



Preparing the Future: An interprofessional approach to prepare future health and service-delivery professionals to attain an AIDS-free generation



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ABSTRACT

Background: Less than 30% of the 1.2 million persons living with HIV in the United States are successfully treated. There is a deficit in knowledge and skills to address the HIV epidemic among the health and service delivery workforce.

Purpose: The purpose of our study was to evaluate the effect of a didactic and hands-on interprofessional HIV curriculum among a health and service delivery professions students in a US urban area using a Knowledge, Attitudes and Beliefs (KAB) framework.

Methods: A pre- and post-test evaluation was distributed to students in the 2012–2013 academic year. Open-ended questions gathered “free-form” insight from participants. A total of 179 students (82% response rate) from the five academic disciplines completed the evaluations.

Discussion: The Preparing the Future program accomplished its goal of increasing knowledge and attitudes about HIV among participants. Educating health and service delivery professions students about HIV provides an opportunity to influence knowledge and attitudes.

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Introduction

Background and context of the national HIV epidemic

Over 1.2 million persons are living with HIV in the United States (US).¹ The HIV epidemic is generalized in many US urban areas, disproportionately impacting racial and ethnic minorities and men who have sex with men.¹

Maryland is ranked second among US states with a rate of 36.7 new HIV infections per 100,000.² In Baltimore, Maryland 1 in 43 citizens over the age of 13 are living with HIV, among African

Americans in the same geographic area, the ratio is 1 in 29.³ These alarming statistics are similar to other major urban areas of the US, representing a generalized epidemic of HIV.¹ The scientific community has confirmed that there are tools, such as treatment as prevention and pre-exposure prophylaxis, to prevent, treat, and control the HIV epidemic.^{4–6}

HIV is considered to be a health disparity, disproportionately impacting persons who live below the poverty line, those without a high school education and those who are experiencing homelessness.⁷ Despite advances in HIV prevention, care and treatment, HIV-related stigma and discrimination still pervade national attitudes. Evidence indicates that gaps in knowledge among practicing health and service delivery professionals hinders the potential to achieve national goals to reduce the incidence of new HIV infections, increase access to high quality HIV care and reduce HIV-related health disparities.^{8,9} The United States Centers for Disease Control and Prevention (CDC) released guidelines in 2006

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that encourage HIV testing as part of routine medical care.¹⁰ Despite this standard, most health care providers do not offer HIV testing to all of their patients, but to only those perceived to be at risk.¹¹ Ending HIV in our lifetime depends on a team of professionals working together to address the HIV epidemic and provide coordinated and comprehensive prevention, diagnosis, care, treatment and supportive services.

Under the Obama White House administration, the National HIV/AIDS Strategy (NHAS) was developed in 2010.⁹ NHAS identified four major goals with clear benchmarks to address our national HIV epidemic which included: 1) reducing the rate of new HIV infections; 2) increasing access to high quality HIV care and supportive services for persons living with HIV; 3) reducing HIV-related health disparities; and 4) creating a coordinated national response to the HIV epidemic. These four goals were reaffirmed in an update to NHAS released in July 2015. The update places emphasis on advances in research that make the end of the epidemic achievable and on closing the gaps in the continuum of care through the engagement of all sectors of society.¹²

The need for HIV-focused, Interprofessional Education (IPE)

Gaps in the continuum of HIV care depict poor engagement and retention in care.¹³ These gaps include patients who are not tested for HIV, not linked or retained into care, and those not on or non-compliant to antiretroviral medications. To close the gaps, expertise of various disciplines are required and it is imperative that they work together to ensure the continuity of care.

Students within health and service delivery disciplines are increasingly aware of issues related to health disparities, social determinants of health, and the need for coordination and a team approach to optimize patient outcomes.^{14,15} Professional schools who make interdisciplinary efforts toward health care delivery lack a definable standard for merging patient care with student education.¹⁶ Previous research has shown that Interprofessional Education (IPE) can improve confidence and knowledge in students, but such studies are inconclusive as to how involving students in IPE can improve patient care for HIV infected patients in the United States.¹⁷

Purpose

The purpose of our study was to evaluate a didactic and hands-on interprofessional HIV curriculum among a group of health and service delivery professional students at a large, urban university in the United States. Our research question was, “Will students who undergo a didactic and hands-on interprofessional HIV curriculum demonstrate increased knowledge and changes in their attitudes and beliefs toward HIV?” According to the Theory of Planned Behavior, knowledge, attitudes and beliefs influence intention to perform an intended behavior.¹⁸ Therefore, positive changes in knowledge, attitudes and beliefs may lead to the development of health and service delivery professionals who are equipped to address the HIV epidemic. A pre- and post-test was used to evaluate knowledge and attitudes toward HIV prior to and after the delivery of the curriculum among participants.

Methods

The Preparing the Future HIV educational program

In September 2011, the JACQUES Initiative of the Institute of Human Virology at the University of Maryland School of Medicine launched the Preparing the Future (PTF) HIV Educational program at the University of Maryland Baltimore. The PTF program addresses the goals of the NHAS by engaging students from six

professional disciplines (medicine, nursing, pharmacy, dentistry, law and social work) through an interprofessional, didactic, and hands-on curriculum. The curriculum was developed through a collaborative and iterative process using NHAS as a framework in collaboration with faculty and experts from the disciplines of medicine, nursing, social work, law, dentistry and pharmacy.

The PTF Curriculum includes trainings, such as HIV 101, HIV Testing Training, Interprofessional Case Conference, Service Learning, and Enrichment Activities (see [Appendix A](#) for full details about the curriculum). Service learning programs aim to address real community needs, while focusing equally on educating those providing the service.¹⁹

Program evaluation

A pre- and post-test evaluation was distributed on paper or electronically to each student who participated in the PTF curriculum in the 2012–2013 academic year (pre- and post-evaluation tools available upon request). The questions were developed by two members of the research team and built directly from the strategic objectives and content of the PTF curriculum to measure participants' knowledge, attitudes and beliefs about HIV. The Knowledge, Attitudes, and Beliefs (KAB) framework has been used to assess knowledge, predict behaviors and plan HIV-related interventions among health care providers.^{20–22} Open-ended questions were included in the pre- and post-test to gather “free-form” insight from this group of students on their experience.

The survey was validated by students who went through the curriculum the year prior and modified based on responses to the survey the prior year. Internal reliability of the survey was ascertained with Cronbach's reliability coefficient (alpha).²³ The reliability coefficient was determined to be .6166. Since this is a study assessing the knowledge and attitude across a diversity of topics, high correlation among survey items is not expected.

Institutional Review Board approval was obtained for a Waiver of Consent for each participant. The population consisted of 218 students from five academic disciplines who were given the opportunity to complete a pre- and post-test survey. The response rate (number and percentage) of the total participants ($n = 218$) who responded to each question on the pre- and post-test are indicated in [Table 1](#). The majority of the missing cases for the pre- and post-test analysis are undergraduate students from the School of Nursing. They were mainly lost to follow-up in the post-test. The demographic characteristics are similar for both those who were available for the analysis and those who were lost to follow-up.

The pre-test questionnaire consisted of the collection of basic demographic data; 33 true/false, yes/no and Likert-style questions; and 3 open-ended questions, where students gave their responses. The post-test consisted of 36 true/false, yes/no, and Likert-style questions and 9 open-ended questions, where students gave their responses. True/false questions and Likert-style questions assessed knowledge and attitudes. Likert-style questions consisted of five points including: strongly agree, agree, neutral, disagree, strongly disagree. Pre-tests were matched to post-tests using a unique identifier.

Quantitative data analysis

A descriptive analysis was conducted on the demographics of the participants. Proportions of true answer for each of the true/false and Likert-style questions were computed and several paired *t*-tests were performed in order to determine statistically significant changes in knowledge and changes in attitudes related to HIV between pre- and post-survey questions. The data management

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