Factors which influence chiropractic student confidence during the clinical internship

INTRODUCTION

The internship is an integral component of chiropractic programs and a time when students are exposed to real patients in a supervised clinic or similar environment which provides them with the opportunity to integrate theoretical knowledge with practical skills. Internships purport to increase clinical competence, foster development of a positive self-image and allow educators and mentors to collaborate in enhancing the transition from student to professional. The internship also appears to be more significant than other learning opportunities in the building of confidence during a student’s tertiary experience with the assumption that confidence will increase due to the experience gained through clinical exposure. If one of the goals of the internship is providing an environment that increases confidence then developing a better understanding of the factors which affect it is vital. Therefore the aims of this study were, 1) to measure change in student confidence in clinical and patient communication skills during an internship paying attention to the interaction effect of gender, age, experience within the profession, and qualification upon entry into the program, and 2) determine which factors of the internship increased or decreased student confidence in clinical skills and patient communication.

METHODOLOGY

A mixed method approach was used to examine changes and factors which influence confidence in patient communication and clinical skills over the course of an internship. Participants in this study were from two cohorts of chiropractic students (n=106) who were
enrolled in their clinical internship at the time. Human ethics approval and student consent were obtained before the study began.

A comprehensive confidence questionnaire\(^4\) consisting of two scales, Patient Communication (PCCS) and Clinical Skills (CSCS), and a demographic section was utilized pre- and post internship. Psychometric analyses utilizing the Rasch measurement model showed that the scales provided valid and reliable measures of confidence. High Person Separation Indices (0.96 for PCCS; 0.93 for SCSC), which are the equivalent of Cronbach’s alpha statistic, provide statistical evidence of validity.

Interviews were conducted in three stages over a 10 month time frame during the internship. The purpose was to gather information as to factors which increased or decreased student confidence over the course of this time. Open-ended questions were used to prompt students’ reflections followed by additional open-ended questions utilized to gather more in depth responses.

**RESULTS**

Comparison of means and repeated measures multivariate analysis of variance (MANOVAs; interaction, main effect for time, experience, age, gender, and qualification) were carried out. Confidence increased significantly over time regardless of experience, age, gender and qualification but no significant interaction effects. However, main effects revealed: males being significantly more confident than females in clinical skills \((p=.001)\); students with a degree having statistically greater levels of confidence \((p=.038)\) in patient communication than those without; those with more experience (with the profession) had significantly higher levels of confidence in patient communication \((p=<.000)\) and clinical skills \((p=.008)\) than
those with less; older students (26-35) showed significantly higher levels of confidence than the younger group (20-25) with their patient communication skills ($p=.003$).

29 students volunteered to be interviewed. From questionnaire data it was determined that two groups of student interviews would be analyzed: those whose confidence increased significantly and those who had limited increase in confidence during the internship. The selection criterion was based upon mean scores with those increasing from the lower to mid 33% at the beginning of the internship to the upper 33% at the end of the internship being categorized as having significant increases in confidence. Those students whose scores went from the upper to the middle 33% at the beginning of the internship to the lower 33% at the end were categorized to have limited increase in confidence. This criterion was utilized for both scales in the questionnaire. An equal distribution of the two groups would make up the final interview analysis, therefore 12 student interviews were selected; 6 from each of the two groups (significant increase and limited increase). Tables 1 and 2 list the various factors.

One significant and reoccurring factor which all students reported was their encounters with clinicians and the value of their feedback.

Some of the clinicians just come in and they see what you're doing and then they just go back out and they don't really give you feedback. Or some clinicians come in and because I cannot perform the adjustment they take over and then after just walk back out and don't say anything. So those don’t make me feel very confident [student 10].
Another significant factor which influenced confidence in positive and negative ways was the audible noise given off during a manipulative procedure which students used as a way to measure success in the skill

\[\ldots a \text{ lack of experience of achieving a cavitation in that joint...} \]
\[\text{lack of success} \]
\[\text{[student 8].}\]

Additionally students reported that other outcomes measure such as reduction of pain were not indicators of success, with the audible being the key element (I like the patient out of pain but I guess hearing the release is probably the most gratifying [student 11]).

In the latter half of the internship those students who became more proactive, in other words took human agency, by seeking ways to improve their skills reflected on increased confidence

\[\ldots \text{asking around for more people to correct me and going to the technique lab. This has helped} \]
\[\text{[student 10].}\]

\[\text{It (patient history) was one that I recorded so it was good to go back and watch and to critique that so I’ve got to work on this, this, and this and I think that was really a good learning experience. I’ve been consciously working on that and I think it’s made a difference. I’m glad I did because it showed a few things that I didn’t realise I did} \]
\[\text{[student 9].}\]
For some students accepting perceived failure also increased confidence.

\[ I \text{ don’t have the same hang up that I had at the beginning of the year, which was such a big thing. If I can’t adjust now well I sort of take it more on the chin and just say oh that’s alright you know it’s not a big deal because I do know that I can adjust... [student 8].} \]

Those students who had developed personal agency also started to mature as clinicians. One result which helped boost their confidence was their ability to build rapport with patients.

\[ I \text{ think it (confidence) has gotten a little bit higher because I think I’ve built a good rapport with my patients, because I have so few I tend to remember what they did, like what they were telling me that they were going to do on the weekend, so I will ask them what they did on the weekend when they came in [student 7].} \]

Students also recognized patient action and interaction as a significant boost in their confidence to communicate.

\[ They \text{ (patients) want to be here so they are happy to sort of listen to you... you don’t have to be intimidated by them which I think is what I was initially. I’ve got no reason not to be confident in communication with them...(p19). For them to go “ok if that’s what you think I need then that’s what we’ll do”.....gives you a bit of confidence to say this complete stranger that I’ve met an hour and a half ago...It’s a confidence boost [student 9].} \]
Students’ views about the profession started to get revealed during the latter stages of the internship and played a significant role in them confidently communicating with patients.

Yeah, I’ve become more and more confused in the chiropractic paradigm. I don’t know if any other profession has such difficulty explaining what they personally do…you go to the dentist, the dentist says, I do this to your teeth. You go to the chiropractor, what does a chiropractor actually do. So I have trouble summarising it to an answer... [student 3].

The only problem is my own demons.....I’m still not quite sure how much I believe in chiropractic so this is my biggest block. .....I don’t feel confident in or I feel disappointed I can’t convey confidence to my patients [student 4].

**DISCUSSION**

The empirical evidence which emerged from this study is supported in the literature. For example males typically reveal higher levels of confidence than females which could be due to evidence which supports women often underestimating their abilities \(^5\,^6\) while their male counterparts tend to overestimate theirs \(^7\). With mature-age students, they tend to have better verbal aptitude, a by-product of prior knowledge and life experience \(^8\,^9\), and therefore able to demonstrate more confidence in problem solving, action planning and are more willing to appraise their strengths and weaknesses than their school leaver counterparts \(^10\,^{11}\,^8\).

Experience within the profession may relate to what Bandura \(^12\) (1977) postulates as one of the sources of self-efficacy, vicarious experience, which involves watching others (models) and noting the consequences of behavior. Seeing people similar to themselves succeed by
sustained effort raises observers’ beliefs that they too possess the capabilities to master comparable activities to succeed.

From the interviews various factors which increase and decrease confidence were established. One in particular, the interaction with clinicians, was a powerful factor on clinical skills and patient communication. This is consistent with research which indicates clinicians influencing how students prepare and develop various values, skills, knowledge, and attitudes throughout their whole academic and professional careers. According to Ryan and Brewer, the successes of the internship are frequently connected to the mentoring processes and may serve to help students achieve their optimal potential. Students in this study reflected on their mixed relationship with the clinicians which can boost and hinder confidence. This provides insight into the value of developing ways to make the interaction between the two as constructive as possible. One key way is to nurture feedback. Work by Ende claimed that this is a critical component of the mentoring process because without it mistakes go uncorrected, good performance is not reinforced, and learning can be compromised. Feedback can create an environment that encourages student participation and assist in the building of confidence.

Another factor identified was the audible noise released from a manipulative procedure. This is not surprising because the joint audible may have a powerful placebo effect on both the patient and practitioner and it is not unreasonable to assume that they expect to hear a cracking sound during the treatment and interpret this sound as a sign of a successful adjustment. Students in this study focused primarily on the audible noise and not patient outcomes as a measure of success. However, even if students focused on patient outcomes such as pain, range of motion and activities of daily living and minimized their reliance on
the audible, they would still need to contend with the effect it has on the patient. Therefore students would need to communicate to their patients that the audible is not a representation of success, but if their confidence in patient communication is limited this may not be successfully addressed.

Students’ perception of the chiropractic profession was a factor which hindered their ability to confidently communicate with patients. Their perceptions may have a myriad of reasons and are supported by research \(^{20}\) which assessed the attitudes of non-practicing chiropractors. It revealed that when surveyed about the dogma and philosophy of chiropractic as being reasons to abandon active practice 60% of respondents agreed with 74% believing that chiropractic lacked cultural authority. Findings from this study reveal that these perceptions can develop during a student’s academic career and possibly have an impact on their success as a practitioner.

Throughout the internship a distinct difference developed between the students. Those who sought ways to improve reflected on increased levels of confidence. This act of human agency was an effect of them maturing as clinicians. Even though they continued to be influenced by clinicians, other factors, such as the profession’s philosophy and inability deal with challenging patient conditions, had no or little affect on their confidence. This reflects what Bandura \(^{21}\) describes as self-efficacy, or confidence, being the foundation of human agency. He notes that unless people believe they can produce desired effects by their actions, they have little incentive to act. This may explain why those students who had little incentive to seek ways to improve reflected on lower levels of confidence.

**CONCLUSION**
The rich data elicited reveals key factors which influence confidence and can assist clinical educators in their development of the clinical internship.

REFERENCES


