

Financial attitudes, knowledge, and habits of chiropractic students: A descriptive survey

Julie Lorence, DC, MS¹

Dana J. Lawrence, DC, MMedEd, MA^{2#}

Stacie A. Salsbury, PhD, RN³

Christine M. Goertz, DC, PhD⁴

Objective: *Our purpose was to describe the financial knowledge, habits and attitudes of chiropractic students.*

Methods: *We designed a cross-sectional survey to measure basic financial knowledge, current financial habits, risk tolerance, and beliefs about future income among 250 students enrolled in business courses at one US chiropractic college. Descriptive statistical analyses were performed.*

Results: *We received 57 questionnaires (23% response rate). Most respondents would accumulate over \$125,000 in student loan debt by graduation. Financial knowledge was low (mean 77%). Most respondents (72%) scored as average financial risk takers. Chiropractic students reported recommended short-term habits such as having checking accounts (90%) and health insurance (63%) or paying monthly bills (88%) and credit cards (60%). Few saved money for unplanned expenses (39%) or long-term goals (26%), kept written budgets (32%), or had retirement accounts (19%).*

Objectif : *Notre but était de décrire les connaissances, les habitudes et les attitudes en matière de finances des étudiants en chiropratique.*

Méthodologie : *Nous avons conçu une étude transversale pour mesurer les connaissances financières de base, les habitudes financières actuelles, la tolérance au risque, et les opinions sur les revenus futurs d'un groupe de 250 étudiants inscrits à des cours de commerce dans un collège de chiropratique aux États-Unis. Des analyses statistiques descriptives ont été effectuées.*

Résultats : *Nous avons reçu 57 questionnaires (taux de réponse de 23 %). La plupart des répondants accumuleraient plus de 125 000 \$ de dette en prêts aux étudiants avant d'obtenir leur diplôme. Le taux des connaissances financières est faible (moyenne de 77 %). La plupart des répondants (72 %) ont obtenu une note moyenne comme preneurs de risque financier. En ce qui concerne les habitudes recommandées à court terme, les étudiants en chiropratique ont signalé avoir des comptes chèques (90 %) et une assurance maladie (63 %), ou payer les factures (88 %) et les cartes de crédit (60 %) tous les mois. Peu disent économiser de l'argent pour des dépenses imprévues (39 %) ou pour des objectifs à long terme (26 %), maintenir des budgets écrits (32 %), ou avoir des comptes de retraite (19 %).*

¹ Doctoral student, Kinesiology and Community Health, University of Illinois, Huff Hall, 1206 S. Fourth Street, Champaign, IL 61820
drjoyas@hotmail.com

² Senior Director, Center for Teaching and Learning, Interim Senior Director for Continuing Education and Events, Palmer College of Chiropractic, 1000 Brady Street, Davenport, IA 52803

Corresponding author
dana.lawrence@palmer.edu

³ Clinical Project Manager, Palmer Center for Chiropractic Research, Palmer College of Chiropractic, 741 Brady Street, Davenport, IA 52803
stacie.salsbury@palmer.edu

⁴ Vice Chancellor for Research and Health Policy, Palmer Center for Chiropractic Research, Palmer College of Chiropractic, 741 Brady Street, Davenport, IA 52803
christine.goertz@palmer.edu

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Conclusion: These chiropractic students demonstrated inadequate financial literacy and did not engage in many recommended financial habits.

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KEY WORDS: chiropractic education; economics; training support; student loans

Introduction

Students in doctor of chiropractic (DC) programs face many financial barriers to establishing successful clinical practices after graduation. Most new DC graduates carry with their diplomas significant student loan debt.¹ More than 60% of DCs are self-employed, which may require additional commercial loans on top of student loan debt to begin practice.² New DCs may be underprepared to balance the demands of being a health practitioner, business owner, financial planner, and office manager simultaneously.³ While no reliable statistics on business failure rates exist for new chiropractic practices, 56% of all new small businesses fail within 4 years.⁴

The United States (US) Bureau of Labor Statistics (BLS) estimated the number of DC jobs as 52,600 in 2010 and projects employment for DCs to grow 28% between the years of 2010-2020, a faster than average rate for healthcare professions.⁵ Yet, consumer demand for chiropractic services has shifted making the success of new chiropractic businesses more uncertain than in the past.^{6,7} The number of people seeking chiropractic care may have reached its pinnacle in the 1990s as evidenced by a 2.5% decrease in the chiropractic utilization rate.⁸

The average income for DCs has changed accordingly. Chiropractic practice surveys instituted in the 1960s by the American Chiropractic Association (ACA) suggest average incomes of DCs doubled from 1980 to 1989, with net incomes rising from \$43,000 to \$101,000, but then fell to \$86,500 by 1997.⁹ In 2010, the *Chiropractic Economics* annual salary surveys reported the average salary of DC respondents at slightly over \$87,000.^{2,10} In contrast, the BLS reported a median annual wage for DCs at just over \$67,000 in 2010.⁵

The US economic climate in the 2000s followed one

Conclusion : Ces étudiants en chiropratique ont fait preuve de connaissances financières insuffisantes et d'un manque d'engagement dans de nombreuses habitudes financières recommandées.

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MOTS CLÉS : formation en chiropratique, économie, soutien à la formation, prêts étudiants

of the worst recessions and periods of job loss since the 1930s, leading consumers to re-evaluate their financial behaviors.¹¹ Many small businesses were hit hard due to the lack of financial planning for a decreased credit market in the rapidly changing, and potentially permanent, reorganization of consumer financial behaviors and priorities.¹² The healthcare industry is more resilient to changes in the economy compared to other industries.¹³ However, the financial success of chiropractic practices often rests on out-of-pocket payments^{14,15} or health insurance coverage¹⁶. Thus, economic downturns may affect chiropractic practices more strongly than they do conventional medical practices.

Chiropractic students enter the profession within a context of a competitive healthcare market, possibly saturated consumer demand for chiropractic services, and tightened salary prospects. While enrollment in chiropractic colleges has dropped over the past decade¹⁷, US chiropractic colleges graduate over 2,500 new chiropractors annually¹⁸. Therefore, chiropractic students will require strong business acumen to assure financially successful clinical practices. However, a recent survey of the business training of practicing DCs noted significant gaps in their existing knowledge and perceived need for additional education on topics such as accounting, finance, human resources, managerial decision making and other key components of successful practice management.³ Similarly, a survey of DC students at two chiropractic colleges revealed self-perceived knowledge deficits in personal finance, practice management, and long-term investment strategies.¹⁹ The purposes of this study were to pilot test a survey instrument to measure financial health among chiropractic students and to describe the financial attitudes, knowledge, and habits of

DC students enrolled in business courses at one chiropractic college.

Methods

We conducted a cross-sectional survey to identify financial knowledge, money management habits, financial risk tolerance and beliefs about potential practice income among chiropractic students at the Palmer College of Chiropractic (PCC)-Davenport. The PCC Institutional Review Board approved this study. We received permission to distribute the survey from the director of the business curriculum and from each course instructor. Participant consent was assumed upon return of the completed questionnaire.

Survey Development

We developed an 81-item self-report questionnaire from existing tools^{2,19,20,21,22} and pre-tested the instrument with research staff. Demographics included age, gender, and trimester. We adapted a 31-item multiple-choice questionnaire designed by the Federal Reserve to test the financial knowledge of young adult and adult consumers.²⁰ We chose this instrument for its on-line availability, readability levels, and previous use in adult surveys of financial literacy.²⁰ We formulated questions on expected income, anticipated practice expenses, and the length of time in practice to reach financial success from the *Chiropractic Economics* annual salary survey.² We measured financial risk taking attitudes on a 10-item domain-specific psychometric scale that identified the likelihood of engaging in both positive and negative financial behaviors.²¹ This instrument rated behaviors on a 5-point Likert-type scale in which 1=extremely unlikely, 2=likely, 3=unsure, 4=likely, and 5=extremely likely.²¹ The *Rutgers Financial Fitness Quiz*²² identified current money management practices such as developing a spending plan, setting financial goals, accumulating emergency savings, and drafting a will. The 20-item instrument is measured on a frequency scale with levels: 5=always, 4=usually, 3=sometimes, 2=seldom, and 1=never and scored as an aggregate.²² As is common in personal financial planning, we classified short-term financial practices as those that are ongoing or achievable under 1 year, mid-term financial practices as targeted for completion in 1 to 5 years, and long-term financial practices as those accomplished in 5 years or more.²³

Survey Sample

A convenience sample of 250 chiropractic students enrolled in business classes at PCC-Davenport during trimesters 1, 7, 8, 9, and 10 in December 2011 were eligible to participate. Students in trimesters 2-6 were ineligible because no business classes are required in the DC curriculum. No additional inclusion or exclusion criteria were applied.

Survey Implementation

The lead author presented each business class with an explanation of the study goals, estimated time (45 minutes) to complete the survey, assurance of confidentiality, and return instructions. A packet containing a cover letter, the survey instrument and a campus-addressed return envelope was distributed to each student present in class. Students returned completed surveys through campus mail. No identifiers were included on the survey form and no attempt was made to follow-up with students who chose not to return the survey.

Statistical Analysis

Survey responses were entered and analyzed using SPSS 18.0 (Chicago, IL). Values are reported as number and percentage unless otherwise noted. Results from the Federal Reserve financial knowledge items are reported in aggregate by totaling the correct responses divided by the number possible resulting in a percentage correct. Responses to the *Rutgers Financial Fitness Quiz* were collapsed so *always* and *usually* are reported together, as well as *seldom* and *never*. Responses to the risk-taking behavior items *extremely likely* and *likely* were collapsed as were the responses *unlikely* and *extremely unlikely* due to the small number of responses in certain categories. Results that do not add up to 100% are due to missing data or rounding.

Results

Fifty-seven of 250 eligible DC students completed the survey, resulting in a 23% response rate. Approximately 59% of respondents were male and the mean age was 27.1 years (range 22 to 42 years) (Table 1). These demographics are comparable to the average age of 26.4 years and 64% male at the institution.

Current levels of non-student loan and student loan debt are reported in Table 2. Only 5% reported they would

Table 1.
Demographic characteristics (N=57)

Demographic	N (%) or Mean(SD)
Age, in years	27.1 (4.3) Range 22-42 years
Sex	
Male	34 (59.6)
Female	23 (40.4)
Trimester	
One	7 (12.3)
Seven	10 (17.5)
Eight	15 (26.3)
Nine	9 (15.8)
Ten	16 (28.1)

Table 2.
Current personal debt and expected practice finances

Variable	N (%)
Current non-student loan debt	
None	19 (33.3)
<\$5,000	11 (19.3)
\$ 5,000-\$10,000	6 (10.5)
\$10,000-\$15,000	2 (3.5)
\$15,000-\$20,000	1 (1.8)
Estimated student loan after graduation	
None	3 (5.3)
<\$50,000	1 (1.8)
\$ 50,000-\$100,000	2 (3.5)
\$100,000-\$125,000	9 (15.8)
\$125,000-\$150,000	11 (19.3)
\$150,000-\$175,000	15 (26.3)
>\$175,000	16 (28.1)
Plans to open practice in 1 year	
Yes	13 (22.8)
No	44 (77.2)
Plans to fund practice start-up	
personal savings	1 (9.1)
borrow from lender	8 (72.7)
borrow from parent/family/friend	1 (9.1)
other	1 (9.1)
Time to reach financial success	
< 3 years	6 (10.5)
3- 5 years	22 (38.6)
5- 8 years	20 (35.1)
8-12 years	7 (12.3)
12-15 years	5 (1.8)
>15 years	0 (0)

have no student loan debt at graduation. In contrast, 5% estimated they will owe less than \$100,000, 15% between \$100,000-125,000, 19% between \$125,000-150,000, 26% between \$150,000-175,000, and 28% estimated they will owe more than \$175,000 in student loan debt. In total, 74% will owe more than \$125,000 in student loans after chiropractic college.

A majority (77%) of respondents did not plan to start a practice within 1 year of graduation (Table 2). Of the respondents who planned to start a chiropractic practice within 1 year (13/57), only one planned to start the practice with personal savings. The remainder anticipated additional debt from a commercial lender (n=8) or a parent, family, or friend (n=2).

A majority (65%) correctly identified the median range of income for a chiropractor (between \$67,000 and \$85,000) reported in the literature (Table 3). Only 21% identified this salary range as their personal definition of *financial success*. Most participants (72%) defined *personal financial success* as an income of \$90,000 or higher. When asked how many years it would take to achieve this salary level, 49% believed it would take them less than 5 years to reach this salary level, while 84% believed it would take 8 years or less (Table 2).

Respondents reported conservative attitudes towards financial risk, with 46% self-described as extremely low, very low or *low risk takers*, 40% as *average risk takers*, and 12% as *high, very high or extremely high risk takers*. Qualitative financial risk-taking descriptors were consistent with these categorizations. When asked to describe risk in a financial context, 51% chose the terms *danger* or *uncertainty*, while 25% selected *opportunity* or *thrill*. When asked how they feel after a large financial decision, 74% reported being *somewhat optimistic* or *very optimistic*.

The domain-specific questionnaire also suggested respondents considered themselves average financial risk takers (Table 4). DC students preferred salaried positions to commission-only jobs. Most would be unlikely to invest in a business with a high chance of failure and few reported the likelihood of gambling, impulsive spending, co-signing loans, or loaning money to others.

The *Rutgers Financial Fitness Quiz* results are presented in Table 5. The mean score on this instrument was 77.6 (SD=10.12). Most DC students engaged in recommended short-range financial behaviors including having

Table 3.

Estimated DC earnings and personal definition of financial success (N=57)

Income Range	Average DC Salary Estimate ¹ n (%)	Salary Level Defined as Financial Success n (%)
≤\$50,000	1 (1.8)	1 (1.8)
\$ 50,000 – 70,000	14 (24.6)	3 (3.5)
\$ 70,000 – 90,000	23 (40.4)	9 (15.8)
\$ 90,000 – 120,000	12 (21.1)	16 (28.1)
\$120,000 – 150,000	2 (3.5)	11 (19.3)
\$150,000 – 175,000	1 (1.8)	5 (8.8)
\$175,000 – 225,000	2 (3.5)	2 (3.5)
>\$225,000	0 (0)	7 (12.3)

¹Columns that do not add to 100% are due to rounding.

Table 4.

Risky financial behavior participation among chiropractic students (N=57)

Variable	Extremely Likely to Likely ¹ n (%)	Unsure n (%)	Unlikely to Extremely Unlikely n (%)
Employment in commission-only job	7 (12.3)	11 (19.3)	36 (63.1)
Invest in business with high-failure risk	1 (1.8)	6 (10.5)	47 (82.5)
Co-sign loans	1 (1.8)	9 (15.8)	44 (77.2)
Loan a friend 1-month salary	1 (1.8)	12 (21.1)	40 (70.1)
10% blue chip stock investments	10 (17.6)	18 (31.6)	25 (43.9)
10% high risk stock	4 (7.0)	10 (17.5)	39 (68.4)
10% government bonds	9 (15.8)	16 (28.1)	29 (50.9)
Impulsive spending habit	4 (7.0)	5 (8.8)	45 (79.0)
Gamble 1-day pay at track	1 (1.8)	3 (5.3)	50 (87.7)
Gamble 1-day pay at slots	0 (0.0)	5 (8.8)	48 (84.2)

¹Columns that do not add to 100% are due to rounding.

Table 5.

Recommended financial behavior participation among chiropractic students (N=57)

Variable	Always or Usually ¹ n (%)	Sometimes n (%)	Seldom or Never n (%)
Checking account	51 (89.5)	2 (3.5)	1 (1.9)
Enough rent/bill money	49 (87.5)	4 (7.0)	0 (0.0)
Emergency money	22 (38.6)	19 (33.3)	13 (22.8)
Pay credit card in full	34 (59.6)	7 (12.3)	11 (19.3)
<20% take home pay consumer debt	27 (47.4)	10 (17.5)	13 (22.8)
Health insurance	35 (63.2)	6 (10.5)	12 (21.1)
3-month emergency fund	17 (29.9)	10 (17.5)	27 (47.4)
Retirement account	11 (19.3)	6 (10.5)	36 (63.2)
Written budget	18 (31.6)	10 (17.5)	28 (45.7)
Financial recordkeeping	35 (61.4)	13 (22.8)	6 (10.6)
Comparison shop major purchases	41 (72.0)	11 (19.3)	2 (3.7)
Avoid impulse purchases	31 (54.4)	17 (29.8)	5 (9.4)
Written short-term financial goals	8 (14.0)	8 (14.0)	38 (66.7)
Save long-term financial goals	15 (26.3)	19 (33.3)	19 (33.3)
Net worth calculated annually	7 (12.3)	10 (17.5)	37 (65.0)
Tax bracket known	14 (24.6)	3 (5.3)	35 (67.3)
Diversified investments	16 (28.1)	3 (5.3)	34 (59.7)
Periodic saving plan adjustments	27 (47.4)	12 (21.1)	12 (21.1)
Investment yield vs. inflation	13 (22.8)	16 (28.1)	19 (33.4)
Current will	4 (4.8)	3 (5.3)	45 (78.9)

¹Columns that do not add to 100% are due to rounding.

a checking account, enough money for monthly bills, or health insurance; keeping financial records; paying credit cards in full; and avoiding impulse purchases. Fewer respondents engaged in medium-range financial habits such as spending less than 20% of take home pay on consumer debt, having money to cover unplanned expenses such as a car repair, or saving a 3-month emergency fund. Long-range financial habits, such as owing diversified investments and retirement accounts, saving for financial goals such as a house or children's educations, or having a current will were uncommon. Few respondents reported a written budget or short-term financial goals, calculated their net worth, or knew their tax bracket.

Discussion

Our survey builds upon a previous assessment of the financial attitudes and knowledge of chiropractic students¹⁹ and extends our understanding of DC student perceptions about their current financial health and economic prospects from a chiropractic practice. Our results suggest DC students enrolled at one chiropractic college have unrealistic future salary expectations, high levels of actual and planned loan acquisition, an underestimation of their own risk tolerance, low levels of basic financial knowledge, and poor current money management skills.

While most respondents correctly identified the average DC salary as less than \$80,000 annually, nearly 72% equated financial success as an annual income of \$90,000 to greater than \$150,000. Our findings are similar to those recently reported by Gliedt et al²⁴ of a survey of DC students at another mid-western chiropractic college in which most respondents anticipated salaries in the range of \$40,000-\$100,000 within 1 year of graduation, \$60,000-\$500,000 within 5 years of graduation, and \$100,000-\$500,000 within 10 years of graduation. In a study of non-practicing chiropractors, 70% disagreed with the statement "salary surveys are realistically aligned with the real world of chiropractic practice".⁷ Chiropractic students who believe they will earn more than the average DC may be heading to a similar disappointment in regards to future income.

Nearly 80% of our respondents did not plan to open a chiropractic practice within 1 year of graduation. This finding is consistent with a recent study of DC student post-graduation plans in which only 17% of the sample planned to open a solo practice immediately following

graduation.²⁴ Respondents reported they were extremely unlikely to take employment in a commission-only job, which chiropractic practice is to some extent. Over 70% of respondents said they were extremely unlikely to invest in business with a high likelihood of failure. These findings suggest a possible mismatch between DC students' understanding of chiropractic practice management and the actual risks involved in running a successful chiropractic clinic. For example, a recent study reported attrition rates among chiropractors in California rose from 10% for graduates licensed in 1970 to 20-25% for those licensed in 1992-1998.⁶ Concurrently, fewer people used chiropractic services and reimbursement rates fell, leading to increased competition among chiropractors.⁶ The authors hypothesized this attrition also was influenced by increased tuition at chiropractic colleges, which outpaced inflation by 414% during this timeframe.²⁵ Similarly, Mirtz, Herbert, and Wyatt surveyed chiropractors who no longer practice and determined most believed overhead expenses and student loans were a factor in practice success.⁷

Chiropractic students may underestimate the financial risk associated with student loans. While 86% of respondents scored as *low-to-average risk takers*, 74% reported they would owe more than \$125,000 in student loans. The median student load debt for professional degree students is \$80,000.²⁵ While the reported student loan debt (\$136,000) for medical or osteopathic degree students is similar to the DC students in our study²⁵, employment prospects of the respective professions differ. Medical or osteopathic college graduates enter residency programs with defined salary and benefit compensation packages. Post-residency median salaries for medical professionals greatly exceed salaries averaged by DCs.^{5,26} Many DC graduates are not likely to achieve their financial goals given their high level of student load debt paired with low post-graduation financial prospects. Chiropractic students may rationalize student loan debt into a different risk category than other financial liabilities due to the lower interest rates, although this should not be the case. Chiropractors have the highest rate of student loan default of any health profession among borrowers from the federal Health Education Assistance Loan program.²⁷ A student loan default will affect credit scores and does not disappear from credit reports for 7 years.²⁸ Unlike other types of commercial debt, borrowers typically can-

not be discharged student loan debt through bankruptcy and such loans are rarely, if ever, forgiven.²⁸

We used the Federal Reserve instrument to assess students' knowledge of basic financial concepts.²⁰ Respondents' average score on this quiz was 77%, or a grade of "C". These scores suggest these DC students do not demonstrate mastery of basic financial concepts. Respondents reported good short-term personal financial behavior, but a high percentage of respondents did not engage in mid- and long-range financial behaviors critical to small business success, such as using a written budget, saving money for small financial emergencies and long-term financial goals, and understanding taxes. Chiropractic colleges may consider assessing students' financial literacy and behaviors early in the chiropractic curriculum to raise students' awareness of their own limited knowledge and practical skills. In addition, colleges might teach foundational financial literacy concepts prior to introducing business management concepts to their students.

Study Limitations

Sampling biases and coverage errors are the primary limitations of this study. The sample size to achieve a 95% sampling error with ± 0.05 standard error of measure was 152 respondents. Our sample was 57 respondents. Students who did not complete the survey may report different financial habits and attitudes than those who responded. Respondent characteristics were similar to the demographics of the DC student population at the institution. Repeated distributions or reminders may have increased the response rate. Coverage and sampling errors were possible. Students not enrolled in business classes and those enrolled in other chiropractic colleges may report different financial habits or knowledge for those described here. Follow-up surveys of chiropractic students across chiropractic colleges would be informative.

Additional limitations were due to the survey instrument itself. Huston notes the challenges of measuring financial literacy across testing circumstances.²⁹ Previous financial research with chiropractic students did not use some survey components such as the Federal Reserve questions designed for high school students or the financial risk items. These items may not be valid for the current sample. Some questions would benefit from better clarity, such as specification of gross or net income in the

questions regarding financial success. Additional items regarding student load debt, such as items about parental student load debt and default rates would be informative.

Conclusion

This pilot study suggests significant gaps may exist in the financial knowledge, attitudes and practices of chiropractic students. Students' perception of expected professional income and preferred income sources poorly related with traditional chiropractic practice models. Overestimating business income may lead to financial liabilities, including unpaid student loan, additional commercial debt, stressful work environments, and possible business closure. Furthermore, these DC students did not engage in financial habits critical to the success of a small business. A larger multi-site study is needed to understand better the financial knowledge, attitudes and habits of chiropractic students. Chiropractic students may require a broader foundation of basic financial knowledge and the development of personal financial skills to support the practice of chiropractic as a financially viable option.

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