Fidelity Testing of an HIV Prevention Intervention: An Opportunity to Enhance Nursing Students’ Research Experience

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Background and Significance. In the United States, Acquired Immunodeficiency Syndrome (AIDS) continues to be a leading cause of death of young adults. Both adolescent and adult women are disproportionately at risk for heterosexual transmission of Human Immunodeficiency Virus (HIV) infection in comparison to men. Heterosexual contact accounts for 85% of HIV infection in adolescent females compared to 3% in adolescent males. Women in general may be vulnerable to heterosexual transmission of HIV related to their often unequal status in relationships, as gendered power relationships between men and women may affect a woman’s ability to take steps to reduce risk for infection. This appears particularly relevant to adolescent young women, and underscores the need to design interventions that provide for the opportunity to listen to their perspectives about how power may construct and constrain their choices in sexual decision-making.

There is a need for proven HIV prevention intervention studies in general, and specifically interventions that are geared toward adolescent young women to reduce heterosexually mediated HIV infection. Given this need, there are calls to replicate best evidence interventions and to further investigate effective, evidence-based interventions that are adapted, translated, or disseminated for the adolescent population. Notwithstanding disparities in socioeconomic status and insurance coverage, 91% of children ages 6-17 have a usual source of health care in which they receive primary care services. Therefore, an opportunity exists to reach adolescent young women and adapt proven HIV prevention interventions to their needs in primary care settings.

Motivational interviewing (MI) and behavioral skills building (BSB) are modes of behavioral intervention that have proven to be efficacious and are dynamic and flexible enough to address cultural inclusiveness and sensitivity, as well as adolescent and adult developmental differences. MI and BSB HIV prevention interventions reduce and delay sexual intercourse, increase condom use, decrease number of sexual partners, and decrease sexually transmitted infections.

Strengths of MI and BSB approaches include the dynamic and flexible nature of these methods that lend to the ability to tailor interventions to individual needs. Conversely, the fluidity of the methods poses a threat to intervention fidelity, the degree to which an intervention is delivered as intended. To address this threat, fidelity testing is imperative.

Fidelity testing can be aided by the incorporation of nursing students into the research team. Notwithstanding the importance of providing sound methodology in the development of behavioral interventions, engaging students in hands-on participation with faculty in research endeavors may motivate students to pursue a research career. Given the nursing faculty and nurse scientist shortage, it is important to foster the next generation of nurse researchers through active engagement in the research process.

To these ends, there were three objectives:

1) Establish fidelity for an MI-BSB HIV prevention intervention
2) Determine training needs of health care providers delivering the HIV prevention intervention
3) Enhance nursing students’ research experience
**Methods.** As part of a larger study investigating the feasibility of incorporating an MI-BSB intervention into primary care practice, three nurse practitioner graduate students were employed as research assistants to determine the training needs of primary care providers in delivering a behavioral HIV prevention intervention. Education for the intervention was provided to the research assistants in seven sessions, 3 hours in length. The interactive training sessions consisted of didactic information, discussion, and clinical simulation and included the topics of HIV and sexually transmitted infections, motivational interviewing, and behavioral skills building.

The Motivational Interviewing Treatment Integrity (MITI) Coding Instrument and the Behaviour Changing Counseling Index (BECCI) were used to measure the fidelity of the intervention, with training needs determined by fidelity testing results. The structure, process, and outcomes of incorporating nursing students into the research team members were measured.

**Results.** Use of the MITI and BECCA were both instructive and evaluative of motivational interviewing and behavioral skills building techniques, with training needs determined by an iterative process of fidelity testing that guided training session content. Fifteen hours of training was needed to attain fidelity in the delivery of the MI-BSB intervention. Students reported an enhanced understanding and interest in the research process, increased knowledge and skill development related to research methods, and saw the research experience as relevant to clinical practice. The faculty member observed students actively engaging in the research process, developing teamwork skills, and expressing enjoyment of the experience.

**Conclusions.** Intensive MI-BSB training was needed to achieve fidelity of the HIV prevention intervention. Nursing students were incorporated effectively into the research team with clear benefits for both students and faculty.

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Abstract Summary:
The training needs of health care providers delivering an HIV prevention intervention were determined by incorporating graduate nursing students into fidelity testing of the behavioral intervention. Training needs were determined by an iterative process of fidelity testing.

Content Outline:
I. Introduction

A. Fidelity Testing of Motivational Interviewing (MI)-Behavioral Skills Building (BSB) HIV Prevention Intervention
B. Training Needs of Health Care Providers Delivering Intervention
C. Enhancing Nursing Students' Research Experience

II. Core Content

A. Establish fidelity for MI-BSB HIV Prevention Intervention

1. Training - 3 graduate nursing students hired as research assistants (RAs) & trained in MI-BSB methods & fidelity testing

2. Measures

   a. Use of Motivational Interviewing Treatment Integrity (MITI) Coding Instrument & the Behaviour Change Counseling Index (BECCI) to establish intervention fidelity
   b. MITI & BECCA both instructive & evaluative of motivation interviewing & behavioral skills building techniques

B. Determine training needs of health care providers delivering HIV prevention intervention

1. Structures

   a. Graduate nursing students trained in MI-BSB HIV prevention intervention
   b. Interactive training sessions with RAs – didactic information, discussion & clinical simulation; Topics - HIV/STIs, MI & BSB
   c. Training sessions: Seven sessions, 3 hours in length

2. Process - Length of time for trainees to achieve fidelity in intervention delivery
3. Outcomes
   
   a. Determined by iterative process of fidelity testing that guided training session content
   b. 15 hours of training to attain intervention fidelity

C. Enhance nursing students’ research experience

1. Students self-report
2. Faculty observations

III. Conclusions

A. Intensive MI-BSB training needed to achieve intervention fidelity

B. Nursing students were incorporated effectively into the research team with clear benefits for both students and faculty.

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