

1 **Students today... educators tomorrow**

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20 **SUMMARY**

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22 Background:

23 The article describes the use of the mini clinical examination (mini-CEX) in a pilot  
24 study to introduce peer assessment in one allied health programme to explore  
25 students' capacity as clinical educators. Preparing today's pre-professional health  
26 students to be clinical educators by engaging them in peer teaching, learning and  
27 assessment may encourage them to become tomorrow's clinical educators.

28

29 Context:

30 Peer assessment is common among many undergraduate medical and allied health  
31 programmes, and is typically used as a means of providing students with feedback  
32 on their clinical skill development. We argue that peer assessment ought to be  
33 focused not only on the development of learners' clinical skills and knowledge, but  
34 also on preparing learners for their responsibilities as clinical educators.

35

36 Innovation:

37 Final-year Australian osteopathy students in our on-campus university clinic  
38 undertook, without training, peer assessment and provision of feedback related to  
39 clinical performance using a discipline-specific adaptation  
40 of the mini-CEX. The current study suggests that students are able to judge  
41 another's consultation skills and case management in that they identify what we  
42 know are common learning issues for students at this level.

43

44 Implication:

45 Students may be willing to engage in peer assessment if they see the exercise as a  
46 way to improve patient care and to develop their skills as educators – potentially  
47 encouraging them to become clinical educators in the future.

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## 50 INTRODUCTION

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52 The process by which learners at the same stage of their training are asked to make  
53 judgement on the work of one of their peers is termed peer assessment. From that  
54 activity, among other outcomes, the peer assessor learns to make judgements and  
55 to provide feedback for their peers. In the peer assessor's future role as a health  
56 care professional, teaching and assessing peers is an expected competency (1).  
57 Learning to be a peer assessor in the work- place arguably helps health care  
58 students to develop skills that contribute to patient care, and possibly motivates them  
59 to consider becoming engaged in clinical education, becoming a member of  
60 tomorrow's academic faculty staff (2).

61

62 Peer assessment has educational value, yet we know that in many instances  
63 students are reluctant to be assessed by a peer (3), particularly in summative  
64 assessments. Peer assessors also don't like to think that they affect another  
65 student's progress in a negative way (4). Furthermore, peer assessors feel  
66 uncomfortable reporting observed clinical weaknesses or unprofessional behaviour  
67 to a peer, and would rather present such information to a third party to pass on (4).  
68 Only one study demonstrated that students can assess peers dispassionately (5).  
69 The aim of the current study was to ascertain whether students, who were not  
70 specifically trained to use the mini-clinical examination (mini-CEX) as peer  
71 assessors, could engage in peer assessment, make performance judgements and  
72 provide useful feedback. The mini-CEX tool was used as it provides a snapshot of a  
73 student's clinical performance and has previously been used in osteopathy clinical  
74 education.

75 **METHODS**

76

77 The osteopathy programme at Victoria University (VU, Melbourne, Australia) is a 5-  
78 year pre-professional programme with clinical education undertaken in on-campus  
79 clinics. In this environment it is expected that students in years 4 and 5 will develop  
80 and consolidate their clinical and professional skills, and knowledge, prior to  
81 registration. The student is expected to take a clinical history, undertake an  
82 examination, and develop/implement a management plan for patients, all under the  
83 supervision of registered osteopaths (6). Students manage members of  
84 the general public with a range of acute and chronic musculoskeletal complaints. As  
85 part of a workplace-based assessment programme, the mini-CEX is used to assess  
86 a student's progress (7).

87

88 The mini-CEX is an assessment tool that can be used to provide a snapshot of  
89 student performance whilst managing a patient in a workplace setting. The tool  
90 captures performance across six domains: information gathering; clinical  
91 examination; communication & counselling skills; clinical judgement; organisation &  
92 efficiency; and professionalism. The students' overall performance managing the  
93 patient during the consultation is also assessed. The domains and overall  
94 performance are assessed on a scale from 1 (well below expectation) to 6 (well  
95 above expectation). Not all domains may be observed during a patient consultation  
96 and the examiner can mark 'not observed' for particular domain(s). Multiple mini-  
97 CEX assessments with different examiners and different patients are required to  
98 make a reliable judgement about competency. The present study explored aspects  
99 of the utility of the mini-CEX as a peer assessment tool with a view to: (1) providing

100 students with peer feedback on their clinical work; and (2) exploring whether student  
101 peer assessors were able to make judgements and provide useful feedback.

102

103 The study was approved by the VU Human Research Ethics Committee. All 52  
104 students enrolled in year 5 (final year) of the osteopathy programme at VU were  
105 required to complete a minimum of two mini-CEX assessments on a year-5 peer as  
106 a hurdle requirement. The assessment was not summative and did not contribute to  
107 the grade for their clinical subjects. These students had already undertaken  
108 approximately 500 hours of clinical training prior to this point, including the  
109 management of approximately 100 patients under supervision. The peer assessor  
110 selected the aspect of the consultation to be assessed, as we wanted to provide an  
111 opportunity for the peer assessor to select an area that they felt comfortable  
112 assessing. Students were able to choose their peer assessor. The assessment was  
113 completed during allocated clinical time.

114

115 Quantitative results from each mini-CEX were extracted and analysed. Qualitative  
116 comments were independently classified by the authors using an adaptation of a tier-  
117 feedback taxonomy (Box 1) (8). The authors met several times to discuss  
118 interpretations, differences and to form a consensus.

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120

121 **Box 1. Modified four-tier feedback taxonomy.**

122

Tier 1 - No comment

Tier 2 - Vague comment: global statement (e.g. overall good performance)

Tier 3 - Descriptive comment: a clear point or issue for the student to act upon  
(e.g. excellent rapport with patients)

Tier 4 - A clear point or issue for the student to act upon, with qualifiers as to what  
the consequences would be

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124



125 **RESULTS**

126

127 One hundred and eighteen assessments were completed during semesters 1 and 2  
128 in 2014. Fourteen students had three assessments completed on them. The  
129 presenting complaints are provided in Figure 1. Peer assessors conducted  
130 assessments across three aspects of the osteopathy consultation: Clinical History  
131 (31.4%), Examination (35.6%) and Management (33.1%).

132

133 **Figure 1.** Regions of presenting complaints assessed.

134

135 Descriptive statistics for the mini-CEX are presented in Table 1. The high number of  
136 'NO/Missing' entries is related to the aspect of the consultation observed, as some  
137 domains were not relevant in every instance (i.e. the clinical examination domain is  
138 not relevant when assessing history taking). The time taken with the assessment and  
139 to provide feedback was acceptable to both parties. Anecdotal reports indicate that  
140 both students and peer assessors felt the process had some educational value and  
141 were keen to participate in similar activities again.

142

143 **Table 1.** Descriptive statistics for the mini-CEX domains and quality assurance  
144 items.

145

146 Peer assessors were asked to provide students with written comments on the  
147 aspects of the consultation that: (1) performed well; (2) needed development and  
148 improvement; and (3) were agreed as items to action. Qualitative comments from the

149 118 assessments fell into the two central tiers: global statements and clear  
150 comments (Table 2).

151

152 **Table 2.** Classification of qualitative comments provided by peer assessors on the  
153 mini-CEX form.

154

155 Written comments included the following examples:

156

- 157 • An example of a global statement, on an area performed well, was 'Very  
158 friendly and relaxed' (student no. 7).
- 159 • An example of a clear point, an area for improvement, was '[seek] more  
160 patient feedback on comfort/pain levels' (student no. 6).
- 161 • An example of a clear point with consequences, an area for improvement,  
162 was 'Address fears of running due to previous injury – relationship to  
163 presenting complaint' (student no. 5).

164

165 The comments suggested peer assessors were able to identify:

- 166 • the questioning techniques used during patient interviews;
- 167 • whether rapport had been established and when
- 168 • communication had gone astray;
- 169 • which clinical tests and techniques were omitted or not performed properly;
- 170 • postural errors that could cause the student to suffer an injury – an important  
171 consideration in manual therapy; and
- 172 • the thoroughness of the consultation relative to the patient's health concern.

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175 **DISCUSSION**

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177 From the snapshot presented here, it appears that the peer assessors had a clear  
178 model of what constitutes an appropriate osteopathy consultation for a given health  
179 concern, and were able to make judgements about a peer's performance and  
180 provide feedback (9). The median mini-CEX domain values were in the mid-range:  
181 no student 'failed' a mini-CEX and, taken on face value, it seems that peer assessors  
182 were reluctant to use the full scale range on each domain. This may possibly be  
183 because of student/peer assessor familiarity or reluctance to find fault (4,5).

184

185 Ostensibly it appears that this cohort have the baseline skills to be peer assessors  
186 and perhaps clinical educators in the future: that is, to complete assessments and  
187 provide feed- back. The ability to provide feedback to peers is encouraged by patient  
188 safety and quality of care agendas, engenders collabo- ration,<sup>9</sup> and creates an  
189 environment that has sense of a community of practice. The feedback – short written  
190 statements – did not suggest the

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192 Peer assessors conducted assessments across three aspects of the osteopathy  
193 consultation possible consequences of the omissions or errors observed for the  
194 patient personally or the patient's health concern. We also think the brevity of the  
195 written feedback was linked to time constraints, or it may reflect a misunderstanding  
196 of the value of providing meaningful, constructive feedback in written form for  
197 accountability and audit purposes. The peer assessors in the present study did  
198 identify learning issues for students at this level of their pre- professional

199 programme. Anecdotally, these are consistent with those identified by clinical  
200 educators in the VU programme.

201

202 Students probably require training in how to give useful feedback (3,10). The present  
203 study was opportunistic given the previous successful implementation of the mini-  
204 CEX, and therefore it was not possible to provide training for peer assessors. Future  
205 studies will provide training for students in the peer assessment process and will  
206 provide feedback, as this has the potential to help students learn to think as clinical  
207 educators in the hope of moving beyond the notion of a peer appraising the work of a  
208 classmate.

209

210 Beyond the training issues, there are a number of limitations in the present study.  
211 There was no way to confirm the accuracy of the student peer assessor's  
212 observations and comments. This would only be possible if the consultation was  
213 videotaped or if both a clinical educator and peer assessor were present at the same  
214 time. Students could select who assessed them, therefore leniency could have  
215 played a part in the results. Allocating the student a peer assessor may help to  
216 resolve this to some extent, but given the small cohort size it is unlikely to have a  
217 significant influence. Peer assessors were untrained but had experience being  
218 assessed by a clinical educator using the mini-CEX during their clinical training.

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221 **CONCLUSION**

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223 Our snapshot exploration of the peer assessment skills of pre- professional  
224 osteopathy students who received no training as educators or assessors suggests  
225 that they have some capability to judge the work of others and provide written  
226 feedback. Embedding peer assessment activities in the pre-professional clinical  
227 curriculum is potentially a way to motivate today's students to become tomorrow's  
228 clinical educators, thereby developing the future health workforce. This is critical  
229 given that all health professions struggle to find willing practitioners to become  
230 clinical educators. Future studies need to explore the perceived educational value of  
231 the peer assessment process in this context, the actual practice of pre-professional  
232 peer assessors in relation to other assessments and the legal aspects of peer  
233 assessment in clinical education.

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235 **REFERENCES**

236

237 1. Gusic M, Hageman H, Zenni E. Peer review: a tool to enhance clinical teaching.

238 Clin Teach 2013;10(5):287–290.

239 2. Mileder L. Are medical schools hesitant to teach undergraduate students teaching

240 skills? A medical student’s critical view. Med Educ Online 2013;18:1–2.

241 3. Burgess AW, Roberts C, Black KI, Mellis C. Senior medical student perceived

242 ability and experience in giving peer feedback in formative long case examinations.

243 BMC Med Educ 2013;13:79.

244 4. Shue CK, Arnold L, Stern DT. Maximizing participation in peer assessment of

245 professionalism: the students speak. Acad Med 2005;80:S1–S5.

246 5. McGarr O, Clifford AM. ‘Just enough to make you take it seriously’: ex- ploring

247 students’ attitudes towards peer assessment. Higher Education 2013;65:677–693.

248 6. Vaughan B, MacFarlane C, Florentine P. Clinical education in the osteopathy

249 program at Victoria University. Int J Osteopath Med 2014;17:199–205.

250 7. Vaughan B, Moore K. The mini Clinical Evaluation Exercise (mini- CEX) in a pre-

251 registration osteopathy program: Exploring aspects of its validity. Int J Osteopath

252 Med 2015;19:61–72.

253 8. Burnand H, Fysh T, Wheeler J, Allum W. Feedback and performance scores for

254 direct observation of procedural skills. Bulletin of The Royal College of Surgeons of

255 England 2014;96:e5–e8.

256 9. Kearney S, Perkins T, Kennedy-Clark S. Using self-and peer-assessment for

257 summative purposes: analysing the relative validity of the AASL (Authentic

258 Assessment & Sustainable Learning) model. Assessment and Evaluation in Higher

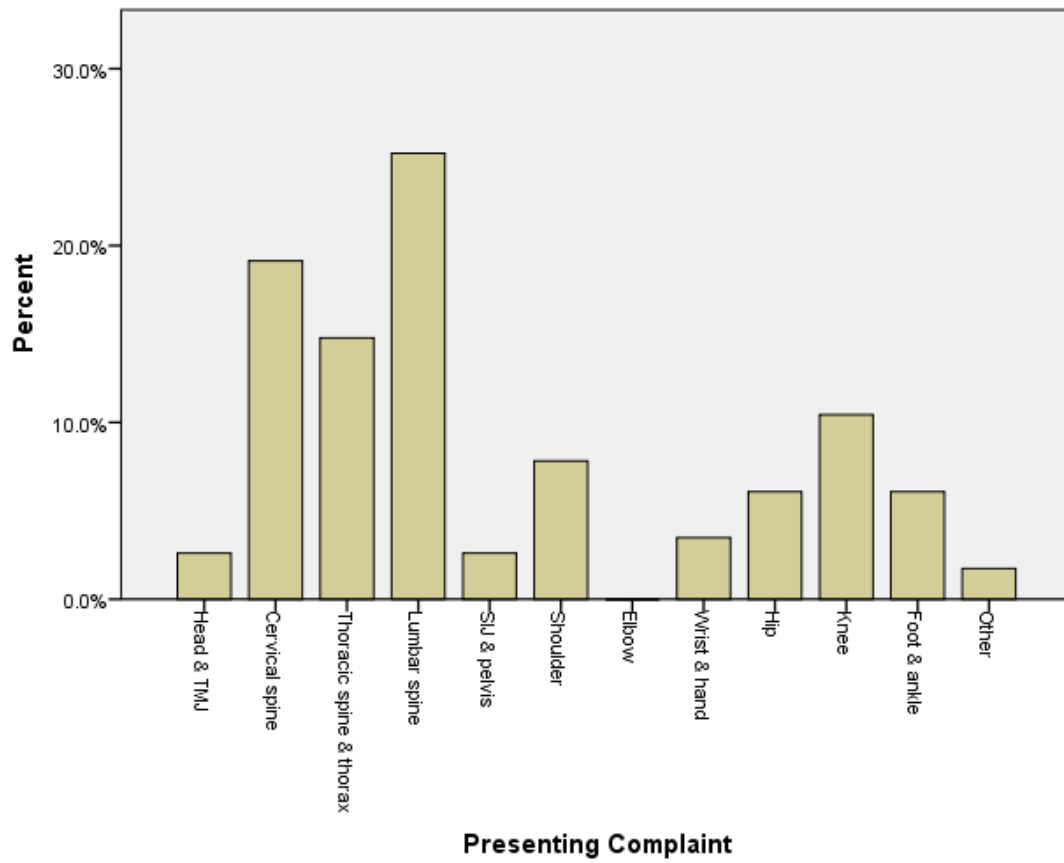
259 Education 2015;1–14.

260 10. Finn GM, Garner J. Twelve tips for implementing a successful peer assessment.  
261 Med Teach 2011;33:443–446.

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**Figure 1.** Regions of presenting complaints assessed



**Table 1.** Descriptive statistics for the mini-CEX domains and quality assurance items.

<b>Mini-CEX domain</b>	<b>Mean (SD)</b>	<b>Median</b>	<b>Range</b>	<b>NO/Missing</b>
Information gathering	4.59 ( $\pm$ 0.54)	5	4-6	13
Clinical examination	4.60 ( $\pm$ 0.62)	4	3-6	48
Counselling & communication skills	4.76 ( $\pm$ 0.56)	5	3-6	0
Clinical judgement	4.59 ( $\pm$ 0.58)	4	3-6	1
Organisation & efficiency	4.66 ( $\pm$ 0.65)	4	3-6	0
Professionalism	4.91 ( $\pm$ 0.71)	5	3-6	0
Overall clinical competence	4.69 ( $\pm$ 0.50)	5	2-6	10
<b>Quality assurance items</b>				
Time assessing (mins)	14.36 ( $\pm$ 7.06)	11	4-45	8
Time taken to provide feedback (mins)	7.40 ( $\pm$ 3.61)	5	2-20	29
Examiner satisfaction	4.78 ( $\pm$ 0.49)	5	4-6	4
Student satisfaction	4.74 ( $\pm$ 0.60)	5	3-6	45

\*NO – not observed, mini-CEX domains and overall clinical competence were each scored on 1-6 scale with a maximum possible score of 36.

**Table 2.** Classification of qualitative comments provided by peer assessors on the mini-CEX form.

<b>Tier</b>	<b>Aspects performed well</b>	<b>Areas for development</b>	<b>Agreed actions</b>
1- No comment	0	5	108
2- Global Statement	81	60	12
3- Clear point	303	190	88
4- Clear point with consequences identified	11	8	3
	<b>395</b>	<b>263</b>	<b>211</b>