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Research Note

Students' perceptions of and amount of diabetes education in Canadian schools of pharmacy

Kerry Mansell*, Holly Mansell, Wendell Neubeker, Haley Drake

College of Pharmacy and Nutrition, University of Saskatchewan, Saskatoon, Saskatchewan, S7N 5E5 Canada

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ABSTRACT

Objective: To determine the amount of diabetes content taught at Canadian schools of pharmacy, and students' perceptions of diabetes education.

Methods: Between September 23 and October 23, 2015, faculty members at each pharmacy school were asked to provide the amount of didactic, interactive, and elective hours devoted to diabetes education. These faculty members subsequently emailed an electronic web-survey to all fourth year pharmacy students to ascertain their perceptions of the amount of diabetes-related material they received and comfort level pertaining to diabetes education.

Results: Representatives from each pharmacy school (10/10; 100%) reported the amount of diabetes education provided at their schools (range of 18–43.5 hours; mean 25.3 hours). Student responses were obtained from 90% (9/10) of pharmacy schools; a total of 313/1216 (25.7%) students completed the questionnaire. The majority of pharmacy students (53.2%; 166/313) reported feeling the overall amount of diabetes content in their curriculum was just right while 46.2% (144/313) felt there was too little. 95.6% (299/313) disagreed diabetes received too much attention in the curriculum. A post-hoc analysis revealed that students who attended schools with more contact hours or a diabetes-specific elective felt more comfortable with dealing with certain diabetes patients and situations.

Conclusions: Pharmacy schools vary in the amount of diabetes content taught in their curriculum. Students were split between feeling they received enough diabetes education or too little; students who received more content reported greater comfort in dealing with most diabetes patients and situations. This information is useful for pharmacy schools looking to evaluate their curricular diabetes content.

Introduction

Diabetes mellitus is increasingly becoming a global health crisis that is affecting public health and economic systems around the world.¹ The growing number of diabetes patients is attributed to increasing rates of obesity, excess caloric intake, older age, and increasingly sedentary lifestyles.^{1,2} Canada and the United States (US) are amongst the countries with the highest prevalence of diabetes among the Organization for Economic Cooperation and Development (OECD) countries,³ and it has been recently estimated that 49–52% of adults in the US have either prediabetes or diabetes.² Globally, 381.8 million people were estimated to have diabetes in 2013, with a projected rise to 591.9 million people by 2035.⁴ Global healthcare costs attributable to diabetes were estimated to be \$376 billion United States Dollars (USD) in 2010 and projected to increase to \$490 billion USD by 2030.⁵ In light of these trends, it

* Corresponding author.

E-mail addresses: kerry.mansell@usask.ca (K. Mansell), holly.mansell@usask.ca (H. Mansell), wendell.neubeker@usask.ca (W. Neubeker), had979@mail.usask.ca (H. Drake).

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is vital that pharmacists are both accessible and prepared to deal with this increasingly prevalent group of patients.⁶

Diabetes patients visit their pharmacists up to seven times more frequently than their physicians,^{7,8} so it is important that pharmacists are being trained to have the necessary knowledge, skills, and confidence to provide the care required by diabetes patients. Diabetes mellitus (DM) is a standard component of pharmacy curricula throughout North America, although the educational outcomes of the Association of Faculties of Pharmacy of Canada (AFPC) and Accreditation Council for Pharmacy Education (ACPE) do not mandate what or how much diabetes content must be taught.^{9,10} Further, some Canadian schools of pharmacy are entry-level doctor of pharmacy (PharmD) programs, whereas others are still a baccalaureate program. As such, diabetes content may vary significantly between schools of pharmacy based on curricular constraints and differing faculty experts at each school.¹¹ Therefore, pharmacy students across the schools of pharmacy will likely not all have the same level of education or comfort when working with diabetes patients.

Several diabetes-specific learning programs have been developed in the US in an attempt to discover the value of providing enhanced diabetes education to pharmacy students; these programs range from advanced elective courses to week-long simulations of the life of a diabetes patient.^{12–17} Some studies have stated the need for enhanced diabetes education to be incorporated into the core curriculum of pharmacy programs instead of being designed as an elective course; this would provide an opportunity for all students to gain valuable skills in diabetes patient care.^{12,13} Canadian pharmacists are increasingly interested in diabetes management; they represent one-third of all Certified Diabetes Educators (CDEs) in Canada and are the fastest growing segment of CDEs in Canada.¹⁸

Many studies have evaluated various curricular aspects of US schools of pharmacy,^{19–21} however none have specifically described the amount of diabetes-specific content offered and student perceptions of such content. The purpose of this study was to determine the amount of diabetes content taught in pharmacy schools across Canada and to characterize the students' perceptions and comfort with the amount of diabetes education they receive.

Methods

Diabetes content

In order to determine the amount of diabetes content taught at the 10 pharmacy schools across Canada, the study investigator contacted a faculty member from each pharmacy school via e-mail. Each of these faculty members then directed the study investigator to the faculty member responsible for overseeing the diabetes content delivered in their respective pharmacy programs. The study investigator then contacted each of these faculty members via e-mail and asked them to determine the total amount of diabetes-related content taught at their respective school. They were also asked to determine the amount of didactic, interactive, and diabetes-specific elective hours taught, if applicable. This information was collected between September 23, 2015 and October 23, 2015.

Student perceptions of diabetes-related content

A questionnaire was developed to assess student perceptions of diabetes-related content in their curriculum since no existing validated tool could be identified (questionnaire available upon request). The questionnaire was piloted on five pharmacy students and one non-pharmacy student from the University of Saskatchewan to ensure face validity. Questions were modified based on student feedback to improve question clarity and applicability. The final questionnaire consisted of 14 questions that included 4-point Likert scale questions (strongly agree, agree, disagree, strongly disagree) and 'yes/no' questions focused on diabetes curricula content and student perceptions of their diabetes knowledge. An additional section was added at the end to allow students to provide open-ended feedback. The questionnaire was distributed to all fourth-year pharmacy students from nine pharmacy schools across Canada (one school chose not to disseminate the questionnaire) who were in the final year of their pharmacy program and had already received all of their diabetes-related education in their respective programs.

The questionnaire was made available to students via a link to SurveyMonkey®. Once the questionnaire was ready, the study investigator sent the link and description of the study to the faculty contact representative at each of the pharmacy schools in Canada. These faculty members then emailed their respective students an e-mail link directing them to the questionnaire if they wished to participate. This survey invitation was emailed out twice to all fourth-year pharmacy students between the weeks of October 30, 2015 and November 23, 2015.

This study protocol was submitted to the University of Saskatchewan Behavioural Research Ethics Board for review. An ethics exemption was granted because it met the requirements for program evaluation.

Statistics

Survey results collected via the online survey tool were imported and analyzed using SPSSv23. Basic descriptive statistics were performed for comparisons of student participant responses. In a post-hoc analysis, a comparison between schools was done using Pearson chi-square based on the amount of diabetes-specific content delivered, as well as for one school who provided diabetes-specific elective material.

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