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Greetings Everyone! This is our SECOND draft. We are one step closer to completing our scoping review manuscript! Once we have everyone’s input for this draft, we will incorporate and then send out the final manuscript for review one last time before submission to *JBI Evidence Synthesis* <https://journals.lww.com/jbisrir/pages/default.aspx>

Here is an update so you know what was done to the SECOND manuscript draft.

1. We received input and suggestions from all 33 authors. Your feedback and input were excellent. We reviewed then incorporated relevant content into the manuscript. Some suggestions were wonderful but not included primarily because they were outside of the scope of this study. We also need to keep in mind manuscript length and journal requirements.
2. Based on your input, for the SECOND draft we
   1. Clarified sections of the introduction and the discussion.
   2. Added more detail to the methods section.
   3. Revised figures so that they were easier to read.
   4. Revised figures to include additional description of content. This included breaking the word cloud into more detail.
   5. Added a chart on common journals and another chart showing the number of topics published over time.
   6. Added a PRISMA scoping checklist as an appendix.
3. Also included in this draft are the tables with all excluded papers and all included papers by topic.

INSTRUCTIONS

1. Please review this SECOND manuscript and provide your suggestions to improve it using the **“comments” function**. Please provide suggested improvements that you are recommending by offering suggestions for the content and references. You should not be acting as a peer reviewer with criticisms, instead your comments should be helpful contributions to the manuscript in your role as a co-author.
2. Keep in mind that for our discussion section, we need to focus on the information in our results section and should not extrapolate beyond our results data. For example, we did not do a quality analysis, so we should not discuss quality of the content.
3. Please check your information on the author list for spelling and accuracy on the next page.
4. Note that we are using the JBI template, so the template needs to remain intact. There are comments from the template throughout, which will be addressed before the final manuscript is submitted, so in other words, do not modify or worry about the template.
5. Please complete your review and return your helpful suggestions by **March 4, 2024.** If you have no additional suggestions that is fine but please email back regardless so that we know you have reviewed this manuscript.

Looking forward to seeing your comments so we can move forward to a final draft and publication. If you have questions or are not sure of something, please feel free to email. Thank you!

Sincerely, Claire

Author information for publication purposes – please check for spelling and accuracy. Thank you.

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# Review title

Global status of chiropractic education research: a scoping review

# Abstract<level 1 heading>

**Objective:** The objective of this scoping review was to map the volume and nature of chiropractic education research relating to chiropractic learners and programs worldwide.

**Introduction:** The World Health Organization recognizes the need to increase the quantity and training of the health workforce to address community and population health goals. Information about chiropractic education research is needed to inform education research priorities and assist with preparing a stronger chiropractic workforce to address world health goals.

**Inclusion criteria:** Publications in the indexed literature included those related to chiropractic students, graduates, academics (faculty/administration/staff), and programs in any chiropractic education setting, which focused on chiropractic education (ie, general acquisition of knowledge, skills, and attitudes) and training (ie, practical knowledge, skills, and attitudes specific to a profession) of chiropractic students or chiropractors anywhere in the world. All research designs (qualitative, quantitative, and mixed-methods) and literature reviews were included.

**Methods:** This scoping review was conducted according the JBI methodology for scoping reviews and followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR).We searched MEDLINE (PubMed), PubMed Central (PubMed), Bookshelf (via PubMed), Scopus, the Cumulated Index to Nursing and Allied Health Literature (CINAHL via EBSCO), Index to Chiropractic Literature (ICL), Biblioteca Virtual em Saúde (BVS), and Educational Resources Information Center (ERIC) from their inception to 5 and 6, November 2023 with no language limits. Documents were assessed and data were extracted using the inclusion criteria by paired independent reviewers in Covidence. Data were analyzed in Excel and organized into topics.

**Results:** The search resulted in 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. Major topics included 1) student knowledge and cognitive competencies; 2) student functional competencies; 3) student personal and behavioral competencies; 4) student values and ethical competencies; and 5) program-relevant education research. The 598 studies showed a spectrum of designs including the majority being quantitative (391) followed by qualitative (43), mixed methods (40), literature review (11), descriptive report (91), and commentary (22).

**Conclusions:** This scoping review demonstrated that the body of indexed publications related to chiropractic education and training has breadth and includes topics related to learner competencies in knowledge, skills, and attitudes as well as topics focused on chiropractic programs. The body of literature demonstrates that chiropractic programs are engaging in collecting, analyzing, and distributing assessment data and reporting results in the literature. We observed a trend in the broadening of topics within chiropractic education research, which may reflect the evolving complexities and expanding scope of chiropractic practice, resulting in a more comprehensive educational approach. We have provided a map of the professional competencies that covers the chiropractic educational body of knowledge, which supports the inclusion of chiropractic as a contributor to the global workforce. Thus, the findings of this study have great potential and application to practice, policy, and chiropractic education.

### Review registration number:

[Open Science Framework or similar. Please add it to the title page and remove it from this manuscript.]Registration Open Science Framework https://doi.org/10.17605/OSF.IO/9B3AP

### Keywords:

Benchmarking; Chiropractic; Health Occupations; Health Workforce; Professional Education

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# Introduction<level 1 heading>

The goal of healthcare education is to produce health care professionals who embody the characteristics of their profession. The literature provides a robust description of the traits of professions and the professionals that represent them. A defining characteristic is that professionals possess a specialized set of superior skills based on the requisite knowledge to carry out those tasks.1-4 Importantly, a profession determines its standards and control via admission into the profession, training, accreditation, and a licensing system to screen for those qualified to practice.5 Professions have cultures with unique interactions between members of the formal and informal groups within and outside of the profession.3 Professions and their members are accountable to society, abiding by an ethical code of conduct that demonstrates the profession’s investment in social welfare.1,2,4 As such, professionals are expected to lead and govern their own profession.3,6 A profession is responsible for monitoring the education and training of its members, thus an awareness of its body of evidence and of education research is expected.

The World Health Organization (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.7 And, WHO has called for an increase in the quantity of health workers to address population health needs.8 Health care professionals are educated in their core competencies to prepare them to meet the changing needs of patients and the healthcare system.9 An understanding of the body of evidence in education and training for health professions is essential to developing the health care labor force and for knowing how each profession contributes to greater health. To meet the demand required of the world’s growing population, in addition to increasing the quantity of health workers an emphasis should be made to establish the quality of care that health care workers provide. A study on the education and training of health care workers would be the first step in describing what areas of education are addressed, where there may be gaps, and direct areas of further research. A better understanding of education and training would lead to improvements and ultimately an improvement in quality of care.

Chiropractic is one of many health professions recognized by WHO. With more than 100,000 chiropractors globally, chiropractic is regulated in approximately 40 countries worldwide, either through primary legislation, secondary legislation, or under common law. 10-12 There are over 50 chiropractic education programs worldwide and this number is increasing.13 Due to its global presence, there are challenges of various scopes of practice and education needs, depending on the jurisdiction.14 Education of the workforce is important for a profession to plan for the future, to ensure relevance, applicability, collaboration, provide best care for the public. The development of professional competencies for chiropractors allows for the development of the chiropractic workforce. However, we must first understand the current body of literature about the chiropractic education before we can plan and propose future actions.

Because little is known about the education of chiropractors globally, we conducted a preliminary search of PubMed, Scopus, Epistemonikos, JBI Evidence Synthesis, Cochrane Library, The Campbell Collaboration, and the Index to Chiropractic Literature to identify if any evidence syntheses or scoping reviews about chiropractic education research exist. We also searched the International Prospective Register of Systematic Reviews (PROSPERO) and Open Science Framework. We found no scoping or systematic reviews on chiropractic education research.

Although the amount of chiropractic education research has grown, 15,16 only 2 papers were found that summarized the body of chiropractic education research.17,18 The first study by Adams et al (1997) was limited by the relatively small amount of literature and review methods at that time.17 The second study by Mrozek at al (2006) provided a 10-year update using similar methods.18 However during our search, we found no reviews that systematically mapped and synthesized the state of chiropractic education research. Therefore, the breadth and depth of the current body of chiropractic education research on a global level are not known.

Because the chiropractic profession aims to increase its contributions to global health and improve the quality of care, a comprehensive review of chiropractic education research is needed. Such a review would identify the body of evidence and what gaps may need to be filled. A review would help to direct strategic planning and provide evidence to inform the development of chiropractic education programs, policy decisions, and establish areas needing further research. Therefore, the purpose of this scoping review was to systematically map and describe the volume of the literature on chiropractic education research globally.

# Review questions <level 1 heading>

1. What topics have been studied in chiropractic education research regarding chiropractic learners and programs worldwide?
2. What research designs have been used in chiropractic education research?

# Inclusion criteria<level 1 heading>

## Participants<level 2 heading>

This review considered studies that included chiropractic learners and programs. Participants included chiropractic students, chiropractic graduates, chiropractic academics (faculty, administration, or staff), chiropractic departments, institutions, and accreditation. We included all chiropractic education settings, including chiropractic programs, continuing education, and accreditation agencies. Studies not related to education or training of chiropractic learners or education programs were excluded.

## Concept<level 2 heading>

This review considered studies that explored chiropractic education and training. We define chiropractic education research as the study of chiropractic education, which is the general acquisition of knowledge, skills, and attitudes, and training, which includes practical knowledge, skills, and attitudes specific to a profession. We included studies related to chiropractic competencies and programs.19 Articles on non-educational topics or clinical research done in chiropractic academic settings or articles on education of patients or other health care providers about chiropractic were excluded. Studies were excluded if the term “chiropractic” was used incorrectly, such as if the term “chiropractic” is used to mean “manipulation” but was not performed by a chiropractor.

## Context<level 2 heading>

This review considered studies about chiropractic programs, students, or chiropractors anywhere in the world. We used the following definition for education research. “Education research is the scientific field of study that examines education and learning processes and the human attributes, interactions, organizations, and institutions that shape educational outcomes.”20

## Types of sources<level 2 heading>

This scoping review included studies published in journals in the indexed literature. Included were qualitative, quantitative, mixed method study designs, all types of literature reviews, narrative reports, experimental, quasi-experimental, qualitative, cross-sectional, and descriptive designs (including commentary if warranted). Studies that were categorized as commentary but included qualitative or quantitative data were considered. Not included were conference abstracts since they are not peer reviewed publications and to avoid any duplication of entries. We did not include letters to the editor and grey literature because these publications typically are not research studies.

# Methods<level 1 heading>

This scoping review used the JBI methodology for scoping reviews21 and followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR).22,23The protocol has been published and prospectively registered with Open Science Framework. (((ref protocol))) This study was reviewed by the National University of Health Sciences Institutional Review Board (RS2301) and deemed exempt. (((will be blacked out for peer review)))

## Global representation of contributors<level 2 heading>

The lead authors (CDJ, BNG) who have combined over 60-years of experience in chiropractic education and additional credentials in health professions education, gathered a team of authors. The aim was to include representation of chiropractic education from the world regions and include various stakeholders (eg, administrators, faculty, accreditors) within chiropractic academe. In January 2023, a call for interest was distributed broadly to approximately 500 chiropractic educators and administrators worldwide. The call emphasized priority for those who previously or currently worked in the field of chiropractic education and had prior research or publication experience. After reviewing experience, qualifications, and demographics of the 56 who declared interest, 35 were invited to participate in this scoping review. Because the majority of chiropractors and chiropractic programs are located in the United States, we intentionally over-represented regions outside of the US to improve global stakeholder input. Contributor demographics are represented in Appendix I

## Training of reviewers <level 2 heading>

To increase accuracy and calibrate scoring, reviewers were trained to use the selection criteria and a data extraction tool in Covidence (Veritas Health Innovation, Melbourne, Australia). We developed four rounds of training, using videos and a webpage to efficiently distribute the training materials. We used case exercises, individual and group feedback, and virtual meetings. We also pilot tested the process for inclusion/exclusion and coding accuracy using sample articles. After each round of training, a summary report was distributed among the reviewers. The report included accuracy scores and detailed feedback to explain the rationale for inclusion/exclusion and for accuracy of using the coding tool. In addition to group virtual meetings, we also met one-on-one when questions arose about the training process. We aimed for at least an 80% agreement among the reviewers for inclusion and exclusion criteria and primary items for data extraction. For the fourth and final round of training, 32 reviewers completed the final test with the average accuracy score of 84.8% with a median of 86%. Before initiating the scoping review, a training video was created to explain how to use Covidence for this study and each author attested to the completing the training.

We used a coding tool to categorize content of the chiropractic education research literature. We selected the Cheetham and Chivers model of professional competence as a foundation to develop our topic tool.24,25 The tool was developed to focus on competencies related to preparing the chiropractic workforce for the day to day clinical practice situations that chiropractors face as well as to meet the changing needs of patients and the healthcare system. To be fit for the task of coding, the tool categories were developed to be: 1) easy to use and understand, 2) not be either too general or too detailed, 3) capture most content in the literature about chiropractic education research, and 4) result in information that would be usable/applicable.

## Search strategy<level 2 heading>

The search aimed to locate primary studies and reviews published in peer-reviewed journals. An initial limited search of PubMed was performed to find articles on chiropractic education. Key words from the titles and abstracts of relevant articles were used to develop a full initial 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 that were not published in English either through direct translation or by hiring an interpreter if needed.

We searched MEDLINE (PubMed), PubMed Central (PubMed), Bookshelf (via PubMed), Scopus, the Cumulated Index to Nursing and Allied Health Literature (CINAHL via EBSCO), Index to Chiropractic Literature (ICL), Biblioteca Virtual em Saúde (BVS), and Educational Resources Information Center (ERIC) from their inception to November 5 and 6, 2023. The Preferred Reporting Items for Systematic Reviews and Meta-analyses for Reporting Literature Searches (PRISMA-S) extension was used.26 The search strategies are presented in Appendix II. Syntaxes for the selected databases were created with the assistance of a health sciences librarian based upon this primary syntax. The reference lists of articles were inspected for additional sources. *The* *Journal of Chiropractic Education* was not indexed in PubMed until 2006, thus issues from 1987 to 2006 were hand searched.

## Source of evidence selection<level 2 heading>

Citations were uploaded into EndNote 21 (Clarivate Analytics, PA, USA), which were then uploaded to Covidence. Covidence deduplicated the reference list. Duplications that were not identified by Covidence were hand-entered. Titles and abstracts were assessed using the inclusion and exclusion criteria by two independent reviewers using Covidence. Any disagreements were resolved through a third reviewer.

Following this, the potentially relevant papers were retrieved, and the full-text documents were assessed by two independent reviewers using inclusion criteria. Reasons for decisions to exclude sources that did not meet the inclusion criteria during the full-text assessment stage were recorded. Any disagreements among the reviewers were resolved through discussion between the reviewers. The findings of the search and the inclusion process are included in Figure PRISMA flow diagram.27

## Data extraction<level 2 heading>

Two independent reviewers used an extraction instrument as previously reported to extract the data.(((REF protocol paper here))) The extraction instrument was updating during training and is provided here (see Appendix III). Data were entered in Covidence. Any data entered during data extraction that did not match exactly between the two reviewers was resolved through discussion or by a third reviewer. The data extracted included details about the region for the chiropractic education study, the publication details (year, journal), and study design. Each study was coded using a previously prepared topic tool, on which all data extractors had received training and demonstrated proficiency.

When coding, the extractor was instructed to provide the most relevant code even if the study had more than one topic. Any disagreements between the reviewers were resolved through a third reviewer or discussion. To capture the topics within the included papers, free text entry of key words associated with each study were included. Agreement was not performed for keywords, instead all key words entered by all extractors were included in the analysis.

The majority of title and abstracts were screened by 13 authors (average 697 per author) and the majority of data extraction was performed by 9 authors (average 106 papers per author), however each step had dual entry, thus reducing bias among the reviewers.

## Data analysis and presentation<level 2 heading>

A world map was created to demonstrate the number of chiropractic education research publications in various world regions. The type of studies were sorted by year and represented in a growth trend chart. The journals that published the majority of included papers and the frequency of publication over time were organized into a table.

We chose to use word clouds to represent the essence of the body of literature and provide a visual content analysis.28 We reviewed 2566 key words that were free text entered by the reviewers during data extraction to identify major topics. The words were corrected for spelling and variations of similar terms were edited for spelling and consistency (eg, “curriculum” and “curricula”). Words that were entered in error (eg, “chiropractic”, “education”) were removed since these terms were redundant to the study. After review and editing, the words were reviewed for topics and 14 major topics were identified: basic sciences, clinical sciences, clinic, musculoskeletal, interprofessional, evidence-based, biopsychosocial, public health, patient-centered, professional, assessment, teaching and learning, curriculum, and faculty scholarship. Following this, each key word was clustered into one of the 14 topics. No key word was included in more than one topic; thus, each word was used only once. Words that did not fit any topic were not included (n=82). From the word lists, we created word clouds representing terms represented by proportion based on frequency. Word clouds were created from the 2484 coded words using the online generator https://www.freewordcloudgenerator.com/

The data representing the education research papers were reviewed and codes were clustered into topic areas. The topic groups were organized into learner competencies and the other related to programs to demonstrate prevalence of papers by professional competencies and program-related research. The findings were heterogeneous, thus data synthesis from individual articles, assessment for bias, and quality rating were not part of this scoping review.

# Results<level 1 heading>

## Study inclusion <level 2 heading>

The initial combined search resulted in 7494 studies, after deduplication there were 5041 studies available to be screened. Of those screened, 4372 did not meet the inclusion criteria, resulting in 667 obtained for full-text consideration. There were 69 excluded during full text review, primarily because their focus of study was not about chiropractic education or training. Reasons for exclusion are included in Appendix IV. After full-text screening, 598 were included for data extraction. (see Figure 1 for flow diagram).

## 

References removed **(n = 2453)**

Duplicates identified manually (n = 383)

Duplicates identified by Covidence (n = 2070)

Studies from databases/registers **(n = 7494)**

PubMed (n = 3951)

Scopus (n = 1643)

CINAHL (n = 946)

Biblioteca Virtual em Saúde (BVS) (n = 74)

Hand Searches (n = 276)

Education Resources Information Center (ERIC) (n = 37)

Index to Chiropractic Literature (n = 567)

**Identification of studies via databases, registers, hand searches**

**Identification**

Studies excluded **(n = 4374)**

Studies screened **(n = 5041)**

Studies not retrieved **(n = 0)**

Studies sought for retrieval **(n = 667)**

**Screening**

Studies excluded **(n = 69)**

LTE (n = 6)

Other reason (n = 13)

Conference abstracts/proceedings (n = 14)

Duplicate report of the same study (n = 1)

Not about chiropractic education or training (n = 35)

Studies assessed for eligibility **(n = 667)**

Studies included in review **(n = 598)**

**Included**

**Figure 1: Search results and study selection and inclusion process** 27

## Characteristics of included studies<level 2 heading>

Of the 598 papers included, the regional foci of each study are represented in Figure 2. The map represents the region that was studied and not the author’s country or region. For example, an author in Australia may have studied education in the US, thus the focus of study was coded as US.

A map of the world

Description automatically generated

A group of blue and black text

Description automatically generated

Figure 2. Map and distribution of locations of focus of study. Some studies had more than one country or region of focus thus the tally is greater than 598.

The 598 studies showed a spectrum of designs including, quantitative (391), qualitative (43), mixed methods (40), literature review (11), descriptive report (91), and commentary (22). (Figure 3) All studies selected for full text screening were in English, thus no translations were necessary.

Figure 3. Proportional study designs over time. Note that last time block (2020 to 2023) represents less than 3 years.

The top 10 journals publishing the greatest amount of chiropractic education research is shown in figure 4.

Figure 4. Publications in top 10 journals over time.

## Review findings<level 2 heading>

The number of papers for each code are shown in Appendix V. Appendix V includes the raw coding shown in a heatmap and includes the table of all 598 studies. The heatmap reveals those areas that have the greatest and least number of publications within each code. From the raw data heatmap table, we organized the topics into practical areas related to student competencies related to knowledge, skills, values/attitudes, and those papers related to chiropractic programs. Figure 5 shows the distribution of study topic over time. The topics clustered into relevant content areas are shown in Figure 6.

Figure 5. Number of studies over time. Program (E) Knowledge (A), Function/Skills (B), and Personal values, Professional, Behavioral/Attitudes (C and D combined). Note this chart is in 5-year increments but the last bar 2020 to 2023 represents less than 3 years.

Professional Competencies

Personal Values, Professional, Behavioral, and Ethical Competence

(Attitudes/Values codes)

Knowledge and Cognitive Competence

(Knowledge codes)

Functional and Clinical Competence

(Skills codes)

Program

Program relevant research (Program codes)

Figure 6. Summary of 598 indexed publications showing professional competencies and program related studies.

The word clouds based on the 14 primary education topics are presented in Figure 7. The larger font represents greater frequency of the terms that the reviewers entered into the data extraction field for primary topics and key words. Terms that were already associated with the scoping study (eg, chiropractic, education) were not included.

A group of words on a white background

Description automatically generated

Figure 7. The word clouds for the 14 major topics: evidence-based, basic sciences, interprofessional, professional, clinic, biopsychosocial, faculty scholarship, patient-centered, public health, musculoskeletal, assessment, clinical sciences, curriculum, and teaching/learning.

# Discussion<level 1 heading>

This study was the first scoping review to systematically analyze the body of published research related to chiropractic education and training. This scoping review addressed two primary research questions to identify what topics have been studied and what research designs have been used in chiropractic education research. This study builds upon the two earlier studies by Adams and Gatterman and Mrozek et al.17,18 These earlier papers provided a snapshot of the early landscape of the literature in chiropractic education research. During that time, chiropractic education research, as well as the methodology for systematic scoping reviews, were still emerging.

The narrative literature review by Adams and Gatterman considered the 1985 to 1996 chiropractic education literature. Their paper was generated through a consensus process by the education study group working with the research agenda conferences. The authors noted that during that time, 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." The follow up paper by Mrozek et al provided an update on the literature from 1997 to 2005 and followed similar methods. Neither study included tabulated details of the literature. Our scoping study incorporated the entire body of evidence in our search, therefore the works reviewed by Adams and Gatterman, and Mrozek et al were included in our results. Our all-encompassing review allowed us to consider a longitudinal view of how education research has developed over the past several decades.

The findings of the current study show that scholarly activity and publications in chiropractic education have grown substantially since its beginning, especially in the last two decades. Compared to a prior analysis of the contents of the JCE in which the contents showed more non-data studies than data studies,29 the findings of this scoping review demonstrates growth in other study designs.

## Volume and study designs

The number of education research studies has increased over time, but also the proportion of research designs are leaning more toward quantitative studies. This increase plus the overall growth in the chiropractic education studies may be a result of increased emphasis on research from chiropractic colleges. Although this study did not evaluate the quality of the studies, we noticed an increase in qualitative research suggests more complex questions and inquiry. Our results showed that quantitative research had the greatest representation, which is similar to a scoping review of family medicine education research that showed similar trends.19 As education research advances, we would expect to see proportional growth in each of the research designs, noting that each research design have their purpose and are valuable contributions to the peer reviewed literature.

Proportions of study designs changed over time. Descriptive studies were a common study design used in the earliest decades and although they continue to be used, they are proportionally fewer in the present. As well, we noticed in the 1995 to 1999 range that there was a temporary surge in publications. We consider that this may be due to increased interest in publications because 1995 was the centennial year for the chiropractic profession and more papers were stimulated by journals at that time.

We identified the top 10 journals that published a majority (86%) of the papers included in this study. As would be expected, the journals publishing papers on chiropractic education are journals that focus on chiropractic. Noted is a shift in the number of publications among 2 of the journals. In 2006, the JCE began its inclusion in PubMed and Scopus, which seemed to have stimulated an increase in the number of publications in this journal. Also, there was a drop in education focused papers for the JMPT, which was likely due to the fact that due to an increasing number of submissions, JMPT restricted topics to focus on clinical research. The trends in journal publications show that the chiropractic profession has the journal infrastructure needed to support and publish education research.

## Topics studied

The primary objective of this study was to describe the topics of 598 education research papers. The body of work encompasses two groups: professional competencies and program topics. We organized the professional competencies based on the Cheatham and Chivers professional competency model.24,25 The first category of this model reflects the knowledge and cognitive competencies that a chiropractic student must master before graduation. This knowledge is often learned in the earlier years of the program such as in basic sciences and clinical sciences courses but also includes the knowledge and cognitive competencies learned later in the program such as during clinical training. The second category includes the functional and clinical competencies are required in clinical practice and often surround patient care and clinical practices. The third and fourth categories includes the values, professional, behavioral, and ethical competencies that relate to personal and professional practices.

A majority of the publications were categorized as program-relevant research. Program-related research provides insights into what education researchers are focusing on. The greatest number of publications were in the teaching and learning methods, followed by curriculum, student assessment, governance/administration/programmatic, students support, and finally research on faculty and staff. It is possible that one of the reasons that the greatest amount of research focused on teaching methods is that this type of research is relatively simple to complete and publish. Often these studies focus on one program or one classroom and do not require many resources to complete. Whereas studies that relate to curriculum or student assessment may be more complex and require more time and advanced resources.

Organizing common terms using word clouds allowed a more in depth look at the topics observed within this body of literature. The words from all the studies were combined for the word cloud and are based on the interpretation of the people who read the papers and did the data extraction. The terms reflect the foci of the studies and could be considered as a surrogate for what is perceived to be important for chiropractic education and training of chiropractors. Prominent terms relating to the practitioner include evidence-based practice, critical thinking, interprofessional, integration, health-occupations, professionalism, professional, ethics, patient-centered, cultural-competency, diversity, equity, public health, prevention, health promotion, manipulation, technique, diagnostic imaging, radiology, history taking, physical examination, diagnosis, differential diagnosis, decision making, and clinical competence. These terms seem to be congruent with the requirements and expectations such as those found in *Health Workforce Requirements for Universal Health Coverage and the Sustainable Development Goals.7*

The most prominent terms relating to program content, included anatomy, physiology, basic sciences, internship, residency, mental health, stress, anxiety, faculty development, scholarship, productivity, publications, assessment, measurement, qualifying examination, curriculum, standards, method, accreditation, learning, problem-based learning, simulations, technologies, online-learning, and active learning. These topics may assist with the planning of future research and the development of a chiropractic education research agenda.

We noted that some topics were more frequently studied than other areas. For example, it is not known why there were more studies on manual therapies and fewer on ethics and professionalism. It is possible that some topics may be easier to study in a rigorous manner, such as the use of force plates or adjusting manikins. Whereas for other topics, there may be a lack of interest or they may be more difficult to study in a rigorous manner. For example, professionalism is a challenging topic to study.30 Also, there may be topics that are considered taboo, such as those related to student ethics or graduate practice behaviors that an institution may not wish to have under public scrutiny. A qualitative analysis of how and why education researchers select their studies may help to answer questions about the density of publications per topic.

## World Regions Studied

Chiropractic education studies were primarily focused on the North American region, which is expected since this is where many programs are located. Of the current 47 accredited chiropractic programs, 21 are in North America. As well, North America is the location of the longest standing chiropractic programs, therefore they had more time to develop and be subject to chiropractic education research. The first chiropractic program was established in the United States in 1897. The first chiropractic program in Canada began in 1945, the first in Europe was 1965 and the first in for Australia was 1990.13 As chiropractic programs grow globally, we expect to see increases in education research in all regions. And as the programs develop and mature, we hope to see more international research collaborations among the programs.

Additional regional issues to consider include availability of research resources. Chiropractic programs within universities that have research departments dedicated to producing research are likely have an advantage over those who do not have those resources. As well, some regions have more funding opportunities than other regions, which impacts capacity for doing research.31 Research culture among the chiropractic faculty is another consideration. Prior studies have suggested there are barriers to faculty scholarship.32,33 Faculty who are given more opportunities for developing research skills and have motivators to expand their research productivity may have more opportunities. Future studies assessing faculty resources and publication success may help to better understand the milieu in which chiropractic educators attempt to perform education research.

## Recommendations for Future Research

This scoping review provides a much-needed update that is a rigorous, methodical, and structured review of that field of endeavor. The topic tool facilitated the review and reflected where our collective interests reside. The results should prove very useful as we consider the use of scarce resources in future chiropractic education research. Next steps should reflect on encouraging and expanding the depth of research effort in specific areas of shared interest. Over the past several decades the capacity of our educators to engage and advance chiropractic education research has grown steadily.

Overall, the body of chiropractic education research literature reflects a growing field with a strong commitment to improving educational standards and practices. Continued focus on innovative teaching methods and ethical practice will further strengthen the chiropractic field. The findings of this study are helpful in that they demonstrate that the chiropractic profession has begun to amass a body of work related to education and training. These findings can lead to more detailed studies that will help to direct education policy decisions and future research. The comprehensiveness of this work might serve as a productive foundation for discussions focused on scholarly agenda-setting and prioritization for funded work in the profession’s educational ranks. This review tells us which areas of chiropractic education we know something about and other areas that are under-researched. 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.

Future research could identify if education research is reflective of chiropractic practice. Prior efforts have noted there is a need for an education research agenda education and that education should be aligned with clinical practice.34-37 Future studies could include focusing on each of the categories, performing a quality assessment, and possibly looking at education trends. Future studies could include a comparison of word clouds that have been done with other health professions to see if there are similarities or differences.

In terms of the WHO health work force requirements for universal health coverage more research more accurate research on graduate preparedness in terms of contributing to the workforce. Future quantitative analysis of this scoping review can explore other aspects such as the institutional affiliations of authors by region, output per capita, and whether there are any trends of university compared to standalone chiropractic institutions engagement in educational research. Cross-institution and interprofessional collaborations would also be valuable as to how we currently perform in our educational research with other health professions. Future studies should consider including additional stakeholders such as chiropractic institutions, administrators, educators, students, patients, other healthcare providers, and governing bodies in both planning and implementation of future research. .

Our next steps will be to describe actionable outcomes. We aim to perform a secondary data analysis on the findings of this study. Then, through an international, interprofessional, consensus driven process, using the evidence from this study, we will 1) develop a chiropractic education research agenda, and 2) identify health-related, population-specific, person-centered learning outcomes for chiropractic programs worldwide.

## Strengths

The strengths of this scoping review include searching multiple databases for related studies. We engaged a diverse and international expert team to participate in this study, which demonstrated diversity and regional inclusion. The investigators were trained and used dual confirmation for which studies to include and how the data was extracted from full-text manuscripts, which improved confidence and accuracy. We used an established model of professional competencies as a foundation to analyze the contents, thereby facilitating the applicability and usefulness of the results.24,25 This study was also the first to analyze the state of chiropractic education and training on a global scale. This work is comprehensive and inclusive, thus rendering it the most accurate view of chiropractic educational research today and its trajectory since its inception.

## Limitations

We recognize the following limitations of this scoping review. First, the primary focus was on education research for the chiropractic profession, thus the findings are focused on chiropractic. 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 1987.38,39 Thus, the duration of literature on chiropractic education and training was limited to more recent decades. We did not hand search all journals due to time and resource limitations, therefore we may have missed papers that were published prior to some journals being indexed in PubMed.

For the sake of feasibility, papers were coded using the most relevant code, thus only the major theme was coded. Some studies may have had additional minor topics that were not coded, thus some of the detail was not included. For selected areas of research, we will return and evaluate these papers in future studies. It is possible that authors screened or did data extraction on their own research, however this potential bias was mitigated using dual data entry. The coding tool provided general categorization for the topics; thus, fine detail was not extracted. We plan on clustering and then reviewing each group of studies further to identify if there were any additional themes or details in our findings.

Due to the heterogeneity of the studies, we did not include quality assessment of the included studies nor an assessment for bias. Thus, we cannot say what the quality of evidence is in our findings. Future studies could evaluate the extent to which education was based on research or evidence and include additional evaluation for quality and bias.

The focus of this study was on chiropractic education research, not on the scholarly productivity of faculty or institutions. Therefore, we did not analyze the characteristics of the authors or institutions. A future study could include author country and affiliation to show how researchers produce education research.

To represent expertise and world regions, we included a large number of reviewers, which may have resulted in some variance. However, all reviewers were trained, and we used a dual entry method with a third reviewer if there was disagreement, thus mitigated variance that could have affected outcomes. The terms in word clouds were not standardized and terms were based on the subjective interpretation of the reviewers doing the data extraction, thus may limit interpretation of these diagrams.

# Conclusions<level 1 heading>

This scoping review demonstrated that the body of indexed publications related to chiropractic education and training has breadth and includes topics related to learner competencies in knowledge, skills, and attitudes as well as topics focused on chiropractic programs. The body of literature demonstrates that chiropractic programs are engaging in collecting, analyzing, and distributing assessment data and reporting results in literature. We observed a trend in the broadening of topics within chiropractic education research, which may reflect the evolving complexities and expanding scope of chiropractic practice, resulting in a more comprehensive educational approach. We have provided a map of the professional competencies that covers the chiropractic educational body of knowledge, which supports the inclusion of chiropractic as a contributor to the global workforce. Thus, the findings of this study have great potential and application to practice, policy, and chiropractic education.

## Implications for research and practice <level 2 heading>

This study lays a foundation for identifying possible gaps, thus may inform education leaders and researchers as they plan for the future. Additional high quality quantitative and qualitative chiropractic education research may assist with a greater understanding of teaching and learning practices in chiropractic education and help to better prepare the future chiropractic workforce.

# Acknowledgments<level 1 heading>

*[Insert the full names and precise contributions of individuals, or institutions, who did not qualify for authorship. The acknowledgment section must be included in the submission title page to facilitate the double-blind peer-review process and removed from this manuscript.*

We thank the following people for their assistance in retrieving articles for this scoping review:

* Rhian Plenty, Faculty Librarian, Faculty of Life Sciences and Education Librarian at University of South Wales
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* Stephanie Bacon, Senior Librarian, New Zealand College of Chiropractic
* Segarani Naidoo, Subject Librarian, Durban University of Technology

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*[Provide details on sources of funding for the review and explicitly describe the role of funders in the review process. Please add to the title page and remove from this manuscript.*

# Declarations<level 1 heading>

*[Authors are invited to consider equity, diversity, and inclusion to acknowledge authors who work to improve diversity and inclusion in research and to encourage them going forward. Please add to the title page and remove from this manuscript.]*

# Author contributions<level 1 heading>

Claire has been tracking this since the beginning.

*[Detail each author’s specific involvement in a manuscript, such as designing the analysis, contributing or collecting the data, performing the analysis or writing the manuscript, to increase the transparency of contributions. Please add to the title page and remove from this manuscript.]*

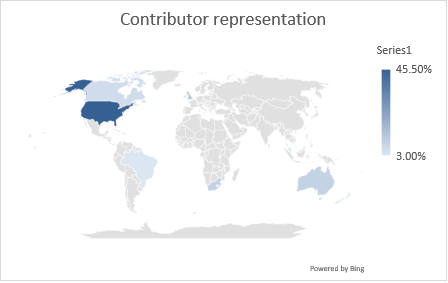
# Conflicts of interest<level 1 heading>

The authors declare no conflict of interest.

# References<level 1 heading>

References will be moved to here once ready to submit manuscript – see end of file (ENDNOTE puts references at very end of manuscript)

# Appendix I: Contributor demographics <level 1 heading>

Contributor information n = 33

|  |  |  |
| --- | --- | --- |
| REGION | Contributor representation of workgroup | Portion of global chiropractic workforce in this country (WFC, 2017) |
| 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 of America | 45.5% | 75.20% |

Author diversity traits

Sex diversity female (14), male (19). Self-reported race was: 30 white, 1 Asian, 1 Chinese, 1 Mix-race / Hispanic-Latin American. Additional self-reported diversity traits: 30 heterosexual, 1 lesbian/gay, 2 declined to answer. Other self-reported diversity traits included age over 60, religion (Hindu), Southern Slavic ethnic background, and Neurodiversity (autism).

Breadth and depth of topic experience by authorship group

In addition to 28 Chiropractors, other professional degrees represented were Physical therapist, Librarian, Dietician, Radiologist. Additional degrees include: PhD or other doctorate (12), Doctorate in education (3), Master's degree in education (6), Master's or bachelor's degree in other area (24). Degrees represented include the fields of: Biology, Biomedical Science, Chemistry, Clinical biochemistry, Clinical pharmacology, Clinical Research, Clinical Sciences, College Science Teaching, Earth 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 number of years employed in academia. Average: 21.4 years. Of the 33 authors, total 705 years employed in academia.

Self-reported author percent 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.

# Appendix II: Search strategy<level 1 heading>

## MEDLINE (PubMed)

Search conducted on 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 on November 6, 2023, from date of inception, limited to peer reviewed only, no language limits

|  |  |
| --- | --- |
| Search | Results |
| “chiropractic” or “chiropractor” | 37 |

## Biblioteca Virtual em Saúde (BVS)

Search conducted on November 6, 2023, from date of inception, limited to peer reviewed only, no language limits

|  |  |
| --- | --- |
| Search | Results |
| “quiropraxia” and “educação” | 74 |

## Scopus

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

|  |  |
| --- | --- |
| Search | Results |
| 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 |

## The Cumulated Index to Nursing and Allied Health Literature (CINAHL via EBSCO)

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **#** | **Query** | **Limiters/Expanders** | **Last Run Via** | **Results** |
| S1 | MH Education, Chiropractic | Limiters  - Peer Reviewed  Expanders  - Applyequivalent subjects  Search modes  -Boolean/Phrase | Interface  - EBSCOhost ResearchDatabases  Search Screen  - AdvancedSearch  Database  - CINAHL with FullText | 925 |

## Index to Chiropractic Literature (ICL)

Search conducted on November 17, 2023, from date of inception, peer review only, no language limits

|  |  |
| --- | --- |
| Search | Results |
| All Fields:chiro AND All Fields:education OR All Fields:training, | 567 |

# Appendix III: Data extraction instrument and coding tool<level 1 heading>

|  |  |
| --- | --- |
| **Evidence Source Details and Characteristics** | |
| Citation details | Author/s, date, title, journal, volume, issue, pages |
| Participants  What or who was the primary focus of the study? | Student/graduate competencies (knowledge, skills, attitudes, etc)  Program (curriculum, infrastructure, faculty, accreditation, etc)  Other |
| Concept | Competencies (knowledge, skills, attitudes)  Program (curriculum, infrastructure, faculty, accreditation) |
| Context | Australia  Brazil  Canada  Denmark  France  New Zealand  South Africa  Spain  Sweden  Switzerland  United Kingdom  United States of America  Other |
| **Details extracted from source of evidence** | |
| Study design | Literature review (eg, systematic, scoping)  Quantitative  Qualitative  Mixed methods  Descriptive report  Other |
| Code: Type in one letter and one number from the topic tool that best fits the study. | Code (see Topic Tool below) |
| List the primary topics and key words for this paper in 10 words or less. Do not include the following terms we have already accounted for: chiropractic, education, teaching, training, research, student, or program. Key words are terms used in indexing or searches to find important information. | (free text entry) |

*A screenshot of a computer

Description automatically generated*

# Appendix IV: Studies ineligible following full-text review<level 1 heading>

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Published Year | Title | Authors | Journal | Reason |
| 1952 | CHIROPRACTIC: applicant must obtain preliminary education in proper sequence | na | J Am Med Assoc | Exclusion reason: Not about chiropractic education or training; not education research |
| 1964 | Requirements For Admission To Schools Of Chiropractic | Wisowaty, K. W.; Edwards, C. C.; White, R. L. | Jama | Exclusion reason: Other reason; This studies program. Historical; background |
| 1982 | Creation science and chiropractic curriculum alternatives | Hildebrandt, R. W. | J Manipulative Physiol Ther | Exclusion reason: Not about chiropractic education or training; This is not education research. It barely mentions education |
| 1984 | Chiropractic college libraries in the United States and Canada, 1981-1982 | Peterson, D. R.; Wiese, G. C. | Bull Med Libr Assoc | Exclusion reason: Not about chiropractic education or training; Peripherally related to chiropractic education |
| 1985 | Chiropractic's Abraham Flexner: the lonely journey of John J. Nugent, 1935-1963 | Gibbons, R. W. | Chiropr Hist | Exclusion reason: Not research about chiropractic education or training; history, not ed research |
| 1988 | Clinical research preparation for chiropractors: implementing a scientist-practitioner model | Carbon, J. | J Manipulative Physiol Ther | Exclusion reason: LTE; not education research |
| 1989 | Chiropractic education | Christensen, A. | Complementary Medical Research | Exclusion reason: Other reason; Not related |
| 1991 | An overview of chiropractic educational institutions, 1896 to the present | Glenda Wiese; Dennis Peterson | Journal of Chiropractic Education | Exclusion reason: Not about chiropractic education or training |
| 1992 | The evolution of higher education in chiropractic: a survey 1906-74 | Blacher, P. | Chiropr Hist | Exclusion reason: Historical account of program evolutions and accreditation.; background, historical |
| 1993 | Competency-based professional standards: a fundamental consideration | Jamison, J. R. | J Manipulative Physiol Ther | Exclusion reason: Other reason; hypothetical and only peripherally related. Background info |
| 1994 | Faculty evaluation in the scholarly domain: conceptions for academic planning | Coyle, B. A. | J Manipulative Physiol Ther | Exclusion reason: Not about chiropractic education or training; Opinion piece that is about scholarship in general and very peripherally touched on chiropractic education. Historical, background. Not education research |
| 1995 | Comparison of Nutrition Knowledge, Perceptions and Dietary Practices of Chiropractic Student Doctors at Three Points in their Chiropractic Training | Bohanan, S. L.; Kubena, K. S.; McIntosh, W. A. | Journal of the American Dietetic Association | Exclusion reason: Conference abstracts/proceedings; conf abstract; this is a conference abstract |
| 1995 | A pattern approach to teaching chest radiology | Marchiori, D. | Journal of Chiropractic Education (Association of Chiropractic Colleges) | Exclusion reason: Not about chiropractic education or training; not education research |
| 1995 | Chiropractic education: fearless youth, yet new horizons and distant scenes | Coyle, B. A.; Tolar, R. L. | Topics in Clinical Chiropractic | Exclusion reason: Not about chiropractic education or training; Background - historical; This is not education research |
| 1997 | Chiropractic education in Australia...Stanley Bolton, 'Chiropractic Education in Australia: historical perspectives and contemporary issues,' | Drinkwwater, J. | Chiropractic Journal of Australia | Exclusion reason: LTE; not an article |
| 1997 | Overview of the development of a comprehensive code of ethics | Casey, G. C.; Mellifont, R. | Journal of Chiropractic Education (Association of Chiropractic Colleges) | Exclusion reason: Not about chiropractic education or training; Excerpts from campus book. Not education research |
| 1997 | Canadian chiropractors’ attitudes towards chiropractic philosophy and scope of practice: implications for the implementation of clinical practice guidelines | Biggs, Lesley; Hay, David; Mierau, Dale | The Journal of the Canadian Chiropractic Association | Exclusion reason: Not about chiropractic education or training; not education research |
| 1998 | Chiropractic education in Australia: historical perspectives and contemporary issues | Badham, M. A.; Bolton, S. P.; Montgomery, D. M.; Chance, M. A. | Chiropractic Journal of Australia | Exclusion reason: LTE; background, opinion |
| 1999 | Early educational tracts helped to build chiropractic | Willis, J. C. | Chiropr Hist | Exclusion reason: Not about chiropractic education or training; not about chiropractic education |
| 1999 | Accreditation of chiropractic education in Australia | Kleynhans, A. M. | Chiropractic Journal of Australia | Exclusion reason: Other reason; opinion. not education research.; descriptive |
| 1999 | Commentary. Toward an evidence-based model for chiropractic education and practice | Delaney, P. M.; Fernandez, C. E. | Journal of Manipulative & Physiological Therapeutics | Exclusion reason: Not about chiropractic education or training; Not about chiropractic. This is general information on EBHC; not education research |
| 2000 | College presidents discuss role of subluxation in education and research | Cleveland, C. S.; Williams, S. E.; Clim, G.; Goodman, G. A.; Allenburg, J. F. | Chiropractic Journal | Exclusion reason: Not about chiropractic education or training; news article |
| 2001 | Chiropractic education in Australia: a historical review | Bolton, S. P. | Chiropractic History | Exclusion reason: Not about chiropractic education or training; History paper; not about competencies or programs; historical |
| 2002 | A model course for public health education in chiropractic colleges | Perillo, M. | Journal of the American Chiropractic Association | Exclusion reason: Duplicate report of the same study; News item |
| 2002 | New chiropractic internship rounds out students' education | Pena, A. | Journal of the American Chiropractic Association | Exclusion reason: Other reason; news item |
| 2003 | Editorial: the institution's role in training chiropractors to analyze the literature effectively | Flanagan, J. L.; Huff, L. | Journal of Chiropractic Education (Association of Chiropractic Colleges) | Exclusion reason: Not about chiropractic education or training; peripherally related This could have been written for any profession.; not education research |
| 2004 | 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 | Brown, E. | J Chiropr Med | Exclusion reason: LTE; not education research |
| 2005 | The establishment of the Chiropractic & Osteopathic College of Australasia in Queensland (1996-2002) | Walker, B. F. | Chiropr Osteopat | Exclusion reason: Other reason; background only |
| 2005 | Thirty years of chiropractic education at RMIT University: the consolidation period: 1979-1999 | Ebrall, P.; Molyneux, T. | Chiropractic Journal of Australia | Exclusion reason: Other reason; historical article. Background history info.; descriptive |
| 2006 | The Council on Chiropractic Education's new wellness standard: a call to action for the chiropractic profession | Evans, M. W., Jr.; Rupert, R. | Chiropr Osteopat | Exclusion reason: Not about chiropractic education or training; This is not education research. It paraphrases the then-new CCE requirement The paper itself did not consist of any education research.; descriptive, commentary |
| 2006 | Best practices in syllabus writing: contents of a learner-centered syllabus | Johnson, C. | J Chiropr Educ | Exclusion reason: Not about chiropractic education or training; Not specific to chiropractic |
| 2006 | Iron Sharpens Iron Experiential Learning Strategies in Chiropractic Education | Morgan, W. E.; Morgan, C. P. | Journal of Chiropractic Humanities | Exclusion reason: Not about chiropractic education or training; Commentary about what is thought to be most effective but very little content specific about chiro |
| 2007 | Long-term retention of material taught and examined in chiropractic curricula: its relevance to education and clinical practice | Bruno, P.; Ongaro, A.; Fraser, I. | J Can Chiropr Assoc | Exclusion reason: Not about chiropractic education or training; This is a narrative commentary about what could theoretically be done but there is nothing that has been done for chiropractic training |
| 2007 | Peer review of teaching | Fernandez, C. E.; Yu, J. | J Chiropr Educ | Exclusion reason: Not about chiropractic education or training; This is not chiropractic education. It is a thoughtful review of the topic of peer review of teaching in general, but there is nothing here about chiropractic.; no methods, but seems to be a narrative review on the topic |
| 2007 | The ethics of educational research | Lawrence, D. J. | J Manipulative Physiol Ther | Exclusion reason: Not about chiropractic education or training; not really about education research, more general information |
| 2007 | Evidence-based practice and curriculum development at UBCC...ACC Conference | Greenstein, G.; Funk, M.; Sherman, P.; Good, C.; Perle, S. | Journal of Chiropractic Education (Association of Chiropractic Colleges) | Exclusion reason: Conference abstracts/proceedings; Conference abstract |
| 2007 | A retrospective analysis of the development, implementation, and assessment of an evidence-based practice course for chiropractors...ACC Conference | D'Antoni, A. V.; Zipp, G. P. | Journal of Chiropractic Education (Association of Chiropractic Colleges) | Exclusion reason: Conference abstracts/proceedings; Conference abstract |
| 2007 | Orienting new faculty at a chiropractic college: a pilot project...ACC Conference | Callender, A.; Hynes, R. | Journal of Chiropractic Education (Association of Chiropractic Colleges) | Exclusion reason: Conference abstracts/proceedings; Conference abstract |
| 2008 | Interprofessional education (IPE) and chiropractic | Karim, R.; Ross, C. | J Can Chiropr Assoc | Exclusion reason: Not about chiropractic education or training; peripherally related; more of a biosketch than an actual paper |
| 2008 | Beyond the didactic classroom: educational models to encourage active student involvement in learning | Shreeve, M. W. | J Chiropr Educ | Exclusion reason: Not about chiropractic education or training; Not about chiropractic education |
| 2008 | Right courses: competency and capability | Nichols, D. E.; Ebrall, P. | Chiropractic Journal of Australia | Exclusion reason: LTE; not education research |
| 2009 | A survey of geriatrics courses in North American chiropractic programs | Wyatt, L. H. | Journal of the American Chiropractic Association | Exclusion reason: Other reason; Not a publication. News item or summary |
| 2009 | How the Index to Chiropractic Literature contributes to chiropractic education and practice worldwide | Taylor-Vaisey, A.; Harvey, P. | Journal of Chiropractic Education (Association of Chiropractic Colleges) | Exclusion reason: Conference abstracts/proceedings; conference abstract |
| 2009 | 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 | Robinson, P.; Pearson, G.; Stark, T.; Giggleman, G.; Rupert, R. | Journal of Chiropractic Education (Association of Chiropractic Colleges) | Exclusion reason: Conference abstracts/proceedings; conference abstract |
| 2009 | Elective course offerings in North American chiropractic programs: an opportunity for growth | Osterbauer, P.; Wiles, M. | Journal of Chiropractic Education (Association of Chiropractic Colleges) | Exclusion reason: Conference abstracts/proceedings; conference abstract |
| 2009 | Student learning in a collaborative testing environment | Meseke, C.; Meseke, J.; Nafziger, R. | Journal of Chiropractic Education (Association of Chiropractic Colleges) | Exclusion reason: Conference abstracts/proceedings; Conference abstract |
| 2009 | Implementation of a faculty mentorship program at a chiropractic college: a preliminary report | Keene, K.; Lockenour, J. | Journal of Chiropractic Education (Association of Chiropractic Colleges) | Exclusion reason: Conference abstracts/proceedings; Conference abstract |
| 2009 | Comparison of hybrid online format and traditional classroom format in a chiropractic methods course | Hinck, G.; Hulbert, J. R.; Bergmann, T. | Journal of Chiropractic Education (Association of Chiropractic Colleges) | Exclusion reason: Conference abstracts/proceedings; Conference abstract |
| 2009 | Clinical Competencies Assessment Rubric System (C-CARS) | Ciolfi, M. | Journal of Chiropractic Education (Association of Chiropractic Colleges) | Exclusion reason: Conference abstracts/proceedings; Conference abstract |
| 2010 | A teaching scholar program in chiropractic education | Lawrence, D. J. | J Can Chiropr Assoc | Exclusion reason: Other reason; a proposal for a program; descriptive |
| 2010 | Mentoring in the Clinical Setting to Improve Student Decision-Making Competence | Stick-Mueller, Misty; Boesch, Ron; Silverman, Steven; Carpenter, Scott; Illingworth, Robert; Countryman, James |  | Exclusion reason: Other reason; unreliable journal |
| 2011 | An RMIT university perspective on chiropractic research | Ebrall, P. | Chiropractic Journal of Australia | Exclusion reason: Not about chiropractic education or training; Loosely related to education research.; not education research |
| 2011 | 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 | Williams, Jonathon; Osterbauer, Paul | Clinical Chiropractic | Exclusion reason: Conference abstracts/proceedings; Conf abstract |
| 2011 | The Journal of Chiropractic Education: Leading the Dissemination of Scholarly Discourse | O'Bryon, David | Journal of Chiropractic Education (Association of Chiropractic Colleges) | Exclusion reason: LTE; Bart Green This was a congratulatory note about the 25th anniversary of the JCE |
| 2011 | Chiropractic Student Motivations and Course Choices |  | Clinical Chiropractic | Exclusion reason: Conference abstracts/proceedings; Conference abstract |
| 2012 | 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 | Cantarero-Villanueva, Irene; FernÃ¡ndez-Lao, Carolina; Galiano-Castillo, Noelia; Castro-MartÃ­n, Eduardo; DÃ­az-RodrÃ­guez, Lourdes; Arroyo-Morales, Manuel | Journal of manipulative and physiological therapeutics | Exclusion reason: Not about chiropractic education or training; PT, no chiro material |
| 2013 | 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 | Gleberzon, Brian; Stuber, Kent | Journal of the Canadian Chiropractic Association | Exclusion reason: Not about chiropractic education or training; Not education research.; more of a practice analysis than education research |
| 2014 | Predictors of Knowledge and Use of Research Literacy Skills Among Students of Acupuncture and Chiropractic Programs | Miller, Judith | Journal of Alternative & Complementary Medicine | Exclusion reason: Conference abstracts/proceedings; conference abstract |
| 2016 | Community-based free clinics: opportunities for interprofessional collaboration, health promotion, and complex care management | Kaeser, M. A.; Hawk, C.; Anderson, M. L.; Reinhardt, R. | J Chiropr Educ | Exclusion reason: Not about chiropractic education or training; |
| 2016 | Knowledge Translation and Implementation Science in Health Professions Education: Time for Clarity? | Thomas, A.; BussiÃ¨res, A. | Acad Med | Exclusion reason: Not about chiropractic education or training; a table summary of concepts related to KT education in general; not research |
| 2018 | Analysis of the chief complaints of older patients seeking chiropractic care at a teaching clinic and potential implications for clinical education | D'Cruz, D.; Clark, M.; Cade, A.; Glucina, T.; Pritchard, K.; Fox, M. | J Chiropr Educ | Exclusion reason: Not about chiropractic education or training; This was a demographic cross-sectional analysis of a clinic. It is not about education |
| 2018 | Testing a strength and conditioning program to prevent common manipulative technique training injuries in chiropractic students: a study protocol for a randomised controlled trial | Hodgetts, C. J.; Walker, B. F. | Chiropr Man Therap | Exclusion reason: Other reason; This was a protocol. Nothing was really done |
| 2018 | A Preliminary Study of Chiropractors' Beliefs About Biomedical and Biopsychosocial Pain: A Survey of University of Western States Alumni | Lady, S. D.; Haas, M.; Takagi, R.; Takaki, L. | J Chiropr Med | Exclusion reason: Not about chiropractic education or training; This was not about education |
| 2019 | A failed review of CCE site inspection standards and processes | Innes, S. I.; Leboeuf-Yde, C.; Walker, B. F. | Chiropr Man Therap | Exclusion reason: Not about chiropractic education or training; I do not see this as education research. It is a study about researcher knowledge of planning a feasible study |
| 2019 | The passive voice and comprehensibility of biomedical texts: An experimental study with 2 cohorts of chiropractic students | Millar, N.; Budgell, B. S. | J Chiropr Educ | Exclusion reason: Not about chiropractic education or training; a study of text readability could have been administered to any population |
| 2019 | Assessing a Novel Method of Calculation of the Cobb Angle for Scoliosis: Interexaminer Reliability and Student Satisfaction | Caso, Marcello L; Clements, John M | Journal of Manipulative and Physiological Therapeutics | Exclusion reason: Not about chiropractic education or training |
| 2020 | Chiropractic qualifying examinations: Honoring the profession's commitment to society | Green, B. N. | J Chiropr Educ | Exclusion reason: Not about chiropractic education or training; not education research |
| 2022 | Do chiropractic interns use clinical practice guidelines when managing patients with neck pain in France? A feasibility study | Sorondo, D.; Delpierre, C.; CÃ´tÃ©, P.; Lemeunier, N. | Chiropr Man Therap | Exclusion reason: 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.; not education research |
| 2023 | Measuring the Quality of the OSCE in a Chiropractic Programme: A Review of Metrics and Recommendations | Cade, A. E.; Meuller, N. | J Chiropr Educ | Exclusion reason: Other reason - not published in final form at this time |

# Appendix V: Characteristics of included studies<level 1 heading>

A screenshot of a computer screen

Description automatically generated

Above is the heatmap of papers organized by topic. All included 598 studies are listed below arranged in tables by topic.

### Student Knowledge and Cognitive Competence

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Published Year | Title | Authors | Journal | Topic |
| 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 |
| 1991 | The use of video microscope technique in the evaluation of students' learning of histology | Emile Goubran | Journal of Chiropractic Education. 5(3), 89-93. | Knowledge of Normal and Abnormal |
| 1991 | Nutrition course topics selected by chiropractic students | David C Lin | Journal of Chiropractic Education. 5(3), 95-100. | Knowledge of Health, Patient Needs, and Special Populations |
| 1992 | Nutrition course topics for chiropractic and medical students | David C Lin | Journal of Chiropractic Education. 6(4), 141-149. | Knowledge of Health, Patient Needs, and Special Populations |
| 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 |
| 1996 | Chiropractic student attitudes toward radiology | Marchiori, D. M. | J Manipulative Physiol Ther. 19(9), 583-6. | Knowledge of Evaluation, assessment |
| 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 |
| 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 Special Populations |
| 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 Special Populations |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 Special Populations |
| 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 |
| 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 Special Populations |
| 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 Special Populations |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 Special Populations |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 Special Populations |
| 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 |
| 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 |
| 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 |
| 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 |
| 2020 | Musculoskeletal Anatomy Knowledge Retention in the Macquarie University Chiropractic Program: A Cross-Sectional Study | Hulme, A. K.; Luo, K.; Å trkalj, G. | Anat Sci Educ. 13(2), 182-191. | Knowledge of Normal and Abnormal |
| 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 Special Populations |
| 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 Special Populations |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 Special Populations |
| 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 Special Populations |
| 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

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| --- | --- | --- | --- | --- |
| Published Year | Title | Authors | Journal | Topic |
| 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 |
| 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 |
| 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 |
| 1993 | An evaluation within the affective domain of teaching methods in manipulative technique laboratory: Chirobics vs conventional thrusting exercises | Christopher J Good | Journal of Chiropractic Education. 7(19-28), . | Perform Manual Therapies, Treatments, Patient Therapeutic Education, and Other Supporting Therapies |
| 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 |
| 1996 | Jurisprudence practice development projects at a chiropractic college | Allan M Freedman; John Mrozek | Journal of Chiropractic Education. 9(4), 143-146. | Demonstrate business management skills |
| 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 |
| 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 |
| 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 |
| 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 |
| 1999 | Effects of gender and age on students performance in adjustive technique classes | Anne Rampacher; Cynthia Peterson | Journal of Chiropractic Education. 13(2), 114-130. | Perform Manual Therapies, Treatments, Patient Therapeutic Education, and Other Supporting Therapies |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 2010 | Diagnostic Imaging Guidelines Implementation Study for Spinal Disorders: A Randomized Trial with Postal Follow-ups | BussiÃ¨res, A. E.; Laurencelle, L.; Peterson, C. | J Chiropr Educ. 24(1), 44975. | Perform assessment, Clinical Reasoning Skills |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |

### Student Personal Values, Professional, Behavioral, and Ethical Competence

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| Published Year | Title | Authors | Journal | Topic |
| 1971 | The chiropractic physician: a study of career contingencies | White, Marjorie; Skipper Jr, James K | Journal of Health and Social Behavior. (), 300-306. | Demonstrate Patient/Person Competence |
| 1992 | A study of chiropractic students using the Myers-Briggs Type Indicator with comparison to other health professionals | Joanne Nyiendo; Elizabeth Olsen; Rebekah Jones | J Chiropr Humanit. 5(4), 133-145. | Demonstrate Personal Competence |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 2017 | Definition of Professionalism by Different Groups of Health Care Students | Zafiropoulos, George | Educational Research and Reviews. 12(7), 380-386. | Demonstrate Professionalism and Practice Competence |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 2020 | Provider-Patient Interaction: Exploring Elderspeak in Simulated Preclinical Chiropractic Student Encounters | Cockrell, M. D. | Gerontol Geriatr Med. 6(), 2333721420923453. | Demonstrate Patient/Person Competence |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 2022 | Empathy levels in Australian chiropractic students | Innes, S. I.; Simpson, J. K. | J Chiropr Educ. 36(2), 110-116. | Demonstrate Patient/Person Competence |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 2023 | "It's the most important work we will ever do": Chiropractic students, servicelearning 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 |
| 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

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| Published Year | Title | Authors | Journal | Topic |
| 1979 | Identifying predictors of academic success in a chiropractic program | Byron S Wills | ACA J Chiropr. 13(16), S99-S105. | Program Student assessment |
| 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 |
| 1984 | Educational preparation for chiropractic clinical research | Jamison, J. R. | J Manipulative Physiol Ther. 7(2), 109-17. | Program Methods |
| 1985 | Standards of chiropractic practice | Vear, H. J. | J Manipulative Physiol Ther. 8(1), 33-43. | Program Accreditation and Requirements |
| 1985 | National Board Scores versus Student GPA's in Chiropractic Education | Kalthoff, Theodore J. | College and University. 61(1), 61-67. | Program Student assessment |
| 1987 | Technology brings a patient to the classroom | Thomas Bergmann | Journal of Chiropractic Education. 1(2), 9-10,15. | Program Methods |
| 1987 | Autosimulation topical feedback methodology: An easy and effective way to learn extremity dermatomal distributions | Ronald O Kirk | Journal of Chiropractic Education. 1(1), 45179. | Program Methods |
| 1987 | Teaching about cerebrovascular accidents in a chiropractic educational context: A preventive orientation | Ronald O Kirk | Journal of Chiropractic Education. 1(2), 1,11-12. | Program Methods |
| 1988 | Chiropractic residency at Lindell Hospital: a program description | Carmichael, J. P. | J Manipulative Physiol Ther. 11(3), 177-80. | Program Methods |
| 1988 | A collaborative project: NWCC worksite internship program and the American Red Cross | Terry J Gromola | Journal of Chiropractic Education. 2(2), 1,3-4. | Program Methods |
| 1988 | The role of cadaveric radiographs in teaching anatomy at chiropractic colleges | Timothy J Mick; Tracy Hoyt | Journal of Chiropractic Education. 2(1), 1,3-4. | Program Curriculum |
| 1988 | An analysis of grade distribution and grade inflation at Palmer College of Chiropractic from 1984-1988 | Patrick J Goff | Journal of Chiropractic Education. 3(2), 23-29. | Program Student assessment |
| 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 |
| 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 |
| 1989 | Computer-based learning systems in a chiropractic college | Peter N Fysh | Journal of Chiropractic Education. 3(3), 45245. | Program Methods |
| 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 |
| 1989 | Correlates of locus of control in chiropractic teachers | Michael Wiles | Journal of Chiropractic Education. 2(4), 13-19. | Program Faculty/Staff |
| 1989 | Effect of the order of taking practical examination on scores | Ruth Sandefur; J Michael Burk | Journal of Chiropractic Education. 2(4), 44933. | Program Student assessment |
| 1990 | assessing the worth of intern performance | Sauter, R. C.; Spurgin, D. S. | J Manipulative Physiol Ther. 13(3), 169-70. | Program Methods |
| 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 |
| 1990 | Comparison of core curriculum courses common to chiropractic, medical, and osteopathic schools in Missouri | C Ray Ratliff; Sid R Rogers; Kevin D Richardson | Journal of Chiropractic Education. 4(3), 76-80. | Program Curriculum |
| 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 |
| 1991 | Introduction to chiropractic history: Design of a course | Joseph C Keating | Journal of Chiropractic Education. 4(4), 131-137. | Program Methods |
| 1991 | Development of a grand rounds program | Brian MacDonald; Daniel Cordry | Journal of Chiropractic Education. 4(4), 115-121. | Program Methods |
| 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 |
| 1991 | The development and implementation of an innovative curriculum in chiropractic education: The LACC experience | Alan H Adams; John A Miller; Gary Miller | Journal of Chiropractic Education. 4(4), 122-127. | Program Curriculum |
| 1991 | Chi Rho Theta: The research honors program at Palmer College | R Douglas Baker; Alana C Ferguson | Journal of Chiropractic Education. 5(1), 44995. | Program Curriculum |
| 1991 | Grades as Predictors of College and Career Success: The Case of a Health-Related Institution | Tan, David L. | Journal of College Admission. (), . | Program Student assessment |
| 1991 | Gender bias detected in a survey of chiropractic technique class grades | NC French | Journal of Chiropractic Education. 5(2), 70-73. | Program Student assessment |
| 1992 | An approach to the evaluation of academic quality of the North American schools of chiropractic medicine | Hugh A Gemmell | Journal of Chiropractic Education. 6(1), 23-30. | E2 |
| 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 |
| 1992 | Teachin-learning options for the study of chiropractic principles: A case study | Meridel I Gatterman | Journal of Chiropractic Education. 6(2), 93-103. | Program Methods |
| 1992 | Problem solving facilitation in chiropractic education using the portable patient problem pack (P4) | John P Mrozek | Journal of Chiropractic Education. 6(2), 105-110. | Program Methods |
| 1992 | Chiropractic clinical teaching | Mootz, R. D.; Cohen, P. A. | J Manipulative Physiol Ther. 15(7), 471-6. | Program Faculty/Staff |
| 1992 | Use of selected elements of patient perception of care in the evaluation of clinical training | Patrick J Goff | Journal of Chiropractic Education. 5(4), 115-122. | Program Student assessment |
| 1993 | Administration in chiropractic education | Coyle, B. A. | J Manipulative Physiol Ther. 16(4), 266-73. | Program Governance and Administration |
| 1993 | Self-efficacy: A possible direction for the at-risk student | Ann Drake | Journal of Chiropractic Education. 7(3), 83-87. | Program Student Support |
| 1993 | A review and comparison of medical and chiropractic education | Glenda Wiese | Journal of Chiropractic Education. 6(4), 127-139. | Program Curriculum |
| 1993 | Non-cognitive evaluations for chiropractic education | Janet A Harris | Journal of Chiropractic Education. 7(1), 45002. | Program Student assessment |
| 1994 | Correlation between clinic entrance examination results and 4th year clinical competency evaluations | Cynthia Peterson | Journal of Chiropractic Education. 8(1), 44997. | Program assessment and Quality Improvement |
| 1994 | Using the case study method in evaluation of a student service program at Palmer College of Chiropractic | Craig Russon; Yvonne Brockington | Journal of Chiropractic Education. 8(2), 51-57. | Program assessment and Quality Improvement |
| 1994 | Running a chiropractic journal club in the clinic setting | Rona I Brynin; Kimary Farrar | Journal of Chiropractic Education. 8(3), 87-92. | Program Methods |
| 1994 | Developing case based clinical tutorials for the first year chiropractic student | Gary M Greenstein; Bruce L Carr | Journal of Chiropractic Education. 8(1), 29-33. | Program Methods |
| 1994 | A survey of chiropractic college admission policy and state board licensure requirements vis-a-vis convicted felons | Craig Russon; Mary Pitcher; Yvonne Brockington | Journal of Chiropractic Education. 8(3), 93-98. | Program Student Support |
| 1994 | Chiropractic education: reflecting the paradigm dilemma of chiropractic practice | Jamison, J. R. | J Manipulative Physiol Ther. 17(3), 186-93. | Program Curriculum |
| 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 |
| 1994 | Chiropractic College Admission Tests as predictors of academic performance at Palmer College | KV Subba Reddy | Journal of Chiropractic Education. 8(2), 39-49. | Program Student assessment |
| 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 |
| 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 |
| 1995 | Chiropractic history: a curriculum necessity | Green, B. N. | J Chiropr Educ. 9(2), 49-56. | Program Methods |
| 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 |
| 1995 | A novel instructional technique used in neuroscience and human physiology courses | Paul M Delaney; Gene S Tobias; Phillip W Harvey | Journal of Chiropractic Education. 8(4), 149-157. | Program Methods |
| 1995 | A new method for teaching gross anatomy lab: Combining prosection and serial dissection | Charles Henderson; Brian McMaster | Journal of Chiropractic Education. 8(4), 131-140. | Program Methods |
| 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 |
| 1995 | Public health in chiropractic colleges: A preliminary study | Satya P Krishnan; Kathryn S Victory; Hill Flora | Journal of Chiropractic Education. 9(1), 17-25. | Program Curriculum |
| 1995 | A microbiological survey of the chiropractic educational environment | Scott Harrell; Randy Shaw; James T Hunter; Attila Z Buday | Journal of Chiropractic Education. 8(4), 143-147. | Program Resources |
| 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 |
| 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 |
| 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 |
| 1996 | Motivation to learn physiology using self-study | Villani, R. G. | Medical Teacher. 18(1), 43-46. | Program Methods |
| 1996 | Teaching pathology in a competency based/problem centered curriculum | Emile Goubran; Nader Timsah | Journal of Chiropractic Education. 10(1), 44994. | Program Methods |
| 1996 | A comparison of clinical competency evaluation methods | David P Waalen; KJudith K Waalen | Journal of Chiropractic Education. 9(4), 147-153. | Program Curriculum |
| 1996 | The effect of discontinuing an early curriculum course in terminology | Virginia A Wolfenberger | Journal of Chiropractic Education. 9(4), 119-123. | Program Curriculum |
| 1996 | Identifying patron needs for computerized literature searches in chiropractic college libraries | Grace E Jacobs; Cheryl Duggan | Journal of Chiropractic Education. 9(4), 135-142. | Program Resources |
| 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 |
| 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 |
| 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 |
| 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 |
| 1997 | Teaching chiropractic principles through patient centered problems | Gatterman, M. I. | Journal of the Canadian Chiropractic association. 41(1), 27-35. | Program Methods |
| 1997 | Protocols for interns treating at athletic events | Rona Brynin; Kim Farrar | Journal of Chiropractic Education. 11(2), 51-58. | Program Methods |
| 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 |
| 1997 | Supervision of chiropractors: a pilot study | Sigrell, H. | J Manipulative Physiol Ther. 20(5), 320-5. | Program Faculty/Staff |
| 1997 | Evaluating the effectiveness of the Current Awareness Project (CAP) at the learning resource center at Los Angeles College of Chiropractic | Nehmat G Saab | Journal of Chiropractic Education. 11(2), 75-79. | Program Faculty/Staff |
| 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 |
| 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 |
| 1997 | The process of curriculum change at The National College of Chiropractic | Swenson, R. L. | J Chiropr Educ. 10(4), S71-5. | Program Curriculum |
| 1997 | When is someone qualified in chiropractic? | Kleynhans, A. M. | Chiropractic Journal of Australia. 27(3), 117-126. | Program Curriculum |
| 1997 | Towards an integrative chiropractic curriculum design | Kleynhans, A. M. | Chiropractic Journal of Australia. 27(2), 78-84. | Program Curriculum |
| 1997 | The repeated use of known test questions reduces the students' understanding of the materials taught in class: A preliminary study | John Q Zhang; Leroy G Moore | Journal of Chiropractic Education. 11(1), 45248. | Program Student assessment |
| 1997 | The correlation of students' entry level GPA, academic performance and the national board examination in physiology | John Q Zhang; Susan S Newlin | Journal of Chiropractic Education. 11(1), 19-25. | Program Student assessment |
| 1998 | Teaching biochemistry in a 'Guided Discovery Curriculum' | Surlekar, S. | Biochemical Education. 26(3), 218-222. | Program Methods |
| 1998 | Chiropractic education and critical thinking | Johnson, C. D.; Green, B. N. | Topics in Clinical Chiropractic. 5(2), 34-72. | Program Methods |
| 1998 | Plastination: a modern approach to chiropractic teaching | Grondin, G. | Journal of the Canadian Chiropractic association. 42(2), 107-112. | Program Methods |
| 1998 | Problem solving exercise in a clinical science technique class | Bovee, M. L. | Chiropractic Technique. 10(3), 110-112. | Program Methods |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 1999 | Effects of the mock technique system: Teaching students technique evaluation | Stephen M Perle; Angela M Speck | Journal of Chiropractic Education. 13(2), 100-109. | Program Methods |
| 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 |
| 1999 | An active sabbatical leave program: Critical changes make all the difference | Robert W Boal; Nark Kaminski; Janet A Harris; Ronald G Sellner | Journal of Chiropractic Education. 13(2), 110-113. | Program Faculty/Staff |
| 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 |
| 1999 | MSc clinical chiropractic: Development and design of an innovative postgraduate course in practice-based learning at the Anglo-European College of Chiropractic | Jennifer E Bolton; B Kim Humphreys | Journal of Chiropractic Education. 13(1), 45149. | Program Curriculum |
| 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 |
| 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 |
| 1999 | Correlations Between Chiropractic National Board (Part I) Scores and Basic Science Course Grades and Related Data | Wolfenberger, Virginia | College and University. 74(2), 16-20. | Program Student assessment |
| 1999 | The correlation of students entry-level GPA, academic performance, and the National Board Examination in all basic science subjects | John Q Zhang | Journal of Chiropractic Education. 13(2), 91-99. | Program Student assessment |
| 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 |
| 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 |
| 2000 | Complementary medicine: the Southampton undergraduate experience | Lewith, G. T.; Owen, D. | Complement Ther Med. 8(3), 202-6. | Program Methods |
| 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 |
| 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 |
| 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 |
| 2000 | An action research approach to standardizing the evaluation of diagnostic psychomotor skills | David P Waalen; Judith K Waalen; Franklin J Medio | Journal of Chiropractic Education. 14(2), 78-87. | Program Faculty/Staff |
| 2000 | Residency programs at the Canadian Memorial Chiropractic College | Steiman, I. | J Manipulative Physiol Ther. 23(7), 503-11. | Program Curriculum |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 2001 | Development of an on-line advanced clinical topics course | Rose, K. A. | J Chiropr Educ. 16(2), 122-127. | Program Methods |
| 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 |
| 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 |
| 2001 | Reform in public health education in chiropractic | Green, B. N. | Topics in Clinical Chiropractic. 8(4), 27-69. | Program Methods |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 2002 | Educating primary care chiropractic physicians | Wickes, D. | J Chiropr Med. 1(4), 175-9. | Program Curriculum |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
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| 2004 | A qualitative study of 16 African Americans in chiropractic education | Wiese, G. C. | J Chiropr Educ. 18(2), 127-136. | Program Student Support |
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| 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 |
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| 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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| 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 |
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| 2006 | Do chiropractic college faculty understand informed consent: a pilot study | Lawrence, D. J.; Hondras, M. A. | Chiropr Osteopat. 14(), 27. | Program Faculty/Staff |
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| 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 |
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| 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 |
| 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 |
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| 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 |
| 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 |
| 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 |
| 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 |
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| 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 |
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| 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 |
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| 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 |
| 2009 | Student-generated case reports | Good, C. J. | J Chiropr Educ. 23(2), 165-73. | Program Methods |
| 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 |
| 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 |
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| 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 |
| 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 |
| 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 |
| 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 |
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| 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 |
| 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 |
| 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 |
| 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 |
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| 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 |
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| 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 |
| 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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| 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 |
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| 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 |
| 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 |
| 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 |
| 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 |
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| 2011 | The New Anatomy Facility at Macquarie University and its Role in Chiropractic Education and Research | Arkalj, Goran; Casey, Marian; Appleyard, Richard | Chiropractic Journal of Australia. 41(2), 54-56. | Program Resources |
| 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 |
| 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 |
| 2012 | Empowering student learning through rubric-referenced self-assessment | He, X.; Canty, A. | J Chiropr Educ. 26(1), 24-31. | Program Methods |
| 2012 | Manikin-based clinical simulation in chiropractic education | McGregor, M.; Giuliano, D. | J Chiropr Educ. 26(1), 14-23. | Program Methods |
| 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 |
| 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 |
| 2012 | Diversity in the chiropractic profession: preparing for 2050 | Johnson, C. D.; Green, B. N. | J Chiropr Educ. 26(1), 44939. | Program Student Support |
| 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 |
| 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 |
| 2012 | Ethics education in chiropractic colleges: a North American survey | Kinsinger, S.; Soave, D. | J Manipulative Physiol Ther. 35(6), 486-90. | Program Curriculum |
| 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 |
| 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 |
| 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 |
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| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 2013 | A comparison of the efficacy of test-driven learning versus self-assessment learning | Xiaohua, He; Canty, Anne | J Chiropr Educ. 27(2), 110-115. | Program Methods |
| 2013 | Video capture on student-owned mobile devices to facilitate psychomotor skills acquisition: A feasibility study | Hinck, Glori; Bergmann, Thomas F. | J Chiropr Educ. 27(2), 158-162. | Program Methods |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
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| 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 |
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| 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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| 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 |
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| 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 |
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| 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 |
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| 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 |
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| 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 |
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| 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 |
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| 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 |
| 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 |
| 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 |
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| 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 |
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| 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 |
| 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 |
| 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 |
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| 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 |
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| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
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| 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 |
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| 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 |
| 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 |
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| 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 |
| 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 |
| 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 |
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| 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 |
| 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 |
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| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 2020 | Public Health Competencies for Chiropractic Programs | Madigan, D.; Maiers, M.; Pfeifer, J. | Pedagogy in Health Promotion. 6(4), 291-295. | Program Curriculum |
| 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 |
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| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 2020 | A Two-Level Alternating Direction Model for Polytomous Items with Local Dependence | Himelfarb, Igor; Marcoulides, Katerina M.; Fang, Guoliang; Shotts, Bruce L. | Educational and Psychological Measurement. 80(2), 293-311. | Program Student assessment |
| 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 |
| 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 |
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| 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 |
| 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 |
| 2021 | The use of photovoice to transform health science students into critical thinkers | Haffejee, F. | BMC Med Educ. 21(1), 237. | Program Methods |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 2021 | Educator's Learning Alignment Instrument (ELAI): A tool to assess aligned learning concepts within college courses | Vining, Robert D.; Millard, Timothy | J Chiropr Educ. 35(1), 28-37. | Program Curriculum |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 2022 | Chiropractic lecturer qualities: The student perspective | Chesterton, P. | J Chiropr Educ. 36(2), 124-131. | Program Faculty/Staff |
| 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 |
| 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 |
| 2022 | Coping strategies and chiropractic student perceived stress | Zhang, N.; Henderson, C. N. R. | J Chiropr Educ. 36(1), 13-21. | Program Student Support |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |

# Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) Checklist

| **SECTION** | **ITEM** | **PRISMA-ScR CHECKLIST ITEM** | **REPORTED ON PAGE #** |
| --- | --- | --- | --- |
| **TITLE** | | | |
| Title | 1 | Identify the report as a scoping review. | 3 |
| **ABSTRACT** | | | |
| Structured summary | 2 | Provide a structured summary that includes (as applicable): background, objectives, eligibility criteria, sources of evidence, charting methods, results, and conclusions that relate to the review questions and objectives. | 3 according to JBI requirements |
| **INTRODUCTION** | | | |
| Rationale | 3 | Describe the rationale for the review in the context of what is already known. Explain why the review questions/objectives lend themselves to a scoping review approach. | 5-6 |
| Objectives | 4 | Provide an explicit statement of the questions and objectives being addressed with reference to their key elements (e.g., population or participants, concepts, and context) or other relevant key elements used to conceptualize the review questions and/or objectives. | 6-7 |
| **METHODS** | | | |
| Protocol and registration | 5 | Indicate whether a review protocol exists; state if and where it can be accessed (e.g., a Web address); and if available, provide registration information, including the registration number. | 7 |
| Eligibility criteria | 6 | Specify characteristics of the sources of evidence used as eligibility criteria (e.g., years considered, language, and publication status), and provide a rationale. | 6-7 |
| Information sources\* | 7 | Describe all information sources in the search (e.g., databases with dates of coverage and contact with authors to identify additional sources), as well as the date the most recent search was executed. | 8-9 |
| Search | 8 | Present the full electronic search strategy for at least 1 database, including any limits used, such that it could be repeated. | Appendix II |
| Selection of sources of evidence† | 9 | State the process for selecting sources of evidence (i.e., screening and eligibility) included in the scoping review. | 9-10 |
| Data charting process‡ | 10 | Describe the methods of charting data from the included sources of evidence (e.g., calibrated forms or forms that have been tested by the team before their use, and whether data charting was done independently or in duplicate) and any processes for obtaining and confirming data from investigators. | 10-11 |
| Data items | 11 | List and define all variables for which data were sought and any assumptions and simplifications made. | 10-11 |
| Critical appraisal of individual sources of evidence§ | 12 | If done, provide a rationale for conducting a critical appraisal of included sources of evidence; describe the methods used and how this information was used in any data synthesis (if appropriate). | Not done |
| Synthesis of results | 13 | Describe the methods of handling and summarizing the data that were charted. | 10-11 |
| **RESULTS** | | | |
| Selection of sources of evidence | 14 | Give numbers of sources of evidence screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally using a flow diagram. | 11-12 |
| Characteristics of sources of evidence | 15 | For each source of evidence, present characteristics for which data were charted and provide the citations. | 13-14 |
| Critical appraisal within sources of evidence | 16 | If done, present data on critical appraisal of included sources of evidence (see item 12). | Not done |
| Results of individual sources of evidence | 17 | For each included source of evidence, present the relevant data that were charted that relate to the review questions and objectives. | 15-18 |
| Synthesis of results | 18 | Summarize and/or present the charting results as they relate to the review questions and objectives. | 15-18 |
| **DISCUSSION** | | | |
| Summary of evidence | 19 | Summarize the main results (including an overview of concepts, themes, and types of evidence available), link to the review questions and objectives, and consider the relevance to key groups. | 19 |
| Limitations | 20 | Discuss the limitations of the scoping review process. | Click here to enter text. |
| Conclusions | 21 | Provide a general interpretation of the results with respect to the review questions and objectives, as well as potential implications and/or next steps. | Click here to enter text. |
| **FUNDING** | | | |
| Funding | 22 | Describe sources of funding for the included sources of evidence, as well as sources of funding for the scoping review. Describe the role of the funders of the scoping review. | Click here to enter text. |

JBI = Joanna Briggs Institute; PRISMA-ScR = Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews.

\* Where *sources of evidence* (see second footnote) are compiled from, such as bibliographic databases, social media platforms, and Web sites.

† A more inclusive/heterogeneous term used to account for the different types of evidence or data sources (e.g., quantitative and/or qualitative research, expert opinion, and policy documents) that may be eligible in a scoping review as opposed to only studies. This is not to be confused with *information sources* (see first footnote).

‡ The frameworks by Arksey and O’Malley (6) and Levac and colleagues (7) and the JBI guidance (4, 5) refer to the process of data extraction in a scoping review as data charting*.*

§The process of systematically examining research evidence to assess its validity, results, and relevance before using it to inform a decision. This term is used for items 12 and 19 instead of "risk of bias" (which is more applicable to systematic reviews of interventions) to include and acknowledge the various sources of evidence that may be used in a scoping review (e.g., quantitative and/or qualitative research, expert opinion, and policy document).

*From:* Tricco AC, Lillie E, Zarin W, O'Brien KK, Colquhoun H, Levac D, et al. PRISMA Extension for Scoping Reviews (PRISMAScR): Checklist and Explanation. Ann Intern Med. 2018;169:467–473. [doi: 10.7326/M18-0850](http://annals.org/aim/fullarticle/2700389/prisma-extension-scoping-reviews-prisma-scr-checklist-explanation).

# Pre-submission checklist [author use only]

Before you submit your manuscript, please ensure you have complied with the following requirements (more guidance can be found in the [Manuscript style and preparation guidelines](http://edmgr.ovid.com/jbisrir/accounts/ifauth.htm#ManuscriptStylePreparationGuidelines)):

* Utilized JBI methodology, and reported any deviations from the JBI approach.
* Followed all guidance within this template, identified by blue text.
* Created a [cover letter](http://edmgr.ovid.com/jbisrir/accounts/ifauth.htm#CoverLetter) and [title page](http://edmgr.ovid.com/jbisrir/accounts/ifauth.htm#TitlePage) (information regarding the review registration number [eg, Open Science Framework], Acknowledgments, Funding, Declarations, Author contributions, Availability of data, and Conflict of interest to be included in the title page).
* Removed author names and affiliations from the body of the manuscript.
* Completed a [PRISMA 2020 checklist](http://prisma-statement.org/PRISMAStatement/Checklist) that will be included as part of your submission (required on submission).
* Cited the *a priori* protocol or Open Science Framework (or other) registration number.
* All authors have completed a copyright transfer agreement (Note: manuscripts are not processed until these forms have been submitted).
* Checked your manuscript complies with word counts and they are reported where required.
* Included maximum of five (5) keywords and that they are presented in alphabetical order, separated by semicolons.
* A [PRISMA flow diagram](http://prisma-statement.org/prismastatement/flowdiagram.aspx) has been included and summed correctly following study inclusions/exclusions.
* Used JBI SUMARI or the appropriate corresponding template in your manuscript
* Tables and figures should be uploaded as separate documents (except SoF) and in-text placement indicated (eg, <insert table 1 here>. Ensure your table or figure has a title that succinctly describes the table or figure in an appropriate manner. As a general rule, the number of tables should be kept below six (6), not including appendices.
* Obtained any copyright permissions for third-party content (including tables and figures where required)
* Used Vancouver style for references (maximum 30) and that all citations appear in sequential order. Journal names are to be abbreviated using the [National Library of Medicine’s Journals in NCBI databases](https://www.ncbi.nlm.nih.gov/nlmcatalog/journals).
* Included the full search strategies in the appendices, complete with search date and number of records returned.
* Included the platforms for any databases to be searched (e.g., MEDLINE (PubMed)).

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