

A practice-based pilot study of patient's attitudes about long-term care and longevity

INTRODUCTION

It is a generally accepted belief among many chiropractors and chiropractic patients that maintenance care has salutary health effects. It is also believed by some that long-term maintenance care may increase longevity. From these beliefs it seems to logically follow that if such care were utilized by a large proportion of the population, the number of expensive medical procedures aimed at lifestyle-related diseases might be reduced with a consequent reduction in health care costs. Studies focused on maintenance care have not necessarily supported these beliefs although it has been suggested that some cost benefits may accrue.¹⁻⁷

The present study, which is cross-sectional in design, represents a different approach to looking at these issues. It came about as a result of a collaborative arrangement between our college and a large practice management group which gave us access to a large number of field doctors and their patients.

The project had two primary goals: 1) to study the attitudes of chiropractic patients toward health and longevity, and 2) to study the long term benefits of chiropractic care as assessed through evaluation of patient well-being.

METHODS

The protocol and consent forms for this pilot study were approved by our school's Institutional Review Board. Seventeen field doctors volunteered to participate in the study and signed consent forms. Patient participation was voluntary and without coercion. Participation did not entail any change to their normal care with their chiropractor. Minors were not eligible and were not be invited to participate.

Patients were recruited based upon their stated willingness to complete a patient information survey and not upon chief complaint, other health-related criteria or upon the length of time they had been under care. Participating clinic staff were instructed to offer the survey to all patients except minors. It was hoped that by recruiting in an essentially random fashion, we were able to obtain a population of patients representing a spectrum of demographics and care histories.

Data for this study were collected via 100-question patient surveys. The survey instrument consisted of 7 parts:

1. Patient demography
2. Experience with chiropractic (including weeks/months/years under care)
3. Patient Reported Outcomes Measurement Information System (PROMIS) Global Health Scale validated for physical and mental health and well-being⁸⁻⁹
4. AIOS (Arizona Integrated Outcome Scale)¹⁰
5. Mental Health Scale: Flourishing to Languishing (Keyes)¹¹
6. Longevity instrument: proprietary to practice management group

7. Feedback about the questionnaire experience.

Patients were offered 4 different ways to take the survey: on paper in the doctor's office, online in the doctor's office using a tablet in the waiting room, online in the doctor's office at a workstation in a private room or online at home.

Patients signed a consent form for the paper survey; online consent was obtained via the opening question in the survey. If the patient agreed to participate by checking the 'yes' box and pressing submit, she was directed to the questions. A 'no' answer resulted in a 'Thank You Anyway' response and redirection back to the browser.

Participating clinics and doctors were assigned unique randomized numbers in the research network; these numbers were used for purposes of data identification. This research does not involve protected health information (PHI) so HIPAA measures do not apply.

To direct the patients to the online questionnaire, they were given a card with an internet link on it. Each card also had on it a unique randomized number which was encoded for both the clinic of origin and the patient. It was up to the office staff to record which card went to which patient. The research staff at our college was blinded to this information. Paper forms were returned to the research staff via mail. Completed surveys were analyzed using descriptive statistics as well as more sophisticated methods to look at the independence of questions.

RESULTS

Of 17 clinics that agreed to participate, 11 ultimately followed through with patient recruitment. Of the 110 surveys that were returned, 97 had complete data. The study population ranged in age from less than 18 to 80; approximately half were in their 40s and 50s; 53% were female. More than 80% of the population was white, 64% were employed, 14% were retired, and 52% had incomes greater than \$70,000 while 34% had incomes exceeding \$100,000.

We were interested in obtaining a representative sample of years under care. In our sample the largest group were those who had been under care for 1-3 years. The 4-6 year group is about half as big but the trend is upward from there with almost as many having been under care for more than 20 years as in the 1-3 year group. Patients under care for one year or less were not as well represented.

Fig. 1 Age and Care Frequency vs Time Under Care

<u>Age</u>	Years Under Care								
	new pt	1 month	6 months	1 year	2 years	5 years	9 years	15 years	20 years
< 18	0	1	0	1	0	0	0	0	0
19-25	0	1	2	2	1	0	0	1	0

26-30	1	3	0	0	6	2	0	0	0
31-35	0	1	2	1	1	0	0	1	0
36-40	0	0	1	0	1	0	1	0	0
41-45	0	1	1	1	4	2	0	1	1
46-50	0	3	3	0	1	1	2	1	1
51-55	0	2	1	0	5	1	0	0	0
56-60	0	0	1	0	1	1	4	2	1
61-65	1	0	0	0	1	2	1	0	2
66-70	0	1	0	0	1	0	0	2	2
71-75	0	0	2	0	2	0	2	0	1
76-80	0	0	0	0	0	0	0	0	1
<u>Care Frequency</u>									
I'm not a regular patient	1	0	0	0	1	0	0	0	2
3-4 times a year	1	0	0	0	1	0	0	2	0
Once a month	0	0	0	0	1	2	1	1	1
2-3 times per month	0	0	1	2	5	2	3	2	5
Every week	0	3	6	2	8	2	5	2	0
2 times per week	0	7	5	1	4	3	1	1	1
More than 2 times per week	0	3	1	0	4	0	0	0	0

To address the question of whether long-term chiropractic care promotes greater health and longevity, we analyzed the relationship between the results of our health and longevity instruments and the length of time under chiropractic care.

One measure of interest in this regard was the AIOS, a wellness scale on which the patient rated himself in a range from 0 to 100, where 0 was sick unto death and 100 was perfect. In our group, the mean score was 72 and the median 79 (half the observations were above 79 and half below). If 50 is an expected average score, our patients rate themselves well above average in wellness.

When we looked at the above wellness measure as a function of years under care, there did not appear to be any trend (fig 2a). However, if the 'years under care' variable was divided in two ranges: 0-2 and 3-20+, a possible difference appeared, namely that wellness scores went up over the first two years under care and then appeared to level off (figs. 2b & 2c). This is a very interesting outcome but based on the small sample size, it's impossible to say if it is real and not just an artifact of our data.

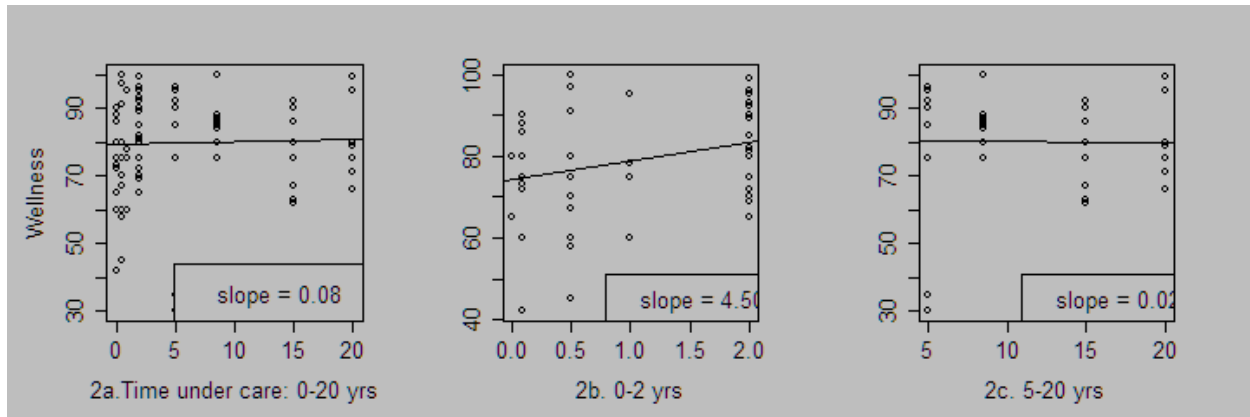


Fig. 2 Wellness vs Time Under Care

Another part of the survey included questions from the PROMIS global health inventory. This inventory is part of a government-sponsored outcome study battery that is validated and available for public use. It is scored as two scales: mental and physical health, available both as raw scores and t-scores based upon a normative database. For both scales, our population scored approximate 51 on the t-score scale, placing just above average. Interestingly, for both these scales vs time under care, we saw an effect similar to the one described above for the wellness scale: namely, improvement over the first several years of care followed by a leveling-off. Once again, we are not prepared to interpret these results but find them interesting enough to study more carefully in our next, larger study.

On the Mental Health or Flourishing instrument, there are two scales: MH2 and MH3. MH2 has two levels: not flourishing and flourishing while MH3 has three levels: languishing, moderately mentally healthy, and flourishing. Our population scored greater than 70% flourishing with no score in the languishing category. These results were uniform across age and length of care categories.

The longevity instrument consists of 28 questions that are pragmatic as regards attitudes about longevity, e.g., are you excited about Living to 100, do you have many goals, are you willing to make changes, do you have youthful energy, do you enjoy full night's sleep, etc. These questions are scored on a Likert-like basis anchored by never and always, worst to best. The population responses by percentage were as follows: never (3.21), rarely (9.56), sometimes (24.67), often (36.31) and always (27.28). The average score across all questions was 3.77 and 3.71 for those under care less than three years and those under care for more than three years, respectively.

DISCUSSION

Because this is a pilot study, no causal relationships can be inferred or definitive conclusions drawn. The results on only 100 patients will not be enough to make strong conclusions about the relationship between chiropractic care and health outcomes or attitudes toward longevity.

When viewed in the context of time under care, the apparent improvement in wellness perception and physical and mental health over the first 2-3 years of care with the subsequent leveling off

represents a potentially interesting result. If this effect were real it might lend itself to several possible explanations and might in turn generate some new questions. Chiropractors would like to think ongoing care improves wellness or one's perception of wellness. These results suggest that such an improvement may be occurring early in the care history but that the improvement effect is limited...perhaps by intrinsic catabolic processes associated with aging. This needs to be studied further in a much larger population.

There are many limitations that can be cited for this study. First, the number of participants is too small to draw any inferences. Also, all data come from self-reported survey responses; many may be in error due to memory or understanding issues. Additionally, not all questions represent validated survey items. In particular, the longevity instrument is made up of questions that seem meaningful and pertinent. Some may be considered face valid. Note that we performed a correlation study across all questions of this instrument which revealed very low correlations between questions implying that the questions are independent.

In the future: Ideally, we would like to have approximately 100 clinics involved, each of which could provide enough patient possibilities to yield at least 100 participants. This combination would provide 10,000 research records for analysis, and would increase statistical power significantly.

CONCLUSION

Our goal in doing a cross-sectional snapshot of randomly recruited patients across several clinics to get a representative sample of ages and care histories was, for the most part achieved. Through the use of our multi-part survey we were able to demonstrate results that suggest long-term care can help maintain perceptions of physical and mental health over time.

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