

PROTOCOL OF A SCOPING REVIEW TO MAP EVIDENCE AND PERFORM THEMATIC ANALYSIS OF RESEARCH PUBLISHED BY DOCTORS OF CHIROPRACTIC AT THE VETERANS HEALTH ADMINISTRATION

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ABSTRACT

Objective: Chiropractors have realized significant professional growth within the Veterans Health Administration (VHA) over the past decade, which was recently accelerated by the Consolidated Appropriations Act of 2018. Most, if not all, of the published literature from VHA chiropractors have come from clinician-scientists and focused on describing their clinical settings. The objectives of our proposed scoping review are to explore the peer-reviewed literature, map research evidence, identify overarching themes and commonalities, and produce a gap analysis.

Methods: This study will follow the guidelines set forth by the Preferred Reporting Items for Systematic Review and Meta-Analysis scoping review extension (PRISMA-ScR). This approach includes: 1) formulating the research questions, 2) identifying relevant studies, 3) selecting the literature, 4) charting the data, 5) collating, summarizing, and reporting the results, and 6) consultation with key stakeholders. Peer-reviewed and grey literature will be included if authored by current and prior chiropractors working within VHA. Only publications written in the English language will be considered. All databases included will be searched since 2004. The scoping review was registered in the Open Science Framework (OSF), DOI: 10.17605/OSF.IO/XGJ52.

Discussion: The results of the proposed scoping review will be disseminated through scientific publication, conferences and future workshops with stakeholders relevant to VHA and chiropractic. Appraising the current themes of the literature may help stakeholders to prioritize research questions and assist with the development of research mentorship.

Key Indexing Terms: Veterans Health Services; Chiropractic; Review (*J Contemporary Chiropr* 2020;3: 127-135)

INTRODUCTION

The Veterans Health Administration (VHA) provides care to veterans of the United States (U.S.) Armed Services and is the largest integrated health network delivery system in the country (more than 1,250 medical sites serving 9 million Veterans). VHA's vision includes "...prevention and population health and contribute to the nation's well-being through education, research and service in National Emergencies". (1) Recent data revealed Veteran Affairs Medical Centers outperformed non-VA hospitals in 121 local healthcare markets for 15 outcome measures. (2) An integral component to the success of VHA's ability to deliver exemplary health care includes the efforts put forth by research to apply scientific knowledge to improve veteran's lives whether through basic, translational, clinical, health services, or rehabilitative research.

The addition of on-station chiropractic services as a standard part of VHA medical benefits package was established with the enactment of the VHA Directive 2004-035 in July 2004. (3,4) With the hiring of the first Doctor of Chiropractic (DC) in the fiscal year 2004, staffing DCs at VA facilities has dramatically increased since inception. On average, the number of DC clinicians has grown by 21.7% per year through 2015, ending that year with 86 clinicians staffed at VA facilities. (4) As of

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2018, there were a reported 134 chiropractors working within VA facilities. (5) On-station chiropractic services have been further propagated in VHA by the recent passage of the Consolidated Appropriations Act of 2018, which required expanded availability of clinical care to a minimum of 2 medical centers in each of the Veterans Integrated Service Networks (VISNs). (6)

In addition to delivering clinical services, VHA DCs have the opportunity to participate as investigators on, or contribute to, research studies. A significant limitation to participation in research efforts is a lack of formal training (i.e. fellowship, clinical research training, etc) and experience, with very few VHA DCs having prior involvement in scholarly or academic activities such as peer-reviewed publications or serving as the primary investigator for a funded research project. (7) A 2016 systematic review by Green *et al.* described insufficient VHA research capacity for training (e.g. grant writing, research methodology, scholarly writing), nonexistent protected time for chiropractic providers to perform research, and the lack of a deliberate research agenda put forth by chiropractors in military and VHA facilities. (8)

As a result, VHA chiropractic scholarly works have been varied and diverse, as most publications are individual authors reporting retrospectively on their practice settings. (8) Recently, a VHA state-of-the-art conference that spanned multiple professions, including DCs, sought to understand and address research priorities for non-pharmacological management of chronic musculoskeletal pain. (9) A product of this conference is the potential guidance for developing VA chiropractic studies. This scoping review protocol is an effort to

transparently outline a process to identify gaps in current literature and future opportunities for research.

Therefore, the primary aim for this proposed scoping review is to summarize and map the current state of evidence published by DCs who have been employed by the VHA. Our second aim of the proposed scoping review is to execute a thematic analysis of the literature mapped from our primary aim and to identify research gaps and opportunities for the VHA chiropractic field.

METHODS

A scoping review is designed to address a broad literature topic and creates an exploratory methodology (10), while a systematic review asks a specific research question with a narrow focus that limits the opportunity to survey the breadth of literature on a topic. These stringent exclusion criteria of systematic reviews inherently limit comprehensive concept mapping. Our team is interested in establishing a lay of the land, which can most appropriately be accomplished through a scoping review methodology. (11) The study team consist of 6 VA employed chiropractors and 1 health sciences librarian. Three of the team members are graduates of the VA chiropractic residency program, and 2 hold leadership positions as members of the VA Chiropractic Field Advisory Committee.

To address the purpose and objectives of the proposed study, we will use an a priori scoping review method as described by Arksey and O'Malley (10), revised by Levac (12) and then by Tricco. (13) This approach includes 6 stages:

Table 1. PRISMA-P 2015 Checklist

This checklist has been adapted for use with protocol submissions to Systematic Reviews from Table 3 in Moher D *et al.*: Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) 2015 statement. Systematic Reviews 2015 4:1

Section/Topic	#	Checklist Item	Information Reported		Line Number(s)
			Yes	No	
ADMINISTRATIVE INFORMATION					
Title					
Identification	1a	Identify the report as a protocol of a systematic review	X		1
Update	1b	If the protocol is for an update of a previous systematic review, identify as such		X	N/A
Registration	2	If registered, provide the name of the registry (e.g., PROSPERO) and registration number in the Abstract		X	N/A
Authors					
Contact	3a	Provide name, institutional affiliation, and e-mail address of all protocol authors; provide physical mailing address of corresponding author	X		Title Page

Contributions	3b	Describe contributions of protocol authors and identify the guarantor of the review	X		Title Page
Amendments	4	If the protocol represents an amendment of a previously completed or published protocol, identify as such and list changes; otherwise, state plan for documenting important protocol amendments		X	N/A
Support					
Sources	5a	Indicate sources of financial or other support for the review	X		Title Page
Sponsor	5b	Provide name for the review funder and/or sponsor		X	N/A
Role of Sponsor/ Funder	5c	Describe roles of funder(s), sponsor(s), and/or institution(s), if any, in developing the protocol		X	N/A
INTRODUCTION					
Rationale	6	Describe the rationale for the review in the context of what is already known	X		33-82
Objectives	7	Provide an explicit statement of the question(s) the review will address with reference to participants, interventions, comparators, and outcomes (PICO)	X		84-88
METHODS 1					
Eligibility Criteria	8	Specify the study characteristics (e.g., PICO, study design, setting, time frame) and report characteristics (e.g., years considered, language, publication status) to be used as criteria for eligibility for the review	X		151-171
Information sources	9	Describe all intended information sources (e.g., electronic databases, contact with study authors, trial registers, or other grey literature sources) with planned dates of coverage	X		120-142
Search strategy	10	Present draft of search strategy to be used for at least one electronic database, including planned limits, such that it could be repeated	X		125--130
STUDY RECORDS					
Data Management	11a	Describe the mechanism(s) that will be used to manage records and data throughout the review	X		174-176
Selection Process	11b	State the process that will be used for selecting studies (e.g., two independent reviewers) through each phase of the review (i.e., screening, eligibility, and inclusion in meta-analysis)	X		145-149

Section/Topic	#	Checklist Item	Information Reported		Line Number(s)
			Yes	No	
		screening, eligibility, and inclusion in meta-analysis)			
Data Collection Process	11c	Describe planned method of extracting data from reports (e.g., piloting forms, done independently, in duplicate), any processes for obtaining and confirming data from investigators	X		177-179
Data Items	12	List and define all variables for which data will be sought (e.g., PICO items, funding sources), any pre-planned data assumptions and simplifications	X		185-187
Outcomes and Prioritization	13	List and define all outcomes for which data will be sought, including prioritization of main and additional outcomes, with rationale	X		174-175
Risk of Bias in Individual Studies	14	Describe anticipated methods for assessing risk of bias of individual studies, including whether this will be done at the outcome or study level, or both; state how this information will be used in data synthesis		X	N/A
DATA					

Synthesis	15a	Describe criteria under which study data will be quantitatively synthesized		X	N/A
	15b	If data are appropriate for quantitative synthesis, describe planned summary measures, methods of handling data, and methods of combining data from studies, including any planned exploration of consistency (e.g., I 2, Kendall's tau)		X	N/A
	15c	Describe any proposed additional analyses (e.g., sensitivity or subgroup analyses, meta-regression)		X	N/A
	15d	If quantitative synthesis is not appropriate, describe the type of summary planned		X	N/A
Meta-Bias(es)	16	Specify any planned assessment of meta-bias(es) (e.g., publication bias across studies, selective reporting within studies)		X	N/A

Section/Topic	#	Checklist Item	Information Reported		Line Number(s)
			Yes	No	
Confidence in Cumulative Evidence	11c	Describe how the strength of the body of evidence will be assessed (e.g., GRADE)		X	N/A

- 1) Formulating the research questions;
- 2) Identifying relevant studies;
- 3) Selecting the literature (an iterative process);
- 4) Charting the data;
- 5) Collating, summarizing, and reporting the results; and
- 6) Consultation with key stakeholders including VHA chiropractic Field Advisory Committee (FAC) and Doctor of Chiropractic Resident Program directors.

We will follow the recently standardized PRISMA-ScR extension by Tricco *et al* (14) (<http://www.equator-network.org/reporting-guidelines/prisma-scr/>). PRISMA-P (Preferred Reporting Items for Systematic reviews and Meta-Analyses extension) reporting guidelines were followed for this protocol (Table 1). (15) We deviated from PRISMA-P regarding defining PICO (Population, Comparison, Intervention, Outcomes) and Risk of Bias due to lack of relevance to our proposed scoping review objectives. We elected to prospectively register this scoping review at Open Science Framework (DOI: 10.17605/OSF.IO/XGJ52).

1) Formulating the research question

The research questions guiding this scoping review will be finalized in consultation with relevant stakeholders identified as the advisory committee (Table 2). The research question and objectives were identified in the previous section.

Table 2. Advisory Committee. A list of names of key stakeholders is identified in alphabetical order.

Advisory Committee (In Alphabetical Order)

- Gina Bonavito-Larragoite, DC, FIAMA, Field Advisory Committee, Iowa City VA Medical Center
- Jason Cook, DC, Field Advisory Committee, Tennessee Valley Healthcare System
- Paul Dougherty, DC, Resident Director, Finger Lakes VA Health Care System
- Andrew Dunn, DC, MEd, MS, Resident Director VA Western New York VA Medical Center
- Anthony Lisi, DC, VA Chiropractic Program Director, Resident Director VA Connecticut Healthcare System
- Valerie Johnson, DC, DABCI, DACBN, Resident Director, VA Greater Los Angeles Health Care System
- Shawn Neff, DC, MAS, Field Advisory Committee Chair, Martinsburg VA Medical Center
- Lindsay Rae, DC, Field Advisory Committee, Finger Lakes VA Health Care System
- Michael Saenger, MD, FACP, Field Advisory Committee, Atlanta VA Health Care System

Table 3. Literature Search Strategy

Database, Search Strings and Parameters	
PubMed	MeSH Search Terms
<p>Searched each individual author last name and first initial, combined with the search string:</p> <p>AND (Chiropractic OR Acupuncture OR Veterans OR "United States Department of Veterans Affairs" OR Manipulation, Spinal OR Manipulation, Chiropractic OR Musculoskeletal Manipulations OR Low Back Pain OR Back Pain OR Neck Pain OR spine pain OR spinal pain OR Military OR manual therapy OR musculoskeletal pain)</p> <p>2004-present, English</p>	<ul style="list-style-type: none"> • Chiropractic • Acupuncture • Veterans • United States Department of Veterans Affairs • Manipulation, Spinal • Manipulation, Chiropractic • Musculoskeletal Manipulations • Low Back Pain • Back Pain • Neck Pain • Spine Pain • Spinal Pain • Military • Manual Therapy • Musculoskeletal Pain
Index to Chiropractic Literature	
Search by author in the author index, 2004-present, peer reviewed	
CINAHL	
<p>Each individual author combined with:</p> <p>AND (Chiropractic OR Acupuncture OR Veterans OR "United States Department of Veterans Affairs" OR Manipulation, Spinal OR Manipulation, Chiropractic OR Musculoskeletal Manipulations OR Low Back Pain OR Back Pain OR Neck Pain OR spine pain OR spinal pain OR Military OR manual therapy OR musculoskeletal pain)</p> <p>2004-present, English, Academic Journals, Expander: Apply equivalent subjects</p>	
Cochrane Library	
<p>Each individual author combined with:</p> <p>AND (Chiropractic OR Acupuncture OR Veterans OR "United States Department of Veterans Affairs" OR Manipulation, Spinal OR Manipulation, Chiropractic OR Musculoskeletal Manipulations OR Low Back Pain OR Back Pain OR Neck Pain OR spine pain OR spinal pain OR Military OR manual therapy OR musculoskeletal pain)</p> <p>2004-present, English</p>	

- Pamela Wakefield, DC, Resident Director VA St. Louis Health Care System
- Robert Walsh, DC, Field Advisory Committee, VA Palo Alto Health Care System

2) Identifying relevant studies

We will utilize the services of a research librarian to refine the parameters of our search strategy. For the purposes of this scoping review, we will systematically search all academic literature (peer-reviewed) and grey literature to identify relevant publications. Our comprehensive search strategy will consist of:

- A health sciences librarian will conduct searches of Pubmed/MEDLINE, CINAHL, Index to Chiropractic Literature, Cochrane Library (Wiley), and EMBASE (Ovid) from the date of 2004 to present. As this is a known list of specific individuals, we will query the roster of names,

extracted from VHA support service center (internal database), with associated MeSH terms related to chiropractic practice as well as military and veteran language to reduce the volume of captured articles which are not relevant. (Table 2)

- Grey literature sources (e.g. conference proceedings, non-indexed peer-reviewed journals)
- Hand-searching relevant chiropractic journals (e.g. Journal of Manipulative and Physiological Therapeutics)
- Reference lists in publications identified in (a), (b), and (c).
- Personal contacts of the working group and stakeholder groups

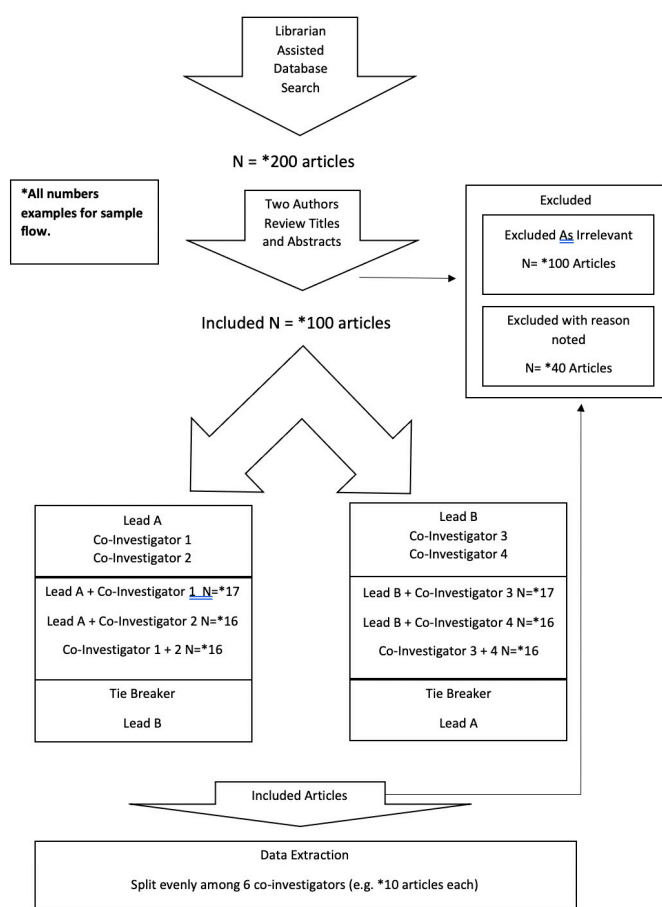


Figure 1. Literature Selection and Data Extraction Process

Search terms will include keywords specific to authors identified from a VHA roster of all current and past VHA chiropractors. Search limits will be applied in language (English only), and status (e.g. in submission, accepted, in press). Search results will be gathered using a bibliographic manager (e.g EndNote) then uploaded into the screening application Rayyan (16) and duplicates will be removed.

3) Selecting the literature

We will use an iterative process with retrieved search results each reviewed by at least two independent co-investigators for eligibility. Publications identified as potential for inclusion will be gathered in full-text and then the same selection process will again be performed. If any disagreements remain, a third reviewer will adjudicate until a consensus is reached. A shared Google Sheets will be used to organize the data through the iterative process (17) (Figure 1)

Eligibility Criteria

Inclusion

All peer-reviewed and indexed literature that was authored by DCs during their time of work within VHA will be

included. This will include work by full-time employees, resident trainees, fee-basis consultants, and/or without compensation affiliates. Additionally, we will search clinicaltrials.gov and the World Health Organization International Clinical Trials Registry to identify recently completed studies which may have been accepted for publication but are not yet in-print. We will reach out to the investigators of any relevant studies as appropriate for additional information. Only English language studies will be included. All study methodologies and topics will be included.

Exclusion

Articles exclusively authored by chiropractic students will be excluded. If the article includes VHA DCs, the student(s) will not be included in the data extraction for analysis of authorship. Studies contributed to by VHA DC employees either exclusively before or after their employment will be excluded. An article is excluded if it is not specifically relevant to VHA (e.g. VA data, VA facility, etc...) and the VHA DC does not list his or her VHA affiliation. We will reach out to individual authors as necessary if employment dates cannot be determined by listed affiliations, knowledge of authors, or knowledge of the advisory committee. If we are unable to confirm dates of VA affiliation, then the study will be excluded. Studies authored by VHA employees without a DC in the author list will be excluded. Studies that listed VHA chiropractors as an acknowledgment only, without authorship contribution, will be excluded. Publications written in non-English languages will be excluded. Restrictions according to publication status will be

applied with exclusion of articles in submission, but not yet in-print or accepted for publication.

4) Charting the literature

We will classify the literature according to the author, year of publication, journal of publication, methodology, and theme. A predefined charting form has been created for data extraction (Table 4). Data will be entered into Google Sheets spreadsheets in tabular format. The data form will be revised by the study team as appropriate. Data extraction of articles that meet full text inclusion criteria will be performed by a member of the team and another co-investigator will review the extraction for error, ensuring completeness. No quality assessment will be performed as the goal of this scoping review will assess the state of the literature, and there

is an expected considerable heterogeneity between included publications.

5) Collate, summarize and report the results

Descriptive numerical analysis: We will highlight the

Table 4. Data extraction form. A description of the data extraction form is included that we will use during the data extraction phase of the proposed scoping review.

Reviewer:					
Date:					
Publication Information					
Study Identifier:					
VHA Medical Center		Academic Affiliation		Author Type (Attending=1, Resident=2, Fellow=3)	
1 st Authors Name:					
2 nd VA Authors Name:					
3 rd VA Authors Name:					
4 th VA Authors Name:					
5 th VA Authors Name:					
Publication Year:					
Journal:			VA Specific Topic: (Y/N)		
Collaboration					
Non-DC Co-Authors: (Y/N)	MD/DO:	PT:	OT:	PhD:	Other:
Authors from more than 1 institution: (Y/N)					
Study Details					
Study Details:					
Population/ Sample:					

nature and distribution of studies. Specifically, we will explore study designs, year of publication, frequency of authorship, VHA or academic affiliation listed, journal of publication, area of study, and measure of collaboration (e.g. multiple VAs, academic affiliations, and/or interdisciplinary co-authors). The data will be collated and summarized into a table that will serve as our map of the literature.

Qualitative thematic analysis: The research question/ study purpose and major findings will serve as the primary thematic components. We will conduct the thematic analysis of the included literature by identifying, color coding, and analyzing themes and patterns through an iterative process to reflect the entire data set as described by Braun and Clarke.(17) We will utilize Google Sheets for this purpose. (18) These topics, as well as trends from the grey literature, will be summarized in a table. Once the themes have been recognized, 2 of the authors will discuss the appearing themes using the charting tables and confirm that they corresponded to the themes that

are generated with any disagreements resolved through discussion, and when necessary, a third author will review for consensus.

6) Consultation with key stakeholders

The results through step 5 will be provided to the key stakeholder group, acknowledged as the advisory committee, for their input. The advisory committee members will include the VHA chiropractic FAC members and VHA chiropractic residency directors. A standardized form will be presented for each to record their feedback regarding analysis. The responses will be reviewed by the authors and incorporated into the discussion encompassing recommendations for future opportunities.

DISCUSSION AND CONCLUSION

This planned scoping review aims to contribute to the vision of VHA (1) by exploring the evidence in existing literature published by current VHA DCs. With this

protocol, we describe the detailed plans for completion of the scoping review, including search strategy, data sources, data extraction, planned descriptive analysis, and consultation with stakeholders. As there is not a dedicated research agenda that has been identified for VHA chiropractic clinician-scientists (8), we expect a wide array of subject matter that may be challenging to thematically codify. This scoping review will provide further insights into the nature of projects being completed, and assist stakeholders in identifying gaps and opportunities. The themes identified may help to prioritize research questions for future research endeavors. The results of this scoping review will be

disseminated through professional conferences, scientific publication, and presentations with stakeholders.

Abbreviations

DC – Doctor of Chiropractic

FAC – Field Advisory Committee

PRISMA-P – Preferred Reporting Items for Systematic reviews and Meta-Analyses Protocol extension

PRISMA-ScR – Preferred Reporting Items for Systematic reviews and Meta-Analyses Scoping Review extension

VA – Veterans Affairs

VHA – Veterans Health Administration

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We would like to acknowledge our Advisory Committee members for their support and feedback through this protocol writing including (in alphabetical order):

Gina Bonavito-Larragoite, DC, FIAMA, Field Advisory Committee, Iowa City VA Medical Center

Jason Cook, DC, Field Advisory Committee, Tennessee Valley Healthcare System

Paul Dougherty, DC, Resident Director, Finger Lakes VA Health Care System

Andrew Dunn, DC, MEd, MS, Resident Director, VA Western New York VA Medical Center

Valerie Johnson, DC, DABCI, DACBN, Resident Director, VA Greater Los Angeles Health Care System

Anthony Lisi, DC, Chiropractic Service Chief and Resident Director, VA Connecticut Health Care System

Shawn Neff, DC, MAS, Field Advisory Committee Manager, Martinsburg VA Medical Center

Lindsay Rae, DC, Field Advisory Committee, Finger

Lakes VA Health Care System

Michael Saenger, MD, FACP, Field Advisory Committee, Atlanta VA Health Care System

Pamela Wakefield, DC, Resident Director, VA St. Louis Health Care System

Robert Walsh, DC, Field Advisory Committee and Resident Director, VA Palo Alto Health Care System

Authors' Note

The views expressed in this article are those of the authors and do not reflect the official policy or position of the Department of Veterans Affairs, or the United States Government.

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