

Failure to Use *Vertebral Subluxation Complex* as a Diagnostic Term: A Flaw of Reductionistic Diagnosis with Resultant Compromise of Student and Patient Outcomes in Chiropractic Teaching Clinics

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ABSTRACT: *Objective:* To determine and report the extent to which the term vertebral subluxation complex is applied as a working diagnosis by contemporary chiropractic students in a clinical education environment and the extent to which student interns diagnose and manage patients' health beyond simple mechanical joint dysfunction. *Methods:* All 39 final year students in the RMIT chiropractic program self-selected then reviewed and summarised the health records of any 10 patients they had seen as a new patient within the University Chiropractic Teaching Clinics during the previous 6 months. The resulting 400 reports were then reviewed by the authors and the diagnostic categories identified and collapsed into themes. *Results:* There were 355 patients with a spinal complaint for whom a working diagnosis of vertebral subluxation complex could have been appropriate, however this diagnostic term was used in only 13 cases. The more common diagnosis was biomechanical joint dysfunction. In the vast majority of cases students diagnosed and managed patients attending the clinic with regard to mechanical joint pain and dysfunction only, and in the majority of cases did not address any health issues in patients beyond this clinical descriptor. *Discussion:* Despite being provided with an extensive variety of diagnostic and management tools that enable them to assess and manage patients' health issues beyond the reductionist diagnosis of mechanical joint pain, the greater majority of students within the RMIT teaching clinics do not appear to function beyond a limited, mechanical paradigm. It is argued that diagnostic reductionism to mechanical descriptors is counter-productive to the holistic attribute of chiropractic practice. One possible explanation for this disconnection may be the manner in which students are assessed in the clinical environment. *Conclusion:* This apparent disconnection between the foundation clinical decision-making skills taught in the classroom and the application of those skills in the clinical education environment is a cause of concern to chiropractic educators and deserves further investigation.

INDEX TERMS: (MeSH): WELLNESS; CHIROPRACTIC; AUSTRALIA. (INDEX TO CHIROPRACTIC LITERATURE): WELLNESS; EDUCATION, CHIROPRACTIC; EDUCATION, CHIROPRACTIC/AUSTRALIA; SUBLUXATION; SUBLUXATION, DIAGNOSIS; VERTEBRAL SUBLUXATION COMPLEX.

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INTRODUCTION

The RMIT chiropractic clinical experience requires students to complete a pre-determined number of clinical tasks during their staged progression through the four

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courses that comprise the clinical education (practicum) component of the 4-semester Master of Clinical Chiropractic. This quantification of clinical behaviours is common to all accredited chiropractic programs, and in RMIT's case reflects the quotas within the Guidelines for Accreditation of the Council on Chiropractic Education Australasia Inc (CCEA).¹

The accreditation requirements quantify a number of specific clinical activities (Box 1). It naturally follows that the quantification of clinical activities results in a focus on quantitative documentation during the student's experience in the clinical learning environment, however the student is also expected to think and act beyond numbers.

The RMIT chiropractic curriculum addresses the components of the vertebral subluxation complex (VSC) and places an emphasis on the holistic approach to patient management. It does this by using a model of the VSC (Figure 1) that specifically identifies clinical elements such

Box 1

QUANTIFIED CLINICAL LEARNING ACTIVITIES ¹	
Activity	Quantity
Individual patient assessments including comprehensive case history and examination, with diagnosis or clinical impression and an appropriate case management regime	50
Chiropractic care sessions directed to the alleviation of an identifiable ailment	300
Examination of each of the specific systems	
cardiovascular	5
respiratory	5
genitourinary	5
digestive	5
EENT	5
Appropriate neuromusculoskeletal examination	40
Interpreted and provided written reports on X-ray studies with a minimum of 30 being studies on different patients	60

Note: No more than 10% of the above services should be administered to students enrolled in the program.

as neural change that are beyond simple mechanical change. The intended emphasis is on optimising health outcomes for patients with an expectation that students will address general health issues beyond the kinematic dimensions of the subluxation.

In spite of the term *VSC* and its derivatives enjoying common usage by many, if not most, members of the chiropractic profession² over a reasonable period of time,³ Wenban found it to have a poor representation in discipline-specific scholarship.^{4,5} These reports stimulated questions among the authors of the current paper as to possible reasons that may underpin Wenban's findings. Ways of knowing about subluxation in the clinical sense are matters of interest to the authors who, as educators, are expected to have defensible pedagogies and learning objects. We attempt to contribute to the literature on these themes.⁶⁻⁸

The authors are not alone in discussing the use of the term *subluxation*,⁹⁻¹¹ however it is difficult to understand the *VSC* in today's environment where almost every dimension of clinical practice is subjected to a call for evidence. To this end it may be thought that the Cochrane Collaboration is actually doing a disservice by perpetuating the myth that there is only one way of knowing.^{12,13}

A research question developed with respect to the extent to which the term *VSC* is applied as a working diagnosis by contemporary chiropractic students and its influence, if any, on the resultant management plans of patients within the University's teaching clinics. The data discussed in this paper are drawn from a review of the diagnoses and the management interventions reported by senior students in the RMIT University chiropractic teaching clinics.

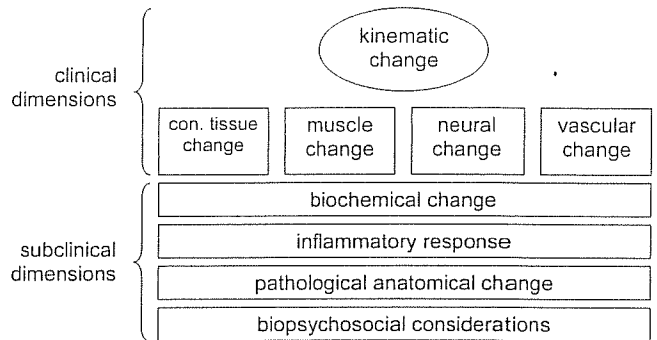


Figure 1. A contemporary model of the vertebral subluxation complex. From Ebrall PS. Assessment of the spine. Edinburgh: Churchill Livingstone, 2004:37.

METHODOLOGY

The data sources were the health records of patients attending the RMIT University Chiropractic Teaching Clinics during the 6-month period October 2006 to March 2007. All final-year students (n=39) of the RMIT Master of Clinical Chiropractic were required to audit the records of any 10 patients they had consulted during the period. A data collection form and report format were constructed that blinded the students to the specific intent of the investigators to report the working diagnoses and management plans by requiring a variety of items to be documented. These are summarised as Table 1. This audit process is a form of Quality Assurance used to drive a reflection by the student on the standard of their record-keeping with a secondary result being an improvement in this standard as a component of the external professional accreditation process.

The required quota of 10 patient files was met by 37 students, while two students, by choice, completed reviews on 15 patient files rather than the required 10. The patient files use plain language, descriptive diagnoses and a similar format for the management plan. The resulting 400 reports captured that plain language and were individually reviewed by one author (AR). The various diagnoses and management plans were summarised into categories that captured the intent of the plain language descriptions.

The diagnostic categories were identified and collapsed into diagnoses related to the spine, including the lumbosacral spine and pelvis, and those not related to the spine, as in an extremity. There was no attempt to assign diagnoses to regions of the spine, as a number of files showed more than one region with a diagnosis. The data were also reviewed to determine the nature of the resultant management plan.

It is important to note that the diagnosis assigned to each patient was the primary criterion audited and that the management plan is a natural consequence of the diagnosis. Thus they are inseparable within the clinical encounter. It is a requirement of the RMIT chiropractic teaching clinics

THE FLAW OF DIAGNOSTIC REDUCTIONISM
 REPKA • EBRALL • DRAPER

Table 1

INFORMATION REQUIRED FOR THE FILE AUDIT INSTRUMENT	
Category	Data Sought
Compliance	Patient initials / signed privacy statement/signed informed consent / new or return patient / number of subsequent visits
Demographics	Gender / age [by nominated ranges]
Occupational grouping	Identification of one of 13 categories
Area of patient complaint	Head and/or Neck / Thoracic / Low Back and Pelvis / Extremity
Outcome measures completed	Head and/or Neck / Thoracic / Low Back and Pelvis / Extremity
Diagnoses for area treated	[Free space for writing the diagnosis and a summary of the management plan as recorded in plain language in the file]
Types of therapies used	Adjusting / Soft Tissue / Mechanically Assisted / Ultrasound / Interferential / Ice / Exercise / Stretch / Lifestyle
Radiographs	Have any radiographs been taken during the current month? [yes/no] Ever? [yes/no]
Regions radiographed	Cervical / Thoracic / Lumbar & Pelvis / Extremity
All signatures present?	New Pt forms / Diagnosis & Management form / Therapy Authorisation form / Daily Treatment form / Re-evaluation form [yes/no]

Table 2

DISTRIBUTION OF DIAGNOSES BY CATEGORY		
Category	n =	% of total
Spine-related diagnoses	355	88.75
Non-spine-related diagnoses	45	11.25
Total reported diagnoses	400	100.00

Note: spine-related includes the lumbosacral spine and pelvis.

Table 3

SPINE-RELATED DIAGNOSTIC TERMS NOT USING THE TERM <i>SUBLUXATION</i>			
Diagnostic Term	n -	% of non-sublucation, spine-related n = 342	% of total spine-related n = 355
biomechanical joint dysfunction	230	67.25	64.80
mechanical joint dysfunction	57	16.70	16.00
mechanical joint sprain	44	12.80	12.40
facet joint sprain	5	1.50	1.40
sacroiliac joint sprain	6	1.75	1.70
Total	342	100.00	96.30

that no form of patient intervention may occur without a diagnosis that is approved and 'signed-off' by the relevant duty clinician.

This project was approved by the University's Human Research Ethics Committee as a component of the Research and Scholarship Portfolio, which engages all Master students in a range of clinical research and scholarship activities. All reported data are anonymous, and no patient is identified. At their point of entry into the teaching clinic all patients are invited to provide prospective informed consent for the use of their de-identified data in such activities and research projects. There are no meaningful dependent relationships between the students and the investigators, as this project was a student-directed review of their own file maintenance as a quality assurance activity. This was a mandatory activity, and the allocation of a set grade (5% towards the total earned grade for the course) was given based solely on submission of the report.

RESULTS

A total of 400 reports were received from 39 students. Each student reported on patients they had managed during the preceding 6 months. There was no known duplication of patients across students. The sample therefore represented 400 different patient encounters within the university's teaching clinics and a minimum of 400 individual working diagnoses.

An unknown number of patients may have received more than one working diagnosis during their total period of encounter with the teaching clinics, however students were only required to report the current diagnosis they generated with the agreement of the relevant duty clinician. As noted above, some patients received more than a single diagnosis of one spinal level, but the categorisation was by primary working diagnosis as being that diagnosis that drove the subsequent management plan.

Of the total 400 diagnostic terms recorded, 88.75% (n = 355) related to spinal presentation, leaving 11.25% (n = 45) as non-spine-related (Table 2). The 355 spine-related diagnoses could all have reasonably used a term inclusive of *subluxation* and were again reviewed to determine the actual diagnostic language used.

A distinction was made between a diagnosis that used the term *subluxation*, either alone in its least preferred form or in the context of *subluxation complex* or *vertebral subluxation complex* and one that used terms such as *joint dysfunction* or *biomechanical joint dysfunction*.

Of the 355 spine-related diagnoses there were diagnoses from 37 students that consistently used terms such as *biomechanical joint dysfunction* (Table 3). Of these 355 diagnoses, there were a small number (n = 11, 3.1%) that described a specific clinical finding (facet joint sprain or sacroiliac joint sprain), however the greater majority (n = 230, 64.8% of total spine-related diagnoses) were the generic *biomechanical joint dysfunction*. The 355 spine-related diagnoses gave rise to 342 diagnoses (96.3%) that did not use the term *subluxation*, or its variants.

Indeed, the term *subluxation* in any form was used in only 13 patients, representing an application rate of 3.7%

for this term to a spine-related diagnosis. These 13 diagnoses were found in the reports of 2 students (5.2% of all students reporting these data). The frequency of distribution was 8 out of 10 reports for one student and 5 out of 10 for the second. These students consistently used *subluxation* within an appropriate diagnostic phrase and did not use euphemistic terms.

The 400 working diagnoses were also assessed to determine whether they fell into one of either of 2 categories; conditions that could be defined as *mechanical*, whether they related to the spine and/or pelvis or an extremity, *versus* conditions that may be considered *non-mechanical*. The same terms given in Table 3 as relating to the spine were used for this analysis that included all diagnoses without limitation to the spine.

The 400 working diagnoses gave rise to 395 (98.75%) conditions that were classified as primarily mechanical. The remaining 5 (1.25%) were diagnosed as either one of benign positional paroxysmal vertigo (BPPV), hypertension headache, lacrimal gland blockage, fibromyalgia or maxillary congestive sinusitis.

DISCUSSION

The finding that the greater majority of working diagnoses applied to spinal conditions in the RMIT University chiropractic teaching clinics fail to include the term *subluxation*, *vertebral subluxation*, or *vertebral subluxation complex* appears to signal a significant disconnection between the foundation clinical skills learnt in the classroom and the applied clinical thinking undertaken in the teaching clinic environment.

The RMIT chiropractic curriculum specifically addresses the VSC and provides a range of understandings and guidelines for the students. This content includes the published work of one of the authors (PE)⁷ in addition to knowledgeable use of the term by other staff in their learning materials.

Another of the authors (BD) leads students through a holistic learning journey that specifically addresses issues of wellness and quality of life in courses relating to physical diagnosis. These courses are designed to assist the student learn that chiropractic is far beyond a simple paradigm of care for mechanical, musculoskeletal pain.

The finding that the patient encounter within the chiropractic teaching clinics of RMIT University is driven almost entirely by a focus on the singular, biomechanical component of the patient's presentation suggests that there has been a significant breakdown in the transference of the knowledge and skill base learned in the classroom and applied in the clinic.

The chiropractic program is meant to help students understand a range of patient health issues beyond the simplistic kinematic component of the vertebral subluxation complex. It is within this context that the diagnostic term *biomechanical joint dysfunction* is reductionistic; it reduces a potentially complex package of spinal dysfunction and associated quality-of-life or wellness issues to a singular, putative biomechanical entity.

It is the *ethos* of the teaching clinics of the Division of Chiropractic, overseen by the lead author (AR), that during the clinical encounter students will explore whole-of-health

THE FLAW OF DIAGNOSTIC REDUCTIONISM

REPKA • EBRALL • DRAPER

issues with their patients. Through a rational clinical decision-making process an attempt is made to relate these into a management plan that, for all intents and purposes, represents a holistic approach to patient wellbeing.

The finding that few ($n=5$, 1.25%) diagnoses were reported beyond the mechanical component of the subluxation is of both interest and concern. It is known^{14,15} that every mix of patients will reasonably include a variety of conditions, and it must be expected that a cohort of 400 patients presenting to the chiropractic teaching clinics would reasonably include a variety of non-mechanical conditions. The proportion is variable and reflective of today's informed society, where patients may largely self-select medical conditions for presentation to their general practitioners and mechanical conditions for presentation to their chiropractors. The finding that this number is just 1.25% of this sample is surprising when previous studies suggest it is overtly more like 5% and covertly perhaps much higher.

The essential premise of chiropractic is that many patients with mechanical presentations will also exhibit signs and symptoms of non-mechanical presentations. Within the RMIT chiropractic curriculum this truism is seen as representing a holistic approach to patient care with the pedagogic position being the training of students to adequately and capably explore this. From their first year of study students learn to utilise a model of the subluxation complex (Figure 1) that allows for an ordered collection of evidence to validate use of the term in the clinical environment. The students in the cohort reported in this study commenced their chiropractic education in either 2003 or 2004 and were exposed to these learning approaches.

The collective, pragmatic view of the authors is that these students should be capable of determining when it is appropriate to develop a working diagnosis inclusive of the term *VSC* and competent at identifying the evidence and structuring it into a descriptive diagnosis. The finding that this is not being appropriately documented is a cause for reflection.

Essential Premise

The essential premise underlying this paper is that the term *VSC* is a valid diagnostic entity when documented with appropriate clinical evidence. The collective intent of the authors' learning materials is to help the student think clinically and lead them through the categories of evidence identified in Figure 1. The outcome should be a consistent and genuinely holistic approach to each individual patient in the teaching clinics.

It would appear self-evident that this method is suited to the inclusion of wellness encounters within chiropractic practice. It is appreciated that these encounters would reasonably sit alongside pain-driven presentations, but the underlying point is that all such encounters have the potential to provide clinical evidence supportive of a holistic approach to patient assessment and management.

The clinical dimensions of the *VSC* as given in Figure 1 allow the clinician to identify, document, then manage a broad range of patient presentations from simple mechanical pain to complex changes in cognitive function and to gather, order and describe the found clinical evidence.

Within this model, the dimension of kinematic change is but one of 5 clinical dimensions for which evidence may be found. The use of one of the more common diagnostic terms reported in this study, *biomechanical joint dysfunction*, represents a reductionistic form of clinical thinking and would appear to exclude any engagement with the patient beyond intervention to reduce pain and increase movement.

The authors argue that the use of such restrictive diagnostic terms is a fad that has had its day in chiropractic practice. The meaninglessness of the term is emphasised when it is realised that a fracture through the tibial plateau, perhaps sustained in a skiing accident, equally results in biomechanical joint dysfunction albeit of a nature totally unsuited to chiropractic management.

Diagnostic Reductionism

The term may be thought to equate to *kinematic change* as used in the contemporary model of the *VSC* (Figure 1). Regardless of any perceived interchangeability between *biomechanical joint dysfunction* and *kinematic change*, either is but one of five clinical dimensions. Reliance on kinematic change alone as a diagnostic term represents a simplistic and incomplete approach to patient assessment, notwithstanding the value of appreciating the relationship between perceived kinematic change and the proposed nature of the therapeutic intervention.⁷

Therefore the use of the term *biomechanical joint dysfunction* to describe a functional spinal lesion is meaningless in that it represents a specific end point (mechanical problem creates mechanical pain), which is the epitome of a reductionist approach to clinical presentations. This type of reductionism precludes consideration of the multiplicity of associated dysfunctions that have, over time, come to be empirically associated with the *VSC*.

There is also the paradox that *biomechanical joint dysfunction* is by definition a biomechanical diagnosis for what some argue is more a neurophysiological condition of the spine than a biomechanical one.¹⁶⁻¹⁸ It follows that the chiropractic adjustment, as a therapeutic intervention, provides more a neurophysiological input about the spine than a biomechanical correction, once poorly thought of as putting a bone back into place. The spinal adjustment can be seen as a biomechanical means of creating a neurophysiological response within and about the spinal column.

An argument may, however, be mounted that the term *biomechanical joint dysfunction* is acceptable and understood within the broader context of the language of medicine, while the term *VSC* is not understood by anyone other than most chiropractors. Budgell *et al.*¹⁹ have provided a contextual correction to this argument by describing the words used by chiropractors as being a *dialect* of a universal biomedical language. In this sense there is no longer a parallel language of medicine; it too is seen as simply a dialect of our shared biomedical language. The onus thus returns to the clinician to appreciate and understand the different dialects within a common language.¹⁹

The data reported here also demonstrate that in 98.75% of presentations there was little or no exploration of non-mechanical health changes and therefore no management plan that addressed these. It is within this educational

environment that the CCEA is being consulted by the Australian Government regarding an expansion of a role for addressing mental health issues within the chiropractic curriculum.²⁰

The position of the authors is that if chiropractic interns fail to consider conditions beyond mechanical joint pain, then a more extensive form of management for the patient will never be possible. If this conclusion is true, it renders a large component of what is taught in the pre-clinic years irrelevant to the clinical learning experience of the senior years. It also renders useless any intent of the CAA, CCEA or government to formalise any role for chiropractors in the fields of mental health and wellbeing.

Why this situation?

The authors have looked for reasons why these data are found within the University's chiropractic teaching clinics. While we think the answer is multifactorial, it may include the emphasis on quantitative educational measurement. We contend that the patient management focus will be compromised for as long as the student is mindful of quantitative determinants that are used to assess their performance.

The question of how to optimise the clinical experience in educational institutions is an area that rightfully continues to undergo investigation. Feedback from students undertaking clinical education programs provides an insight into the factors that they feel detract from the clinical experience. Shapiro *et al.*²¹ surveyed medical undergraduates who had completed an elective subject that required students to reflect on their experiences in clinical placement. They concluded that "when students are given the time and guidance to attend to the *process* as well as the content of medicine, they report becoming more empathetic, compassionate and caring, more self aware, and *better able to learn from their clinical experience*" (our emphasis).

It follows that removing the limitations, especially the limitation of time that is associated with the clinical experience, should allow greater reflection by the student on their clinical behaviours. This simple change in itself would assist in creating an environment in which students are better able to analyse their behaviour, and hopefully become better practitioners.

Forrester-Jones and Hatzidimitriadou²² analysed the impact of clinical education on social workers and identified the following barriers that students felt hindered them from using newly gained knowledge in the clinical environment:

- Lack of time to read and reflect (48%)
- Insufficient resources for improving practice (40%)
- Heavy workloads (36%)
- Poor access to reading material in the workplace (36%)

A lack of time, due to expectations and workloads, for example as with quantitative assessment, detracted from the learning experience. The issue with time within quantitative assessment arises from the extensive and often complex need of the student to document task elements and then have them signed off by a clinician. It is becoming clear

that these behaviours may be a waste of time and may not contribute to student attainment of professional knowledge and capability.

The argument of this paper is that measurement of the *number* of tasks a student is required to complete successfully within the clinical setting is a weak, if not incompetent, measure of student capability. We also argue that this process of quantification compromises qualitative clinical outcomes associated with holistic patient management.

The Need to Shift to Capabilities

The arguments for the authors' points of view centre around improving clinical assessment and aligning it with contemporary theories of learning. We see it as shallow learning to use a process that quantifies performance expectations, and recommend a movement beyond performing an outcomes process that emphasises attainment against quotas or 'numbers'.

For example, we argue that quotas direct the student focus towards the *number* of patients they are required to manage over and above the *manner* in which they manage them. The expectation of the former reduces the effectiveness of the latter, which in turn represents a lack of understanding of educational theory.

As demonstrated in a current paper²³ by one of the authors (PE), quantification is a low-level measurement of declarative and procedural knowledge, probably appropriate for assessing the attainment of competencies, but falling far short of any valid measurement of capability.

A second premise of this paper is that assessment within chiropractic clinical education must evolve from competencies to capabilities if the doctor of the future is to have any hope of retaining a role in the dramatically evolving health care system. Further, it is quite clear that competencies struggle to allow for the incorporation of wellness activities in clinical practice, and worse, work against the holistic attribute long associated with chiropractic practice.²⁴⁻²⁶

The effect of the quantitative component of the clinical experience can be seen as detracting from student time that could be better spent on quality development. There is a flow-on effect that discourages students from integrating their knowledge and skill base into working clinical models as effectively as they could, with the result that many of the skills and knowledge they have acquired in the pre-clinical program do not get exercised in the clinical environment.

It may be suggested that both quantitative and qualitative assessment occur concurrently in the clinical environment, and to a certain extent this may be true. The mere fact that quantitative assessment is an accreditation requirement, however, compromises qualitative outcomes; the attention of the student is directed away from patient management and towards recording their attainment as numbers without clinical meaning.

We also argue that the continued assessment of quantitative outcomes will restrict the student to the lower levels of knowledge development (declarative and procedural).²³ At this level the supposedly successful student is more concerned with tasks such as whether they can complete

THE FLAW OF DIAGNOSTIC REDUCTIONISM REPKA • EBRALL • DRAPER

a case history or perform a verbal case presentation. The dimensions that can't be quantified and are thus not measured are the capabilities such as, *What elements of the case history should be completed at this time, and why is a verbal case presentation needed in this patient?* In the context of medical training, this is a question that perplexed the medical educator Cate in a recent short report.²⁷ Clearly, the need to demonstrate an integrated level of understanding and capability in regards to patient management has been separated from the process of completing the component parts.

To this end the current process may be considered negatively synergistic in that the sum of all of the parts is not equalling the expected whole. It is our view that asking students to separately complete presentation of component parts of the clinical process (verbal case presentation on one patient on one day, a case history on another patient on another day) minimises the effect of the desired outcome of quality patient management.

The authors argue that optimum patient outcomes and therefore student outcomes are facilitated when the student has the ability to focus on all parts of the management scenario and is able to consider these in reflection of one to another. From this the student should be able to develop a comprehensive management plan that incorporates holistic attributes. We see this as positive synergism where the sum of total parts exceeds the expected outcomes, in this case the quality of patient care and the depth of student learning.

A model for addressing this situation would need to incorporate in at least some capacity a model of assessment that focuses on the qualitative performance of the student in the clinical setting. The implementation of any new model of assessment will need to be observed and reported to determine whether patient management improves beyond addressing the simplistic, limiting kinematic component of the subluxation complex.

For this to be successful, however, the quantitative assessment needs to be either replaced completely, or it needs to occur earlier within the clinic experience, allowing a period of time for assessment more by qualitative means.

Several further investigations have been prompted by the findings reported in this paper. The intent is to identify the source of the disconnection and perhaps ways it may be remedied. The authors are developing an instrument to survey all registered chiropractors (about 20) who provide either ongoing or sessional clinical supervision in the RMIT chiropractic teaching clinics for the purpose of generating a description of their private practice of chiropractic and to explore their perceptions of diagnostic terminology relevant to spinal presentations.

A second instrument is being developed to survey first-year Master students as they commence their clinic rotations to generate a description of their perceived intent as to the spinal diagnostic labels they may elect to offer for discussion with their supervising clinician. The instrument used to generate the data reported in this paper will also be administered to these students in March 2008 to allow a comparison between the incoming cohort and the cohort of the current report.

CONCLUSION

Despite the best intentions and efforts of experienced chiropractic educators in the pre-clinical (class-room) environment to have students demonstrate competence and capability with a contemporary understanding of the vertebral subluxation complex and how it may be best utilised within a descriptive diagnosis, the term was used in only 13 out of a potential 355 occasions where it may have been an appropriate diagnostic term for a spine-related clinical presentation. Further, patient diagnosis and management interventions within the RMIT teaching clinics rarely seem to extend beyond management of the kinematic component of the vertebral subluxation complex.

The authors view this as a significant disconnection between pre-clinical and applied clinical learning. We see a very real and pressing issue for chiropractic educators within the University that may potentially compromise both student and patient outcomes. A possible explanation may be the emphasis on quantitative assessment. In this paper the authors have proposed that a model be developed to explore, then address, the issue. We argue for the development and implementation of a qualitative method of assessment where student learning outcomes are assessed against an integrated, holistic approach to patient management.

The continued embrace of the reductionistic diagnostic thinking embodied in use of the term *biomechanical joint dysfunction* as a diagnostic label for putative intersegmental spinal dysfunction would appear to be anathema to the philosophy of chiropractic and in direct conflict with any intent for the profession to stake a claim in wellness care.

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