

Utilizing Tai Chi and Qigong to Treat Colon Cancer Survivors

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ABSTRACT

This study had two purposes. The main purpose was to see what information was available about the use of tai chi and qigong, two tools in the Traditional Chinese Medicine toolbox, in the treatment of patients who have or had colon cancer. The subsidiary purpose was to use artificial intelligence (AI) to see whether it was able to uncover relevant studies on the topic. The study was successful on both counts. Microsoft Copilot was used to find and summarize relevant literature. Several studies cited found that both tai chi and qigong proved beneficial to cancer patients in general, and in some cases to colon cancer patients in particular.

Keywords: Tai Chi; Qigong; Traditional Chinese Medicine; TCM; Colon Cancer; Colorectal; Artificial Intelligence; Copilot

Abbreviations: TCM: Traditional Chinese; AI: Artificial Intelligence; QOL: Quality of Life; RCTs: Randomized Controlled Trials

Introduction

Tai chi [1] and qigong [2] (pronounced chee gong) are both forms of Traditional Chinese Medicine (TCM). They both involve physical movement and are considered gentle forms of exercise. They are both considered forms of moving meditation. Tai chi is considered to be both a martial art and a set of exercises, whereas qigong is generally not considered to be a martial art, although there is some dispute on this point. One other feature they have in common is that they both awaken the body's natural healing power [3-11]. Practicing them strengthens the body's immune system. No one knows precisely when either tai chi or qigong came into existence, but it is generally conceded that qigong is much older than tai chi. Maybe tai chi originated in the twelfth century, or maybe it came into existence a few centuries later [3, 5-8]. Qigong is probably at least 2000 years old but may be much older than that [4,9-11]. Both tai chi and qigong have become increasingly popular in recent decades, both as exercises and as their use in Western medical practice [12-47].

The Study

The purpose of the current study is two-fold. The main purpose is to see what information is available about the use of tai chi and qigong

in the treatment of patients who have or had colon cancer. The subsidiary purpose is to use artificial intelligence (AI) to see whether it is able to uncover relevant studies on the topic. Artificial intelligence use in medical research is increasing [48-77] and will doubtlessly continue to increase as the software becomes more sophisticated and as practitioners become well versed in the technology. However, two caveats need to be mentioned when using AI in medical or any other kind of research. Prior studies have found that AI can sometimes provide inaccurate results [78-82] or can produce results that are biased [83-91]. Thus, care must be taken when using AI. The results it produces must be checked for both accuracy and bias.

There are many chatbots that can be used to search for relevant literature, and even to write drafts of findings. Microsoft Copilot [92] was chosen for the present study because it is readily available, inexpensive, and has been used in other medical studies with a certain degree of success. The first step in using a chatbot is to formulate an instruction or question in a way that is likely to produce the desired result. Since the present study focuses on colon cancer, a good place to start would be to ask what the main symptoms of colon cancer are. The question and response are given below.

Question

What are the main symptoms of colon cancer?

COPILOT

The main symptoms of colon cancer can vary, but some common signs to watch for include:

- Changes in bowel habits: This can include diarrhea, constipation, or a change in the consistency of your stool.
- Rectal bleeding or blood in your stool.
- Persistent abdominal discomfort: This might manifest as cramps, gas, or pain.
- A feeling that your bowel doesn't empty completely.
- Weakness or fatigue.
- Unexplained weight loss [93-95].

It's important to note that these symptoms can also be caused by other conditions. If you experience any of these symptoms, it's a good idea to consult with a healthcare professional for a proper diagnosis.

Author Comments

Copilot wrote a good, grammatically correct reply. Three sources were specifically cited [93-95]. It also gave one bonus source that was not specifically cited [96]. All sources gave more or less the same information, and it appeared to be accurate. Copilot sometimes gives suggestions for follow-up questions. The next question is such an example.

Question

What are the main treatments for colon cancer?

COPILOT

The main treatments for colon cancer typically depend on the stage and location of the cancer, as well as the patient's overall health. Here are the primary treatment options

1. **Surgery:** This is often the first line of treatment, especially for early-stage colon cancer. The type of surgery can vary from removing polyps during a colonoscopy to more extensive procedures like a partial colectomy, where a section of the colon is removed [97,98].
2. **Chemotherapy:** This treatment uses drugs to destroy cancer cells and is often used after surgery to eliminate any remaining cancer cells. It can also be used to shrink tumors before surgery or to treat advanced cancer [97,98].
3. **Radiation Therapy:** This involves using high-energy rays to target and kill cancer cells. It's less commonly used for colon

cancer but may be recommended in certain cases, especially if the cancer has spread to nearby tissues [97,98].

4. Targeted Therapy: These drugs target specific molecules involved in cancer growth and spread. They are often used for advanced colon cancer and can be combined with chemotherapy [98,99].

5. Immunotherapy: This treatment helps the immune system recognize and attack cancer cells. It's typically used for advanced colon cancer that has specific genetic markers [98,99].

6. Palliative Care: For advanced cancer, palliative care focuses on relieving symptoms and improving quality of life [99].

Each treatment plan is tailored to the individual's specific situation. It's important to discuss all available options with a healthcare provider to determine the best approach.

Do you have any other questions or concerns about colon cancer treatments?

Author Comments

Copilot cited three specific sources [97-99] and suggested two more [100,101]. All five sources provided useful information. Copilot suggested the next question as well.

Question

What are the survival rates for colon cancer?

Copilot

Survival rates for colon cancer can vary significantly based on the stage at which the cancer is diagnosed. Here are some general statistics

- **Localized Stage:** When the cancer is confined to the colon, the 5-year relative survival rate is about 91% [102].
- **Regional Stage:** If the cancer has spread to nearby structures or lymph nodes, the 5-year relative survival rate drops to around 73% [102].
- **Distant Stage:** For cancer that has spread to distant parts of the body, such as the liver or lungs, the 5-year relative survival rate is approximately 13% [102].
- **Overall:** Combining all stages, the 5-year relative survival rate for colon cancer is about 63% [102].

These rates are averages and can be influenced by various factors, including the patient's overall health, age, and how well the cancer responds to treatment. Early detection through routine screenings can significantly improve the chances of survival. If you have any more questions or need further information, feel free to ask!

Author Comments

This time Copilot cited one source specifically [102] and gave four additional sources [103-106]. All sources were on point. However, one citation [103] gave a link to Bing, which listed links to various other sources. So far, all sources were on point, and there was no apparent bias. The next question was also suggested by Copilot.

Question

How can I prevent colon cancer?

COPILOT

Preventing colon cancer involves a combination of regular screenings and lifestyle changes. Here are some key strategies

- 1. Regular Screenings:** Starting at age 45, regular screenings are crucial. These can detect precancerous polyps, which can be removed before they turn into cancer [107,108].
- 2. Healthy Diet:** Focus on a diet rich in vegetables, fruits, and whole grains. Limit red and processed meats, which have been linked to an increased risk of colon cancer [107-109].
- 3. Physical Activity:** Regular exercise can help lower your risk. Aim for at least 30 minutes of moderate activity most days of the week [107,108].
- 4. Maintain a Healthy Weight:** Being overweight or obese increases your risk of colon cancer. Maintaining a healthy weight through diet and exercise can help reduce this risk [107,108].
- 5. Limit Alcohol and Avoid Tobacco:** Reducing alcohol consumption and avoiding tobacco can significantly lower your risk [107,108].
- 6. Stay Informed:** Keep up with the latest guidelines and recommendations from health organizations regarding colon cancer prevention [107,108]. Making these changes can help reduce your risk of colon cancer. If you have any specific concerns or questions, it's always a good idea to discuss them with your healthcare provider.

Is there anything else you'd like to know about colon cancer or any other health topics?

Author Comments

This time Copilot gave three specific citations [107-109] and gave suggestions for three additional sources [110-112]. One of the sources was Bing [109]. The Copilot summary did not mention that the risk of colorectal cancer can be reduced by taking vitamins, although this suggestion was made in several of the cited sources. Taking an aspirin a day was also suggested, since aspirin reduces inflammation. The next question was suggested by the author. Up until now, most of the sources cited by Copilot consisted of general articles or information

on websites. One of the main purposes of the present study was to find medical studies that had been conducted on the use of tai chi or qigong for the treatment of colon cancer patients and survivors.

Question

What studies have been conducted on the utilization of tai chi or qigong to treat colon cancer survivors? Summarize those studies and provide citations.

COPILOT

Several studies have explored the benefits of Tai Chi and Qigong for cancer survivors, including those with colon cancer. Here are some key findings

1. Systematic Reviews and Meta-Analyses

- A systematic review and meta-analysis published in 2019 evaluated the effects of Tai Chi and Qigong on cancer survivors. The study found significant improvements in fatigue, sleep quality, and overall quality of life (QOL) for those practicing these mind-body interventions¹. However, the effects on anxiety, stress, and depressive symptoms were positive but not statistically significant [113].

- Another meta-analysis involving 22 randomized controlled trials (RCTs) with 1,410 cancer survivors reported that regular practice of Tai Chi reduced cancer-related fatigue and cortisol levels, and improved limb function [114].

2. Specific Studies on Colon Cancer Survivors

While most studies focus on general cancer populations, some research has specifically looked at colon cancer survivors. For instance, a study highlighted the benefits of Tai Chi in improving cognitive function, mood, and sleep among cancer survivors, including those with colon cancer [115]. The study found that Tai Chi helped reduce fatigue, cognitive impairment, and depression, while also improving sleep quality [115].

3. Quality of Life and Immune Function

Research has shown that Tai Chi and Qigong can enhance immune function and reduce inflammation in cancer patients. A study involving various cancer types, including colon cancer, found that these practices improved overall quality of life and reduced cancer-related fatigue [116].

4. Practical Applications

Tai Chi and Qigong are often recommended as complementary therapies due to their gentle, adaptable nature, making them suitable for cancer survivors who may not be able to engage in more strenuous physical activities [117]. These practices integrate movement, meditation, and breath regulation, which collectively contribute to physical and emotional well-being [117].

These studies suggest that Tai Chi and Qigong can be beneficial for colon cancer survivors by improving physical and mental health outcomes. However, more research with larger sample sizes and longer follow-up periods is needed to confirm these findings and establish standardized guidelines. If you have any specific questions or need more detailed information on any of these studies, feel free to ask!

Author Comments

Copilot cited five references directly [113-117] and suggested six additional references [118-123]. Some of the studies it cited referred to the application of tai chi or qigong to cancer patients in general, while others referred to studies that included colon cancer patients as well as other kinds of cancer patients. None of the cited sources summarized involved just colon cancer patients. One of the articles [116] suggested some additional helpful links [124-126]. The instruction given was a good one, as evidenced by the results obtained.

Question

Can you provide more details about the specific studies?

COPILOT

Sure, I can provide more details about some of the specific studies on Tai Chi and Qigong for cancer survivors, including those with colon cancer

1. Systematic Review and Meta-Analysis (2019)

- **Objective:** To evaluate the effects of Tai Chi and Qigong on cancer survivors.
- **Methods:** The review included 22 randomized controlled trials (RCTs) with a total of 1,410 participants.
- **Findings:** The meta-analysis found significant improvements in fatigue, sleep quality, and overall quality of life (QOL). However, the effects on anxiety, stress, and depressive symptoms were positive but not statistically significant.
- **Conclusion:** Tai Chi and Qigong can be beneficial for improving certain aspects of QOL in cancer survivors.

2. Study on Cognitive Function and Mood (2023)

- **Objective:** To assess the impact of Tai Chi on cognitive function, mood, and sleep among cancer survivors, including those with colon cancer.
- **Methods:** This study involved a mixed group of cancer survivors who participated in Tai Chi sessions over a 12-week period.
- **Findings:** Participants reported reduced fatigue, cognitive impairment, and depression, along with improved sleep quality.
- **Conclusion:** Tai Chi may help alleviate some of the cognitive and emotional challenges faced by cancer survivors.

3. Study on Immune Function and Inflammation (2022)

- **Objective:** To investigate the effects of Tai Chi and Qigong on immune function and inflammation in cancer patients.
- **Methods:** The study included cancer patients from various types, including colon cancer, who practiced Tai Chi or Qigong regularly.
- **Findings:** The practices were associated with enhanced immune function, reduced inflammation, and improved overall quality of life.
- **Conclusion:** Tai Chi and Qigong can be effective complementary therapies for improving immune health in cancer patients.

4. Practical Applications and Recommendations

- **Objective:** To provide practical guidelines for incorporating Tai Chi and Qigong into cancer care.
- **Methods:** Review of existing literature and expert recommendations.
- **Findings:** These practices are gentle and adaptable, making them suitable for cancer survivors who may not be able to engage in more strenuous physical activities. They integrate movement, meditation, and breath regulation, which collectively contribute to physical and emotional well-being.
- **Conclusion:** Tai Chi and Qigong are recommended as complementary therapies for cancer survivors to enhance their quality of life.

These studies highlight the potential benefits of Tai Chi and Qigong for cancer survivors, including those with colon cancer. If you need more detailed information or have specific questions about any of these studies, feel free to ask!

Author Comments

Copilot was able to expand upon the initial summary. One criticism that could be made is that it did not provide full citations for the studies it mentioned. However, those citations were given previously.

Question

What are the specific benefits of Tai Chi and Qigong for cancer survivors?

COPILOT

Tai Chi and Qigong offer a range of benefits for cancer survivors, addressing both physical and emotional well-being. Here are some specific benefits

1 Reduced Fatigue

Many cancer survivors experience chronic fatigue. Studies have shown that regular practice of Tai Chi and Qigong can significantly reduce fatigue levels, helping survivors feel more energized and capable of daily activities.

2. Improved Sleep Quality

Sleep disturbances are common among cancer survivors. Tai Chi and Qigong incorporate gentle movements and breathing exercises that promote relaxation, leading to better sleep quality and duration.

3. Enhanced Immune Function

These practices have been found to boost immune function, which is crucial for cancer survivors. Improved immune response helps the body fight off infections and may contribute to overall health and recovery.

4. Reduced Inflammation

Chronic inflammation is a concern for many cancer survivors. Tai Chi and Qigong have anti-inflammatory effects, which can help reduce pain and improve overall health.

5. Better Cognitive Function

Cognitive impairment, often referred to as “chemo brain,” can affect cancer survivors. Tai Chi has been shown to improve cognitive function, including memory and attention.

6. Improved Mood and Reduced Anxiety

The meditative aspects of Tai Chi and Qigong help reduce stress, anxiety, and depression. These practices promote a sense of calm and well-being, which is beneficial for mental health.

7. Enhanced Quality of Life

Overall, these practices contribute to a better quality of life by improving physical health, emotional well-being, and social interactions. Survivors often report feeling more balanced and in control of their lives.

8. Increased Physical Function

Tai Chi and Qigong improve balance, flexibility, and strength, which are important for maintaining independence and preventing falls. These benefits make Tai Chi and Qigong valuable complementary therapies for cancer survivors, helping them manage symptoms and improve their overall quality of life.

If you have any specific questions or need more detailed information on any of these benefits, feel free to ask!

Author Comments

Copilot provided a good summary of benefits in a manner that could be understood by nonprofessionals.

Question

Are there any specific guidelines for practicing Tai Chi or Qigong as a cancer survivor?

COPILOT

Yes, there are several guidelines that can help cancer survivors safely and effectively practice Tai Chi or Qigong:

1. Consult with Healthcare Providers

Before starting any new exercise regimen, it's important to consult with your healthcare team. They can provide personalized advice based on your medical history and current health status.

2. Start Slowly

Begin with short sessions, perhaps 10-15 minutes, and gradually increase the duration as your stamina improves. This helps prevent overexertion and allows your body to adapt to the new activity.

3. Find a Qualified Instructor

Look for instructors who have experience working with cancer survivors. They can tailor the practice to your specific needs and ensure that you are performing the movements correctly and safely.

4. Focus on Gentle Movements

Tai Chi and Qigong are known for their gentle, flowing movements. Focus on these aspects rather than trying to perform more strenuous exercises. The goal is to promote relaxation and healing.

5. Listen to Your Body

Pay attention to how your body feels during and after practice. If you experience pain, dizziness, or extreme fatigue, stop and rest. It's important to respect your body's limits.

6. Incorporate Breathing Exercises

Both Tai Chi and Qigong emphasize deep, mindful breathing. This can help reduce stress and improve oxygen flow throughout your body. Practice breathing exercises regularly, even outside of your Tai Chi or Qigong sessions.

7. Stay Consistent

Regular practice is key to experiencing the benefits of Tai Chi and

Qigong. Aim to practice several times a week, even if it's just for a short period each time.

8. Create a Comfortable Environment

Practice in a quiet, comfortable space where you can focus without distractions. Wearing loose, comfortable clothing can also help you move more freely.

9. Combine with Other Therapies

Tai Chi and Qigong can be part of a comprehensive wellness plan that includes other therapies such as nutrition, counseling, and conventional medical treatments. Discuss with your healthcare team how to integrate these practices into your overall care plan.

10. Stay Hydrated

Drink plenty of water before and after your practice sessions to stay hydrated, especially if you are engaging in longer sessions. By following these guidelines, cancer survivors can safely incorporate Tai Chi and Qigong into their recovery and wellness routines, potentially enhancing their quality of life and overall well-being.

If you have any more questions or need further details, feel free to ask!

Final Author Comments

The study achieved the stated goals, which were to see what information is available about the use of tai chi and qigong in the treatment of patients who have or had colon cancer, and to determine whether artificial intelligence could be a good tool to use in medical research. Tai chi and qigong have been effective as supplementary techniques to treat cancer patients and survivors. Artificial intelligence can be used effectively in medical research. Some other studies that have not been discussed in the present study have found similar results [127-133].

Funding

None.

Conflict of Interest

None.

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