Case Study

Improved Spinal Range of Motion, Quality of Life, Dysponesis & Dysautonomia in a 75-year-old male Following Activator Methods Chiropractic Technique for the Correction of Vertebral Subluxation: A Case Report

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Abstract

Objective: To describe the impact of therapeutic nihilism on the elderly population, and the improvements in spinal range of motion (ROM) and mobility in a 75-year-old male receiving chiropractic care to correct vertebral subluxation.

Clinical features: A 75-year-old male presented with a 20-year history of low back and neck pain more recently managed with over-the-counter medication. Postural alterations and significant reduction in regional spinal ROM were found in conjunction with vertebral subluxation throughout the spine.

Intervention & Outcomes: Chiropractic care using Activator Methods Chiropractic Technique was provided for the correction of vertebral and extremity subluxations. The patient demonstrated subjective physical improvements in mobility, an improvement from 4/10 to 8/10 in perceived physical health and objective increases in measured regional spinal ROM ranging from 7.1% to 81.8%. Reduction in dysponesis and dysautonomia were also noted through sEMG and thermal scanning.

Conclusion: Chiropractic care to correct vertebral subluxation was associated with improvements in the patient’s presenting musculoskeletal complaints and resultant quality of life. More research is needed to investigate the role chiropractors may play in helping older adults with maintaining an active lifestyle.

Key words: Aging, therapeutic nihilism, chiropractic, Activator Methods, range of motion, vertebral subluxation, quality of life, adjustment

Introduction

The older adult population, aged 60 years or older, is globally growing and by 2050 is estimated to increase to account for 21.1% of the world’s population, more than 2 billion people. A multitude of important issues relating to aging and older adults have been identified having both economic and social implications, however it has been reported that while overall well-being naturally declines with age interventions can be useful even in situations where complete restoration of health may not be possible. A concern for older adults is therapeutic nihilism which describes one particular barrier to recovery where health care providers and older patients themselves may believe that the older patient cannot recover as fully as a younger patient, leading to failure to seek or provide treatment due to limiting beliefs. Injury and pain are too commonly accepted by the older population as a matter of aging. This commonly results in immobility due to fear of further injury and non-use can result in loss of independence.

The role of manipulation in the treatment of patient perceived pain and range of motion (ROM) has been extensively reported on with mixed results. In one study it was reported that only pain improved under manipulation, with no significant changes to ROM compared to a control group receiving mobilization. Similar results were found when
It has been reported that the general public and older adult populations tend to visit chiropractors mostly for musculoskeletal complaints, especially neck and back pain.12,13 In recent studies chiropractic care, primarily focused on the correction of vertebral subluxation, has been shown to positively impact the older adults’ ability to remain independent, perform activities of daily living, and to be able to participate in life on many different levels, including physical and social functioning.11,14-16 This goes well beyond the therapeutic benefits commonly associated with chiropractic care.

The purpose of this case study is to chronicle the improvements in spinal ROM, reduction in perceived pain levels and improved patient-perceived quality of life in an older adult male receiving Activator Methods Chiropractic Technique for the correction of vertebral subluxation.

Case Study

History

A 75-year-old male presented with a 20-year history of low back and neck pain that he had felt he would “just have to live with”. The patient had sustained a back injury falling some seven meters down a sewage pit forty-eight years earlier, from when some of his complaints he believes first began. His presentation resulted in discomfort while sitting and standing, and reduced physical activity to walking only short distances due to pain and stiffness. Over the prior four to six weeks he had started taking over-the-counter pain medication (Panadol) twice weekly.

The patient subjectively rated his physical health as 4/10 and mental health as 7/10 at the time of his initial presentation on a 10-point numeric rating scale where 1 is worst and 10 is best.

Examination

Initial examination revealed an increased forward head carriage and pronounced thoracic kyphosis, with additional postural alterations of a markedly higher left hip and right head tilt with fixed rotation to the right. Initial chiropractic examination for vertebral subluxation revealed a right shorten leg length inequality, positive right Derifield, and soft tissue and biomechanical subluxation indicators at multiple levels of the spine.

Range of motion (ROM) of the cervical spine using a bubble inclinometer revealed flexion of 22°, extension of 35°, left lateral flexion of 20° (with acute pain noted on active motion) and right lateral flexion of 28°. Lumbar ROM was initially not taken due to pain, however after six sessions of chiropractic care it was measured to show flexion of 50°, extension of 40°, left lateral flexion of 25° and right lateral flexion of 28°.

Thermography and surface EMG studies revealed overactivity of varying levels of severity primarily in the cervical spine, and large areas of hypo-activity throughout the spine as measured by surface EMG. (see Figure 1)

Intervention

Over a period of six weeks the patient was checked and adjusted where necessary twice weekly for 12 visits using full spine Activator Methods Chiropractic Technique (AMCT). The most commonly adjusted segments were the right medial knee (66.6%), left AS (66.6%), right PI (66.6%), L4 (83.3%), T12 (66.6%), C7 (75%) and C1 (58.3%) with an average of 7.9 levels being adjusted at each visit, for a complete summary of levels adjusted per visit see Table 1. AMCT uses a handheld instrument with a blunt stylus to deliver a specific, high velocity, low amplitude thrust for the correction of vertebral subluxation.17

Outcomes

During the course of chiropractic care, the patient subjectively reported by the sixth visit he had noticed improved flexibility and was now walking with ease daily for approximately four kilometres. On the seventh visit he commented “it is important for me to be able to bend forward and move my head, I can do that easier now”, and “I’ve noticed my posture is more upright and not bent forward”. At this point the patient also reported he had ceased taking over-the-counter pain medication, and had been medication free for 10 days.

An overall improvement in subjective physical and mental health was reported, physical health improving from 4/10 to 8/10, and mental improving slightly from 7/10 to 8/10 on a 10-point scale where 1 is worst and 10 is best.

Spinal ROM studies revealed improvements in all ranges of motion. Cervical ROM revealed flexion of 40° (81.8% improvement), extension of 50° (42.8% improvement), left lateral flexion of 30° (50% improvement) and right lateral flexion of 36° (28.5% improvement). Cervical active ROM no longer elicited pain. Lumbar ROM revealed flexion of 60° (20% improvement), extension of 46° (15% improvement), left lateral flexion of 25° (no improvement) and right lateral flexion of 30° (7.1% improvement).

Changes in thermography and surface EMG studies after the progress examination can be seen in Figure 2 indicating reduction in dysponesis and dysautonomia.

Discussion

Pain and restriction in ROM can have a substantial effect on limiting physical function, participation in ADL’s and ultimately loss of independence particularly in older adults, with the limiting beliefs associated with therapeutic nihilism that further contribute to inaction.2-5 It is no doubt that the loss of overall function and well-being is a major health issue and has been estimated to affect up to one in every six people, often that of the older population.18 With the growing population it is important to identify healthcare practices that can be effective, safe and inexpensive to help maintain the independence of older adults.
Chiropractic is well utilized by older adults, though there is limited literature focused on chiropractic care for the older adult population. Chiropractic care has been reported as being effective for both the reduction of pain and the increase in spinal ROM and mobility, and specifically for older adults has been reported to be effective in not only enhancing mobility but QoL both physically and emotionally. Similar findings have been reported outside the chiropractic profession where it has been found that the use of body based health care practices (specifically chiropractic) show better functional status, and better physical and mental health related QoL outcomes. These findings appear to have a long lasting effect when reviewed after a one-year period.

Chiropractic care aims to optimize health and well-being through the enhancement of the nervous system function by removing nerve interference caused by vertebral subluxations. The correction of vertebral subluxations by Chiropractic adjustments are a fundamental component of personal enhancement and wellbeing. Vertebral Subluxation as stated by the Association of Chiropractic Colleges is a “complex of functional and/or structural and/or pathological articular changes that compromise neural integrity and may influence organ system function and general health.”

The overall positive results seen in the musculoskeletal presentations and patient-perceived QoL reported in the current case study are congruent with some previously reported studies that investigated the effects of chiropractic care on ROM and QoL. While there is limited current research investigating the effects of chiropractic care particularly in the older adult population, this case study supports the use of chiropractic care for the correction of vertebral subluxation to promote the health of older adults.

**Limitations**

Besides the inherent limitation of a single case study, being an isolated case that is not controlled for external factors and natural progression, there was limited information from the initial exam as lumbar ROM was initially not taken. Additionally, while several studies have assessed QoL with instruments such as the SF-36, the current study only used a simple 10-point scale to assess patient perceived physical and emotional health.

**Conclusion**

Chiropractic care to correct vertebral subluxation was associated with improvements in the patient’s presenting musculoskeletal complaints and resultant quality of life. More research is needed to investigate the role chiropractors may play in helping older adults with maintaining an active lifestyle.

**References**


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Table 1. Adjustment summary by visit
Figure 1. Thermography and surface EMG study at initial visit

Figure 2. Thermography and surface EMG study at progress examination