

Education and training of chiropractic students and graduates: a scoping review

Summary report of findings: Step 2 training

August 07, 2023

Greetings! This is a report of our findings for Step 2 training for our Chiropractic Education Research Scoping review, which was due August 6.

We are looking forward to finishing the training so we can get started on the actual scoping review in Covidence! Thank you all for your participation!

The primary purpose of this training is to make sure everyone is on the same page with inclusion/exclusion and data extraction - and to help everyone feel more comfortable with using the process and tools.

Here is a reminder about the purpose of our study.

Introduction: Education and training of the health workforce is critical to reaching community and population health goals. Chiropractic educational programs aim to train chiropractors to practice in a safe and effective manner in a variety of healthcare environments. However, the breadth and depth of evidence on chiropractic education and training is not known.

Objective: The purpose of this scoping review is to identify and describe the available evidence on chiropractic education and training.

Inclusion criteria: This scoping review will include studies directly related to the education and training of chiropractic students and/or graduates, and chiropractic programs.

Exclusion criteria: Not related to education or training of chiropractors, education programs, or studies that are only peripherally related.

Here are the results from our Step 2 of the training.

ITEM 1 – timeliness

Participation: Of 36 participants, 31 completed the task on time, 3 completed late, 1 not completed at all, and 1 there were technical difficulties (did exercise but systemic problem, my apologies for this).

Action: Everyone needs to be mindful of completing their assigned tasks on time.

ITEM 2 – Overall results

Of the 34 successfully submitted, only 4 people were accurate in all 5 primary decision points; inclusion or exclusion of the 2 abstracts and categorization of the 3 papers using the topic tool. Over half scored 60% or less. Based on these findings, I feel that we need to do some additional training exercises, especially for coauthors who scored less than 4 (80%).

I know we can all do better than this! So let's go one more round to see if we can raise our scores.

The explanations for the answers are on the pages that follow. Since everyone received a copy of their answers by email following the completion of this exercise, you can score yourself and see how you did.

Results of 34 participants responses in the second training exercise. 80% or higher is above blue bar.

Overall correct out of 5	Include or exclude Title abstract 1	Include or exclude Title abstract 2	1 Feasibility of using a standardized patient encounter for training chiropractic students in tobacco cessation counseling https://doi.org/10.7899/JCE-13-2	2 Curriculum mapping within an Australian master of chiropractic program https://doi.org/10.7899/JCE-14-9	3 A mixed-method study of chiropractic student placements in nonmetropolitan Western Australia https://doi.org/10.7899/JCE-18-1
5	Exclude	Exclude	B7	E7	C2
5	Exclude	Exclude	B7	E7	C2
5	Exclude	Exclude	B7	E7	C2
5	Exclude	Exclude	B7	E7	C2
4	Exclude	Include	B7	E7	C2
4	Exclude	Include	B7	E7	C2
4	Exclude	Exclude	A4	E7	C2
4	Exclude	Exclude	A4	E7	C2
4	Exclude	Include	B7	E7	C2
4	Exclude	Exclude	E4	E7	C2
4	Exclude	Exclude	E7	E7	C2
4	Exclude	Exclude	E7	E7	C2
3	Exclude	Exclude	E4	E7	E4
3	Exclude	Exclude	E4	E7	E6
3	Exclude	Include	E8	E7	C2
3	Exclude	Exclude	E7	E2	C2
3	Exclude	Exclude	E7	E7	E6
3	Exclude	Include	B1	E7	C2
3	Exclude	Include	A4	E7	C2
3	Exclude	Exclude	E7	E7	E2
3	Exclude	Exclude	E4	E7	E6
3	Exclude	Include	E4	E7	C2
3	Exclude	Include	B7	E7	E8
3	Exclude	Exclude	E7	E7	E7
3	Exclude	Include	B4	E7	C2
3	Exclude	Exclude	E4	E7	E4
3	Exclude	Exclude	B1	E7	E8
3	Exclude	Include	B4	E7	C2
2	Exclude	Include	B4	E7	D1
2	Exclude	Include	A4	B1	C2
2	Exclude	Include	B7	A6	C3
2	Exclude	Include	E4	E10	C2
2	Exclude	Exclude	A5	E2	A6
1	Exclude	Include	C5	E3	E1

ITEM 3 – results of title and abstract inclusion exclusion exercise

Observation: For the first of the 2 abstracts under consideration, we had perfect agreement. Here are the explanations and the answers.

1. A Survey of the Public Perception of Chiropractic After Exposure to Chiropractic Public Place Marketing Events in New Zealand
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5812904/>

This study focused on the public's perception of chiropractic. Although students were involved in collecting the surveys, the study was not about chiropractic education.

ANSWER Exclude

2. Radiology Undergraduate and Resident Curricula: A Narrative Review of the Literature
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4685241/>

This study was a literature review of radiology curricula in general, not a focus on chiropractic radiology education. The title and abstract do not have "chiropractic" mentioned anywhere. Although the paper has a short mention of chiropractic radiology, the primary focus of the paper was about general radiology education, not chiropractic education. The study did not evaluate chiropractic radiology programs or analyze how other literature could be applied to chiropractic programs. The reason that the second paper should be excluded is that the focus of the was not about chiropractic education. Although we could extrapolate the topic so that it "could" be relevant to chiropractic education, the primary purpose was not directly about chiropractic education.

ANSWER Exclude

Lesson: Use the methods and results to determine the focus of the study. Do not extrapolate.

ITEM 4 – results of paper data extraction

Categories There are 2 main categories for this scoping review.

- **Student** as the topic - is when the study primarily focuses on the education and training of the students or learners, who may be pre or post-graduate. These topics are the 4 meta-competency columns in the Topic Tool: A) knowledge/cognitive, B) functional, C) personal/behavioral, and D) values/ethical.
- **Program** as the topic - is when the study primarily focuses on studying or measuring the overall academic program, administration, faculty, infrastructure, or accreditation, as in the 5th column of the Topic Tool.

The main focus is to categorize the content of the paper using the Topic Tool A,B,C,D,E.

Let's go over the answers to this exercise.

1 Feasibility of using a standardized patient encounter for training chiropractic students in tobacco cessation counseling

<https://doi.org/10.7899/JCE-13-2>

This study measured the implementation of a 2-hour tobacco cessation activity in a course, teaching students how to educate patients about tobacco cessation. They measured what percent of the students completed the essential components of the tobacco cessation activity, which was to perform therapeutic patient education about tobacco use. They also measured student satisfaction/opinion.

The focus of the study was mainly on an exercise to teach students and assess their functional competence.

The focus of the educational study was on teaching students to deliver a patient therapeutic intervention (tobacco cessation).

Category = B7
Demonstrate therapeutic education

Lesson: In this case the completion of the teaching exercise showed implementation of a teaching module was feasible, however the paper was not written as a feasibility study. Authors will sometimes include words or add in commentary that has little to do with the actual study methods or results. Focusing on the methods and results will reveal what the study was actually about. In this case, teaching students to do an intervention on tobacco cessation.

2 Curriculum mapping within an Australian master of chiropractic program: Congruence between published evidence for chiropractic and student assessment tasks

<https://doi.org/10.7899/JCE-14-9>

This study compared the similarity between an existing chiropractic curriculum and current evidence on common musculoskeletal disorders. This study was done at one point in time, not overtime, and did not include any intervention.

The focus of the study was on the program.

The study analyzed the contents of a portion of a chiropractic curriculum.

Category = E7
Program Curriculum

Lesson: Because this was one point in time and did not include an intervention, this was not about quality improvement. Focusing on methods and results helps to reveal the paper was about the program content analysis.

3 A mixed-method study of chiropractic student clinical immersion placements in nonmetropolitan Western Australia: Influence on student experience, professional attributes, and practice destination

<https://doi.org/10.7899/JCE-18-1>

This study measured the effect of an educational intervention (clinical immersion) on students' awareness and respect for others, empathy, and communication skills.

The focus of the study was on improving student behavior of caring for patients, including empathy and respect, especially for disadvantaged people.

Category = C2
Demonstrate patient competence

Lesson: When using the Topic Tool, focus on the concept, not matching words. Keep in mind that the Topic Tool only gives examples, the list is not all inclusive, so we must rely on general knowledge of chiropractic education research.

HELPFUL HINTS

As a general rule - If the study measures or focuses on studying or reporting student knowledge, skills, or attitudes, then the topic should probably fall within the meta-competency topics A, B, C, or D. If the study focuses on the program and infrastructure (how to improve the curriculum, faculty/staff training, modifying teaching models), the category should be within the E category.

Of note, there are not a whole lot of papers in chiropractic education that fit the E category. However, there are lots of authors that will say their study that is about student learning can have an impact on the curriculum or program, even though the study is not about the curriculum or program.

Do not rely solely on the author's conclusion in an abstract since often the conclusion is not about the study. It is better to focus on the methods and results to determine what the study was actually about.

COMMENTS from participants who completed Step 2

NOTE: For those who were working on completing this last Saturday, my apologies. I am so sorry that there was a glitch. I am not sure what happened. I logged in to look at the responses, I do not believe that I made any changes, but the system marked that I had. I am so sorry if anyone needed to complete this task twice. For any future SurveyMonkey items, I will do my best to be more mindful. Thank you for your patience. Once we are using Covidence, there should be fewer glitches.

COMMENTS from participants

- This was the most difficult. A case for E7 could be made. However, the decision to include a CIP is an innovation (see introduction) in curriculum (in my opinion); hence my vote for E4 rather than E7. Also, I clicked on the "Done" button for this survey and all answers were erased due to the survey creator making a change to the survey, necessitating that I repeat the entire exercise.
- This paper seems like it could be either C or D depending on which questions within the manuscript are chosen for focus.
- I was not sure of the level of detail you were looking for in the summary requests. Article three was a difficult decision between student personal, behavioral competence and chiropractic program.
- This is an amazing exercise tricky at times as some topic selection may be interrelated but overall I think I could pinpoint the specificity of it.
- These examples were good in highlighting how major area E and B may be closely aligned.
- Very challenging exercise particularly paper 2 and the study methods.
- This has taken me longer than anticipated and I'm still unsure whether I have the right views. That said, this exercise is mid-stretching and is extremely useful in making you categorise the literature. My brain hurts, but it is worth it - thank you!
- The last one was difficult to sift and sort using the tool as it hits a number of the domains including knowledge, skill, behaviour etc so it'll be interesting to see where the group lands.
- This training took me over 30 minutes as I had to go into the full article to understand the research and which category would be most applicable. Papers 1 & 2 were rated the same as I felt they both had to do with curriculum development/assessment. I found that selecting the most appropriate topic tool for each paper overlapped in the Chiropractic Program column was a

challenge. Thank you for this training, it definitely makes you think more about how to allocate each paper.

- This was harder than I expected it to be :-) Good learnings to be more explicit in ones' own writing...
- Apologies for the time this appeared to take but i was called away from my desk for several hours.
- Inclusion exclusion paper 2 was difficult as it did include information directly related to chiropractic education but it only formed a smaller part of the review. I wasn't sure if it was sufficient enough to include.
- The feedback from the first exercise was very helpful. I anticipate the same from this next exercise.
- This was a tricky exercise as the examples given in the topic tool didn't necessarily match the focus of the papers, particularly in the third paper.
- This pilot test was much more difficult than the first one! I debated between multiple answers for #s 2, 3, 10
- I may need some remedial training on research design, that question posed the greatest challenge for me.
- Paper 1 was approved by Logan's IRB; however, I didn't find any other indication of where it was performed but assumed it was at Logan thus in the US.
- Study 3 was difficult for me to assign to a minor topic under E. Both E4 & E8 were relevant and I went with E8 because of the followup- students felt the program was valuable AND it influenced their practice context choices...
- The aim of the Amorin-Woods, et al study was almost 50/50 as to what part of the study aimed to the learner graduate and what part of the study was focused on workforce maldistribution in Australia, which in my view would be "other".

We will follow up with Step 3 for our training, which will be due **August 11**. Please see the Survey Monkey email invitation for the Step 3 pilot.

I am hoping that because of your participation, the next exercise will be easier to do and everyone will be much more accurate.

This week (August 7 to 11) we are setting up Covidence so that once coauthors are trained, they can begin engaging in the scoping review process through Covidence.

Thank you all for your participation!