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Moving towards a contemporary chiropractic professional identity

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ABSTRACT

Since the inception of the chiropractic profession, debate has continued on differing practice objectives and philosophical approaches to patient care. While the political and academic leaders of the profession continue to dominate the discourse, little is known on the perspectives of the everyday practising chiropractor on their professional identity. In this paper, professional identity within the profession of chiropractic was evaluated using a systematised search strategy of the literature from the year 2000 through to May 2019. Initially 562 articles were sourced, of which 24 met the criteria for review. The review confirmed three previously stated professional identity subgroups; two polarised approaches and a centrist or mixed view. The musculoskeletal biomedical approach is in contrast to the vertebral subluxation vitalistic practice approach. Whilst these three main chiropractic identity subtypes exist, within the literature the terminology used to describe them differs. Research aimed at categorising the chiropractic profession identity into exclusive subtypes found that at least 20% of chiropractors have an exclusive vertebral subluxation focus. However, deeper exploration of the literature shows that vertebral subluxation is an important practice consideration for up to 70% of chiropractors. Patient care with a musculoskeletal spine focus is dominant in clinical practice. This review found that practising chiropractors consider themselves to be primary care or primary contact practitioners with a broad scope of practice across a number of patient groups not limited to musculoskeletal management. Across the research, there is a marked difference in the categories of practice objectives evaluated, and future research could examine the relatedness of these. Additionally, future research could explore the professional identity construct over time and within different practice contexts to help facilitate the progression of the profession.

1. Introduction

The changing nature of health professions and the relationship between professions in the public sector has been the focus of much interest [59]. Chiropractic is no exception, with a large degree of discourse being from within [41,117]. Contention exists on what characterises the chiropractic profession relating to philosophy and scope of practice, and chiropractic researchers and academics provide much commentary on the continued difficulty to define its identity [15,41,48,89,99,105]. The importance of professional identity is paramount to the survival of any profession - as former secretary-general of the World Federation of Chiropractic, Chapman-Smith (2000) stated, "quite simply, a product or service not understood is not used" (p.150). For this to occur, a profession must first understand itself.

Chiropractic has been described by the World Health Organisation as "a health care profession concerned with the diagnosis, treatment and prevention of disorders of the neuromusculoskeletal (NMS) system and the effects of these disorders on general health; there is emphasis of manual techniques used such as joint adjustments and/or manipulation, with particular focus on subluxations" [121]; p.3). An evaluation of this definition suggests that there is a range of approaches within chiropractic, yet in general, patients typically report a high level of satisfaction with the chiropractic care that they receive [26,37,78,100,118].

Within the chiropractic profession, there is debate around the contrasting practice objectives of a short-term biomedically focused musculoskeletal (MSK) treatment style of practice [20,89,120] versus a long-term vitalistic vertebral subluxation wellness focus style of practice [49,66,108,120]. Vertebral subluxations (VS) are hypothesised to be biomechanical derangements of the spine (as a result of stresses on the body), producing clinically significant maladaptive effects on neurological function and sensorimotor integration [51,116]. For the individual, reduction of VS is theorised to improve health and quality of life

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[28,32,69]. By analysing and correcting VS through the chiropractic intervention, the adjustment, it is posed that an individual is placed on a more optimum physiological path, with the potential to increase resilience and adaptability [69]. The MSK framework of chiropractic care considers that chiropractic treatment improves dysfunctional joints by mobilisation, which in turn reduces pain and improves function [105]. Some chiropractors with a MSK-focus practice objective make claims that the VS-focus chiropractors are held in older concepts - that subluxation is the cause of all disease, even though there has been evolution of VS theory [43,69,107]. There is a large group within the profession, the 'centrists', that incorporates the traditional philosophy of VS-focused chiropractic, while also having a practice objective of treatment of general MSK complaints [120].

These differing practice objectives have been at the centre of robust debate with considerable disagreement on practice scope and lexicon [117]. As it currently stands, the progression of chiropractic may be hindered by this division on foundational concepts and by the clustering of those who practice into rival camps [81]. Attempts to bridge the gap between the approaches have been contentious [11,117], and the profession has not yet resolved issues of professional and social identity [73,85].

Chiropractic has been successful in attaining the formal criteria of a health care profession [14], and over the last 50 years, the professional focus of chiropractic has included obtaining formal recognition by government agencies, achieving insurance equality, and gaining greater acceptance in health care [65,93]. Nonetheless, the chiropractic profession continues to be globally underrepresented in most discussions on health care delivery [99] and remains largely marginalised from public health systems, with chiropractors increasingly forced to defend their professional status [14]. The following information will introduce the importance of professions, professional identity and how it relates to the chiropractic profession.

1.1. Professions and professional identity

The word profession comes from the Latin word *profiteor*, as the act of publicly declaring to offer a service as a means of social utility. Sociologists and psychologists have examined professional identity for many decades [1,42,104]. It can be accepted that the term traditionally profession relates to a group of people having the same intellectual/artistic job, who share a specific field of knowledge that requires special education, training, skills and experience [1,34]. More recently, what defines a profession has shifted from trait and functionalist theories through to those concerned with the "essence" of a profession [36].

The social process of an occupation transforming into a profession is termed professionalisation. Professionalisation is the process in which professionals create and control a market for their professional skills and knowledge to secure their social and economic position [72]. This process can occur for many reasons, such as the advancement of science and its ramifications on the division of labour [72]. This has been observed with the rise of the importance placed on managerial dominance to guideline industry which has been said to contribute to stratification within medicine [47]. Division of labour can be within the domain of scope of practice (SCOP), which is the regulation of professionals in a specific jurisdiction and legally creates boundaries by restricting a specified profession's permissible activities [18].

Professions are often a perceived singular unit concerned with defence of a status quo as opposed to adapting to changing needs and demands of the market [59]. Another view argues that change provides an opportunity for professions to renew themselves [88]. In order to preserve a profession, strategies are applied to maintain the status of its identity through its professional boundaries [59]. Where there is contextual change within a marketplace, professions deploy defensive strategies to either protect boundaries or reject or make claim to new areas of knowledge [1]. Control over specialised scientific or expert knowledge is deemed necessary for a profession's achievement, and abstract knowledge delineates the profession's jurisdictional control. This control of knowledge also forms the basis of practical techniques and political autonomy in distinguishing itself in a competitive marketplace [1]. [36]; a leader in the professional identity field, argues that it is the responsibility of professions to establish the rationale and justifications of their professional status, and postulates that professionalism is now being re-created through hierarchical control whereby everyday practitioners are subject to the control of professional elites who exercise administrative and cultural authority. These newer professionalisation tactics have been said to create internal divisions within medicine [47,80] and homeopathy [29].

Professional identity is the ownership of a core set of values, beliefs and assumptions about a profession's unique characteristics, that differentiates it from others [119]. Professional identity has commonly been explained in terms of Social Identity Theory. Social identity refers to an individual's self-concept derived from membership to social groups and the values and emotional significance that they attach to belonging to those groups [115]. Professional identity is one aspect of a person's social identity, and professional socialisation provides a sense of belonging, stability and esteem, which is constructed and developed over time through interaction [59].

Professional identity relating to an individual's chosen field develops during one's whole life, providing a sense of continuity with the past, meaning in the present, and future direction [8]. A unified profession is said to be essential for both the personal and social wellbeing of the individuals who comprise it as well as the greater community [27]. In this way, in order for a profession to thrive, it is paramount to seek to understand and research its identity.

1.2. Chiropractic professional identity

Amongst every profession there is a tendency to stratify into new groups in order to differentiate between areas of specialty. However, these intra-professional factions can provide specific challenges [1,59,83], which is also evident within the chiropractic profession. Since its development, tensions have existed on chiropractic professional identity (CPI) and its SCOP. Historically, this has centred around differences in practice, intervention approaches and epistemological backgrounds, which is being played out today as the VS versus the MSK chiropractic approaches [16,107]. Attempts have been made to reconcile intra-professional division: In 2004, the World Federation of Chiropractic (WFC), through a global consultative process, sought to deliver an international identity of chiropractic that encompassed the majority of views held amongst practitioners and organisations [16]. From this, the identity statement to be "the experts in spinal health care within the health care system" [120]; p.1.) was created. Since then, this statement itself continues to be hotly debated and is contentious amongst leaders and practitioners alike. Much commentary continues to revolve around terminology as well as philosophical and therapeutic orientations towards patient care [16,85]. Some argue that a professional unity for chiropractic does not seem possible [41,63,73].

While intra-professional debate surrounding CPI continues, it remains unclear what actual research exists that has examined this emotionally loaded and hotly debated subject. The aim of this paper is to critically evaluate the literature on CPI from the perspective of the practising chiropractor. The importance of this groups' viewpoint lies in that everyday chiropractors are the ground force providers for the patients seeking their form of health care, and hence would be most affected by organisational directives on CPI.

2. Method

A systematised approach was employed for this critical literature review. A literature search was conducted using the Index to Chiropractic Literature, Medline, CINAHL Plus with Full Text and SPORTDiscus with Full Text through the EBSCO Health Database. Search

criteria included that articles needed to be in the English language, in peer-reviewed academic journals and published between January 2000 and May 2019. These dates were selected to represent the most current research available. Searches were conducted using the following terms included in the abstract: chiropract* AND ("professional identity" OR identity) OR chiropract* AND character* OR chiropract* AND perception* OR chiropract* AND perspect* chiropract* AND "scope of practice".

Studies that investigated (either qualitatively, or quantitatively) analysis of SCOP (e.g., VS or MSK practice objectives) and/or views and attitudes of practising chiropractors on identity were included for review. Professional identity evaluation was not necessitated to be the primary objective of the entire research. If aspects of professional identity were examined, the paper was included in this critical review. Commentaries, letters, dissertations, theses, conference proceedings and poster presentations were excluded.

From the search terms above, a total of 562 articles were identified through database searches. After 59 duplicates were removed 503 articles remained. Additional hand searches and reference tracking searches revealed 6 articles, leaving 509 articles for screening of abstracts and articles. Full-text articles were retrieved for 35 articles that were read to ascertain whether they met the inclusion/exclusion criteria of this review. After this eligibility assessment, 24 articles were retained for evaluation (Fig. 1).

3. Results

3.1. Data abstraction and synthesis

Analysis was conducted to identify the main characteristics and differences between studies systematically. Extracted data included author(s), study focus and location, year of data collection, sample characteristics, methods/methodology, and summary of results relating to CPI and SCOP. Since many of the articles were quantitative analyses of survey instruments, psychometric properties such as validity/reliability were also obtained. The main characteristics of the 24-studies are presented in Table 1.

Studies in this review are from diverse international locations, with the majority of research being conducted in Europe [5,39,52,61,67,79,90,94], and the United States of America [19,31,75,96,110,111,117]. Research was also conducted in Canada [83,95], Australia [2–4], and South Africa [64,87]. Multiple geographic locations were used for three

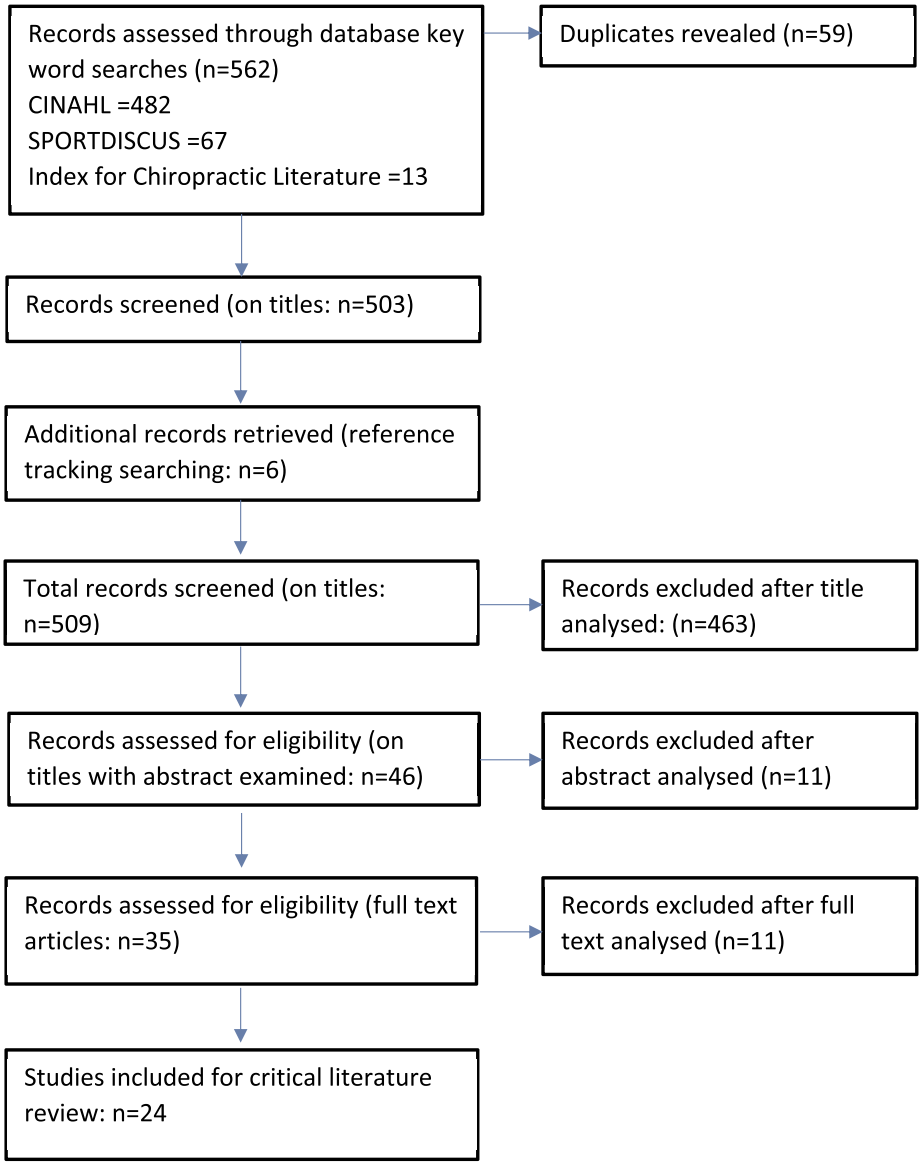

Fig. 1. Search strategy for critical literature review.

Table 1
Summary of research findings for chiropractic professional identity.

Reference & Study Focus (αβγ)	Year of data collection., d ata location and sample	Method/Methodology	Additional notes	Summary of results relating to CPI and/or SCOP
Quantitative				
[39] **α**	• 2017 • Europe • EAC and ECU members $n = 1322$ RR = 17.2%	• Adapted survey from Ref. [83] with 5 CPI subtypes to be evaluated • Sent via email	• Face validity tested on AECC faculty • Greater generalisability as all European associations represented regardless of ECU membership	Five categorisations of chiropractic identity were evaluated: From the categorisations, chiropractors indicated their response as follows: • General Problems 14% - treat MSK and NMS problems and include specific disorders such as but not limited to low back and neck related pain • Biomechanical 54% - treat the broadest spectrum of health concerns and may include lifestyle and wellness issues • Biomechanical/Organic-Visceral 4.9% - treat VS as a somatic joint dysfunction and/or related to functional or MSK or problems • Subluxation as a somatic dysfunction 7% - treat a combination of biomechanical and organic-visceral complaints • Subluxation as an obstruction to human health 20.1% - treat VS as an encumbrance to the expression of health – VS seen as an entity in and of itself, which is corrected to benefit patient well-being These five groups were then summated: • Groups 1–4 were stated as orthodox chiropractors (79.9%) • Group 5 stated to be unorthodox chiropractors (20.1%)
[2] **β**	• 2015 • Australia • ACORN project $n = 1907$ RR = 40.7%	• Cross-sectional research design • Descriptive questionnaire on practice characteristics and SCOP • Sent online and via hard copy	• Pilot tested: Content and face validity	• Rural and remote chiropractors report more chiropractic intervention for predominately MSK and also non-MSK and degenerative disorders • Practice analysis of rural/remote and urban chiropractors found a wide range of MSK presentations in clinical practice • Rural and remote chiropractors report more non-MSK and degenerative conditions or migraine for adults and children • Rural chiropractors are less likely to discuss health promotion strategies but would often discuss health and safety and other management interventions
[3,4] **β**	• 2015 • Australia • ACORN project $n = 2005$ RR = 43%	• Cross-sectional research design • Descriptive questionnaire on practice characteristics and SCOP • Sent online and hard copy	• Pilot tested: Content and face validity	From the survey data it was found that: • There is a wide range of public health and disease strategies discussed in clinical practice e.g. 84.9% chiropractors often discuss physical activities with their patients • >87% MSK and spine complaints present in practice • Multiple patient subgroups identified e.g. children 0–3 years old 30.1%, older people 73.5%, pregnant women 36.7% etc. • Non-MSK presentations seen 30% of the time in practice • Broad SCOP with a wide use of adjunct therapies often used e.g. soft tissue work 66%, taping rehab/49.3% etc.
[64] **β**	• 2015 • South Africa • Registered with Allied Health Professions Council $n = 282$ RR = 32%	• Descriptive study of Job Analysis Surveys • Adapted version of [61] questionnaire • Sent online	• Pre-tested on a small group of chiropractors	• Predominance of MSK and spine presentations • Non-MSK presentations 42.7% and wellness care 84.2% reported in 1–50% of patients • SCOP included adjunct MSK therapies (e.g. trigger point therapy used in over 76% of patients) as well as health

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Table 1 (*continued*)

Reference & Study Focus (αβγ)	Year of data collection., d ata location and sample	Method/Methodology	Additional notes	Summary of results relating to CPI and/or SCOP
				promotion strategies such as ADL given 36.4% in over 76% patients
[90] **β**	• 2010–2014 • Denmark • DCA $n = 70$ RR = 32%	• Cross-sectional research design • Descriptive Survey on practice characteristics and SCOP • Online questionnaire		• Virtually all chiropractors use manipulation • Trigger point treatment and other soft tissue techniques are offered by 85–93% of chiropractors and exercise instructions are offered by more than 80% of chiropractors
[83] **α**	• 2010 • Canada • Online English-speaking chiropractic licencing body directories $n = 503$ RR = 68%	• Stratified random sampling method • Questionnaire with 6 CPI subtypes to be evaluated • Postal delivery	• Pre-tested to screen for question ambiguity	Six categorisations of chiropractic identity were evaluated. From the categorisations, chiropractors indicated to be: • General (broad) 17.1% - broad perspective on the conditions they treat that includes lifestyle and wellness issues • Biomechanical 43.1% - treat mainly MSK or NMS problems including specifically low back and neck-related pain • Biomechanical/General 9.2% - combined broad perspective on the conditions they treat that includes lifestyle and wellness issues, treating mainly MSK or NMS problems including specifically low back and neck-related pain • Biomechanical/Organic-Visceral 4.2% - combined treating mainly MSK or NMS problems including specifically low back and neck-related pain some conservative component of Organic-Visceral complaints • Chiropractic subluxation as a somatic dysfunction 7.7% - consistent with a biomechanical perspective • Chiropractic subluxation as an obstruction to human health 18.8% - subluxation is an encumbrance to the expression of human health that needed to be corrected to benefit patient well-being These six groups were then summated: • Groups 1–5 being stated as orthodox chiropractors (81.2%) • Group 6 stated to be unorthodox chiropractors (18.8%)
[95] **α**	• 2010 • Canada • English-language online directories of chiropractic licencing bodies $n = 503$ RR = 68%	• Stratified random sample • Used McGregor questionnaire/ dataset of CPI subtypes • Postal delivery	• Face validity tested	• Relationships exist between treatment efficacy and faction membership e.g. greater relationship of unorthodox group believing that chiropractic can treat genetic/visceral related underpinning disorders • Chiropractic education programs are the greatest predictor of faction membership for Canadian chiropractor's. Chiropractic education contributes to multiple CPI's
[19] **β**	• 2011–2013 • US • FCLB email list $n = 51$ jurisdictions	• Cross sectional research design • Survey with 97 SCOP services evaluated • Sent via e-mail	• Content validity tested via draft survey sent to FCLB for feedback • Duplicate question added to test reliability	• Chiropractic practice in US varies widely between jurisdiction. SCOP is dynamic and grey • Seven states have the broadest practice laws with one being the most restrictive • 90% stated limited prescription rights and minor surgery are not within the SCOP • Overall trend of increasing SCOP
[75] **β**	• 2009 • US • VHA system $n = 33$ providers RR = 91.6%	• Descriptive survey on practice characteristics modified from two previous chiropractic practice surveys • Sent online		• Greatest complaint for patient presentation is MSK based • 88% of visits related to low back pain • 79% of visits related to cervical pain • Non-MSK or wellness visits over last week = 7.5%

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Table 1 (*continued*)

Reference & Study Focus (αβγ)	Year of data collection., d ata location and sample	Method/Methodology	Additional notes	Summary of results relating to CPI and/or SCOP
[5] **β**	• 2008 • Belgium • BCU database $n = 80$ RR = 79%	• Descriptive survey of chiropractors on practice characteristics and SCOP of consecutive 10-patient visits		• Broad scope of interventions are used The following falls within SCOP: • 99% NMS complaints • 88% treatment of infants and children • 86.5% request diagnostic imaging • 85% Primarily focus on neck and back complaints with emphasis on spine however almost 63% feel their SCOP is not limited to MSK disorders • 81% Adjunct treatment such as ergonomic advice and exercise therapy used
[61] **β**	• 2009 • Switzerland • SAC $n = 183$ RR = 70%	• Descriptive Job Analysis Surveys • Adapted from the US National Board of Chiropractic Examiners and the UK General Chiropractic Council Job Analysis surveys • Sent online	• Face and content validity tested	• Primarily spine focussed MSK SCOP • for >51% of their patients, chiropractors give advice on ADL 43%, 25% therapeutic exercises • 73.7% provide wellness/preventative care for their patients between 1 and 40% of the time in practice • Children commonly seen
[110] **γ**	• 2002–2003 • US • State board licensed $n = 720$ RR = 52%	• Cross-sectional research design • Pragmatic, descriptive, attitudinal survey on practice characteristics and SCOP and health care categorisation • Postal delivery with follow up phone calls		• Chiropractors described themselves as both back pain and MSK specialist as well as primary care generalist. • 90% considered themselves capable of diagnosing broad range of health disorders not limited to back pain or MSK and 79% capable of treating such conditions • 80% consider themselves back pain or MSK specialist • 73% see themselves as primary care specialist
[111] **α**	• 2002–2003 • US • State Board licensed sample $n \approx 3000$ RR ≈ 50%	• Cross-sectional research design • Non-replacement sampling frame • Pragmatic, descriptive survey on philosophical notions of CPI and practice characteristics • Postal delivery with follow up phone calls	• Pre-validation and pilot testing on leaders of COCSA NCBE FCLB	Chiropractors consider: • >70% detection and resolution of subluxation guides clinical care or decision making • >75% clinical approach to addressing NMS disorders were subluxation based • >70% clinical utility of subluxation concept is important • Subluxation approach limited utility for visceral disorders
[96] **γ**	• YNS • US • Representative PBRN $n = 132$ (71-faculty RR = 37% 61-chiro-practors RR = 57%)	• Descriptive survey on chiropractic related to wider healthcare categorisations • Klimenko instrument used on concepts of health from CAM providers • Sent online	• Original survey was pilot tested for content validity • 3 questions - No assurance control on content validity of these	• Chiropractors are considered to be the largest CAM profession, yet 69% chiropractors reject this grouping • 27% show some preference for Integrated Medicine • Of the data that exclusively analysed practising chiropractors, it was found that 41% classify chiropractic to be CAM, Integrative Medicine, 38% Mainstream Medicine 20%
[79] **β**	• 2005 • Finland • FCU $n = 44$ RR = 88%	• Cross-sectional research design • Descriptive survey on practice characteristics and SCOP	• Pilot tested for face validity	• Vast majority consider their SCOP approach to MSK with chiropractic techniques and soft tissue work • Adjunct therapies used by some e.g. ice 46%
[94] **α β γ**	• YNS • UK • GCC Association database • Sample 1: N = 490 $n = 249$ RR = 54% • Sample 2: A further N = 45 RR 53%	• Random sample (tested to be representative) • Descriptive questionnaire on philosophical notions of chiropractic, SCOP and practice characteristics, and wider health care categorisation • Postal delivery	• Weak to moderate internal consistency (r = −.265) of the two samples (sample 2 was testing whether it was representative of sample 1)	• 100% agreement that chiropractic good for spinal mechanical dysfunction ad MSK conditions • 98% believe chiropractors are primary contact practitioners • 78% primarily NMS and to some degree visceral organic • 76% traditional beliefs (chiropractic philosophy) important • 73% mainstream and chiropractic paradigms compatible • 69% not only NMS specialist • 63% subluxation central to intervention • Strongly believe chiropractic intervention beneficial for adults for

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Table 1 (*continued*)

Reference & Study Focus (αβγ)	Year of data collection., d ata location and sample	Method/Methodology	Additional notes	Summary of results relating to CPI and/or SCOP
				mechanical dysfunction and some visceral • Firm belief that chiropractic is effective in MSK of adolescent and some infantile systemic conditions • Non-MSK complaints benefit from chiropractic care e.g. Premenstrual Syndrome 70%, Asthma 64%, Gastrointestinal complaints 61%
[74] **α β**	• 2002–2003 • Canada, US, Mexico, Hong-Kong, Japan, Australia, and South Africa • Data collection on research site with local chiropractors $n = 385$	• Convenience sample of local chiropractors • Descriptive questionnaire on philosophical notions of CPI and practice characteristics		• 75% chiropractors believed that it was always or often more important to correct VS than to relieve symptomatic complaints • 74% chiropractors (in the past 3 months) told all or most of their patients that chiropractic adjustments might have NMSK effects on their bodies • Chiropractic management was for low back pain (60%) and neck problems (51%) • The 3 most common NMSK complaints reported for patients by the chiropractor were problems with digestion (19%), problems with circulation (12%), and allergy (11%) • Manual adjustments given in 83% of patients, 52% received soft tissue therapy • 35% were treated with mechanically assisted adjustments
[81] **α β**	• YNS • US 91.8% Canada 8% Mexico .3% • Dynamic Chiropractic magazine database $n = 655$ RR = 68.3%	• Systematic random attitudinal descriptive survey on philosophical notions of CPI, practice characteristics and SCOP • Postal delivery	• Pre-tested on a non-random sample • Questions critiqued/face validity tested	• 89.8% adjustment should not be limited to MSK conditions • 88.1% wished to retain term VS • >75% chiropractors favour a broad scope of services • Across several items > 75% finds adjustment of VS elicits improvements in visceral conditions. • Broad (MSK), middle (centrist) and focused (VS) scope chiros agree on all issues except divide evenly on views surrounding limited prescription rights
[31] **βγ**	• 1999 • Survey 1: $n = 13$ (RR = 59%) of N = 22 accredited chiropractic college presidents and $n = 14$ (RR = 38%) of N = 37 international chiropractic organisation leaders from ACA or ICA membership directories • Survey 2 average $n = 159$ Connecticut-licensed chiropractors providing NMS care (RR = 25%)	• Part 1: Literature review to apply the terms *primary care*, *NMS care*, or *MSK care* to the practice of chiropractic, particularly in Connecticut • Part 2 (Survey 1 & 2): Descriptive survey on chiropractic related to wider healthcare categorisations		• Definitions of Primary Care and Primary Care Provider are found to be attributable to chiropractic: No definitions found on NMS and MSK care • Intra-professional consensus that chiropractors are Primary Care Providers • 83% chiropractors are not exclusively NMS providers: multiple services rendered in chiropractic practice e.g. family practice, sports medicine, stress management, subluxation correction
Mixed Methods				
[67] **βγ**	• YNS • UK • Qualitative $n = 7$ • Quantitative $n = 416$ RR = 69%	• Mixed Methods Sequential Exploratory Design • Face to face faculty interviews from AECC and Welsh Institute of Chiropractic • Thematic Analysis to inform descriptive questionnaire on chiropractic related to wider healthcare categorisations • Postal delivery	• Pilot testing of survey for face validity • Exclusion of McTimoney College of Chiropractic (an institution not accredited with the ECCE at the time of the study) acknowledged to limit generalisability	• Chiropractors strongly agree that they are Primary Contact Healthcare Practitioners (can diagnose and refer) • Chiropractors strongly consider that they are not Primary Healthcare Practitioners as they are unable to treat all medical conditions that present in primary healthcare setting
Qualitative				
[14] **α**	• 2014–2016 • UK and Australia $n = 23$ (16-chiropractic academics and 7 political elite practitioners e.g. on advisory boards, associations)	• Purposive sampling using reflexive sociologist Bourdieusian framework to assess for chiropractic professionalisation strategies • Face to face interviews	• No comment as to whether saturation was achieved • No comment on triangulation	• Divergent approaches exist within the profession relating to paradigms, identity and education • Tension exists between MSK focus and chiropractors with traditional approaches. Central to the competition in the profession is how to define

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Table 1 (*continued*)

Reference & Study Focus (αβγ)	Year of data collection., d ata location and sample	Method/Methodology	Additional notes	Summary of results relating to CPI and/or SCOP
		• Constant Comparative Method for themes		chiropractic. Both camps unified only in the agreement that the profession is in crisis • Divergent strategies exist across two opposing poles: ○ The academics (and some practising chiropractors) prioritise evidence based, MSK approaches to be in alignment with medical and allied health sector strategy • VS based practitioners promote creation of new education channels with vitalistic philosophy and professional distinction and autonomy
[52] **α β**	• 2008 • UK • Self-selected $n = 1$	• Interpretative functionalist realist field study	• Single case only • No blinding or triangulation	• Chiropractor self-identified as primarily being an MSK specialist where additional health benefits received by the patient from chiropractic care were considered a bonus • Belief that chiropractic improves wellbeing
[117] **α**	• 2002–2010 • US articles $n = 98$ papers evaluated (78% peer-reviewed mix of commentary, surveys and magazines)	• CDA through the lens of professional crisis to examine the movement of at the following levels: 1. Thematic text analysis 2. Discourse practice 3. Social practice	• Limitation: No accepted methodological procedures for CDA • Reflexivity noted, no comment on triangulation	• Discrepancies between everyday practising chiropractors and a small group of academics, researchers and chiropractic leaders over the importance of science for the profession • Academics/leaders utilise rhetoric, status, institutional position, and their roles as journal gatekeepers to dominate the discourse and propel the back/neck pain specialist approach. The tactic is to silence the traditional VS approach with emotionally loaded discourse e.g. accusations as using pseudoscience or fundamentalist labels • Challenge in how to reconcile differing philosophy of vitalistic chiropractors who argue for expanding SCOP to include emotional and psychological wellbeing. This is compared to positivistic science based MSK chiropractors that advocate narrowing the SCOP to neck and back pain management • Need for everyday chiropractor to participate in CPI discourse which is currently being decided by academics and neck/back pain segment
[87] **α**	• YNS • South Africa • Durban chiropractors $n = 10$	• Purposive Maximum Variation Sampling • Face to face semi-structured interviews • Phenomenological case studies - Inductive Analysis for philosophical notions of chiropractic	• Data collection was completed until saturation was achieved • Triangulation noted with second author • With Maximum Variation Sampling "typical" chiropractor may not be represented • Durban location may create limited generalisability	• Lack of coherent identity, marketable model of practice and poor interprofessional relationships impact the progression of the profession • Broad practice models from multimodal to mechanistic approaches exist • 2 main classification of chiropractor practice objective exist: o The Technician (limited diagnostic function - the vitalist philosophy) o The Physician (primary care practitioner: biomedical philosophy) o Mixed views also present.

Table 1 Abbreviations.
α = Study focus on philosophical notions and concepts of chiropractic professional identity.
β = Study focus on practice characteristics and scope of practice.
γ = Study focus on grouping chiropractic practice into healthcare categorisations.
ACORN = Australian Chiropractic Research Network, BCU= Belgian Chiropractic Union, CAM= Complementary Medicine, CDA= Critical Discourse Analysis, COCSA= Congress of Chiropractic State Associations, CPI= Chiropractic Professional Identity, DCA = Danish Chiropractic Association, EAC = European Academy of Chiropractic, ECU = European Chiropractors' Union, FCLB= Federation of Chiropractic Licensing Boards, FCU= Finnish Chiropractic Union, GCC = General Chiropractic Council, NCBE= National Board of Chiropractic Examiners, N = target sample, *n* = sample size, NMS= Neuro-musculoskeletal, non-MSK = Non-musculoskeletal, MSK = Musculoskeletal, MVS = Maximum Variation Sampling, PBRN= Practice Based Research Network, SAC= Swiss Association of Chiropractors, SCOP= Scope of Practice, UK=United Kingdom, US= United States of America, RR = response rate VHA= Veterans Health Administration, VS= Vertebral Subluxation, YNS = year not stated.

projects; Canada, United States, Mexico, Hong Kong, Japan, Australia, and South Africa [74], the United States, Canada and Mexico [81], and the United Kingdom and Australia [14]. Sample size varied in this review from a single-case study [52] through to responses from 3559 participants [111]. The mean sample size was 406 per study, with a bimodal distribution that peaked around 50–99 [5,19,90,117] and 500–999 [81,95,110].

The majority of articles were quantitative analyses of survey instruments [2–5,9,19,39,61,64,74,75,79,81,83,90,94–96,110,111], with the exception of one mixed-methods study [67] that used qualitative inquiry to inform an instrument that was analysed quantitatively. One study used a questionnaire aimed at quantifying the professional stratification (of six pre-defined subgroups) among Canadian chiropractors [83], which formed the basis for other studies both with [39] or without [95] additional adapted questions. Another questionnaire was created using the National Board of Chiropractic Examiners (United States) Job Analysis Survey as a template, as well as adapting questions from the United Kingdom survey from the General Chiropractic Council, to examine Swiss chiropractic practice characteristics [61]. This questionnaire was also used by Ref. [64]; with adapted additional questions.

Four qualitative studies [14,52,87,117] were included in this review. Of these, one examined methods of professionalisation used by the two CPI poles e.g., the vitalistic VS focused and biomedical MSK focused practice objectives [14], with another evaluating the literature using Critical Discourse Analysis [117].

Further examination of the eligible articles found three overarching concepts. Studies were divided into three types of research approaches, with some overlap (Table 2). These include: 11-articles with a research focus on philosophical notions and concepts of professional identity, 15-articles with a research focus on practice characteristics and SCOP, and 5-articles with a research focus on grouping chiropractic into wider health care categorisations.

For research relating to CPI philosophical notions, this review confirmed the three main practice objectives previously stated in the literature. These include the MSK, centrist and VS focused approaches. Notably, these main groupings are at times labelled differently. For example, in the qualitative study by Ref. [87]; the vitalist chiropractor is referred to as a technician, and the biomedical chiropractor is referred to as a physician. Some of the studies contrast the two historically polarised MSK and VS approaches by categorising practice objectives into these dichotomous groups [39,83,87,95], hence the proportion of those who may hold a centrist practice objective is not researched or explicitly quantified.

Whilst SCOP is under jurisdictional control by individual state or country, papers in this review that investigated SCOP reported on chiropractors utilising traditional chiropractic interventions alongside soft tissue approaches [2–5,19,52,61,64,74,75,79,81,90]. All studies that investigated SCOP relating to patient subgroups (e.g., acute, chronic, paediatric, athlete, older adult etc. patient groups) found that chiropractors care for multiple patient subgroups across multiple ages [2–5,61,64,94].

Results varied for healthcare categorisation within wider health care. Some chiropractors consider themselves as Integrative Medicine or Complementary and Alternative Medicine providers [96]. Chiropractors have also demonstrated their preference as being Primary Contact Practitioners [67,94], Primary Care Providers [31], MSK specialists [52,61,110] and back pain specialists or primary care generalists [110].

Table 2
Summary of study focus for articles in critical literature review.

Philosophical notions and concepts of chiropractic professional identity	Practice characteristics and scope of practice	Grouping chiropractic practice into healthcare categorisations
[39]	[2]	[110]
[83]	[3,4]	[96]
[95]	[64]	[67]
[111]	[90]	[31]
[94]	[19]	[94]
[81]	[52]	
[14]	[67]	
[52]	[75]	
[117]	[5]	
[74]	[61]	
[87]	[79]	
	[94]	
	[74]	
	[81]	
	[31]	

4. Discussion

The purpose of this review was to evaluate the body of knowledge on practising chiropractors' perspectives on their professional identity. This study confirmed that the literature mostly uses the following terms to classify the different approaches of chiropractic professional identity (CPI): the vitalistic VS-focused (or subluxation-based), centrist, and biomedical MSK-focused approaches. Three key and overlapping areas of study focus are found to assess professional identity as it relates to philosophical concepts, practice characteristics and SCOP, and grouping of chiropractic into wider healthcare categorisations. The following discussion summarises the main findings of the review.

4.1. Competing identities

Polarised, and at times competing, intra-professional identities are not unique to the chiropractic profession and is apparent amongst many professions including counselling services [84,97], physiotherapy [35], homeopathy [12] and osteopathy [24]. Within the literature on the practice of family medicine, for example, at least three models have been discussed ranging from: a holistic biopsychosocial orientation that cares for the under-served; a pragmatic approach that considers market forces and personal practice styles; and family medical practitioners acting as gatekeepers for specialty care referral [17]. Within family medical practice, two distinct divergent approaches have been identified with potential future implications on the profession: The 'generalist' works to preserve traditional functions while adapting to changing contexts with a large SCOP compared with the 'specialist' that concentrates on increasing specialisation amongst general practitioners [7]. This differentiation is said to be the result of a rapidly expanding scope of practice, as well as the high value attributed to specialisation from society and the professional system [7].

The existence of multiple identities within health care may not be as important as how one feels about the group that they belong in – a positive, strong, self-selected and flexible professional identity has been shown to influence an individual's satisfaction and professional success [109]. Within the nursing profession, it has been observed that a strong coherent professional identity creates a more productive and committed professional who is beneficial to other healthcare workers as well as patients [23]. How nurses think and feel about themselves also supports patient care within a positive environment and enhances job satisfaction and retention rates [58]. It has been posed that a unified profession is essential for both the personal and social wellbeing of the individuals who comprise it as well as the greater community [27]. Perhaps it is not the unified aspect that is the function of personal wellbeing and professional confidence – instead it may be the result of intra-professional respect that professional identity is individual and may evolve and change that promotes strong social and professional wellbeing? In this way, it may be useful for the chiropractic profession to continue to investigate ways to establish a more contemporary CPI.

From the papers in the review with a focus on CPI in terms of philosophical notions and concepts, research was directed on the different chiropractic identity subtypes and practice objectives. [81] expressed the three main identities along a graded continuum from one

(broad/mixer) to ten (focussed/straight), with five representing the middle scope. Research that categorised pre-prescribed chiropractic identities into discreet subtypes, further grouped the findings [39,83,95] into two polarised approaches; these are referred to as *orthodox* (MSK biomedical) and *unorthodox* (vitalistic VS) approaches [39]. [83] found that 18.8% of chiropractors use a VS approach in clinical practice. In this research [83], asked participants to self-select their practice objective into one of six groupings. These subgroups were then summated with the VS subgroup termed as *unorthodox* and the remaining five categories as *orthodox*. However, when you also consider that one of the so-called *orthodox* categories also utilised the term VS, the percentage of chiropractors who self-categorise as having a VS focus increases to 26.5%. The authors of this study chose not to group these two categories together as *unorthodox*. [39] adapted the original categorisations of practice objectives of [83] from six to five categories. This research found 20.1% of chiropractors to practice within the *unorthodox* paradigm, however, when adding the two categories that include VS as a practice objective option for the chiropractor to self-select, the percentage increases to 27.1% [39]. In both studies, it should not be understated that, when adding both categories of practice objectives that have a VS focus, the percentages reflect a significant proportion of the profession. This is in contrast to Ref. [111]; whose research evaluated the degree of importance and prevalence of a VS focus in clinical practice, which found that over 70% of study participants used VS to guide their practice.

Within the chiropractic profession, there has already been some critique on the original categorisations used by Ref. [83]. [106] argued that these categorisations do not capture the historical complexity of the VS approach with respect to discrete practice styles. He further stated that many of the groupings overlap and hence may not accurately capture a true impression of the diversity in chiropractic practice. Notably, further reading on the primary research for the original construction of these categorisations shows some potential flaws to generalisability. The six strata groupings [82] were derived from survey information relating to the identification, means of evaluation and treatment of health problems that chiropractors address, gathered from 64-individuals, 25% of which were practising chiropractors. Of the three individuals that were asked to post-evaluate these subgroups (for validity), none were stated to be practising chiropractors, instead they were involved in research, policy or publication - potentially introducing bias. These potential limitations could affect generalisability of some studies in this review of CPI, which used this classification system as a basis for their research [39,83,95].

4.2. Scope of practice

The chiropractic SCOP is important to several stakeholders including patients, health care providers, organisations and policy makers [19]. In order to reduce confusion, some have advocated for a uniform chiropractic practice act in the United States of America [31]. However, this may be challenging given the United States of America does not have a unified SCOP for most health care professions [19]. Studies that demonstrate the effect of utilising chiropractic legislative SCOP on actual clinical practice have not yet been conducted. What research has been conducted, suggests that individual chiropractors and/or patient preferences set their own limit on their SCOP [38].

Chiropractic SCOP is relevant to CPI to differentiate it from other manual therapies which use similar modalities with an MSK focus; it has been suggested that VS is central to chiropractic, which sets it apart from other professions [101], however the general public may not be aware of the VS-focus which may be the result of to the lack of a coherent CPI. A New Zealand study explored how various MSK providers discussed their treatment approaches compared to other primary care practitioners [91]. It was uncovered that many professions (e.g., chiropractors, osteopaths, physiotherapists and general practitioners) are seen to employ similar modalities or methods to treat a condition. In this way, the division of labour or SCOP overlaps [1]. This implies that in some cases the *what* or *how* a practitioner practices may be less important than the *why* in terms of professional identity [91]. This could mean that there may be merit in preserving and promoting traditional aspects of chiropractic philosophy both within the chiropractic profession, and to the wider health care profession and general public.

According to Ref. [36]; professions are distinct from other occupations in their ability to control their own work and have professional autonomy. No matter how specialised, professionals can seldom free themselves from stereotypical assumptions of people outside the profession irrespective of the profession's resources [36]. If the public has a stereotype of chiropractic being related to the spine, then a unified identity of a spine focus for the public's understanding as the management emphasis of the chiropractic profession may be the most marketable approach [11,98,105]. However, two recent studies suggest that perceptions (and thus potentially stereotypes) on the purpose of chiropractic care can be changed when communicating and educating individuals on VS based care – this was found to occur with both the general public [103] and for new patients who received VS focused chiropractic care [102].

4.3. Professional unification or dissolution

[72] stated that internal unification of a profession involves a process of conflict and struggle about who shall be included or excluded. Thus, a crucial comparative research question becomes how and in what ways the discourse of professionalism is being used (by employers and managers, and by some relatively powerful occupational groups themselves) as an instrument of occupational change (including resistance to change) and social control [34]. Some papers in this review identified this organisational control [14,117]. [14] discusses the strategies of the academics and MSK chiropractors who prioritise building the MSK evidence and becoming more aligned with medicine and allied health professions as compared with the vitalistic VS chiropractors who prioritise the formation of new chiropractic institutions and ongoing education and conferences to promote their views. There is evidence that additional self-directed post-graduate education contributes to changes in practice characteristics [62]. If one relates this to the VS group attending seminars and conferences to preserve their philosophy, then this indeed may be a powerful strategy. [14] poses the potential of separate futures within chiropractic, based on these polarised factions. [117] also argued that everyday chiropractors are being silenced by academic elites who have an agenda to push for the MSK model for chiropractic.

A strategy called Organisational or Managerial Change tactics [30] can further explain the process of academic elites silencing others that occurs in professions. Managerial Change Tactics, within any organisation, proposes that due to perceived challenging and hostile environments, there is a threat to the future of an organisation [30]. In this instance, this can be seen as the competitive health care market – 'the enemy outside'. The managerial elite are also concerned with a perceived enemy inside, seen to resist their 'new vision' strategy to advance the organisation, and hence suggest change within an organisation. Using this process to explain chiropractic, the managerial elite would be considered to be research and political elites, academics and heads of associations with a directive towards the *orthodox*, MSK chiropractic practice objective approach. The hierarchical leadership of both individual associations and international organisations highlight the unwilling *unorthodox* members within the group who resist the new order of an MSK evidence based model of chiropractic. Members of the *unorthodox* group are portrayed as apathetic, sticking to an invalid old model of academia. The MSK *orthodox* view sees resisting change as unfavourable, regressive and inappropriate [22], while those who resist change, the VS *unorthodox* approach, choose words and orient towards values and theories of more traditional approaches [114]. A paper in this review highlights the struggle from an *orthodox* perspective remarking

that the *unorthodox* group has been said to hold a mix of philosophical, scientific and pseudo-scientific elements towards the evolution of a new health care paradigm [39]. [39] further remarks that the internal battle of the polarised paradigms continues to impede progression towards inclusion in a modern multidisciplinary health care setting having an impact on chiropractic gaining social and cultural legitimacy.

Organisational change can occur where individuals in power, the managerial elite, create change initiatives, justified and implemented through organisational discourses and politics [10,30]. Recently, research leaders, members, and the chair of the World Federation of Chiropractic Research Council co-authored a paper suggesting that the centrist group might be responsible for the current state of the profession insofar that their apathy has allowed the traditionalist VS views to continue [73]. These leaders also commented further that the centrist group should clearly state their allegiance to either of the polarised factions and for the profession to consider a split [73]. In this light, there may be an agenda that CPI is being influenced by Managerial Change Tactics by the political and academic elites. In a time where diversity is celebrated around the world, it is interesting that within chiropractic, separatism is actively being encouraged with diversity being stated to be a weakness rather than a strength [73]. [117] suggested the need for greater involvement by the everyday chiropractor so that their views can be heard. Individuals are capable of transforming structures through their choices, decisions and actions [122] and change created in context can create shifts in power, influence and status [59]. Perhaps more engagement and involvement of the centrists, the largest group within the profession, could silence the polarised factions that may be the driving force behind this rift.

4.4. Under-representation of VS-focused practice objective

If on face value, approximately 20% of the profession has an exclusive VS-focus [39,83], with as much as 70% who incorporate aspects of VS in practice [74,81,94,111], the proportion of the literature that relates to VS is much less so. This lack of research on subluxation-based chiropractic has even led some to question the existence of VS [68]. However, there is growing evidence espousing the existence of VS including studies on reliability of subluxation indicators [54,55] and increased emphasis on VS focussed research [60,101]. Recently, within the literature there are greater numbers of studies on VS care in patients on improving an array of health presentations and patient outcomes [21,45,46,53,57].

An apparent theme in the discussion elements of many papers evaluated in this critical review is the emphasis on MSK research and patient outcomes such as back pain and disability. However, research based on the explanatory frameworks and neurological mechanisms of the VS-focussed chiropractic approach that demonstrates positive patient outcomes [6,25,43,44,57] are not presented in the discussion, which could imply it does not exist. At times, those that advocate the biomedical MSK model of chiropractic seem contradictory - the importance of a spine-focused identity and MSK intervention approach are highlighted, yet it also seems recognised that chiropractic patients themselves frequently report chiropractic interventions to be effective in additional benefits such as sleep and digestion improvements [74], asthma [13] and infantile colic [92]. It has been reported that up to 15% [56,74] of patients present for chiropractic care with a non-MSK complaint, supporting the rationale that chiropractic intervention may impact positively on a wide array of presentations not exclusive to MSK complaints. VS-focussed chiropractic care has shown improvement in both MSK and non-MSK conditions as well as patients reporting improvement in aspects of health unrelated to their initial presenting complaint [102].

Potentially, CPI may not be best measured as a concept with mutually exclusive sub-categories. As a chiropractor, it may be possible to have a practice objective of relieving a patient's symptomology while also addressing VS – this would not necessarily make one categorise themselves as centrist as it could vary upon individual patient needs. A recent qualitative study showed that the practice objective was patient-centred to improve health and wellbeing including symptom status, and yet was still VS based [40]. Forcing individuals to choose one categorisation over another may oversimplify the complicated entity that is professional identity. Professional identity has been found to develop over time [77] and can even occur before formal education [71]. Future longitudinal studies are needed to examine this for CPI.

Three of the papers included in this review gave VS as a response option for questions on identifying practice objectives for research that was targeted at practice characteristics and SCOP (Table 2) [74,81,94]. Hence, VS as a practice objective has not been examined extensively. It is noteworthy that researchers may focus on the more obvious treatment questions, although, in clinical practice, deeper discussions around chiropractic philosophies and the chiropractic connection to health and wellbeing may occur in everyday practice [28], and research questions that relate to these aspects could be explored. VS as a clinical focus has been said to place emphasis on promoting wellness by engaging in positive health practices [33,69,70]. Research such as this, oriented at salutogenic approaches to health, are also gaining popularity in public health and health education [112].

4.5. Study quality and limitations

The research that employed surveys [2–5,39,61,64,67,74,75,79,81,83,90,94–96,110,111] had usual but obvious limitations. External validity generalisability issues exist as to whether the findings are applicable to a wider population than the study sample. Despite often high response rates and sample sizes, potential limitations may also include a recall bias. As being a VS-focused chiropractor or MSK-focussed chiropractor is a contentious issue within chiropractic, a social desirability bias in practitioners' responses may also be present. Non-surveyed and non-responder attitudes and profiles could also affect generalisability. For all papers in this review, no exploration on the strength of the attitudes and beliefs underlying CPI responses were evaluated.

Further to generalisability, the issues of validity and reliability must be considered. Content validity which refers to the degree to which the content of an instrument is an adequate reflection of what is meant to be measured [86] and face validity, which ascertains whether an instrument appears to measure whatever it is supposed to measure [50] were said to take place for a third of the studies in this review (see Table 1). Many of the papers in this review included adapted questions, which often had not been tested for their psychometric properties. Of further importance, cross-cultural validity [113] had not been established for any papers in this review that adapted previous surveys [39,61,64]. Reliability, which has to do with the consistency of measurement at repeated times, was measured in this review only by Ref. [19] who added a duplicate question to test reliability of the survey questions. Factors that influence reliability include unclear or misinterpreted questions [50], and ways to further enhance reliability include testing convergent/discriminant validity, to evaluate the relatedness of concepts across groups or strata [76]. For many of the surveys, limitations could also exist in the lack of definitions for various strata or description of the variables that were assessed. Future studies could explore the relatedness of concepts such as those used in primary care, generalist, specialist, primary contact, spinal dysfunction, VS, MSK specialist, and strata subtypes for practice philosophies.

5. Conclusion

Chiropractic professional identity is complicated. Chiropractors have struggled to define their work both within the profession and in parallel to other health disciplines. This review sought to examine what studies have been conducted on professional identity and SCOP. The number of studies on CPI that are not commentary or narratives are relatively small, and the methodologies are varied. Furthermore, the literature selection was limited to English. The primary author, a chiropractor may

also introduce a bias in their evaluation of the articles due to their own epistemological views, which could have influenced the analysis. However, this was mitigated by three other reviewers, two of whom were not chiropractors, also examining the papers in this review.

Articles in this review found that chiropractors had a predominately spine-based MSK practice focus utilising a wide array of interventions. Practising chiropractors consider themselves to be primary care practitioners with a broad scope of practice not limited to MSK intervention with their care including NMS, non-MSK and organic-visceral practice approaches across multiple patient demographic groups. On the surface, at least 20% of chiropractors have an exclusive VS focus. However, from this critical literature review, it is apparent that VS is an important practice consideration for a much larger proportion of chiropractors, which may be up to 70%. Of the papers in this review, less than half examined philosophical concepts of professional identity, and most papers were centred around categorising practice characteristics and SCOP. There could be a benefit for the profession to explore deeper issues of professional identity, such as how it may change over time, or investigating potential relationships between practitioner clinical confidence, patient outcomes and professional identity.

Much work is still needed to create a coherent objective and contemporary CPI. The marked difference in the concepts evaluated and potential methodological differences have highlighted areas for future development. Further empirical research into the theoretical concepts that underline professional identity and the factors that influence changes in this crucial construct is required. Future recommendations could include studies that use conceptually derived and psychometrically robust instruments capable of detecting the subtle changes in the construct over time. Further research is needed to better understand the tensions between personal and professional values and the role of workplace learning on professional identities. It is crucial that the understanding of chiropractors' professional identity is not limited to the undergraduate identity of students, academic directive, or leaders of the professions. Comprehensive exploration to discover specific practice settings that meet the daily demands of the practising chiropractor is paramount. An adequate understanding of professional identity must include the diverse contexts in which chiropractors conduct their practice, such as family care, sport performance or acute/chronic injuries and health conditions. After all, it is the everyday chiropractor in everyday practice settings that are the ground forces that have led to the high patient satisfaction rates that the profession prides itself on. Further empirical work on CPI is needed to guide and inform chiropractic education, as well as serving to inform political groups and guide policy direction. Through continued focus and exploration of evolving chiropractic professional identity, a more coherent identity may be possible, which could involve celebrating and embracing its diversity.

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Declaration of competing interest

None.

Appendix A. Supplementary data

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