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Global status of chiropractic education research and scholarly publications: a scoping review

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ABSTRACT

Objective: This scoping review aimed to map the volume (number of studies) and nature (topics and designs) of chiropractic education research and scholarly publications on chiropractic learners and programs worldwide.

Introduction: Despite the expansion of the chiropractic profession and its recognition by entities such as the World Health Organization, a gap exists in comprehending the international landscape of chiropractic education. No prior studies have systematically mapped the volume and nature of chiropractic education research and scholarly publications. A scoping review of chiropractic education research and scholarly publications is needed to guide future policy development, research agendas, and educational initiatives within the chiropractic profession.

Inclusion criteria: Publications in the indexed literature on chiropractic students, graduates, academics, and programs in any chiropractic education setting were included. Studies focused on chiropractic programs and education for chiropractic students or chiropractors worldwide were considered for inclusion. All research designs, literature reviews, descriptive studies, and commentaries were included.

Methods: This scoping review was conducted according to JBI methodology for scoping reviews and was reported in line with the Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR). The databases PubMed (NLM), Scopus, CINAHL via EBSCOhost, Index to Chiropractic Literature, Biblioteca Virtual em Saúde, and Educational Resources Information Center were searched from their inception to November 5 and 6, 2023, with no language limits. Data were extracted for primary topics, study designs, and regions of the included documents and entered in Covidence by paired independent reviewers. The findings were organized into figures and tables with a narrative description.

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The authors declare no conflicts of interest.

DOI: 10.11124/JBIES-24-00122

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Results: The search identified 7494 documents. After deduplication, 5041 were screened for relevance, of which 667 were selected for full-text review. From these, 598 were selected for data extraction. The chiropractic education topics included values/ethical competence (n=3), personal/behavioral competence (n=34), knowledge and cognitive competence (n=49), functional and clinical competence (n=93), and program-relevant research (n=419). Most designs were quantitative (n=391), followed by descriptive reports (n=91), qualitative (n=43), mixed methods (n=40), commentaries (n=22), and literature reviews (n=11). Chiropractic education was most studied in the United States (n=359), Australia (n=116), and Canada (n=106).

Conclusions: This scoping review reports the volume and nature of indexed publications relating to chiropractic learners and programs worldwide. This body of literature contains learner competencies in knowledge, skills, and attitudes, as well as studies about chiropractic programs. The increasing number of publications and proportion of study designs over time show that chiropractic scholars and programs are engaged in collecting, analyzing, and distributing data relevant to education and training. The map of professional competencies in the chiropractic education literature shows that the profession possesses the fundamental traits needed to contribute to the global health care workforce.

Review registration: Open Science Framework https://osf.io/9b3ap

Supplemental digital content: French- [http://links.lww.com/SRX/A94], Spanish- [http://links.lww.com/SRX/A93] Mandarin- [http://links.lww.com/SRX/A87], Portuguese- [http://links.lww.com/SRX/A88], Malaysian- [http://links.lww.com/SRX/A90], and Welsh-language [http://links.lww.com/SRX/A89] translations of the abstract are available.

Keywords: chiropractic; health occupations; health workforce; professional education

JBI Evid Synth 2025; 23(4):638–703.

Introduction

The World Health Organization's (WHO) "Health Workforce Requirements for Universal Health Coverage and the Sustainable Development Goals" describes the need for dedicated efforts to prepare the world's health workforce.[1] The WHO has called for an increase in the number of health workers to address the population's health needs.[2] Health care professionals must be educated in their core competencies to prepare them to meet the changing needs of their patients and health care systems.[3] Understanding the body of evidence in education and training for health professions is essential to developing the health care labor force and knowing how each profession contributes to better health provision. The quantity and quality of health care workers must be improved to meet the health care demands of a growing global population.[1-3]

Chiropractic is one of many health professions recognized by WHO. There are more than 100,000 chiropractors globally[4-6] and more than 50 chiropractic education programs worldwide.[7] The global presence affords access to chiropractic care for much of the world's population, but it also produces challenges due to differing scopes of practice and education requirements among jurisdictions.[8-10]

Little is known about the education of chiropractors globally. Therefore, we conducted a preliminary search of the existing literature using the American Educational Research Association's operational definition of *education research*: "the scientific field of study that examines education and learning processes and the human attributes, interactions, organizations, and institutions that shape educational outcomes."[11(para.1)] We searched PubMed, Scopus, Epistemonikos, *JBI Evidence Synthesis*, Cochrane Library, The Campbell Collaboration, and the Index to Chiropractic Literature to identify any existing evidence syntheses or scoping reviews about chiropractic education research. We also searched the International Prospective Register of Systematic Reviews (PROSPERO) and Open Science Framework. Although reports suggest that chiropractic education research has grown,[12,13] only 2 papers were found that summarized the body of chiropractic education publications.[14,15] The first study by Adams and Gatterman[14] was limited by the relatively small amount of literature and review methods at that time. The second study by Mrozek et al.[15]

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provided a 10-year update using similar methods. Our search found no reviews that systematically mapped and synthesized the state of chiropractic education research and publications. Therefore, the breadth and depth of the current body of chiropractic education research on a global level are unknown.

Education of the workforce is required for a profession to strategically plan; ensure relevance, applicability, and collaboration; and provide the best care to the public. We must first understand the current body of chiropractic education literature to develop professional competencies that prepare the chiropractic workforce. A review of the literature on the education of chiropractors is needed to describe the volume (number of studies) and nature (topics and designs) of publications. This information will help to identify where there may be gaps and provide a foundation for establishing priorities for areas of further research. Therefore, this scoping review aimed to map the volume and nature of chiropractic education research and scholarly publications relating to chiropractic learners and academic programs worldwide.

Review questions

i) What topics have been published in chiropractic education research and scholarly publications regarding chiropractic learners and programs worldwide?
ii) What research designs have been used in chiropractic education publications?

Inclusion criteria

Participants

This scoping review considered publications about chiropractic learners and chiropractic programs.[7,14,15] This review included publications that investigated or described chiropractic students pursuing a chiropractic degree in a chiropractic course or program, and graduates with chiropractic degrees pursuing ongoing studies, such as for continuing education.[7,14,15] This review also included publications about chiropractic programs, which focused on studying or measuring the overall academic program (curriculum, implementation, quality improvement), chiropractic academics (teaching faculty, administration, or staff), infrastructure, or accreditation.[7,14,15] Publications unrelated to education (ie, unrelated to the training of chiropractic learners or not associated with chiropractic education programs) were excluded.

Concept

This review focused on publications about chiropractic education and training. We included studies or descriptions of chiropractic education, including general knowledge acquisition, skills, and attitudes. These learning domains are often used to describe performance, competencies, and outcomes.[16,17] We included papers on descriptions or studies about chiropractic education, including chiropractic training programs, postgraduate training, continuing chiropractic education, and chiropractic competencies.[18] Relevant concepts related to chiropractic education and training included curriculum development, instructional methodologies, assessment practices, clinical skills training, interprofessional education, and student experiences. Publications unrelated to education, such as clinical research or articles about educating patients or other health care providers about chiropractic, were excluded. Publications were also excluded if the term *chiropractic* was misused, such as if it was used to mean *manipulation* but was not performed by a chiropractor.

Context

This review included publications about chiropractic education and training in all education and research settings, including chiropractic degree-granting programs, postgraduate education, and accreditation agencies. There were no geographic limits on this scoping review.

Types of sources

This scoping review included papers published in journals that were included in the indexed literature. Quantitative, qualitative, mixed methods studies; literature reviews; descriptive designs; and commentaries were included. Only publications from peer-reviewed journals were included. Peer review has been described as "the quality control mechanism in the entire ecology of the scholarly communication system."[19(para.155)] Although there are times when the inclusion of gray literature is beneficial,[20] the peer-review and revision processes required for publication in a scientific journal helps ensure that only the highest quality of evidence is published. The primary purpose of this scoping review was to map the volume and nature of peer-reviewed, published studies on chiropractic education. Therefore, only publications that met the rigor of the peer-review process were included. Publications that did not go through the

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peer-review and revision processes, such as letters to the editor, conference abstracts, and gray literature, were excluded.

Methods

This scoping review followed JBI methodology for scoping reviews[21] and was reported according to the Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR).[22,23] The review protocol was prospectively registered with Open Science Framework (https://osf.io/9b3ap) and published.[24] This review was reviewed by the National University of Health Sciences (Illinois, USA) institutional review board (RS2301) and deemed exempt. Demographics of the review team are presented in Appendix I.

Search strategy

The search aimed to identify publications published in peer-reviewed journals that met the inclusion criteria. An initial limited search of PubMed was performed to find articles on chiropractic education. Indexing terms and keywords from the titles and abstracts of relevant articles were used to develop a complete search strategy for PubMed. Publications in any language were considered because the context for this scoping review was global. The research team had international representation and was prepared to address any languages not published in English, either through direct translation or by hiring an interpreter if needed.

The search included PubMed (NLM), Scopus, CINAHL (EBSCOhost), Index to Chiropractic Literature Biblioteca Virtual em Saúde, and Educational Resources Information Center (ERIC) from database inception to November 5 and 6, 2023. Included were the relevant search engines that index health professions' education publications. The search began from the inception of each database to capture as much of the published literature as possible. The PRISMA extension for reporting literature Searches (PRISMA-S) was used.[25] The primary syntax was created for PubMed. Syntaxes for the other databases were made with the assistance of a health sciences librarian based upon this primary syntax. The search strategies are presented in Appendix II. The reference lists of included articles were inspected for additional sources. *The Journal of Chiropractic Education* was not indexed in PubMed until 2006, thus issues from 1987 through 2006 were hand-searched.

Source of evidence selection

References were uploaded into EndNote v.21 (Clarivate Analytics, PA, USA) and imported to Covidence (Veritas Health Innovation, Melbourne, Australia) where duplicates were removed. Any additional duplications that Covidence did not identify were removed during the screening process. Titles and abstracts were assessed by 2 independent reviewers using the inclusion and exclusion criteria, which were available in Covidence. Seventeen reviewers were involved in this step (LGAW, IA, KDB, JPC, BNG, NH, CDJ, CSL, CPM, KSM, JPM, SN, GS, GJS, SW, DW, YKW). Any titles and abstracts not in English were translated with Google Translate for inclusion/exclusion criteria screening. Google Translate is accurate for abstracting data from non-English studies for systematic reviews.[26] Any disagreements about inclusion and exclusion were resolved with a third reviewer. Following this, the potentially relevant papers were retrieved, and the full-text documents were assessed by 2 independent reviewers using the inclusion criteria. Reasons for excluding sources that did not meet the inclusion criteria during the full-text assessment stage were recorded. Any reviewer disagreements were resolved through discussion between the reviewers or by one or both principal reviewers. A PRISMA flow diagram includes the search findings and the source inclusion process.[27]

Training of reviewers

Before initiating the scoping review, we pilot-tested the process for Covidence and trained reviewers for inclusion/exclusion and coding accuracy using sample articles. The extraction instrument is reported in the protocol and was refined during training.[24] To increase data extraction accuracy and calibrate scoring, reviewers were trained to use the selection criteria and the data extraction tool in Covidence. We developed 4 rounds of training, which included videos: i) an overview and explanation of the purpose of the review, professional core competencies, inclusion/exclusion criteria, development and categories of the topic tool (described in later paragraphs); ii) topic tool categories were reviewed in detail with a demonstration of how to use the tool during data extraction; iii) explanation about how to perform title and full-text screening in Covidence; and iv) how to conduct data extraction in Covidence.

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The training rounds included case exercises, individual and group feedback, and virtual meetings. Reviewers were briefed with asynchronous training videos and live video orientation meetings. Training materials developed for this review were included on a webpage to distribute information efficiently so the reviewers could easily access content to master the methodology. Reviewers were trained to use a topic tool (Appendix III) to code the content of the included publications for data extraction through the training exercises. The extraction instrument reported in the protocol was further refined during training, based on reviewer feedback.[24] In addition to meeting virtually as a group, coauthors and the principal investigator met one-on-one when questions arose about the training process.

After each round of training and assessment, a summary report was distributed among the reviewers to give them their accuracy scores and feedback. The training report included accuracy scores (percentage of items correctly marked) and detailed feedback to explain the rationale for inclusion/exclusion and the accuracy of using the topic tool during data extraction. Consensus studies typically require a minimum of 75% agreement.[28,29] For this scoping review, the agreement for the dual-blinded reviewers was set at 100%. For training purposes, we arbitrarily set an 80% accuracy score for training exercises that each reviewer was required to achieve to participate in the review. For the fourth and final round of training, 32 reviewers completed the final test with an average accuracy score of 84.8% and a median of 86%. Only reviewers who had received training and demonstrated proficiency in selection and extraction participated in this review.

Topic tool

We searched for a preexisting tool to code education topics; however, none was found. Therefore, we developed the topic tool used for this review so that we could code the included publications. The Cheetham and Chivers model of professional competence was selected as the foundation for the topic tool.[16,17] This model of professional competence is well-recognized in higher education and provides a good fit for this review.[30-32] The key features of the Cheetham and Chivers model include overarching meta-competencies encompassing 4 primary categories of knowledge, function, behavior, and values, all of which combine to create overall professional competence.

Using the Cheetham and Chivers model as a scaffold, lead authors (CDJ, BNG) outlined a preliminary draft of a topic tool for coding to include chiropractic concepts. The tool included competencies related to preparing the chiropractic workforce for the day-to-day clinical practice situations that chiropractors manage and addressing the changing needs of patients and the health care system. The primary topic categories included in the topic tool were i) student knowledge and cognitive competence, ii) student functional competence, iii) student personal and behavioral competence, iv) student values and ethical competence, and v) studies about chiropractic educational programs. See Appendix III for more details for each category. Each category was intentionally made to be general and not all-inclusive or overly detailed, so that the coding would be feasible.

The content of the topic tool was verified against documents from the 4 primary global chiropractic accreditation agencies, which included the Council on Chiropractic Education, the European Council on Chiropractic Education, the Council on Chiropractic Education Australasia, and the Council on Chiropractic Education Canada.[33-36] Based on these findings, further refinements were made, including adding codes for chiropractic training programs to the topic tool, which were based on the accreditation agencies' documents. The codes for programs were included in the topic tool to accommodate publications that address information about education and delivery of chiropractic training (see Figure 1). The lead authors made sure that all items for all competencies and programs within the accreditation documents could be coded with the topic tool. There were no items in the topic tool that were not represented by at least 1 accreditation document. Then, the topic tool was reviewed by expert accreditation agency representatives and experienced users of these accreditation documents. Their input was used to revise the topic tool further before being tested during the training exercises. During the training process, the topic tool was further clarified and refined before the start of the review (see Appendix III).

Data extraction

For data extraction, 2 independent and blinded reviewers (one reviewer did not know the identity of the other reviewer) used the extraction instrument and entered data into Covidence.[24] For this review, we set a 100% agreement threshold, meaning that

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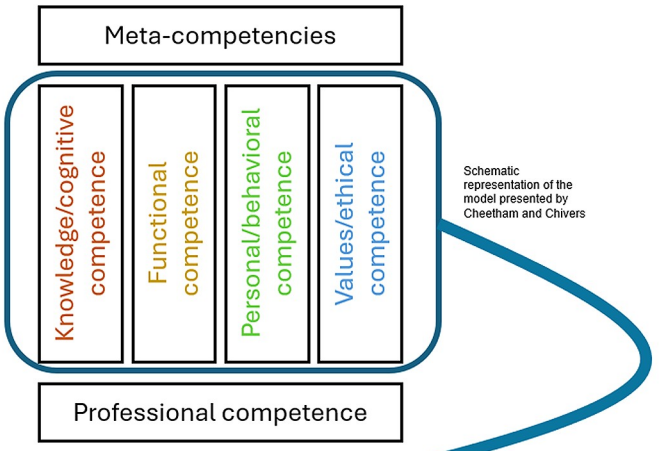
Figure 1: Representation of the development of the topic tool used for coding chiropractic education publications included in this review



Knowledge/cognitive competence	Functional competence	Personal/behavioral competence	Values/ethical competence	Chiropractic programs, infrastructure, and delivery
Knowledge of normal structure/function Knowledge of individual and population health Knowledge of evaluation Knowledge of research and science Knowledge of chiropractic principles Knowledge of abnormal structure/function Knowledge of chiropractic care Knowledge of patient needs Knowledge of sub-population needs Knowledge of the healthcare systems	Demonstrate manual therapies Demonstrate patient therapeutic education Demonstrate assessment Demonstrate critical thinking Demonstrate clinical reasoning skills Demonstrate practice management skills Demonstrate safety in the clinical environment Demonstrate patient health management Demonstrate patient communication Demonstrate supporting therapies	Demonstrate personal competence Demonstrate interpersonal and patient competence Demonstrate professional competence	Demonstrate professionalism Demonstrate practice and professional competence	Methods for teaching and learning Curriculum Student assessment Student support Faculty and staff Assessment and quality improvement Accreditation and requirements Resources Ethics Governance and administration

each reviewer had to agree on each item. Any items that did not match between the 2 reviewers were resolved through discussion or with a third arbitrating reviewer. Data extraction was performed by 25 reviewers (LGA, IA, KDB, DCB, JPC, PD, MF, BNG, NH, AGWH, CDJ, AJH, CSL, CPM, KSM, DM, JPM, SN, RMR, GS, SGBS, KLW, SW, DW, YKW).

The data extracted included details about the region of the chiropractic education study, the publication details (year, journal), and the study design. Reviewers were instructed to provide the most relevant item from the topic tool if the study had more than one topic. Any disagreements between the blinded reviewers were resolved with a third reviewer. If, by chance, a reviewer screened or extracted data on their research, potential biases and conflicts of interest were mitigated by blinded dual entry, and a third reviewer arbitrated any decisions that did not match 100%.

Data analysis and presentation

The results were organized by the category codes selected a priori by the topic tool. Topics were organized to demonstrate the prevalence of papers by professional competencies and program-related publications. A world map was created to illustrate the number of publications about chiropractic education in various world regions (Microsoft Excel, Redmond, Washington, USA). The studies were sorted by year and presented in a growth trend chart. The journals publishing the most papers and the frequency of

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publication over time were presented in a bar graph with explanatory table. The topics were organized into practical areas related to student competencies, such as knowledge, skills, and values/attitudes, and papers related to chiropractic programs. A separate paper will report a qualitative analysis of the keyword terms. All members of the review team gave input into reviewing and interpreting the data to provide a balanced worldview of the findings.

Results

Source inclusion

The searches resulted in 7494 papers identified. After deduplication, 5041 papers were screened. Of those screened, 4374 did not meet the inclusion criteria, resulting in 667 papers retrieved for full-text consideration. Sixty-nine papers were excluded during the full-text review, primarily because they were not about chiropractic education or training. Reasons for exclusion are included in Appendix IV. After the full-text screening, 598 papers remained for data extraction (see Figure 2).[27]

Characteristics of included sources

Appendix V presents the 598 publications published from 1971 to November 2023, listed chronologically within the 5 topic groups. All included publications were in English. Figure 3 shows the countries where chiropractic education was researched. The map represents the regions studied, not the authors' country or region. For example, an author in Australia may have studied education in the United States; thus, the focus of the study was recorded as the United States. The country most studied in the included sources was the United Studied (n=359), followed by Australia (n=116), Canada (n=106), and the UK (n=47). The following countries and regions were studied in fewer than 20 sources: South Africa (n=18), France (n=15), New Zealand (n=15), Denmark (n=12), Europe (n=11), Sweden (n=9), Malaysia (n=8), Spain (n=8), Brazil (n=6), and Switzerland (n=6). Twenty sources were identified as "other" or "unspecified."

Ten journals published the majority (86%) of the publications that focused on chiropractic (Figure 4). The overall number of publications related to chiropractic education increased over time. There was a shift in the proportion of education-related publications among 2 journals between 2005 and 2009. The *Journal of Chiropractic Education* began in 1987 and, in 2006, was indexed in PubMed, followed by Web of Science and Scopus. The *Journal of Chiropractic Education* is indexed with "other terms," not MeSH terms. Therefore, having the additional indexing systems allows the articles to be found. At the same time, the *Journal of Manipulative and Physiological Therapeutics* changed its scope to focus more on clinical research; therefore, education-related studies decreased in this journal.

Review findings

The study designs of the papers included quantitative (n=391), followed by descriptive reports (n=91), qualitative (n=43), mixed methods (n=40), commentaries (n=22), and literature reviews (n=11). The proportion of study designs over time is shown in Figure 5. This figure demonstrates growth in the number of quantitative study designs. In the earlier decades, descriptive studies were more common. Descriptive study designs continue to be published, but there are proportionately fewer of them.

Figure 6 reveals the topics with the greatest and least number of publications within each topic area. The chiropractic education topics identified included values/ethical competence (n=3), personal/behavioral competence (n=34), knowledge and cognitive competence (n=49), functional and clinical competence (n=93), and program-relevant publications (n=419). Most of the program-relevant publications were about teaching and learning methods, followed by curriculum, student assessment, governance/administration/programmatic, student support, and studies about faculty and staff.

Figure 7 shows the changes in the number of published studies over time based on their primary topics. The figure demonstrates the large number of chiropractic program-related topics and the proportional growth in professional competencies, especially over the past decade.

Discussion

This is the first scoping review to systematically analyze the body of research and scholarly publications related to chiropractic education and training. It identified topics about chiropractic education regarding chiropractic learners and programs worldwide, and mapped the research designs used in these publications.

This review builds upon the earlier studies by Adams and Gatterman[14] and Mrozek et al.,[15] which provided a snapshot of the early landscape of the

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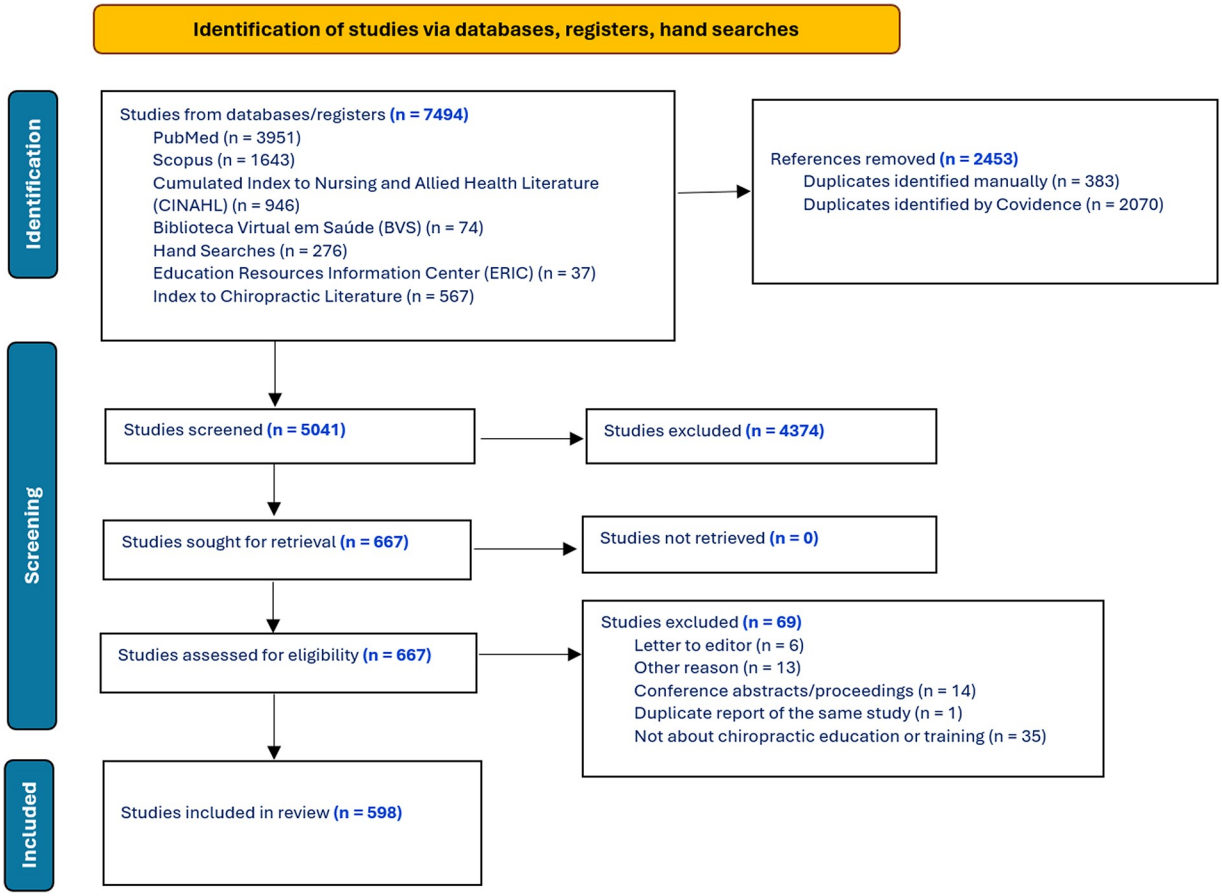
Figure 2: Search results and source selection and inclusion process[23]



literature on chiropractic education research. The narrative literature review by Adams and Gatterman considered the 1985 to 1996 chiropractic education literature.[14] Their paper was generated by an education study group working with chiropractic research agenda conferences through a consensus process. The authors noted at the time that most studies were descriptive. They called for the development of chiropractic education research "theory and science by defining research issues and questions for investigation and then underpin them with appropriate research methodology."[14(p.179)] The follow-up paper by Mrozek et al. used similar methods and updated the literature from 1997 to 2005.[15] Neither study included tabulated details of the literature. A prior analysis of the contents of the *Journal of Chiropractic Education* from 1987 to 2007 showed more descriptive studies, narrative reviews, and commentary publications than experimental educational research, survey research, quantitative analyses, or mixed method studies.[13] The findings of this study reveal steady growth in chiropractic education scholarly activity and publications. The present scoping review incorporates the entire body of evidence and imparts a longitudinal view of how publications on chiropractic education have evolved over the past several decades.

This scoping review fills a need for chiropractic education and training. The purpose of health care education is to produce health care professionals who embody the characteristics of their profession. A defining characteristic of a profession is that its members can demonstrate a specialized set of skills based on the requisite knowledge to carry out their professional tasks.[37-40] A profession determines its standards and controls who may enter the profession through admissions, training, accreditation, and

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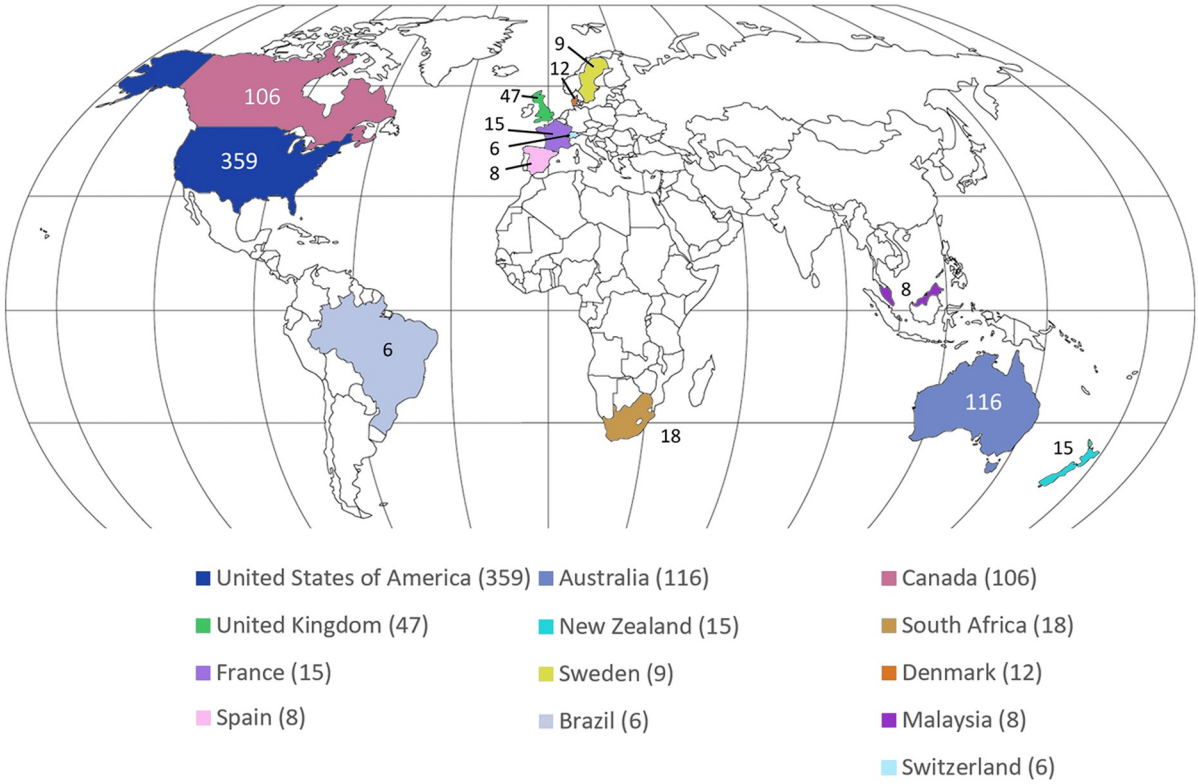
Figure 3: Distribution of geographic locations of the included publications



Some studies had more than one country or region of focus; thus, the tally is greater than the 598 included publications. Not shown in figure: Europe (n=11) and other non-specified (n=20). (Map created via Microsoft Excel)

licensing.[41] Professional bodies and their members are accountable to society, abiding by an ethical code of conduct demonstrating the profession's investment in social welfare.[37,38,40] As such, professionals are expected to lead, educate, and govern their profession.[39,42] Thus, a profession is responsible for being aware of its body of evidence, the content of its education programs, and how to adapt its education and skill set to the needs of the people it serves.

The primary purpose of this scoping review was to map the volume and nature of chiropractic education research and scholarly publications. The findings show that the body of work encompasses 2 major areas: research on professional competencies and programs. The professional competencies in this body of literature are congruent with the Cheetham and Chivers professional competency model.[16,17] This reflects the knowledge and cognitive competencies a chiropractic student must master before graduation. This knowledge is often learned in the program's early years, such as in basic and clinical sciences courses. However, such knowledge and cognitive competencies continue to be learned and reinforced throughout the program, such as during clinical training. Functional and clinical competencies are required in clinical practice and often surround patient care and clinical activities. The additional competencies, including values, professional, behavioral, and ethical competencies, relate to personal and professional practices.

We mapped the topics studied regarding chiropractic learners and programs worldwide. It is noticeable that some topics were studied more than others, although it is not known why. For example, there were more studies on manual therapies and fewer on ethics and professionalism. It is possible that the majority of program-related publications focused on teaching methods because this type of research is

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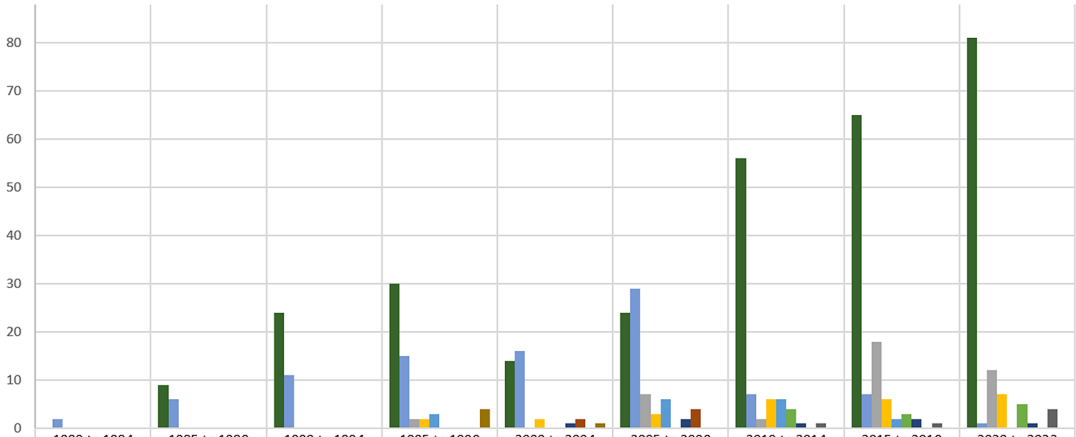
Figure 4: The top 10 journals most represented in the included chiropractic education publications, over time (n=517 out of 598 included sources)



	1980 to 1984	1985 to 1989	1990 to 1994	1995 to 1999	2000 to 2004	2005 to 2009	2010 to 2014	2015 to 2019	2020 to 2023
J Chiropr Educ (303)	0	9	24	30	14	24	56	65	81
J Manip Physiol Ther (94)	2	6	11	15	16	29	7	7	1
Chiropr Man Therap (41)	0	0	0	2	0	7	2	18	12
J Can Chiropr Assoc (26)	0	0	0	2	2	3	6	6	7
Chiro J of Austr (17)	0	0	0	3	0	6	6	2	0
Anat Sci Educ (12)	0	0	0	0	0	0	4	3	5
J Chiropr Med (7)	0	0	0	0	1	2	1	2	1
J Allied Health (6)	0	0	0	0	2	4	0	0	0
J Chiropr Humanit (6)	0	0	0	0	0	0	1	1	4
J of NMSK System (5)	0	0	0	4	1	0	0	0	0

relatively simple to complete and publish. Studies related to curriculum or student assessment require more time and resources due to their greater complexity. Some topics may be more interesting to chiropractic investigators or are more accessible to study rigorously, such as using force plates or adjusting manikins. Other topics may also lack interest or be more challenging to investigate; for example, professionalism and empathy are valued, but both are challenging topics to study.[43] Also, there may be topics that an institution may not wish to have under public scrutiny, such as student ethics or graduate practice behaviors. A qualitative analysis of how and why education researchers select their studies may help to answer questions about the density of publications per topic.

When and where the papers were published provides insight into the origins of chiropractic education research and scholarly publications. Chiropractic education and research grew slowly due to various challenges during the first century of the profession.[44-47] The first peer-reviewed journal indexed in PubMed began in 1978, and the first peer-reviewed journal dedicated to chiropractic education research and scholarship was established in 1987.[48,49] We noticed that publications increased temporarily from 1995 through 1999. The centennial year for the chiropractic profession was 1995, and more papers were likely stimulated by the many academic meetings and enthusiasm that occurred during that time.

More studies about chiropractic education were conducted in the North American region. This is likely because North America has approximately half of the accredited and longest-running chiropractic programs compared with other regions. The oldest accredited chiropractic program was established in the United States in 1897, and the first program outside the United States began in Canada in 1945.[7] Existing accredited chiropractic programs in other countries expanded in the following decades and included, but were not limited to, the United Kingdom (1965), France (1983), Sweden (1983), South Africa (1989), Australia (1990), New Zealand (1994), Denmark (1994), Brazil (2000), Spain (2007), Switzerland (2008), and Malaysia (2010).[7] Thus, the regions that have had chiropractic education programs the longest were the regions with more publications.

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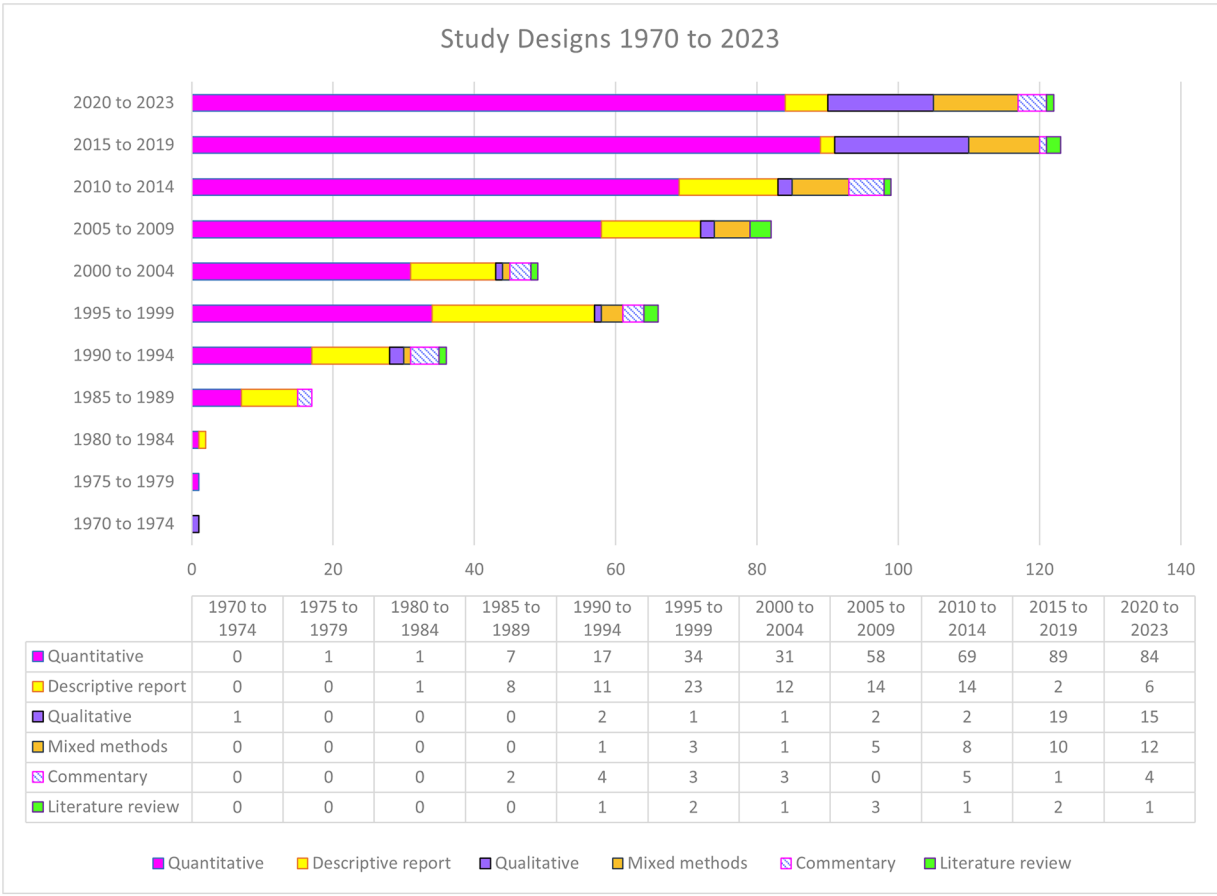
Figure 5: The number of study designs in the included chiropractic education publications over time (1970–2023), in 5-year increments



	1970 to 1974	1975 to 1979	1980 to 1984	1985 to 1989	1990 to 1994	1995 to 1999	2000 to 2004	2005 to 2009	2010 to 2014	2015 to 2019	2020 to 2023
Quantitative	0	1	1	7	17	34	31	58	69	89	84
Descriptive report	0	0	1	8	11	23	12	14	14	2	6
Qualitative	1	0	0	0	2	1	1	2	2	19	15
Mixed methods	0	0	0	0	1	3	1	5	8	10	12
Commentary	0	0	0	2	4	3	3	0	5	1	4
Literature review	0	0	0	0	1	2	1	3	1	2	1

Note that the last time block (2020 through November 6, 2023) represents 4 years.

This scoping review presents the study designs used more frequently in publications over time. Quantitative research had the greatest representation, which is similar to other professions,[18] while quantitative research designs have grown in proportion to other study designs over the past decades. There was an increase in qualitative research over the time period of the included publications, which suggests the development of more complex questions and inquiries. The number and type of research designs depend on the availability of research resources, which is a critical factor in scholarly productivity. Chiropractic programs in universities with research departments that support scholars (faculty, staff, and administrators) and research production have an advantage over those with fewer resources and less infrastructure. Regions that have more funding opportunities have greater capacity for doing education research.[50] Research culture among the chiropractic faculty and barriers to faculty scholarship are other considerations.[51,52] In addition to limited resources, another barrier for many faculty members is the high teaching load and administrative and academic service commitment requirements, which leave little time for research.[53,54]

Chiropractic as a contributor to the global health care workforce

Competency is "the habitual and judicious use of communication, knowledge, technical skills, clinical reasoning, emotions, values, and reflection in daily

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Figure 6: Number of included chiropractic education publications for each topic

Topics	Number of publications
Values/ethical competence (n=3)	
Demonstrate professionalism	3
Demonstrate practice and professional competence	0
Personal/behavioral competence (n=34)	
Demonstrate personal competence	15
Demonstrate interpersonal/patient competence	13
Demonstrate professional competence	6
Knowledge/cognitive competence (n=49)	
Knowledge of normal structure/function	11
Knowledge of individual and population health	11
Knowledge of evaluation	8
Knowledge of research and science	8
Knowledge of chiropractic principles	4
Knowledge of abnormal structure/function	3
Knowledge of chiropractic care	2
Knowledge of patient needs	1
Knowledge of sub-population needs	1
Knowledge of the healthcare systems	0
Functional and clinical competence (n=93)	
Demonstrate manual therapies	30
Demonstrate patient therapeutic education	13
Demonstrate assessment	11
Demonstrate critical thinking	11
Demonstrate clinical reasoning skills	10
Demonstrate practice management skills	8
Demonstrate safety in the clinical environment	4
Demonstrate patient health management	3
Demonstrate patient communication	3
Demonstrate supporting therapies	0
Information related to chiropractic programs, infrastructure, and delivery of chiropractic education (n=419)	
Methods for teaching and learning	154
Curriculum	85
Student assessment	58
Student support	42
Faculty/staff	31
Assessment and quality improvement	23
Accreditation and requirements	17
Resources	6
Ethics	2
Governance and administration	1

practice for the benefit of the individual and the community being served."[55(p.226)] Over the past several decades, health professions have been called to transform their education, discard outdated methods in favor of competency-based methods, and collaborate with other professions.[56] The present review mapped professional competencies included within chiropractic education publications. The findings

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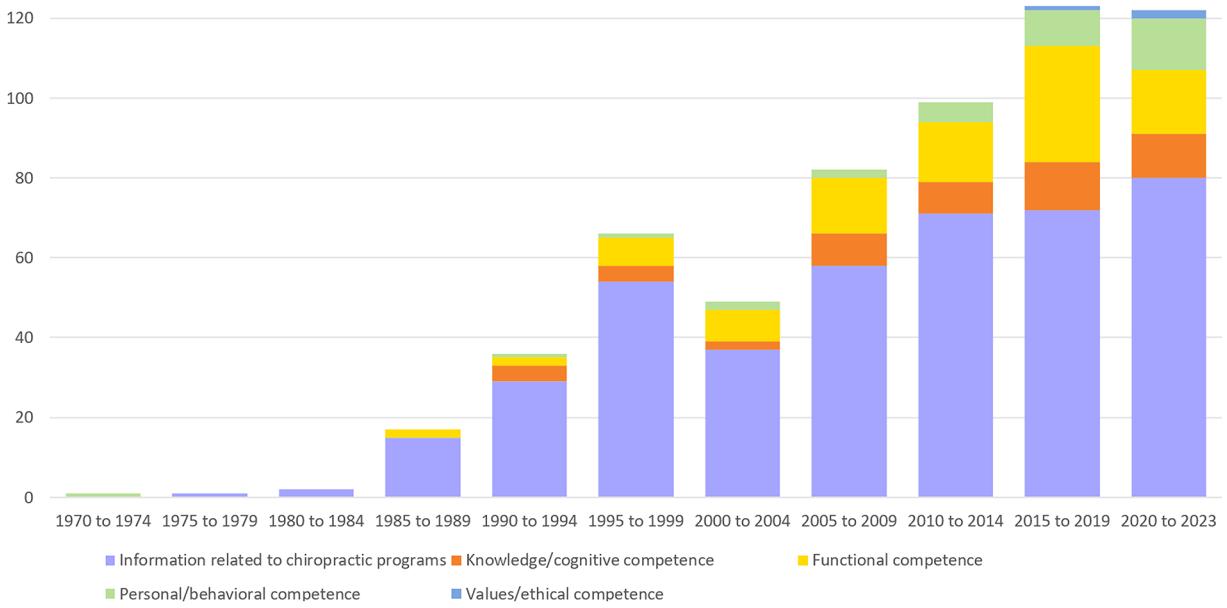
Figure 7: Distribution of the primary chiropractic education-related topics published between 1970 and 2023



show that the chiropractic education body of knowledge contains essential material to support competency-based education. These competencies include knowledge and cognitive competence, functional and clinical competence, personal and behavioral competence, and ethical competence. The findings of this scoping review suggest that the chiropractic education literature provides evidence that the profession possesses the fundamental traits needed to contribute to the global workforce.[1,57]

Recommendations for future research

In line with WHO statements on health workforce requirements for universal health coverage, more accurate research on graduate preparedness is needed to prepare the workforce.[1,2] Future quantitative analyses in chiropractic education research should explore authors' institutional affiliations by region, output per capita, and whether there are any engagement trends in educational research when comparing university programs to stand-alone chiropractic institutions. Interprofessional and intraprofessional education research collaborations may benefit programs and strengthen relationships between the health care professions. To enhance relevance, planning, and implementation, future research should include additional stakeholders such as patients, community leaders, regional/national governing bodies, funding bodies, accrediting agencies, chiropractic institutions/entities, chiropractic and other health professions' administrators, educators, students, and health care providers.

This review demonstrates that chiropractic education research has grown steadily. However, currently, there is no known strategic plan for future education research, therefore, an education research agenda is needed. Prior efforts have noted the need for an education research agenda and that future research studies should align with clinical practice.[58-61] The categories presented in this scoping review offer areas for exploration. For categories with sufficient evidence, detailed reviews, including quality assessment, could look at education trends. The review findings revealed categories with few or no studies, which are fertile grounds for new investigations.

This scoping review identified topics with more publications and those that have undergone less study. These findings inform education leaders and researchers as they plan their education research for the future. Additional high-quality studies may assist with a greater understanding of teaching and learning practices in chiropractic education and help better prepare the future chiropractic workforce. Research efforts

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should expand in areas of shared interest and under-researched topics. Actions could include identifying critical areas for future research that will best support the profession's future and the WHO's Health Workforce Requirements for Universal Health Coverage and the Sustainable Development Goals.[1]

As a next step, we aim to analyze the findings of this scoping review further. Then, through an international, interprofessional, consensus-driven process, we plan to develop a chiropractic education research agenda and identify health-related, population-specific, person-centered learning outcomes for chiropractic programs worldwide.

Strengths of the review

This review has several strengths. First, this is the first comprehensive and inclusive scoping review to analyze the global state of chiropractic education and training since its inception. This work provides the most accurate compendium of chiropractic educational research and publications to date. Second, the diverse and international expert author team, as described in Appendix I, provides depth, representation, and relevance to this review. The investigators were rigorously trained, improving the results' confidence and accuracy. Third, we used an established model of professional competencies as a foundation to analyze the contents, thereby facilitating the applicability and usefulness of the results.[16,17] Fourth, the comprehensiveness of this work can serve as a productive foundation for discussions focused on scholarly agenda-setting and prioritization for funded work in the profession's educational ranks. Designers of new academic programs and those in revision may draw on the findings of this study. The findings provide impetus to further research, to broaden the body of knowledge of chiropractic education and programs, and to allow for an analysis of the quality of chiropractic education and areas of future improvements. This review introduces innovation in educational research methodology by developing the topic tool (Appendix III) and the strategies to train the investigators. This methodology can be applied in future research projects.

Limitations of the review

We recognize several limitations of this scoping review. First, we did not include gray literature; thus, some information may have been missed, introducing bias that could theoretically impact the validity and relevance of the results. Second, due to time and resource limitations, we did not hand-search all journals; therefore, we may have missed papers published prior to some journals being indexed in PubMed or the Index to Chiropractic Literature, where the earliest citations are indexed. We addressed the potential limitations by using indexing systems that included chiropractic literature from before 1978. We recognize that we could not capture all studies. Still, the experienced authorship team is aware of the literature in this area, and we are confident that we have presented the literature to its best extent, given the inherent limitations of literature reviews. Third, for feasibility, papers were coded using the most relevant topic code; thus, only the major theme was coded per publication. Some studies may have had additional minor topics that were not coded; therefore, some details may not have been included. Fourth, the limited search terms used for CINAHL may have resulted in possible missed publications; however, there is considerable overlap between CINAHL and the other databases searched, so we do not consider this a substantial issue. And, lastly, to represent expertise and world regions, we included numerous reviewers, which may have resulted in some variance. However, all reviewers were trained, and we used a dual entry method with a third reviewer arbitrating if there was disagreement, thus mitigating regional variance that could have affected outcomes for this study.

Conclusions

This scoping review describes the volume and nature of indexed publications about chiropractic learners and academic programs worldwide. We found that, over the past 50 years, there has been tremendous growth in the volume of chiropractic education research and scholarly literature. From 4 papers in the first decade to 245 in the most recent decade, this increase in publications reflects a growing field with a solid commitment to improving educational experiences, methods, standards, and practices. This review shows that the nature of the body of literature contains topics related to learner competencies that span all professional competencies, including knowledge, skills, and attitudes within chiropractic programs. The findings of this review demonstrate that the chiropractic profession has begun to amass a body of work related to education and training. These

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findings can lead to more detailed studies to direct education policy decisions and future research.

This scoping review demonstrates that there was also breadth to the body of indexed publications related to chiropractic education and training, including topics related to professional competencies and chiropractic educational programs. The findings show an increasing number of publications, and the proportion of study designs show that many of the chiropractic scholars and programs are engaged in collecting, analyzing, and distributing data relevant to education and training. We observed a trend in the broadening of topics within chiropractic education research and scholarly publications, which may reflect the evolving complexities and the scope of chiropractic practice, resulting in a more comprehensive educational approach.

This review presents a list of topics representing chiropractic professional competencies and studies of chiropractic education programs. The list of the chiropractic core competencies substantiates the content needed for the chiropractic profession to be a contributor to the global workforce. The findings from this scoping review have potential application to practice, policy, and chiropractic education. These findings will help to prepare an international, interprofessional, consensus-driven process to develop a chiropractic education research agenda and to identify health-related, population-specific, person-centered learning outcomes for chiropractic programs worldwide.

Acknowledgments

Rhian Plenty, faculty librarian, Faculty of Life Sciences and Education, at University of South Wales; Peggy Carey, interlibrary loan assistant, National University of Health Sciences; Stephanie Bacon, senior librarian, New Zealand College of Chiropractic; and Segarani Naidoo, subject librarian, Durban University of Technology for their assistance in retrieving articles for this scoping review.

Author contributions

CDJ and BNG were involved in the initial conceptualization of this review. RI contributed to the literature search strategies. All authors were involved in the drafting and finalization of this review. All authors reviewed and approved the final version of the manuscript.

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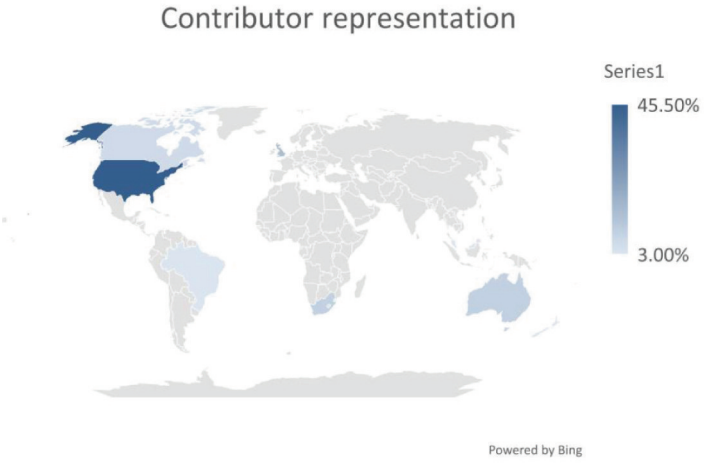
Appendix I: Demographics and training of scoping review team members

Author information (n = 33)



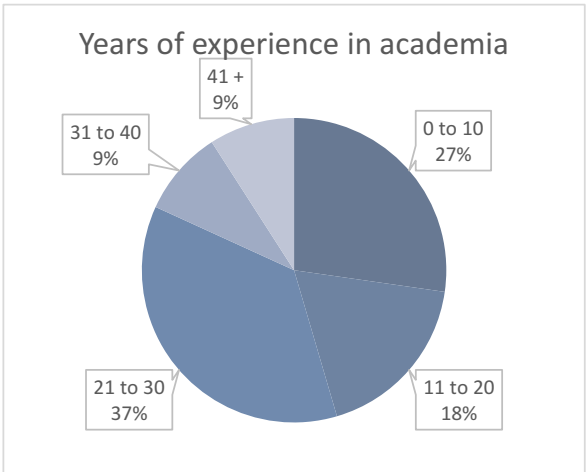
Country	Author representation of scoping workgroup	Portion of the global chiropractic workforce in this country as of 2017 according to the World Federation of Chiropractic
Australia	9.1%	5.20%
Brazil	3.0%	1.00%
Canada	6.1%	8.30%
Malaysia	3.0%	0.20%
New Zealand	3.0%	0.60%
Puerto Rico	6.1%	Not available
South Africa	9.1%	0.80%
United Kingdom	15.2%	3.10%
United States	45.5%	75.20%

Author diversity traits

The following is information regarding the authors of this scoping review. Sex representation was 14 women and 19 men. Self-reported race was 30 White, 1 Asian, 1 Chinese, 1 mixed-race and Hispanic Latin American. Additional self-reported diversity traits: 30 heterosexual, 1 lesbian/gay, 2 declined to answer. Other self-reported diversity traits included age older than 60 years, religion (Hindu), Southern Slavic ethnic background, and neurodiversity (autism).

Breadth and depth of experience by authorship group

The author group included 28 chiropractors. In addition, some authors had other designations, including physical therapist, librarian, dietitian, and radiologist. Additional degrees included a doctorate in education (n=3), master's degree in education (n=6), PhD or another doctorate (n=12), and master's or bachelor's degree in another area (n=24). Degrees represented included the fields of biology, biomedical science, chemistry, clinical biochemistry, clinical pharmacology, clinical research, clinical sciences, college science teaching, earth



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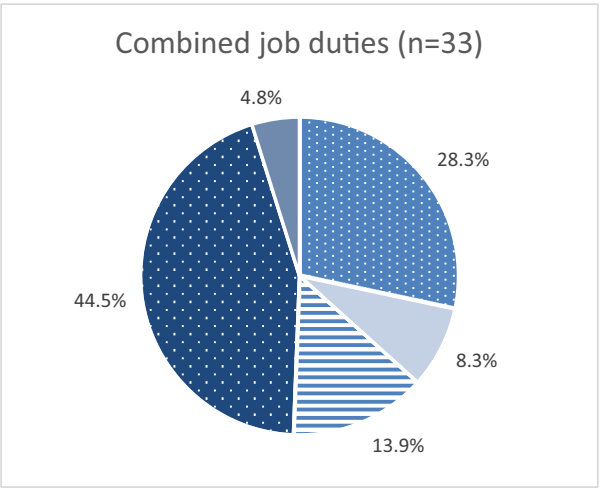
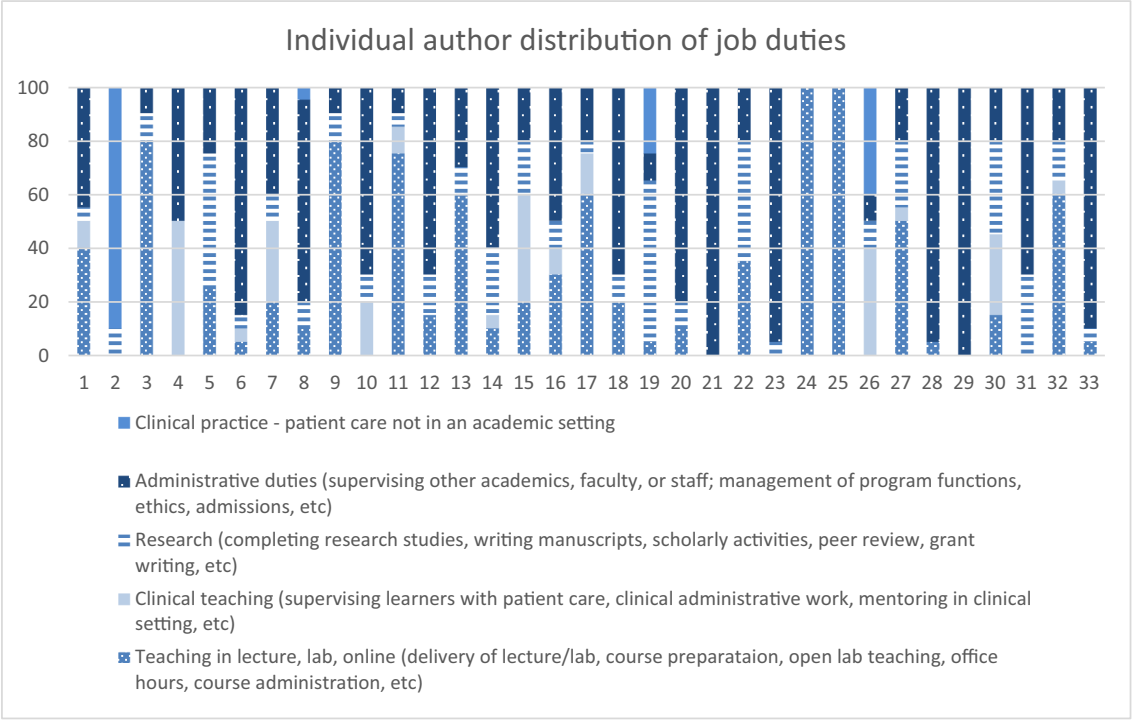
sciences, educational technology leadership, health professions education, health services administration, human biology, library science, medical education, microbiology, neuroscience, physiology, public health, and rehabilitation.

Percentage of authors and the number of years employed in academia: average: 21.4 years. Of the 33 authors, there is a total of 704 years employed in academia.





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Authors' 1 through 33 self-reported the percentage of time assigned to job duties, demonstrating the range of work combinations. Representation of authors' work duties as a group shows the breadth of experience and activities.

Global representation of review authors

The lead authors (CDJ, BNG), who have 60 years of combined experience in chiropractic education and additional credentials in health professions education, gathered a team of coauthors. The aim was to include representation of chiropractic education from the world regions and include diverse stakeholders (eg, administrators, faculty, accreditors) within the chiropractic academe. In January 2023, a call for interest was distributed broadly to more than 500 chiropractic educators and administrators worldwide through the Chiropractic Educators Research Forum and additional email communications. The invitation emphasized priority for those who previously or currently worked in chiropractic education and possessed research or publication experience. After reviewing the experience, qualifications, and demographics of the 56 people who expressed interest, 35 were invited to participate in this scoping review, and 33 completed the training. Because many chiropractors and chiropractic programs are in the United States, representation from regions outside was sought to improve global stakeholder input.

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Appendix II: Search strategy

PubMed

Search conducted: November 5, 2023, from date of inception; no language limits

Search	Query	Records retrieved
1	"chiropract*"[All Fields]	10,296
2	"education, professional"[MeSH Terms] OR ("education"[All Fields] AND "professional"[All Fields]) OR "professional education"[All Fields] OR ("education"[All Fields] AND "professional"[All Fields]) OR "education professional"[All Fields]	398,862
3	"curriculum"[MeSH Terms] OR "curriculum"[All Fields] OR "curricula"[All Fields] OR "curriculums"[All Fields] OR "curriculum s"[All Fields] OR "education"[MeSH Subheading] OR "education"[All Fields]	1,767,877
4	"education"[MeSH Subheading] OR "education"[All Fields] OR "teaching"[All Fields] OR "teaching"[MeSH Terms] OR "teaches"[All Fields] OR "teach"[All Fields] OR "teachings"[All Fields] OR "teaching s"[All Fields]	1,943,855
5	"educational measurement"[MeSH Terms] OR ("educational"[All Fields] AND "measurement"[All Fields]) OR "educational measurement"[All Fields]	174,950
6	"faculty"[MeSH Terms] OR "faculty"[All Fields] OR "faculties"[All Fields] OR "faculty s"[All Fields]	2,047,654
7	"student s"[All Fields] OR "students"[MeSH Terms] OR "students"[All Fields] OR "student"[All Fields] OR "students s"[All Fields]	471,891
8	"educability"[All Fields] OR "educable"[All Fields] OR "educates"[All Fields] OR "education"[MeSH Subheading] OR "education"[All Fields] OR "educational status"[MeSH Terms] OR ("educational"[All Fields] AND "status"[All Fields]) OR "educational status"[All Fields] OR "education"[MeSH Terms] OR "education s"[All Fields] OR "educational"[All Fields] OR "educative"[All Fields] OR "educator"[All Fields] OR "educator s"[All Fields] OR "educators"[All Fields] OR "teaching"[MeSH Terms] OR "teaching"[All Fields] OR "educate"[All Fields] OR "educated"[All Fields] OR "educating"[All Fields] OR "educations"[All Fields]	2,353,174
9	"education"[MeSH Subheading] OR "education"[All Fields] OR "training"[All Fields] OR "education"[MeSH Terms] OR "train"[All Fields] OR "train s"[All Fields] OR "trained"[All Fields] OR "training s"[All Fields] OR "trainings"[All Fields] OR "trains"[All Fields]	2,600,466
10	2 or 3 or 4 or 5 or 6 or 7 or 8 or 9	4,778,693
11	1 and 10	3650

Educational Resources Information Center (ERIC)

Search conducted: November 6, 2023, from date of inception; limited to peer-reviewed sources only; no language limits

Search	Records retrieved
"chiropractic" or "chiropractor"	37

Biblioteca Virtual em Saúde

Search conducted: November 6, 2023, from date of inception; limited to peer-reviewed sources only; no language limits

Search	Records retrieved
"quiropraxia" and "educação"	74

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Scopus

Search conducted: November 5, 2023, from date of inception; no language limits

Search	Records retrieved
TITLE-ABS (educ*) OR TITLE-ABS (learn*) OR TITLE-ABS (teach*) OR TITLE-ABS (train*) OR TITLE-ABS (student*) OR TITLE-ABS (curricul*) AND TITLE-ABS (chiropract*) AND (LIMIT-TO (DOCTYPE, "ar") OR LIMIT-TO (DOCTYPE, "re") OR LIMIT-TO (DOCTYPE, "ed") OR LIMIT-TO (DOCTYPE, "sh")) AND (LIMIT-TO (SRCTYPE, "j"))	1643

CINAHL (EBSCOhost)

Search conducted: November 6, 2023, from date of inception; no language limits

#	Query	Limiters/Expanders	Last Run Via	Records retrieved
S1	MH Education, Chiropractic	Limiters	Interface	925
		- Peer Reviewed	- EBSCOhost Research	
		Expanders	Databases Search Screen	
		- Apply equivalent subjects	- Advanced Search	
		Search modes		
		- Boolean/Phrase	Database	
			- CINAHL with Full Text	

Index to Chiropractic Literature

Search conducted: November 17, 2023, from date of inception; limited to peer-reviewed sources only; no language limits

Search	Records retrieved
All Fields:chiro AND All Fields:education OR All Fields:training,	567

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Appendix III: Topic tool used by review authors to code the included publications during data extraction

Student knowledge, cognitive competence
Knowledge/cognitive competence is "the possession of appropriate work-related knowledge, the ability to put this to effective use."[16(p.87)]
Knowledge of chiropractic principles (for example, principles, theories, history, philosophy of chiropractic, how chiropractic fits into the healthcare system, etc.)
Knowledge of normal structure and function (for example, anatomy, physiology, biomechanics, biology, biochemistry, immunology, genetics, microbiology, health-related biopsychosocial factors, foundational knowledge, etc.)
Knowledge of abnormal structure and function (for example, pathology, dysfunction, disease process, microbiology, harmful biopsychosocial factors, foundational knowledge, etc.)
Knowledge of individual and population health (for example, determinants of health, disease prevention, health promotion, public health, nutrition, physical activity, injury prevention, etc.)
Knowledge of evaluation (for example, the information needed for patient assessment, neurology, orthopedics, clinical findings, patient management, diagnostic tests, diagnostic imaging, laboratory tests, clinical evaluation, etc.)
Knowledge of chiropractic care (for example, information related to safety and effects of chiropractic care, manipulation, modalities, management, supportive active and passive treatment methods, etc.)
Knowledge of patient needs (for example, characteristics of patient choices/needs, values, diversity/equity, pain, healing process and relationships, etc.)
Knowledge of sub-populations (for example, people with urgent health concerns/emergencies, pediatrics, geriatrics, sports, men's/women's health, workers, etc.)
Knowledge of research and science (for example, fundamental concepts about critical appraisal and application of research and science related to health care, etc.)
Knowledge of healthcare systems (for example, understand how chiropractic functions within the healthcare system, clinical impacts and implications of patients with concurrent health conditions, treatments used by other health professions, and other factors that may impact chiropractic care, etc.)
Student functional competence
Functional competence is "the ability to perform a range of work-based tasks effectively to produce required outcomes."[16(p.87)]
Demonstrate assessment (for example, patient-relevant history, examination, order/refer tests such as laboratory tests, diagnostic tests, refer to other providers, etc.)
Demonstrate clinical reasoning skills (for example, formulate diagnosis/clinical impression, differential diagnosis, make a therapeutic decision, estimate prognosis for the patient, etc.)
Demonstrate patient health management (for example, develop/implement a management plan, estimate prognosis, monitor patient response to care, coordinate care, referral, etc.)
Demonstrate patient communication (for example, report of findings, obtain patient consent, discuss patient values, expectations of treatment plan, prognosis, etc.)
Demonstrate manual therapies (for example, adjusting /manipulation/ mobilization, manual soft tissue therapies, etc.)
Demonstrate supporting therapies (for example, modalities, exercise/active therapies, rehabilitative therapies, etc.)
Demonstrate patient therapeutic education (for example, provide patient instructions about self-care, home exercises, diet/nutrition, injury prevention, ergonomics, etc.)
Demonstrate safety in the clinical environment (for example, patient safety, provider safety, hygiene, risk reduction in the clinical setting, etc.)
Demonstrate critical thinking (for example, evidence-informed decision-making skills, evidence-based practice skills, obtain and evaluate new scientific information, including the patient's values and beliefs in the clinical decision, and apply new information to the clinical practice setting, etc.)
Demonstrate practice management skills (for example, use current technology, effectively run a practice, record keeping, patient confidentiality/privacy, etc.)
Student personal, behavioral competence
Personal/behavioral competence is "the ability to adopt appropriate, observable behaviors in work-related situations."[16(p.88)]
Demonstrate personal competence (for example, intrapersonal self-awareness, self-care, self-improvement, acquisition of new knowledge and skills, technology and information literacy, life lifelong learning skills, etc.)
Demonstrate interpersonal/patient competence (for example, person-centered care, empathy, cultural competence/diversity, professional/caring interpersonal communication and behaviors with patients, etc.)
Demonstrate professional competence (for example, interpersonal communication and collaboration with other providers, team-based care, etc.)

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Student values, ethical competence
Values/ethical competence is "the possession of appropriate personal and professional values and the ability to make sound judgements based upon these in work-related situations."[16(p.88)]
Demonstrate professionalism (for example, on a personal level demonstrate honesty, integrity, ethics, leadership, etc.)
Demonstrate practice and professional competence (for example, on a professional level, participate in regional jurisprudence, legal, regulatory compliance, licensure, self-regulation of the profession, etc.)
Chiropractic educational program
Information and qualities related to chiropractic degree-granting programs, infrastructure, and delivery of chiropractic education
Governance and administration (for example, demonstration of governance effectiveness, effective leadership, administration structure, demonstrate achieving the mission of the program, etc.)
Assessment and quality improvement (for example, improvement/quality/effectiveness of the program; program evaluates its operations, improves performance through institutional and program effectiveness processes, etc.)
Ethics (for example, integrity on the program level, adherence to ethical standards, policies/procedures, functions, governing body, administration, etc.)
Methods for teaching and learning (for example, innovations, teaching methods, and education paradigms, such as competency-based, interprofessional, integrative, problem-based learning, etc.)
Faculty/staff (for example, program development or support of faculty teaching methods, teaching, expertise, research, scholarship, service, improvement, etc.)
Student support (for example, program characteristics that support student experience, equity/inclusion, admissions, success, performance, and learning, etc.)
Curriculum (for example, curriculum development, assessment/monitoring of program content, curriculum, or competencies overall, etc.)
Student assessment (for example, evaluation of performance data that includes, licensing exam success rates, program completion rates, and students demonstrate competencies and meta-competencies, etc.)
Resources (for example, resources needed to support program success, financial stability/management, infrastructure, facilities, technology, expertise, and human resources, etc.)
Accreditation and requirements (for example, the process of accreditation for chiropractic or regional accreditation, demonstration of how it is meeting program aims, goals, mission, meeting regional legal requirements, etc.)

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Appendix IV: Studies ineligible following full-text review

Study	Year	Authors	Title	Journal	Reason for exclusion
1	1952	No authors listed	Chiropractic: applicant must obtain preliminary education in proper sequence	J Am Med Assoc	Not about chiropractic education or training; not education research
2	1964	Wisowaty KW, Edwards CC, White RL	Requirements for admission to schools of chiropractic	JAMA	Other reason; historical; background
3	1982	Hildebrandt RW	Creation science and chiropractic curriculum alternatives	J Manipulative Physiol Ther	Not about chiropractic education or training; this is not education research; scarcely mentions education
4	1984	Peterson DR, Wiese GC	Chiropractic college libraries in the United States and Canada, 1981-1982	Bull Med Libr Assoc	Not about chiropractic education or training
5	1985	Gibbons RW	Chiropractic's Abraham Flexner: the lonely journey of John J. Nugent, 1935-1963	Chiropr Hist	Not research about chiropractic education or training; history, not education research
6	1988	Carbon J	Clinical research preparation for chiropractors: implementing a scientist-practitioner model	J Manipulative Physiol Ther	Letter to the editor; not education research
7	1989	Christensen A	Chiropractic education	Complementary Medical Research	Other reason; not related to purpose
8	1991	Wiese G, Peterson D	An overview of chiropractic educational institutions, 1896 to the present	J Chiropr Educ	Not about chiropractic education or training; historical background information
9	1992	Blacher P	The evolution of higher education in chiropractic: a survey 1906-74	Chiropr Hist	Historical account of program evolutions and accreditation; background, historical
10	1993	Jamison JR	Competency-based professional standards: a fundamental consideration	J Manipulative Physiol Ther	Other reason; hypothetical and only peripherally related; background information
11	1994	Coyle BA	Faculty evaluation in the scholarly domain: conceptions for academic planning	J Manipulative Physiol Ther	Not about chiropractic education or training; opinion piece that is about scholarship in general and only peripherally touched on chiropractic education; historical, background; not education research
12	1995	Bohanan SL, Kubena KS, McIntosh WA	Comparison of nutrition knowledge, perceptions and dietary practices of chiropractic student doctors at three points in their chiropractic training	J Am Dietetic Assoc	Conference abstracts/proceedings
13	1995	Marchiori D	A pattern approach to teaching chest radiology	J Chiropr Educ	Not about chiropractic education or training; not education research
14	1995	Coyle BA, Tolar RL	Chiropractic education: fearless youth, yet new horizons and distant scenes	Top Clin Chiropr	Not about chiropractic education or training; background; historical. This is not education research.
15	1997	Drinkwater J	Chiropractic education in Australia. . .Stanley Bolton, 'Chiropractic Education in Australia: historical perspectives and contemporary issues'	Chiropr J Australia	Letter to editor; not an article
16	1997	Casey GC Mellifont R	Overview of the development of a comprehensive code of ethics	J Chiropr Educ	Not about chiropractic education or training; excerpts from campus book. Not education research.
17	1997	Biggs L, Hay, D, Mierau D	Canadian chiropractors' attitudes towards chiropractic philosophy and scope of practice: implications for the implementation of clinical practice guidelines	J Can Chiropr Assoc	Not about chiropractic education or training; not education research
18.	1998	Badham MA, Bolton SP, Montgomery DM, Chance MA	Chiropractic education in Australia: historical perspectives and contemporary issues	Chiropr J Australia	Letter to editor; background, opinion

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(*Continued*)

Study	Year	Authors	Title	Journal	Reason for exclusion
19	1999	Willis JC	Early educational tracts helped to build chiropractic	Chiropr Hist	Not about chiropractic education or training
20	1999	Kleynhans A M	Accreditation of chiropractic education in Australia	Chiropr J Australia	Other reason; opinion; not education research
21	1999	Delaney PM, Fernandez CE	Commentary. Toward an evidence-based model for chiropractic education and practice	J Manip Physiol Ther	Not about chiropractic education or training; not about chiropractic. General information on evidence-based health care; not education research
22	2000	Cleveland CS, Williams SE, Clim G, Goodman GA, Allenburg JF	College presidents discuss role of subluxation in education and research	Chiropr J	Not about chiropractic education or training; news article
23	2001	Bolton SP	Chiropractic education in Australia: a historical review	Chiropr Hist	Not about chiropractic education or training; history paper; not about competencies or programs
24	2002	Perillo M	A model course for public health education in chiropractic colleges	J Am Chiropr Assoc	Duplicate report of the same study; news item
25	2002	Pena A	New chiropractic internship rounds out students' education	J Am Chiropr Assoc	Other reason; news item
26	2003	Flanagan JL, Huff L	Editorial: the institution's role in training chiropractors to analyze the literature effectively	J Chiropr Educ	Not about chiropractic education or training; peripherally related. This could have been written for any profession. Not education research.
27	2004	Brown E	Strength in diversity: professional and legislative opportunities in primary care by the recognition, defining and promotion of the licensure of chiropractic medical education, competencies and skills	J Chiropr Med	Letter to editor; not education research
28	2005	Walker BF	The establishment of the Chiropractic & Osteopathic College of Australasia in Queensland (1996-2002)	Chiropr Osteopat	Other reason; background only
29	2005	Ebrall P, Molyneux T	Thirty years of chiropractic education at RMIT University: the consolidation period: 1979-1999	Chiropr J Australia	Other reason; historical article; background history information
30	2006	Evans MW Jr, Rupert R	The Council on Chiropractic Education's new wellness standard: a call to action for the chiropractic profession	Chiropr Osteopat	Not about chiropractic education or training; not education research. It paraphrases the then-new CCE requirement; descriptive, commentary
31	2006	Johnson C	Best practices in syllabus writing: contents of a learner-centered syllabus	J Chiropr Educ	Not about chiropractic education or training
32	2006	Morgan WE, Morgan CP	Iron sharpens iron: experiential learning strategies in chiropractic education	J Chiropr Humanities	Not about chiropractic education or training; commentary about what is thought to be most effective but little content specific about chiropractic
33	2007	Bruno P, Ongaro A, Fraser I	Long-term retention of material taught and examined in chiropractic curricula: its relevance to education and clinical practice	J Can Chiropr Assoc	Not about chiropractic education or training; narrative commentary about what could theoretically be done but there is nothing that has been done for chiropractic training
34	2007	Fernandez CE, Yu J	Peer review of teaching	J Chiropr Educ	Not about chiropractic education or training; review of the topic of peer review of teaching in general, but there is nothing about chiropractic
35	2007	Lawrence DJ	The ethics of educational research	J Manipulative Physiol Ther	Not about chiropractic education or training; not really about education research, general information

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(*Continued*)

Study	Year	Authors	Title	Journal	Reason for exclusion
36	2007	Greenstein G, Funk M, Sherman P, Good C, Perle S	Evidence-based practice and curriculum development at UBCC. . .ACC Conference	J Chiropr Educ	Conference abstracts/proceedings
37	2007	D'Antoni AV, Zipp GP	A retrospective analysis of the development, implementation, and assessment of an evidence-based practice course for chiropractors. . .ACC Conference	J Chiropr Educ	Conference abstracts/proceedings
38	2007	Callender A, Hynes R	Orienting new faculty at a chiropractic college: a pilot project. . .ACC Conference	J Chiropr Educ	Conference abstracts/proceedings
39	2008	Karim R, Ross C	Interprofessional education (IPE) and chiropractic	J Can Chiropr Assoc	Not about chiropractic education or training; peripherally related; more of a biosketch than an actual paper
40	2008	Shreeve MW	Beyond the didactic classroom: educational models to encourage active student involvement in learning	J Chiropr Educ	Not about chiropractic education or training; about education in general
41	2008	Nichols DE, Ebrall P	Right courses: competency and capability	Chiropr J Australia	Letter to editor; not education research
42	2009	Wyatt LH	A survey of geriatrics courses in North American chiropractic programs	J Am Chiropr Assoc	Other reason; not a publication; news item or summary
43	2009	Taylor-Vaisey A, Harvey P	How the Index to Chiropractic Literature contributes to chiropractic education and practice worldwide	J Chiropr Educ	Conference abstracts/proceedings
44	2009	Robinson P, Pearson G, Stark T, Giggleman G, Rupert R	A study to investigate the effectiveness of a disinfection process being used on tables in the labs in the academic center of a chiropractic college	J Chiropr Educ	Conference abstracts/proceedings
45	2009	Osterbauer P, Wiles M	Elective course offerings in North American chiropractic programs: an opportunity for growth	J Chiropr Educ	Conference abstracts/proceedings
46	2009	Meseke C, Meseke J, Nafziger R	Student learning in a collaborative testing environment	J Chiropr Educ	Conference abstracts/proceedings
47	2009	Keene K, Lockenour J	Implementation of a faculty mentorship program at a chiropractic college: a preliminary report	J Chiropr Educ	Conference abstracts/proceedings
48	2009	Hinck G, Hulbert JR, Bergmann T	Comparison of hybrid online format and traditional classroom format in a chiropractic methods course	J Chiropr Educ	Conference abstracts/proceedings
49	2009	Ciolfi M	Clinical Competencies Assessment Rubric System (C-CARS)	J Chiropr Educ	Conference abstracts/proceedings;
50	2010	Lawrence DJ	A teaching scholar program in chiropractic education	J Can Chiropr Assoc	Other reason; a proposal for a program
51	2010	Stick-Mueller M, Boesch R, Silverman S	Mentoring in the clinical setting to improve student decision-making competence	J Iss Educ	Other reason; unreliable source material
52	2011	Ebrall P	An RMIT university perspective on chiropractic research	Chiropr J Australia	Not about chiropractic education or training; loosely related to education research
53	2011	Williams J, Osterbauer P	Preparing for the field: a comprehensive program to train chiropractic students to conduct pre-season sports physicals and manage athletic injuries in high school athletes	Clin Chiropr	Conference abstracts/proceedings
54	2011	O'Bryon D	The Journal of Chiropractic Education: leading the dissemination of scholarly discourse	J Chiropr Educ	Letter to the editor; congratulatory note about the 25th anniversary of the JCE

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(*Continued*)

Study	Year	Authors	Title	Journal	Reason for exclusion
55	2011	Conference abstract	Chiropractic student motivations and course choices	Clin Chiropr	Conference abstracts/proceedings
56	2012	Cantarero-Villanueva I, Fernández-Lao C, Galiano-Castillo N, Castro-Martín E, Díaz-Rodríguez L, Arroyo-Morales M	Evaluation of e-learning as an adjunctive method for the acquisition of skills in bony landmark palpation and muscular ultrasound examination in the lumbopelvic region: a controlled study	J Manipulative Physiol Ther	Not about chiropractic education or training; physical therapy, no chiropractic material
57	2013	Gleberzon B, Stuber K	Frequency of use of diagnostic and manual therapeutic procedures of the spine currently taught at the Canadian Memorial Chiropractic College: a preliminary survey of Ontario chiropractors. Part 2 - procedure usage rates	J Can Chiropr Assoc	Not about chiropractic education or training; more of a practice analysis than education research
58	2014	Miller J	Predictors of knowledge and use of research literacy skills among students of acupuncture and chiropractic programs	J Altern Complem Med	Conference abstracts/proceedings
59	2016	Kaeser MA, Hawk C, Anderson ML, Reinhardt R	Community-based free clinics: opportunities for interprofessional collaboration, health promotion, and complex care management	J Chiropr Educ	Not about chiropractic education or training
60	2016	Thomas A, Bussières A	Knowledge translation and implementation science in health professions education: time for clarity?	Acad Med	Not about chiropractic education or training; a table summary of concepts related to knowledge translation education in general; not research
61	2018	D'Cruz D, Clark M, Cade A, Glucina T, Pritchard K, Fox M	Analysis of the chief complaints of older patients seeking chiropractic care at a teaching clinic and potential implications for clinical education	J Chiropr Educ	Not about chiropractic education or training; demographic cross-sectional analysis of a clinic
62	2018	Hodgetts CJ, Walker BF	Testing a strength and conditioning program to prevent common manipulative technique training injuries in chiropractic students: a study protocol for a randomised controlled trial	Chiropr Man Therap	Other reason; protocol; research not done yet
63	2018	Lady SD, Haas M, Takagi R, Takaki L,	A preliminary study of chiropractors' beliefs about biomedical and biopsychosocial pain: a survey of University of Western States Alumni	J Chiropr Med	Not about chiropractic education or training
64	2019	Innes SI, Leboeuf-Yde C, Walker BF	A failed review of CCE site inspection standards and processes	Chiropr Man Therap	Not about chiropractic education or training; it is a study about researcher knowledge of planning a feasible study
65	2019	Millar N, Budgell BS	The passive voice and comprehensibility of biomedical texts: an experimental study with 2 cohorts of chiropractic students	J Chiropr Educ	Not about chiropractic education or training; a study of text readability could have been administered to any population
66	2019	Caso ML, Clements JM	Assessing a novel method of calculation of the cobb angle for scoliosis: interexaminer reliability and student satisfaction	J Manipulative Physiol Ther	Not about chiropractic education or training
67	2020	Green BN	Chiropractic qualifying examinations: honoring the profession's commitment to society	J Chiropr Educ	Not about chiropractic education or training; not education research
68	2022	Sorondo D, Delpierre C, Côté P, Lemeunier N	Do chiropractic interns use clinical practice guidelines when managing patients with neck pain in France? A feasibility study	Chiropr Man Therap	Not about chiropractic education or training; a feasibility study for a survey that might be used in the future. By itself, it is not education research.
69	2023	Cade AE, Meuller N	Measuring the quality of the OSCE in a chiropractic programme: a review of metrics and recommendations	J Chiropr Educ	Other reason; not published in final form at this time

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Appendix V: List of included sources

The following table shows the included 598 sources on chiropractic education, including the first indexed paper published in 1971 through the search date in November 2023. Publications are organized by each topic area: student knowledge and cognitive competence, student functional and clinical competence, student personal and behavioral competence, student values and ethical competence, and chiropractic program-relevant education research. Within each topic area, the papers are listed chronologically.

Student knowledge and cognitive competence (n = 49)					
	Year	Title	Authors	Journal	Topic
1	1991	Osteopathic vs. chiropractic education: a student perspective	McNamee, K. P.; Magarian, K.; Phillips, R. B.; Greenman, P. E.	J Manipulative Physiol Ther. 14 (7), 422-7.	Knowledge of chiropractic as a profession, chiropractic care, and chiropractic in the healthcare system
2	1991	The use of video microscope technique in the evaluation of students' learning of histology	Goubran, E.	Journal of Chiropractic Education. 5(3), 89-93.	Knowledge of normal and abnormal
3	1991	Nutrition course topics selected by chiropractic students	Lin, D. C.	Journal of Chiropractic Education. 5(3), 95-100.	Knowledge of health, patient needs, and sub-population needs
4	1992	Nutrition course topics for chiropractic and medical students	Lin, D. C.	Journal of Chiropractic Education. 6(4), 141-149.	Knowledge of health, patient needs, and sub-population needs
5	1995	Interpretation of abnormal lumbosacral spine radiographs. A test comparing students, clinicians, radiology residents, and radiologists in medicine and chiropractic	Taylor, J. A.; Clopton, P.; Bosch, E.; Miller, K. A.; Marcelis, S.	Spine (Phila Pa 1976). 20(10), 1147-53; discussion 1154.	Knowledge of evaluation, assessment
6	1996	Chiropractic student attitudes toward radiology	Marchiori, D. M.	J Manipulative Physiol Ther. 19 (9), 583-6.	Knowledge of evaluation, assessment
7	1996	Research attitudes among chiropractic college students	Zhang, J. Q.	J Manipulative Physiol Ther. 19 (7), 446-53.	Knowledge of evidence-based practice, science, research
8	1997	Effect of chiropractic education on nutritional status of students	Lin, D. C.; Ward, R. W.	J Chiropr Educ. 11(3), 87-93.	Knowledge of health, patient needs, and sub-population needs
9	2002	Attitudes toward vaccination: a survey of Canadian chiropractic students	Busse, J. W.; Kulkarni, A. V.; Campbell, J. B.; Injeyan, H. S.	Cmaj. 166(12), 1531-4.	Knowledge of health, patient needs, and sub-population needs
10	2003	Attitudes toward research in undergraduate chiropractic students	Newell, D.; Cunliffe, C.	Clinical Chiropractic. 6 (44989), 109-119.	Knowledge of evidence-based practice, science, research
11	2005	The self-concept of chiropractic students as science students	Shields, R. F.	J Chiropr Med. 4(2), 70-5.	Knowledge of evidence-based practice, science, research
12	2006	Effectiveness of an evidence-based chiropractic continuing education workshop on participant knowledge of evidence-based health care	Feise, R. J.; Grod, J. P.; Taylor-Vaisey, A.	Chiropr Osteopat. 14(), 18.	Knowledge of evidence-based practice, science, research
13	2007	An examination of musculoskeletal cognitive competency in chiropractic interns	Humphreys, B. K.; Sulkowski, A.; McIntyre, K.; Kasiban, M.; Patrick, A. N.	J Manipulative Physiol Ther. 30 (1), 44-9.	Knowledge of evaluation, assessment
14	2008	Conventional microscopy vs. computer imagery in chiropractic education	Cunningham, C. M.; Larzelere, E. D.; Arar, I.	J Chiropr Educ. 22(2), 138-44.	Knowledge of normal and abnormal

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	Year	Title	Authors	Journal	Topic
15	2008	Factors associated with changes in knowledge and attitude towards public health concepts among chiropractic college students enrolled in a community health class	Rose, K. A.; Ayad, S.	J Chiropr Educ. 22(2), 127-37.	Knowledge of health, patient needs, and sub-population needs
16	2008	Adherence to radiography guidelines for low back pain: a survey of chiropractic schools worldwide	Ammendolia, C.; Taylor, J. A.; Pennick, V.; Cote, P.; Hogg-Johnson, S.; Bombardier, C.	J Manipulative Physiol Ther. 31 (6), 412-8.	Knowledge of evaluation, assessment
17	2008	Critical reflection in work-integrated learning	Ebrall, P.; Repka, A.; Draper, B.	Chiropractic Journal of Australia. 38(2), 49-56.	Knowledge of health, patient needs, and sub-population needs
18	2009	Basic life support knowledge of undergraduate nursing and chiropractic students	Josipovic, P.; Webb, M.; Mc Grath, I.	Australian Journal of Advanced Nursing. 26(4), 58-63.	Knowledge of health, patient needs, and sub-population needs
19	2011	A preliminary assessment of the fifth-year chiropractic students' knowledge of anatomy	Strkalj, G.; Schroder, T.; Pather, N.; Solyali, V.	J Altern Complement Med. 17 (1), 63-6.	Knowledge of normal and abnormal
20	2011	Knowledge, perceptions, and practices of chiropractic interns in the early detection of atypical moles	Ramcharan, M.; Evans, M. W., Jr.; Ndetan, H.; Beddard, J.	J Chiropr Med. 10(2), 77-85.	Knowledge of normal and abnormal
21	2011	International web survey of chiropractic students about evidence-based practice: a pilot study	Banzai, R.; Derby, D. C.; Long, C. R.; Hondras, M. A.	Chiropr Man Therap. 19(1), 6.	Knowledge of evidence-based practice, science, research
22	2012	Background, expectations and beliefs of a chiropractic student population: a cross-sectional survey	Gliedt, J. A.; Briggs, S.; Williams, J. S.; Smith, D. P.; Blampied, J.	J Chiropr Educ. 26(2), 146-60.	Knowledge of chiropractic as a profession, chiropractic care, and chiropractic in the healthcare system
23	2013	Using confidence-based marking in a laboratory setting: A tool for student self-assessment and learning	Barr, D. A.; Burke, J. R.	J Chiropr Educ. 27(1), 21-6.	Knowledge of normal and abnormal
24	2013	A cross sectional study on the retention of neuroanatomy knowledge by chiropractic students	McCoy, R.; Whillier, S.; Parkinson, A.; Hijazi, G.; Hall, K.; Nguyen, T.	Chiropractic Journal of Australia. 43(1), 137-141.	Knowledge of normal and abnormal
25	2013	Knowledge of accurate blood pressure measurement procedures in chiropractic students	Crosley, A. M.; Rose, J. R.	J Chiropr Educ. 27(2), 152-7.	Knowledge of evaluation, assessment
26	2013	Low back pain-related beliefs and likely practice behaviours among final-year cross-discipline health students	Briggs, A. M.; Slater, H.; Smith, A. J.; Parkin-Smith, G. F.; Watkins, K.; Chua, J.	Eur J Pain. 17(5), 766-75.	Knowledge of chiropractic as a profession, chiropractic care, and chiropractic in the healthcare system
27	2015	Emphasis on various subtopics in the anatomy curriculum for chiropractic training: An international survey of chiropractors and anatomists	Chapman, P. D.; Meyer, A.; Young, K.; Wibowo, D.; Walker, B.	J Chiropr Educ. 29(1), 37-42.	Knowledge of normal and abnormal
28	2015	Factors influencing student performance on the carpal bone test as a preliminary evaluation of anatomical knowledge retention	Meyer, A. J.; Armson, A.; Losco, C. D.; Losco, B.; Walker, B. F.	Anat Sci Educ. 8(2), 133-9.	Knowledge of normal and abnormal
29	2015	The development of vaccination perspectives among chiropractic, naturopathic and medical students: a case study of professional enculturation	McMurtry, A.; Wilson, K.; Clarkin, C.; Walji, R.; Kilian, B. C.; Kilian, C. C.; Lohfeld, L.; Alolabi, B.; Hagino, C.; Busse, J. W.	Adv Health Sci Educ Theory Pract. 20(5), 1291-302.	Knowledge of health, patient needs, and sub-population needs

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	Year	Title	Authors	Journal	Topic
30	2016	Immunology knowledge as one of the basic sciences that forms the foundations to developing sound clinicians	Armson, A. J.; Meyer, A. J.; Losco, B. E.; Ardakani, E. M.; Walker, B. F.	J Chiropr Educ. 30(2), 108-113.	Knowledge of normal and abnormal
31	2017	Mental health knowledge and common misconceptions in a master of chiropractic final year cohort	Ferrari, M.; Whillier, S.	Journal of Mental Health Training, Education and Practice. 12(3), 150-160.	Knowledge of evaluation, assessment
32	2017	A cross-sectional study of chiropractic students' research readiness using the Academic Self-Concept Analysis Scale	Whillier, S.; Au, K.; Feng, L.; Su, H.	J Chiropr Educ. 31(2), 109-114.	Knowledge of evidence-based practice, science, research
33	2018	The identity, role, setting, and future of chiropractic practice: a survey of Australian and New Zealand chiropractic students	de Luca, K. E.; Gliedt, J. A.; Fernandez, M.; Kawchuk, G.; Swain, M. S.	J Chiropr Educ. 32(2), 115-125.	Knowledge of chiropractic as a profession, chiropractic care, and chiropractic in the healthcare system
34	2018	Analysis of immediate student outcomes following a change in gross anatomy laboratory teaching methodology	Afsharpour, S.; Gonsalves, A.; Hosek, R.; Partin, E.	J Chiropr Educ. 32(2), 98-106.	Knowledge of normal and abnormal
35	2018	Impacting public health by affecting individual health: A focus group study with chiropractic students after an international clinical experience	Boysen, J.; Salsbury, S. A.; Lawrence, D. J.	J Can Chiropr assoc. 62(1), 18-25.	Knowledge of health, patient needs, and sub-population needs
36	2018	Promoting the use of self-management in novice chiropractors treating individuals with spine pain: the design of a theory-based knowledge translation intervention	Eilayyan, O.; Thomas, A.; Halle, M. C.; Ahmed, S.; Tibbles, A. C.; Jacobs, C.; Mior, S.; Davis, C.; Evans, R.; Schneider, M. J.; Alzoubi, F.; Barnsley, J.; Long, C. R.; BussiÃ¨res, A.	BMC Musculoskelet Disord. 19 (1), 328.	Knowledge of evidence-based practice, science, research
37	2019	Comparison of chiropractic student lexicon at two educational institutions: a cross-sectional survey	Gleberzon, B. J.; Pohlman, K. A.; Russell, E.	J Can Chiropr assoc. 63(1), 36-43.	Knowledge of chiropractic as a profession, chiropractic care, and chiropractic in the healthcare system
38	2019	Chiropractic conservatism and the ability to determine contra-indications, non-indications, and indications to chiropractic care: a cross-sectional survey of chiropractic students	Goncalves, G.; Demortier, M.; Leboeuf-Yde, C.; Wedderkopp, N.	Chiropr Man Therap. 27(), 3.	Knowledge of chiropractic as a profession, chiropractic care, and chiropractic in the healthcare system
39	2020	Australian chiropractors' perception of the clinical relevance of anatomical sciences and adequacy of teaching in chiropractic curricula	Giuriato, R.; Strkalj, G.; Prvan, T.; Pather, N.	Chiropr Man Therap. 28(1), 37.	Knowledge of normal and abnormal
40	2020	Musculoskeletal anatomy knowledge retention in the Macquarie University chiropractic program: a cross-sectional study	Hulme, A. K.; Luo, K.; Štrkalj, G.	Anat Sci Educ. 13(2), 182-191.	Knowledge of normal and abnormal
41	2020	Influence of cooking skills and nutritional training on dietary choices of incoming chiropractic students	Colton, K. K.; Nightingale, L. M.	J Chiropr Educ. 34(2), 156-163.	Knowledge of health, patient needs, and sub-population needs
42	2021	Evaluating a service-learning assignment in a doctor of chiropractic program public health course	Ward, K. L.; Odierna, D. H.; Smith, M.	J Chiropr Educ. 35(1), 139-143.	Knowledge of health, patient needs, and sub-population needs
43	2022	Musculoskeletal anatomy knowledge in Australian chiropractors	Giuriato, R.; Åtrkalj, G.; Prvan, T.; Hulme, A.; Pather, N.	Anat Sci Educ. 15(4), 663-670.	Knowledge of normal and abnormal

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	Year	Title	Authors	Journal	Topic
44	2022	Making a case for genomics in chiropractic education	Burnham, K. D.; Takaki, L. A. K.	J Chiropr Educ. 36(1), 37-42.	Knowledge of evaluation, assessment
45	2022	The impact of a targeted education package on the knowledge, attitudes, and utilisation of patient reported outcome measures amongst chiropractors in Australia	Clohesy, N.; Schneiders, A.; Barbery, G.; Obst, S.	Chiropr Man Therap. 30(1), 44.	Knowledge of evaluation, assessment
46	2023	Association of pain neurophysiology knowledge and application amongst UK chiropractic students: A cross-sectional study	Nordbo, K.; Dewhurst, P.	J Chiropr Educ. 37(2), 82-89.	Knowledge of normal and abnormal
47	2023	A cross-sectional study of Australian chiropractors' and students' readiness to identify and support patients experiencing intimate partner violence	Moore, K. M.; Amorin-Woods, D.; Amorin-Woods, L. G.; Vindigni, D.; Haworth, N. G.	J Chiropr Educ. 37(1), 71-81.	Knowledge of health, patient needs, and sub-population needs
48	2023	Knowledge, attitudes and perceived behavioral modification of chiropractic students returning to clinical training in South Africa amid the COVID-19 pandemic	O'Connor, L. M.; Yelverton, C.	J Chiropr Educ. 37(1), 33-40.	Knowledge of health, patient needs, and sub-population needs
49	2023	Information literacy of matriculating chiropractic students assessed via research readiness survey	Ward, K. L.; Gatti, B. L. D.; Osenga, A.; Odierna, D. H.; Smith, M.	J Chiropr Educ. 37(1), 20-25.	Knowledge of evidence-based practice, science, research

Student functional and clinical competence (n=93)

	Year	Title	Authors	Journal	Topic
1	1986	A critical study of the student interns' practice activities in a chiropractic college teaching clinic	Nyiendo, J. A.; Haldeman, S.	J Manipulative Physiol Ther. 9(3), 197-207.	Demonstrate patient management, safe practices, patient communication
2	1988	Self-care: chiropractic student's perspective	Jamison, J. R.	J Manipulative Physiol Ther. 11(3), 165-76.	Perform manual therapies, treatments, patient therapeutic education, and other supporting therapies
3	1990	The role of experience in clinical accuracy	Mior, S. A.; McGregor, M.; Schut, B.	J Manipulative Physiol Ther. 13(2), 68-71.	Perform assessment, clinical reasoning skills
4	1993	An evaluation within the affective domain of teaching methods in manipulative technique laboratory: Chirobics vs conventional thrusting exercises	Good, C. J.	Journal of Chiropractic Education. 7(19-28), .	Perform manual therapies, treatments, patient therapeutic education, and other supporting therapies
5	1995	Biomechanical performance of spinal manipulation therapy by newly trained vs. practicing providers: does experience transfer to unfamiliar procedures?	Cohen, E.; Triano, J. J.; McGregor, M.; Papakyriakou, M.	J Manipulative Physiol Ther. 18(6), 347-52.	Perform manual therapies, treatments, patient therapeutic education, and other supporting therapies
6	1996	Jurisprudence practice development projects at a chiropractic college	Freedman, A. M.; Mrozek, J.	Journal of Chiropractic Education. 9(4), 143-146.	Demonstrate business management skills

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	Year	Title	Authors	Journal	Topic
7	1996	Effects of contextual interference on learning a kinesthetic sensitive skill	Pringle, R. K.; Wyatt, L. H.	J Chiropr Educ. 10(44960), 47-52.	Perform manual therapies, treatments, patient therapeutic education, and other supporting therapies
8	1998	A cervical manikin procedure for chiropractic skills development	Young, T. J.; Hayek, R.; Philipson, S. A.	J Manipulative Physiol Ther. 21(4), 241-5.	Perform manual therapies, treatments, patient therapeutic education, and other supporting therapies
9	1999	Developing a clinical competency examination in radiology: part I–test structure	Marchiori, D. M.; Adams, T. L.; Henderson, C. N.	J Manipulative Physiol Ther. 22(2), 57-62.	Perform assessment, clinical reasoning skills
10	1999	Factors associated with success or failure in radiological interpretation: diagnostic thinking approaches	Peterson, C.	Med Educ. 33(4), 251-9.	Perform assessment, clinical reasoning skills
11	1999	Effects of gender and age on students' performance in adjustive technique classes	Rampacher, A.; Peterson, C.	Journal of Chiropractic Education. 13(2), 114-130.	Perform manual therapies, treatments, patient therapeutic education, and other supporting therapies
12	2002	Differences between the cutaneous two-point discrimination thresholds of chiropractic students at different stages in a 5-year course	Chandhok, P. S.; Bagust, J.	J Manipulative Physiol Ther. 25(8), 521-5.	Perform assessment, clinical reasoning skills
13	2002	The effects of augmented sensory feedback precision on the acquisition and retention of a simulated chiropractic task	Scaringe, J. G.; Chen, D.; Ross, D.	J Manipulative Physiol Ther. 25(1), 34-41.	Perform manual therapies, treatments, patient therapeutic education, and other supporting therapies
14	2002	Developing skilled performance of lumbar spine manipulation	Triano, J. J.; Rogers, C. M.; Combs, S.; Potts, D.; Sorrels, K.	J Manipulative Physiol Ther. 25(6), 353-61.	Perform manual therapies, treatments, patient therapeutic education, and other supporting therapies
15	2003	Financial experience, knowledge, and attitudes among chiropractic students in college	Zhang, J; Rupert, R; Nosco, D; Tepe, R	J Chiropr Educ. 17(), 120-5.	Demonstrate business management skills
16	2004	Implementing evidence-based guidelines for radiography in acute low back pain: a pilot study in a chiropractic community	Ammendolia, C.; Hogg-Johnson, S.; Pennick, V.; Glazier, R.; Bombardier, C.	J Manipulative Physiol Ther. 27(3), 170-9.	Perform assessment, clinical reasoning skills
17	2004	Cutaneous two-point discrimination thresholds and palpatory sensibility in chiropractic students and field chiropractors	Foster, I. E.; Bagust, J.	J Manipulative Physiol Ther. 27(7), 466-71.	Perform assessment, clinical reasoning skills
18	2004	Applying evidence-based health care to musculoskeletal patients as an educational strategy for chiropractic interns (a one-group pretest-posttest study)	Fernandez, C. E.; Delaney, P. M.	J Manipulative Physiol Ther. 27(4), 253-61.	Demonstrate critical thinking
19	2004	Evidence-based health care in medical and chiropractic education: a literature review	Fernandez, C. E.; Delaney, P. M.	J Chiropr Educ. 18(2), 103-115.	Demonstrate critical thinking
20	2005	Experience and practice organization in learning a simulated high-velocity low-amplitude task	Enebo, B.; Sherwood, D.	J Manipulative Physiol Ther. 28(1), 33-43.	Perform manual therapies, treatments, patient therapeutic education, and other supporting therapies
21	2005	Improving preventive health services training in chiropractic colleges: a pilot impact evaluation of the introduction of a model public health curriculum	Globe, G. A.; Azen, S. P.; Valente, T.	J Manipulative Physiol Ther. 28(9), 702-7.	Perform manual therapies, treatments, patient therapeutic education, and other supporting therapies
22	2005	Fostering critical thinking skills: a strategy for enhancing evidence based wellness care	Jamison, J. R.	Chiropr Osteopat. 13(), 19.	Perform manual therapies, treatments, patient therapeutic education, and other supporting therapies

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	Year	Title	Authors	Journal	Topic
23	2006	Learning spinal manipulation: the importance of augmented feedback relating to various kinetic parameters	Descarreaux, M.; Dugas, C.; Lalanne, K.; Vincelette, M.; Normand, M. C.	Spine J. 6(2), 138-45.	Perform manual therapies, treatments, patient therapeutic education, and other supporting therapies
24	2006	An educational campaign to increase chiropractic intern advising roles on patient smoking cessation	Evans, M. W., Jr.; Hawk, C.; Strasser, S. M.	Chiropr Osteopat. 14(), 24.	Perform manual therapies, treatments, patient therapeutic education, and other supporting therapies
25	2007	Attitudes and behaviors of chiropractic college students on hand sanitizing and treatment table disinfection: results of initial survey and focus group	Evans, M. W., Jr.; Breshears, J.	Journal of the American Chiropractic association. 44(4), 13-23.	Demonstrate patient management, safe practices, patient communication
26	2007	Use of radiographic imaging protocols by Canadian Memorial Chiropractic College interns	Butt, A.; Clarfield-Henry, J.; Bui, L.; Butler, K.; Peterson, C.	J Chiropr Educ. 21(2), 144-52.	Demonstrate critical thinking
27	2007	Use of a modified journal club and letters to editors to teach critical appraisal skills	Green, B. N.; Johnson, C. D.	J Allied Health. 36(1), 47-51.	Demonstrate critical thinking
28	2007	Influence of an information literacy course on students' information search behavior	Weinert, D. J.; Palmer, E. M.	J Allied Health. 36(1), e1-e12.	Demonstrate critical thinking
29	2009	Importance of building confidence in patient communication and clinical skills among chiropractic students	Hecimovich, M. D.; Volet, S. E.	J Chiropr Educ. 23(2), 151-64.	Demonstrate patient management, safe practices, patient communication
30	2009	Improving preventive health services training in chiropractic colleges part II: enhancing outcomes through improved training and accountability processes	Globe, G.; Redwood, D.; Brantingham, J. W.; Hawk, C.; Terre, L.; Globe, D.; Mayer, S.	J Manipulative Physiol Ther. 32(6), 453-62.	Perform manual therapies, treatments, patient therapeutic education, and other supporting therapies
31	2009	Intentions of chiropractic interns regarding use of health promotion in practice: applying theory of reasoned action to identify attitudes, beliefs, and influencing factors	Evans, M. W.; Ndetan, H.; Williams, R. D.	J Chiropr Educ. 23(1), 17-27.	Perform manual therapies, treatments, patient therapeutic education, and other supporting therapies
32	2009	A proposed protocol for hand and table sanitizing in chiropractic clinics and education institutions	Evans, M. W., Jr.; Ramcharan, M.; Floyd, R.; Globe, G.; Ndetan, H.; Williams, R.; Ivie, R.	J Chiropr Med. 8(1), 38-47.	Demonstrate patient management, safe practices, patient communication
33	2009	Hand hygiene and treatment table sanitizing in chiropractic teaching institutions: results of an education intervention to increase compliance	Evans, M. W., Jr.; Ramcharan, M.; Ndetan, H.; Floyd, R.; Globe, G.; Pfefer, M.; Brantingham, J.	J Manipulative Physiol Ther. 32(6), 469-76.	Demonstrate patient management, safe practices, patient communication
34	2010	Standardized simulated palpation training–development of a palpation trainer and assessment of palpatory skills in experienced and inexperienced clinicians	Anders, H. L.; Corrie, M.; Jan, H.; Cuno, R.; Marianne, H.; Kristian, M.; Per, A.	Man Ther. 15(3), 254-60.	Perform assessment, clinical reasoning skills
35	2010	Diagnostic imaging guidelines implementation study for spinal disorders: a randomized trial with postal follow-ups	Bussières, A. E.; Laurencelle, L.; Peterson, C.	J Chiropr Educ. 24(1), 44975.	Perform assessment, clinical reasoning skills
36	2010	Self-perceived skills confidence: an investigative study of chiropractic students in the early phases of a college's clinic program	Bisiacchi, D. W.	J Manipulative Physiol Ther. 33(3), 201-6.	Perform manual therapies, treatments, patient therapeutic education, and other supporting therapies
37	2010	Learning spinal manipulation skills: assessment of biomechanical parameters in a 5-year longitudinal study	Descarreaux, M.; Dugas, C.	J Manipulative Physiol Ther. 33(3), 226-30.	Perform manual therapies, treatments, patient therapeutic education, and other supporting therapies

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	Year	Title	Authors	Journal	Topic
38	2010	Health promotion practices in two chiropractic teaching clinics: does a review of patient files reflect advice on health promotion?	Ndetan, H.; Evans, M. W.; Lo, K.; Walters, D.; Ramcharan, M.; Brandon, P.; Evans, C.; Rupert, R.	J Chiropr Educ. 24(2), 159-64.	Perform manual therapies, treatments, patient therapeutic education, and other supporting therapies
39	2011	Allowing a possible margin of error when assessing student skills in spinous process location	Hart, J.; Neely, C.	J Chiropr Educ. 25(2), 182-5.	Perform assessment, clinical reasoning skills
40	2011	Learning spinal manipulation: a comparison of two teaching models	Harvey, M. P.; Wynd, S.; Richardson, L.; Dugas, C.; Descarreaux, M.	J Chiropr Educ. 25(2), 125-31.	Perform manual therapies, treatments, patient therapeutic education, and other supporting therapies
41	2011	Maturation in rate of high-velocity, low-amplitude force development	Triano, J. J.; Gissler, T.; Forgie, M.; Milwid, D.	J Manipulative Physiol Ther. 34(3), 173-80.	Perform manual therapies, treatments, patient therapeutic education, and other supporting therapies
42	2011	Are patients receiving health promotion advice in the chiropractic teaching clinic setting: an impact assessment of a brief intervention to increase advising rates and goal setting	Evans, M. W., Jr.; Page, G.; Ndetan, H.; Martinez, D.; Brandon, P.; Daniel, D.; Walker, C.	J Chiropr Educ. 25(2), 132-41.	Perform manual therapies, treatments, patient therapeutic education, and other supporting therapies
43	2012	Tracing the evolution of chiropractic students' confidence in clinical and patient communication skills during a clinical internship: a multi-methods study	Hecimovich, M.; Volet, S.	BMC Med Educ. 12(), 42.	Demonstrate patient management, safe practices, patient communication
44	2013	Force-time profile differences in the delivery of simulated toggle-recoil spinal manipulation by students, instructors, and field doctors of chiropractic	DeVocht, J. W.; Owens, E. F.; Gudavalli, M. R.; Strazewski, J.; Bhogal, R.; Xia, T.	J Manipulative Physiol Ther. 36(6), 342-8.	Perform manual therapies, treatments, patient therapeutic education, and other supporting therapies
45	2013	Feasibility of using a standardized patient encounter for training chiropractic students in tobacco cessation counseling	Hawk, C.; Kaeser, M. A.; Beavers, D. V.	J Chiropr Educ. 27(2), 135-40.	Perform manual therapies, treatments, patient therapeutic education, and other supporting therapies
46	2014	Audit and feedback intervention: An examination of differences in chiropractic record-keeping compliance	Homb, N. M.; Sheybani, S.; Derby, D.; Wood, K.	J Chiropr Educ. 28(2), 123-9.	Demonstrate business management skills
47	2014	Financial attitudes, knowledge, and habits of chiropractic students: A descriptive survey	Lorence, J.; Lawrence, D. J.; Salsbury, S. A.; Goertz, C. M.	J Can Chiropr assoc. 58(1), 58-65.	Demonstrate business management skills
48	2014	Evidence-based practice in chiropractic practice: A survey of chiropractors' knowledge, skills, use of research literature and barriers to the use of research evidence	Walker, B. F.; Stomski, N. J.; Hebert, J. J.; French, S. D.	Complement Ther Med. 22(2), 286-95.	Demonstrate critical thinking
49	2015	Clinical competency evaluation of Brazilian chiropractic interns	Facchinato, A. P.; Benedicto, C. C.; Mora, A. G.; Cabral, D. M.; Fagundes, D. J.	J Chiropr Educ. 29(2), 145-50.	Perform assessment, clinical reasoning skills
50	2015	The simulated early learning of cervical spine manipulation technique utilising mannequins	Chapman, P. D.; Stomski, N. J.; Losco, B.; Walker, B. F.	Chiropr Man Therap. 23(), 23.	Perform manual therapies, treatments, patient therapeutic education, and other supporting therapies
51	2015	Learning spinal manipulation: the effect of expertise on transfer capability	Descarreaux, M.; Dugas, C.; Treboz, J.; Cheron, C.; Nougarou, F.	J Manipulative Physiol Ther. 38(4), 269-74.	Perform manual therapies, treatments, patient therapeutic education, and other supporting therapies
52	2015	Consistency and malleability of manipulation performance in experienced clinicians: a pre-post experimental design	Triano, J. J.; Giuliano, D.; Kanga, I.; Starmer, D.; Brazeau, J.; Screaton, C. E.; Semple, C.	J Manipulative Physiol Ther. 38(6), 407-15.	Perform manual therapies, treatments, patient therapeutic education, and other supporting therapies

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	Year	Title	Authors	Journal	Topic
53	2015	Development and psychometric evaluation of an information literacy self-efficacy survey and an information literacy knowledge test	Tepe, R.; Tepe, C.	J Chiropr Educ. 29(1), 45235.	Demonstrate critical thinking
54	2016	Clinical evaluation tools: a survey of doctors of chiropractic and students at one chiropractic college	Mansholt, B. A.; Vining, R. D.	J Can Chiropr assoc. 60(1), 26-35.	Perform assessment, clinical reasoning skills
55	2016	A survey of the perceptions and behaviors of chiropractic interns pertaining to evidence-based principles in clinical decision making	Dane, D. E.; Dane, A. B.; Crowther, E. R.	J Chiropr Educ. 30(2), 131-137.	Perform assessment, clinical reasoning skills
56	2016	Concussion assessment and management knowledge among chiropractic fourth year interns and residents	Kazemi, M.; Pichini, A.; Scappaticci, S.; Savic, M.	J Can Chiropr assoc. 60(4), 273-285.	Perform assessment, clinical reasoning skills
57	2016	The interrater reliability of an objective structured practical examination in measuring the clinical reasoning ability of chiropractic students	Rose, K. A.; Babajanian, J.	J Chiropr Educ. 30(2), 99-103.	Perform assessment, clinical reasoning skills
58	2016	The meaning of it all: evaluating knowledge of Minimal Clinically Important Difference (MCID) among chiropractic students	Wates, R. J.; Woodruff, I.; Pfefer, M. T.	J Can Chiropr assoc. 60(3), 241-251.	Perform assessment, clinical reasoning skills
59	2016	Systematic Augmented Feedback and Dependency in Spinal Manipulation Learning: a Randomized Comparative Study	Lardon, A.; Cheron, C.; Page, I.; Dugas, C.; Descarreaux, M.	J Manipulative Physiol Ther. 39(3), 185-91.	Perform manual therapies, treatments, patient therapeutic education, and other supporting therapies
60	2016	Correlation of expertise with error detection skills of force application during spinal manipulation learning	Loranger, M.; Treboz, J.; Boucher, J. A.; Nougarou, F.; Dugas, C.; Descarreaux, M.	J Chiropr Educ. 30(1), 44932.	Perform manual therapies, treatments, patient therapeutic education, and other supporting therapies
61	2016	Changes in manipulative peak force modulation and time to peak thrust among first-year chiropractic students following a 12-week detraining period	Starmer, D. J.; Guist, B. P.; Tuff, T. R.; Warren, S. C.; Williams, M. G.	J Manipulative Physiol Ther. 39(4), 311-7.	Perform manual therapies, treatments, patient therapeutic education, and other supporting therapies
62	2016	Tobacco cessation training for complementary and alternative medicine practitioners: results of a practice-based trial	Muramoto, M. L.; Gordon, J. S.; Bell, M. L.; Nichter, M.; Floden, L.; Howerter, A.; Ritenbaugh, C. K.	Am J Prev Med. 51(2), e35-e44.	Perform manual therapies, treatments, patient therapeutic education, and other supporting therapies
63	2016	Chiropractic intern attitudes, beliefs, and future practice intentions with regard to health promotion, wellness, and preventive services	Grand, S.; Morehouse-Grand, K.; Carter, S.	J Chiropr Educ. 30(2), 152-157.	Perform manual therapies, treatments, patient therapeutic education, and other supporting therapies
64	2017	Differences of cutaneous two-point discrimination thresholds among students in different years of a chiropractic program	Dane, A. B.; Teh, E.; Reckelhoff, K. E.; Ying, P. K.	J Manipulative Physiol Ther. 40(7), 511-516.	Perform assessment, clinical reasoning skills
65	2017	The relationship between intolerance of uncertainty in chiropractic students and their treatment intervention choices	Innes, S. I.; Leboeuf-Yde, C.; Walker, B. F.	Chiropr Man Therap. 25(), 20.	Perform assessment, clinical reasoning skills
66	2017	Effects of practice variability on spinal manipulation learning	Marchand, A. A.; Mendoza, L.; Dugas, C.; Descarreaux, M.; Page, I.	J Chiropr Educ. 31(2), 90-95.	Perform manual therapies, treatments, patient therapeutic education, and other supporting therapies
67	2017	Changes in adjustment force, speed, and direction factors in chiropractic students after 10 weeks undergoing standard technique training	Owens, E. F., Jr.; Russell, B. S.; Hosek, R. S.; Sullivan, S. G. B.; Dever, L. L.; Mullin, L.	J Chiropr Educ. 32(1), 44994.	Perform manual therapies, treatments, patient therapeutic education, and other supporting therapies
68	2017	The effect of augmented feedback and expertise on spinal manipulation skills: an experimental study	Pasquier, M.; Cheron, C.; Dugas, C.; Lardon, A.; Descarreaux, M.	J Manipulative Physiol Ther. 40(6), 404-410.	Perform manual therapies, treatments, patient therapeutic education, and other supporting therapies

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	Year	Title	Authors	Journal	Topic
69	2017	Implementation of tobacco cessation brief intervention in complementary and alternative medicine practice: qualitative evaluation	Eaves, E. R.; Howerter, A.; Nichter, M.; Floden, L.; Gordon, J. S.; Ritenbaugh, C.; Muramoto, M. L.	BMC Complement Altern Med. 17(1), 331.	Perform manual therapies, treatments, patient therapeutic education, and other supporting therapies
70	2017	Training chiropractic students in weight management counseling using standardized patients	Hawk, C.; Ramcharan, M.; Kruger, C. L.	J Chiropr Educ. 32(1), 23-31.	Perform manual therapies, treatments, patient therapeutic education, and other supporting therapies
71	2018	A survey of chiropractic intern experiences learning and using an electronic health record system	Funk, M. F.	J Chiropr Educ. 32(2), 145-151.	Demonstrate business management skills
72	2018	Chiropractic student choices in relation to indications, non-indications and contra-indications of continued care	Innes, S. I.; Leboeuf-Yde, C.; Walker, B. F.	Chiropr Man Therap. 26(), 3.	Perform assessment, clinical reasoning skills
73	2018	Infection control practices and methicillin-resistant *Staphylococcus aureus* skin infections: a survey of students in US chiropractic programs	Egan, J. T.	J Chiropr Med. 17(2), 75-81.	Demonstrate patient management, safe practices, patient communication
74	2019	The usefulness of a novel patient management decision aid to improve clinical decision-making skills in final year chiropractic students	Hobbs, M.; Crafford, D.; MacRae, K.; Hulme, A.; Whillier, S.; Jenkins, H.	Chiropr Man Therap. 27(), 55.	Demonstrate patient management, safe practices, patient communication
75	2019	Effects of an 8-week physical exercise program on spinal manipulation biomechanical parameters in a group of 1st-year chiropractic students	Lardon, A.; Pasquier, M.; Audo, Y.; Barbier-Cazorla, F.; Descarreaux, M.	J Chiropr Educ. 33(2), 118-124.	Perform manual therapies, treatments, patient therapeutic education, and other supporting therapies
76	2019	Learning spinal manipulation: Gender and expertise differences in biomechanical parameters, accuracy, and variability	Pasquier, M.; Barbier-Cazorla, F.; Audo, Y.; Descarreaux, M.; Lardon, A.	J Chiropr Educ. 33(1), 44933.	Perform manual therapies, treatments, patient therapeutic education, and other supporting therapies
77	2019	A pilot study of the effect of force feedback training on students learning flexion-distraction chiropractic technique	Rowell, R. M.; Gudavalli, M. R.; Silverman, S.	J Chiropr Educ. 33(2), 100-105.	Perform manual therapies, treatments, patient therapeutic education, and other supporting therapies
78	2020	Learning spinal manipulation: objective and subjective assessment of performance	Pasquier, M.; Cheron, C.; Barbier, G.; Dugas, C.; Lardon, A.; Descarreaux, M.	J Manipulative Physiol Ther. 43(3), 189-196.	Perform manual therapies, treatments, patient therapeutic education, and other supporting therapies
79	2021	Attitudes and behaviors of chiropractic interns toward occupational history taking	Madigan, D.; Quinlan-Ruof, E.; Cambron, J. A.; Forst, L.; Zanoni, J.; Conroy, L. M.; Patil, C. L.; Friedman, L. S.	J Chiropr Educ. 35(1), 116-123.	Perform assessment, clinical reasoning skills
80	2021	Perceptions of Ontario chiropractors on business education in chiropractic schools	Ciolfi, M. A.; Azad, A.; Al-Azdee, M.; Habib, A.; Lalla, A.; Moslehi, M.; Nguyen, A.; Panah, B. A.	J Chiropr Educ. 35(1), 131-138.	Demonstrate business management skills
81	2021	A survey of chiropractic students' perceived business preparedness at graduation	Sikorski, D. M.; Wanlass, P. W.; Kizhakkeveettil, A.; Tobias, G. S.	J Chiropr Educ. 35(1), 59-64.	Demonstrate business management skills
82	2021	Chiropractic student diagnosis and management of headache disorders: A survey examining self-perceived preparedness and clinical proficiency	Moore, C.; Whillier, S.; Funabashi, M.; De Carvalho, D.; Adams, J.; Fernandez, M.; Giuriato, R.; Swain, M.	J Chiropr Educ. 35(2), 229-241.	Perform assessment, clinical reasoning skills

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	Year	Title	Authors	Journal	Topic
83	2021	A pilot study to determine the consistency of peak forces during cervical spine manipulation utilizing mannequins	Duquette, S. A.; Starmer, D. J.; Plener, J. B.; B. Sc DAG	J Chiropr Educ. 35(1), 45151.	Perform manual therapies, treatments, patient therapeutic education, and other supporting therapies
84	2021	Association between chiropractic students' hand-eye coordination or general self-efficacy and their performance on a spinal manipulative therapy examination: a cross-sectional study	Hodgetts, C. J.; McLeish, T.; Thomas, E.; Walker, B. F.	J Chiropr Med. 20(4), 183-190.	Perform manual therapies, treatments, patient therapeutic education, and other supporting therapies
85	2021	Self-perceived evidence-based practice competencies: a survey of faculty and students at a chiropractic institution	Odhwani, A. S.; Sarkar, P. K.; Giggleman, G. F.; Holmes, M. M.; Pohlman, K. A.	J Chiropr Educ. 35(1), 22-27.	Demonstrate critical thinking
86	2021	The association between guideline adherent radiographic imaging by chiropractic students and the diagnostic yield of clinically significant findings	Parthipan, S.; Bowles, C.; de Luca, K.; Jenkins, H.	J Can Chiropr assoc. 65(1), 66-75.	Demonstrate critical thinking
87	2022	Evaluating the baseline auscultation abilities of second-year chiropractic students using simulated patients and high-fidelity manikin simulators: A pilot study	da Silva-Oolup, S. A.; Giuliano, D.; Stainsby, B.; Thomas, J.; Starmer, D.	J Chiropr Educ. 36(2), 172-178.	Perform assessment, clinical reasoning skills
88	2022	Factors associated with recording the exercise vital sign (EVS) in the electronic health records of patients in chiropractic teaching clinics	Edgar, M.; Howitt, S.; DeGraauw, C.; Hogg-Johnson, S.	J Can Chiropr assoc. 66(1), 61-73.	Demonstrate business management skills
89	2022	Intervention usage for the management of low back pain in a chiropractic teaching clinic	Csiernik, B.; Smith, A.; Plener, J.; Tibbles, A.; Young, J. J.	Chiropr Man Therap. 30 (1), 3.	Demonstrate critical thinking
90	2023	Chiropractic care and research priorities for the pediatric population: a cross-sectional survey of Quebec chiropractors	Hayes, R.; Imbeau, C.; Pohlman, K. A.; Blanchette, M. A.; Doucet, C.	Chiropr Man Therap. 31 (1), 42.	Demonstrate patient management, safe practices, patient communication
91	2023	Differences in history-taking skills between male and female chiropractic student interns	Sheppard, M.; Johnson, S.; Quiroz, V.; Ward, J.	J Chiropr Educ. 37(2), 151-156.	Demonstrate patient management, safe practices, patient communication
92	2023	Can self-assessment and augmented feedback improve performance and learning retention in manual therapy: results from an experimental study	Pasquier, M.; Memari, S.; Lardon, A.; Descarreaux, M.	Chiropr Man Therap. 31 (1), 35.	Perform manual therapies, treatments, patient therapeutic education, and other supporting therapies
93	2023	An investigation into chiropractic intern adherence to radiographic guidelines in clinical decisions with a descriptive comparison to clinical practitioners	Taylor, D. N.; Hawk, C.	J Chiropr Educ. 37(1), 41-49.	Demonstrate critical thinking

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Student personal and behavioral competence (n=34)					
	Year	Title	Authors	Journal	Topic
1	1971	The chiropractic physician: a study of career contingencies	White, M.; Skipper Jr, J. K.	Journal of Health and Social Behavior. (), 300-306.	Demonstrate patient/ person competence
2	1992	A study of chiropractic students using the Myers-Briggs Type Indicator with comparison to other health professionals	Nyiendo, J.; Olsen, E.; Jones, R.	J Chiropr Humanit. 5(4), 133-145.	Demonstrate personal competence
3	1996	Patient satisfaction. A case study of a South African teaching clinic	Jamison, J. R.	Australas Chiropr Osteopathy. 5(2), 53-7.	Demonstrate patient/ person competence
4	2002	Chiropractors' attitudes to, and perceptions of, the impact of continuing professional education on clinical practice	Bolton, J. E.	Med Educ. 36(4), 317-24.	Demonstrate personal competence
5	2002	Health professions students' perceptions of interprofessional relationships	Hawk, C.; Buckwalter, K.; Byrd, L.; Cigelman, S.; Dorfman, L.; Ferguson, K.	Acad Med. 77(4), 354-7.	Demonstrate professional/ interprofessional competence
6	2005	An online survey of chiropractors' opinions of Continuing Education	Stuber, K. J.; Grod, J. P.; Smith, D. L.; Powers, P.	Chiropr Osteopat. 13(), 22.	Demonstrate personal competence
7	2009	Survey of health attitudes and behaviors of a chiropractic college population	DuMonthier, W. N.; Haneline, M. T.; Smith, M.	J Manipulative Physiol Ther. 32(6), 477-84.	Demonstrate personal competence
8	2012	Teaching, leadership, scholarly productivity, and level of activity in the chiropractic profession: a study of graduates of the Los Angeles College of Chiropractic radiology residency program	Young, K. J.; Siordia, L.	J Chiropr Humanit. 19(1), 45283.	Demonstrate personal competence
9	2012	A retrospective analysis of the cultural competence of chiropractic students in a public health course	Khauv, K. B.; Alcantara, J.	J Chiropr Educ. 26(2), 169-74.	Demonstrate patient/ person competence
10	2013	Increasing research capacity in the chiropractic profession: A case study and evaluation of an innovative research program in Norway	Lothe, L. R.; Bolton, J. E.	J Chiropr Educ. 27(1), 40-7.	Demonstrate personal competence
11	2014	Attitudes of Australian chiropractic students toward whole body donation: a cross-sectional study	Alexander, M.; Marten, M.; Stewart, E.; Serafin, S.; Åtrkalj, G.	Anat Sci Educ. 7(2), 117-23.	Demonstrate patient/ person competence
12	2014	A survey of interprofessional education in chiropractic continuing education in the United States	Bednarz, E. M.; Lisi, A. J.	J Chiropr Educ. 28(2), 152-6.	Demonstrate professional/ interprofessional competence
13	2015	A web-based survey of the motivations and challenges faced by emerging researchers in the chiropractic profession	de Luca, K.; Tuchin, P.; Bonello, R.	J Chiropr Educ. 29(2), 151-8.	Demonstrate personal competence
14	2015	Perceptions of interprofessional education and practice within a complementary and alternative medicine institution	Kadar, G. E.; Vosko, A.; Sackett, M.; Thompson, H. G.	J Interprof Care. 29(4), 377-9.	Demonstrate professional/ interprofessional competence
15	2016	A focus group study of chiropractic students following international service learning experiences	Boysen, J. C.; Salsbury, S. A.; Derby, D.; Lawrence, D. J.	J Chiropr Educ. 30(2), 124-130.	Demonstrate personal competence
16	2017	Student perceptions of a clinical placement within a therapeutic community	Amorin-Woods, L.; Cascioli, V.; Parkin-Smith, G.	Chiropractic Journal of Australia. 45(4), 269-287.	Demonstrate patient/ person competence
17	2019	Newly qualified chiropractors' perceptions of preparedness for practice: A cross-sectional study of graduates from European training programs	Pulkkinen, E.; de la Ossa, P. P.	J Chiropr Educ. 33(2), 90-99.	Demonstrate personal competence

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	Year	Title	Authors	Journal	Topic
18	2019	Measuring the level of metacognitive regulation in graduate health sciences students: what is the value of a prompt?	Williams, C. A.; Takaki, L. A. K.; LeFebvre, R.	Med Sci Educ. 29(2), 409-418.	Demonstrate personal competence
19	2019	A mixed-method study of chiropractic student clinical immersion placements in nonmetropolitan Western Australia: Influence on student experience, professional attributes, and practice destination	Amorin-Woods, L. G.; Losco, B. E.; Leach, M. J.	J Chiropr Educ. 33(1), 30-39.	Demonstrate patient/ person competence
20	2019	Assessing attitudes of patient-centred care among students in international chiropractic educational programs: a cross-sectional survey	Hammerich, K.; Stuber, K.; Hogg-Johnson, S.; Abbas, A.; Harris, M.; Lauridsen, H. H.; Lemeunier, N.; Maiers, M.; McCarthy, P.; Morales, V.; Myburgh, C.; Petrini, V.; Pohlman, K.; Mior, S.	Chiropr Man Therap. 27(), 46.	Demonstrate patient/ person competence
21	2019	The adoption of person-centred care in chiropractic practice and its effect on non-specific spinal pain: An observational study	Stomski, N.; Morrison, P.; Maben, J.; Amorin-Woods, L.; Ardakani, E.; Theroux, J.	Complement Ther Med. 44(), 56-60.	Demonstrate patient/ person competence
22	2020	Examining the motivation of health profession students to study human anatomy	Abdel Meguid, E. M.; Smith, C. F.; Meyer, A. J.	Anat Sci Educ. 13(3), 343-352.	Demonstrate personal competence
23	2020	Provider-patient interaction: exploring elderspeak in simulated preclinical chiropractic student encounters	Cockrell, M. D.	Gerontol Geriatr Med. 6 (), 2333721420923453.	Demonstrate patient/ person competence
24	2021	Chiropractic and osteopathic students' perceptions of readiness for transition to practice: The educational value of university clinic vs community and private clinics	Haworth, N. G.; Horstmanshof, L.; Moore, K. M.	J Chiropr Educ. 35(1), 38-49.	Demonstrate personal competence
25	2021	Impostor phenomenon among US chiropractic students	Kimball, K. A.; Roecker, C. B.; Hoyt, K.	J Chiropr Educ. 35(2), 209-214.	Demonstrate personal competence
26	2021	Attitudes of dental and chiropractic students towards a shared learning programme-An interprofessional learning model	Omar, H.; Khan, S.; Haneline, M.; Toh, C. G.	Eur J Dent Educ. 25(3), 592-599.	Demonstrate professional/ interprofessional competence
27	2022	Exploring student perceptions of their learning adaptions during the COVID-19 pandemic	Williams, C. A.; Nordeen, J.; Browne, C.; Marshall, B.	J Chiropr Educ. 36(1), 82-93.	Demonstrate personal competence
28	2022	Empathy levels in Australian chiropractic students	Innes, S. I.; Simpson, J. K.	J Chiropr Educ. 36(2), 110-116.	Demonstrate patient/ person competence
29	2022	Assessing attitudes of patient-centered care among chiropractic students at a South African university	Ismail, F.; Yelverton, C.; Schafer, T.; Peterson, C.	J Chiropr Educ. 36(1), 94-102.	Demonstrate patient/ person competence
30	2022	Australian chiropractic and osteopathic graduates' perceptions of readiness for transition to practice	Haworth, N. G.; Horstmanshof, L.; Moore, K. M.	J Chiropr Educ. 36(2), 153-164.	Demonstrate professional/ interprofessional competence
31	2022	Perceptions of chiropractic students regarding interprofessional health care teams	Knieper, M. J.; Bhatti, J. L.; Dc, E. J. T.	J Chiropr Educ. 36(1), 30-36.	Demonstrate professional/ interprofessional competence
32	2023	Mental health and lifestyle behaviors of students in a doctor of chiropractic program	Ward, K. L.; Dc, K. K.; Fernando, S. T.; Smith, M.	J Chiropr Educ. 37(1), 44932.	Demonstrate personal competence

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	Year	Title	Authors	Journal	Topic
33	2023	Exploring 1st- and 2nd-year chiropractic students' willingness and attitudes toward peer physical examination	Ardakani, E. M.; Theroux, J.; Beynon, A. M.; Losco, B.	J Chiropr Educ. 37(1), 13-19.	Demonstrate patient/person competence
34	2023	"It's the most important work we will ever do": Chiropractic students, service learning experiences at a day laborer center in California	Odierna, D. H.; Savai, F.; Pino, L. L.; Currie, J. D.; Smith, M.	J Chiropr Educ. 37(2), 98-105.	Demonstrate patient/person competence

Student values and ethical competence (n=3)

	Year	Title	Authors	Journal	Topic
1	2017	Definition of professionalism by different groups of health care students	Zafiropoulos, G.	Educational Research and Reviews. 12(7), 380-386.	Demonstrate professionalism and practice competence
2	2021	Attitudes of anatomy students toward commemorations for body donors: A multicultural perspective	El-Haddad, J.; Prvan, T.; Åtrkalj, G.	Anat Sci Educ. 14(1), 89-98.	Demonstrate professionalism and practice competence
3	2023	Assessment of professionalism in a chiropractic college: A design and implementation of a rubric	Voorhies, J. L.	J Chiropr Educ. 37(2), 162-170.	Demonstrate professionalism and practice competence

Program-relevant education research (n=419)

	Year	Title	Authors	Journal	Topic
1.	1979	Identifying predictors of academic success in a chiropractic program	Wills, B. S.	ACA J Chiropr. 13(16), S99-S105.	Program student assessment
2	1983	Reliability of faculty assessments of student case histories: a problem in chiropractic education	Josefowitz, N.; Moss, J.; Pike, B.; Fainstat, P.	J Manipulative Physiol Ther. 6(1), 33-5.	Program student assessment
3	1984	Educational preparation for chiropractic clinical research	Jamison, J. R.	J Manipulative Physiol Ther. 7(2), 109-17.	Program methods
4	1985	Standards of chiropractic practice	Vear, H. J.	J Manipulative Physiol Ther. 8(1), 33-43.	Program accreditation and requirements
5	1985	National Board Scores versus Student GPA's in Chiropractic Education	Kalthoff, T. J.	College and University. 61(1), 61-67.	Program student assessment
6	1987	Technology brings a patient to the classroom	Bergmann, T.	Journal of Chiropractic Education. 1(2), 9-10,15.	Program methods
7	1987	Autosimulation topical feedback methodology: An easy and effective way to learn extremity dermatomal distributions	Kirk, R. O.	Journal of Chiropractic Education. 1(1), 45179.	Program methods
8	1987	Teaching about cerebrovascular accidents in a chiropractic educational context: A preventive orientation	Kirk, R. O.	Journal of Chiropractic Education. 1(2), 1,11-12.	Program methods
9	1988	Chiropractic residency at Lindell Hospital: A program description	Carmichael, J. P.	J Manipulative Physiol Ther. 11(3), 177-80.	Program methods

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	Year	Title	Authors	Journal	Topic
10	1988	A collaborative project: NWCC worksite internship program and the American Red Cross	Gromola, T. J.	Journal of Chiropractic Education. 2(2), 1,3-4.	Program methods
11	1988	The role of cadaveric radiographs in teaching anatomy at chiropractic colleges	Mick, J. T.; Hoyt, T.	Journal of Chiropractic Education. 2(1), 1,3-4.	Program curriculum
12	1988	An analysis of grade distribution and grade inflation at Palmer College of Chiropractic from 1984-1988	Goff, P. J.	Journal of Chiropractic Education. 3(2), 23-29.	Program student assessment
13	1988	How many chiropractic schools? An analysis of institutions that offered the D.C. degree	Ferguson, A.; Wiese, G.	Chiropr Hist. 9(1), 27-31.	Program resources
14	1989	Clinical competence: The use of simulators/ models in diagnosis of visceral conditions	Jamison, J. R.	J Manipulative Physiol Ther. 12(1), 45203.	Program methods
15	1989	Computer-based learning systems in a chiropractic college	Fysh, P. N.	Journal of Chiropractic Education. 3(3), 45245.	Program methods
16	1989	The need for innovation in clinical training: Faculty practice plans in chiropractic education	Bergmann, T. F.; Keating, J. C., Jr.; Sawyer, C. E.	J Manipulative Physiol Ther. 12(6), 491-5.	Program faculty/ staff
17	1989	Correlates of locus of control in chiropractic teachers	Wiles, M.	Journal of Chiropractic Education. 2(4), 13-19.	Program faculty/ staff
18	1989	Effect of the order of taking practical examination on scores	Sandefur, R.; J Burk, J. M.	Journal of Chiropractic Education. 2(4), 44933.	Program student assessment
19	1990	Assessing the worth of intern performance	Sauter, R. C.; Spurgin, D. S.	J Manipulative Physiol Ther. 13(3), 169-70.	Program methods
20	1990	Nutrition education of chiropractic students: a survey of colleges recognized by the Council on Chiropractic Education	Jamison, J. R.	J Manipulative Physiol Ther. 13(6), 316-21.	Program curriculum
21	1990	Comparison of core curriculum courses common to chiropractic, medical, and osteopathic schools in Missouri	Ratliff, C. R.; Rogers, S. R.; Richardson, K. D.	Journal of Chiropractic Education. 4(3), 76-80.	Program curriculum
22	1990	Chiropractic education: a student survey	McNamee, K. P.; Magarian, K.; Phillips, R. B.	J Manipulative Physiol Ther. 13(9), 521-31.	Program student assessment
23	1991	Introduction to chiropractic history: Design of a course	Keating, J. C.	Journal of Chiropractic Education. 4(4), 131-137.	Program methods
24	1991	Development of a grand rounds program	MacDonald, B.; Cordry, D.	Journal of Chiropractic Education. 4(4), 115-121.	Program methods
25	1991	Health Beliefs Model as a template for measurement of intern satisfaction in an ambulatory care clinical training program	Bohm, J.	J Manipulative Physiol Ther. 14(5), 305-10.	Program curriculum
26	1991	The development and implementation of an innovative curriculum in chiropractic education: The LACC experience	Adams, A. H.; Miller, J. A.; Miller, G.	Journal of Chiropractic Education. 4(4), 122-127.	Program curriculum
27	1991	Chi Rho Theta: The research honors program at Palmer College	Baker, R. D.; Ferguson, A. C.	Journal of Chiropractic Education. 5(1), 44995.	Program curriculum
28	1991	Grades as predictors of college and career success: The case of a health-related institution	Tan, D. L.	Journal of College Admission. (), .	Program student assessment
29	1991	Gender bias detected in a survey of chiropractic technique class grades	French, N. C.	Journal of Chiropractic Education. 5(2), 70-73.	Program student assessment
30	1992	An approach to the evaluation of academic quality of the North American schools of chiropractic medicine	Gemmell, H. A.	Journal of Chiropractic Education. 6(1), 23-30.	E2

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	Year	Title	Authors	Journal	Topic
31	1992	The fixed response objective structured clinical examinations: A useful adjunct for assessing competence in diagnostic decision making?	Jamison, J. R.	J Manipulative Physiol Ther. 15(4), 261-6.	Program methods
32	1992	Teaching-learning options for the study of chiropractic principles: A case study	Gatterman, M. I.	Journal of Chiropractic Education. 6(2), 93-103.	Program methods
33	1992	Problem solving facilitation in chiropractic education using the portable patient problem pack (P4)	Mrozek, J. P.	Journal of Chiropractic Education. 6(2), 105-110.	Program methods
34	1992	Chiropractic clinical teaching	Mootz, R. D.; Cohen, P. A.	J Manipulative Physiol Ther. 15(7), 471-6.	Program faculty/ staff
35	1992	Use of selected elements of patient perception of care in the evaluation of clinical training	Goff, P. J.	Journal of Chiropractic Education. 5(4), 115-122.	Program student assessment
36	1993	Administration in chiropractic education	Coyle, B. A.	J Manipulative Physiol Ther. 16(4), 266-73.	Program governance and administration
37	1993	Self-efficacy: A possible direction for the at-risk student	Drake, A.	Journal of Chiropractic Education. 7(3), 83-87.	Program student support
38	1993	A review and comparison of medical and chiropractic education	Wiese, W.	Journal of Chiropractic Education. 6(4), 127-139.	Program curriculum
39	1993	Non-cognitive evaluations for chiropractic education	Harris, J. A.	Journal of Chiropractic Education. 7(1), 45002.	Program student assessment
40	1994	Correlation between clinic entrance examination results and 4th year clinical competency evaluations	Peterson, C.	Journal of Chiropractic Education. 8(1), 44997.	Program assessment and quality improvement
41	1994	Using the case study method in evaluation of a student service program at Palmer College of Chiropractic	Russon, C.; Brockington, Y.	Journal of Chiropractic Education. 8(2), 51-57.	Program assessment and quality improvement
42	1994	Running a chiropractic journal club in the clinic setting	Brynin, R. I.; Kimary Farrar, K.	Journal of Chiropractic Education. 8(3), 87-92.	Program methods
43	1994	Developing case based clinical tutorials for the first year chiropractic student	Greenstein, G. M.; Carr, B. L.	Journal of Chiropractic Education. 8(1), 29-33.	Program methods
44	1994	A survey of chiropractic college admission policy and state board licensure requirements vis-a-vis convicted felons	Russon C.; Pitcher, M.; Brockington, Y.	Journal of Chiropractic Education. 8(3), 93-98.	Program student support
45	1994	Chiropractic education: Reflecting the paradigm dilemma of chiropractic practice	Jamison, J. R.	J Manipulative Physiol Ther. 17(3), 186-93.	Program curriculum
46	1994	The use of the standardized patients in chiropractic education	Traina, A. D.; Gour, N. M.; Traina, T. M.	J Manipulative Physiol Ther. 17(7), 489-94.	Program student assessment
47	1994	Chiropractic College Admission Tests as predictors of academic performance at Palmer College	Subba Reddy, K. V.	Journal of Chiropractic Education. 8(2), 39-49.	Program student assessment
48	1995	A patient-centered paradigm: A model for chiropractic education and research	Gatterman, M. I.	J Altern Complement Med. 1(4), 371-86.	Program methods
49	1995	Multi-modal components of instruction in a preclinical educational program	Traina, A. D.; Gour, N. J.; Scaringe, J. G.	J Chiropr Educ. 9(2), 63-72.	Program methods
50	1995	Chiropractic history: A curriculum necessity	Green, B. N.	J Chiropr Educ. 9(2), 49-56.	Program methods

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	Year	Title	Authors	Journal	Topic
51	1995	The integration of a problem based learning approach in the teaching of ophthalmology to nonspecialist undergraduates	Crawford, C. M.	J Chiropr Educ. 9(3), 103-111.	Program methods
52	1995	A novel instructional technique used in neuroscience and human physiology courses	Delaney, P. M.; Tobias, G. S.; Harvey, P. W.	Journal of Chiropractic Education. 8(4), 149-157.	Program methods
53	1995	A new method for teaching gross anatomy lab: Combining prosection and serial dissection	Henderson, C.; McMaster, B.	Journal of Chiropractic Education. 8(4), 131-140.	Program methods
54	1995	Establishing a meaningful instructional accommodation for students with disabilities: Alternative anatomy laboratories	Drake, A. K.	J Chiropr Educ. 9(3), 113-116.	Program student support
55	1995	Public health in chiropractic colleges: A preliminary study	Krishnan, S. P.; Victory, K. S.; Flora, H.	Journal of Chiropractic Education. 9(1), 17-25.	Program curriculum
56	1995	A microbiological survey of the chiropractic educational environment	Harrell, S.; Shaw, R.; Hunter, J. T.; Buday, A. Z.	Journal of Chiropractic Education. 8(4), 143-147.	Program resources
57	1996	Description of integrated competency examination: tools to assess the chiropractic curriculum effectiveness and students' competency levels	Traina, A. D.; Goubran, E.; Gour, N. J.; Scaringe, J. G.; Talmage, D. M.; Wells, K.	J Manipulative Physiol Ther. 19(7), 463-8.	Program assessment and quality improvement
58	1996	Quality improvement in the classroom using total quality management tools and inter-term student questionnaires: A case study	Good, C. J.	J Chiropr Educ. 10(44960), 35-46.	Program assessment and quality improvement
59	1996	Innovations in education: A case study of a novel teaching/learning format	Jamison, J. R.	J Manipulative Physiol Ther. 19(2), 92-8.	Program methods
60	1996	Motivation to learn physiology using self-study	Villani, R. G.	Medical Teacher. 18(1), 43-46.	Program methods
61	1996	Teaching pathology in a competency based/problem centered curriculum	Goubran, E.; Timsah, N.	Journal of Chiropractic Education. 10(1), 44994.	Program methods
62	1996	A comparison of clinical competency evaluation methods	Waalen, D. P.; Waalen, J. K.	Journal of Chiropractic Education. 9(4), 147-153.	Program curriculum
63	1996	The effect of discontinuing an early curriculum course in terminology	Wolfenberger, V. A.	Journal of Chiropractic Education. 9(4), 119-123.	Program curriculum
64	1996	Identifying patron needs for computerized literature searches in chiropractic college libraries	Jacobs, G. E.; Duggan, C.	Journal of Chiropractic Education. 9(4), 135-142.	Program resources
65	1997	Chiropractic student education in planning and prescribing patient exercise programs [corrected and republished article originally appearing in J CHIROPRACT EDUC 1997 Sep; 11(2): 69-74]	Piccininni, J. J.	J Chiropr Educ. 11(3), 95-100.	Program methods
66	1997	Sports chiropractic: Experience at a chiropractic college	McCarthy, K.; Souza, T.; Jacobs, B.; Alvarez, C.	Topics in Clinical Chiropractic. 4(2), 57-84.	Program methods
67	1997	Implementation of basic disciplines into a problem-based learning curriculum for first trimester chiropractic students	Jiang, B.	J Chiropr Educ. 11(2), 60-68.	Program methods
68	1997	Chiropractic history research posters: active learning of research skills and chiropractic heritage	Green, B. N.; Johnson, C. D.	Chiropractic Journal of Australia. 27(3), 127-131.	Program methods

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	Year	Title	Authors	Journal	Topic
69	1997	Teaching chiropractic principles through patient centered problems	Gatterman, M. I.	Journal of the Canadian Chiropractic association. 41(1), 27-35.	Program methods
70	1997	Protocols for interns treating at athletic events	Brynin, R.; Farrar, K.	Journal of Chiropractic Education. 11(2), 51-58.	Program methods
71	1997	The state of the art of research on chiropractic education	Adams, A. H.; Gatterman, M.	J Manipulative Physiol Ther. 20(3), 179-84.	Program faculty/ staff
72	1997	Supervision of chiropractors: a pilot study	Sigrell, H.	J Manipulative Physiol Ther. 20(5), 320-5.	Program faculty/ staff
73	1997	Evaluating the effectiveness of the Current Awareness Project (CAP) at the learning resource center at Los Angeles College of Chiropractic	Saab, N. G.	Journal of Chiropractic Education. 11(2), 75-79.	Program faculty/ staff
74	1997	Comparison of entrance requirements for health care professions	Doxey, T. T.; Phillips, R. B.	J Manipulative Physiol Ther. 20(2), 86-91.	Program student support
75	1997	Chiropractic training in care of the geriatric patient: An assessment	Hawk, C.; Killinger, L. Z.; Zapotocky, B.; Azad, A.	JNMS - Journal of the Neuromusculoskeletal System. 5(1), 15-25.	Program curriculum
76	1997	The process of curriculum change at The National College of Chiropractic	Swenson, R. L.	J Chiropr Educ. 10(4), S71-5.	Program curriculum
77	1997	When is someone qualified in chiropractic?	Kleynhans, A. M.	Chiropractic Journal of Australia. 27(3), 117-126.	Program curriculum
78	1997	Towards an integrative chiropractic curriculum design	Kleynhans, A. M.	Chiropractic Journal of Australia. 27(2), 78-84.	Program curriculum
79	1997	The repeated use of known test questions reduces the students' understanding of the materials taught in class: A preliminary study	Zhang, J. Q.; Moore, L. G.	Journal of Chiropractic Education. 11(1), 45248.	Program student assessment
80	1997	The correlation of students' entry level GPA, academic performance and the national board examination in physiology	Zhang, J. Q.; Newlin, S. S.	Journal of Chiropractic Education. 11(1), 19-25.	Program student assessment
81	1998	Teaching biochemistry in a 'Guided Discovery Curriculum'	Surlekar, S.	Biochemical Education. 26(3), 218-222.	Program methods
82	1998	Chiropractic education and critical thinking	Johnson, C. D.; Green, B. N.	Topics in Clinical Chiropractic. 5(2), 34-72.	Program methods
83	1998	Plastination: A modern approach to chiropractic teaching	Grondin, G.	Journal of the Canadian Chiropractic association. 42(2), 107-112.	Program methods
84	1998	Problem solving exercise in a clinical science technique class	Bovee, M. L.	Chiropractic Technique. 10(3), 110-112.	Program methods
85	1998	Research productivity of chiropractic college faculty	Marchiori, D. M.; Meeker, W.; Hawk, C.; Long, C. R.	J Manipulative Physiol Ther. 21(1), 45151.	Program faculty/ staff
86	1998	Research capacity of the chiropractic colleges: Faculties' attitudes	Marchiori, D. M.; Hawk, C.; Meeker, W. C.	JNMS - Journal of the Neuromusculoskeletal System. 6(4), 154-160.	Program faculty/ staff
87	1998	A comparative study of chiropractic and medical education	Coulter, I.; Adams, A.; Coggan, P.; Wilkes, M.; Gonyea, M.	Altern Ther Health Med. 4(5), 64-75.	Program curriculum
88	1998	A survey of immunology and immunization education in chiropractic colleges	Colley, F. C.; Haas, M.	JNMS - Journal of the Neuromusculoskeletal System. 6(4), 141-145.	Program curriculum
89	1998	Development of a model curriculum in chiropractic geriatric education: Process and content	Killinger, L. Z.; Azad, A.; Zapotocky, B.; Morschhauser, E.	JNMS - Journal of the Neuromusculoskeletal System. 6(4), 146-153.	Program curriculum

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	Year	Title	Authors	Journal	Topic
90	1998	The use of learning and study strategies inventory (LASSI) as a predictor for success or failure on Part 1 of the National Board of Chiropractic Examiners test	Pringle, R. K.; Lee, J.	Journal of Manipulative and Physiological Therapeutics. 21(3), 164-166.	Program student assessment
91	1999	The quality of chiropractic college education: A survey of practicing chiropractors	Mayer, J. M.; Druger, M.; Ploutz-Snyder, R. J.	J Chiropr Educ. 13(2), 131-136.	Program assessment and quality improvement
92	1999	Experience in a hospital-based clinic as part of chiropractic undergraduate training	Till, H.; Till, G.	J Chiropr Educ. 13(1), 44933.	Program methods
93	1999	Effects of the mock technique system: Teaching students technique evaluation	Perle, S. M.; Speck, A. M.	Journal of Chiropractic Education. 13(2), 100-109.	Program methods
94	1999	Supervision of chiropractors: a summary of results from two surveys involving chiropractic supervisors and graduates in England and Sweden	Sigrell, H.	J Manipulative Physiol Ther. 22(4), 209-15.	Program faculty/ staff
95	1999	An active sabbatical leave program: Critical changes make all the difference	Boal, R. W.; Kaminski, N.; Harris, J. A.; Sellner, R. G.	Journal of Chiropractic Education. 13(2), 110-113.	Program faculty/ staff
96	1999	Chiropractic and osteopathic education at Royal Melbourne Institute of Technology. A student perspective	French, S. D.; Marshall, S. J.; Webb, M.; Tucker, C.	Australas Chiropr Osteopathy. 8(1), 45204.	Program curriculum
97	1999	MSc clinical chiropractic: Development and design of an innovative postgraduate course in practice-based learning at the Anglo-European College of Chiropractic	Bolton, J. E.; Humphreys, B. K.	Journal of Chiropractic Education. 13(1), 45149.	Program curriculum
98	1999	Relationship between techniques taught and practice behavior: education and clinical correlation	Leone, A.	J Manipulative Physiol Ther. 22(1), 29-31.	Program student assessment
99	1999	Developing a clinical competency examination in radiology: part II–test results	Marchiori, D. M.; Henderson, C. N.; Adams, T. L.	J Manipulative Physiol Ther. 22(2), 63-74.	Program student assessment
100	1999	Correlations between Chiropractic National Board (Part I) scores and basic science course grades and related data	Wolfenberger, V.	College and University. 74 (2), 16-20.	Program student assessment
101	1999	The correlation of students entry-level GPA, academic performance, and the National Board Examination in all basic science subjects	Zhang, J. Q.	Journal of Chiropractic Education. 13(2), 91-99.	Program student assessment
102	2000	Comparison of two teaching methods in a chiropractic clinical science course	Bovee, M. L.; Gran, D. F.	J Allied Health. 29(3), 157-60.	Program methods
103	2000	Integration of chiropractic education into a hospital setting: A South African experiences	Till, A. G.; Till, H.	J Manipulative Physiol Ther. 23(2), 130-3.	Program methods
104	2000	Complementary medicine: The Southampton undergraduate experience	Lewith, G. T.; Owen, D.	Complement Ther Med. 8 (3), 202-6.	Program methods
105	2000	First aid and emergency care education for chiropractic students: A course at Macquarie University	Woo, C. C.	J Manipulative Physiol Ther. 23(9), 645-51.	Program methods
106	2000	Academic and clinical design to promote utilization of active care procedures	Weinert, D.; McDermott, A. M.	Journal of Sports Chiropractic and Rehabilitation. 14(1), 21-23.	Program methods
107	2000	The use of technology in support of the basic sciences labs at the Los Angeles College of Chiropractic	Goubran, E. Z.; Doss, T. A.; Awad, S. A.	J Chiropr Educ. 14(2), 68-70.	Program methods

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	Year	Title	Authors	Journal	Topic
108	2000	An action research approach to standardizing the evaluation of diagnostic psychomotor skills	Waalen, D. P.; Waalen, J. K.; Medio, F. J.	Journal of Chiropractic Education. 14(2), 78-87.	Program faculty/ staff
109	2000	Residency programs at the Canadian Memorial Chiropractic College	Steiman, I.	J Manipulative Physiol Ther. 23(7), 503-11.	Program curriculum
110	2000	A survey of the use of evidence-based health care in chiropractic college clinics	Rose, K. A.; Adams, A.	J Chiropr Educ. 14(2), 71-77.	Program curriculum
111	2000	Name techniques in Canada: current trends in utilization rates and recommendations for their inclusion at the Canadian Memorial Chiropractic College	Gleberzon, B. J.	Journal of the Canadian Chiropractic association. 44 (3), 157-168.	Program curriculum
112	2000	Analysis of the relationship between program design and professional practice in CMCC's undergraduate chiropractic program	Saranchuk, R.; Watkins, T.	Journal of the Canadian Chiropractic association. 44 (4), 230-244.	Program student assessment
113	2001	Evaluation of a geriatrics course emphasizing interdisciplinary issues for chiropractic students	Hawk, C.; Byrd, L.; Killinger, L. Z.	J Gerontol Nurs. 27(7), 45089.	Program methods
114	2001	Teaching with cases to enhance the clinical problem-solving skills and integration skills of fourth-term chiropractic students	Talmage, D. M.	J Chiropr Educ. 15(2), 53-60.	Program methods
115	2001	Development of an on-line advanced clinical topics course	Rose, K. A.	J Chiropr Educ. 16(2), 122-127.	Program methods
116	2001	Diversity in chiropractic technique: A proposed solution to the obstacles associated with teaching and evaluating technique in the academic and clinical settings of a chiropractic college	Petty, S.; McCoy, M.; Jezequel, J.	J Chiropr Educ. 15(2), 72-75.	Program methods
117	2001	Structured self-assessment exercises as a substitute for small-group tutorial teaching in diagnostic imaging: Student preferences and effects on examination performance	Peterson, C.	J Chiropr Educ. 15(2), 61-68.	Program methods
118	2001	Reform in public health education in chiropractic	Green, B. N.	Topics in Clinical Chiropractic. 8(4), 27-69.	Program methods
119	2001	First-trimester chiropractic students' reactions to a multistation teaching format for learning adjustive psychomotor skills	Ebbets, J. R.	J Chiropr Educ. 16(2), 107-113.	Program methods
120	2001	Enhancing the 3rd-year intern clinical experience: Procedures and protocols for supervised on-site chiropractic care at athletic events	Ebbets, J. R.	J Chiropr Educ. 16(2), 114-121.	Program methods
121	2001	The teaching of electroacupuncture in North America: An informal survey	Mayor, D. F.	Clinical Acupuncture and Oriental Medicine. 2(2), 116-128.	Program curriculum
122	2001	Neuroscience in the chiropractic curriculum	Bub, G. A.; Budgell, B. S.; Henderson, C. N. R.; Injeyan, H. S.; Kinsinger, S.; Moltz, J. H.; Pickar, J. G.; Polus, B. I.; Song, X.; Vernon, H.	JNMS: Journal of the Neuromusculoskeletal System. 9(3), 77-81.	Program curriculum
123	2002	The use of information technology to teach differential diagnosis to chiropractic students	Jamison, J. R.	J Manipulative Physiol Ther. 25(4), 277-82.	Program methods
124	2002	The role of the institution in developing the next generation chiropractor: Clinician and researcher	Flanagan, J.; Giordano, J.	J Manipulative Physiol Ther. 25(3), 193-6.	Program faculty/ staff
125	2002	Educating primary care chiropractic physicians	Wickes, D.	J Chiropr Med. 1(4), 175-9.	Program curriculum

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	Year	Title	Authors	Journal	Topic
126	2003	The impact of newly implemented PBL curriculum on the National Board of Chiropractic Examiners part I examinations at the National University of Health Sciences	Shenouda, N. S.; Swenson, R. L.; Fournier, J. T.	Teaching & Learning in Medicine. 15(4), 233-237.	Program assessment and quality improvement
127	2003	Quantitative feedback versus standard training for cervical and thoracic manipulation	Triano, J. J.; Rogers, C. M.; Combs, S.; Potts, D.; Sorrels, K.	J Manipulative Physiol Ther. 26(3), 131-8.	Program methods
128	2003	Empowerment and organizational commitment of chiropractic faculty	Henkin, A. B.; Marchiori, D. M.	J Manipulative Physiol Ther. 26(5), 275-81.	Program faculty/ staff
129	2003	Empowerment of chiropractic faculty: A profile in context	Marchiori, D. M.; Henkin, A. B.	J Manipulative Physiol Ther. 26(1), 17-24.	Program faculty/ staff
130	2003	Predicting academic success in the first year of chiropractic college	Green, B. N.; Johnson, C. D.; McCarthy, K.	J Manipulative Physiol Ther. 26(1), 40-6.	Program student assessment
131	2004	Effects of contrasting equivalent teaching approaches on student ratings	Bovee, M. L.; Gran, D. F.	J Allied Health. 33(1), 70-4.	Program methods
132	2004	Guidance hypothesis with verbal feedback in learning a palpation skill	Pringle, R. K.	J Manipulative Physiol Ther. 27(1), 36-42.	Program methods
133	2004	Report on the development, implementation, and evaluation of an evidence-based skills course: A lesson in incremental curricular change	Smith, M.; Long, C.; Henderson, C.; Marchiori, D.; Hawk, C.; Meeker, W.; Killinger, L.	J Chiropr Educ. 18(2), 116-126.	Program methods
134	2004	Organizational commitment of a health profession faculty: dimensions, correlates and conditions	Marchiori, D. M.; Henkin, A. B.	Med Teach. 26(4), 353-8.	Program faculty/ staff
135	2004	A qualitative study of 16 African Americans in chiropractic education	Wiese, G. C.	J Chiropr Educ. 18(2), 127-136.	Program student support
136	2004	Identifying the perceived weaknesses of a new curriculum by means of the Dundee Ready Education Environment Measure (DREEM) Inventory	Till, H.	Med Teach. 26(1), 39-45.	Program curriculum
137	2004	Development of a mixed-mode undergraduate chiropractic program	Cunliffe, C.; Newell, D.	J Chiropr Educ. 18(2), 97-102.	Program curriculum
138	2004	Procedural skills in spinal manipulation: Do prerequisites matter?	Triano, J. J.; Bougie, J.; Rogers, C.; Scaringe, J.; Sorrels, K.; Skogsbergh, D.; Mior, S.	Spine J. 4(5), 557-63.	Program student assessment
139	2005	Climate studies: can students' perceptions of the ideal educational environment be of use for institutional planning and resource utilization?	Till, H.	Med Teach. 27(4), 332-7.	Program assessment and quality improvement
140	2005	Fostering critical appraisal skills as a prelude to clinical practice	Jamison, J. R.	Chiropractic Journal of Australia. 35(3), 107-111.	Program methods
141	2005	A chiropractic internship program in the Department of Veterans Affairs Health Care System	Dunn, A. S.	J Chiropr Educ. 19(2), 92-96.	Program methods
142	2005	The development of an on-line self-guided diagnostic imaging tutorial and its impact on course performance	Bassano, J. M.	J Chiropr Educ. 19(2), 81-84.	Program methods
143	2005	Characterization of side effects sustained by chiropractic students during their undergraduate training in technique class at a chiropractic college: A preliminary retrospective study	Macanuel, K.; Deconinck, A.; Sloma, K.; Ledoux, M.; Gleberzon, B. J.	J Can Chiropr assoc. 49(1), 46-55.	Program student support

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	Year	Title	Authors	Journal	Topic
144	2005	Implementation of a course on wellness concepts into a chiropractic college curriculum	Hawk, C.; Rupert, R. L.; Hyland, J. K.; Odhwani, A.	J Manipulative Physiol Ther. 28(6), 423-8.	Program curriculum
145	2005	Research & science. Does chiropractic clinical training address tobacco use?	Hawk, C.; Evans, M. W., Jr.	Journal of the American Chiropractic association. 42 (3), 45090.	Program curriculum
146	2005	Predictive efficacy of chiropractic college assessment test scores in basic science chiropractic education	Cunningham, K. A.; DesJardins, S. L.; Christensen, M. G.	J Manipulative Physiol Ther. 28(3), 175-8.	Program student assessment
147	2005	Assessment of knowledge of primary care activities in a sample of medical and chiropractic students	Sandefur, R.; Febbo, T. A.; Rupert, R. L.	J Manipulative Physiol Ther. 28(5), 336-44.	Program student assessment
148	2006	Physical injury assessment of male versus female chiropractic students when learning and performing various adjustive techniques: A preliminary investigative study	Bisiacchi, D. W.; Huber, L. L.	Chiropr Osteopat. 14(), 17.	Program assessment and quality improvement
149	2006	Teaching diagnostic decision making: Student evaluation of a diagnosis unit	Jamison, J. R.	J Manipulative Physiol Ther. 29(4), 315.e1-9.	Program methods
150	2006	Effects of visual feedback on manipulation performance and patient ratings	Triano, J. J.; Scaringe, J.; Bougie, J.; Rogers, C.	J Manipulative Physiol Ther. 29(5), 378-85.	Program methods
151	2006	Development, validity and reliability of a novice adjusting simulator for the thoracic spine: Preliminary investigation	Cucciolillo, A.; Gemmell, H.; Gosselin, G.	Clinical Chiropractic. 9(4), 170-175.	Program methods
152	2006	Research in chiropractic education: An update	Mrozek, J. P.; Till, H.; Taylor-Vaisey, A. L.; Wickes, D.	J Manipulative Physiol Ther. 29(9), 762-73.	Program faculty/ staff
153	2006	Journal publications by Australian chiropractic academics: Are they enough?	Hoskins, W.; Pollard, H.; Reggars, J.; Vitiello, A.; Bonello, R.	Chiropr Osteopat. 14(), 13.	Program faculty/ staff
154	2006	Do chiropractic college faculty understand informed consent: A pilot study	Lawrence, D. J.; Hondras, M. A.	Chiropr Osteopat. 14(), 27.	Program faculty/ staff
155	2006	Recruiting underrepresented minorities to chiropractic colleges	Callender, A.	J Chiropr Educ. 20(2), 123-7.	Program student support
156	2006	Commentary: Establishing an accredited master of science in diagnostic imaging degree at a chiropractic college	Mestan, M. A.; Taylor, J. A.; Blackshaw, G. L.; McDonald, J. C.	J Manipulative Physiol Ther. 29(5), 410-3.	Program curriculum
157	2006	A preliminary analysis of preparation strategies and other correlates to performance on a basic science qualifying exam in chiropractic	Cunningham, K. A.; Percuoco, R. E.; Marchiori, D. M.; Christensen, M. G.	J Allied Health. 35(1), Program Faculty/Staff 9-72.	Program student assessment
158	2006	Predictors of performance of students from the Canadian Memorial Chiropractic College on the licensure examinations of the Canadian Chiropractic Examining Board	Lawson, D. M.; Till, H.	J Manipulative Physiol Ther. 29(7), 566-9.	Program student assessment
159	2006	Department of defense chiropractic internships: A survey of internship participants and nonparticipants	Dunn, A. S.	J Chiropr Educ. 20(2), 115-22.	Program student assessment
160	2006	Canadian chiropractors' perception of educational preparation to counsel patients on immunization	Injeyan, H. S.; Russell, M. L.; Verhoef, M. J.; Mutasingwa, D.	J Manipulative Physiol Ther. 29(8), 643-50.	Program student assessment
161	2006	Applying generalizability theory to high-stakes objective structured clinical examinations in a naturalistic environment	Lawson, D. M.	J Manipulative Physiol Ther. 29(6), 463-7.	Program student assessment

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	Year	Title	Authors	Journal	Topic
162	2006	Applying structural equation modeling to Canadian Chiropractic Examining Board measures	Lawson, D. M.	J Can Chiropr assoc. 50(2), 134-9.	Program student assessment
163	2006	The presence and impact of local item dependence on objective structured clinical examinations scores and the potential use of the polytomous, many-facet Rasch model	Lawson, D. M.; Brailovsky, C.	J Manipulative Physiol Ther. 29(8), 651-7.	Program student assessment
164	2007	Curriculum reform in a public health course at a chiropractic college: Are we making progress toward improving clinical relevance?	Borody, C.; Till, H.	J Chiropr Educ. 21(1), 20-7.	Program assessment and quality improvement
165	2007	Interactive atlas of histology: A tool for self-directed learning, practice, and self-assessment	Goubran, E. Z.; Vinjamury, S. P.	J Chiropr Educ. 21(1), 45268.	Program methods
166	2007	Collaborative community-based teaching clinics at the Canadian Memorial Chiropractic College: Addressing the needs of local poor communities	Kopansky-Giles, D.; Vernon, H.; Steiman, I.; Tibbles, A.; Decina, P.; Goldin, J.; Kelly, M.	J Manipulative Physiol Ther. 30(8), 558-65.	Program methods
167	2007	Comparison of teaching orthopaedics using an integrated case-based curriculum and a conventional curriculum: A preliminary study	Gemmell, H. A.	Clinical Chiropractic. 10(1), 36-42.	Program methods
168	2007	Development of an evidence-based application and rubric for evaluating applicants' qualifications for promotion to professor	Wiese, G. C.; Percuoco, R. E.; Pickar, J. G.; Duray, S. M.; Faruqui, S. R.; Schmiedel, G. O.; McLean, I. D.	J Manipulative Physiol Ther. 30(7), 527-35.	Program faculty/ staff
169	2007	Chiropractic interns' perceptions of stress and confidence	Spegman, A. M.; Herrin, S.	J Chiropr Educ. 21(2), 129-37.	Program student support
170	2007	A survey of chiropractic academic affiliations within the department of veterans affairs health care system	Dunn, A. S.	J Chiropr Educ. 21(2), 138-43.	Program curriculum
171	2007	Poverty and human development: contributions from and callings to the chiropractic profession	Johnson, C.	J Manipulative Physiol Ther. 30(8), 551-6.	Program curriculum
172	2007	Primary contact practitioner training: A comparison of chiropractic and naturopathic curricula in Australia	Grace, S.; Vemulpad, S.; Beirman, R.	Chiropractic Journal of Australia. 37(1), 19-24.	Program curriculum
173	2007	Separate and distinct: a comparison of scholarly productivity, teaching load, and compensation of chiropractic teaching faculty to other sectors of higher education	Ward, R. W.	J Chiropr Educ. 21(1), 44937.	Program resources
174	2008	Facilitating the learning process: A pilot study of collaborative testing vs individualistic testing in the chiropractic college setting	Meseke, J. K.; Nafziger, R.; Meseke, C. A.	J Manipulative Physiol Ther. 31(4), 308-12.	Program methods
175	2008	Use of a clinical seminar to horizontally integrate basic science and clinical topics for year-one students	Green, B. N.; Johnson, C. D.; Vuong, J.; Luckock, A. S.; Waagen, G.	J Allied Health. 37(3), e160-76.	Program methods
176	2008	Student course performance and collaborative testing: A prospective follow-on study	Meseke, C. A.; Nafziger, R. E.; Meseke, J. K.	J Manipulative Physiol Ther. 31(8), 611-5.	Program methods
177	2008	Designing core clinical bioethics training for master's level students in an American chiropractic college	Lawrence, D. J.	Chiropractic Journal of Australia. 38(2), 57-68.	Program methods

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	Year	Title	Authors	Journal	Topic
178	2008	Issues in conducting research in chiropractic college clinics	Hawk, C.; Cambron, J.; Pahmeyer, D.	J Manipulative Physiol Ther. 31(4), 301-7.	Program faculty/ staff
179	2008	Assessment of unpublished scholarly activity: An informal rubric for evaluating faculty performance	Ward, R. W.	Journal of Chiropractic Education. 22(1), 17-22.	Program faculty/ staff
180	2008	An intercollegiate comparison of prevalence of injuries among students during technique class from five chiropractic colleges throughout the world: A preliminary retrospective study	Kuehnel, E.; Beatty, A.; Gleberzon, B.	J Can Chiropr assoc. 52(3), 169-74.	Program student support
181	2008	Student mental health in a chiropractic university setting	Rubin, L. E.	J Chiropr Educ. 22(1), 45266.	Program student support
182	2008	Towards a 21 century paradigm of chiropractic: Stage 1, redesigning clinical learning	Ebrall, P.; Draper, B.; Repka, A.	J Chiropr Educ. 22(2), 152-60.	Program curriculum
183	2008	A survey of graduate perception of undergraduate chiropractic training	Draper, B.; Walsh, M.	Chiropractic Journal of Australia. 38(3), 97-103.	Program curriculum
184	2009	The impact of microbial surveys on disinfection protocols in a chiropractic college environment	Burnham, K.; Peterson, D.; Vavrek, D.; Haas, M.	J Manipulative Physiol Ther. 32(6), 463-8.	Program assessment and quality improvement
185	2009	Prevalence of musculoskeletal injuries sustained by students while attending a chiropractic college	Ndetan, H. T.; Rupert, R. L.; Bae, S.; Singh, K. P.	J Manipulative Physiol Ther. 32(2), 140-8.	Program assessment and quality improvement
186	2009	Conflict of interest policies among institutions and organizations offering chiropractic continuing education	Funk, M. F.; Lisi, A. J.	J Manipulative Physiol Ther. 32(4), 303-8.	Program ethics
187	2009	Impact of collaborative testing on student performance and satisfaction in a chiropractic science course	Meseke, C. A.; Bovee, M. L.; Gran, D. F.	J Manipulative Physiol Ther. 32(4), 309-14.	Program methods
188	2009	Student-generated case reports	Good, C. J.	J Chiropr Educ. 23(2), 165-73.	Program methods
189	2009	Educating chiropractic students about intraobserver and interobserver variability through the use of skinfold measurement	McRae, M. P.	J Chiropr Educ. 23(2), 147-50.	Program methods
190	2009	The implementation of virtual instruction in relation to x-ray anatomy and positioning in a chiropractic degree program: A descriptive paper	Rush, P. O.; Boone, W. R.	J Chiropr Educ. 23(1), 40-6.	Program methods
191	2009	Epidemiology of musculoskeletal injuries among students entering a chiropractic college	Ndetan, H. T.; Rupert, R. L.; Bae, S.; Singh, K. P.	J Manipulative Physiol Ther. 32(2), 134-9.	Program student support
192	2009	Generalizability of a composite student selection procedure at a university-based chiropractic program	O'Neill, L. D.; Korsholm, L.; Wallstedt, B.; Eika, B.; Hartvigsen, J.	J Chiropr Educ. 23(1), 45154.	Program student support
193	2009	A survey of geriatrics courses in North American chiropractic programs	Borggren, C. L.; Osterbauer, P. J.; Wiles, M. R.	J Chiropr Educ. 23(1), 28-35.	Program curriculum
194	2009	Integrated neuroscience program: An alternative approach to teaching neurosciences to chiropractic students	He, X.; La Rose, J.; Zhang, N.	J Chiropr Educ. 23(2), 134-46.	Program curriculum
195	2009	Towards a 21st Century paradigm of chiropractic education: Stage 2, connecting assessment to attainment in practice-integrated learning	Ebrall, P.; Draper, B.; Repka, A.; Haworth, N.	Chiropractic Journal of Australia. 39(3), 92-102.	Program curriculum

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	Year	Title	Authors	Journal	Topic
196	2009	Usefulness of CanMEDS Competencies for Chiropractic Graduate Education in Europe	Wangler, M.	J Chiropr Educ. 23(2), 123-33.	Program student assessment
197	2010	Development of the Murdoch chiropractic graduate pledge	Simpson, J. K.; Losco, B.; Young, K. J.	J Chiropr Educ. 24(2), 175-86.	Program ethics
198	2010	Restructuring of the jurisprudence course taught at the Canadian Memorial Chiropractic College	Gleberzon, B. J.	J Can Chiropr assoc. 54(1), 60-8.	Program methods
199	2010	Effect of clinician feedback versus video self-assessment in 5th-year chiropractic students on an end-of-year communication skills examination	Hecimovich, M. D.; Maire, J. A.; Losco, B.	J Chiropr Educ. 24(2), 165-74.	Program methods
200	2010	Student attitudes, satisfaction, and learning in a collaborative testing environment	Meseke, C. A.; Nafziger, R.; Meseke, J. K.	J Chiropr Educ. 24(1), 19-29.	Program methods
201	2010	Interprofessional education through shadowing experiences in multi-disciplinary clinical settings	Riva, J. J.; Lam, J. M.; Stanford, E. C.; Moore, A. E.; Endicott, A. R.; Krawchenko, I. E.	Chiropr Osteopat. 18(), 31.	Program methods
202	2010	Understanding the extraocular muscles and oculomotor, trochlear, and abducens nerves through a simulation in physical examination training: An innovative approach	Zhang, N.; He, X.	J Chiropr Educ. 24(2), 153-8.	Program methods
203	2010	Mary Anne Chance memorial paper: Review of journal clubs for fostering communication and clinical interpretive skills	Lawrence, D. J.	Chiropractic Journal of Australia. 40(2), 51-56.	Program methods
204	2010	Anecdote and evidence: A comparison of student performance using two learning referents	Draper, B.; Ebrall, P.	Chiropractic Journal of Australia. 40(2), 63-68.	Program methods
205	2010	Faculty perception of and resistance to online education in the fields of acupuncture, chiropractic, and massage therapy	Schwartz, J.	Int J Ther Massage Bodywork. 3(3), 20-31.	Program faculty/ staff
206	2010	Jurisprudence and business management course content taught at accredited chiropractic colleges: A comparative audit	Gleberzon, B. J.	J Can Chiropr assoc. 54(1), 52-9.	Program curriculum
207	2010	100 years after the flexner report: Reflections on its influence on chiropractic education	Johnson, C.; Green, B.	J Chiropr Educ. 24(2), 145-52.	Program curriculum
208	2010	Degree of vertical integration between the undergraduate program and clinical internship with respect to lumbopelvic diagnostic and therapeutic procedures taught at the Canadian Memorial Chiropractic College	Vermet, S.; McGinnis, K.; Boodham, M.; Gleberzon, B. J.	J Chiropr Educ. 24(1), 46-56.	Program curriculum
209	2010	Horizontal integration of the basic sciences in the chiropractic curriculum	Ward, K. P.	J Chiropr Educ. 24(2), 194-7.	Program curriculum
210	2010	Correlation of preadmission organic chemistry courses and academic performance in biochemistry at a midwest chiropractic doctoral program	McRae, M. P.	J Chiropr Educ. 24(1), 30-4.	Program student assessment
211	2010	Investigating the use of written and performance-based testing to summarize competence on the case management component of the NBCE part IV-national practical examination	Townsend, P. D.; Christensen, M. G.; Kreiter, C. D.; zumBrunnen, J. R.	Teach Learn Med. 22(1), 16-21.	Program student assessment

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	Year	Title	Authors	Journal	Topic
212	2011	Collaborative testing: The effect of group formation process on overall student performance	Nafziger, R.; Meseke, J. K.; Meseke, C. A.	J Chiropr Educ. 25(1), 45235.	Program methods
213	2011	Advancing integration through evidence informed practice: Northwestern Health Sciences University's integrated educational model	Taylor, B.; Delagran, L.; Baldwin, L.; Hanson, L.; Leininger, B.; Vihstadt, C.; Evans, R.; Kreitzer, M. J.; Sierpina, V.	Explore (NY). 7(6), 396-400.	Program methods
214	2011	Allowing a possible margin of error when assessing student skills in spinous process location	Hart, J.; Neely, C.	J Chiropr Educ. 25(2), 182-185.	Program faculty/ staff
215	2011	Pregnant students in the gross anatomy laboratory: Policies and practices at chiropractic colleges	Duray, S. M.; Mekow, C. L.	Anat Sci Educ. 4(1), 22-8.	Program student support
216	2011	Laboratory pre-participation screening examination in a chiropractic college: Development, implementation, and results	Funk, M. F.; Cantito, A. A.	J Chiropr Educ. 25(1), 16-29.	Program student support
217	2011	Depressive symptoms in chiropractic students: A 3-year study	Kinsinger, S.; Puhl, A. A.; Reinhart, C. J.	J Chiropr Educ. 25(2), 142-50.	Program student support
218	2011	Perception of educational environment among undergraduate students in a chiropractic training institution	Palmgren, P. J.; Chandratilake, M.	J Chiropr Educ. 25(2), 151-63.	Program student support
219	2011	Differences in learning and study strategies inventory scores between chiropractic students with lower and higher grade point averages	Schutz, C. M.; Gallagher, M. L.; Tepe, R. E.	J Chiropr Educ. 25(1), 45056.	Program student support
220	2011	Training the evidence-based practitioner: University of Western States document on standards and competencies	Lefebvre, R. P.; Peterson, D. H.; Haas, M.; Gillette, R. G.; Novak, C. W.; Tapper, J.; Muench, J. P.	J Chiropr Educ. 25(1), 30-7.	Program curriculum
221	2011	Aligning lifelong learning and continuing professional development with the techniques practised by chiropractors	Richards, D.	Chiropractic Journal of Australia. 41(3), 95-98.	Program curriculum
222	2011	The new anatomy facility at Macquarie University and its role in chiropractic education and research	Arkalj, G.; Casey, M.; Appleyard, R.	Chiropractic Journal of Australia. 41(2), 54-56.	Program resources
223	2012	Development and psychometric evaluation of an evidence-based practice questionnaire for a chiropractic curriculum	Leo, M. C.; Peterson, D.; Haas, M.; LeFebvre, R.; Bhalerao, S.	J Manipulative Physiol Ther. 35(9), 692-700.	Program assessment and quality improvement
224	2012	Teaching anatomy to chiropractic students: experiences from Macquarie University, Sydney	Strkalj, G.; Beirman, R.; Strkalj, M.; Sierpina, V. S.; Kreitzer, M. J.	Explore (NY). 8(2), 141-4.	Program methods
225	2012	Empowering student learning through rubric-referenced self-assessment	He, X.; Canty, A.	J Chiropr Educ. 26(1), 24-31.	Program methods
226	2012	Manikin-based clinical simulation in chiropractic education	McGregor, M.; Giuliano, D.	J Chiropr Educ. 26(1), 14-23.	Program methods
227	2012	Evidence-based chiropractic education: Are we equipping graduates for clinical practice with improved patient outcomes?	Shreeve, M. W.	J Chiropr Educ. 26(2), 184-7.	Program methods
228	2012	Effect of implementing instructional videos in a physical examination course: An alternative paradigm for chiropractic physical examination teaching	Zhang, N.; Chawla, S.	J Chiropr Educ. 26(1), 40-6.	Program methods
229	2012	Diversity in the chiropractic profession: Preparing for 2050	Johnson, C. D.; Green, B. N.	J Chiropr Educ. 26(1), 44939.	Program student support

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	Year	Title	Authors	Journal	Topic
230	2012	The emotional impact of being recently diagnosed with dyslexia from the perspective of chiropractic students	Kong, S. Y.	Journal of Further and Higher Education. 36(1), 127-146.	Program student support
231	2012	Evaluation of the effects of an evidence-based practice curriculum on knowledge, attitudes, and self-assessed skills and behaviors in chiropractic students	Haas, M.; Leo, M.; Peterson, D.; Lefebvre, R.; Vavrek, D.	J Manipulative Physiol Ther. 35(9), 701-9.	Program curriculum
232	2012	Ethics education in chiropractic colleges: a North American survey	Kinsinger, S.; Soave, D.	J Manipulative Physiol Ther. 35(6), 486-90.	Program curriculum
233	2012	An international survey of gross anatomy courses in chiropractic colleges	Ball, J. J.; Petrocco-Napuli, K. L.; Zumpano, M. P.	J Chiropr Educ. 26(2), 175-83.	Program curriculum
234	2012	Developing a model curriculum for ethical practice building at Chiropractic Colleges: Part 1: Qualitative analysis of opinions from an International Workshop	Gleberzon, B. J.; Perle, S. M.; Lamarche, G. A.	J Can Chiropr assoc. 56(2), 87-91.	Program curriculum
235	2012	Degree of vertical integration between the undergraduate program and clinical internship with respect to cervical and cranial diagnostic and therapeutic procedures taught at the Canadian Memorial Chiropractic College	Leppington, C.; Gleberzon, B.; Fortunato, L.; Doucet, N.; Vandervalk, K.	J Chiropr Educ. 26(1), 51-61.	Program curriculum
236	2012	Correlation between student performances on course level integrated clinical skills examinations and objective structured clinical examinations in a chiropractic college program	Russell, B. S.; Hoiriis, K. T.; Guagliardo, J.	J Chiropr Educ. 26(2), 138-45.	Program student assessment
237	2013	Competencies for public health and interprofessional education in accreditation standards of complementary and alternative medicine disciplines	Brett, J.; Brimhall, J.; Healey, D.; Pfeifer, J.; Prenguber, M.	Explore (NY). 9(5), 314-20.	Program accreditation and requirements
238	2013	Using computer-assisted learning to engage diverse learning styles in understanding business management principles	Frost, M. E.; Derby, D. C.; Haan, A. G.	J Chiropr Educ. 27(2), 141-6.	Program methods
239	2013	Comparison of chiropractic student scores before and after utilizing active learning techniques in a classroom setting	Guagliardo, J. G.; Hoiriis, K. T.	J Chiropr Educ. 27(2), 116-22.	Program methods
240	2013	Outcomes of a mentored research competition for authoring pediatric case reports in chiropractic	Pohlman, K. A.; Vallone, S.; Nightingale, L. M.	J Chiropr Educ. 27(1), 33-9.	Program methods
241	2013	The effect of face-to-face teaching on student knowledge and satisfaction in an undergraduate neuroanatomy course	Whillier, S.; Lystad, R. P.	Anat Sci Educ. 6(4), 239-45.	Program methods
242	2013	Intensive mode delivery of a neuroanatomy unit: Lower final grades but higher student satisfaction	Whillier, S.; Lystad, R. P.	Anat Sci Educ. 6(5), 286-93.	Program methods
243	2013	Using actors as simulated patients for interprofessional education	Panzarella, K.; Rivers, L.; Bright, B.; Whelan, M.; Butterfoss, K.; Russ, L.; Case, A.; Brian, S.; Ferro, H.; DeMarco, L.; Dunford, D.; Schmitz, K.; Kittleson, H.; Kennedy, M.; Brzykcy, D.; Pownall, L.; Reddington, M.	Medical Science Educator. 23(3), 438-448.	Program methods
244	2013	Anatomy based research projects in the final year of chiropractic studies: Reinforcing anatomy knowledge while improving research skills	Åtrkalj, G.; Casey, M.	Chiropractic Journal of Australia. 43(2), 80-81.	Program methods

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	Year	Title	Authors	Journal	Topic
245	2013	A comparison of the efficacy of test-driven learning versus self-assessment learning	Xiaohua, H.; Canty, A.	J Chiropr Educ. 27(2), 110-115.	Program methods
246	2013	Video capture on student-owned mobile devices to facilitate psychomotor skills acquisition: A feasibility study	Hinck, G.; Bergmann, T. F.	J Chiropr Educ. 27(2), 158-162.	Program methods
247	2013	Stress in chiropractic education: A student survey of a five-year course	Hester, H.; Cunliffe, C.; Hunnisett, A.	J Chiropr Educ. 27(2), 147-51.	Program student support
248	2013	Is there a chilly climate? An educational environmental mixed method study in a chiropractic training institution	Palmgren, P. J.; Chandratilake, M.; Nilsson, G. H.; Laksov, K. B.	J Chiropr Educ. 27(1), 45250.	Program student support
249	2013	An investigation into the demographics and motivations of students studying for a chiropractic degree	Yalden, P.; Cunliffe, C.; Hunnisett, A.	J Chiropr Educ. 27(2), 128-34.	Program student support
250	2013	Prevalence of nonmusculoskeletal versus musculoskeletal cases in a chiropractic student clinic	Hodges, B. R.; Cambron, J. A.; Klein, R. M.; Madigan, D. M.	J Chiropr Educ. 27(2), 123-7.	Program curriculum
251	2013	Correlation between academic performance and NBCE part I scores at a chiropractic college	Kenya, A. W.; Kenya, H. M.; Hart, J.	J Chiropr Educ. 27(1), 27-32.	Program student assessment
252	2013	Learning and Study Strategies Inventory subtests and factors as predictors of National Board of Chiropractic Examiners Part 1 examination performance	Schutz, C. M.; Dalton, L.; Tepe, R. E.	J Chiropr Educ. 27(1), 45056.	Program student assessment
253	2014	Attitudes of Australian chiropractic students towards anatomy and chemistry	Åtrkalj, G.; Luo, K.; Rigney, C. T.	Anthropologist. 18(1), 191-198.	Program assessment and quality improvement
254	2014	Training and certification of doctors of chiropractic in delivering manual cervical traction forces: Results of a longitudinal observational study	Gudavalli, M. R.; Vining, R. D.; Salsbury, S. A.; Goertz, C. M.	J Chiropr Educ. 28(2), 130-8.	Program methods
255	2014	Evaluation of three different methods of distance learning for postgraduate diagnostic imaging education: A pilot study	Poirier, J. N.; Cooley, J. R.; Wessely, M.; Guebert, G. M.; Petrocco-Napuli, K.	J Chiropr Educ. 28(2), 157-63.	Program methods
256	2014	Observed improvements in an intern's ability to initiate critical emergency skills in different cardiac arrest scenarios using high-fidelity simulation	Starmer, D. J.; Duquette, S. A.; Guiliano, D.; Tibbles, A.; Miners, A.; Finn, K.; Stainsby, B. E.	J Chiropr Educ. 28(2), 164-7.	Program methods
257	2014	Development of a student-mentored research program between a complementary and alternative medicine university and a traditional, research-intensive university	Sullivan, B. M.; Furner, S. E.; Cramer, G. D.	Acad Med. 89(9), 1220-6.	Program methods
258	2014	Publication rates of abstracts presented at the association of Chiropractic Colleges Educational Conference/Research Agenda Conference from 2002 to 2008	Bakkum, B. W.; Chapman, C.; Johnson, C.	J Chiropr Educ. 28(1), 32-40.	Program faculty/ staff
259	2014	Faculty development initiatives to advance research literacy and evidence-based practice at CAM academic institutions	Long, C. R.; Ackerman, D. L.; Hammerschlag, R.; Delagran, L.; Peterson, D. H.; Berlin, M.; Evans, R. L.	J Altern Complement Med. 20(7), 563-70.	Program faculty/ staff
260	2014	Prevalence of adverse effects among students taking technique classes: A retrospective study	Kizhakkeveettil, A.; Sikorski, D.; Tobias, G.; Korgan, C.	J Chiropr Educ. 28(2), 139-45.	Program student support

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	Year	Title	Authors	Journal	Topic
261	2014	The learning style preferences of chiropractic students: A cross-sectional study	Whillier, S.; Lystad, R. P.; Abi-Arrage, D.; McPhie, C.; Johnston, S.; Williams, C.; Rice, M.	J Chiropr Educ. 28(1), 21-7.	Program student support
262	2014	Test anxiety and academic performance in chiropractic students	Zhang, N.; Henderson, C. N.	J Chiropr Educ. 28(1), 44965.	Program student support
263	2014	Commentary on a framework for multicultural education	Hammerich, K. F.	J Can Chiropr assoc. 58(3), 280-5.	Program curriculum
264	2014	Knowledge transfer within the Canadian chiropractic community. Part 2: Narrowing the evidence-practice gap	Kawchuk, G.; Newton, G.; Srbely, J.; Passmore, S.; BussiÃ¨res, A.; Busse, J. W.; Bruno, P.	J Can Chiropr assoc. 58(3), 206-14.	Program curriculum
265	2014	Staging the use of teaching aids in the development of manipulation skill	Triano, J. J.; McGregor, M.; Dinulos, M.; Tran, S.	Man Ther. 19(3), 184-9.	Program curriculum
266	2014	Predictors of performance on the National Board of Chiropractic Examiners Parts I and II	McCall, A. R.; Harvey, R. D.	J Chiropr Educ. 28(1), 45184.	Program student assessment
267	2014	Predictors of performance of students in biochemistry in a doctor of chiropractic curriculum	Shaw, K.; Rabatsky, A.; Dishman, V.; Meseke, C.	J Chiropr Educ. 28(1), 28-31.	Program student assessment
268	2015	Reassessing the educational environment among undergraduate students in a chiropractic training institution: A study over time	Palmgren, P. J.; Sundberg, T.; Laksov, K. B.	J Chiropr Educ. 29(2), 110-26.	Program assessment and quality improvement
269	2015	No differences in grades or level of satisfaction in a flipped classroom for neuroanatomy	Whillier, S.; Lystad, R. P.	J Chiropr Educ. 29(2), 127-33.	Program methods
270	2015	The implementation of problem-based learning in collaborative groups in a chiropractic program in Malaysia	Win, N. N.; Nadarajah, V. D.; Win, D. K.	J Educ Eval Health Prof. 12 (), 17.	Program methods
271	2015	Can formative quizzes predict or improve summative exam performance?	Zhang, N.; Henderson, C. N.	J Chiropr Educ. 29(1), 16-21.	Program methods
272	2015	Exploring chiropractic students' experiences of the educational environment in healthcare professional training: A qualitative study	Palmgren, P. J.; Laksov, K. B.	BMC Med Educ. 15(), 128.	Program student support
273	2015	Effects of test stress during an objective structured clinical examination	Zhang, N.; Rabatsky, A.	J Chiropr Educ. 29(2), 139-44.	Program student support
274	2015	Curriculum mapping within an Australian master of chiropractic program: Congruence between published evidence for chiropractic and student assessment tasks	Gorrell, L.; Beirman, R. L.; Vemulpad, S. R.	J Chiropr Educ. 29(1), 29-36.	Program curriculum
275	2015	Intervention development for integration of conventional tobacco cessation interventions into routine CAM practice	Muramoto, M. L.; Matthews, E.; Ritenbaugh, C. K.; Nichter, M. A.	BMC Complement Altern Med. 15(), 96.	Program curriculum
276	2015	Introduction, development, and evaluation of the miniclinical evaluation exercise in postgraduate education of chiropractors	Paravicini, I.; Peterson, C. K.	J Chiropr Educ. 29(1), 22-8.	Program student assessment
277	2015	Participation strategies and student performance: An undergraduate health science retrospective study	Starmer, D. J.; Duquette, S.; Howard, L.	J Chiropr Educ. 29(2), 134-8.	Program student assessment
278	2016	Similarities and differences of a selection of key accreditation standards between chiropractic councils on education: A systematic review	Innes, S. I.; Leboeuf-Yde, C.; Walker, B. F.	Chiropr Man Therap. 24(), 46.	Program accreditation and requirements

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	Year	Title	Authors	Journal	Topic
279	2016	How comprehensively is evidence-based practice represented in councils on chiropractic education (CCE) educational standards: A systematic audit	Innes, S. I.; Leboeuf-Yde, C.; Walker, B. F.	Chiropr Man Therap. 24(1), 30.	Program accreditation and requirements
280	2016	Similarities and differences of graduate entry-level competencies of chiropractic councils on education: A systematic review	Innes, S. I.; Leboeuf-Yde, C.; Walker, B. F.	Chiropr Man Therap. 24(), 1.	Program accreditation and requirements
281	2016	The effectiveness and feasibility of an online educational program for improving evidence-based practice literacy: An exploratory randomized study of US chiropractors	Schneider, M.; Evans, R.; Haas, M.; Leach, M.; Delagran, L.; Hawk, C.; Long, C.; Cramer, G. D.; Walters, O.; Vihstadt, C.; Terhorst, L.	Chiropr Man Therap. 24(), 27.	Program assessment and quality improvement
282	2016	Manikin-based simulation: online orientation and student anxiety	Giuliano, D. A.; McGregor, M.; Howard, L.; Taylor, R.; Statz, R.; Linka, M.; Bagnell, C.	J Chiropr Educ. 30(2), 94-98.	Program methods
283	2016	Positive outcomes increase over time with the implementation of a semiflipped teaching model	Gorres-Martens, B. K.; Segovia, A. R.; Pfefer, M. T.	Adv Physiol Educ. 40(1), 32-7.	Program methods
284	2016	Student performance on practical gross anatomy examinations is not affected by assessment modality	Meyer, A. J.; Innes, S. I.; Stomski, N. J.; Armson, A. J.	Anat Sci Educ. 9(2), 111-20.	Program methods
285	2016	VARK learning preferences and mobile anatomy software application use in pre-clinical chiropractic students	Meyer, A. J.; Stomski, N. J.; Innes, S. I.; Armson, A. J.	Anat Sci Educ. 9(3), 247-54.	Program methods
286	2016	The influence of anatomy app use on chiropractic students' learning outcomes: a randomised controlled trial	Meyer, A. J.; Stomski, N. J.; Losco, C. D.; Armson, A. J.	Chiropr Man Therap. 24(), 44.	Program methods
287	2016	How should we teach lumbar manipulation? A consensus study	O'Donnell, M.; Smith, J. A.; Abzug, A.; Kulig, K.	Man Ther. 25(), 44936.	Program methods
288	2016	Establishing force and speed training targets for lumbar spine high-velocity, low-amplitude chiropractic adjustments	Owens, E. F., Jr.; Hosek, R. S.; Sullivan, S. G.; Russell, B. S.; Mullin, L. E.; Dever, L. L.	J Chiropr Educ. 30(1), 45120.	Program methods
289	2016	Chiropractic student attitudes toward team-based learning	Sherrier, W.; Brennan, T.; Rabatsky, A.	J Chiropr Educ. 30(2), 121-123.	Program methods
290	2016	Learning spinal manipulation: A best-evidence synthesis of teaching methods	Stainsby, B. E.; Clarke, M. C.; Egonia, J. R.	J Chiropr Educ. 30(2), 138-151.	Program methods
291	2016	Brief, cooperative peer-instruction sessions during lectures enhance student recall and comprehension	Zhang, N.; Henderson, C. N.	J Chiropr Educ. 30(2), 87-93.	Program methods
292	2016	Multidisciplinary meeting (MDM) can provide education and reinforcement of inter-professional development	Zafiropoulos, G.; Byfield, D.	Educational Research and Reviews. 11(2), 78-86.	Program methods
293	2016	Subluxation and semantics: a corpus linguistics study	Budgell, B.	J Can Chiropr assoc. 60(2), 190-4.	Program curriculum
294	2016	Core competencies of the certified pediatric doctor of chiropractic: Results of a Delphi Consensus Process	Hewitt, E.; Hestbaek, L.; Pohlman, K. A.	J Evid Based Complementary Altern Med. 21(2), 110-4.	Program curriculum
295	2016	The Swiss Master in Chiropractic Medicine Curriculum: Preparing graduates to work together with medicine to improve patient care	Humphreys, B. K.; Peterson, C. K.	J Chiropr Humanit. 23(1), 53-60.	Program curriculum
296	2016	Preceptor doctors' assessment of the clinical skills of chiropractic externs	Hynes, R. J.; Callender, A. K.; Hynes, R. A.; Gran, D. F.	J Chiropr Educ. 30(1), 37-41.	Program curriculum

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	Year	Title	Authors	Journal	Topic
297	2016	The influence of curricular and extracurricular learning activities on students' choice of chiropractic technique	Sikorski, D. M.; KizhakkeVeettil, A.; Tobias, G. S.	J Chiropr Educ. 30(1), 30-6.	Program curriculum
298	2016	A proposed bioethics curriculum for chiropractic colleges	Kinsinger, F. S.; Lawrence, D.	Chiropractic Journal of Australia. 44(4), 290-302.	Program curriculum
299	2016	Association Between Chiropractic and Allopathic Classroom Hours of Biochemistry with Nutrition Counseling Practice Patterns for Patients with Diabetes in the US Between 1995 and 2015	Isaza, A.	Nutritional Perspectives: Journal of the Council on Nutrition. 39(4), 23-30.	Program curriculum
300	2016	Influence of year-on-year performance on final degree classification in a chiropractic master's degree program	Dewhurst, P.; Rix, J.; Newell, D.	J Chiropr Educ. 30(1), 14-9.	Program student assessment
301	2016	Comparison of National Board of Chiropractic Examiners part I examination scores between tutors and tutees at a chiropractic college	Kenya, A. W.; Hart, J. F.; Vuyiya, C. K.	J Chiropr Educ. 30(2), 104-107.	Program student assessment
302	2017	Impact of providing case-specific knowledge in simulation: A theory based study of learning	Cox, J.; McGregor, M.; Giuliano, D.; Howard, L.	BMJ Simul Technol Enhanc Learn. 3(1), 44930.	Program methods
303	2017	Thrust magnitudes, rates, and 3-dimensional directions delivered in simulated lumbar spine high-velocity, low-amplitude manipulation	Owens, E. F., Jr.; Hosek, R. S.; Mullin, L.; Dever, L.; Sullivan, S. G. B.; Russell, B. S.	J Manipulative Physiol Ther. 40(6), 411-419.	Program methods
304	2017	A prospective survey of chiropractic student experiences with pediatric care and variability of case mix while on clinical placement in Rarotonga	Todd, A. J.; Carroll, M. T.; Russell, D. G.; Mitchell, E. K.	J Chiropr Educ. 31(1), 14-19.	Program methods
305	2017	Requiring students to justify answer changes during collaborative testing may be necessary for improved academic performance	Zhang, N.; Henderson, C. N. R.	J Chiropr Educ. 31(2), 96-101.	Program methods
306	2017	Barriers to peer-reviewed journal article publication of abstracts presented at the 2006-2008 association of Chiropractic Colleges Educational Conference and Research Agenda Conference Meetings	Bakkum, B. W.; Chapman, C.	J Chiropr Educ. 31(1), 20-26.	Program faculty/ staff
307	2017	A qualitative exploration of chiropractic and physiotherapy teachers' experiences and conceptualizations of the educational environment	Palmgren, P. J.; Liljedahl, M.; Lindquist, I.; Laksov, K. B.	J Chiropr Educ. 32(1), 45221.	Program faculty/ staff
308	2017	Building a chiropractic academy of educators: A needs assessment of selected faculty educators	Tunning, M. J.; Derby, D. C.; Krell-Mares, K. A.; Barber, M. R.	J Chiropr Educ. 31(2), 102-108.	Program faculty/ staff
309	2017	The relationship between levels of resilience and coping styles in chiropractic students and perceived levels of stress and well-being	Innes, S. I.	J Chiropr Educ. 31(1), 44933.	Program student support
310	2017	Perceived stress and fatigue among students in a doctor of chiropractic training program	Kizhakkeveettil, A.; Vosko, A. M.; Brash, M.; Ph, D.; Philips, M. A.	J Chiropr Educ. 31(1), 45151.	Program student support
311	2017	Current and prospective use of musculoskeletal diagnostic ultrasound imaging at chiropractic teaching institutions: A worldwide survey of diagnostic imaging staff	Henderson, R. E.; Walker, B. F.; Young, K. J.	J Chiropr Med. 16(1), 54-63.	Program curriculum

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	Year	Title	Authors	Journal	Topic
312	2017	Tumor imaging instruction and assessment at chiropractic colleges in North America: a pilot study with implications for National Board of Chiropractic Examiners content	Linaker, K. L.; Arpin, S. A.; Fischer, C. P.; Sackett, M.; Georger, L.	J Chiropr Educ. 31(2), 125-131.	Program curriculum
313	2017	Description of the case mix experienced by chiropractic students during a clinical internship	Puhl, A. A.; Reinhart, C. J.; Injeyan, H. S.; Tibbles, A.	J Chiropr Educ. 31(2), 132-139.	Program curriculum
314	2017	Chiropractic curriculum mapping and congruence of the evidence for workplace interventions in work-related neck pain	Frutiger, M.; Tuchin, P. J.	J Chiropr Educ. 31(2), 115-124.	Program curriculum
315	2017	Engagement as predictors of performance in a single cohort of undergraduate chiropractic students	Rix, J.; Dewhurst, P.; Cooke, C.; Newell, D.	J Chiropr Educ. 32(1), 36-42.	Program student assessment
316	2017	Essential literature for the chiropractic profession: Results and implementation challenges from a survey of international chiropractic faculty	Mansholt, B. A.; Salsbury, S. A.; Corber, L. G.; Stites, J. S.	J Chiropr Educ. 31(2), 140-163.	Program resources
317	2018	Comparing the old to the new: A comparison of similarities and differences of the accreditation standards of the chiropractic council on education-international from 2010 to 2016	Innes, S. I.; Leboeuf-Yde, C.; Walker, B. F.	Chiropr Man Therap. 26(), 25.	Program accreditation and requirements
318	2018	An online catalog of muscle variants: Student perceptions of a new opportunity for self-directed learning	Bale, L. S.; Herrin, S. O.; Brandt, N. M.; Enos, N. M.	J Chiropr Educ. 32(2), 131-140.	Program methods
319	2018	Systems change to improve tobacco use identification and referral in the chiropractic setting: a pilot study	Buettner-Schmidt, K.; Maack, B.; Larson, M.; Orr, M.; Miller, D. R.; Mills, K.	Chiropr Man Therap. 26(), 45.	Program methods
320	2018	Comparison of student performance and perceptions of a traditional lecture course versus an inverted classroom format for clinical microbiology	Burnham, K. D.; Mascenik, J.	J Chiropr Educ. 32(2), 90-97.	Program methods
321	2018	Differences in learning retention when teaching a manual motor skill with a visual vs written instructional aide	Cade, A.; Sherson, M.; Holt, K.; Dobson, G.; Pritchard, K.; Haavik, H.	J Chiropr Educ. 32(2), 107-114.	Program methods
322	2018	Development of a clinical skills remediation program for chiropractic students at a university	Lady, S. D.; Takaki, L. A. K.	J Chiropr Educ. 32(2), 152-158.	Program methods
323	2018	Description of a change in teaching methods and comparison of quizzes versus midterms scores in a research methods course	Sullivan, S. G. B.; Hoiriis, K. T.; Paolucci, L.	J Chiropr Educ. 32(2), 84-89.	Program methods
324	2018	The prevalence of the term subluxation in chiropractic degree program curricula throughout the world	Funk, M. F.; Frisina-Deyo, A. J.; Mirtz, T. A.; Perle, S. M.	Chiropr Man Therap. 26(), 24.	Program curriculum
325	2018	The association between students taking elective courses in chiropractic technique and their anticipated chiropractic technique choices in future practice	Wanlass, P. W.; Sikorski, D. M.; Kizhakkeveettil, A.; Tobias, G. S.	J Chiropr Educ. 32(2), 126-130.	Program student assessment
326	2019	A perspective on Chiropractic Councils on Education accreditation standards and processes from the inside: a narrative description of expert opinion: Part 1: Themes	Innes, S. I.; Cope, V.; Leboeuf-Yde, C.; Walker, B. F.	Chiropr Man Therap. 27(), 57.	Program accreditation and requirements

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	Year	Title	Authors	Journal	Topic
327	2019	A perspective on Councils on Chiropractic Education accreditation standards and processes from the inside: a narrative description of expert opinion: Part 2: Analyses of particular responses to research findings	Innes, S. I.; Cope, V.; Leboeuf-Yde, C.; Walker, B. F.	Chiropr Man Therap. 27(), 56.	Program accreditation and requirements
328	2019	Is there any benefit to adding students to the European council on chiropractic education evaluation teams and general council? An audit of stakeholders	Peterson, C.; Miller, J.; Humphreys, B. K.; Vall, K.	Chiropr Man Therap. 27(), 53.	Program accreditation and requirements
329	2019	The European Council on Chiropractic Education identification of critical standards to accredit chiropractic programs: a qualitative study and thematic analysis	Peterson, C. K.; B. Sc MB; Med, C.; Dc, K. V.	J Chiropr Educ. 33(2), 145-150.	Program accreditation and requirements
330	2019	The impact on anatomical landmark identification after an ultrasound-guided palpation intervention: a pilot study	Cho, J. C.; Reckelhoff, K.	Chiropr Man Therap. 27(), 47.	Program methods
331	2019	A comparison of student performance and satisfaction between a traditional and integrative approach to teaching an introductory radiology course on the extremities	Jarrett-Thelwell, F. D.; Burke, J. R.; Poirier, J. N.; Petrocco-Napuli, K.	J Chiropr Educ. 33(1), 21-29.	Program methods
332	2019	Influence of an educational review sheet on chiropractic students' evaluation and management coding performance: A randomized trial	Sergent, A.; Roecker, C. B.; Cofano, G.	J Chiropr Educ. 33(2), 106-110.	Program methods
333	2019	Development of a student grading rubric and testing for interrater agreement in a doctor of chiropractic competency program	Ward, K.; Kinney, K.; Patania, R.; Savage, L.; Motley, J.; Smith, M.	J Chiropr Educ. 33(2), 140-144.	Program methods
334	2019	Obesity bias among preclinical and clinical chiropractic students and faculty at an integrative health care institution: A cross-sectional study	Kadar, G. E.; Thompson, H. G.	J Chiropr Educ. 33(1), 45153.	Program student support
335	2019	A cross-sectional study of the association between anxiety and temporomandibular disorder in Australian chiropractic students	Theroux, J.; Stomski, N.; Cope, V.; Mortimer-Jones, S.; Maurice, L.	J Chiropr Educ. 33(2), 111-117.	Program student support
336	2019	Predicting stress and test anxiety among 1st-year chiropractic students	Zhang, N.; Henderson, C. N. R.	J Chiropr Educ. 33(2), 133-139.	Program student support
337	2019	Tactile teaching methods support students with visual impairment in training for a career in chiropractic	Joshi, A.; Ray, S.; Odierna, D. H.; Smith, M.	Journal of Visual Impairment and Blindness. 113(6), 557-565.	Program student support
338	2019	Student and new graduate perception of hospital versus institutional clinic for clinical educational experience	Haworth, N. G.; Jones, L. K.	J Chiropr Educ. 33(2), 125-132.	Program curriculum
339	2019	A collaborative process for a program redesign for education in evidence-based health care	Whillier, S.; Spence, N.; Giuriato, R.	J Chiropr Educ. 33(1), 40-48.	Program curriculum
340	2020	Are Councils on Chiropractic Education expectations of chiropractic graduates changing for the better: a comparison of similarities and differences of the graduate competencies of the Chiropractic Council on Education-Australasia from 2009 to 2017	Innes, S. I.; Kimpton, A.	Chiropr Man Therap. 28(1), 30.	Program accreditation and requirements

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	Year	Title	Authors	Journal	Topic
341	2020	An international stakeholder survey of the role of chiropractic qualifying examinations: A qualitative analysis	Green, B. N.; Johnson, C. D.; Brown, R.; Korporaal, C.; Lawson, D.; Russell, E.; Fujikawa, R.	J Chiropr Educ. 34(1), 15-30.	Program accreditation and requirements
342	2020	The accreditation role of Councils on Chiropractic Education as part of the profession's journey from craft to allied health profession: a commentary	Innes, S. I.; Leboeuf-Yde, C.; Walker, B. F.	Chiropr Man Therap. 28(1), 40.	Program accreditation and requirements
343	2020	Current state and future directions of the National Board of Chiropractic Examiners	Ouzts, N. E., Jr.; Himelfarb, I.; Shotts, B. L.; Gow, A. R.	J Chiropr Educ. 34(1), 31-34.	Program accreditation and requirements
344	2020	Patient safety in chiropractic teaching programs: a mixed methods study	Pohlman, K. A.; Salsbury, S. A.; Funabashi, M.; Holmes, M. M.; Mior, S.	Chiropr Man Therap. 28(1), 50.	Program assessment and quality improvement
345	2020	The influence of online video learning aids on preparing postgraduate chiropractic students for an objective structured clinical examination	Fong, K. K.; Gilder, S.; Jenkins, R.; Graham, P. L.; Brown, B. T.	J Chiropr Educ. 34(2), 125-131.	Program methods
346	2020	A comparison of the academic outcome of chiropractic students on full-time and full-time equivalent chiropractic education routes	Hunnisett, A. G. W.; Cunliffe, C.	J Chiropr Educ. 34(2), 140-146.	Program methods
347	2020	High-velocity, low-amplitude spinal manipulation training of prescribed forces and thrust duration: A pilot study	Shannon, Z. K.; Vining, R. D.; Gudavalli, M. R.; Boesch, R. J.	J Chiropr Educ. 34(2), 107-115.	Program methods
348	2020	The influence of online review videos on gross anatomy course performance among doctor of chiropractic students	Zipay, N. M.; Roecker, C. B.; Derby, D. C.; Nightingale, L. M.	J Chiropr Educ. 34(2), 147-155.	Program methods
349	2020	Facilitators and barriers to education for chiropractic students with visual impairment	Joshi, A.; Ray, S. L.	J Chiropr Educ. 34(2), 116-124.	Program student support
350	2020	Anatomical sciences in chiropractic education: A survey of chiropractic programs in Australia	Giuriato, R.; Strkalj, G.; Meyer, A. J.; Pather, N.	Anat Sci Educ. 13(1), 37-47.	Program curriculum
351	2020	The prevalence of psychosocial related terminology in chiropractic program courses, chiropractic accreditation standards, and chiropractic examining board testing content in the United States	Gliedt, J. A.; Battaglia, P. J.; Holmes, B. D.	Chiropr Man Therap. 28(1), 43.	Program curriculum
352	2020	Establishing a residency program for a chiropractic specialty in a public hospital system: Experiences from Denmark	O'Neill, S. F. D.; Konner, M. B.; Fejer, R.; Vesterager, S. V.	J Chiropr Educ. 34(2), 164-171.	Program curriculum
353	2020	Designing a 21st century chiropractic educational program: A time for reflection, a time for action	Wiles, M. R.	J Chiropr Educ. 34(2), 172-176.	Program curriculum
354	2020	Public health competencies for chiropractic programs	Madigan, D.; Maiers, M.; Pfeifer, J.	Pedagogy in Health Promotion. 6(4), 291-295.	Program curriculum
355	2020	Scarlet letters: The association of alternative admissions track plan status with key programmatic outcomes in a chiropractic training program	Derby, D. C.; Percuoco, R. E.; Everetts, A.	J Chiropr Educ. 34(1), 45152.	Program student assessment
356	2020	The transition to digital presentation of the diagnostic imaging domain of the Part IV examination of the National Board of Chiropractic Examiners	Himelfarb, I.; Seron, M. A.; Hyland, J. K.; Gow, A. R.; Tang, N. E.; Dukes, M.; Smith, M.; Fisher, M.	J Chiropr Educ. 34(1), 52-67.	Program student assessment

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	Year	Title	Authors	Journal	Topic
357	2020	Variables associated with successful performance on the National Board of Chiropractic Examiners Part IV examination	Himelfarb, I.; Shotts, B. L.; Hyland, J. K.; Gow, A. R.	J Chiropr Educ. 34(1), 43-51.	Program student assessment
358	2020	Score production and quantitative methods used by the National Board of Chiropractic Examiners for postexam analyses	Himelfarb, I.; Shotts, B. L.; Tang, N. E.; Smith, M.	J Chiropr Educ. 34(1), 35-42.	Program student assessment
359	2020	Admissions criteria as predictors of first-term success at a chiropractic institution	Long, A. N.; Chen, P. D.	J Chiropr Educ. 34(2), 132-139.	Program student assessment
360	2020	Comparison of first-year grade point average and national board scores between alternative admission track students in a chiropractic program who took or did not take preadmission science courses	Manrique, C. J.; Giggleman, G.	J Chiropr Educ. 34(1), 45023.	Program student assessment
361	2020	Revised methodology for the examinations of the National Board of Chiropractic Examiners: Impact on institutions, faculty, and students	Wiles, M. R.; Little, C. S.; Mrozek, J. P.	J Chiropr Educ. 34(1), 68-70.	Program student assessment
362	2020	A two-level alternating direction model for polytomous items with local dependence	Himelfarb, I.; Marcoulides, K. M.; Fang, G.; Shotts, B. L.	Educational and Psychological Measurement. 80(2), 293-311.	Program student assessment
363	2021	Chiropractic program changes facilitated by the European Council on Chiropractic Education Accreditation reports	Peterson, C. K.; Miller, J.; Humphreys, B. K.; Vall, K.	J Chiropr Educ. 35(2), 242-248.	Program accreditation and requirements
364	2021	Practice analysis and changes to the Chiropractic Board of Clinical Nutrition diplomate exam	Shotts, B. L.; Himelfarb, I.; Crawford, G. L.; Harding, J.; Gow, A. R.	J Chiropr Educ. 35(2), 171-183.	Program accreditation and requirements
365	2021	Australian chiropractic students' perceptions of education: Validation of a questionnaire	Innes, S. I.; Stomski, N.; Leboeuf-Yde, C.; Walker, B. F.	J Can Chiropr assoc. 65(2), 174-185.	Program assessment and quality improvement
366	2021	COVID-19: How has a global pandemic changed manual therapy technique education in chiropractic programs around the world?	de Luca, K.; McDonald, M.; Montgomery, L.; Sharp, S.; Young, A.; Vella, S.; Holmes, M. M.; Aspinall, S.; Brousseau, D.; Burrell, C.; Byfield, D.; Dane, D.; Dewhurst, P.; Downie, A.; Engel, R.; Gleberzon, B.; Hollandsworth, D.; Nielsen, A. M.; O'Connor, L.; Starmer, D.; Tunning, M.; Wanlass, P.; D. French S	Chiropr Man Therap. 29(1), 7.	Program methods
367	2021	"Learning by Doing": A mixed-methods study to identify why body painting can be a powerful approach for teaching surface anatomy to health science students	Diaz, C. M.; Woolley, T.	Med Sci Educ. 31(6), 1875-1887.	Program methods
368	2021	Survey of students' perception of the jurisprudence, ethics and business management course at the Canadian Memorial Chiropractic College	Gleberzon, B. J.	J Can Chiropr assoc. 65(1), 105-120.	Program methods
369	2021	The use of photovoice to transform health science students into critical thinkers	Haffejee, F.	BMC Med Educ. 21(1), 237.	Program methods
370	2021	Evaluation of an online case-based learning module that integrates basic and clinical sciences	Major, C. A.; Burnham, K. D.; Brown, K. A.; Lambert, C. D.; Nordeen, J. M.; Takaki, L. A. K.	J Chiropr Educ. 35(2), 192-198.	Program methods

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	Year	Title	Authors	Journal	Topic
371	2021	Active learning strategies, such as analogical models, aid in student learning of spinal anatomy and biomechanics	Rix, J.	J Chiropr Educ. 35(1), 65-71.	Program methods
372	2021	Chiropractic students' experiences on the use of virtual radiography simulation: a pilot observational study	Shanahan, M.; Molyneux, T.; Vindigni, D.	BMC Med Educ. 21(1), 404.	Program methods
373	2021	Use of videos to teach basic science concepts in a doctor of chiropractic training program	Shaw, K. M.; Rabatsky, A.	J Chiropr Educ. 35(2), 205-208.	Program methods
374	2021	The development and evaluation of an online educational tool for the evidence-based management of neck pain by chiropractic teaching faculty	Verville, L.; Dc, P. C.; Grondin, D.; Dc, S. M.; Kay, R.	J Chiropr Educ. 35(1), 95-105.	Program methods
375	2021	Online or onsite? Comparison of the relative merit of delivery format of Aboriginal cultural-awareness-training to undergraduate chiropractic students	Amorin-Woods, L.; Gonzales, H.; Amorin-Woods, D.; Losco, B.; Skeffington, P.	Journal for Multicultural Education. 15(4), 374-394.	Program methods
376	2021	Improving the learning process in anatomy practical sessions of chiropractic program using e-learning tool	Mitra, N. K.; Aung, H. H.; Kumari, M.; Perera, J.; Sivakumar, A.; Singh, A.; Nadarajah, V. D.	Translational Research in Anatomy. 23(), .	Program methods
377	2021	The research enterprise at Canadian Memorial Chiropractic College	Budgell, B. S.; Fillery, M.	J Can Chiropr assoc. 65(2), 219-228.	Program faculty/ staff
378	2021	Exploring diverse career paths and recommendations for celebrating Chiropractic Day 2021: A narrative inquiry	Johnson, V.; Assal, S.; Khauv, K.; Moosad, D.; Morales, B.	J Chiropr Humanit. 28(), 22-34.	Program student support
379	2021	Stress and burnout in chiropractic students of European chiropractic colleges	Rank, M. P.; de la Ossa, P. P.	J Chiropr Educ. 35(1), 14-21.	Program student support
380	2021	Aromatherapy for test anxiety in chiropractic students	Wells, B. M.; Nightingale, L. M.; Derby, D. C.; Salsbury, S. A.; Lawrence, D.	J Chiropr Educ. 35(1), 50-58.	Program student support
381	2021	A descriptive analysis of clinical application of patient-reported outcome measures and screening tools for low back pain patients in US chiropractic teaching institutions	Cooper, J. C.; Gliedt, J. A.; Pohlman, K. A.	J Chiropr Educ. 35(1), 144-148.	Program curriculum
382	2021	Developing a standardized curriculum for teaching chiropractic technique	Gleberzon, B. J.; Cooperstein, R.; Good, C.; Roecker, C.; Blum, C.	J Chiropr Educ. 35(2), 249-257.	Program curriculum
383	2021	Exploring the application of the Charlson Comorbidity Index to assess the patient population seen in a Veterans Affairs chiropractic residency program	Ly, V. T.; Coleman, B. C.; Coulis, C. M.; Lisi, A. J.	J Chiropr Educ. 35(2), 199-204.	Program curriculum
384	2021	Educator's Learning Alignment Instrument (ELAI): A tool to assess aligned learning concepts within college courses	Vining, R. D.; Millard, T.	J Chiropr Educ. 35(1), 28-37.	Program curriculum
385	2021	A descriptive study of sports chiropractors with an International Chiropractic Sport Science Practitioner qualification: A cross-sectional survey	Nelson, L.; Pollard, H.; Ames, R.; Jarosz, B.; Garbutt, P.; Da Costa, C.	Chiropr Man Therap. 29(1), 51.	Program student assessment
386	2021	Grit and chiropractic students' academic performance: a cross-sectional study	Pulkkinen, E. A.; de la Ossa, P. P.	J Chiropr Educ. 35(1), 124-130.	Program student assessment
387	2021	Factors influencing implementation of the GLA:D Back, an educational/exercise intervention for low back pain: a mixed-methods study	Ris, I.; Boyle, E.; Myburgh, C.; Hartvigsen, J.; Thomassen, L.; Kongsted, A.	JBI Evid Implement. 19(4), 394-408.	Program student assessment

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388	2021	Nonacademic qualities as predictors of performance in an undergraduate healthcare program	Rix, J.; Dewhurst, P.; Cooke, C.; Newell, D.	J Chiropr Educ. 35(1), 106-115.	Program student assessment
389	2022	The Councils on Chiropractic Education International Mapping Project: Comparison of member organizations' educational standards to the Councils on Chiropractic Education International Framework Document	Peterson, C. K.; Randhawa, K.; Shaw, L.; Shobbrook, M.; Moss, J.; Edmunds, L. V.; Potter, D.; Pallister, S.; Webster, M.	J Chiropr Humanit. 29(), 44932.	Program accreditation and requirements
390	2022	A brief review of chiropractic educational programs and recommendations for celebrating education on Chiropractic Day	Johnson, C. D.; Green, B. N.; Brown, R. A.; Facchinato, A.; Foster, S. A.; Kaeser, M. A.; Swenson, R. L.; Tunning, M. J.	J Chiropr Humanit. 29(), 44-54.	Program assessment and quality improvement
391	2022	Education and patient care in a chiropractic teaching clinic: An organizational approach to health and safety during the COVID-19 pandemic	Odierna, D. H.; Smith, M.	J Chiropr Educ. 36(2), 103-109.	Program assessment and quality improvement
392	2022	Experiences and perspectives of chiropractic students graduating from an alternate admission track plan	Strutin, N. B.; Ray, S. L.; Straub, D.; Odierna, D.; Smith, M.	J Chiropr Educ. 36(1), 43-49.	Program assessment and quality improvement
393	2022	The positive and negative impacts of the COVID-19 pandemic on the European Council on Chiropractic Education accredited programs: A mixed methods audit and thematic analysis	Yelverton, C.; Peterson, C. K.; Humphreys, B. K.; Vall, K.	J Chiropr Educ. 36(2), 165-171.	Program assessment and quality improvement
394	2022	Effects of a sudden change in curriculum delivery mode in postgraduate clinical studies, following the COVID-19 pandemic	Frutiger, M.; Whillier, S.	J Chiropr Educ. 36(2), 132-141.	Program methods
395	2022	Perceptions and attitudes of University of Johannesburg chiropractic students toward a blended learning approach and a shift to an e-learning approach necessitated by the COVID-19 pandemic	Ismail, F.; Yelverton, C.; Rademan, R.; Peterson, C.	J Chiropr Educ. 36(1), 73-81.	Program methods
396	2022	Development of a mannequin lab for clinical training in a chiropractic program	Owens, E. F.; Dever, L. L.; Hosek, R. S.; Russell, B. S.; Dc, S. S.	J Chiropr Educ. 36(2), 147-152.	Program methods
397	2022	Comparison of student satisfaction, perceived learning and outcome performance	Taliaferro, S. L.; Harger, B. L.	J Chiropr Educ. 36(1), 22-29.	Program methods
398	2022	A comparison of virtual and in-person instruction in a physical examination course during the COVID-19 pandemic	Zhang, N.; He, X.	J Chiropr Educ. 36(2), 142-146.	Program methods
399	2022	Chiropractic lecturer qualities: The student perspective	Chesterton, P.	J Chiropr Educ. 36(2), 124-131.	Program faculty/ staff
400	2022	Stress self-perception and burnout in chiropractic students in a lockdown situation due to COVID-19: A cross-sectional and comparative study	Etxeberria, I. R.; de la Ossa, P. P.; Rank, M. P.	J Chiropr Educ. 36(2), 77-83.	Program student support
401	2022	The prevalence of anxiety, stress and depressive symptoms in undergraduate students at the Canadian Memorial Chiropractic College	Meckamalil, C.; Brodie, L.; Hogg-Johnson, S.; Carroll, L. J.; Jacobs, C.; Cote, P.	J Am Coll Health. 70(2), 371-376.	Program student support
402	2022	Coping strategies and chiropractic student perceived stress	Zhang, N.; Henderson, C. N. R.	J Chiropr Educ. 36(1), 13-21.	Program student support

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	Year	Title	Authors	Journal	Topic
403	2022	The prevalence of suicide prevention training and suicide-related terminology in United States chiropractic training and licensing requirements	Cupler, Z. A.; Price, M.; Daniels, C. J.	J Chiropr Educ. 36(2), 93-102.	Program curriculum
404	2022	Chiropractic techniques and treatment modalities included in academic programs: A survey of chiropractic educational institutions	Dubuc, Ã‰; Page, I.; Boucher, P. B.; Brousseau, D.; Robidoux, S.; Blanchette, M. A.	J Chiropr Educ. 36(2), 84-92.	Program curriculum
405	2022	A comparative audit of jurisprudence, ethics and business management (JEB) courses taught at 21 accredited chiropractic programs worldwide	Gleberzon, B. J.	J Can Chiropr assoc. 66(2), 172-201.	Program curriculum
406	2022	Restructuring of an evidence-based practice curriculum and assessment with structural mapping by course outcome verb	Murdock, M. E.; Brennan, T.; Murphy, E.; Sherrier, W.	J Chiropr Educ. 36(1), 50-57.	Program curriculum
407	2022	Musculoskeletal anatomy core syllabus for Australian chiropractic programs: A pilot study	B. Sc RG; Åtrkalj, G.; Prvan, T.; Pather, N.	J Chiropr Educ. 36(2), 117-123.	Program curriculum
408	2022	Examining the validity of chiropractic grade point averages for predicting National Board of Chiropractic Examiners Part I exam scores	Himelfarb, I.; Shotts, B. L.; Gow, A. R.	J Chiropr Educ. 36(1), 44938.	Program student assessment
409	2023	Understanding patient preferences for student clinician attire: a cross-sectional study of a student chiropractic clinic in Australia	Theroux, J.; Rogers, C.; Moyle, R.; Atwood, I.; Bebic, M.; Murfit, S.; Martin, R.; Klee, S.; Even, T.; Moore, A.; Willmott, Z.; McCartney, K.; Cascioli, V.; Blanchette, M. A.; Beynon, A.	J Can Chiropr assoc. 67(2), 127-141.	Program assessment and quality improvement
410	2023	First-person video experiences as a vicarious, virtual alternative to in-person basic science labs	Burnham, K. D.; Major, C. A.; Borman, W. H.	J Chiropr Educ. 37(1), 45119.	Program methods
411	2023	Differences in learning retention and experience of augmented reality notes compared to traditional paper notes in a chiropractic technique course: A randomized trial	Cade, A. E.; Stevens, K.; Lee, A.; Baptista, L.	J Chiropr Educ. 37(2), 137-150.	Program methods
412	2023	Implementing an external student placement strategy into an undergraduate chiropractic curriculum in the United Kingdom: An education descriptive report	Chesterton, P.; Deane, F.; Moore, D.	J Chiropr Humanit. 30, 44934.	Program methods
413	2023	Developing spinal manipulation psychomotor skills competency: A systematic review of teaching methods	de Kock, E.; Yelverton, C.; Myburgh, C.	J Chiropr Educ. 37(2), 116-123.	Program methods
414	2023	Feasibility of a new clinical journal club implementation and its association with knowledge, attitudes, and application of evidence-based practice among chiropractic students and trainees: a before-and-after healthcare education improvement study	Housler, M.; Lalji, R.; Hofstetter, L.; Hincapie, C. A.	Chiropr Man Therap. 31(1), 22.	Program methods
415	2023	assessment of forces during side-posture adjustment with the use of a table-embedded force plate: Reference values for education	Russell, B. S.; Owens, E. F., Jr.; Hosek, R. S.; Dever, L. L.; Weiner, M. T.	J Chiropr Educ. 37(2), 73-81.	Program methods

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	Year	Title	Authors	Journal	Topic
416	2023	Transforming the delivery of chiropractic education through the strategic integration of educational technology in a chiropractic college program	Harrington, B. G.	J Chiropr Educ. 37(2), 106-115.	Program faculty/ staff
417	2023	Effect of lavender and rosemary aromatherapy on test anxiety in chiropractic students	Enwright, P.; Blank, S.; Wells, B. M.; Nightingale, L. M.; Torgerud, S.	J Chiropr Educ. 37(1), 26-32.	Program student support
418	2023	Interactions between the sex of the clinician grader and the sex of the chiropractic student intern on spinal manipulation assessment grade	Sheppard, M.; Johnson, S.; Quiroz, V.; Ward, J.	J Chiropr Educ. 37(2), 157-161.	Program student support
419	2023	Integrated clinical opportunities for training offered through US doctor of chiropractic programs	Meyer, K. W.; Al-Ryati, O. Y.; Cupler, Z. A.; Bonavito-Larragoite, G. M.; Daniels, C. J.	J Chiropr Educ. 37(2), 90-97.	Program curriculum

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