

Chiropractic Treatment of Scoliosis

A Literature Review

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Abstract

Objective:

This article provides a summary of the current literature associated with the connection between chiropractic care and scoliosis. Emphasis is on providing research concerning the conservative treatment of scoliosis and how it can benefit individuals suffering from this condition. Explanation of what scoliosis is, the common chiropractic treatments, and the general expected outcomes are covered. Finally, recommendations for alterations in the current practice methods are made based upon the best treatment approaches according to current evidence.

Data Collection:

A computer search of PubMed, Google Scholar, and the Logan College of Chiropractic Library for articles containing relevant information on scoliosis was conducted. Information was sought concerning treatment options for this condition. PubMed and Google Scholar searches were restricted to peer reviewed articles and generated over 4,000 articles on scoliosis, and over 18,000 articles on chiropractic. Fewer than 400 articles were found to address both topics.

Conclusions:

After reviewing hundreds of articles which consisted of clinical trials, controlled studies, retroactive analyses, and literature reviews, the finding is that there is limited research that directly connects chiropractic treatment benefits to patients with scoliosis. More clinical trials with larger sample sizes are needed. One problem for future research is the variation in every chiropractor's technique based on his or her's individual skill. This creates difficulty for creating a gold standard for comparison of chiropractic treatment of scoliosis.

Key Indexing Term:

Scoliosis, Chiropractic, Adjustment, Manipulation, Conservative Treatment

Introduction

Scoliosis is a genetic or acquired condition of the spine, characterized by exaggerated lateral deviation of at least 10 degrees of the spine with use of Cobb's method^{1,15} of radiograph measurements. Scoliosis may or may not cause pain and has been found to be seven times more common in females.^{17,20} In the United States, approximately 500,000 adults have scoliosis². Complications of scoliosis include back pain,³ intervertebral foraminal encroachment, along with cardiac and pulmonary complications in curvatures that exceeded 60 degrees.^{1,4,5} Scoliosis can be broken up into two different types which are structural and nonstructural scoliosis.⁷

Structural scoliosis occurs when there is a structural change that prevents the spine from straightening in non-weight-bearing positions. Nonstructural scoliosis is the effect of a gravitational force on muscles and ligaments of asymmetry which causes a lateral curve of the spine. The lateral curve decreases when the patient is in positions of non-weight-bearing. There are three different onsets of scoliosis which include infantile, juvenile, and adult⁶. Infantile or congenital scoliosis occurs from birth to age three and can resolve spontaneously. The most common presentation for infantile scoliosis is a left thoracic curvature. Next, juvenile onset scoliosis occurs between the ages of four through ten. This type of scoliosis and occurs more commonly in females. Juvenile scoliosis can progress to the adult form, and clinically presents as a right thoracic curve. Finally, adult onset scoliosis occurs from age ten to skeletal maturity. There is an increase of primary and secondary curve of the spine⁶. Physical therapy and exercise may arrest the progression. The three different

onsets of scoliosis are commonly associated with different etiologies including congenital, pathological, and idiopathic, respectively. These etiologies account for 65 percent of all scoliosis.

One aspect of health care that has not been explored in great depth is chiropractic treatment for scoliosis. Chiropractic is a science, art, and philosophy that treats with various neuromusculokeletal conditions that affect the nervous system negatively. Chiropractic treatments include adjustments, which are performed to restore normal range of motion along with returning the nervous system to a normalized state.

The purpose of this literature review is to synthesize the current research concerning scoliosis and chiropractic care in regards to scoliosis management including the efficacy of adjustments and manipulation. The hypothesis is chiropractic care will provide symptomatic relief for patients suffering from complications of scoliosis. The objective of this study is to compile evidence that has been researched to expose the validity of chiropractic treatment of scoliosis.

Methods

Search Strategy

To find current literature pertaining to chiropractic treatment of scoliosis, searches were performed through PubMed, Google Scholar, and Logan University Library. The search emphasized recent literature and the initial search focused on articles from 2000 through August 2011. The initial search strategy

used included the term scoliosis along with terms used to describe chiropractic such as chiropractic, adjust, manipulation, conservative treatment. The searches resulted in over 4,000 articles for scoliosis and over 18,000 responses to chiropractic. Only 378 hits were found to address both chiropractic and scoliosis.

Inclusion / Exclusion Criteria

Articles addressing the appropriateness of chiropractic care for patients with all types of scoliosis were included. All languages were included in the results with them being translated through use of an internet translator (Google Language Tools; Google Inc., Mountain View, CA).

Review Methods

Articles that met the inclusion criteria were reviewed to determine published results and the patient population studied. Article evaluation was performed to determine the accuracy and validity of the literature reviewed. This information was considered when comparing and contrasting the individual article results.

Discussion

Conservative treatment for scoliosis may include multiple types of treatment. For chiropractors, this includes Diversified adjustments, shoe and

heel lifts, and the Logan Basic technique. One misconception for conservative treatment techniques is it should be limited to and only include “the timing and course of brace treatment and the types of exercises.”⁸ Chiropractors believe that adjustments to the spine have the ability to benefit patients suffering from pain associated with scoliosis.^{18,19} There are several different techniques that are utilized in the treatment of scoliosis through chiropractic, and each technique may yield different results. When publishing articles, it is important to state what chiropractic technique is being evaluated. One nationwide study showed that the primary technique utilized was “diversified adjustments that consisted of an average of six months intensive treatment along with follow ups for four years.”⁹ The research study also showed, “Eighty-two percent of respondents named diversified technique as their primary adjustive treatment, 87 percent would use exercise, and 30 percent would use electric muscle stimulation as an adjunct to manual therapy.”⁹ Diversified adjustments has been shown to be the technique most utilized by practicing chiropractors.

Diversified adjusting is a technique that utilizes several different or diverse hand contacts used to deliver a manual adjustment to a joint.¹⁴ Studies show, the Diversified adjustment technique has been proven in case reports to benefit patients with scoliosis. One of these cases concluded that “Diversified-type CMT has a favorable effect on acute back pain when used palliatively. The procedure may also have a favorable long term effect of preventing recurrence of back pain and on retarding curve progression when used routinely 1-2 times per month.”¹⁰ Another case report showed that Diversified adjusting was associated with

“reduction in the degree of curvature of adolescent idiopathic scoliosis in this case, after half a year of conventional medical treatment had failed to stop curve progression.” However, Diversified technique is not the only technique utilized by chiropractors. Some other techniques routinely used in the conservative management of scoliosis include shoe lifts and Logan Basic technique.

Shoe or heel lifts are commonly used by chiropractors. Shoe or heel lifts are indicated when a leg length inequality or pelvis distortion exists. If left untreated, leg length inequality can result in an unlevel or unbalanced spine and be a massive contributor to the progression of scoliosis. A simple shoe lift or heel lift may be placed in the patient’s shoe on the shorter side to restore equal length to both legs and therefore, return the spine to its proper level or balance. Research shows that the insertion of a “shoe lift resulted in acute postural adaptations which specifically affected the spine and the three-dimensional position and orientation of the pelvis and shoulder girdle.”¹¹ This leveling of the spine and extremities was confirmed through analysis, but lacked information pertaining to patient pain relief. Another study, showed the postural adaptations of leveling the “sacral base with heel lifts also provided a statistically significant relief from low-back pain.”¹² It is noteworthy to state this study also utilized osteopathic manipulation in addition to heel lifts for the conservative treatment of scoliosis.

Another technique that is able to address scoliosis and the pain associated with it is the Logan Basic technique. In this technique, chiropractors evaluate the spine for any distortions with a focus of evaluating the base of the

sacrum. The philosophy behind the Logan Basic technique is if the base of the sacrum has any distortions in terms of being unlevel it can lead to distortions further up the spine. If associated deviations are extensive enough, they may qualify as scoliosis. Once the distortion of the base of the sacrum is identified, contact can be made to the sacrotuberous ligament to allow for correction of base of the sacrum.¹⁶ One research article has shown that “scoliotic curves had an average correction of four degrees for each patient through the use of Logan Basic Technique.”¹³ This study included a sample of 72 cases that received Logan Basic adjustments for one year. Measurements were confirmed through x-ray analysis through use of the Cobb method^{1,15} of measuring scoliosis.

Analysis of the current available literature correlating chiropractic care for management of patients with scoliosis raises concern. One of the major limitations for current research is the majority of documentation for diversified adjustments are individual case reports. While it is promising to have documented cases to show that improvement is possible, the level of evidence is limited due to the small sample size. There is a need for studies with a larger sample size and randomization of patients to establish how much improvement should be expected through diversified adjustments.

Conclusions

Overall, the conclusion to this literature review is that there are several chiropractic benefits that have been found to help patients suffering from

scoliosis. This includes symptomatic relief and reduction of lateral curvature of the spine as documented in case reports and clinical trials. This is accomplished through use of techniques including Diversified adjustments, shoe or heel lifts, and Logan Basic technique.

However, there is a need for further research to determine more specific expectations for improvement based off each individual technique. This includes larger sample size experiments where chiropractic techniques are used and results are documented and interpreted through appropriate statistical analysis to try to demonstrate significant and reproducible results. The difficulty with this is that chiropractic relies largely on the skill of the practicing chiropractor. This skill is very difficult to standardize and quantify for accurate research.

Overall, scoliosis has been found to be a very manageable condition for conservative care. The research collected for Chiropractic care and scoliosis shows that there is a strong connection for successful treatments on patients with scoliosis with various types of chiropractic treatments. Considering the promising research that is available Chiropractic care should be at the top of the list for conservative care of scoliosis.

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