

Incorporating Tai Chi and Artificial Intelligence into a Medical Practice to Treat Dizziness and Vertigo

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ABSTRACT

Vertigo and other forms of dizziness are common ailments, and several traditional treatments are available. Doctors have been learning about these treatments in medical schools for decades. However, the treatments taught in medical schools do not often include the treatments used in traditional Chinese medicine (TCM). One purpose of this article is to introduce medical professionals to some TCM treatments that have been used to treat these ailments. Another purpose is to demonstrate how artificial intelligence can be incorporated into a medical practice to find useful information about a wide range of ailments quickly and efficiently, using vertigo and dizziness as examples.

Keywords: Vertigo; Dizziness; Tai Chi; Qigong; Traditional Chinese Medicine; TCM; Artificial Intelligence; Copilot

Introduction

Vertigo and other forms of dizziness are common ailments, and several traditional treatments are available. Doctors have been learning about these treatments in medical schools for decades. However, the treatments taught in medical schools do not often include the treatments used in traditional Chinese medicine (TCM). One purpose of this article is to introduce medical professionals to some TCM treatments that have been used to treat these ailments. Another purpose is to demonstrate how artificial intelligence can be incorporated into a medical practice to find useful information about a wide range of ailments quickly and efficiently, using vertigo and dizziness as examples. Tai chi is a form of gentle Chinese exercise. The Chinese and others have been incorporating it into their health routines for hundreds of years. It has been referred to as a form of moving meditation. Its cousin, qigong (pronounced chee gong), is even older, going back thousands of years. Qigong exercises and breathing techniques activate the body's natural healing powers. Traditional Chinese Medicine (TCM) focuses more on prevention than cure, although TCM is also used to treat or even cure a wide variety of ailments [1-53]. In China, TCM is often the only or the primary treatment used.

In Western medical practices, it is starting to be used as a supplementary medical treatment, along with the traditional western methods. Artificial intelligence (AI) is increasingly being used in a wide range of disciplines, including medical research and everyday medical practice [54-80]. One purpose of the present article is to demonstrate how AI can be used to incorporate TCM into a medical practice. Since most medical professionals in the West are unfamiliar with TCM, an easy way to quickly get a basic understanding of TCM techniques and applications would be to use AI to do a search or to ask basic questions.

The Study

There are many ways to use AI to generate medical or other information. In this study we will use Microsoft Copilot [81], since it is easy to access and fairly good at generating useful results, although some studies have found that prior versions of Chatbots have sometimes been inaccurate or even biased [82-95]. Thus, some caution must be taken when using AI, although it can be used as a good first step in medical research and diagnosis. The first step in conducting an AI study, after determining what it is you want to study, is to give

an instruction to the chatbot, in this case, Microsoft Copilot. It might go something like this.

Instruction

Have any studies been conducted on the use of either tai chi or qigong on treating vertigo?

Response

Yes, there have been studies conducted on the use of tai chi and qigong for treating vertigo. Here are some key findings:

- A systematic review published in 2024 investigated the effectiveness of Tai Chi and Qigong in the treatment of traumatic brain injury (TBI), which can include symptoms such as vertigo. The review found that Tai Chi improved functional, psychological, and cognitive outcomes in patients with TBI [96].
- The Vestibular Disorders Association has noted that Tai Chi can help improve balance, which is often affected by vertigo. They recommend Tai Chi as a complementary therapy to vestibular rehabilitation [97].
- Preliminary findings from a small study indicated that practicing Tai Chi for just two months led to a marked decrease in vertigo and nausea symptoms and an improvement in balance among patients who had struggled with mainstream therapies for their vestibular disorders [98].
- Another study found that Tai Chi may slow the progression of symptoms in Parkinson's disease, which can include dizziness and balance issues. Participants practicing Tai Chi experienced fewer falls, less back pain and dizziness, and improvements in memory and concentration [99].

These studies suggest that Tai Chi and Qigong may be beneficial for individuals experiencing vertigo, but it's important to consult with a healthcare professional before starting any new treatment regimen.

Author Comment

As you might have noticed, the information given was basic, but serves as a good starting point for further inquiry. Copilot also gave a few references. It is important to read the referenced material, since some of it may be irrelevant or not quite on point. The intellectual level of the information given might also be a bit too low, but that problem can be solved, as we will discuss below. After receiving a reply to the initial inquiry, it is possible to ask supplementary questions. Copilot will often even make suggestions for additional related questions that might be asked. Here is a follow-up question that would be relevant for a study that is attempting to connect tai chi and qigong to the treatment of vertigo.

Instruction

Are there any specific exercises in Tai Chi that help with vertigo?

Response

Yes, there are specific Tai Chi exercises that can help with vertigo. These exercises focus on improving balance and coordination, which are key to managing vertigo symptoms. Here are some exercises and principles from Tai Chi that are beneficial:

- **Postural Orientation:** Exercises that involve positioning the trunk and head in alignment to each other as well as to the ground and to the visual field [100].
- **Postural Equilibrium:** Coordinating movement strategies to center and stabilize the body [100].
- **Low-Impact, Low-Intensity Poses:** Standing and seated poses that are gentle on the body while promoting relaxation and deep abdominal breathing [101].
- **Seated Tai Chi:** There are 18-minute seated Tai Chi routines available that can be particularly helpful for those with balance issues [102].

It's important to start these exercises under the guidance of a qualified instructor, especially if you're experiencing vertigo. They can tailor the exercises to your needs and ensure that you perform them safely. Remember to consult with a healthcare professional before beginning any new exercise regimen.

Author Comment

Again, Copilot's response provided some additional useful information. Although it cited only three references it provided two additional references that were not specifically cited [103,104]. For the free version of Copilot, researchers are permitted to ask a limited number of questions, after which it is necessary to start a new conversation, which may be on the same identical topic. Thus, the fact that the number of inquiries may be limited by the free version, it is not necessary to purchase the paid version, since a new conversation may be started at no cost. Here is another follow-up question that may be asked.

Instruction

Are there other exercises besides Tai Chi that can help with vertigo?

Response

Certainly, there are several exercises besides Tai Chi that can help manage vertigo. These exercises are designed to improve balance and stability, which can alleviate the symptoms of vertigo. Here are some of them:

- **Epley Maneuver:** This is a sequence of movements that can help to reposition crystals in the inner ear that may cause dizziness [105].

- Semont Maneuver: Similar to the Epley Maneuver, this technique involves moving the body in specific ways to manage benign paroxysmal positional vertigo (BPPV) [105].
- Half-Somersault or Foster Maneuver: This exercise involves kneeling down and tipping the head upward, then touching the forehead to the floor, which can help with BPPV [105].
- Brandt-Daroff Exercises: These involve sitting on the edge of a bed and flopping down to one side, then the other, which can be effective for certain types of vertigo [105].
- Yoga: Certain yoga poses can improve balance and stability, reducing the frequency and intensity of vertigo episodes [106].
- Walking: Regular walking improves cardiovascular health and overall balance [106].
- Cycling: Stationary cycling can be a safe way to exercise without risking falls [106].
- Stair Stepping: This exercise can help strengthen the legs and improve balance [106].
- Pilates: Pilates focuses on core strength, which is essential for balance [106].
- Water Aerobics: The buoyancy of water can provide support while exercising, making it a safe option for those with balance issues [106].
- Neck Stretching: Gentle neck stretches can help relieve tension that might contribute to vertigo symptoms [106].

It's important to perform these exercises under the guidance of a healthcare professional, especially if you have severe vertigo. They can help ensure that you're doing the exercises correctly and safely. Always consult with your doctor before starting any new exercise regimen, particularly if you have a health condition that affects your balance or dizziness.

Author Comment

Although Copilot cited only two sources, it provided three other references [107-109] for further reading. Now that we have completed the first step of the research, which was to obtain some general information, it is time to go on to the second step, where we can find additional information that is more suitable for medical professionals to act on, in the event that they want to decide whether the tai chi and qigong treatments are suitable for a particular patient. Many professional studies have been done on the effectiveness of tai chi, qigong and other tools in the TCM toolbox (including acupuncture, acupressure and herbal medicine) to treat or even cure a wide range of ailments. The ProMed database [110] would be a good place to go to find scientific studies that have investigated the effectiveness of tai chi and qigong on the medical ailment in question. A word search using

“tai chi” and “vertigo” found a number of relevant studies [111-116]. The medical studies just cited are a few examples of studies that were found doing the word search. These studies found that tai chi and/or qigong can be effective in treating vertigo and/or dizziness. Many more studies could have been cited. The point is that tai chi and qigong are being incorporated into many medical practices in the West because they have been found to be effective in the treatment of vertigo, dizziness and other ailments.

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