Research Paper Review

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The comparative effect of episodes of chiropractic and medical treatment on the health of older adults

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ABSTRACT

OBJECTIVES: The comparative effect of chiropractic vs medical care on health, as used in everyday practice settings by older adults, is not well understood. The purpose of this study is to examine how chiropractic compares to medical treatment in episodes of care for uncomplicated back conditions. Episodes of care patterns between treatment groups are described, and effects on health outcomes among an older group of Medicare beneficiaries over a 2-year period are estimated.

METHODS: Survey data from the nationally representative Survey on Assets and Health Dynamics among the Oldest Old were linked to participants' Medicare Part B claims under a restricted Data Use Agreement with the Centers for Medicare and Medicaid Services. Logistic regression was used to model the effect of chiropractic use in an episode of care relative to medical treatment on declines in function and well-being among a clinically homogenous older adult population. Two analytic approaches were used, the first assumed no selection bias and the second using propensity score analyses to adjust for selection effects in the outcome models.

RESULTS: Episodes of care between treatment groups varied in duration and provider visit pattern. Among the unadjusted models, there was no significant difference between chiropractic and medical episodes of care. The propensity score results indicate a significant protective effect of chiropractic against declines in activities of daily living (ADLs), instrumental ADLs, and self-rated health (adjusted odds ratio [AOR], 0.49; AOR, 0.62; and AOR, 0.59, respectively). There was no difference between treatment types on declines in lower body function or depressive symptoms.

CONCLUSION: The findings from this study suggest that chiropractic use in episodes of care for uncomplicated back conditions has protective effects against declines in ADLs, instrumental ADLs, and self-rated health for older Medicare beneficiaries over a 2-year period.

BACKGROUND INFORMATION

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As manual health care providers, we strive to assist in the prevention of morbidity associated with musculoskeletal complaints. The therapeutic and restorative benefit of chiropractic care on functional abilities has been well studied in clinical efficacy trials (1-3). What has not been studied to date is the effectiveness of chiropractic compared to other common medical treatments for similar conditions over time.

In this interesting study, the researchers sought to examine whether chiropractic care results in similar, better or worse changes in functional health and well-being relative to typical medical-care only. To accomplish this, they described episodes of care patterns and subsequent effects on health outcomes among an older group of Medicare beneficiaries (United States) over a 2-year period.

PERTINENT RESULTS

Medical & Chiropractic Patient Characteristics

- A greater proportion of those who underwent chiropractic care were white men, married, had completed high school and were within the highest income quintile. This proportion of individuals also had fewer ADL (Activities of Daily Living), IADL (Independent Activities of Daily Living) and Lower Body Function (LBF – functional status) limitations and contained fewer persons suffering from angina (although the lower number of IADL limitations was statistically insignificant).
- Chiropractic patients also had better self-rated health (71% rated good or better, compared to 59% in the medical care only group) and fewer depressive symptoms (although, differences in depressive symptoms were not statistically significant).
- Further, a greater percentage of those in the chiropractic group engaged in vigorous exercise (40%), but were paradoxically more overweight/obese (59%).
- Only 30% of chiropractic users were hospitalized by their first interview, compared to 38% of medical-care users.

Comparison of Chiropractic Care and Medical Treatment

- Chiropractic care episodes averaged 125 days in duration, compared to those who underwent medical-care, which averaged 15 days.
- Chiropractic care averaged 9 visits. Medical-care averaged 2.4 visits – 1 visit was to a primary care provider, with the rest distributed amongst other specialists.
- Greater than 30% of medical-care users declined in ADLs over the years, compared to only 19% of chiropractic users.
- 29% of medical-care users declined in IADLs, compared to only 18% of chiropractic users.
- Decline in body function was also different between groups: 38% of medical care users declined, compared to only 30% of chiropractic care users.

CLINICAL APPLICATION & CONCLUSIONS

This study provides evidence for the comparative effectiveness of chiropractic care relative to medical-only services on the functional health of older adults during acute episodes of back care, demonstrating that:

1. Not surprisingly, chiropractic care resulted in a greater number of provider visits over a longer duration compared to typical medical-care for acute episodes of back care.

2. Chiropractic care for uncomplicated back conditions is protective against 2-year declines in ADLs and LBF in older adults.
3. Chiropractic care was no different from standard medical care in preventing loss in IADL performance. There was also no difference between groups in perceived health status and/or depressive symptoms.

This evidence suggests chiropractic care might prevent long-term losses in function and in one's ability to perform their ADLs as they age – very important findings!

This study is unique because it is the first to show the importance of examining chiropractic use within an episode of care in traditional practice settings, rather than focusing on visit frequency alone. Further, the authors evaluated important outcome measures (ADLs, LBF etc.) that inform patients, clinicians, and payers about the benefits and harms of certain treatments relative to others. Given the general lack research to date on the minimally effective chiropractic treatment level for back problems, this research provides additional support that such therapeutic levels are indeed beneficial in terms of protecting older persons from functional declines and self-rated health over as much as 2 years.

STUDY METHODS

Demographic, socioeconomic, physical and cognitive health status, disease history and lifestyle behaviours of the studied population were attained from the Survey on Assets and Health Dynamics among the Oldest Old (shortened to 'AHEAD)'. These data were linked to participants' Medicare Part B claims. Participants were 70+ years of age when their baseline interviews were conducted between 1993 and 1995. Subsequent interviews were conducted from baseline to 2006, which defines the observation window of this study. Each participant must have had one subsequent interview within the outlined time frame.

The inclusion criteria ensured patients had a single acute (non-chronic) back pain episode. The inclusion criteria were as follows:

- Participants had to present to a clinician for 1 out of 29 possible back-related conditions between contiguous interviews.
- Participants could only have experienced 1 back-related episode between those interviews.
- They could only have 1 pair of contiguous interviews with a back episode over the entire study period.

Claims that occurred within a 60-day window were considered to be part of the same back pain care episode. Claims outside of the 60-day period were considered the start of a new episode. This algorithm was selected based on the premise that effective chiropractic care for back pain may require up to 12 visits over several weeks (4, 5). Thus, multiple claims within 60 days of one another suggest a therapeutic plan for a single back pain issue.

The authors assumed that back pain patients would only visit primary care/specialist physicians 1-2 times over the course of 60 days, while patients undergoing chiropractic care would attend a cluster of visits over a longer period of time (no reference provided!). The total study population was 1057 patients.

Outcome measures included:

- Activities of daily living (ADLs) – difficulty/inability to get across a room, get dressed, bathe, eat, get out of bed
- Independent ADLs (IADLs) – using a telephone, taking medication, handling money, shopping, preparing meals
- Lower Body Function (LBF – functional status) – climbing up and down 1 flight of steps, walking several blocks, pushing or pulling heavy objects, lifting or carrying 10 lbs or more

- Self-rated health questionnaire, where participants rated their own overall health as excellent (95+), very good (90), good (80), fair (30), poor (15).
- Center for Epidemiological Studies of Depression (CES-D) 8 Scale – the participants were issued one point for each depressive symptom endorsed, which included: feeling depressed, feeling that everything is an effort, restless sleep, feeling unhappy, feeling lonely, not enjoying life, feeling sad, and feeling they could not get going (limited to 951 responders).

The researchers adjusted for the following covariates:

1. Age,
2. sex,
3. race,
4. marital status,
5. education achieved,
6. income quintiles,
7. additional health insurance policy,
8. employment status at first interview,
9. whether the participant had 3 or more comorbid health conditions,
10. disease history indicators,
11. pain,
12. vision and hearing status,
13. physical function,
14. self-rated health,
15. healthy lifestyle (vigorous exercise, body mass, smoking, alcohol consumption),
16. prior hospitalizations,
17. back care episodes from 1993-1995, and
18. whether patient was self-responding or utilized a proxy.

A multivariate logistic regression analysis was done to compare the effectiveness of chiropractic care episodes to medical-only episodes on decline in function and well-being.

STUDY STRENGTHS / WEAKNESSES

Weaknesses

- The researchers had no concrete way of ensuring a homogeneous sample.
- Although the 60-day period which defines a single back pain episode was consistent with the research, there is the potential for shorter lengths.
- Combined medical and chiropractic care back pain episodes were lumped into the chiropractic group.
- The researchers might not have been able to account for selection bias, as their statistical methods might not have adjusted for unobserved confounders that can affect the care episode type and health care outcome (i.e. a preference for health that drives other unobserved behaviours affecting functional ability).
- The authors did not elucidate why individuals undergoing chiropractic care exercised more and what impact this has on the ability to perform ADLs.

Strengths

- The study featured a large statistical sample.
- The authors utilized validated health questionnaires and functional measures.

Additional References

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