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Short communication

# Brazilian pharmacists' perspectives on continuing education for diabetes management

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## Abstract

**Background:** Pharmacists in low- to middle-income countries often lack opportunities to develop and apply clinical pharmacy skills in real-world settings. The benefit of a diabetes continuing education program (DM Educate<sup>®</sup>) has not been assessed in Brazil and may prove convenient and cost-effective for pharmacists to develop diabetes management skills.

**Objective:** To identify if Brazilian pharmacists and student pharmacists would participate in DM Educate<sup>®</sup>, utilize skills gained in practice, and identify modifications to DM Educate<sup>®</sup> that better meet the needs of these health care professionals.

**Methods:** Three focus groups of pharmacists and student pharmacists ( $N = 19$ ) were conducted in Brazil. Participants watched a module of DM Educate<sup>®</sup> with visuals in English and audio in Brazilian Portuguese. Participants were asked about program value and barriers to its use and implementation in Brazil.

**Results:** Four main themes emerged: Pharmacists struggle with expanding their clinical role and knowledge base, pharmacists value programs like DM Educate<sup>®</sup> to acquire knowledge about diabetes care, cultural adaptations are necessary to improve program applicability, and program content should be available through different modalities.

**Conclusions:** This study suggests that Brazilian pharmacists and student pharmacists want to provide clinical services to patients with diabetes, but they lack access to current drug information and have limited training to execute care. Continuing education programming like DM Educate<sup>®</sup> enables pharmacists in other countries to engage in clinical training. Partnerships with U.S. institutions that provide educational programming could serve to establish clinical pharmacy education in countries that lack supporting infrastructure as long as program accessibility is convenient and culturally appropriate.

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**Keywords:** Brazil; Diabetes mellitus; Pharmacists; Continuing education

## Introduction

Pharmacists have been recognized for providing evidence-based care for patients,<sup>1</sup> with many studies demonstrating their positive impact on clinical and economic outcomes.<sup>2–4</sup> Clinical pharmacists' value has been illustrated in high-income countries, but in middle- to low-income

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countries that struggle with outdated pharmacy curricula, dilapidated health care infrastructures, and shortages of practicing pharmacists, the role of a clinical pharmacist has yet to be fully recognized.<sup>5,6</sup>

In Brazil, approximately 11.9 million citizens aged 20–79 years old have diabetes mellitus,<sup>7</sup> with an additional five million cases expected by 2030.<sup>8</sup> Knowledgeable clinicians who can care for this growing population segment are needed. With the aid of continuing education resources, clinical pharmacists could fill this gap while enhancing their professional role and offsetting the workload burden experienced by other clinicians.<sup>1</sup> Particularly in Brazil, opportunities for continuing education are limited and are not mandatory to practice as a pharmacist. Individuals pursuing a pharmacy degree complete a five-year program resulting in a generalist pharmacy degree. While training activities involving patient care were introduced in 1997, such activities represent only 5% of the total curriculum hours, with the majority of coursework focusing on pharmacology, clinical analysis, and parenteral nutrition. Consequently, many pharmacists are employed in industry, clinical analysis laboratories, hospital pharmacies, and hospital pharmacy administration.<sup>6</sup>

DM Educate<sup>®</sup>, an online continuing education program created by the University of Pittsburgh School of Pharmacy, is designed to provide health care professionals with a multidisciplinary approach to comprehensive diabetes management.<sup>9</sup> The program contains a collection of 12 modules, delivered through video lecture by a multidisciplinary group of faculty. Lectures are available via the internet and are synchronized with PowerPoint slides. Learning is also facilitated through active learning experiences and post-module self-assessment questions. Some course modules incorporate supplemental learning activities provided through links outside the delivered lecture. An example activity is a step-by-step instructional video on the use of insulin delivery systems. At the end of each module section, a self-assessment test provides ten multiple-choice questions that are randomly selected by the program from a pool of at least 30 questions, so that learners receive unique examinations. Module topics focus on pharmacotherapy, nutrition, exercise, mental health, health promotion, and cultural competency. DM Educate<sup>®</sup> has been implemented in over 85 colleges and universities and has assisted the educational needs of over 10,000 pharmacists, but it has not been explored in middle- to low-income countries.<sup>10</sup>

The purpose of this study was to describe the perspectives of Brazilian pharmacists and student pharmacists to determine how they would use this tool and what program adaptations would serve to meet their educational needs.

## Methods

### Setting

This qualitative study was conducted between May 2011 and June 2011 in the city of Salvador, Brazil, at Hospital Aliança and the Regional Council of Pharmacy of Bahia.

### Participant recruitment

Eligible participants included adults who were licensed pharmacists or student pharmacists in Brazil with no previous exposure to DM Educate<sup>®</sup>. Participants were recruited from universities, local hospitals, and the Center of Diabetes and Endocrinology of Bahia (CEDEBA) and were contacted via telephone and in person by coordinators from local health centers and from the Regional Council of Pharmacy of Bahia. The primary role of participating pharmacists in their respective job positions was related to medication dispensing. Each participant who completed the study received US \$100 as compensation for three hours of participation.

### Data collection

The Institutional Review Board at the University of Pittsburgh reviewed and approved the study prior to data collection. Participants provided verbal informed consent at the beginning of each focus group. The investigators sought to recruit eight to ten participants for each focus group, anticipating that six to eight individuals would participate based on dropout rates reported in the literature.<sup>11</sup> A trained focus group facilitator fluent in Brazilian Portuguese conducted each focus group. Interview questions were designed for the study and are shown in Table 1. The facilitator did not present personal views during data collection. An interview guide was used to provide consistency among interviews, and probing questions were asked as needed when the interviewer needed to clarify participants' answers. Participants were shown a DM Educate<sup>®</sup> module (i.e., oral antihyperglycemic agents), with visual content in English and audio content in Brazilian Portuguese, followed by a question-and-answer period.

### Data analysis

Each focus group was audio recorded and transcribed from Brazilian Portuguese to English by a reputable

Table 1

#### Focus group questions

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What did you think about this video?

Would you watch/participate in these modules?

- If yes, why do you think that?
- If no, why not?

What would motivate you to participate?

PROBE: If continuing education is not a requirement for your job, would you use the program for the purposes of your own education?

How would you like to see these modules delivered to you?

What challenges would you see in implementing this program?

Do you see yourself using the information presented in this program in your profession?

- If yes, why do you think that?
- If no, why do you think that?

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What do you think is the best way to advertise this program?

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