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Osteopathic graduates perceptions of stress and competence – A longitudinal study

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Osteopathic graduates perceptions of stress and competence – a longitudinal study

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INTRODUCTION

Osteopathic students develop their professional skills and competencies through external (with a qualified osteopath in private clinic) and internal (within the university teaching clinic) supervised clinical placements and clinical tutorials.¹ Osteopaths in Australia are eligible for registration after five years of prescribed study² then predominantly work in privately owned clinics which may be sole operator, osteopathic group or multidisciplinary in nature.³

Research suggests that when transitioning into their first year of health care practice, medical and allied health students and graduates:

- were unsure of their role and what was expected of them;⁴⁻⁷
- identified it as a time of acquiring new skills and knowledge and accepting increased responsibilities;⁸
- felt unprepared to deal with significant increases in workload, adjusting to full time work, complex cases and decision making about patient care;^{4-6,8-11}
- were lacking in confidence and competence to perform their job requirements adequately;^{6,12}
- felt that graduate programs and mentorship increase confidence and competence, make the transition from study to work less stressful, and increase job satisfaction.⁷⁻

9,13,14

Health professional graduates perceive conflict between expectations of the clinical practice role and the reality of the work setting.^{4-6,8,15} This has been termed 'reality shock'.¹⁶

"Reality shock occurs when a new employee's expectations, established prior to joining an

organisation, differ significantly from what is experienced upon entering the organisation” (page 55).¹⁷

Unlike many other health professions, there are currently no graduate programs to support an osteopath’s transition to practice in Australia. Mentoring relationships are sometimes established with the employer if the graduate is an associate in the practice but there is no formal professional structure upon which a uniform approach to mentoring is based. Some graduates may start practicing independently (their own clinic/business) and therefore have limited scope for a mentoring relationship. In either situation, from their first day in practice graduates are expected by their employers and their patients to be competent practicing osteopaths (in contrast to competent student osteopaths), with the ability to handle all situations. The expectation for graduates to immediately be competent practitioners has the potential to be a major source of stress for new graduates as evidenced in other health professions.^{8,18} The present study aims to explore osteopathic graduates’ perceptions of occupational stress and clinical competence .

METHOD

Sampling and Recruiting

Osteopathy students in their final year at Victoria University (Melbourne, Australia) in 2010 were invited to take part in this study by completing two anonymous web-based surveys. An invitation to participate was sent by global email to the final year osteopathy students at Victoria University in November 2010 for the initial survey, and in July 2011 for the follow up survey. If students agreed to participate they were asked to follow the link embedded within the email and complete the survey hosted by Survey Monkey (Survey Monkey Inc., Palo Alto, California, USA). All information to participants was included in the invitation emails and repeated on the first page of the survey. Students were notified that informed consent would be implied on the completion of the survey. Inclusion criteria for the first survey were that the participants had completed the course requirements and would be in the graduating class of the Victoria University Master of Health Science (Osteopathy) in 2010 and were not yet working as an osteopath. Only those students who had completed the first survey and were working as a registered osteopath were eligible to complete the second survey. Not completing the second survey indicated voluntary withdrawal from the study.

The study involved the collection of self-reported data and received prior approval from the University's Human Research Ethics Committee.

Materials & Measures

As there were no available measurement tools specific to the osteopathic profession, two surveys were developed for this study by the researchers. The surveys were developed to investigate variables similar to those identified as relevant to soon to be, and new, graduates in other health professions.

Survey One (T1), 'Expectations of Practice' (Appendix 1), consisted of items to capture students' personal demographics, their expectations of what professional practice as an osteopath would entail, and perception of their level of competence to practice as an osteopath. Self-perceived competence as an osteopath was assessed in the form of a Likert scale and consisted of 45 items identified by Hager, Boud & Stone¹⁹ as key elements within a capability framework for osteopaths. Work-related stressors, assessed in the form of a Likert scale, were adapted from Salter²⁰ and Smith and Pilling.¹⁴

Survey Two (T2), 'Transitioning to Practice' (Appendix 2), completed by the same cohort when they had commenced practice, aimed to substantiate whether or not their perceptions of osteopathic practice had been met. This survey included the same 65 items as Survey One and was designed to provide information about job characteristics (not reported here) and difficulties new graduate osteopaths experienced. This survey also attempted to identify areas in which participants' self-perceived competence levels changed after their first months of professional practice.

To ensure ease of readability the survey was subjected to the Flesch–Kincaid readability tests included in Microsoft Word 2010. Both surveys have a Flesch reading ease of 3.4 and a Flesch-Kincaid grade level of 16.1. This was within the expected capabilities of the participants, who were undertaking postgraduate education at a Masters level,

equivalent to year 17 of formal education.²¹ Face validity testing was performed by the authors.

Data analysis

Data were received in a Microsoft Excel table from the survey-hosting site then collated for comparison of the two surveys. For the stress items, responses were coded as follows to simplify input and to allow the calculation of descriptive statistics: extremely stressful=4; moderately stressful=3; somewhat stressful=2; mildly stressful=1; and, not stressful=0. For the competence items responses were coded as follows: extremely competent=3; quite competent=2; competent=1; unsure=0; and, not competent =-1.

Although the survey collected a high volume of perceived competence data from each participant, this paper reports on aspects of competence considered most relevant by the authors. We wanted to identify key areas that may require development in pre-registration teaching programs, or the development of post-registration mentoring programs, in order to facilitate a smoother transition from student to practitioner. Each of the 45 competence items were considered in the context of the most essential to safe and efficient practice of osteopathy. The six authors discussed each item in this context and the agreed final list of 19 are reported here.

Data analysis was performed using Microsoft Excel and SPSS version 19 (IBM Corp, USA). Data were summarised and assessed for normality prior to significance testing using dependent means t-tests with alpha set at $p < 0.05$.

RESULTS

Participant characteristics

A total of 25 of the 51 graduates of 2010 completed the first survey, and 14 of 51 completed both surveys (response rate of 27%). The age range of the participants was 20-34 years of age. Of the 14 participants, 9 were female. Participants had between 2 and 9 months experience in osteopathic practice at the time of completing survey two. Participants were treating between 11 and 50 patients per week, with an expected income range of \$20,000 to \$100,000 in their first year of practice.

To determine whether participants withdrew from the study (did not complete survey 2) because of increased stress or decreased competence, the total stress and competence data at T1 were compared between groups. There were non-significant differences between those who participated in survey 2 (n=14) and those who withdrew from the study after survey 1 (n=11) for both stress (33 ± 12 vs. 32 ± 12 ; $p=0.976$) and competence (76 ± 18 vs. 67 ± 17 ; $p=0.195$) at the time of the initial survey (T1). These data indicate that participants did not withdraw from the study because of increased stress or decreased competence.

Stress

Overall, the mean stress scores (out of a possible 80) were 32.9 ± 12.5 for T1 and 32.3 ± 10.8 for T2 with the participant group showing no significant change in total stress after approximately 6 months of practice ($p=0.83$). As a group, the overall stress expected at T1 was similar to the amount the participants reported at T2.

Eight of 14 participants (57%) experienced more stress as an osteopath than they anticipated (see Figure 1). Participants 2, 4 and 8 had the lowest stress scores at T1 and all subsequently experienced an increase in stress at T2 (Figure 1).

INSERT Figure 1 here

Managing a full case load was rated the most stressful item at T1 and was the only stress item found to change significantly, decreasing between T1 and T2 ($p=0.03$) indicating the participants over-estimated the stress this would cause (Table 1). The most stressful items for new graduates were:

- S2 Feeling like I should know everything;
- S5 Medico-legal issues;
- S6 Overwork;
- S13 Managing the tricky patients;
- S14 Time management - including work competing with non-work demands; and,
- S19 Having babies as patients.

Only one of these stressors (S19 Having babies as patients) was associated with an increase in stress between T1 and T2.

The least stressful items for new graduates were:

- S10 Competition from other health professionals including osteopaths;
- S17 Managing the straightforward patients; and,

- S20 Having children as patients.

INSERT Table 1 here

To gather more information about stressors in the transition to osteopathy practice, participants were asked to respond to the open-ended question “Do you find any other aspects of working stressful?” Verbatim responses can be found in the appendices section (appendix 3).

Competence

The mean total competence scores (out of a possible 135) at T1 (75 ± 18.3) and T2 (64.3 ± 17.2) indicated a significant decrease in perceived competence after commencing professional practice ($p < 0.001$). This demonstrated that graduates perceived themselves as being less competent after commencing professional practice. Only two of the 14 participants (11%) reported increased perceived competence between T1 and T2 (Figure 2).

INSERT Figure 2 here

Participants reported a significant decrease in perceived competence between T1 and T2 on (Table 2):

- 1.3 Critical analysis: Devise and instigate a care plan in consultation with a patient;
- 1.4 Critical analysis: Establish a prognosis, use appropriate outcome measures, review patient progress and modify care plan as required;

- 6.6 Professional and business activities: Manage risks to minimise impact on all concerned; and,
- 6.7 Professional and business activities: Maintain currency of knowledge and skills.

Of interest, “not competent” (score of -1) was only used by one participant on one item. So whilst the perception of competence decreased at T2, it did not decrease to a level where participants felt “not competent” on any of the items.

INSERT Table 2 here

The results demonstrate that university students in their final months of training feel more competent to be osteopaths than when they begin their career as a practitioner. Job related stress is noted, although the actual stressors are different to those that students were most worried about before leaving university. The results also demonstrate that students could be better prepared in several areas of practice, especially:

- establishing prognosis;
- devising and instigating a care plan;
- managing risks; and,
- maintaining currency of knowledge and skills.

Furthermore, adequate graduate supervision is reported to be valuable when beginning a career in osteopathy.

To find out more about the transition to osteopathy practice, participants were asked to respond to the open-ended question, “Please list and/or discuss anything that you think

helped you to transition into a professional osteopath and/or make suggestions about how you think the transition process could be made easier for others.” The verbatim list of responses can be found in the appendices (appendix 4).

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DISCUSSION

The results of the present study suggest that osteopathy graduates from Victoria University face similar difficulties to other health graduates, especially when it comes to stress and a perceived lack of competence. Data from the present study indicate that managing the tricky patients, feeling like they should know everything, medico-legal issues, having babies as patients, time management, and overwork, are major stressors for recently graduated osteopaths from Victoria University. Similar findings of feelings of being unprepared, particularly in relation to workload, no time to care, and role stress (being legally responsible for someone else's life), too much work to do, earning enough money, threat of litigation, and patients who are difficult to manage²² were also reported by new practitioners in other health fields.¹⁴

In association with managing a full case load, participants indicated that 'time management – including work competing with non-work demands' rated amongst the most stressful experiences. This is a common occurrence amongst graduates in other medical professions.^{23, 24} Social isolation has been shown to increase stress levels^{25, 26} and the change of environment from university life to that of a professional in practice, often with a change in location and potential isolation both in the treatment room, and from their peers, has effects on the social life of new graduates. It is expected that osteopathy graduates would learn to balance work and non-work demands over time, but further research with osteopaths who have been practicing for longer than the sample involved in the present study is needed to investigate this.

The results reported in the current study can be explained as a product of both the structure of the Victoria University course and the way professional practice in Australia is

structured. The Masters' degree course at Victoria University requires students to participate in 686 supervised clinical hours and 270 hours of clinical placements outside the university clinic, over two years.²⁷ While this may seem a significant amount of time, it breaks down to less than 10 hours per week, less than a third of what most of the graduates in this study worked in their first year of practice. Limited hours in the student clinic make it difficult for students to gain experience, and follow up on patients, especially with complex medical needs. This is due to the case mix of presenting patients to a student clinic, the lack of external clinic hours in different environments as well as the limited amount of hours per week each student is able to attend clinic. This limits the amount of clinical knowledge and experience the graduates have in dealing with complex cases. With self-reflection, experience and exposure to these complex cases in practice, we surmise that confidence and knowledge in this area will improve and dealing with complex cases should become less stressful but further research with more experienced practitioners would be useful to determine how long it takes for this transition to occur, and whether the osteopathic profession needs to provide ongoing professional development to ensure that this occurs.

It appears that the assumption of both students and some employers that new graduates are ready to treat a full case load without limited supervision – compared to their clinical training - has a large effect on new graduate stress levels. This may be an area where osteopathy training in the tertiary setting can be improved by implementing a networking program or mentorship from other qualified osteopaths. This may, to some extent, have the same effect as a formal graduate program and smooth the transition from clinical student to practicing clinician.

Several studies have shown the merit of access to ongoing support during the transition stage for graduates,^{7,14,28} where participants can share their concerns and fears and have questions answered. Other health and science related fields often have graduate programs to develop knowledge whilst having access to greater supervision and the ability to defer decision-making processes to a more qualified supervisor.⁷ Graduate programs supporting the transition from student to professional are common in nursing, and internship and graduate support to medical practitioners are an integral part of medical training.¹⁰ Other health graduates may also have professional networking requirements prescribed by their professional associations (eg. Australian Psychological Society). Unfortunately, however, in Australia and the UK²⁹ it is unusual to provide a structured program to support allied health graduates through this phase of transition to practice.³⁰

In some instances there was a large decrease in competence ratings at T2. This may reflect that as students, participants were unaware of all of the demands they would face (reality shock), or may be due to reduced feedback regarding performance due to the change of environment from the clinical student setting. Performance feedback for the osteopathy graduate is mostly in the form of patient feedback on outcomes and satisfaction. One participant in the present study commented that “providing patient satisfaction was stressful”. Patient satisfaction may be lower than what participants were accustomed to as student clinicians, because patients pay on average three times the cost of an appointment at the university clinic for an appointment with a qualified practitioner. Patients have greater expectations of treatment when they are paying more for the treatment, and this could contribute to a decrease in patient satisfaction.³¹ Medico-legal aspects of practice have been found to be a cause of stress in other health fields.²² It is

possible that the stress caused by medico legal aspects in the transition to practice is high because this is the first time that participants are exposed to full legal responsibility for their practice, the threat of litigation and the management of patients who are litigating. Medico-legal training at Victoria University entails: record keeping; using an evidence based approach to practice; to practice only what you are insured to practice; the advice to be courteous and considerate; to have procedures for managing unsatisfied patients in place in your clinic; and, to promptly contact one's insurer in these situations. Further research is necessary to quantify what specific medico-legal aspects were found to be stressful and to address the question 'What further training could assist graduates in this area?'

Graduates felt barely competent in establishing an appropriate prognosis for the patient and using outcome measures. Outcome measures are now becoming a necessity for daily osteopathic practice³² as third party payers (workers compensation, transport accident schemes) require health care providers to utilise them. Outcome measures are introduced to students in clinical tutorials, and practice management classes, but are not routinely used in the teaching clinic, potentially due to the absence of third party payers or lack of encouragement from clinical educators. Therefore participants had little exposure to outcome measures before starting practice. This aspect of practice demonstrates that integrating what is learnt in academic units with the clinical learning environment is vital.

It is worth noting that under the scoring system used in this study, the new graduates still considered themselves competent (mean scores greater than or equal to 1 on all competence items) at T2. So whilst there are clear areas for improvement, the overall impression is that the Victoria University program produces competent graduates.

Limitations

This study was limited by including only Victoria University graduates. However, there are four osteopathic training courses offered in Australia and New Zealand and due to accreditation processes, they are all similar in content. This study was also limited by the small number of participants (n=14 or participation rate of 27%). However, the issues identified by this study are not necessarily isolated to the Victoria University osteopathy program. It is reasonable to assume that all osteopathy graduates transitioning to practice in Australia and New Zealand will encounter similar issues.

Perhaps the students who opted out of participating in the study perceived they had completed the course of training, passed all required assessments and were therefore adequately prepared for practice. The data presented earlier indicated they were not “more stressed” or “less competent” than the students who stayed in the study. Alternately, they may have not as yet commenced working as an osteopath. The reasons students chose not to participate in this study would have been helpful to this analysis and could be included in future studies.

The authors also acknowledge the limitations of the survey instrument developed for this study. The fact that the tool was developed by Victoria University students and staff to survey Victoria University graduates may limit the scope outside the Australian context. Further work needs to be conducted to validate this instrument outside the local context. Similarly, other users may have a different interpretation of the most relevant items to safe practice and choose to include some of the items excluded here.

Recommendations

A follow up study on the same cohort after 3 or 4 years in practice would provide more data on the transition process of this cohort of graduates. This type of study could substantiate whether or not osteopaths adjusted to the stressors identified and felt more competent. As identified by this study, it is recommended that future graduates benefit from improved graduate mentorship and support programs. It is also apparent that the osteopathic profession should be encouraged to establish ongoing professional development opportunities around these topic areas to ensure that the needs of the new, as well as more experienced, practitioners are understood.

CONCLUSION

Student osteopaths have realistic expectations of stress during the transition to professional practice. To decrease the stress involved in the transition, having a suitable networking, mentoring or graduate supervision program is recommended as soon as the student becomes an osteopath in a working practice.

Graduate osteopaths entering practice face similar stressors to other health graduates about overwork, time management and medico-legal issues. There are several areas where osteopathy graduates feel they are under prepared for practice: risk management; medico-legal procedures; paediatrics; and, prognosis and management of the complex patient. Improved training in these areas is indicated at the undergraduate, postgraduate and professional development levels.

STATEMENT OF COMPETING INTERESTS

Brett Vaughan is an Editor of the Int J Osteopath Med but was not involved in review or editorial decisions regarding this manuscript.

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Appendix 1: Survey One

Student Osteopaths' Expectation of Professional Practice Survey

Please be aware that the survey will be administered in an online format. Hard copy surveys will only be given if requested. As such this hard copy does not reflect the final formatting of the online survey (questions will not break across pages). The online survey will have identical questions and answer recording methods as this hard copy.

If you received this survey then you are eligible to participate in the study titled Transition from a Student Osteopath to Practising Osteopath: Students' expectations and the realities of professional practice' being conducted at Victoria University by: Patrick McLaughlin and Jane Mulcahy. Please see your email box for the Information to Participants document. Any queries may be directed to the researchers: Patrick McLaughlin and Jane Mulcahy

By completing this survey you are confirming you agree to participate in this research study.

Please tick ANY of the boxes that apply to you:

1. Age

- 20-24
- 25-29
- 30-34
- 35-39
- 40-44
- 45-49
- Older than 50

2. Sex

- Male
- Female

3. Study Status

- International student
- Local resident student

4. How many years have you spent studying osteopathy?

- 5
- 6
- 7 or more

5. Relationship status

- Single
- Married
- De Facto

6. Number of dependants (children or disabled in your care)

- 0

- 1
- 2
- 3
- 4 or more

7. If you are employed, what is your current employment level?

- Part time
- Casual
- Full time

8. What is your current income range?

- Less than \$2,000
- \$2,001-\$6,000
- \$6,001-\$10,000
- \$10,001-\$20,000
- \$20,001-\$30,000
- \$30,001-\$40,000
- More than \$40,000

9. What is your current source of income? (please tick all that apply)

- Government allowance
- Parental support
- Employee
- Self employed
- Contractor
- Scholarship

10. What areas are you currently, or have you been previously, employed in (please tick all that apply)

- Health and Human Services
- Administration or Business Management
- Customer service
- Sport & Recreation
- Retail
- Hospitality
- Information Technology
- Commerce or Finance
- Education
- Other, please specify:

11. Prior to your current course in osteopathy what was your highest level of education

- Year 12
- Diploma
- Advanced Certificate
- Degree
- Post Graduate Degree

- Professional Examination of a professional body (e.g. chartered accounting)

12. Have you undertaken a clinical internship in osteopathy?

- Yes
 No

THE FOLLOWING QUESTIONS RELATE TO YOUR EXPECTATIONS OF OSTEOPATHIC PRACTICE WITHIN THE NEXT YEAR ONLY.

13. Do you intend to complete further research or studies in or related to osteopathy within the following year?

- Yes
 No

If yes what study or research are you going to undertake?

14. Do you intend to work as a practising osteopath in the next year?

- Yes
- No

15. How difficult do you think it will be to find employment in osteopathy?

1	2	3	4	5
Not at all		Moderately		Extremely
Hard		hard		hard

16. Where do you expect to work?

- Within 50kms of current residence
 More than 50km away from current residence

Interstate:

- S.A.
 N.S.W.
 TAS.
 N.T.
 W.A.
 QLD.
 A.C.T.
 Overseas

17. How will you be getting to your work? Tick all that apply

- Public transport
 Drive car or other vehicle
 Walk or ride a push bike

- Moved closer to work

18. What range do you expect your first year income will be in?

- Less than \$20,000
 \$20,001-\$34,000
 \$34,001 -\$40,000
 \$40,001-\$60,000
 \$60,001-\$70,000
 \$70,001-\$80,000
 \$80,001-\$100,000
 More than \$100,001

19. Do you feel that you are prepared for working as an osteopath?

<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
not at all		moderately		extremely well
prepared		prepared		prepared

20. Do you feel that you are prepared for running a small business?

<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
not at all		moderately		extremely well
prepared		prepared		prepared

21. Do you feel that you are prepared for both the running of a small business and working as an osteopath together

<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
not at all		moderately		extremely well
prepared		prepared		prepared

22. What sort of setting do you expect to work in?

- Mobile clinic
 Private residence/home
 Osteopathic clinic
 Multi-disciplinary clinic
 Sporting club
 Research institute
 Tertiary Education
 Other

Please specify: _____

23. How many osteopaths do you expect to work with?

- None work alone
- 2
- 3
- 4 or more

24. If you worked in a clinic, what do you expect your position would be?

- Subcontractor
- Employee
- Principal
- Locum
- Sole trader renting facilities
- Other

Please specify: _____

25. How many hours per week do you expect to work as an osteopath?

- 0-10
- 11-20
- 21-30
- 31-40
- More than 41

26. How many patients do you expect to treat per week?

- Less than 10
- 11-20
- 21-30
- 31-40
- 41-50
- 51-60
- 61-70
- More than 71

27. How many hours per week do you expect to spend on paperwork?

- Less than 5
- 6-10
- 11-15
- 16-20
- More than 21

28. Tick how much stress you think will be caused by the following aspects of working as an osteopath (specifically in your first year).

	1 Not at all stressful	2 Mildly stressful	3 Somewhat stressful	4 Moderately stressful	5 Extremely stressful
Managing a full caseload.					
Feeling like I should know everything.					
Osteopathic knowledge or clinical skills.					
Patient communication.					
Medico-legal issues.					
Overwork.					
Prevention of work related injuries.					
Managing personal injuries.					
Interacting with other health professionals.					
Competition from other health professionals including Osteopathy.					
Paperwork.					
Business Administration.					
Managing the "tricky" patients.					
Time management - adjusting to full-timework and balancing a full caseload with competing non-work demands.					
Having full responsibility for patients – not always having a supervisor around to ask for assistance or go through plans and issues in detail.					
Taking up personal authority - even when confidence is low.					
Managing the "straight forward" patients.					
Financial uncertainty.					
Having babies as patients.					
Having children as patients.					
Other-Please specify:					

The questions below relate to the competencies and skills that are required by the osteopathy profession in Australia to ensure the safe and proficient practice of osteopathy as approved by the Australian and New Zealand Osteopathic Council. (Hager, P., Boud, D., & Stone, C.F. (2009). Capabilities for Osteopathic Practice. Sydney, Australia: University of Technology Sydney).

29. Can you please rate your current level of proficiency for each of the competencies in the boxes corresponding to each of the items as follows:

Not competent, Unsure, Competent, Quite competent and Extremely competent.

1. Clinical Analysis.	1 Not competent	2 Unsure	3 Competent	4 Quite competent	5 Extremely competent
1.1. Gather, organise and record a focused personal health record.					
1.2. Synthesize information into a suitable working diagnosis and demonstrate an understanding of general health status.					
1.3. Devise and instigate a plan of care addressing the person's presenting disorder and their general health, in consultation with that person (or their representative or carer).					
1.4. Establish a prognosis with appropriate outcome measures, review patient progress and modifying plan of care as required.					
1.5. Recognise when further information is required.					
1.6. Critically reflect on clinical challenges and uncertainties.					

2. Person Oriented Care and Communication.					
2.1. Consider socio-cultural factors in communication and management strategies.					
2.2. Use appropriate questioning strategies.					
2.3. Ensure patient comprehension.					
2.4. Ensure patients goals and concerns are identified and integrated into the clinical analysis.					
2.5. Obtain consent having discussed risks and benefits.					
2.6. Communicate clearly with respect to diagnosis, prognosis, and possible management plans, self management and other options of care.					
2.7. Take account of previous patient experiences of health care, medical and allied health systems.					
2.8. Understand the complexity of therapeutic relationships and have the professionalism to engage in appropriate levels of interaction and care.					
2.9. Ensure a professional commitment towards patient trust, confidentiality, safety and patient oriented care.					
2.10. Understand when it is required that a representative, carer or family member, communicate on behalf of, or in conjunction with the patient, and acting accordingly.					

3.0. Osteopathic Care and Scope of Practice.					
3.1. Implement an appropriate management plan that reflects the application of osteopathic philosophy.					
3.2. Understand and appropriately employing a variety of osteopathic examination and treatment techniques and approaches.					
3.3. Recognise and act within the scope of osteopathic practice.					
3.4. Where the patient has a condition that requires other medical assessments and <i>I</i> or interventions identify how any ongoing osteopathic care of the person should be adapted.					
3.5. Adapt ongoing care of a patient to their general health and wellbeing needs and to their changing circumstances.					
3.6. Identify how your personal professional approach to patients is placed within general osteopathic healthcare philosophy and practice.					
3.7. Recognise and acting within the scope of your personal osteopathic capabilities.					
3.8. Modify and adapt management in accordance with osteopathic practice.					

4.0. Primary Health Care Responsibilities.					
4.1. Accept responsibility for an individual's welfare.					
4.2. Recognise and respond to professional capabilities and limitations, as a primary healthcare provider.					
4.3. Relate effectively and knowledgeably with other health and community services or providers.					
4.4. Facilitate an individual's access to appropriate health and community services.					
4.5. Accept responsibilities as a primary health care practitioner in relation to guidelines and ethical standards, as issued by appropriate bodies and authorities.					
4.6. Ensure awareness of costs associated with healthcare, and the principles of efficient and equitable allocation and use of finite resources.					
4.7. Maintain commitment to the principles of health education, disease prevention, rehabilitation and amelioration of pain and suffering.					
4.8. Carry out basic first aid and life-saving procedures as required.					

5. Professional Relationships and Behaviour.					
5.1. Demonstrate the ability to be able to work as part of a net work of osteopaths, and other disciplines and providers via respectful effective and efficient communication.					
5.2. Recognise how to implement a multidisciplinary approach through referral and co management, and intra and interprofessional education.					
5.3. Implement the appropriate multidisciplinary care for the individual.					
5.4. Maintain effective lines of communication with other parties.					
5.5. Maintain a strong understanding and critical review of osteopathic philosophy and professional ethos and its place in general healthcare systems.					
5.6. Maintain understanding of other approaches to healthcare, and their contribution to patient management.					

6. Professional and Business Activities.					
6.1. Ensure ethical conduct of self and others in provision of care and services.					
6.2. Provide for continuing professional learning for self and of employees.					
6.3. Care of self.					
6.4. Maintaining an appropriate physical environment for privacy, comfort, and confidentiality.					
6.5. Managing all aspects of practice to comply with legal and regulatory requirements (as a sole operator or as an employer of others).					
6.6. Manage risks effectively and responsibly in such a way that minimises impact on all concerned.					
6.7. Maintain currency of knowledge and skills according to changes in regulatory and other, ethico-legal requirements and practice environments over time.					

Appendix 2: Survey 2

Transitioning to Practice Follow Up Survey

Please be aware that the survey will be administered in an online format. Hard copy surveys will only be given if requested. As such this hard copy does not reflect the final formatting of the online survey (questions will not break across pages). The online survey will have identical questions and answer recording methods as this hard copy.

If you received this survey then you have already consented to be a part of and completed part one of this research study titled Transition from a Student Osteopath to Practicing Osteopath: Students' expectations and the realities of professional practice' being conducted at Victoria University by: Patrick McLaughlin and Jane Mulcahy. Please see your email box for the Information to Participants document. Any queries may be directed to the researchers: Patrick McLaughlin and Jane Mulcahy

Please tick all of the boxes that apply:

1. Have you practiced osteopathy professionally in 2011?

- Yes - GO TO QUESTION 3.
 No

2. Please indicate the reason(s) for not practicing osteopathy

- Working in another occupation
 Difficulty finding employment as an osteopath
 Family care commitments
 Holidaying
 Completion certificate not gained, still studying Masters of Osteopathy
 Completion certificate not gained, no longer studying Masters of Osteopathy
 Completion certificate gained, but undergoing further education

Please use this space to elaborate on any of these answers or list other reasons:

YOU HAVE NOW FINISHED THE SURVEY. THANK YOU.

3. Have you completed or are you currently undertaking further studies related to osteopathy since course completion?

Yes

Please explain the nature and title of the study or research:

_____.

No

4. How many months have you practised osteopathy professionally?

0-1 2 3 4 5 6 7 8

5. How difficult was it to find employment in osteopathy?

1 _____ 2 _____ 3 _____ 4 _____ 5 _____

Not at all _____ Moderately _____ Extremely _____

Hard _____ hard _____ hard _____

6. Did you move residence since gaining your completion certificate?

Yes

No

If you work at multiple practices then the following questions apply to your main practice where you work the most hours

7. Where do you work in relation to where you resided as a student?

Within 50kms

More than 50km away

Interstate:

S.A.

N.S.W.

TAS.

N.T.

W.A.

QLD.

A.C.T.

Overseas Please specify country if you feel comfortable doing so

_____.

8. How do get to work? Tick all that apply

Public transport

Drive car or other vehicle

Walk or ride a push bike

9. What is your current projected income for 2011?

- Less than \$20,000
- \$20,001-\$34,000
- \$34,001-\$40,000
- \$40,001-\$60,000
- \$60,001-\$70,000
- \$70,001-\$80,000
- \$80,001-\$100,000
- More than \$100,001

9. Relationship status

- Single
- Married
- De Facto

10. How prepared do you feel you were for working as an osteopath when you gained your completion certificate?

<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
not at all		moderately		extremely well
prepared		prepared		prepared

11. How prepared do you feel you were for running a small business when you gained your completion certificate?

<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
not at all		moderately		extremely well
prepared		prepared		prepared

12. How prepared do you feel you were for both the running of a small business and working as an osteopath, together, when you gained your completion certificate?

<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
not at all		moderately		extremely well
prepared		prepared		prepared

13. In what sort of setting do you work?

- Mobile clinic
- Private residence/home
- Osteopathic clinic
- Multi-disciplinary clinic
- Sporting club
- Research institute

- Tertiary Education
- Other

Please specify: _____

14. How many osteopaths do you work with?

- None work alone
- 2
- 3
- 4 or more

15. If you work in a clinic, what is your position within the practice?

- Subcontractor
- Employee
- Principal
- Locum
- Sole trader renting facilities
- Other

Please specify: _____

16. How many hours per week do you work as an osteopath?

- 0-10
- 11-20
- 21-30
- 31-40
- More than 41

17. How many patients do you treat per week?

- Less than 10
- 11-20
- 21-30
- 31-40
- 41-50
- 51-60
- 61-70
- More than 71

18. How many hours per week do you spend on paperwork?

- Less than 5
- 6-10
- 11-15
- 16-20
- More than 21

19. Tick a box to indicate how much stress you feel from the following aspects of working as an osteopath.

	Not at all stressful	Mildly stressful	Somewhat stressful	Moderately stressful	Extremely stressful
Managing a full caseload.					
Feeling like I should know everything.					
Osteopathic knowledge or clinical skills.					
Patient communication.					
Medico-legal issues.					
Overwork.					
Prevention of work related injuries.					
Managing personal injuries.					
Interacting with other health professionals.					
Competition from other health professionals including Osteopathy.					
Paperwork.					
Business Administration.					
Managing the "tricky" patients.					
Time management - adjusting to full-timework and balancing a full caseload with competing non-work demands.					
Having full responsibility for patients – not always having a supervisor around to ask for assistance or go through plans and issues in detail.					
Taking up personal authority - even when confidence is low.					
Managing the "straight forward" patients.					
Financial uncertainty.					
Having babies as patients.					
Having children as patients.					
Other-Please specify:					

The questions below relate to the competencies and skills that are required by the osteopathic profession in Australia to ensure the safe and proficient practice of osteopathy as approved by the Australian and New Zealand Osteopathic Council. (Hager, P., Boud, D., & Stone, C.F. (2009). Capabilities for Osteopathic Practice. Sydney, Australia: University of Technology Sydney).

20. Can you please rate your level of proficiency for each of the competencies in the boxes corresponding to each of the items as follows:

Not competent, Unsure, Competent, Quite competent and Extremely competent.

	Not competent	Unsure	Competent	Quite competent	Extremely competent
1. Clinical Analysis.					
1.1. Gather, organise and record a focused personal health record.					
1.2. Synthesize information into a suitable working diagnosis and demonstrate an understanding of general health status.					
1.3. Devise and instigate a plan of care addressing the person's presenting disorder and their general health, in consultation with that person (or their representative or carer).					
1.4. Establish a prognosis with appropriate outcome measures, review patient progress and modifying plan of care as required.					
1.5. Recognise when further information is required.					
1.6. Critically reflect on clinical challenges and uncertainties.					

2. Person Oriented Care and Communication.					
2.1. Consider socio-cultural factors in communication and management strategies.					
2.2. Use appropriate questioning strategies.					
2.3. Ensure patient comprehension.					
2.4. Ensure patients goals and concerns are identified and integrated into the clinical analysis.					
2.5. Obtain consent having discussed risks and benefits.					

2.6. Communicate clearly with respect to diagnosis, prognosis, and possible management plans, self management and other options of care.					
2.7. Take account of previous patient experiences of health care, medical and allied health systems.					
2.8. Understand the complexity of therapeutic relationships and have the professionalism to engage in appropriate levels of interaction and care.					
2.9. Ensure a professional commitment towards patient trust, confidentiality, safety and patient oriented care.					
2.10. Understand when it is required that a representative, carer or family member, communicate on behalf of, or in conjunction with the patient, and acting accordingly.					

3.0. Osteopathic Care and Scope of Practice.

3.1. Implement an appropriate management plan that reflects the application of osteopathic philosophy.					
3.2. Understand and appropriately employing a variety of osteopathic examination and treatment techniques and approaches.					
3.3. Recognise and act within the scope of osteopathic practice.					
3.4. Where the patient has a condition that requires other medical assessments and / or interventions identify how any ongoing osteopathic care of the person should be adapted.					
3.5. Adapt ongoing care of a patient to their general health and wellbeing needs and to their changing circumstances.					
3.6. Identify how your personal professional approach to patients is placed within general osteopathic healthcare philosophy and practice.					

3.7. Recognise and acting within the scope of your personal osteopathic capabilities.					
3.8. Modify and adapt management in accordance with osteopathic practice.					

4.0. Primary Health Care Responsibilities.

4.1. Accept responsibility for an individual's welfare.					
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4.2. Recognise and respond to professional capabilities and limitations, as a primary healthcare provider.					
4.3. Relate effectively and knowledgeably with other health and community services or providers.					
4.4. Facilitate an individual's access to appropriate health and community services.					
4.5. Accept responsibilities as a primary health care practitioner in relation to guidelines and ethical standards, as issued by appropriate bodies and authorities.					
4.6. Ensure awareness of costs associated with healthcare, and the principles of efficient and equitable allocation and use of finite resources.					
4.7. Maintain commitment to the principles of health education, disease prevention, rehabilitation and amelioration of pain and suffering.					
4.8. Carry out basic first aid and life-saving procedures as required.					

5. Professional Relationships and Behaviour.

5.1. Demonstrate the ability to be able to work as part of a net work of osteopaths, and other disciplines and providers via respectful effective and efficient communication.					
5.2. Recognise how to implement a multidisciplinary approach through referral and co management, and intra and interprofessional education.					
5.3. Implement the appropriate multidisciplinary care for the individual.					
5.4. Maintain effective lines of communication with other parties.					
5.5. Maintain a strong understanding and critical review of osteopathic philosophy and professional ethos and its place in general healthcare systems.					
5.6. Maintain understanding of other approaches to healthcare, and their contribution to patient management.					

6. Professional and Business Activities.

6.1. Ensure ethical conduct of self and others in provision of care and services.					
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6.2. Provide for continuing professional learning for self and of employees.					
6.3. Care of self.					
6.4. Maintaining an appropriate physical environment for privacy, comfort, and confidentiality.					
6.5. Managing all aspects of practice to comply with legal and regulatory requirements (as a sole operator or as an employer of others).					
6.6. Manage risks effectively and responsibly in such a way that minimises impact on all concerned.					
6.7. Maintain currency of knowledge and skills according to changes in regulatory and other, ethico-legal requirements and practice environments over time.					

21. Please list and/or discuss anything that you think helped you to transition into a professional osteopath and/or make suggestions about how you think the transition process could be made easier for others:

22. Please list and/or discuss anything that you feel is important and hasn't been covered or that you wish to elaborate on that you think has negatively impacted on your transition from a student to a professional osteopath:

Appendix 3: Verbatim responses to “stressors”:

The following is an exhaustive and verbatim list of the responses:

- “Patients who are not improving”;
- “Taking holidays versus losing potential or current patients”;
- “Not having any patients, being locked into a contract with no patients and still having to give 2 months notice, giving notice and still having to work with principle for another 2 months, being a contractor yet still being told what to do and when to do it and not being allowed to promote yourself to gain patients”; and
- “Patient satisfaction.”

Appendix 4: Verbatim responses to “competencies”

- “The clinical internship that I did in 5th year was a huge benefit to transition into working in a clinic. I think this should be completed by more students”;
- “Prior to commencing work, I worked with the clinic principle to improve my communication skills and to understand that clinics’ specific beliefs and philosophies and the way they liked to manage patient care. I found this extremely useful at the time and it definitely helped boost my confidence. I also had weekly meetings with other practitioners within the clinic over the first 4/52 to help me settle in and to discuss any issues I was having”.
- “More business subjects starting earlier on. Discussion about whether osteo (sic) contracts are actually legally binding? More information about how to promote own business in an established practice”; “I feel like university was a stepping stone, making me a safe practitioner and touching the surface as to what to expect. The only thing that made the transition easier was having a support network of experienced osteopaths to discuss cases with and learn from. My boss' have played a major mentoring role, as well as my colleagues who have helped me from filling out my BAS form, to difficult patients and techniques I’ve forgotten”;
- “(name removed) classes all helped with the transition. Very intelligent in understanding what its (sic) like to be a student and very open for questioning. The university could do with some more people like (name removed) and less academics with minimal experience”;
- “All that is needed is provided through the university course. I did want to review certain aspects of running a business and patient management before starting

practice, however, I found that this does not happen until you actually start practicing and you then become more competent along the way”.

- “Previous experience during university as a subcontractor”;
- “Go over the common conditions in 5th year as these are the "bread and butter" cases. I believe it would (sic) be much more beneficial doing this (sic) subject in 5th year, possibly 2nd semester, rather than in 2nd and 3rd year”;
 - “Working as a massage therapist in a practice with osteopaths whilst studying osteo (sic) and building up a clientel (sic) for when becoming an osteo (sic) and having a job”.

The question “Please list and/or discuss anything that you feel is important and hasn’t been covered or that you wish to elaborate on that you think has negatively impacted on your transition from a student to a professional osteopath” was asked. This response was received:

“Personally I found the building of client numbers difficult, I didn't like being around the clinic for 5 days (sic) hours on end without many patients. Looking back I would prefer to shorten my days and hours worked initially and gradually build up to full days, rather than have to try to entertain myself and find productive things to do with my time. I also felt like I should have been clearer with my expectations to the practice principle, I had issues with confidence initially however we don't work together and although technically there is an open door policy (identifier removed) were never at the clinic to speak to”.

Table 1. Descriptive statistics for individual stress items in Survey One (T1) and Two (T2).

Item	Survey One		Survey Two		P value
	Mean \pm SD	Range	Mean \pm SD	Range	
S1 Managing a full caseload.	2.4 \pm 1.2	0-3	1.8 \pm 0.9	0-3	0.03 *
S2 Feeling like I should know everything.	2.6 \pm 1.1	1-4	2.4 \pm 1.0	1-4	0.31
S3 Osteopathic knowledge or clinical skills.	1.6 \pm 0.9	0-3	1.5 \pm 0.9	0-3	0.71
S4 Patient communication.	1.1 \pm 0.9	0-3	1.2 \pm 1.0	0-3	0.32
S5 Medico-legal issues.	2.3 \pm 1.2	0-4	2.0 \pm 1.0	0-3	0.46
S6 Overwork.	2.1 \pm 0.9	1-3	1.9 \pm 1.3	0-4	0.57
S7 Prevention of work related injuries.	1.2 \pm 0.9	0-3	1.6 \pm 0.9	0-3	0.19
S8 Managing personal injuries.	1.1 \pm 0.7	0-2	1.6 \pm 1.1	0-4	0.11
S9 Interacting with other health professionals.	1.5 \pm 0.8	0-3	1.5 \pm 1.1	0-3	0.95
S10 Competition from health professionals	0.9 \pm 0.8	0-2	1.0 \pm 1.2	0-3	0.59
S11 Paperwork.	1.7 \pm 1.3	0-4	1.5 \pm 1.0	0-3	0.47
S12 Business Administration.	1.7 \pm 1.2	0-3	1.6 \pm 1.2	0-4	0.62
S13 Managing tricky patients.	2.5 \pm 0.9	1-4	2.4 \pm 0.7	1-3	0.71
S14 Time management	2.1 \pm 1.2	0-4	1.9 \pm 1.1	0-4	0.60
S15 Having full responsibility for patients	1.9 \pm 1.2	0-4	1.6 \pm 0.9	0-3	0.26
S16 Taking up personal authority	1.7 \pm 1.1	0-4	1.6 \pm 0.9	0-2	0.63
S17 Managing straight forward patients.	0.4 \pm 0.7	0-2	0.4 \pm 0.5	0-1	0.56
S18 Financial uncertainty.	1.4 \pm 1.1	0-3	1.8 \pm 1.3	0-4	0.36
S19 Having babies as patients.	1.5 \pm 1.0	0-4	2.0 \pm 1.5	0-3	0.25
S20 Having children as patients.	1.2 \pm 0.7	1-3	1.0 \pm 1.0	0-3	0.56

*Significant difference between T1 and T2 ($p < 0.05$).

Mean scores which approach 0 are indicative of a non-stressful item.

Table 1. Mean competence scores for 18 competence items at T1 and T2.

Items number	Survey One		Survey Two		P value
	mean±SD	Range	mean±SD	Range	
Critical analysis					
1.3 Devise & instigate a care plan in consultation with the patient	2.0±0.7	1-3	1.4±0.8	0-3	0.01*
1.4 Establish a prognosis, use appropriate outcome measures, review patient progress and modify plan of care as required	1.6±0.7	0-3	1.0±0.8	0-3	0.02*
Person Oriented Care and Communication					
2.03 Ensure patient comprehension.	1.8±0.7	1-3	1.5±0.7	1-3	0.21
2.04 Identify & integrate patient goals and concerns	1.6±0.5	1-2	1.5±0.8	0-3	0.66
2.05 Obtain consent having discussed risks and benefits.	1.7±0.7	1-3	1.5±0.7	1-3	0.37
2.06 Communicate diagnosis, prognosis, management, self-management & other care options.	1.8±0.7	1-3	1.6±0.6	1-3	0.48
Osteopathic Care and Scope of Practice					
3.3 Recognise and act within the scope of osteopathic practice	1.9±0.8	1-3	1.8±0.6	1-3	0.74
3.4 Adapt osteopathic care to other medical assessments &/or interventions	1.2±0.7	0-2	1.4±0.6	0-2	0.48
Primary Health Care Responsibilities					
4.3 Relate with other health and community services providers.	1.2±0.7	0-2	1.2±0.7	0-2	0.99
4.5 Accept responsibilities of a primary health care practitioner in following guidelines and ethical standards	1.2±0.6	0-2	1.4±0.6	1-3	0.32
4.7 Follow the principles of health education, disease prevention, rehabilitation and amelioration of pain	1.9±0.6	1-3	1.9±0.8	1-3	0.99
Professional Relationships and Behaviour					
5.2 Utilise multidisciplinary management through referral, co management and intra & inter professional education	1.6±1.1	0-3	1.3±0.8	0-2	0.13
5.5 Critically review and understand of osteopathic philosophy/role	1.5±0.5	1-2	1.5±0.9	0-3	0.99
5.6 Current knowledge of other health	1.4±0.8	0-2	1.1±1.0	-1-2	0.31

practices & contributions					
Professional and Business Activities					
6.3 Care of self.	1.6±0.9	0-3	1.4±0.9	0-3	0.53
6.5 Meet legal and regulatory requirements of practice	1.6±0.9	0-3	1.2±0.8	0-3	0.25
6.6 Manage risks to minimise impact on all concerned	1.6±0.8	0-3	1.0±0.7	0-2	0.03*
6.7 Maintain currency of knowledge and skills	1.7±0.6	1-3	1.1±0.6	0-2	0.01*

*Significant difference between T1 and T2 ($p < 0.05$).

** Due to the number coding system where the response 'Competent' scored a value of 1, any value less than this would mean the participants rated themselves as incompetent for that area. Therefore individual competencies were viewed as only just competent when the mean approached 1.

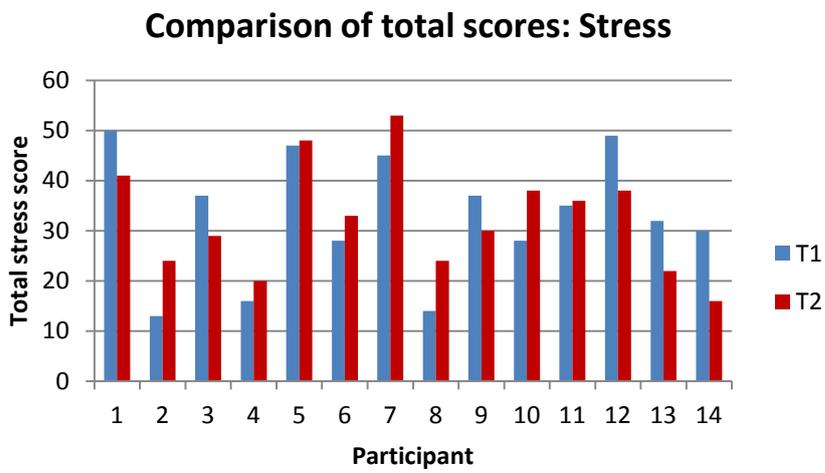
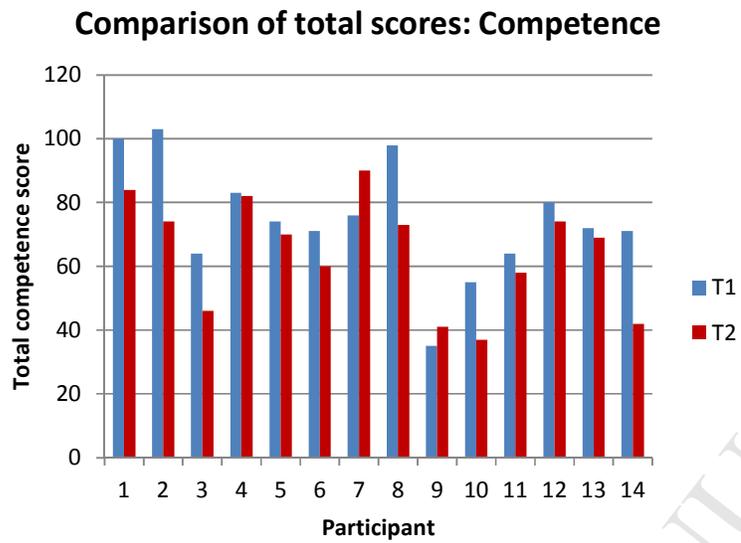
Figure 1. Participants' total stress scores in Survey One and Two

Figure 1. Participants' competence scores for Survey One (T1) and Two (T2)

- Student osteopaths have realistic expectations of stress during the transition to professional practice.
- To decrease the stress involved in the transition to clinical practice, having a suitable networking, mentoring or graduate supervision program is recommended.