

- o Participants: Adolescents (1,244 individuals).
- o Interventions:
- Both Tai Chi and Qigong exercises were explored.
- Specific postures and exercises were not explicitly mentioned in the reviewed studies.
- o Results:
- Anxiety reduction: Adolescents practicing Tai Chi and Qigong experienced reduced anxiety (Standardized Mean Difference [SMD] = 0.386).
- Depression reduction: Both practices led to decreased depression symptoms (SMD = 1.937).
- Cortisol level reduction: Tai Chi and Qigong were associated with lowered cortisol levels (SMD = 0.621).
- No significant effects were found for stress, mood, or self-esteem.
- o Citations:
- Liu, X., Li, R., Cui, J., Liu, F., Smith, L., Chen, X., & Zhang, D. (2021). The Effects of Tai Chi and Qigong Exercise on Psychological Status in Adolescents: A Systematic Review and Meta-Analysis. Frontiers in Psychology, 12. [66] Read more.

Additional Considerations:

- o Taoist Tai Chi™ Practice:
- While not directly cited in the studies, Taoist Tai Chi™ practice has been reported to help people cope with stress, reduce anxiety, and enhance emotional stability [67].
- o General Recommendations:
- Duration: Typically, sessions last 45 minutes to an hour.
- Repetitions: Vary based on individual needs and practice intensity.
- Commitment: Regular practice over weeks or months is recommended for sustained benefits.

Remember that individual responses may vary, and consulting with healthcare professionals is crucial when considering mind-body practices for PTSD.

Author Comments

Copilot was able to give more detailed information that would be relevant and useful to a medical professional. Providing the citations also made it possible to retrieve further information if needed. The first article cited could be downloaded for free in its entirety. Also, the primary author's contact information was given, which would be useful if a medical practitioner wanted to know more precisely which postures or exercises were used in the study, along with the number of repetitions or time commitment, and frequency (daily, three days a week, etc.). The second cited article was written in a style that non-professionals could easily understand. It discussed the benefits of the kind of tai chi practiced by the organization and also included testimonials of some people who found relief as a result of practicing the kind of tai chi offered by the tai chi organization, including a video of a Vietnam War veteran who discussed the benefits he had experienced practicing tai chi. From viewing the video, it appeared that he was practicing Yang style tai chi, which is one of the five main styles of tai chi and, based on the author's prior study and experience, is the style of tai chi most often used to treat a wide variety of ailments. Copilot sometimes suggests other questions that might be asked on the same topic. One of the questions it suggested was, "Are there any studies specifically on Qigong for veterans with PTSD?" I decided to ask, curious to see what Copilot would have to say.

Instruction

Are there any studies specifically on Qigong for veterans with PTSD?

Reply

While there are limited studies specifically on Qigong for veterans with post-traumatic stress disorder (PTSD), preliminary findings from case reports suggest that Qigong may reduce PTSD symptom severity in torture survivors [68]. However, no studies using Qigong have been conducted specifically on veterans or active-duty combatants diagnosed with PTSD. Further research is needed to explore the effectiveness of Qigong as an intervention for this population. If you're interested in complementary and integrative health practices, Tai Chi has been investigated and appears to be feasible and safe for veterans with PTSD symptoms, with high rates of satisfaction. It might be worth exploring as well [67].

Author Comments

The Lake [68] article gave some useful information about how meditation and yoga have reduced symptoms of PTSD. The article also included links to other studies. The other item cited had already been cited earlier by Copilot [67]. Copilot provided sufficient general information about how tai chi, qigong, yoga and meditation can be used to help patients with PTSD. I wanted to see what studies I could find on the PubMed database [62], so I went to the website and did a search for "PTSD" and "tai chi" to see what I would find. I got six hits. The first article consisted of a literature review that found 16 relevant articles that included a variety of mind-body practices, not just tai chi. Only one of those studies examined the effects of tai chi and qigong on patients who had experienced refugee trauma and torture [69] The results seemed to indicate that tai chi and qigong could be beneficial in a number of ways, including stress reduction, psychological well-being, mental awareness, depression, anger management, life satisfaction, self-esteem, sleep, pain reduction and interpersonal communications.

The second study [70] involved 17 veterans who had four tai chi sessions. The results were positive, in the sense that the sessions had beneficial effects of concentration and managing stress. The third study [71] focused on insomnia and sleep disorders. The fourth study [72] dealt with meditation-based mind-body interventions, which included mindfulness, yoga, tai chi and qigong. The fifth study [73] integrated hypnosis with tai chi in order to enhance the beneficial effects of both techniques. The sixth study [74] was not very relevant, since it had more to do with the use of VA benefits than the effectiveness of the various treatments that were available. I decided to expand the scope of the study to include stress in general rather than just PTSD, and to include qigong as well as tai chi in the search feature, so I conducted a search using the keywords stress, tai chi and/or qigong. I got 1300 hits. One of the more interesting studies was a bibliometric analysis that included 15 diseases and conditions, not just stress. That study found qigong to be effective in 97 percent of the 886 clinical studies examined. Ba Duan Jin was the most popular set of qigong exercises used (55.5%), followed by Health Qigong (12.1%), Dao Yin Shu (9.6%), Wu Qin Xi (7.6%) and Yin Jin Jing (7.4%) [75].

Some of the other studies examined tai chi, yoga and qigong as mind-body exercises [76], tai chi and qigong for mood regulation [77], tai chi and qigong for trauma exposed populations [78], and tai chi and qigong for the treatment and prevention of mental disorders [79]. A bibliometric study that compiled statistics on the frequency with which various tai chi exercise sets were used between 1958-2013 found that 72.84 percent used Yang style, followed by Sun style (4.53%), Chen style (3.88%), Wu style (1.29%) and other styles (23.71%). The total is slightly more than 100 percent because some studies used more than one style. The Yang style was by far the most popular tai chi style used in clinical studies during this period, and the Yang-24 form was by far the most popular Yang form used, 43.1% of the total for all styles [80].

Concluding Comments

The evidence shows that many studies have examined the effectiveness of tai chi and qigong on stress reduction in general, and a few studies have focused on post-traumatic stress disorder in particular. Although more studies could be done, the evidence has become clear that tai chi and qigong can be used effectively to reduce stress.

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Conflict of Interest

None.

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