

# Student indebtedness amongst graduates from Canadian Optometry Schools

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## RÉSUMÉ / ABSTRACT

**Objet :** Cette étude avait pour but d'examiner le niveau d'endettement des diplômés des deux écoles d'optométrie canadiennes (Montréal et Waterloo). Un second objectif consistait à évaluer l'incidence financière du stage clinique sur l'endettement global.

**Méthodes :** La promotion de 2007 a fait l'objet d'une enquête anonyme au cours de laquelle on a recueilli des données démographiques et des renseignements sur le nombre d'années d'études et les frais de stage ainsi qu'une estimation du niveau de l'endettement global à l'obtention du diplôme.

**Résultats :** L'endettement global moyen s'échelonnait entre zéro et cent cinquante mille dollars (150 000 \$ CAD), la moyenne étant plus élevée chez les étudiants de l'UW (UM 26 750 \$; UW 75 165 \$;  $p < 0,05$ ). La dette a été beaucoup plus élevée chez les diplômés que chez leurs collègues de sexe féminin à l'une ou l'autre des écoles (F 48 200 \$ contre H 59 231 \$;  $p < 0,05$ ).

**Conclusions :** Cette étude est la première qui traite de l'endettement des étudiants en optométrie au Canada. La compréhension des facteurs qui contribuent à l'endettement des étudiants en optométrie est la première étape qui permet de saisir le fardeau financier des étudiants dans les écoles d'optométrie au Canada.

**Purpose:** The objective of this study was to investigate the level of student indebtedness amongst the graduates from the two Canadian optometry schools (Montreal and Waterloo). A secondary objective was to investigate the financial impact of the clinical externship program on the overall student debt.

**Methods:** The 2007 graduating class was surveyed anonymously. Information was obtained on demographics, number of years of study, expenses related to externships and the overall estimated level of debt upon graduation.

**Results:** The mean overall debt varied between zero and one hundred and fifty thousand (\$150,000 Cdn), with UW students having a higher mean debt (UM \$26,750; UW \$75,165 Cdn;  $p < 0.05$ ). Males had a significantly higher debt than females at either school (F \$48,200 vs M \$59,231;  $p < 0.05$ ).

**Conclusions:** This is the first report of Canadian optometry student indebtedness. Understanding the factors that contribute to the optometry student indebtedness is the first step in understanding the financial burden of students attending Canadian optometry schools.

## Introduction

Student indebtedness has been a growing concern in many professions,<sup>1,2</sup> including those studying at optometry schools.<sup>3-6</sup> Previous reports estimate the debt amongst optometry students to be greater than one hundred thousand dollars upon graduation.<sup>7,8</sup> The financial burden that new graduates bear may influence their choice of practice modality.<sup>5,8,9</sup> Student debt is such a substantial part of the educational process, that several north American schools have a dedicated financial aid office and guide students towards eligible financial resources.<sup>10</sup> By the time a student graduates from optometry school, their average age is in the mid twenties and for most, this is concomitant with other major life changes such as marriage, owning a home and starting a family.

Although university education in Canada is quite affordable as compared to the US, the rising cost of education is a concern for all

students attending university. As a result, Canadian students incur a level of debt, albeit less than those studying in the US, that is parallel with the growth of education costs. Optometry students are not immune to these rising costs, since their expenses include tuition, books, equipment and travel costs related to clinical externship programs. The level of indebtedness amongst US optometry students has been reported to be well above \$100,000 U.S.<sup>7</sup> and continues to steadily rise. Although the trend is likely similar in Canada, the level of indebtedness amongst Canadian optometry students remains unknown.

As part of the clinical curriculum of all 19 North American schools/colleges of optometry, final year students are required to participate in a clinical externship program, of 8-12 weeks duration. For Canadian students, these are held away from the school and often out of country, which entails additional travel and housing expense for the students.

The objective of this study was to investigate the level of overall student indebtedness amongst students graduating from the two Canadian optometry schools, namely University of Montreal and University of Waterloo. As a secondary objective, the expenses related to externships and how this related to the overall student debt was also investigated.

## Materials and Methods

Optometry students from the 2007 graduating class of the University of Montreal (UM) and University of Waterloo (UW) were surveyed

anonymously about their estimated level of debt upon graduation. A bilingual survey (French/English) (Appendix 1) was developed to assess different aspects of student demographics and to investigate the level of debt related to externships and overall debt. Demographics, such as age, gender and years of study at university were included. Specific expenses relating to the externship program were also investigated, as well as the financial resources that the students used during their years of study (ie. Provincial/federal loans, scholarships, financial assistance from parents/family, bank loans, etc). Surveys were returned anonymously and the results were tabulated and analyzed by the department of statistics at UM (SPSS version 15, Chicago, IL, USA). All reported dollar amounts are in Canadian funds. Descriptive statistics such as averages, standard deviation and confidence intervals were determined where appropriate.

Non-parametric data (ie. financial resources) were calculated as a percentage of financial resources used by each student. Statistical significance was set at  $p < 0.05$ .

## Results

Twenty six ( $n=26$ ) students from each school (out of a class size of 38 for UM and 72 for UW) responded to the survey. The gender, age and years of study demographics and overall student indebtedness are summarized for each school in Tables 1 and 2. The average age of the new graduates did not differ significantly between the two schools (UM  $24.8 \pm 2.2$  (yrs  $\pm$  SD) vs UW  $25.5 \pm 1.2$ ;  $p > 0.05$ ). A significant difference existed in the number of years of study between the two institutions (UM 5.9 yrs versus UW 7.5 yrs;  $p < 0.001$ ), however there was no significant correlation found between the number of years of study and the level of debt for UW (Pearson correlation  $r=0.127$ ,

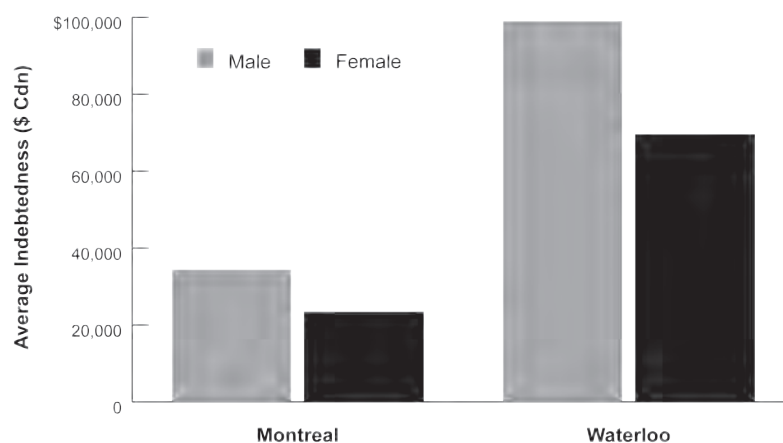


Figure 1: Student debt (\$Cdn) by gender and school (UM-Montreal; UW-Waterloo)

	Participants (class size)	F : M	Avg Age (yrs $\pm$ SD)	Avg yrs of study (yrs)
UM	26 (38)	18 F: 8 M	F: 24.7 $\pm$ 1.8 M: 25.1 $\pm$ 3.1	F: 5.6 $\pm$ 1.3 M: 6.5 $\pm$ 2.3
			Total 24.8 $\pm$ 2.2	Total: 5.9 $\pm$ 1.7
UW	26 (72)	21 F: 5 M	F: 25.4 $\pm$ 1.2 M: 26.2 $\pm$ 1.3	F: 7.3 $\pm$ 1.0 M: 8.6 $\pm$ 1.1
			Total 25.5 $\pm$ 1.2	Total: 7.5 $\pm$ 1.1
Canadian Average	52 (110)	39 F: 13 M	Total 25.05	Total: 6.7

**Table 1:** Student demographics including number of participants, age, gender and total years of university studies are showed for each institution (UM-Montreal; UW-Waterloo; F-female; M-male)

	Mean total debt	Range
UM	\$26,750	\$0 – 115,000
UW	\$75,165	\$3,300 – 150,000
Female	\$48,200	\$0 – 150,000
Male	\$59,231	\$0 – 150,000
Canadian Average	\$50,958	\$0 – 150,000

**Table 2:** Overall student debt presented by institution and by gender (UM-Montreal; UW-Waterloo)

$p=0.54$ ), whereas there was a difference for UM (Pearson correlation  $r=0.524$ ,  $p=0.006$ ). Table 2 and Figure 1 reveal the overall student debt for each University, which varied between zero and one hundred and fifty thousand (\$150,000), with a significant difference between institutions (UM \$26,750 vs UW \$75,165;  $p<0.05$ ) and between genders (M \$59,231 vs F \$48,200;  $p<0.05$ ). Amongst the respondents, the average student graduating was 25.05 years of age, with 6.7 years of University study and an average debt of \$51,000.

UM has one externship rotation of 10-12 weeks, with sites mainly in the US, as compared with UW, which has two 15 week rotations (therapeutic and private practice rotations) throughout North America. The average expense related to the externship at UM was \$3,596, which represented 25% of the total student debt. At UW, the private practice externship represented 6% (\$2,626) and the therapeutic rotation represented 8% (\$5,300), for a total of 14% (\$7,926) of the total debt incurred during the time of study.

A compilation of the individualized educational expenses for each optometry program, detailing tuition, books and instruments, is summarized for each school in Table 3. The cumulative tuition, optometric equipment and books for the entire program were higher for UW (\$52,877) than for UM (\$21,666) students ( $p<0.001$ ). The largest difference was for tuition, with \$13,200 and \$39,670 for UM and UW, respectively. Although computers are not currently “required” for either program, most university students have one and this cost contributes to the total education expenses.

Table 4 illustrates the percentage of students that used a variety of available financial resources. Students used a variety of financial resources, including provincial and federal loans, assistance from parents/family, personal money, bursaries and other (such as bank loans and lines of credit). All students used at least one resource, with the majority using four resources. There was no significant correlation between the amount of resources used and the overall debt (Pearson correlation,  $r=0.184$ ;  $p=0.19$ ). No significant trend was identified between genders as to the amount of resources used (females used on average 3.7 resources vs males 4.1;  $p>0.05$ ).

## Discussion

The educational system in Canada is different to that in the US in many respects. Education is governed at a provincial level and hence each province is slightly different from

another. In Quebec, high school ends at grade 11, this is followed by a two year junior college program (CEGEP) prior to entering University. In the rest of Canada, high school ends at grade 12 and students enter a University Bachelor's degree program thereafter.

To attend optometry school at the UM, the minimal requirements are to obtain the junior college diploma. Eligible students are required to complete a University pre-optometry year prior to the full four-year program. The optometry program is divided into semesters, a fall and a winter semester, with a summer semester between the third and fourth year of the program. Hence upon graduation, students attending the optometry program at UM have completed a *minimum* of nine semesters to complete the requirements for the doctor of optometry (OD) degree.

Students with a bachelor or masters degrees have more years of university prior to entering optometry school. Depending on their discipline of study, they may be granted equivalence for the courses given in pre-optometry.

At the time of the survey, a minimum of 2 years of university was necessary to complete the requirements to attend optometry school at UW. This has since been modified to three years. The UW optometry program works on a similar semester system, with a fall and winter semester per year for the first three years and three semesters in the final year of the program.

In assessing the differences in the

	Tuition	Equipment	Books	Computer	Total
UM	\$13,200	\$6,096	\$2,370	NR*	\$21,666
UW	\$39,670	\$8,810	\$4,397	NR*	\$52,877

\*NR = not formally required

**Table 3:** Academic costs for Canadian optometry programs detailing tuition, equipment and books (UM-Montreal; UW-Waterloo)

	Provincial loans	Federal loans	Parents / family	Personal Money	Bursary	Other
UM	80.8%	15.4%	57.7%	80.8%	80.8%	38.5%
UW	100%	69.2%	53.8%	46.2%	92.3%	42.3%

**Table 4:** Percentage of students using different financial resources for each institution (UM-Montreal; UW-Waterloo)

two optometry programs, students attending UM are potentially younger upon entering the program, since they can enter directly from junior college and hence may have less years of university study than their UW counterparts. This is well reflected in the data presented in this study, with UM having an average of 5.9 yrs of study versus the 7.5 yrs for UW (Table 1). It would seem logical that an increase in the years of study would be reflected by an increase in the expenses incurred and therefore an increase in the amount of debt. However, this study failed to identify any trend between the years of study and the overall debt for UW students ( $p > 0.05$ ). This can be explained partly by the limited variance of years of study for those students which ranged only between 6 and 9 years. Separating debt upon entering optometry school versus debt incurred while at optometry school, and identifying if they have

a previous university degree, may better reflect the correlation between years of study and incurred debt.

The increased female presence in optometry schools is a trend that has been observed over the past two decades. For the 2007 graduating class 71 % of the UM class and 75% of the UW class were women. This trend has continued, the 2012 class at UW has 76% female (69 out of a class of 90). This is a trend that is mirrored in the US schools, with geographical differences across the country.<sup>11</sup> Although more females responded to the survey than males at both institutions, this respected the class demographics.

This study revealed a higher debt for students attending UW than UM (Table 2 and Figure 1). Part of the difference can be explained by the differences in academic costs between the two institutions, especially those directly related to tuition



(Table 3). Other factors influencing the differences are equipment and books that are required to be purchased. For example, UW students are required to purchase their own trial lens sets and Goldmann tonometer probes. At UM this is not a requirement.

UM is the only French speaking optometry school in Canada and attracts mainly resident French speaking students. UW is the only English optometry school in the country and hence attracts a more diverse English-speaking pool of applicants from across the country. Many students are non-resident to Ontario and as a consequence may have higher travel expenses, which may further explain the difference between the debt of students attending the two Canadian optometry schools. Out of province students attending UM are subject to higher fees than resident Quebec students. International students are subjected to considerably higher fees at both institutions.<sup>12, 13</sup> This survey was not able to differentiate between students from within or outside of province. Future studies will address this question in more depth.

The range of debt was surprisingly large for both schools, (0 to \$150,000). Although the average debt (UM – \$26,750; UW – \$75,165) seems low from a US perspective, these are considered high values when taken within the Canadian context. The overall tuition for an American optometry school program varies from around \$60,000 for a public school to \$90,000 US for a private institution.<sup>14</sup> It is noteworthy

that a new graduate in Canada can expect an average gross salary of \$80,000.<sup>15, 16</sup> From that, housing, income taxes and transportation costs need to be deducted prior to paying down student debt. It is equally noteworthy that in Quebec and Ontario an income between \$70,000-80,000 Cdn places the graduate around the 45% income tax bracket. This taxing structure lengthens repayment of student loans, since other living expenses need to also be considered (housing, food, transportation, etc.) and those often coincide with major life milestones such as marriage, purchasing a home/car, and starting a family.

Gender differences in overall debt were also identified (Table 2, Figure 1) with males having, on average, a \$10,000 higher debt than women. The questionnaire used in this study was not able to identify the reason for this difference. Males from both schools had more years of study than their female counterparts (Table 1) which is most likely a contributory factor to the gender difference observed. More research is needed to identify lifestyle differences, spending habits (housing, food, transportation, entertainment) and the entering debt prior to attending optometry school.

Externships have become an important aspect of the clinical curriculum at all the North American schools and colleges of optometry. Some of the North American schools have between 4 and 6 rotations in their final year, often off campus. These departures from campus have considerable associ-

ated costs but were not previously reported for the Canadian optometry schools. Due to the short duration of the externship rotation (often under 12 weeks), students may maintain their housing near the optometry school and incur additional housing cost at the externship site. Short term housing can be expensive and varies geographically. The lack of break between 3<sup>rd</sup> and 4<sup>th</sup> year leads to students being unable to work in the summer and earn money to support their studies

The single externship rotation at UM represents 25% of the total student debt, while at UW the combination of the two externship rotations represented 14% of the total debt. Becoming aware of the financial impact that externships have on the student's debt is helpful for future planning of financial assistance for these programs. In addition, the student may better prepare their finances in light of that heavy burden in their final year.

## Conclusion

Identifying student debt amongst Canadian optometry students is an important step in understanding the financial burden that new graduates face. Clearly, more research is needed to uncover the contributing factors that affect the level of student indebtedness between genders and between institutions. This is the first report of student indebtedness in Canadian optometry schools. This information is valuable for prospective optometry students, program administrators, legislators and current students within the program.

Phase II of this project is ongoing and will survey the 2008 graduating class of the two Canadian optometry schools, with a more elaborate survey investigating academic costs, housing, travel and personal lifestyles for the new graduates.

## Acknowledgements

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**Key words:** *student indebtedness, Canadian optometry students*

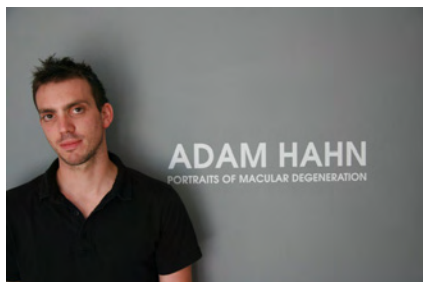
## Appendix 1. Indebtedness survey

- Age at graduation : \_\_\_\_ years old
- Gender ☐ Male ☐ Female
- How many years of University will you have completed in total by the time you graduate from Optometry School ? (include other university studies ex. BSc, BA, MSc. etc) \_\_\_\_ years
- By the time you graduate, can you estimate your level of indebtedness (how much money will you owe to pay back loans that you've incurred for your studies)  
☐ I will have no debts by the time I graduate  
☐ my estimate my debt to be around \_\_\_\_\_ \$ Cdn
- Estimate your total expenses related ONLY to your therapeutic externship rotation. \_\_\_\_\_ \$ Cdn
- Estimate your total expenses related ONLY to your practice externship rotation \_\_\_\_\_ \$ Cdn
- What has been the sources of your financial assistance while at Optometry school ? (check all that apply)  
☐ provincial loans  
☐ federal loans  
☐ parent's assistance  
☐ personal money  
☐ bursary/grants (do not need to pay back)  
☐ other (specify) \_\_\_\_\_

## Appendix

*Appendix 1: Survey on student indebtedness distributed to the 2007 graduating class of both Canadian optometry schools. The survey was available in both French and English.*

## ACKNOWLEDGEMENT



Adam Hahn graciously allowed us to use his work to accompany the feature article on age-related macular degeneration.

Adam Hahn is an established portrait painter who has twice been selected for the BP Portrait Award at the National Portrait Gallery in London, England. He studied at the Glasgow School of Fine Arts and the Prague Academy of Arts, Architecture and Design.

With the assistance of The London (UK) Project to Cure Blindness he spent a year with his portrait subjects for this project, patients suffering from macular degeneration. His series captures the subjects as they see themselves – through the fog of partial blindness. The viewer is engaged in trying to understand how someone with macular degeneration sees the world.

To see more of Adam's work:  
[www.adamhahn.co.uk](http://www.adamhahn.co.uk)

The inspiration for the work was my grandmother. She had MD for the last eight years of her life but like so many people with MD she never really spoke about it so we never really knew what she could or couldn't see. We would read her newspaper articles, help her with her post and finances but she was an incredibly independent person who could do more in one day than I could in a week! Although she couldn't recognize faces or read type, she never let her eye sight interfere with her life. She was constantly on the go, walking up to eight miles every Sunday, forever going to concerts, theatres, music groups, classes, exhibitions, and cinema, and she also helped as a volunteer at her local hospital.

So after she died (almost three years ago) I decided to do something in her memory by raising awareness of MD. I contacted the Institute of Ophthalmology and the London Project who gave me the scientific information necessary to understand the disease, but I needed people's experiences to truly understand what it's like to live with MD. The MD Society put me in touch with two of their members and the MD group in Tunbridge Wells, southeast of London.

On meeting each person I asked them to describe in as much detail what they saw of



'Richard', by Adam Hahn

me. I kept the distance constant for each sitter to get a clear idea of the information their eyes received. After taking photographs at the sitting, I transferred this information by manipulating the image to a level of vision described by each sitter. In the case of my grandmother's portrait Booba, (see page 14). I worked on the basis of what other sitters had told me of their vision and how that related to what she saw and how she used her peripheral vision. Not only was I trying to raise awareness but I was also challenging the scientific images where MD vision is represented as a circular black hole in the centre of one's vision, that no sitter related to.

Adam Hahn

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