Financial Literacy and Interest in Canadian Undergraduate Medical Students

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Abstract

Background
It has been suggested that medical trainees desire financial training, although educational interventions are rare, particularly in Canada. The purpose of this study was to characterize the state of financial knowledge, desire for expanded training and satisfaction with current financial education in a cohort of students at a Canadian medical school.

Methods
A voluntary questionnaire was sent to medical students at the University of Ottawa. Questions were formatted on Likert scales ranging from 1-strongly disagree to 5-strongly agree.

Results
Ninety-seven students responded to the questionnaire. Only 28% of respondents agreed or strongly agreed that they were financially literate, and respondents indicated an interest in personal finance (76%), medical business (78%), and healthcare spending (60%) concepts. Most respondents agreed or strongly agreed that financial topics should be formally taught in medical school (89%). Seventy-one percent of respondents disagreed or strongly disagreed that the current curriculum provides an adequate background in financial knowledge. No significant differences were noted between cohorts of different years.

Conclusions
Although Canadian medical students lack financial preparedness, a majority expressed interest in further financial education at the University of Ottawa. Subsequent studies will seek to optimize and evaluate the delivery of finance-related educational material to medical students.

Keywords: Financial Education; Medical Education; Financial Literacy; Undergraduate Curriculum
Background

Financial literacy is known to be poor amongst medical trainees. Medical students and residents perform poorly on assessments of financial knowledge (Jayakumar et al., 2017) and also fail to engage in financial practices that facilitate financial security, including budgeting, retirement planning, and investing (Glaspy et al., 2005). Indeed, the mean result for 1052 first- and fourth-year American medical students on a verified test of financial literacy was only 47.4% (Jayakumar et al., 2017).

The reasons for the lack of financial competency in medical trainees are multifold. The academic demands of medical training may preclude time to pursue self-learning of financial principles. In fact, medical residents justify delaying immersion in financial concepts as a result of deferred time and compensation upon training completion (Young et al., 2016). In addition, medical education has near unanimously failed to deliver financial curriculum-based programs (Mizell et al., 2014). In the United States, upwards of 63.7% (1,088/1,707) and 68.8% (99/144) of sampled medical residents reported not receiving formal financial lectures in their respective medical school curriculum (Glaspy et al., 2005) (McKillip et al., 2018). This continues to occur despite many medical students, residents and residency program directors reporting that educational opportunities are needed for financial and management skills in conjunction with traditional medical learning (Glaspy et al., 2005).

The Faculty of Medicine at the University of Ottawa has provided a limited financial management curriculum for several years (one lecture in each year of study presented by a financial institution) (Accreditation report, 2018). However, a large proportion (45%) of medical students reported dissatisfaction with the limited scope and teaching style of the lectures (Accreditation report, 2018). In turn, the current study sought to define the perception of financial competency, desire for expanded training, and areas of most interest within finance and management fields between undergraduate medical students at the University of Ottawa. The results of this study were intended to provide a needs-based assessment in order to improve the financial curriculum framework.

Methods

In June 2017, a 13- or 14-item bilingual questionnaire (Table 1) was emailed to all 194 undergraduate medical students of the Finance in Medicine interest group. Questions were formatted using a Likert scale from 1-strongly disagree to 5-strongly agree. The clerkship students (class of 2017 and 2018) were additionally asked about financial preparedness for residency and in practice (Table 1, #8) as they were closer to the completion of their degree. Two qualitative questions were also included for additional comments or ideas (Table 1, #15-16). Survey participation was voluntary, and responses were anonymously recorded. This quality improvement project was exempted from the research ethics board review.

Table 1: Contents of questionnaire

| Subject Demographics |
|-----------------------|
| 1. What is your year of study? |
| 2. What is your gender? |

| Assessment of Financial Literacy |
|----------------------------------|
| 3. Do you consider yourself financially literate? That is, do you understand and feel comfortable with your financial decisions? |
| 4. Do you understand how different types of investment strategies, insurance, and mortgages work? |
| 5. Do you understand how different physician remuneration models work (i.e. how physicians get paid)? |
| 6. Do you understand why many physicians form their own corporations? |
7. Do you have a knowledge about the cost of healthcare resources?
8. Do you feel prepared for the financial decisions that will be required of you in residency and in practice?

Assessment of Interest in Financial Education

9. What is your current interest level in personal finance concepts (budgeting, investing, insurance)?
10. What is your current interest level in medical business concepts (physician remuneration, incorporation, running a practice, entrepreneurship)?
11. What is your current interest level in healthcare spending concepts (Physician Service Agreement debate, cost savings of healthcare resources)?
12. Do you feel financially related concepts such as personal finance, business, and healthcare spending should be formally taught in Medical School?
13. Do you feel a general background in financially related concepts such as personal finance, business, and healthcare spending would be helpful in your future career as a physician?

Assessment of Current Financial Education Curriculum Satisfaction

14. Do you feel a general background in financially related concepts such as personal finance, business, and healthcare spending is satisfactorily covered in uOttawa's curriculum?

Qualitative Questions

15. Which financial concepts do you feel are most important for future physicians to acquire during their medical training?
16. Do you have additional comments or ideas on how to incorporate finance-related concepts into the undergraduate medical curriculum?

Results

Subjects Demographics
A total of 97 (50%) responses were elicited from the email questionnaire. Responses were obtained from 18 students in the class of 2017 (MD2017), 20 in the class of 2018 (MD2018), 33 in the class of 2019 (MD2019), and 26 in the class of 2020 (MD2020). The respondent cohort included 40 males (41%) and 57 (59%) females. Table 2 presents the results of the survey based on each question and responses.

Table 2: Results of Assessment

| Question                                                                 | % Very Strongly/Strongly Agree | % Neutral | % Very Strongly/Strongly Disagree |
|--------------------------------------------------------------------------|-------------------------------|-----------|----------------------------------|
| Do you consider yourself financially literate? (n = 97)                  | 28                            | 41        | 31                               |
| Do you understand how different types of investment strategies, insurance, and mortgages work? (n = 97) | 18                            | 38        | 44                               |
| Do you understand how different physician remuneration models work? (n = 97) | 30                            | 33        | 37                               |
| Do you understand why many physicians form their own corporations? (n = 97) | 31                            | 25        | 44                               |
| Do you have a knowledge about the cost of healthcare resources? (n = 97)  | 26                            | 36        | 38                               |
| What is your current interest level in personal finance concepts? (n = 97) | 76                            | 19        | 5                                |
| What is your current interest level in medical business concepts? (n = 97) | 78                            | 15        | 6                                |
What is your current interest level in health care spending concepts? (n = 97)

|          | 60 | 30 | 10 |
|----------|----|----|----|
| Do you feel financially related concepts should be formally taught in Medical School? (n = 97) | 89 | 11 | 0 |
| Do you feel a general background in financially related concepts would be helpful in your future career as a physician? (n = 97) | 96 | 4 | 0 |
| Do you feel a general background in financially related concepts is satisfactorily covered in uOttawa's curriculum? (n = 97) | 20 | 9 | 71 |

Assessment of Financial Literacy

Only 28% of medical students agreed or strongly agreed that they were financially literate (41% were neutral and 31% disagreed or strongly disagreed). The majority of respondents indicated disagreement or strong disagreement when asked if they understood personal finance concepts, physician remuneration models, physician corporations, or the cost of healthcare resources (44%, 37%, 44%, and 38% respectively). In addition, only 5 of 38 clerkship respondents (13%) indicated that they were prepared for the financial decisions required in residency and future practice. A one-way ANOVA revealed a significant effect of class year on mean responses to questions relating to financial literacy ($F(3,93) = 3.2$, $P = 0.03$), although post-hoc Tukey HSD tests did not indicate any significant differences between class years.

Assessment of Interest in Financial Concepts

A majority of respondents agreed or strongly agreed to having an interest in personal finance, medical business, and healthcare spending concepts (76%, 78%, 60%, respectively). In addition, 89% of participants agreed or strongly agreed that finance-related concepts should be formally taught in medical school and 96% of respondents agreed or strongly agreed that a general background in finance-related concepts would be helpful in their future practicing careers. A one-way ANOVA revealed no significant effect of class year on mean responses to questions relating to interest in finance-related topics ($F(3,93) = 1.6$, $P = 0.2$).

Assessment of Curriculum Satisfaction

The majority of respondents reported that sessions provided by the Faculty of Medicine were insufficient at providing a general background in finance-related concepts (71%). A smaller minority (20%) of respondents indicated satisfaction with the current financial curriculum, while 9% of respondents were neutral. A one-way ANOVA revealed no significant effect of class year on mean responses to questions relating to curriculum satisfaction ($F(3,93) = 0.90$, $P = 0.44$).

Qualitative Results

Qualitative responses converged on several main themes. Medical students expressed the educational importance of personal financing. Students wrote that "budgeting is important for medical students" and that "acquiring the knowledge and skills to take proper control of our finances in studentship can help with future budget and financial management." Another student expanded on the importance of financial planning by commenting that "100% of people will use [it] eventually and need to know more about [it]."

Medical students also endorsed an interest to learn about medically related business concepts. One student wrote that "handling loans, physician remuneration, basic business strategies and costs of practice, cost of healthcare resources would be useful for my future." Another student echoed these remarks by commenting: "I think it is most important
for physicians to understand the cost of the healthcare resources that they will be using. I also think it is important for us to know the business side of medicine, or at least be provided with resources of how to learn more about it for those who are interested."

Medical students also described dissatisfaction with the faculty's financial curriculum. One graduating student wrote that "[MD] 2017s did not have much training on physician remuneration or incorporation; while these topics might not be immediately relevant to clerks and residents, it’s important to be informed about these issues." Likewise, another student wrote: "the school tries to address financial concerns, but I feel this is mainly done by giving us budgeting sessions and making sure we are aware of where to apply for scholarships… this is good but is missing a lot of the bigger concerns for the real world. I do not feel these sessions have provided me any additional information that I did not already know."

Discussion

The results from a cohort of 97 Canadian undergraduate medical students correlate with previous work that has demonstrated disparate financial knowledge despite prominent interest in learning financial principles amongst medical trainees (Jayakumar et al., 2017) (Glaspy et al., 2005) (Mizell et al., 2014). Given that studies varying in geographical location and level of training converge on the same notion of deficient financial knowledge amongst medical trainees, there is strong rationale for the inclusion of finance-related content in medical training curricula. Indeed, when prompted, a vast majority (89%) of our respondents indicated that they agree or strongly agree that core financial principles should be formally taught in medical school.

In the United States, several authors have reported encouraging results of education interventions in improving the financial literacy of residents (Mizell et al., 2014) (Shappell et al., 2009). However, we postulate that outcomes may be superior should interventions target trainees prior to residency. This hypothesis is predicated on two factors: (a) Medical students’ schedules may be more accommodating of longitudinal interventions that enable an educational opportunity for repetitive content exposure (Bar-Or et al., 2018). (b) Early intervention may permit students to make financial decisions that yield greater long-term benefit, such as budgeting, investing (if finances allow), or debt management. While there is a relative paucity of medical school financial education interventions, those previously reported describe markedly positive educational and satisfaction outcomes (Meleca et al., 2014). Certainly, the duration (i.e. single intervention or longitudinal), choice of curricular model (i.e. web-based, formal lectures, interactive seminars), and the financial information presented (i.e. budgeting, insurance, investing, incorporation, physician remuneration, debt management) are important factors in the construction of an effective financial program during medical training. More research is necessary to ascertain optimal permutations of these factors within an integrated curriculum.

The primary limitation of our study is that the respondents were members of a medical student financial interest group during the 2016-2017 academic year. These students had the opportunity to attend eleven non-mandatory, one-hour seminars with topics ranging from personal finance, healthcare and practice management, as well as medical innovation. This cohort may therefore have been more likely to express interest in finance-related topics than the medical student body at large. However, despite having the opportunity to attend educational finance lectures, a low perceived financial literacy was identified in this group. It is plausible that the perceived financial literacy may be even lower in the entire population of University of Ottawa medical students; many of whom would not have attended the finance seminars.

The data presented here contributed to the development of a novel and unbiased financial curriculum at the Faculty of Medicine of the University of Ottawa. The curriculum incorporates multiple learning resources and perspectives,
and specifically targets personal finance, healthcare management, medical innovation design principles and the Canadian healthcare system. The goal is to increase the number of finance-related sessions provided to students throughout their four years of study (i.e. two to four mandatory lectures per year) with each lecture delivered by qualified physician lecturers or University professors. The curriculum revision was introduced in September 2018 and will be monitored on an ongoing basis to assess student satisfaction and educational outcomes.

**Conclusion**

The current study finds that undergraduate medical students at the University of Ottawa perceive themselves to lack financial preparedness for their future medical practices. Our results also demonstrate a desire amongst medical students to engage in finance-related educational material and that most survey respondents feel an integrated finance-curriculum within medical school would benefit their career and future aspirations. Further studies are necessary to determine the best approach to address deficient financial knowledge for medical trainees in a stimulating, comprehensive and unbiased manner within a time-constrained medical school curriculum.

**Take Home Messages**

- Medical students lack financial preparedness for their future medical practices
- Medical students have a desire to engage in finance-related educational material
- An integrated finance-curriculum within medical school would benefit a future career in medicine and aspirations
- Further studies are necessary to determine the best approach to address the deficit

**Notes On Contributors**

Jonathan R. Whelan is a medical student at the Faculty of Medicine of the University of Ottawa.

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Appendices

None.

Declarations

*The author has declared that there are no conflicts of interest.*

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Ethics Statement

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