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Research Article

# Student pharmacists' perceptions on their preparedness and comfort level in counseling on HIV transmission risk factors and over-the-counter HIV tests

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## Abstract

**Objectives:** To assess student pharmacists' preparedness and comfort level to provide information about the over-the-counter human immunodeficiency virus (HIV) test and HIV transmission risk factors.

**Methods:** A survey consisting of questions assessing student perceptions about the over-the-counter (OTC) HIV test, as well as preparedness to counsel patients on test results and HIV transmission risk factors, was developed using a 5-point Likert-type scale. Data were analyzed using independent *t*-tests and analysis of variance.

**Results:** A total of 212 of 277 student pharmacists provided complete data for the study (response rate = 76.5%). Of the fourth-year students, 40.6% reported that they were not familiar with the OTC HIV test and only 33.1% feel comfortable counseling patients on its use. Moreover, 51.5% feel that the coursework has not adequately prepared them to counsel patients on OTC HIV tests. However, students who had received specific counseling and training on OTC HIV testing outside their required coursework were more likely to feel prepared to counsel patients on HIV transmission risk factors and OTC HIV tests.

**Conclusions:** This study identifies potential shortcomings in Doctor of Pharmacy programs as it relates to training student pharmacists on HIV testing and counseling and HIV transmission risk factors. Findings from this study provide a basis for pharmacy schools to consider implementing techniques in the curricula to increase the preparedness and comfort level of student pharmacists when counseling patients on the OTC HIV test available in pharmacies today.

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**Keywords:** HIV; AIDS; Over-the-counter test; Patient counseling; Student preparedness

## Introduction

It is estimated that more than 1.1 million people are living with human immunodeficiency virus (HIV) in the United States, with an estimated 50,000 new infections per year.<sup>1</sup> Approximately, 13% of those living with HIV infection in the United States are unaware of their HIV

status.<sup>2</sup> Early awareness of HIV status is critical to prevent onward transmission and to achieve favorable treatment outcomes. On March 25, 2004, the Food and Drug Administration (FDA) approved the first rapid test for HIV in oral fluids.<sup>3</sup> Late in 2012, the FDA approved a rapid HIV test for over-the-counter (OTC) sale and home use to be sold at pharmacies. The OraQuick<sup>®</sup> Rapid HIV-1/2 antibody test (OraSure Technologies, Inc.) is a qualitative, one-step test designed for the detection of anti-HIV-1/2 antibodies using oral mucosa transudate.<sup>4</sup> This rapid OTC HIV test is currently available for purchase at community pharmacies in the United States

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and online at an approximate retail price of \$44. The non-invasive test has the advantage of using oral fluid and results are available in 20 minutes, providing a very quick turnaround time; however, an additional confirmatory test is required. The test user interprets the test validity and the presence of antibodies for HIV-1 and HIV-2 by reading lines on the swabbing device. While this test is accessible in community pharmacy aisles and online, many pharmacists choose to keep it visible to the public behind the counter in an effort to provide counseling at the time of purchase.

As community pharmacists are continuously ranked as one of the most trusted professions in the United States,<sup>5</sup> they have been able to grow into their roles as patient educators. Consequently, these pharmacists are in an excellent position to engage the patient at the point of sale and to be able to better counsel these patients regarding the test and post-test resources. Studies suggest that patients value a personal connection prior to engaging in antiretroviral therapy regardless of whether it is in a specialized pharmacy setting<sup>6</sup> or a community pharmacy setting.<sup>7,8</sup> The rapid OTC HIV test offers the opportunity to provide pre- and post-test HIV counseling about reducing HIV transmission risk factors for people irrespective of their HIV status. With the high rate of undiagnosed HIV infections in the United States<sup>2</sup> and the evolving role of pharmacists in health care, some community pharmacies are offering HIV testing services on site. Research shows that pharmacists' discomfort with the task of delivering results to patients and lack of existing training on pharmacy-based HIV testing are barriers to the implementation of on-site HIV testing in pharmacies.<sup>9</sup>

Research has shown that community pharmacists identify a public health need related to the OTC sale of rapid HIV test kits and see this as an opportunity for pharmacists to offer consultation about the test results.<sup>10</sup> According to Ryder et al.,<sup>9</sup> pharmacists feel that standard pharmacy training is not sufficient for counseling regarding HIV test results. Other studies have shown that pharmacists are willing to expand their roles into other areas of HIV/Acquired Immune Deficiency Syndrome (AIDS) prevention<sup>11</sup>; however, they recognize that there is a need for additional training.<sup>12</sup> A literature search for evaluations of current Doctor of Pharmacy (Pharm.D.) curricula regarding HIV OTC testing reveals that pharmacy schools across the United States have begun the conversation regarding students' perceptions on HIV/AIDS.<sup>13</sup> In a recent article by Akinwale et al.,<sup>14</sup> point-of-care testing for infectious disease is described as an important component of the Pharm.D. curriculum, not only in terms of instruction of the mechanics of each test but also in the appropriate delivery of test results and subsequent care.

What is lacking in the current pharmacy academic curriculum is a discussion regarding HIV OTC testing and the responsibility of schools to provide such training to the student pharmacists. Therefore, it is imperative that pharmacy programs evaluate their curricula in order to ensure that future pharmacists are able to meet the new demands and added

responsibilities at community pharmacies as it pertains to HIV/AIDS. Although some studies have described the attitudes, perceptions, and knowledge regarding HIV/AIDS,<sup>15</sup> most have focused on describing the role of student pharmacists in the management of antiretroviral therapy.<sup>16,17</sup> At Belmont University College of Pharmacy, where student pharmacists are exposed to HIV/AIDS topics, our goal is to assess their preparedness and comfort level in counseling patients on HIV transmission risk factors and OTC HIV tests.

## Objectives

This study extends the body of research on the preparedness and comfort level of student pharmacists' in OTC HIV testing and counseling. The primary objectives of this study were to assess students' preparedness to provide information about the OTC HIV test, and comfort level when counseling patients about the test and on HIV transmission risk factors. HIV transmission risk factors were defined as those risky behaviors that have been identified as major causes of HIV transmission as identified on a risk assessment form used by a local community-based AIDS service organization. These included oral, vaginal and anal intercourse, sex with multiple partners, engaging in risky behaviors with HIV positive or unknown HIV status individuals, IV drug use, and sharing needles. The secondary objective of the study was to assess students' opinions about their pharmacy school coursework as it pertains to HIV/AIDS related issues.

## Methods

### *Data collection tool*

In order to address the objectives of this study, a cross-sectional descriptive anonymous survey design was used. An electronic survey instrument was developed and disseminated to pharmacy students at Belmont University College of Pharmacy in Nashville, Tennessee ([Appendix 1](#)). The scale development process utilized in this project was patterned after the suggestions of Churchill<sup>18</sup> and DeVellis.<sup>19</sup> After a review of pertinent literature and in-depth interviews with a local HIV/AIDS advocacy organization, the researchers created a survey instrument containing 63 items assessing demographic characteristics of the respondents, perceptions of the rapid OTC HIV test, and their preparedness to discuss and counsel patients. The initial survey was pre-tested in a small ( $n = 30$ ) panel of pharmacy school faculty. Following the advice of DeVellis<sup>19</sup> they were asked the following: (1) to judge how relevant they believe each item is, (2) to evaluate the clarity and conciseness of the items, and (3) to suggest better ways to access the constructs of interest. Based on the suggestions of this panel, several items were deleted, thereby reducing the number of items to 50 for all constructs.

Eight of these questions assessed basic demographic information (age, gender, year in school, etc.), while the

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