

Accepted Manuscript

The Osteopathic Clinical Practice Assessment – a pilot study to develop a new workplace-based assessment tool

Brett Vaughan, Lecturer, Keri Moore

PII: S1746-0689(15)00048-6

DOI: [10.1016/j.ijosm.2015.05.002](https://doi.org/10.1016/j.ijosm.2015.05.002)

Reference: IJOSM 373

To appear in: *International Journal of Osteopathic Medicine*

Received Date: 7 January 2015

Revised Date: 10 May 2015

Accepted Date: 11 May 2015

Please cite this article as: Vaughan B, Moore K, The Osteopathic Clinical Practice Assessment – a pilot study to develop a new workplace-based assessment tool, *International Journal of Osteopathic Medicine* (2015), doi: 10.1016/j.ijosm.2015.05.002.

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.



The Osteopathic Clinical Practice Assessment – a pilot study to develop a new workplace-based assessment tool.

Brett Vaughan^{1,2,3}
Keri Moore^{1,3}

¹ Centre for Chronic Disease Prevention & Management, College of Health & Biomedicine, Victoria University, Melbourne, Australia

² Institute of Sport, Exercise and Active Living, Victoria University, Melbourne, Australia

³ School of Health & Human Sciences, Southern Cross University, Lismore, Australia

Corresponding Author

Brett Vaughan
Lecturer, Osteopathy
Discipline of Osteopathic Medicine
College of Health and Biomedicine
Victoria University
PO Box 14428
Melbourne VIC 8001
Australia
P. 61 3 9919 1210
F. 61 3 9919 1030
E. brett.vaughan@vu.edu.au

The Osteopathic Clinical Practice Assessment – a pilot study to develop a new workplace-based assessment tool.

ACCEPTED MANUSCRIPT

ABSTRACT**Background**

It is widely recognised that multiple forms of assessment are required in order to make decisions about learner competency and fitness-to-practice. One assessment tool that is gaining popularity in the Australian allied health professions is the global clinical competency assessment. These tools are designed to assess learner performance across a range of areas required for professional practice, with the assessment typically performed at the end of a 'block' clinical placement. There is no literature on their use in osteopathy longitudinal placements.

Objective

To explore the applicability of an adaptation of the Assessment of Physiotherapy Practice in an osteopathic context. The study presents pilot data and discussion about the adaptation of a workplace-based assessment tool – the Osteopathic Clinical Practice Assessment (OCPA).

Design

Evaluation of the OCPA using data from multiple administrations.

Setting

Osteopathic on-campus, student-led teaching clinic at one Australian university.

Methods

Clinical Educators completed the OCPA for learners during weeks 5 and 12 of a 12 week semester. Descriptive statistics were generated for the data. The Wilcoxon signed rank test was used to investigate differences between the week 5 and 12 ratings. Cronbach's alpha was used to assess the internal consistency and Spearman's coefficient used to assess the relationship between the total OCPA score and global rating.

Participants

The OCPA was completed by 12 Clinical Educators assessing 31 learners in year 4 of the program.

Results

Learners were rated, on average, at the 'expected level' at each of the two time points. This was consistent for both the OCPA items and the global rating contained on the OCPA. Cronbach's alpha was 0.822 and Spearman's coefficient was 0.59 suggesting a 'large' relationship between the total OCPA score and the global rating.

Conclusions

There is a clear need for the OCPA to be used in conjunction with other assessment tools in order to make learner progress and fitness-to-practice decisions. Data suggest if learners are

assessed at two or more different time points (across a longitudinal placement) changes need to be considered in the rating scale used on the OCPA in order to more clearly demonstrate learner progression. The OCPA could be used as a formative assessment tool in osteopathy with an adjustment to the current rating scale. In its current format caution should be applied if it is to be used as a summative tool as we do not have data supporting its use for this purpose. At present we cannot make any further arguments about the ability of the OCPA results to be *extrapolated* and make reliable and defensible *decisions* as there are no data correlating it with other performance assessments nor data supporting its reliability. This will be the subject of future research.

INTRODUCTION

A central component to any health professional education program of study is the work-based or clinical education curriculum. The assumption is that clinical education provides learners with opportunities to experience clinical life through participation in the workplace learning (WPL) setting, under supervision of a qualified health professional. It is expected that such an experience will promote knowledge and skill development,^{1, 2} and develop their sense of professional identity and autonomy.

Typically, in any health discipline the desired set of competencies come under the broader terms of: knowledge, skills, problem-solving skills and attitudes or professionalism.³

Underneath those umbrella terms clinical education is chiefly concerned with developing the learner's competencies in clinical reasoning, problem-solving and critical appraisal skills, communication and professionalism.⁴⁻⁶ Towards the close of the curriculum, assessing competence means assessing the learners' management of integrated *whole tasks* of increasing complexity (i.e. patient care beyond performance of a single task).^{3, 7}

In WPL, the assessment of the learner's development of clinical competence takes many forms with each assessment tool used having a different purpose. Ideally, each tool provides a different level of information about a learners' competency in different contexts and situations. Through the use of multiple tools academic and clinical faculty can develop a picture of the clinical competence of a learner. When the results from these multiple tools are combined or, looked at through a programmatic lens, the learner will have ideally been assessed across the breadth of skills, knowledge and attributes required of a graduate health professional.

Numerous examples of assessment tools that contribute to this developing picture of learner competence exist within the literature.

In Australian allied health there has been a move toward the use of global rating tools which record learners' performance in clinic, *over a period of time*, as opposed to assessment of performance of the application of clinical skills knowledge and abilities *at the point of patient care*. The use of such assessment tools has been driven by the need to ensure that students are assessed on a range of criteria related to clinical performance, and that the same assessment tool can be used regardless of the clinical context. Examples of these global rating tools are the Assessment of Physiotherapy Practice (APP),⁸⁻¹⁰ occupational therapy's Learner Practice Evaluation Form – Revised,¹¹ speech therapy's COMPASS,^{12, 13} the Radiation Therapy Learner Clinical Assessment,^{14, 15} and a tool to assess nursing competencies.¹⁶ These tools are typically used at the end of a block clinical placement as a summative assessment. In essence the above named tools explore learner's clinical habits and methodologies.

As with any assessment tool, making an argument for its validity is paramount. Kane's approach^{17, 18} to structuring a validity argument is helpful here in that it outlines four links in an inferential chain from administration of an assessment tool to the final decisions therein. This chain is: *scoring, generalization, extrapolations* through to *decision*. Further, it is important to recognize that the tool itself is not valid, however evidence can be provided to support the validity of the score derived from the assessment tool. The global assessment tools listed previously are designed to contribute to the evidence used to make decisions about competency and fitness-to-practice; they are not the sole determinant. The score on the global

assessment tool represents performance over a period of time in a WPL setting, thus the score represents a broad view of a learner's daily habits and methodologies. To support the notion of *generalization*, global assessment tools would need to be completed by several examiners per learner, and completed across different clinical contexts. For example, a physiotherapy student would be required to be assessed in the musculoskeletal, neurological and cardiothoracic practice contexts prior to graduation. The process to design the global assessment tool ensures that it has face and content validity, and the users of the tool have been informed about its implementation and execution thereby supporting the *generalization* notion. In order to *extrapolate* the results of the multiple global assessment tools, evidence from other sources is required. Educationalists must ask, do the results of the global assessment tool correlate with the results of other performance assessments? Only then is it possible to extrapolate the results of these performance assessments and subsequently make a *decision* about the learners' fitness-to-practice.

A major challenge in the implementation of any workplace-based assessment is the reliability of the ratings. Using theoretical frameworks from social perception research, Govaerts et al.¹⁹ explored the content of schemas and their use by raters during assessment of learning performance in a single patient encounter. These authors identified that a 'judgment' by a rater could involve interactions between a variety of performance theories, task-specific performance requirements and/or person (rater) schemas. Differences between novice and expert raters in their approach to task-specific performance schemas were also observed: that is, the dimensions of the task being assessed were considered variously depending on the learner. Among other implications, the authors posited that raters will interpret the rating scale differently – the utility of a particular tool may be compromised when the rating scales used does not mirror the raters' own performance theories. This means there is no 'consistency'.

When preparing for the administration of any assessment, among other issues, it is important to be explicit with the instructions to rater's (in our case the clinical supervisors) and learners regarding how often this tool is administered and if the rater is instructed to rate a learner's work in either of the following ways:

- a) according to where the learners is in their development relative to the *skills required of a graduate*, or;
- b) according to their perception of where the learner is performing *according to a specific time point in a program of study*.

If the educators and learners are instructed that a) is desirable than several administrations of the tool over any set period of time will typically see the learners' scores progress *up the scale*. However, if it is instructed that option b) is desirable a learner may score a 'satisfactory' at every administration of the tool over a set time period and that would be regarded as acceptable progress. As an example, the 20 items in the APP⁸⁻¹⁰ are designed so that raters can judge the learner at the end of a block placement on each item against the minimum target attributes required to achieve *beginner's (entry-level) standard and register to practice*. In the present study a global rating tool was used formatively to provide learners with progressive feedback throughout a 12-week longitudinal placement.

The object of the present paper is to report on an adaptation of the APP for the osteopathic context: the Osteopathic Clinical Practice Assessment (OCPA). Further, the present paper

also discusses a number of considerations including its use as a formative assessment, the rating scale, our learnings from the pilot study and plans for future use, together with how these issues intersect with current theories about assessment in the health professions.

ACCEPTED MANUSCRIPT

METHOD

This study was approved by the VU Human Research Ethics Committee as part of a larger investigation into the assessment practices in the osteopathy program.

Participants

Data were collected on the completed OCPA of learners enrolled in the Clinical Practicum 5 subject in the Master of Health Science (Osteopathy) program. The learners were in the 4th year of their program of study and were managing patients in the VU Osteopathy Clinic: a student-led on-campus clinic, under the supervision of qualified and registered osteopaths ('Clinical Educators'). The global assessment tool was completed by the Clinical Educators and the learner was required to sign the form to indicate that they had discussed the results with the Clinical Educators. The 4th year of the program was chosen to pilot the OCPA for logistical reasons, as there were a smaller number of students compared to the final year level (5th year).

Measure

The OCPA tool was developed by modifying the Assessment of Physiotherapy Practice (APP)⁸⁻¹⁰ tool. The APP was selected as it has been demonstrated to be both valid and reliable, and contains items that reflect aspects of osteopathic practice. The APP was modified to reflect the environment and expectations of pre-registration osteopathy learners. The items in the OCPA reflect the osteopathic examination, palpation, osteopathic reasoning and treatment planning

approaches. The scoring and interpretation of the OCPA items and global rating is at Table 1 and the tool itself is found at Supplementary File 1.

Table 1. OCPA item and global rating scoring and interpretation.

OCPA items
<p><i>Score of 0</i> The student cannot demonstrate any desirable behaviours for the item. A score of zero would be a matter of immediate importance and warrant considered feedback (both verbal and written) to provide the student with avenues to achieve competence for the item.</p> <p><i>Score of 1</i> Competence in the assessed item is not yet adequate. If a score of 1 is awarded for an item, feedback on specific behaviours that require development must be provided to the student, along with strategies to achieve this.</p> <p><i>Score of 2 (passing standard)</i> The student has achieved a level of competency that would be expected of a student. A score of 2 indicates that for this item, the student has met this standard regardless of their experience or place in the course.</p> <p><i>Score of 3</i> The student demonstrates most performance indicators to above an expected level and reflects that the student is 'comfortable' with that aspect of their performance.</p> <p><i>Score of 4</i> The student demonstrates most performance indicators to an excellent standard. It reflects that the student is exhibiting a level of excellence with respect to a given item.</p>
Global Rating Scale
<p><i>Below expected level</i> This rating would be used when in the in the educator's opinion, the student's performance overall was not adequate.</p> <p><i>Borderline level</i> When reflecting on the student's performance overall in the unit, a borderline student may be good at some things and not so good at others. However typically they would be able to manage a variety of patients with relatively uncomplicated needs, major goals established and treatment is completed safely and effectively within a reasonable time frame. While achieving this, the student is aware of their limitations and where to seek assistance.</p> <p><i>Expected level</i> The student at this level will be able to manage a range of patients in a safe and effective</p>

manner. Students at this level will also be able to articulate how the patient's psychosocial situation is impacting on their complaint, and discuss evidence-informed and practical management strategies for the patient.

Above expected level

Students at this level will be able to manage a variety of patients, including complex patients, and incorporate an evidence-informed approach to their examination, treatment and management of the patient. The student would be capable of independent practice under limited supervision.

The comparison of the APP and OCPA items is presented in Table 2. Three Clinical Educators and one academic staff member from the VU programme reviewed the OCPA for comprehension and relevance.

Table 2. Comparison of items in the Assessment of Physiotherapy Practice and the Osteopathic Clinical Practice Assessment.

Assessment of Physiotherapy Practice	Osteopathic Clinical Practice Assessment
1. Demonstrates an understanding of patient/client rights and consent	1. Demonstrates an understanding of patient rights and informed consent
2. Demonstrates commitment to learning	2. Demonstrates a commitment to learning through clinic tutorials and individual patient research
3. Demonstrates ethical, legal & culturally sensitive practice	3. Demonstrates ethical, legal and culturally sensitive practice
4. Demonstrates teamwork	4. Demonstrates teamwork and engages in peer review
5. Communicates effectively and appropriately - Verbal/non-verbal	5. Communicates effectively and appropriately with patients, clinical educators, other health professionals and peers
6. Demonstrates clear and accurate documentation	6. Consistently presents clear and accurate clinical histories
7. Conducts an appropriate patient/client interview	7. Conducts an appropriate patient clinical history interview
8. Selects and measures relevant health indicators and outcomes	8. Identifies and prioritises patient complaints
9. Performs appropriate physical assessment procedures	9. Selects and measures relevant health indicators and outcomes
10. Appropriately interprets assessment findings	10. Selects and performs appropriate clinical, orthopaedic, neurological and osteopathic examinations
11. Identifies and prioritises patient's/client's problems	11. Appropriately interprets examination findings
12. Sets realistic short and long term goals with the patient/client	12. Sets short and long term management goals in conjunction with patients and clinical educators
13. Selects appropriate intervention in collaboration with patient/client	13. Demonstrates an understanding of the short and long term prognosis of a variety of common musculoskeletal complaints

14. Performs interventions appropriately	14. Performs osteopathic techniques safely and appropriately
15. Is an effective educator	15. Monitors and reviews the effect and progress of their treatments
16. Monitors the effect of intervention	16. Progresses treatment and management as appropriate
17. Progresses intervention appropriately	17. Effectively educates patients about their condition and management
18. Undertakes discharge planning	18. Demonstrates basic application of evidence-informed practice in the care of their patients
19. Applies evidence based practice in patient care	19. Incorporates osteopathic principles into the treatment and management
20. Identifies adverse events/near misses and minimises risk associated with assessment and interventions	20. Identifies red and yellow flags ¹ within the clinical history
	21. Identifies and manages adverse events
	22. Demonstrates an awareness of the VU Osteopathy Clinic policies and clinical practice guidelines

Each Clinical Educator (rater) was provided with a manual containing a description of the OCPA as well as a rubric to assist with the completion of the tool. The rubric was designed to allow the rater's to assess the learner against an expected level of performance for *the stage of the program*. Rater's were asked to rate the student on each OCPA item and also provide a global rating. The rater was not required to add the ratings from each OCPA item together to derive the global rating – the global rating was the raters' overall impression of the learner. Learners were provided with a copy of the OCPA at the start of the semester. Clinical Educators completed the OCPA for each learner in semester 1, 2014, during at least, week 5 and again at week 12, the final week of the semester. Two administrations were used in order to provide the learner with feedback about their performance and evaluate the feasibility of the OCPA for this purpose. At week 5, the learner has only been managing patients under supervision for 5 weeks having seen approximately 15 patients over a period of approximately 25 hours. By week 12, the learner will have managed approximately 30-35 patients under

¹ Yellow flags in the context of this assessment generically refers to a range of psychosocial factors including those sometimes described by other flag colours including blue, black and orange.

supervision over 60 hours. Further detail about the learners can be found in the commentary by Vaughan et al.²⁰

Data analysis

Data were entered into SPSS for Mac Version 21 (IBM Corp, USA) for analysis. Descriptive statistics were generated for the OCPA items, total and global score. As the data were not normally distributed, Spearman's rho (ρ) was used to investigate the relationship between the total OCPA score and the global rating. The correlation statistic was interpreted according to Hopkins:²¹ <0.10 (trivial); 0.10-0.30 (small); 0.30-0.50 (moderate); 0.50-0.70 (large); 0.70-0.90 (very large); 0.90-1.0 (perfect). The Wilcoxon signed rank test was used to investigate if there were differences between the week 5 and week 12 ratings for each OCPA item with alpha set at $p < 0.05$. Effect sizes were interpreted as small (0.2), medium (0.5), large (0.8), very large (1.2).³⁹ Cronbach's alpha was also used to examine the internal consistency of the OCPA items.

RESULTS

Data were available from 31 (73.3%) of the forty-two enrolled learners assessed by 12 clinician educators. The OCPA assessment sheets from the remaining 11 learners were not available for analysis as they had been handed back to the respective learner. Learners received between 1 and 3 assessments for the semester, and the clinician educators completed between 1 and 10 assessments each. Descriptive statistics for the OCPA are presented in Table 2.

Table 3. Descriptive statistics for the OCPA.

	Median	Min	Max	Mean	Std. Dev.
1 Demonstrates an understanding of patient rights and informed consent	3	2	4	3.10	0.357
2 Demonstrates ethical, legal and culturally sensitive practice	3	0	4	3.00	0.530
3 Demonstrates a commitment to learning through clinic tutorials and individual patient research	3	1	4	3.05	0.633
4 Demonstrates teamwork and engages in peer review	3	0	4	2.90	0.742
5 Communicates effectively and appropriately with patients, clinical educators, other health professionals and peers	3	2	4	3.14	0.634
6 Consistently presents clear and accurate clinical histories	3	2	4	2.98	0.541
7 Conducts an appropriate patient clinical history interview	3	1	4	3.05	0.600
8 Identifies and prioritises patient complaints	3	2	4	3.05	0.391

9 Selects and measures relevant health indicators and outcomes	3	0	4	2.98	0.572
10 Selects and performs appropriate clinical, orthopaedic, neurological and osteopathic examinations	3	2	4	3.08	0.501
11 Appropriately interprets examination findings	3	2	4	3.12	0.560
12 Sets short and long term management goals in conjunction with patients and clinical educators	3	2	4	3.07	0.487
13 Demonstrates an understanding of the short and long term prognosis of a variety of common musculoskeletal complaints	3	2	4	3.03	0.454
14 Performs osteopathic techniques safely and appropriately	3	2	4	3.22	0.457
15 Monitors and reviews the effect and progress of their treatments	3	2	4	3.14	0.472
16 Progresses treatment and management as appropriate	3	3	4	3.15	0.363
17 Effectively educates patients about their condition and management	3	1	4	3.08	0.535
18 Demonstrates basic application of evidence-informed practice in the care of their patients	3	0	4	3.03	0.490
19 Incorporates osteopathic principles into the treatment and management	3	0	4	2.95	0.544
20 Identifies red and yellow flags within the clinical history	3	0	4	2.85	0.827
21 Identifies and manages adverse events	3	0	4	1.78	1.554
22 Demonstrates an awareness of the VU Osteopathy Clinic policies and clinical practice guidelines	3	0	4	2.78	0.911
Total		43	81	65.29	6.589

The correlation between the global rating and the total score for the OCPA was $\rho = 0.59$ suggesting a 'large' relationship. ρ^2 was 0.39 suggesting a shared variance between the global rating score and total OCPA score of approximately 40%. Internal consistency of the OCPA was 0.822, with the alpha score improving if items 21 (Identifies and manages adverse events) and 22 (Demonstrates an awareness of the VU Osteopathy Clinic policies and clinical practice guidelines) were removed from the analysis, suggesting they may not be related to the other OCPA items. The Wilcoxon test was used to explore any differences between the week 5 and week 12 results. The only significant differences noted were for items 4 ($p=0.035$, $d=0.50$) and 22 ($p = 0.033$, $d=0.56$).

DISCUSSION

The purpose of this pilot investigation was to introduce the notion of the OCPA tool as a global assessment of osteopathic learner performance in the on-campus, student-led teaching clinic. The OCPA has been mooted for inclusion in the suite of assessment tools used to make learner progress and competency decisions. As a formative assessment and feedback tool it was expected the OCPA would aid learner's learning and provide a clear record of their progress at regular intervals.²² At this time of administration the year 4 learners were in their first semester of clinical practicum - having only recently entered the clinical environment in a 'treating practitioner' capacity thus the feedback at this stage would be valuable.

At each interval in time, the median score for each of the OCPA items and global rating was a 3 or 'expected level'. This result suggests that the learners were at the level expected of a year 4 learner at *both* weeks 5 and 12 of semester 1. The mean values for each item, however, are more informative. Those items with a mean below 3 related to consultation skills and clinical reasoning (Item 9, 19, 20 & 21) as well as awareness of the clinical environment and skills in succinct presentations (Items 4, 6 & 22). The latter group of items in particular, provides the academic faculty with a list of issues that can be improved or reinforced within the classroom as well as during WPL. Conversely, it is only by participating in the various activities *within* WPL that we expect to see the learner begin to hone their consultation skills and clinical reasoning skills.

There were significant differences between the week 5 and week 12 data for this learner cohort for items 4 and 22 on the OCPA. For item 4 *Demonstrates teamwork and engages in peer review*, at week 5 the students had only been in a direct patient care role for the 5 weeks and

are unlikely to have participated in either peer review or teamwork situations. As they progress towards week 12, participation in these situations is more likely. For item 22 *Demonstrates an awareness of the VU Osteopathy Clinic policies and clinical practice guidelines* it is likely this difference was due to the fact that these items were marked as 'not observed' in week 5 and given a mark in week 12. This item relates to systems-based aspects of the clinical learning environment and at week 5, a learner may have not yet demonstrated an awareness of, or ability to manage, these systems issues.

We are generally satisfied from the above that the tool is useful for osteopathy and its inclusion in the institutions' assessment strategy could be supported. Our concerns though are the lack of difference between the vast majority of the OCPA items between administrations at weeks 5 and 12. The scores recorded only *suggest* that raters thought the learners typical performance had indeed improved. The learner was performing at the level expected in week 5 and performing at the expected level in week 12. Indeed learners work ought to improve over a period of time, and as such, they ought to demonstrate *the* expected level of performance at *any specific* time point. However, when the tool is used multiple times (as occurred in the present study), the current scoring options may not be an ideal way to record improving learner performance, and provide feedback.

It is important to recognise that the results we refer to here are not a reflection on the rater's judgement *per se* but rather their interpretation of the rating scale as described by previous educationalists.^{19, 23} It may be that irrespective of the rubric offered, each of our Clinical Educators had an inherently different interpretation of what 'expected' level would be for that stage of the program, however we cannot be sure this was the case. With the current OCPA, if the learner is demonstrating the expected level of skill for their *stage* of training, the numeric

representation of their ability on the OCPA will not change if they are continually performing at the expected level. This could be disheartening for the learner as they are not observing any progression on the rating scale, as well as providing a confusing numerical representation of a learners performance over time. A potential mechanism to solve this, and to continue to use the tool formatively, is to introduce time-point specific rubrics, that is, the rubric relates specifically to the expectations *at a point in time*, however this is an arduous undertaking and could be splitting hairs, so to speak.

Plans for future iterations and implications for practice

To solve this dilemma we plan to employ an alternative scale such as that suggested by Crossley et al.²³ In their investigation of workplace-based assessment tools, Crossley et al.²³ suggest that issues with reliability may be more related to the scale used than the rater. These authors question the validity of the behavioral scales conventionally used for rating learner's performance, and suggest that construct-aligned scales reduce assessor *disagreement* and increase assessor *discrimination*. In order to achieve this construct-aligned scaling it could be that the idea of 'entrustment'²⁴⁻²⁶ fits with the assessors ideas of learner competency. Entrustment is the idea that a supervisor 'trusts' the learner to be able to perform an activity as part of patient care (i.e. taking a clinical history from a patient, performing a shoulder examination). Over time, the complexity of the tasks the supervisor entrusts the learner with undertaking increases. Such a scale of increasing independence and entrustment has not previously been proposed in osteopathic education however it would appear entirely applicable for clinical competency assessments.

Crossley et al.²³ suggest that scales ought to be designed to align to the expertise of the rater and to the learner's developing ability - this would require the use of anchors linked to the construct of clinical independence. As such, the OCPA scale will be modified to reflect this increasing independence. See Table 4 for a comparison of the current scale with the proposed modifications.

Table 4. Current and proposed rating scale.

	1	2	3	4	5
Current scale	Below expected level	Borderline level	Expected level	Above expected level	
Proposed scale	Not able to practice independently. Requires high level of supervision.	Limited ability to practice independently.	Able to practice independently for non-complex cases. High level of supervision required for complex cases.	Able to practice independently with minimal supervision for complex cases.	Able to practice independently.

Learners should require decreasing levels of supervision as they move closer towards graduation. As the learner progresses towards graduation, their ratings on the OCPA should increase. This reflects a decrease in the amount of supervision required helping the learner to develop confidence and provides a progressive numerical representation of their improvement. Further, some learners may be able to demonstrate aspects of their practice at a level that is not commensurate with their current place in the teaching program. They may be well advanced in some skills early in the program (i.e. demonstrates clinical history taking skills of a graduate learner on first entering the teaching clinic). We need a scale that can capture this

and we need to be able to capture accurately learners skills and habits related to *whole tasks* of increasing complexity as they progress through the curriculum.^{7, 27} It is thought that the proposed change to the current rating scale will better reflect what happens in a student-led osteopathy teaching clinic in pre-registration teaching programs.

We have also previously highlighted the work of Kane^{17, 18} in order to develop a validity argument for the OCPA, and its place in the clinical competency assessments in the VU programme. Data from the present study contributes to this validity argument, particularly moving from *score* to *generalization*. The previously validated measure on which the OCPA is based – the APP - demonstrates content validity, and is based on the judgement of experienced Clinical Educators. We administered the OCPA to *score* learners to allow formative assessment and feedback thus we used it at the two time points. We contend that even though the scores did not represent it, learner performance improved over the 6 week period of each administration of the OCPA, allowing us to make the *generalization* about an individual learners' performance improving over that period. At present we cannot make any further arguments about the ability of the OCPA results to be *extrapolated* and make reliable and defensible *decisions* as there are no data correlating it with other performance assessments nor data supporting its reliability. This will be the subject of future research.

It is noteworthy that no learner failed the assessment at either time point, and very few learners demonstrated a level of performance that was below expectations for the OCPA items. Such a result is consistent with previous research with performance assessments, particularly the idea 'failure to fail'. This issue supports the need to use multiple forms of assessment to make decisions about learner progress and competency.

There are a number of limitations in this pilot study including the small sample size, and investigation of the OCPA in a single learner cohort at a single institution. These limitations restrict the generalisability of the results to other osteopathic teaching institutions. That said, other institutions are encouraged to explore the idea of using global assessment tools as part of their assessment strategy. The next paper will report on a larger sample across multiple osteopathic teaching institutions.

ACCEPTED MANUSCRIPT

CONCLUSION

This pilot study has introduced an adaptation of the APP, as a global competency assessment tool for osteopathy. We propose the Osteopathy Clinical Practice Assessment for use in a pre-registration osteopathy teaching program in an on-campus, student-led clinic. The tool appears to be able to provide the learner and program administrators with information about their skills across a range of expected learning objectives related to osteopathic practice. The OCPA has great potential to provide valuable information about learner competency above and beyond any single patient-care assessment. There is clear the potential for the OCPA to be used as part of any assessment programme to build defensible fitness-to-practice decisions about osteopathic learners. Further work is required to investigate how the proposed change to the rating scale works in longitudinal placements, along with evaluation of the criterion and predictive validity, and reliability. In addition, quality assurance work related to student and rater satisfaction, time to complete the OCPA, and the impact of the formative feedback from the tool on the learner also require further investigation.

REFERENCES

1. Fry H, Ketteridge S, Marshall S. *A handbook for teaching and learning in higher education: Enhancing academic practice*: Routledge; 2008.
2. Gingell J, Winch C. *Key concepts in the philosophy of education*: Routledge; 2002.
3. Schuwirth LW, Van der Vleuten CP. Programmatic assessment: From assessment of learning to assessment for learning. *Med Teach* 2011;**33**:478-85.
4. Higgs J, Glendinning M, Dunsford F, Panter J. Goals and components of clinical education in the allied health professions. *Proceedings of the 11th International Congress of the World Confederation for Physical Therapy, London*1991:305-7.
5. Higgs J, Edwards H. *Educating beginning practitioners: challenges for health professional education*: Elsevier Health Sciences; 1999.
6. Norcini JJ. *Workplace-based assessment in clinical training*: Association for the Study of Medical Education; 2007.
7. Dijkstra J, Van der Vleuten C, Schuwirth L. A new framework for designing programmes of assessment. *Adv Health Sci Educ Theory Pract* 2010;**15**:379-93.
8. Dalton M, Davidson M, Keating J. The Assessment of Physiotherapy Practice (APP) is a valid measure of professional competence of physiotherapy students: a cross-sectional study with Rasch analysis. *J Physiother* 2011;**57**:239-46.
9. Dalton M, Davidson M, Keating JL. The assessment of physiotherapy practice (APP) is a reliable measure of professional competence of physiotherapy students: a reliability study. *J Physiother* 2012;**58**:49-56.
10. Dalton M, Keating J, Davidson M. Development of the Assessment of Physiotherapy Practice (APP): A standardised and valid approach to assessment of clinical competence in physiotherapy. Australian Learning and Teaching Council (ALTC). 2009.

11. Allison H, Turpin MJ. Development of the student placement evaluation form: A tool for assessing student fieldwork performance. *Aust Occup Ther J* 2004;**51**:125-32.
12. McAllister S, Lincoln M, Ferguson A, McAllister L. Issues in developing valid assessments of speech pathology students' performance in the workplace. *Int J Lang Commun Disord* 2010;**45**:1-14.
13. McAllister S, Lincoln M, Ferguson A, McAllister L. A systematic program of research regarding the assessment of speech-language pathology competencies. *Int J Speech Lang Pathol* 2011;**13**:469-79.
14. Dempsey S, Giles E, Chiswell M, Wright C, Charlton N, Rowntree P, et al. Development and implementation of the Australian universities radiation therapy student clinical assessment form. *J Med Radiat Sci* 2012;**59**:13-25.
15. Giles E, Dempsey S, Chiswell M, Wright C, Bridge P, Charlton N. A survey to evaluate the implementation of a national clinical assessment form. *J Med Radiat Sci* 2012;**59**:77-84.
16. Crookes P, Brown R, Della P, Dignam D, Edwards H, McCutcheon H. The development of a pre-registration nursing competencies assessment tool for use across Australian universities. Office for Learning & Teaching, Australian Government. 2010.
17. Kane MT. *The Validity of Assessments of Professional Competence* 1992.
18. Schuwirth LW, van der Vleuten CP. Programmatic assessment and Kane's validity perspective. *Med Educ* 2012;**46**:38-48.
19. Govaerts M, Van de Wiel M, Schuwirth L, Van der Vleuten C, Muijtjens A. Workplace-based assessment: raters' performance theories and constructs. *Adv Health Sci Educ Theory Pract* 2013;**18**:375-96.
20. Vaughan B, MacFarlane C, Florentine P. Clinical education in the osteopathy program at Victoria University. *Int J Osteopath Med* 2014;**17**:199-205.

21. Hopkins WG. A new view of statistics. . 2000;
<http://www.sportsci.org/resource/stats/effectmag.html>. Accessed 6 February, 2013.
22. Alves de Lima A, Henquin R, Thierer J, Paulin J, Lamari S, Belcastro F, et al. A qualitative study of the impact on learning of the mini clinical evaluation exercise in postgraduate training. *Med Teach* 2005;**27**:46-52.
23. Crossley J, Johnson G, Booth J, Wade W. Good questions, good answers: construct alignment improves the performance of workplace-based assessment scales. *Med Educ* 2011;**45**:560-9.
24. ten Cate O. AM Last Page: What Entrustable Professional Activities Add to a Competency-Based Curriculum. *Acad Med* 2014;**89**:691.
25. ten Cate O. Nuts and bolts of entrustable professional activities. *J Grad Med Educ* 2013;**5**:157-8.
26. Shaughnessy AF, Sparks J, Cohen-Osher M, Goodell KH, Sawin GL, Gravel Jr J. Entrustable professional activities in family medicine. *J Grad Med Educ* 2013;**5**:112-8.
27. Van der Vleuten C, Schuwirth L, Driessen E, Dijkstra J, Tigelaar D, Baartman L, et al. A model for programmatic assessment fit for purpose. *Med Teach* 2012;**34**:205-14.

ETHICAL STATEMENT

This study was approved by the Victoria University Human Research Ethics Committee.

ACCEPTED MANUSCRIPT

STATEMENT OF COMPETING INTERESTS

Brett Vaughan is a member of the Editorial Board of the International Journal of Osteopathic Medicine but was not involved in review or editorial decisions regarding this manuscript.

ACCEPTED MANUSCRIPT



Osteopathic Clinical Practice Assessment
(Formative Assessment)

Student Name: _____

Date Completed: _____

Aspects or areas where the student is performing well:

Suggested areas of improvement for the student:

Clinical Educator Signature

Student Signature

Clinical Educator Name

Date

	Above expected level	Expected level	Borderline level	Below expected level	Not applicable
Professional Behaviour					
Demonstrates an understanding of patient rights and informed consent	4	3	2	1	N/A
Demonstrates ethical, legal and culturally sensitive practice	4	3	2	1	N/A
Demonstrates a commitment to learning through clinic tutorials and individual patient research	4	3	2	1	N/A
Demonstrates teamwork and engages in peer review	4	3	2	1	N/A
Communication					
Communicates effectively and appropriately with patients, clinical educators, other health professionals and peers	4	3	2	1	N/A
Consistently presents clear and accurate clinical histories	4	3	2	1	N/A
Assessment					
Conducts an appropriate patient clinical history interview	4	3	2	1	N/A
Identifies and prioritises patient complaints	4	3	2	1	N/A
Selects and measures relevant health indicators and outcomes	4	3	2	1	N/A
Selects and performs appropriate clinical, orthopaedic, neurological and osteopathic examinations	4	3	2	1	N/A
Analysis & Planning					
Appropriately interprets examination findings	4	3	2	1	N/A
Sets short and long term management goals in conjunction with patients and clinical educators	4	3	2	1	N/A
Demonstrates an understanding of the short and long term prognosis of a variety of common musculoskeletal complaints	4	3	2	1	N/A
Intervention					
Performs osteopathic techniques safely and appropriately	4	3	2	1	N/A
Monitors and reviews the effect and progress of their treatments	4	3	2	1	N/A
Progresses treatment and management as appropriate	4	3	2	1	N/A
Effectively educates patients about their condition and management	4	3	2	1	N/A
Practice Approach					
Demonstrates basic application of evidence-informed practice in the care of their patients	4	3	2	1	N/A
Incorporates osteopathic principles into the treatment and management	4	3	2	1	N/A
Risk Management					
Identifies red and yellow flags within the clinical history	4	3	2	1	N/A
Identifies and manages adverse events	4	3	2	1	N/A
Demonstrates an awareness of the VU Osteopathy Clinic policies and clinical practice guidelines	4	3	2	1	N/A

* Use this if not able to comment.

Overall Assessment

Above expected level Expected level Borderline level Below expected level (unsatisfactory)