
ORIGINAL ARTICLE

Stress in chiropractic education: a student survey of a five-year course

Hilary Hester, BSc (Chiro), Christina Cunliffe, DC, PhD, and Adrian Hunnisett, PhD, MPhil

Objective: Stress encompasses academic issues, such as time management, increased work load, and new subject matter, but cannot be separated from stressors, such as social adjustment and financial pressure. Our study investigated whether perceived level of academic or practical attainment and the method of study were associated with the amount of perceived stress during students' studies.

Methods: A semi-structured self-administered questionnaire was piloted and distributed to 134 students at a chiropractic college at the end of a lecture.

Results: The survey had a response rate of 81%. Students in their fourth year consistently reported the highest perceived levels of stress, with 81% feeling that their ability to study was affected by their financial situation and 56% felt overwhelmed at their ability to cope with their college workload. All year groups were stressed during their course of studies, but the stressor varies depending on the year of study.

Conclusions: Year 4 consistently demonstrated the highest levels of stress. All students, regardless of year group, experienced varying degrees of stress while studying and the central stressor changed depending on the time position within the course.

Key Indexing Terms: Chiropractic; Education; Stress; Student Welfare

J Chiropr Educ 2013;27(2):147–151 DOI 10.7899/JCE-13-4

INTRODUCTION

In the last decade, there has been a 3% to 50% increase in mental health issues reported in students in further education.^{1,2} In 2004, the American College of Health Associations' annual survey showed that 63% of students reported feelings of hopelessness, 94% felt overwhelmed at times, and 45% reported being "... depressed to the point of having trouble functioning."³ All of these feelings are clear indicators of student stress, which Kadison described as the "Elephant in the room."³ Stress has been described as a 20th century disease, which not only encompasses academic issues, such as time management, increased work load, and new subject matter, but also stressors, such as social adjustment and financial pressure.⁴

Institutions of higher education are recruiting a more diverse student population. However, they are not always addressing the needs of all "different" types of students.⁵ More students are attending college as re-entry students, those who are over the age of 22, and with a gap in their education. Such students are particularly prone to a lack of confidence as learners and underestimate their own ability,

but often counter this with a higher degree of motivation for learning.⁵ Many of them are "juggling" their time between higher education, work, and family, all of which require attention to the exclusion of the other. Re-entry students appear to have special needs that must be addressed for them to make the transition from "citizen-in-the-world" to student.⁵

The most significant indicators of educational stress are a reduction in academic performance,^{6,7} increased alcohol consumption, smoking, and an increased tendency to think about suicide.⁸ Spegman and Herrin found chiropractic student's depression and stress rates to be similar to the general population (25%–30%), but that the students had a diverse range of strategies for coping.⁷ Development of confidence in themselves within the academic environment was influenced by the consistency and manner in which feedback was provided to students during class, and following the submission of assignments and examinations. This included voice tone, timing, and facial expression of the tutors, which defined encouragement, criticism, or disapproval. In addition, as the students all were undertaking the course on a part-time mode of study, many felt that the importance of adequate study time

outside of class competed with relationship and family responsibilities; they then had to “choose battles” and “give up life” outside the university environment.

Students with learning difficulties are more predisposed to stress and have a lower adaptability compared to students without learning difficulties. Maintaining employment alongside their studies causes the student with a learning disability to have multiple demands, and they are more predisposed to stress-related syndromes.⁹

Changes in the funding of tertiary education have led to an increasing number of students who are facing financial pressures and living with limited financial resources.¹⁰ Ross, focusing on stress, debt, and undergraduate medical student performance, stated, “It is important to identify and understand the impact of debt on student mental health and performance.”¹¹ In addition, “Relationships between mental health and performance in undergraduate medical students are complex.”¹¹ Ross further opines that it was the student’s perception of debt per se rather than the level of debt that related more closely to performance. Students who perceived debt to be a problem tended to have higher debts and performed less well against their peers; however, they also noted that there was no correlation within their research between debt and class ranking. Of the survey respondents 42% stated that stress about money contributed to up to a quarter of all their stress, with a further 16% stating that stress about money made up greater than 50% of their overall stress, with the most significant causes of stress being money and course work.¹¹ This implies that a proportion of students may be underperforming and suffering adverse mental health because of debt. Ross concluded that government policy should take account of the potential adverse psychologic effects and impact on performance of debt.¹¹ Students are facing higher fees and fewer support grants, which may be counterproductive, especially as these factors are known to deter graduates from lower socioeconomic backgrounds.

The objective of our study was to investigate whether students’ position in the course, their perceived level of academic or practical attainment, and the method of study had any relationships to the amount of perceived stress during their studies.

METHODS

Ethical approval for the study was obtained from the McTimoney College Research Ethics Committee before commencement of the study. Following ethical approval, a cross-sectional survey in the form of an anonymous self-administered questionnaire was developed, and piloted for face and content validity. The questionnaires were modified in response to the pilot, if appropriate, before distribution.

A conventional seven-point Likert-type format¹² was used to measure the amount, variability, and relationship between the perceived stress, year of study, study environment, and age of student while studying. This is considered a “straightforward” approach to a survey as, when responding, participants indicate their level of

agreement to a statement.¹³ This scaling measures either positive or negative response to a statement.

Students were asked to choose their perception of time on a scale from 1 to 7, where 1 represented “plenty” and 7 represented “very little;” and stress, where 1 represented “has not affected me at all” and 7 represented “has affected me enormously.” The questionnaire (see Appendix available online with this article) contained 26 questions divided into six sections: demographics (general information), time management and stress, stress and academic achievement, college structure, stress and finance, and mental wellbeing.

The subjects of the study were chiropractic students attending a chiropractic college from its foundation year through to the preclinical year (year 4). These year groups all were chosen as this was seen to be the time when the academic learning is undertaken, and exams are taken on a regular basis to ascertain the level of the students understanding of the subjects and achievement attained. All participating students were studying at the college on a part-time basis. All final clinic year students (year 5) were excluded, since at that point the educational environment is clinical and assessments are very different.

All students were asked to take part and were given a verbal explanation of the purpose of the research project before questionnaires were handed out at the end of their lecture. Completed questionnaires were placed in a ballot box placed at the front of the lecture theater for the participant’s convenience.

A sample size calculation indicated that a minimum of 100 returned questionnaires were required from the target population of 134 students to reflect valid results at a confidence level of 95% and confidence interval (CI) of 5%.

The data were collected when all year groups were attending college. The course office prewarned the respective lecturing tutors that the researcher would be undertaking research at the end of their lecture. This was felt to be the least disruptive time for the lecturer and the most opportune time for the research to be completed by students. Students remained anonymous and completion of the questionnaire indicated consent.

Data were collated into Microsoft Excel (Microsoft Corp., Redmond, WA) for processing. Questionnaires were analyzed using appropriate and relevant descriptive and inferential methods to identify any trends and correlations within the data.¹⁴ The data were held anonymously and participants were assured of their confidentiality. The participants gave their consent to this study, implied by return of the questionnaire.

RESULTS

Of 134 potential respondents, 109 students participated in the survey, representing a response rate of 81% of the target population, which was considered to be a statistically valid response.

Demographics

Of the 109 respondents, the majority were female (60%, $n = 65$) reflecting the overall increase in women attracted to

Table 1 - Age Demographic of Respondents

Age Group, y	N, Total = 109
16-20	13
21-25	25
26-30	13
31-35	21
36-40	16
41-50	16
>50	5

the chiropractic profession. The breakdown of students according to age showed a surprisingly well balanced distribution, with an average of 17 students (range 13-24) in each age group across the course (Table 1). There was a very small percentage of students over 50 years of age ($n = 5$, 5%).

While studying, 50% ($n = 54$) of respondents were single, followed by 31% ($n = 34$) married, and 19% ($n = 21$) cohabiting. Approximately half of respondents ($n = 54$; 49%) owned their own home, while the remainder were split between rental ($n = 25$) and living with parents ($n = 28$).

From a social history perspective, the majority of respondents ($n = 85$, 78%) joined the course while continuing to work. A small cohort ($n = 11$, 10%) joined directly from school or directly from a previous university course ($n = 8$, 7%). This group was explained by the recent commencement of a new full-time 4-year course running alongside the part-time 5-year course. Only 5 respondents (5%) were unemployed at the time of the survey.

The diversity of students also is reflected in the manner that they fund their studies. A third of respondents ($n = 37$, 34%) funded the course from their employment salary alone. This was followed by a small group ($n = 14$, 13%) funding the course through a mixture of savings and work salary. Parental help is seen as the next most important factor in funding the course, with 26 (24%) of respondents recording this overall (Parental help, $n = 13$, 12%; and parental help with other methods of payment, $n = 13$, 12%).

College Workload

Overall, almost two-thirds of respondents claimed that they were coping to some degree with their college workload ($n = 65$, 60%, Table 2), which was statistically significant ($P < .05$). Breaking the responses down into year groups indicated that year 4 was coping the least well with workload ($n = 9$, 55% of year group), compared to much lower proportions in the foundation year ($n = 2$, 15%), with this change being statistically significant ($P < .02$).

When "workload worry" was analyzed, more respondents indicated a degree of worry with respect to their workloads ($n = 58$, 53%). This represented a significantly higher proportion of potential stress than is reflected in the respondents who were overtly "not coping" ($n = 45$, 40%) ($P < .05$). Years 3 and 4 had the highest

Table 2 - Ability to Cope With Workloads

Likert Scale No.	Response	N	%
1	I am coping very well.	2	3
2	I am coping well.	8	10
3	I am finding it OK.	24	26
4	Neutral.	31	4
5	I am not coping too well.	31	40
6	I am finding it hard to cope.	10	14
7	I am finding it very hard to cope.	3	4
Total coping OK (response 1-4)		65	60
Total not coping OK (response 5-7)		44*	40*

*Significant difference between those coping and those not coping with the workloads ($P < .05$).

numbers of respondents who reported concerns with workloads ($n = 19$, 27% and $n = 40$, 38%, respectively) and this was significantly higher than the lower year groups ($P < .05$).

Some interesting findings existed in the relationships between stress and academic achievement, and stress and practical skills. Just under a quarter of respondents were concerned with their academic achievements ($n = 25$, 23%). The worry regarding practical achievements was significantly less ($P < .05$) with a much smaller group of respondents indicating a link between stress and practical attainment ($n = 16$, 15%).

Financial Factors

Just over half of all respondents ($n = 57$, 51%) reported that their current financial situation affected their ability to study, particularly in year 4 ($n = 13$, 81%). Odds ratio (OR) analysis indicated that year 4 respondents were almost 3 times more likely to experience stress related to financial issues compared to other year groups ($P < .01$; OR = 2.88; 95% CI, 1.55, 5.57).

Mental Health

Respondents were asked if their mental wellbeing had been affected while undertaking the course. Just under half ($n = 50$, 46%) reported positive effects to their mental wellbeing, while just under a third ($n = 31$, 29%) reported negative effects. The remainder of respondents reported no effect at all. Of those respondents who experienced negative effects, the majority did not seek any help for their problem.

DISCUSSION

Overall, 40% of respondents felt that they were "not coping well" with their college workload. This was reflected especially in year 4 of the course, having the highest percentage of students who were finding it hard to cope. This finding concurs with that of other researchers in the field.^{7,8,15} All students, regardless of year group, experienced varying degrees of stress while studying and

this accords with the findings of Chew-Graham.¹⁶ The majority of students whose mental wellbeing was affected negatively while undertaking the course did not seek help, which supports the view of Yorgason et al.¹⁷ They confirm that, although student populations experience various forms of stress, only a small number actively seek any professional help.

An overwhelming majority of students were in full-time employment when they joined the course, although this dropped while studying. The work/college balance could be seen to have an affect on students as they progressed through the course, with year 4 students feeling “overwhelmed” by their workload and having insufficient time to complete their studies properly. Other studies also concluded that working students were more exposed to stress-related syndromes than students who were not working and have multiple demands placed on them at work and academically.^{9,18}

More respondents seemed to be worried about their college workload than were admitting to an inability to cope with the college demands. Again, the latter years of the course demonstrated the greatest proportion of issues. Financial issues posed a significant stressor with a majority of respondents reporting that ability to study was affected negatively by their financial situation. This may be attributable to the length of the course and financial commitment that has to be made. However, no significant correlation between financial negative experience and ability to study effectively between years 2 and 4 could be demonstrated, but year 4 respondents were more likely to suffer stress due to financial issues than respondents in other year groups.

Limitations

Our study does have some limitations. The respondents are predominantly part-time students, most of whom are in relatively stable employment. This provides a very biased sample for the study. Some of the early year respondents are recruited from a new cohort of full-time students. As this course develops, the student populations will vary and the results may change. It is the intention to repeat this survey once the new full-time course has a full complement of students over all the years of the course and then compare to the part-time cohorts.

CONCLUSION

The aim of our research was to investigate whether students' position on the course, perceived level of academic and practical attainment, and the method of study related in any way to the amount of perceived stress during course. The results show that year 4 consistently demonstrated the highest levels of stress, supporting the findings of other studies.^{7,8,15} However, the students thought that their stress levels did not impact on their practical skills. All students, regardless of year group, experienced varying degrees of stress while studying.

CONFLICT OF INTEREST

The authors have no conflicts of interest to declare.

About the Authors

Hilary Hester is in private chiropractic practice in Oxford, United Kingdom. Christina Cunliffe and Adrian Hunnisett are with the McTimoney College of Chiropractic, Abingdon, Oxfordshire, United Kingdom. Address correspondence to Adrian Hunnisett, McTimoney College of Chiropractic, McTimoney House, 1 Kimber Road, Abingdon, Oxfordshire, OX14 1BZ UK; e-mail: ahunnisett@mctimoney-college.ac.uk. This article was received September 9, 2012, revised March 6, 2013, and accepted March 10, 2013.

© 2013 Association of Chiropractic Colleges

REFERENCES

1. Rubin LE. Student mental health in a chiropractic university setting. *J Chiropr Educ.* 2008;22(1):12–16.
2. Hollingsworth K. Dealing with students in crisis: a systems approach. *Proceedings of the 25th Annual Law and Higher Education Conference*, 2004 Feb 15–17. Clearwater Beach, Gulfport, FL: Stetson University; 2004.
3. Kadison RD, DiGeronimo TF. *College of the Overwhelmed: The Campus Mental Health Crisis and What Colleges Must Do*. San Francisco, CA: Jossey-Bass; 2004.
4. Kariv D, Heiman T. Task-oriented versus emotion-oriented coping strategies: the case of college students. *Coll Stud J.* 2005;16:41–51.
5. Michie F. An evaluation of factors influencing the academic self-concept, self-esteem and academic stress for direct and re-entry students in higher education. *Educ Psychol.* 2001;21:456–472.
6. Robotham D, Julian C. Stress and the higher education student: a critical review of the literature. *J Further High Educ.* 2006;30:107–117.
7. Spelman AM, Herrin S. Chiropractic interns' perception of stress and confidence. *J Chiropr Educ.* 2007;21:129–137.
8. Seyedfatemi N, Tafreshi M, Hagani H. Experienced stressors and coping strategies among Iranian nursing students. *BMC Nurs.* 2007;6(11):1–10.
9. Fram EH, Bonvillian G. Employees as part-time students: is stress threatening the quality of their business education? *Adv Manag J.* 2001;66(3):33–35.
10. Schafer W. *Stress Management for Wellness*. Fort Worth, TX: Harcourt Brace College Publishers; 1996.
11. Ross S. Stress, debt and undergraduate medical student performance. *Med Educ.* 2006;40(6): 584–589.
12. Likert R. A technique for the measurement of attitudes. *Arch Psychol.* 1932;140:1–55.
13. Bell J. *Doing Your Research Project*. Buckingham, UK: Open University Press; 1999.

14. Kruskal WH, Wallis WA. Use of ranks in one-criterion variance analysis. *J Am Stat Assoc.* 1952;47(260):583–621.
15. Evans W, Timmins F, Nicholl H, Brown G. The impact of ongoing continuing professional development for nurses in the Republic of Ireland. *J Nurs Manag.* 2007; 15:614–625.
16. Chew-Graham CA. ‘I wouldn’t want it on my CV or their records’: medical students’ experiences of help-seeking for mental health problems. *Med Educ.* 2003; 37(10):873–880.
17. Yorgason JB, Linville D, Zitzman B. Mental health among college students: do those who need services know about and use them? *J Am Coll Health.* 2008; 57(2):173–181.
18. Watts C, Pickering A. Pay as you learn: student employment and academic progress, *Educ Train.* 2000; 42(2–3):129–135.