

Patient Experience and Satisfaction With Chiropractic Care: A Systematic Review

Journal of Patient Experience
Volume 11: 1-21
© The Author(s) 2024
Article reuse guidelines:
sagepub.com/journals-permissions
DOI: 10.1177/23743735241302992
journals.sagepub.com/home/jpx



Dave Newell, PhD¹ and Michelle M Holmes, PhD² 

Abstract

Despite numerous studies that measure satisfaction in patients undergoing chiropractic care, these have not yet been systematically summarized. The aim of this study was to perform a systematic review of existing literature to identify factors that contribute to high levels of satisfaction in chiropractic care. A comprehensive search was conducted to identify quantitative, qualitative, or mixed-methods studies exploring patient experience with chiropractic care. Forty-three studies were included in the review. The findings showed that patient satisfaction was consistently high in comparison to other professions. The review identified key factors that contribute to patient experience, which were not limited to clinical outcomes, but also the clinical interaction and clinician attributes. The findings of this review provide a core insight into patient experience, identifying both positive and negative experiences not just within chiropractic care but in the wider healthcare sector. Further work should explore factors that impact patient satisfaction and how this understanding may further improve healthcare to enhance patient experience.

Keywords

patient experience, patient satisfaction, chiropractic, pain management

Introduction

The rapidly expanding health workforce encompasses a diverse array of professions beyond traditional medicine, to meet the multifactorial healthcare needs of national populations. Chiropractic is a statutorily regulated profession, with chiropractors qualified to deliver a package of care, including pain education, self-management advice, manipulation and manual therapy treatments, and tailored exercise recommendations.¹ Chiropractors identify as spinal health experts, focusing on improving function in the neuromuscular system and overall health and wellbeing of patients, predominately seeing patients with musculoskeletal conditions.^{2,3} Contemporary meta-analyses support the use of spinal manipulative therapy, a key component of chiropractic care, for such conditions.^{4,5} However, there is a shift to measure the impact of healthcare provision in a more patient-centered manner, considering not only clinical outcomes, but also patient experience and satisfaction measures as key metrics in determining quality of care.

Previous reviews synthesizing existing research on patient satisfaction identified that patients tend to report high levels of satisfaction with chiropractic care.⁶ In addition, patients are often more satisfied with chiropractic care compared to encounters with other healthcare professionals. Despite the overwhelming support for chiropractic care, there is limited understanding of the drivers for these high levels of patient

satisfaction. One explanation for the high levels of satisfaction, is around the pivotal role that effective communication plays in patient care,⁶ with clinicians communication to identify their patients' main concerns and other information as key.^{7,8} However, while communication is recognized as a potential driver of patient satisfaction in chiropractic care, there is limited exploration of this factor.

Despite the presence of numerous studies that measure patient experience and satisfaction within chiropractic care, these valuable insights have not yet been systematically gathered and comprehensively explored. Understanding patient experiences is thus important in the context of a value-based healthcare paradigm as a measure of the value of an intervention over and above traditional clinical outcomes.⁹ The aim of this review was to identify, categorize, and summarize the published literature pertaining to the experiences and satisfaction levels of patients undergoing chiropractic care.

¹ AECC School of Chiropractic, Health Sciences University, Bournemouth, UK

² Centre for Workforce and Systems Innovation, Health Sciences University, Bournemouth, UK

Corresponding Author:

Michelle M Holmes, Centre for Workforce and Systems Innovation, Health Sciences University, Bournemouth BH5 2DF, UK.
Email: mholmes@aecc.ac.uk



Method

This systematic review has been written up in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement.¹⁰

Literature Search

An initial scoping search was conducted in 2020 to refine the research question and construct a full review protocol, published on PROSPERO, ID: CRD42020203251. Terms included derivatives of chiropractic and patient experience and satisfaction, an example search string can be seen in Table 1. The search was restricted to research published after 2005, following a systematic review published on patient satisfaction.⁶ Several databases were searched yielding the following search results: PubMed (506), Cochrane (115), Excerpta Medical Database and Allied and Alternative Medicine (EMBASE) (355), CINAHL (517), Index to Chiropractic Literature (ICL) (1758), and Web of Science (158) by MH in 2021. A bibliography search was also conducted to check for relevant studies.

Article Selection

Articles that met the following criteria were eligible for inclusion in this review: (1) focused on patient satisfaction or patient experience within chiropractic care, (2) primary empirical studies: qualitative, quantitative, and mixed methods, and (3) published in English. Papers were excluded if they were: (1) focus on perceptions of chiropractic care, (2) co-delivered interventions, and (3) case studies, pilot studies, conference abstracts, and non-empirical and secondary studies. Titles and abstracts were examined by at least one reviewer, with full-texts examined by two reviewers (DN and MH). There was 100% agreement on the final inclusion between the two reviewers. The screening and selection of studies is documented in the PRISMA in Figure 1.

Data Extraction and Analysis

Data extraction included citation, country, aims, participants, setting, study design, measures of patient satisfaction and experience, other outcome measures, analysis, intervention groups (where appropriate), and relevant results. Quality assessment was carried out using Markoulakis and Kirsh

rubric,¹¹ with broadly defined score descriptions, allowing for assessment of the methodological implications of the paper despite heterogenous study designs. Narrative synthesis was used to collate and integrate the findings of the included studies with textual descriptions developed to combine results and analyze the relationships between the studies.^{12,13} Data extraction and synthesis was conducted by two reviewers (DN and MH), with 25% of articles checked.

Results

Study Characteristics and Overview

Forty-three studies were eligible for inclusion (see Figure 1 and Table 2). The studies were conducted across the United Kingdom, Europe, North America, Australia, and South Africa. Chiropractic care was delivered in a variety of settings: private practice, university clinics, specialized clinics (military medical centers, therapeutic community facility). The studies included participants seeking chiropractic care for a variety of conditions (spinal pain, low back pain, neck pain, leg pain, headaches, and musculoskeletal conditions) and treatment of specialized populations (pediatric patients, pregnant mothers, older adults, military personnel, and athletes).

Generally, chiropractic patients are very satisfied with their care with high proportions generating consistently high satisfaction scores.^{14,15} This includes patient groups receiving care in both the independent and public sector.¹⁶ Studies recruiting patients presenting with conditions commonly seen by chiropractors reported high to very high satisfaction/experience scores with care.¹⁷⁻²⁰ This is also true of parental satisfaction with pediatric care where scores range from around 75% to 95% satisfaction.²¹⁻²⁴

Results of the quality assessment identified that reporting quality was mixed. However, no studies were marked as very poor or poor. The main methodological weaknesses identified were limited details on patient recruitment and the setting of chiropractic care. Within the quantitative studies, the main limitations were potential for respondent bias, and no details or limited details on generalizability. Taking into consideration the implications of these methodological flaws, no findings were deemed inappropriate and all concepts from the studies were included in the synthesis.

Table 1. Example Search Terms.

-
- 1 Chiropractic [SH] OR Manipulation, Chiropractic [SH] OR Chiropract* [title/abstract]
 - 2 Patient-centered care [SH] OR Patient satisfaction [SH] OR patient-centered [title/abstract] Or patient-centred [title/abstract] Or "patient satisfaction" [title/abstract] OR "patient preference" [title/abstract] OR "patient experience" [title/abstract] OR "personal experience" [title/abstract] OR "patient reported experience measure" OR PREM OR "quality of care" OR "effective communication" OR respect OR dignity OR "emotional support" OR "therapeutic alliance" OR Therapeutic alliance [SH]
 - 3 #1 AND #2
 - 4 Limit – 2005–2020.
-

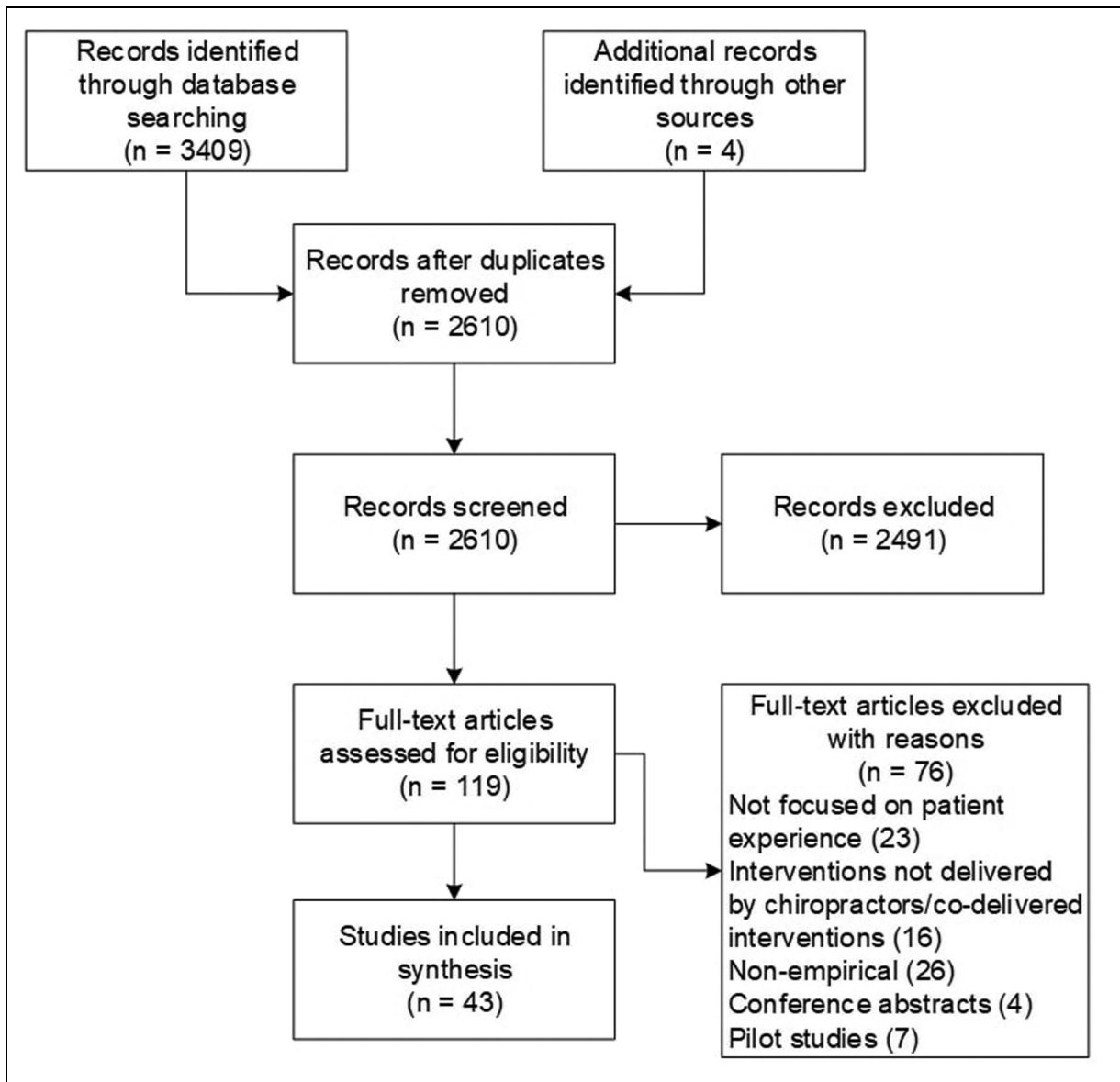


Figure 1. PRISMA diagram.

Comparison of Patient Satisfaction to Other Interventions

Ten included studies were randomized-clinical trials (Table 3). Notwithstanding their heterogeneity, all compared chiropractic treatment or spinal manipulative therapy delivered by chiropractors to a comparator group, including exercise, medication, light massage, or a variety of sham interventions. Five trials used a combined intervention with manipulation as an addition to standard medical care^{25,26} and a further 2 explored adding spinal manipulation to a form of home exercise^{27,28} or home exercise and advice.²⁹

For all trials, chiropractic care either alone or as adjunctive to other interventions generated significantly higher satisfaction scores than comparator interventions (see Table 3). Most comparators where chiropractic care performed better were

either some form of home exercise, medication, or standard medical care. Where clinicians were involved in delivering substantive interventions such as forms of supervised exercise, chiropractic care either scored equal satisfaction or in one case less satisfaction (see Table 3). Furthermore, the addition of chiropractic care to an existing treatment generated better satisfaction than the existing treatment alone.^{25,26} This was also seen in audits of chiropractic care, where a package of manual care added to usual care generated significantly greater satisfaction than usual care plus medication.³⁰

Three national surveys where chiropractors were compared to medical care were included.³¹⁻³³ Patients attending for chiropractic care were nearly twice as likely to be satisfied with the care received than those seen by medical doctors (odds ratio [OR]: 1.79 [1.35-2.39]) and 1.5 times as likely

Table 2. Study Characteristics.

Reference	Country	Aims	Participants	Setting of chiropractic care	Study design	Specific patient satisfaction/experience measures	Chiropractic intervention group	Control or comparison groups
Alcantara et al (2016)	United States	To explore the quality of life and satisfaction of care of patients receiving chiropractic care with the Webster Technique	n = 126 participants (low back pain, other pain, headaches, and wellness care), mean age = 39.68 (SD 12.56) [18-74], 97 females, 29 males	Chiropractors participating in a PBRN—the International Chiropractic Paediatric Association who employ the Webster Technique.	Prospective cohort study—measures taken at baseline and following a course of chiropractic care	Patient satisfaction (RAND VSO9)	Chiropractic care—Webster Technique, spinal adjustments, and adjunct therapies	
Alcantara et al (2018)	United States	To explore the quality of life and satisfaction of pregnant patients after receiving chiropractic care	n = 343 pregnant patients, mean age = 30.96 (4.64)	Chiropractors participating in a PBRN—the International Chiropractic Paediatric Association who employ the Webster Technique	Prospective cohort study—measures taken at baseline and following a course of chiropractic care	Patient satisfaction (RAND VSO9)	Chiropractic care—Webster Technique, spinal adjustments, and adjunct therapies	
Amorin-Woods et al (2016)	Australia	To examine the outcomes of chiropractic manual and manipulative therapy compared to usual care for patients with nonspecific spinal pain within the context of a substance misuse rehabilitation	n = 71 patients with nonspecific spinal pain	Residential therapeutic community facility, with 14 weeks substance misuse rehabilitation (regular counseling and rehabilitative activities). A chiropractic community service was set up, delivered by supervised chiropractic interns	Clinical audit—evaluation of outcomes following a choice of care	Patient satisfaction (Patient Satisfaction Questionnaire—PSQ)	Usual care plus a package of chiropractic manual and manipulative therapy (manual and manipulative therapy received 6 treatments, once per week, over a 6-week period)	Usual care and simple analgesics (paracetamol, ibuprofen)
Bronfort et al (2011)	United States	To assess the relative efficacy of supervised exercise, spinal manipulation, and home exercise for the treatment of chronic low back pain	n = 301 chronic low back pain patients, mean age = 45.1 (11.0), F% = 60.5	University-based clinic, with treatment provided by 9 experienced chiropractors	Randomized controlled trial—comparing spinal manipulative therapy, supervised exercise therapy, and home exercise and advice	Patient satisfaction was (7-point scale, with 1 representing "completely satisfied, couldn't be better" and 7 "completely dissatisfied, couldn't be worse")	Spinal manipulative therapy, delivered by chiropractors who determined the frequency and number of treatments. Included short-lever, low-amplitude, high-velocity spinal manipulative therapy and adjunct therapies	Supervised exercise therapy—20, 1 h sessions, performing core strengthening exercises and abdominal exercises emphasizing high number of repetitions and progressive increase in muscle load
Bronfort et al (2012)	United States	To assess the relative efficacy of spinal manipulative therapy and medication and home exercise for the treatment of acute and subacute neck pain	n = 272 participants with acute and subacute neck pain. SMT group: n = 91, mean age 48.3 (15.2), female: 58.2%. HEA group: n = 91, mean age 48.6 (12.5), females 65.9%. MED group: n = 90,	University affiliated clinics, licensed chiropractors with 5 years minimum clinical experience	Randomized controlled trial—comparing spinal manipulation, medication, and home exercise	Patient satisfaction (multidimensional satisfaction instrument, scored on a 1-5 scale: poor, fair, good, very good, excellent). Includes 2 subscales, information and general care, which are scored by summing and transforming results to 0-100	Spinal manipulative therapy, consisting of high velocity, low amplitude joint manipulation (diversified technique). Other therapies included light soft tissue massage, assisted	Medication—provided by licensed physician at a pain management clinic and consistent of nonsteroidal anti-inflammatory drugs. The number of visits and choice of medication was at physicians' discretion. • Home exercise and advice—2, 1 h appointments with

(continued)

Table 2. (continued)

Reference	Country	Aims	Participants	Setting of chiropractic care	Study design	Specific patient satisfaction/ experience measures	Chiropractic intervention group	Control or comparison groups
Bronfort et al (2014)	United States	To compare spinal manipulative therapy plus home exercise and advise to home exercise and advice alone in reducing leg pain in patients with subacute and chronic back related leg pain	mean age: 46.8 (12.2), females: 72.2% n = 192 patients with back related leg pain. Spinal manipulative therapy plus home exercise group: n = 96, mean age = 57.1 (12.0), females 59%. Home exercise group: n = 96, mean age = 57.5 (11.9), females = 66%	Institution-affiliated research clinics based at two universities	Pragmatic controlled trial —comparing spinal manipulative therapy and home exercise and advice	Patient satisfaction (7-point scale, from 1 = poor to 7 = excellent)	Up to 30 visits for spinal manipulation therapy, including high velocity, low amplitude thrust procedures or low velocity, variable amplitude mobilization maneuvers. Frequency of visits, treatment, and adjunct therapies were decided by the chiropractor. Patients also attended four home exercise and advice visits	Home exercise and advice was delivered one-to-one in four 1h visits, over 12 weeks. This included instruction and practice of positioning and stabilization exercises. These were individualized to patients. Patients were instructed to do 8-12 repetitions of each exercise every other day
Brown et al (2014)	Australia	To describe patient characteristics and summarize their perceptions of chiropractic in Australia	n = 486 patients, females 324 (67.1%), males 159 (32.9%)	96 chiropractic clinics across Australia	Cross-sectional survey	Perceptions of current chiropractic care (Work Force Study Survey Questionnaire)		
Butler and Johnson (2008)	United States	To examine healthcare satisfaction by provider type and its effect on return to work	n = 1831 workers who filed workers' compensation claims for occupational back pain	Chiropractors across the United States	Prospective cohort study —measured at baseline, 6 months, and 12 months after filing a claim for occupational back pain	Patient satisfaction (quality of care, good diagnosis, thorough treatment, effective treatment, took pain seriously, listening, respect, explanations of injury, and treatment). Overall satisfaction (5-point scale—1 very satisfied to 5 very dissatisfied). Individual healthcare satisfaction with the different physicians (4-point scale—1 agree strongly to 4 disagree strongly)		
Crowther (2014)	Canada	To explore the similarities and differences in satisfaction and dissatisfaction experiences of patients attending	n = 197 patients, mean age—55.0 (16.1), 122 females (62%), 75 males (38%)	Full-time chiropractors who had greater than 5 year experience	Qualitative study— semistructured interviews	Semistructured interviews based on Critical Incident Technique (discussing satisfying/dissatisfying experiences in chiropractic care and medical care)		

Table 2. (continued)

Reference	Country	Aims	Participants	Setting of chiropractic care	Study design	Specific patient satisfaction/ experience measures	Chiropractic intervention group	Control or comparison groups
Damaske et al (2016)	Belgium, Denmark, Finland, France, Greece, Hungary, Ireland, Italy, Norway, Portugal, Spain, Sweden, and the United Kingdom	primary care physicians and chiropractors To examine chiropractic patients' beliefs, experiences, and satisfaction with care in an open environment	n = 1109 patients, 650 females, 458 males, 1 not indicated. Mean age = 46.5 (SD 15.4)	Registered chiropractors across Europe utilising an open environment	Cross-sectional survey	Patient satisfaction (11-point numerical rating scale: 0 = poor, 10 = exceptional)		
Eriksen et al (2011)	United States, Canada, Europe	To describe both symptomatic reactions and clinical outcomes following a short term of chiropractic care	n = 1090 patients (multiple complaints, 80.9% spinal pain/dysfunction or headaches). Mean age = 46.1 (14.2), 699 females (64.1%), male 391 (35.9%)	83 chiropractors in private practice	Prospective cohort study following patients after upper cervical technique in chiropractic care	Patient satisfaction (11-point numerical rating scale: "How satisfied are you with the treatment by your chiropractor?" ranging from 0 = very dissatisfied to 10 = very satisfied)	Upper cervical technique —patient management and visit frequency were left to the discretion of the chiropractor; but asked to refrain from using any other type of spinal manipulation or physical therapy	
Field and Newell (2016)	United Kingdom	The examine and compare the outcomes of NHS and private patient groups presenting with musculoskeletal conditions to chiropractors	n = 8222 NHS referred and private patients (low back and neck pain) Mean age (NHS, 49.1; private 49.2) Female, 60.2% and 48.3% NHS and private, respectively	Consortium of UK-based practices located in the south of the United Kingdom	Prospective cohort of patients receiving a course of chiropractic care	Patient satisfaction (7 item scale: "Overall, how have you found the service and care you received?" ranging from 1 = unacceptably poor to 7 = a very high level, 1) would recommend friends with similar problems to consider		
Foley et al (2020)	Australia	To examine the extent to which patients with chronic conditions experience person-centered care when consulting complementary medicine practitioners	n = 153 participants with chronic conditions, 82.4% female, 17.0% male, 0.7% transgender. Chiropractic sample: n = 28 participants, 67.9% female, 32.1% male	Chiropractors participating in a PBRN	Cross-sectional survey	Experience of care and patient-practitioner communication (Patient-Centred Care Scale —PCCS, Perceived Provider Support Scale—PPSS, and the Patient Assessment of Chronic Illness Care Scale—PACIC)		
Gaumer and Gemmen (2006)	United States	To determine the differences in attitudes and other	n = 800. Never visited a chiropractor: n = 400, 56.5% female, 43.5%	-	Cross-sectional survey—national survey	Satisfaction with care (national survey)		

(continued)

Table 2. (continued)

Reference	Country	Aims	Participants	Setting of chiropractic care	Study design	Specific patient satisfaction/ experience measures	Chiropractic intervention group	Control or comparison groups
Goertz et al (2013)	United States	determinants of care-seeking behavior between persons who have used chiropractic services and persons who have not To assess whether chiropractic manipulative therapy and standard medical care reduces pain and increases physical functioning compared to standard medical care only for the treatment of acute low back pain	n = 91 active-duty military personnel with acute low back pain. Standard medical care n = 46, 39 males (84.8%). Standard Med Care + Chiropractic n = 45, 39 males (86.7%)	Military medical centre	Pragmatic randomized comparative study—comparing chiropractic manipulative therapy and standard medical care to standard medical care	Patient satisfaction (11-point numerical rating scale, "How satisfied are you with the overall results of your care?" 0—not at all satisfied, 10—extremely satisfied)	Chiropractic manipulative therapy and standard medical care—focused history and physical examination and diagnostic imaging as indicated. High-velocity low amplitude manipulation, and ancillary treatments at the chiropractors discretion, including massage, exercises, advice on daily living, postural advice, and mobilization	Standard medical care—including any or all: history, physical examination, diagnostic imaging, self-management education, pharmacological management (analgesics and anti-inflammatories), physical therapy, referrals

(continued)

Table 2. (continued)

Reference	Country	Aims	Participants	Setting of chiropractic care	Study design	Specific patient satisfaction/ experience measures	Chiropractic intervention group	Control or comparison groups
Goertz et al (2018)	United States	To determine the effect of adding chiropractic care to usual medical care for patients with low back pain	n = 750 active-duty military participants with low back pain, 23.3% female, 76.7% male. Mean age = 30.9 ±8.7)	Two military medical centers and one military training site	Pragmatic comparative trial—comparing usual medical care with chiropractic care to usual medical care	Patient satisfaction (11-point numerical rating scale: 0 = not at all satisfied, 10 = extremely satisfied)	Usual medical care with chiropractic care—participants had usual medical care, and up to 12 chiropractic care visits. This included spinal manipulative therapy for the low back. Treatment decisions on manipulation were based on patient diagnosis, patient preference, prior care, and medical/case history. Additional therapeutic procedures includes rehabilitative exercises, interferential current therapy, ultrasound, cryotherapy, superficial heat, and other manual therapies	Usual medical care—this was any care recommended or prescribed by military clinicians. This included: self-management advice, pharmacological pain management, physical therapy, or referral to a pain clinic
Haas et al (2005)	United States	To identify relative provider costs, clinical outcomes, and patient satisfaction for the treatment of low back pain	N = 837 chronic low back pain (attending chiropractor: n = 527, mean age 42.2 (14.4), females 55.4%. Attending medical care: n = 310, mean age 52.6 (12.7), females 52.6%), N = 1943 acute low back pain patients (attending chiropractor: n = 1328, mean age = 42.1 (12.9), 47.7% females. Attending medical care: n = 615, mean age = 38.5 (12.1), females 46.7%)	Practices of 51 chiropractic clinics	Prospective cohort study—comparing chiropractic care to medical care	Patient satisfaction (100-point scale)	Chiropractic care—spinal manipulation, physical modalities, exercise plan, and self-care education	Medical care—prescription drugs, exercise plan, self-care advice
Haas, Aickin, and Vavrek (2010)	United States	To present a model to identify the effects of expectancy of treatment success and patient-provider	n = 80 participants with cervicogenic headache, mean age = 36 (SD, 11) 64 (80%) female, 18 (20%) male	Private chiropractic clinics	Preliminary path analysis from a randomized controlled trial which compared spinal manipulative therapy	Measures of patient-provider encounters including patients' perception of chiropractors enthusiasm for care, comfort treating cervicogenic headaches,	Spinal manipulative therapy (high velocity, low amplitude spinal manipulation of the cervical and upper thoracic spine)	Minimal light massage (gentle effleurage and gentle petrissage of the neck and shoulder muscles) delivered by a chiropractor

(continued)

Table 2. (continued)

Reference	Country	Aims	Participants	Setting of chiropractic care	Study design	Specific patient satisfaction/ experience measures	Chiropractic intervention group	Control or comparison groups
Haas et al (2018)	United States	encounter on outcomes in an open-label randomized trial in treatment of cervicogenic headache To determine the effect of spinal manipulative therapy on clinical outcomes in adults with chronic cervicogenic headache	n = 256 participants with cervicogenic headache, mean age = 41 (SD, 13), 182 (71.1%) female, 74 (28.9%) male	University affiliated clinics, either at a university of private clinics, by licensed chiropractors with 6-35 years of clinical experience	to minimal light massage Randomized-controlled trial comparing spinal manipulative therapy to minimal light massage	Satisfaction with care (1-6 scale): 1—extremely dissatisfied, 2—dissatisfied, 3—somewhat dissatisfied, 4—somewhat satisfied, 5—satisfied, 6—extremely satisfied	Spinal manipulative therapy (high velocity, low amplitude spinal manipulation of the cervical and upper thoracic spine) delivered by a chiropractor Groups included: 0 sessions of SMT and 18 sessions of light massage	Minimal light massage (gentle effleurage and gentle percussage of the neck and shoulder muscles) delivered by a chiropractor Groups included: 0 sessions of SMT and 18 sessions of light massage
Haneline (2006)	United States	To determine whether patients with acute neck pain managed with chiropractic manipulative therapy benefited from chiropractic care and their satisfaction	n = 94 acute neck pain patients, mean age = 39.6 (15.7), 60 females (64%) and 34 males (36%)	Private chiropractic clinics	Cross-sectional survey	Patient satisfaction (6-point satisfaction scale—1 “very satisfied” to 6 “very dissatisfied,” questions on likelihood of choosing chiropractic care again, choosing which provider helped their condition the most)		
Hays et al (2020)	United States	To evaluate the perceptions of chronic low back pain and neck pain patients receiving chiropractic care	n = 1835 patients with chronic low back pain or neck pain (mean age = 49), 74% female, 26% male	Private chiropractic clinics	Cohort study—baseline and 3 month follow up	Patient perceptions of care including communication and global rating of the provider (items from the CAHPS Clinician & Group Survey and additional items)		
Hermansen and Miller (2008)	Norway	To gain an insight into everyday life and the struggles of an ADHD child having undergone chiropractic care as perceived by their mothers	n = 5 mothers, with in total 6 children with ADHD, age range 6-16 years, 3 females, 3 males	Single chiropractic clinic	Qualitative study—phenomenological study with semistructured interviews	Semistructured interviews		
Houweling et al (2015)	Switzerland	To compare differences in pain levels, change in overall health, and	n = 719 participants with spinal, hip, or shoulder pain. Medical care—n = 403, mean age =	First-contact care patients who previously contacted the Swiss	Retrospective cohort study—baseline and 4 months	Patient satisfaction (5-point likert scale, ranging from very satisfied to very unsatisfied)		

(continued)

Table 2. (continued)

Reference	Country	Aims	Participants	Setting of chiropractic care	Study design	Specific patient satisfaction/ experience measures	Chiropractic intervention group	Control or comparison groups
Lammers and Bolton (2016)	The Netherlands	patient satisfaction in those seeking care from medical doctors and chiropractic	45.7 (13.87), female 162 (40%), male 88 (22%). Chiropractic—n = 316, mean age = 41.3 (12.93), female 132 (42%), 74 (23%)	telemedicine provider regarding treatment advice, and who then consulted medical doctors or chiropractors regarding spinal, hip, or shoulder pain	Cross-sectional survey	Working alliance (Werkalliantievragenlijst—WAV-12 client version, rating each statement on 5-point Likert scale ranging from "seldom to never" to "always")		
Lammers and Bolton (2016)	The Netherlands	To describe the quality of the perceived therapeutic alliance by patients and chiropractors	n = 207 chiropractic patients, 118 females (57.0%), 84 males (40.6%), 5 missing (2.4%)	Patients receiving care from chiropractors working in private practice in the Netherlands	Cross-sectional survey	Working alliance (Werkalliantievragenlijst—WAV-12 client version, rating each statement on 5-point Likert scale ranging from "seldom to never" to "always")		
Leininger, Evans, and Bronfort (2014)	United States	To assess satisfaction with care after receiving spinal manipulation therapy for acute and subacute neck pain	n = 272 participants with acute and subacute neck pain. SMT group: n = 91, mean age 48.3 (15.2), female: 58.2%, HEA group: n = 91, mean age 48.6 (12.5), females 65.9%. MED group: n = 90, mean age: 46.8 (12.2), females: 72.2%	University affiliated clinics, licensed chiropractors with 5 years minimum clinical experience	Secondary data analysis of data from a randomized controlled trial—comparing spinal manipulative therapy, medication, home exercise and advice	Patient satisfaction (multidimensional satisfaction instrument, scored on a 1-5 scale: poor, fair, good, very good, excellent). Includes 2 subscales, information and general care, which are scored by summing and transforming results to 0-100 scales (0 = worst, 100 = best). Global satisfaction (1-7 scale, from 1 = "completely satisfied, couldn't be better" to 7 = "completely dissatisfied, couldn't be worse")	Spinal manipulative therapy, consisting of high velocity, low amplitude joint manipulation (diversified technique). Other therapies included light soft tissue massage, assisted stretching, heat or cold packs. Number of visits was determined by treating chiropractor	• Medication—provided by licensed physician at a pain management clinic and consistent of nonsteroidal anti-inflammatory drugs. The number of visits and choice of medication was at physicians' discretion. • Home exercise and advice—participants attended 2, 1h visits focusing on self-mobilization exercises for the neck and shoulders over a 2-week period. Participants were instructed to perform 5-10 repetitions of the exercises 6-8 times a day at home
Mace et al (2012)	United Kingdom	To explore whether specific aspects of chiropractic treatment styles influence satisfaction rates	n = 186 patients, 70% females, 30% males	3 chiropractic clinics	Cross-sectional survey (quantitative and qualitative)	Patient satisfaction (0-10 scale, and qualitative question—what they would change to improve satisfaction)		
MacPherson et al (2015)	United Kingdom	To explore patients' experiences and expectations of chiropractic care, perceptions of risks and benefits, and implications for chiropractors' fitness to practise	n = 544 current and former patients, mean age = 54.5. Female = 360 (66%), male = 180 (33%), missing 4 (0.7%)	Current and former patients of registered chiropractors	Cross-sectional survey	Patient experience was measured with a questionnaire (developed from literature and prior qualitative work)		
Maiers, Bronfort, et al (2014)	United States	To determine the relative short- and long-term effectiveness of	n = 241 older adults with chronic neck pain. Spinal manipulative therapy and home	University chiropractic clinic, delivered by 11 licensed chiropractors with a	Randomized controlled trial—comparing spinal manipulative therapy, supervised	Patient satisfaction (7-point scale from 1—completely satisfied, couldn't be better	Spinal manipulative therapy, consisting of high velocity, low amplitude joint	• Supervised exercise program—information and instruction for self-care of pain, light aerobic warm-

(continued)

Table 2. (continued)

Reference	Country	Aims	Participants	Setting of chiropractic care	Study design	Specific patient satisfaction/ experience measures	Chiropractic intervention group	Control or comparison groups
		spinal manipulative therapy with home exercise, supervised rehabilitative exercise and home exercise alone for older adults with chronic neck pain	exercise group: n = 80, mean age = 71.7 (5.2), 45.0% females. Supervised rehabilitative exercise and home exercise: n = 82, mean age = 72.6 (5.6), 51.2% females. Home exercise group: n = 79, mean age = 72.7 (5.3), 44.3% females	minimum of 5 year experience	exercise, and home exercise	to 7 completely dissatisfied, couldn't be worse)	manipulation (diversified technique). Other therapies included light soft tissue massage, assisted stretching, heat or cold packs. Number of visits was determined by treating chiropractor	up, instructions and monitoring of low load exercise with graded progression, and stretching, strength and balance exercises. Tailored to individual ability, delivered one-to-one by a therapist. 20 sessions. <ul style="list-style-type: none"> • Home exercise program —information and instructions for self-care of pain, stretching exercise, muscle strength and endurance exercises, balance exercises. Tailored to individual ability

(continued)

Table 2. (continued)

Reference	Country	Aims	Participants	Setting of chiropractic care	Study design	Specific patient satisfaction/ experience measures	Chiropractic intervention group	Control or comparison groups
Maiers, Vihstadt, et al (2014)	United States	To explore patients' perceptions and satisfaction of spinal manipulative therapy and exercise	n = 222 older adults (65+) with chronic neck pain, mean age = 72.2 (5.4), female = 47%	University chiropractic clinic, delivered by 11 licensed chiropractors with a minimum of 5 year experience	Mixed-methods study embedded in a randomized controlled trial comparing spinal manipulative therapy, supervised exercise, and home exercise	Qualitative interview questions around satisfaction and worthwhileness of care	Spinal manipulative therapy, consisting of high velocity, low amplitude joint manipulation (diversified technique). Other therapies included light soft tissue massage, assisted stretching, heat or cold packs. Number of visits was determined by treating chiropractor	<ul style="list-style-type: none"> Supervised exercise program —information and instruction for self-care of pain, light aerobic warm-up, instructions and monitoring of low load exercise with graded progression, and stretching, strength and balance exercises. Tailored to individual ability, delivered one-to-one by a therapist. 20 sessions. Home exercise program —information and instructions for self-care of pain, stretching exercise, muscle strength and endurance exercises, balance exercises. Tailored to individual ability
Maiers et al (2016)	United States	To explore patients' perceptions of and satisfaction with spinal manipulative therapy and home exercise with advice	n = 174 patients with chronic back-related leg pain, mean age = 57.0 (11.5), females 115 (66%), male 59 (34%)	Institution-affiliated research clinics based at 2 universities	Qualitative interviews following a randomized controlled trial comparing spinal manipulation therapy to home exercise and advice	Qualitative interview questions around satisfaction and worthwhileness of care	Up to 30 visits for spinal manipulation therapy, including high velocity, low amplitude thrust procedures or low velocity, variable amplitude mobilization maneuvers. Frequency of visits, treatment, and adjunct therapies were decided by the chiropractor. Patients also attended four home exercise and advice visits	Home exercise and advice was delivered one-to-one in four 1h visits, over 12 weeks. This included instruction and practice of positioning and stabilization exercises. These were individualized to patients. Patients were instructed to do 8-12 repetitions of each exercise every other day

(continued)

Table 2. (continued)

Reference	Country	Aims	Participants	Setting of chiropractic care	Study design	Specific patient satisfaction/ experience measures	Chiropractic intervention group	Control or comparison groups
Miller et al (2019)	United Kingdom	To investigate mothers' reports of infant condition after chiropractic care, satisfaction, and side-effects	n = 200 mothers, age of infants receiving care <12 weeks: n = 1583 (86%), > 12 weeks n = 256 (14%), 909 females (45%), males 1092 (55%)	Private chiropractors from 15 clinics, and within a teaching clinic	Cohort study—baseline and follow up (fourth visit or discharge visit)	Patient satisfaction (11-point scale)		
Moore et al (2020)	Australia	To estimate the features of headaches in patients presenting to chiropractic care, and to explore associations with headaches type and patient satisfaction with headache management by a chiropractor	n = 203 patients with headache, 72.9% female, 27.1% male. Majority of participants were aged between 51-65 years	Chiropractors participating in a PBRN	Cross-sectional survey	Patient satisfaction—"please select which option best describes your level of satisfaction with chiropractic management of your headaches"		
Myburgh et al (2016)	Denmark	To explore and describe healthcare encounters and perceived value in chiropractic practice	n = 12 patients for first consultation interview, 35 patients completed follow-up consultation interview, 11 patients had a first consultation videoed, 24 patients had a follow-up consultation videoed	Private practice	Mixed-methods study, interviews and observations	Patient experience (through qualitative interviews)		
Navrud et al (2014)	United Kingdom	To explore parent satisfaction with pediatric chiropractic care	n = 395 infants, aged 1 day up to 36 weeks, 174 females (44.1%), 221 males (55.9%). Data reported by parents	Chiropractic teaching clinic	Cohort study—baseline and discharge	Patient satisfaction (10-point scale, from 1 "not at all" to 10 "completely satisfied")		
Newell et al (2016)	United Kingdom	To explore the feasibility of collected health outcomes using a web-based PROM system within UK chiropractic practice	n = 1895 patients with low back or neck pain, mean age = 44.6 (13.0), 1010 females (53%), male = 885 males (47%)	Private practice	Cohort study—baseline and 90 days	Patient experience (rating their degree of patient-centredness in 5 domains: satisfaction with care, involved in decision making, explanation, and time, rating from "very good" to "very poor")		
Ryan et al (2018)	Australia	To compare the frequency and nature of complaints about chiropractors, osteopaths, and physiotherapists	n = 1139 complaints	—	Retrospective data analysis of national dataset (cross-sectional)	Patient dissatisfaction (complaints dataset). These are coded into domains (health, performance, conduct) and into 11 complaint issues (eg,		

(continued)

Table 2. (continued)

Reference	Country	Aims	Participants	Setting of chiropractic care	Study design	Specific patient satisfaction/ experience measures	Chiropractic intervention group	Control or comparison groups
Sadr et al (2012)	Canada	To explore the experience of chiropractic treatment for pregnant women with low back pain, and their chiropractors	n = 11 pregnant patients, age range 24-36	Chiropractor's actively seeing at least one pregnant patient	Qualitative study— semistructured interviews	Chiropractic treatment experience for their low back pain during pregnancy (semistructured interviews)		
Schulz et al (2019)	United States	To determine the short- and long-term effectiveness of spinal manipulative therapy with home exercise, supervised rehabilitative exercise and home exercise alone for older adults with chronic low back pain	n = 241 older adults (65 +) with chronic low back pain. Spinal manipulation therapy and home exercise group: n = 81, mean age 72.5 (5.6), females 46 (56.8%). Supervised rehabilitative exercise and home exercise group: n = 80, mean age = 73.6 (5.3), females 38 (47.5). Home exercise group: n = 80, mean age = 74.7 (5.6), females 40 (50.0%)	University chiropractic clinic, delivered by 11 licensed chiropractors with a minimum of 5 year experience	Randomized-controlled trial—comparing spinal manipulative therapy, supervised exercise therapy, and home exercise and advice	Patient satisfaction (7-point scale, from 1 = "completely satisfied, couldn't be better" to 7 = "completely dissatisfied, couldn't be worse")	Spinal manipulative therapy and home exercise. Manual treatment based on condition, adjunct therapies to facilitate spinal manipulative therapies. Number of visits and technique used was determined by chiropractor	<ul style="list-style-type: none"> Supervised exercise program—information and self-care of pain, light aerobic warm-up, instructions and monitoring of low load exercise with graded progression, and stretching, strength and balance exercises. Tailored to individual ability, delivered one-to-one by a therapist. 20 sessions. 60 min per sessions. Once a week. Home exercise program—information and instructions for self-care of pain, stretching exercise, muscle strength and endurance exercises, balance exercises. Tailored to individual ability. Delivered one-to-one by a therapist. 4 sessions. 45-60 min per session. Once a week

(continued)

Table 2. (continued)

Reference	Country	Aims	Participants	Setting of chiropractic care	Study design	Specific patient satisfaction/ experience measures	Chiropractic intervention group	Control or comparison groups
Stomski et al (2019)	Australia	To establish the use of person-centered care delivered by chiropractic students	n = 108 adults with nonspecific spinal pain, 59.4% male, 40.6% female, mean age = 36.3 (SD 13.8)	Three chiropractic teaching clinics	Cohort study—pain intensity measures at baseline, and experience measures at fourth consultation	Person-centered care in consultations (Consultation and Relational Empathy questionnaire), process involved in medical consultations for musculoskeletal disorders (Picker Musculoskeletal Questionnaire)		
Talmage et al (2009)	South Africa	To determine factors that may affect satisfaction levels of athletes receiving chiropractic care	n = 30 athletes, mean age = 35.6 (15.6), 63.3% male	Chiropractic care delivered by students in sport settings (surfing competition, bouldering competition, walk/run event)	Cross-sectional survey	Patient satisfaction (checklist of yes/no responses, including subscales of competence, humaneness, communication, and demeanor)		
Walker, Hebert, Stomski, Losco, and French (2013)	Australia	To examine the comparative effectiveness of a brief chiropractic intervention compared with sham treatment for participants with spinal pain	n = 183 patients with spinal pain. Usual care group: n = 92, mean age 56.9 (14.6), 39 females 42.4%. Sham group: n = 91, mean age 53.0 (14.3), 28 females (30.8%)	Eight chiropractors	Randomized controlled trial—usual chiropractic care compared to sham group	Treatment satisfaction (5 response options ranging from very dissatisfied to very satisfied, dichotomized in analysis)	Usual chiropractic care —chiropractors administered individualized chiropractic care in line with their usual treatment approach (2 treatments with approximately 1 week between treatments)	Sham group—detuned ultrasound, low impulse thrust randomly administered on and around the spine using an activator on its lowest output and through a tongue depressor to disperse any remaining force, randomly placed hand on the spine
Weigel et al (2014)	United States	To compare function, health, and satisfaction between chiropractic care and medical treatments in Medicare beneficiaries	n = 12 170 Medicare beneficiaries with diagnosis of musculoskeletal disease, sprains or strains of joints and muscles. Aged over 65. 37% male	Private chiropractic care covered by Medicare	Cross-sectional survey—national survey from Medicare	Patient satisfaction (addressing quality of care received, doctor's concern for overall health, costs, access, follow-up care, information, from the Medical Current Beneficiary Survey)		

(continued)

Table 2. (continued)

Reference	Country	Aims	Participants	Setting of chiropractic care	Study design	Specific patient satisfaction/ experience measures	Chiropractic intervention group	Control or comparison groups
Wells et al (2020)	United States	To explore older adults' perceptions of healthcare during a clinical trial for low back pain (primary care, parallel primary care and chiropractic care, collaborative primary and chiropractic care)	n = 115 older adults with low back pain, 64% male, 36% female, mean age = 72.9 (6.2)	Licensed chiropractors at a chiropractic research centre	Qualitative interviews (secondary data analysis)	Structured interviews (following a randomized controlled trial)	Chiropractic treatment consisted of mobilization, instrument assisted manipulation, and/or spinal manipulative therapy focused on the low back complaint	

Abbreviations: ADHD, Attention Deficit Hyperactivity Disorder; HEA, home exercise with advice; MED, medication; NHS, National Health Service; PBRN, Practice-Based Research Network.

to be satisfied with the results of care (OR: 1.52 [1.15-2.02]).³¹ Gaumer, Gemmen³² reported that patients with prior experience of chiropractic care compared to none were less satisfied with other health care providers (87.3% satisfaction compared to 97.3% respectively). In a study of Medicare beneficiaries ($n = 12\ 170$) with a diagnosis of musculoskeletal disease visiting either private chiropractic care or medical care, those receiving chiropractic had higher satisfaction with follow-up after initial visit and with information provided about what was wrong with them.³³

Haas, Sharma, Stano³⁴ followed a cohort of patients who chose chiropractic care compared to medical care. Patient satisfaction significantly favored chiropractic care with satisfaction scores of 86.4% for chronic patients and 90% among acute patients, whereas for medical doctors these scores were 71% and 76%, respectively. Furthermore, using a healthcare attitudes scale, trust in chiropractors was around 95% in those patients choosing chiropractic care whereas this figure was around 60% in those choosing medical care. Additionally, confidence in the provider of choice was 83% to 93% and 61% to 75% for those choosing chiropractors and medical doctors, respectively.

Satisfaction and Dissatisfaction With Chiropractic Care

An in-depth exploration of satisfaction and quality judgments by Canadian patients explored their experiences of visiting physicians and chiropractors.³⁵ Chiropractic care was judged predominantly on treatment outcomes where high satisfaction was associated with positive outcomes and low satisfaction with less positive outcomes. Chiropractors' diversity of treatment options and the perceived ability to handle multiple problems simultaneously generated high satisfaction. Cost was not a factor for dissatisfaction in chiropractic care despite patients attending chiropractic care 5 times more often on average than seeing their physician.

As an alternative to satisfaction Ryan, Too, Bismark³⁶ looked at patient complaints comparing chiropractic, physiotherapy, and osteopathic settings in Australia. Chiropractors had significantly higher complaints than both osteopaths (3 times higher) and physiotherapists (6 times higher). Concerns around professional conduct accounted for half of all complaints with male practitioners, individuals over 65 years of age, and those practicing in metropolitan areas at higher risk of complaints. Among chiropractors only, around 1 in 100 practitioners were subject to more than one complaint. This accounted for 36% of all complaints within the profession suggesting that a small number of individuals significantly skew professional dissatisfaction from patients.

Factors Impacting Chiropractic Patient Satisfaction

Treatment outcomes and reactions were suggested to impact patient satisfaction scores. In qualitative interviews with patients receiving spinal manipulative therapy or exercises,

Table 3. Results From RCTs Where Satisfaction was Measured With Chiropractic Care Versus a Comparator.

Authors	Condition	Intervention (s)	Comparator (s)	Superior satisfaction with chiropractic care (✓)		Notes
				Group comparisons	Follow up (weeks)	
Bronfort et al (2011)	Chronic LBP	SMT	SET, HEA	SMT v HEA SMT v SET	4 (x) 12 (✓) 26 (x) 52 (x) 4 (x) 12 (x) 26 (x) 52 (x)	SET was superior to SMT in terms of satisfaction at week 4
Bronfort et al (2012)	Subacute NP	SMT	MED, HEA	SMT v MED	12 (✓) 26 (✓) 52 (✓)	
Bronfort et al (2014)	Subacute and chronic back related leg pain	SMT + HEA	HEA	SMT v HEA (SMT + HEA) v HEA	12 (✓) 26 (✓) 52 (✓) 12 (✓) 52 (✓)	
Goertz et al (2013)	Acute LBP	CMT + SMC	SMC	(CMT + SMC) v SMC	2 (✓) 4 (✓)	
Goertz et al (2018)	LBP (any duration)	CMT + SMC	SMC	(CMT + SMC) v SMC	6 (✓)	
Haas et al (2018)	Chronic cervicogenic headache	MT	MLM	SMT6 v MLM SMT 12 v MLM SMT 18 v MLM	6 (✓) 12 (✓) 24 (✓) 39 (x) 52 (✓) 6 (✓) 12 (✓) 24 (✓) 39 (✓) 52 (✓) 6 (✓) 12 (✓) 24 (✓) 39 (✓) 52 (✓)	Both study sites showed greater satisfaction with CMT SMT was delivered at a frequency of either 6, 12, or 18 times over 6-week period compared to MLM. Higher satisfaction was seen in more frequent SMT regimes (12 and 18)
Leininger et al (2014)	NIP	SMT	MED, HEA	SMT v MED SMT v HEA	12 (✓), 52 (✓) Information general 12 (x), 52 (x) Information general 12 (✓), 52 (✓) general care	SMT had superior satisfaction concerning general care (including provider concern, quality of treatment recommendation, and overall care) and information provided (including cause, prognosis, activities to hasten recovery, and prevention). SMT had greater satisfaction concerning general care than home exercise. Satisfaction with general care had a stronger relationship with global satisfaction compared to satisfaction with information provided
Maiers, Bronfort, et al (2014)	Subacute or chronic LBP	SMT + HE	HE, SRE + HE	(SMT + HE) v HE SMT + HE) v (SRE + HE)	12 (✓), 52 (✓) 12 (x), 52 (x)	
Schulz et al (2019)	Chronic LBP	SMT + HEP	HEP, SEP + HEP	(SMT + HEP) v HEP SMT + HEP) v (SEP + HEP)	12 (✓), 26 (✓) 12 (x), 26 (x)	
Walker et al (2013)	Spinal pain	SMT	Sham	SMT v Sham	2 (✓)	Awareness of treatment assignment and achieving minimally important improvement in pain intensity were associated with chiropractic treatment satisfaction

Abbreviations: CMT, Chiropractic Manipulative Therapy; HE, home exercise; HEA, home exercise with advice; MED, medication; HEP, home exercise program; MLM, minimal light massage; MT, manual therapy; SET, supervised exercise therapy; SMC, standard medical care; SRE, supervised rehabilitative exercise; SEP, Supervised Exercise Program.

common determinants of satisfaction were perceived treatment effect and changes in pain.³⁷ Similarly, negative treatment outcomes conversely influenced satisfaction. In a cohort study following patients' outcomes of chiropractic care, patients had a mean score of 9.1 out of 10, but their satisfaction was negatively impacted if they perceived they had symptomatic reactions and were 19% more likely to report "poor" satisfaction (95% confidence interval [CI] 0.78-1.79).³⁸ These findings are similar with parental satisfaction with pediatric chiropractic care,²⁴ with moderate negative correlations between distress after care and parental satisfaction (-0.31) and moderate positive correlations between improvement scores and parental satisfaction (0.42).

From qualitative interviews embedded in a randomized controlled trial, content analysis was used to identify the common determinants of satisfaction.³⁷ Participants felt that the interaction with clinicians and their attributes were important, as well as information regarding exercises, tailored care, and information on the cause, prevention and prognosis of the condition.³⁷ In sport settings, where chiropractic care was delivered by students, satisfaction levels were statistically significantly linked to patients' ratings of their assessment ($P = .005$), the communication of the student ($P = .006$), their views of student competence ($P = .01$) and conduct of the student ($P = .036$).³⁹

In private chiropractic clinics in the United States, chronic low back pain and neck pain patients' global ratings of their care were positively associated with the length of time they had been receiving chiropractic care prior to the study ($r = 0.07$; $P < .05$), length of time seeing the chiropractor in the study ($r = 0.09$; $P < .0001$), number of visits to the chiropractor in the study ($r = 0.05$; $P < .05$).¹⁸ Previous experience of chiropractic care was associated with patient satisfaction levels in athletes receiving chiropractic care in sports settings.³⁹

Included studies explored organizational issues with care most often waiting times, length of consultations, care delivery settings and costs. In a study by Brown, Bonello, Fernandez-Caamano, Eaton, Graham, Green⁴⁰ a large proportion either strongly agreed or agreed that they were satisfied with waiting times and the length of consultation times for chiropractors (92.9% and 94.6%, respectively). Similarly, patients' expectations that their chiropractor would allow sufficient time for their consultation were substantively met with 97% indicated that this has happened⁴¹ or that the consultation time was the right amount (84.5%).⁴² MacPherson, Newbronner, Chamberlain, Hopton⁴¹ also reported that in terms of the clinical setting, more than 90% of patients' expectations and experiences corresponded.

Patient Experiences With Chiropractic Care

An observational study used the Consultation and Relational Empathy questionnaire within a chiropractic teaching clinic.⁴² High proportions of patients (88%-97%) scored "very good" or "excellent" across all questions. In addition, 45.4% of participants achieved the maximum score. However, the authors suggest that the student patient

encounter may skew scores, particularly in relation to the increased time students spend with patients.

Foley, Steel, Adams⁴³ explored the perceived experience of patients presenting with chronic conditions to complementary medicine setting including chiropractic care compared to medical care. Using the Perceived Provider Support Scale, higher scores were also found for chiropractors compared to medical doctors around issues including caring, acceptance, personal attention, talking openly, and trust.

Patient experiences are not universally positive. In a cross-sectional survey of chiropractic patients in the United Kingdom, despite chiropractic patients reporting a high level of satisfaction, patients' expectations were least well met concerning information on the cost of the treatment at the first consultation.⁴¹ There were also mismatched expectations concerning the chiropractor's contact with the patient's general practitioner and referral to other healthcare professionals, which did not happen as frequently as expected.⁴¹

In qualitative work, patients valued their interaction with their chiropractor: "Everyone was always courteous, kind, friendly...willing to answer any questions".⁴⁴ Participants appreciated being listened to and valued the opportunity to express their concerns. This was noted as important for patients throughout the lifespan, from children seeking chiropractic care and feeling their condition was being taken seriously⁴⁵ to older adults receiving care.⁴⁶ Patients valued the professionalism of their practitioners, which they noted in the way chiropractors communicated with them. In general chiropractic practice⁴⁷ and following a randomized trial of chiropractic care⁴⁶ patients valued effective communication of their diagnosis and the treatment plan. This was also reflected in pregnant patients' experiences of seeking chiropractic treatment, with participants noting their chiropractor explaining their condition, and involving the patient in developing a management plan.⁴⁸ Patients wanted help for their diagnosis and were appreciative of any individualized help advice including referrals to other healthcare professionals.⁴⁶

Studies also explored the relationship between patients and their chiropractor. In patients receiving care for chiropractors in the Netherlands, patients completed the WAV-12 to measure working alliance between the chiropractor and the patient.⁴⁹ Their mean score was 49.14 (standard deviation [SD] 7.12) rated out of 60. The mean patient score, measured on a 1 to 5 Likert scale was 4.09 (SD ± 0.59), with 5 representing an optimal alliance.⁴⁹ In a study comparing perceived support between chiropractic care and medical care, mean perceived support was higher for chiropractic care, this included components such as: practitioner caring about patient, practitioner accepting patient, trust for practitioner, talking openly with practitioner.⁴³ Trust was also examined in chiropractic teaching clinics, with 84.3% of participants reporting trusting their student chiropractor. Elements of the therapeutic relationship were also noted in qualitative literature, with participants noting that compassion, enthusiasm, genuineness, and helpfulness were important for their relationship.⁴⁶

Discussion

This systematic review provides a comprehensive overview of patient satisfaction with chiropractic care finding that patients reported high levels of satisfaction and positive experiences with their care. Patient experiences are more positive across several important domains including empathy, patient centredness, and perceived support when compared to medical doctors. Generally, where substantive clinician time or attention was involved, patients were more satisfied. Patients noted good communication, being listened to, the development of a strong therapeutic relationship and key traits such as trustworthiness and caring as being central in underpinning positive experience.

The findings of this work suggest the need for an explanation for high levels of satisfaction. For example, it is known that chronic pain patients can face long waits in seeking help without satisfaction from mainstream healthcare sources with minimal contact time with clinicians and poor experiences.⁵⁰ One explanation may be that compared with such negative experiences, attending care in a private setting where clinicians may have more time to communicate and spend time caring, higher satisfaction levels are reported. In this case, it is not clear, whether high satisfaction and good experiences are due to the chiropractic care itself or because of the relative experiences encountered in past health seeking activity. Furthermore, patient choice seems important in determining satisfaction levels and little is available outside of condition-based categorisation³ within the literature that explores the underlying reasons for such choices in patients seeking and maintaining the use of chiropractic care.

Interestingly, satisfaction levels and positive patient experiences reported here were not associated with either technical or manipulative elements of the chiropractic encounter but often with perceptions of good communication, good relationships, trust, and care. Indeed a strong theme around the value of good communication was also found in a recent General Chiropractic Council survey of public perceptions of chiropractic care and chiropractors.⁵¹ There is ample evidence to suggest that such contextual elements are centrally important in generating positive outcomes⁵²⁻⁵⁴ and it is important for the profession to continue to develop a more complete understanding concerning the entirety of the therapeutic encounter, including patient practitioner relationships, as impactful in generating both clinical and experience related positive outcomes. For practitioners caring for patients, empathy, communication, and building trust are central to their patients' positive experience along with a highly patient centered clinical paradigm. It is important that these skills and approaches are prioritized in therapeutic encounters.

Our study has several limitations. The study only focused on published manuscripts in English. There may be unpublished, or studies conducted and published in another language that have not been included which may have provided additional or contrasting findings. With some

limited details on patient recruitment and variety of setting of chiropractic care, this has the potential for respondent bias and limited understanding on generalizability. However, given this review included studies in diverse settings and geographies, with a range of quantitative methodological designs and supportive qualitative work all pointing strongly in the same direction, it is unlikely that further studies concerning general satisfaction levels will change the overall positive conclusions. Further work should focus on factors that impact on patient satisfaction and how these can be improved to enhance patient experience, such as communication.

Conclusion

This systematic review suggests that high and consistent levels of both satisfaction and positive experiences are widely reported in the literature concerning patients undergoing chiropractic care. This was independent of study design, presenting conditions, age groups, and referral routes. Factors influencing satisfaction included clinical outcomes as well as the patients' interaction with their chiropractor. Further research is required to explore the underlying reasons for the predominately positive experience including the influence of patient-practitioner relationships to generate positive experiences and clinical outcomes.

Authors' Contributions

MH ran the search. MH and DN completed article selection, data extraction, and synthesis. Both authors were involved in the write-up.


Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The authors disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This work was supported by the General Chiropractic Council.

ORCID iD

Michelle M Holmes  <https://orcid.org/0000-0002-6018-2235>

References

1. Royal College of Chiropractors. *Chiropractic competencies & skills: management of low back & radicular pain*. Royal College of Chiropractors; 2015.
2. Carey PF, Clum G, Dixon P. *Final report of the identity consultation task force*. Canada: World Federation of Chiropractic; 2005.
3. Beliveau PJH, Wong JJ, Sutton DA, et al. The chiropractic profession: a scoping review of utilization rates, reasons for seeking care, patient profiles, and care provided. *Chiropr Man Therap*. 2017;25(1):35.

4. Masaracchio M, Kirker K, States R, Hanney WJ, Liu X, Kolber M. Thoracic spine manipulation for the management of mechanical neck pain: a systematic review and meta-analysis. *PLoS ONE*. 2019;14(2):e0211877.
5. Rubinstein SM, de Zoete A, van Middelkoop M, Assendelft WJJ, de Boer MR, van Tulder MW. Benefits and harms of spinal manipulative therapy for the treatment of chronic low back pain: systematic review and meta-analysis of randomised controlled trials. *Br Med J*. 2019;364:l689. doi:10.1136/bmj.l689
6. Gaumer G. Factors associated with patient satisfaction with chiropractic care: survey and review of the literature. *J Manipulative Physiol Ther*. 2006;29(6):455-462.
7. Fitzpatrick RM. Patient satisfaction. In: Baum A (ed.) *Cambridge handbook of psychology, health and medicine*. Cambridge University Press; 1997; 301-304.
8. Bergamino M, Vongher A, Mourad F, et al. Patient concerns and beliefs related to audible popping sound and the effectiveness of manipulation: findings from an online survey. *J Manipulative Physiol Ther*. 2022;45(2):144-152.
9. Hurst L, Mahtani K, Pluddemann A, et al. *Defining value-based healthcare in the NHS*. Centre for Evidence-Based Medicine Report; 2019.
10. Page MJ, McKenzie JE, Bossuyt PM, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *BMJ*. 2021;372:n71.
11. Markoulakis R, Kirsh B. Difficulties for university students with mental health problems: a critical interpretive synthesis. *Rev High Ed*. 2013;37(1):77-100.
12. Centre for Reviews and Dissemination. *Systematic reviews: CRD's guidance for undertaking reviews in health care*. University of York; 2009.
13. Popay J, Roberts H, Sowden A, et al. *Guidance on the conduct of narrative synthesis in systematic reviews*. Lancaster University; 2006.
14. Damaske D, McCrossin P, Santoro F, Alcantara J. The beliefs and attitudes of chiropractors and their patients utilising an open practice environment. *Eur J Integr Med*. 2016;8(4):438-445.
15. Mace R, Cunliffe C, Hunnisett A. Patient satisfaction and chiropractic style: a cross sectional survey. *Clinical Chiropractic*. 2012;15(2):92-93. doi:10.1016/j.clch.2012.10.041
16. Field JR, Newell D. Clinical outcomes in a large cohort of musculoskeletal patients undergoing chiropractic care in the United Kingdom: a comparison of self-and National Health Service-referred routes. *J Manipulative Physiol Ther*. 2016;39(1):54-62.
17. Haneline MT. Symptomatic outcomes and perceived satisfaction levels of chiropractic patients with a primary diagnosis involving acute neck pain. *J Manipulative Physiol Ther*. 2006;29(4):288-96.
18. Hays RD, Sherbourne CD, Spritzer KL, et al. Experiences with chiropractic care for patients with low back or neck pain. *J Patient Exp*. 2020;7(3):357-364.
19. Moore C, Leaver A, Sibbritt D, Adams J. The features and burden of headaches within a chiropractic clinical population: a cross-sectional analysis. *Complement Ther Med*. 2020;48:102276.
20. Newell D, Diment E, Bolton JE. An electronic patient-reported outcome measures system in UK chiropractic practices: a feasibility study of routine collection of outcomes and costs. *J Manipulative Physiol Ther*. 2016;39(1):31-41.
21. Alcantara J, Nazarenko AL, Ohm J, Alcantara J. The use of the patient reported outcomes measurement information system and the RAND VSQ9 to measure the quality of life and visit-specific satisfaction of pregnant patients under chiropractic care utilizing the Webster technique. *J Altern Complement Med*. 2018;24(1):90-98.
22. Alcantara J, Ohm J, Alcantara J. The use of PROMIS and the RAND VSQ9 in chiropractic patients receiving care with the Webster technique. *Complement Ther Clin Pract*. 2016;23:110-116.
23. Miller JE, Hanson HA, Hiew M, Lo Tiap Kwong DS, Mok Z, Tee YH. Maternal report of outcomes of chiropractic care for infants. *J Manipulative Physiol Ther*. 2019;42(3):167-176.
24. Navrud IM, Miller J, Eidsmo Bjørnli M, Hjelle Feier C, Haugse T. A survey of parent satisfaction with chiropractic care of the pediatric patient. *J Clin Chiropractic Pediatr*. 2014;14(3):1167-1171.
25. Goertz CM, Long CR, Hondras MA, et al. Adding chiropractic manipulative therapy to standard medical care for patients with acute low back pain: results of a pragmatic randomized comparative effectiveness study. *Spine (Phila Pa 1976)*. 2013;38(8):627-634.
26. Goertz CM, Long CR, Vining RD, Pohlman KA, Walter J, Coulter I. Effect of usual medical care plus chiropractic care vs usual medical care alone on pain and disability among US service members with low back pain: a comparative effectiveness clinical trial. *JAMA Network Open*. 2018;1(1):e180105.
27. Maiers M, Bronfort G, Evans R, et al. Spinal manipulative therapy and exercise for seniors with chronic neck pain. *Spine J*. 2014;14(9):1879-1889.
28. Schulz C, Evans R, Maiers M, Schulz K, Leininger B, Bronfort G. Spinal manipulative therapy and exercise for older adults with chronic low back pain: a randomized clinical trial. *Chiropr Man Therap*. 2019;27(1):21.
29. Bronfort G, Hondras MA, Schulz CA, Evans RL, Long CR, Grimm R. Spinal manipulation and home exercise with advice for subacute and chronic back-related leg pain: a trial with adaptive allocation. *Ann Intern Med*. 2014;161(6):381-391.
30. Amarin-Woods LG, Parkin-Smith GF, Cascioli V, Kennedy D. Manual care of residents with spinal pain within a therapeutic community. *Ther Communities*. 2016;37(3):159-168.
31. Houweling TA, Braga AV, Hausheer T, Vogelsang M, Peterson C, Humphreys BK. First-contact care with a medical vs chiropractic provider after consultation with a Swiss telemedicine provider: comparison of outcomes, patient satisfaction, and health care costs in spinal, hip, and shoulder pain patients. *J Manipulative Physiol Ther*. 2015;38(7):477-483.
32. Gaumer G, Gemmen E. Chiropractic users and nonusers: differences in use, attitudes, and willingness to use nonmedical doctors for primary care. *J Manipulative Physiol Ther*. 2006;29(7):529-39.
33. Weigel PA, Hockenberry JM, Wolinsky FD. Chiropractic use in the Medicare population: prevalence, patterns, and associations with 1-year changes in health and satisfaction with care. *J Manipulative Physiol Ther*. 2014;37(8):542-551.
34. Haas M, Sharma R, Stano M. Cost-effectiveness of medical and chiropractic care for acute and chronic low back pain.

- J Manipulative Physiol Ther.* 2005;2005(8):555-563. doi:10.1016/j.jmpt.2005.08.006
35. Crowther ER. A comparison of quality and satisfaction experiences of patients attending chiropractic and physician offices in Ontario. *J Can Chiropr Assoc.* 2014;58(1):24-38.
 36. Ryan AT, Too LS, Bismark MM. Complaints about chiropractors, osteopaths, and physiotherapists: a retrospective cohort study of health, performance, and conduct concerns. *Chiropr Man Therap.* 2018;26:12.
 37. Maiers M, Vihstadt C, Hanson L, Evans R. Perceived value of spinal manipulative therapy and exercise among seniors with chronic neck pain: a mixed-methods study. *J Rehabil Med.* 2014;46(10):1022-1028.
 38. Eriksen K, Rochester RP, Hurwitz EL. Symptomatic reactions, clinical outcomes and patient satisfaction associated with upper cervical chiropractic care: a prospective, multicenter, cohort study. *BMC Musculoskelet Disord.* 2011;12:219.
 39. Talmage G, Korporaal C, Brantingham JW. An exploratory mixed-method study to determine factors that may affect satisfaction levels of athletes receiving chiropractic care in a non-clinical setting. *J Chiropr Med.* 2009;8(2):62-71.
 40. Brown BT, Bonello R, Fernandez-Caamano R, Eaton S, Graham PL, Green H. Consumer characteristics and perceptions of chiropractic and chiropractic services in Australia: results from a cross-sectional survey. *J Manipulative Physiol Ther.* 2014;37(4):219-229.
 41. MacPherson H, Newbronner E, Chamberlain R, Hopton A. Patients' experiences and expectations of chiropractic care: a national cross-sectional survey. *Chiropr Man Therap.* 2015;23(1):51-68. doi:10.1186/s12998-014-0049-0
 42. Stomski N, Morrison P, Maben J, Amorin-Woods L, Ardakani E, Thérout J. The adoption of person-centred care in chiropractic practice and its effect on non-specific spinal pain: an observational study. *Complement Ther Med.* 2019;44:56-60.
 43. Foley H, Steel A, Adams J. Perceptions of person-centred care amongst individuals with chronic conditions who consult complementary medicine practitioners. *Complement Ther Med.* 2020;52:102518.
 44. Maiers M, Hondras MA, Salsbury SA, Bronfort G, Evans R. What do patients value about spinal manipulation and home exercise for back-related leg pain? A qualitative study within a controlled clinical trial. *Man Ther.* 2016;26:183-191.
 45. Hermansen MS, Miller PJ. The lived experience of mothers of ADHD children undergoing chiropractic care: a qualitative study. *Clin Chiropractic.* 2008;11(4):182-192.
 46. Wells BM, Salsbury SA, Nightingale LM, Derby DC, Lawrence DJ, Goertz CM. Improper communication makes for squat: a qualitative study of the health-care processes experienced by older adults in a clinical trial for back pain. *J Patient Exp.* 2020;7(4):507-515.
 47. Myburgh C, Boyle E, Larsen JB, Christensen HW. Health care encounters in Danish chiropractic practice from a consumer perspectives—a mixed methods investigation. *Chiropr Man Therap.* 2016;24:22.
 48. Sadr S, Pourkiani-Allah-Abad N, Stuber KJ. The treatment experience of patients with low back pain during pregnancy and their chiropractors: a qualitative study. *Chiropr Man Therap.* 2012;20(1):32.
 49. Lambers NM, Bolton JE. Perceptions of the quality of the therapeutic alliance in chiropractic care in the Netherlands: a cross-sectional survey. *Chiropr Man Therap.* 2016;24:18.
 50. Slade SC, Molloy E, Keating JL. 'Listen to me, tell me': a qualitative study of partnership in care for people with non-specific chronic low back pain. *Clin Rehabil.* 2009;23(3):270-280.
 51. General Chiropractic Council. *Public perceptions research: enhancing professionalism.* General Chiropractic Council; 2021.
 52. Ferreira PH, Ferreira ML, Maher CG, Refshauge KM, Latimer J, Adams RD. The therapeutic alliance between clinicians and patients predicts outcome in chronic low back pain. *Phys Ther.* 2013;93(4):470-478.
 53. Lakke SE, Meerman S. Does working alliance have an influence on pain and physical functioning in patients with chronic musculoskeletal pain; a systematic review. *J Compass Health Care.* 2016;3(1):1-10.
 54. Sheriff B, Clark C, Killingback C, Newell D. Impact of contextual factors on patient outcomes following conservative low back pain treatment: systematic review. *Chiropractic Manual Therap.* 2022;30(1):1-29. doi:10.1186/s12998-022-00430-8