A Mixed-Methods Outcome Evaluation of a Mentorship Intervention for Canadian Nurses in HIV Care

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Abstract

We assessed the impact of an HIV care mentorship intervention on knowledge, attitudes, and practices with nurses and people living with HIV (PLWH) in Canada. We implemented the intervention in two urban and two rural sites with 16 mentors (eight experienced HIV nurses and eight PLWH) and 40 mentees (nurses with limited HIV experience). The 6- to 12-month intervention included face-to-face workshops and monthly meetings. Using a mixed-methods approach, participants completed pre- and postintervention questionnaires and engaged in semistructured interviews at intervention initiation, mid-point, and completion. Data from 28 mentees (70%) and 14 mentors (87%) were included in the quantitative analysis. We analyzed questionnaire data using McNemar test, and interview data using content analysis. Results indicated positive changes in knowledge, attitudes, and practices among nurse mentees, with qualitative interviews highlighting mechanisms by which change occurred. Mentorship interventions have the potential to engage and educate nurses in HIV treatment and care.

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Keywords

HIV; mentorship; mixed methods; nurses; outcome evaluation

Nurses are a critical component of HIV care, treatment, and prevention (World Health Organization [WHO], 2013). However, HIV stigma by health care providers (HCP), including nurses, can negatively impact care, treatment, and support for people living with HIV (PLWH; Mill, Edwards, Jackson, MacLean, & Chaw-Kant, 2010; Mill et al., 2013). Stigma may result in people at risk for HIV delaying testing (Pottie et al., 2014) and lead to HCP providing differential care to PLWH (Mill et al., 2013). Stigma perpetuated by nurses may be related to a lack of knowledge and educational preparation about HIV clinical management and counseling, religious background, or workplace culture (Waluyo, Culbert, Levy, & Norr, 2015).

HIV education for HCP is important to promote best practices. Education increases knowledge and promotes positive changes in attitudes, making it key to addressing HIV stigma in health care settings (Aggleton, Yankah, & Crewe, 2011). Despite the benefits, limited evidence exists to evaluate the impact of different approaches to HIV education for HCP (Aggleton et al., 2011). The Canadian Association of Nurses in AIDS Care (CANAC, 2013) recently highlighted deficits in education for nurses in HIV care. CANAC argued that nurses were graduating with insufficient theoretical and clinical experience in HIV care and with "... limited understanding of the broader social, cultural, and historical contexts with which HIV/AIDS is located" (CANAC, 2013, p. 2). WHO (2013) suggested that nurses were in key positions to provide HIV care, treatment, and prevention, and thus it was essential to prepare nurses at the undergraduate and graduate levels, as well as those in practice, to successfully engage in these roles. However, the impact of HIV education programming for nurses to advance knowledge, and practice and address stigma was unclear. Mentorship is one strategy to increase knowledge and skills in HCP. In order to advance education programming for nurses, we implemented and evaluated a mentorship intervention in HIV care for nurses in two rural and two urban sites in Canada. In this paper, we specifically describe the self-reported changes in knowledge, attitudes, and practices by mentees and mentors who took part in the HIV mentorship intervention. Study findings related to HIV nursing education (Mill et al., 2014) and the process of implementing the intervention (Caine et al., 2015) are published elsewhere.

Interventions to Increase Knowledge, Enhance Willingness to Provide Care, and Minimize HIV Stigma

Two recent systematic reviews explored the effect of interventions to reduce HIV stigma in HCP (Sengupta, Banks, Jonas, Miles, & Smith, 2011; Stangl, Lloyd, Brady, Holland, & Baral, 2013). Sengupta and colleagues (2011) noted that, of the 19 studies that met their inclusion criteria, 14 demonstrated effectiveness in reducing HIV stigma. Interventions in the review included information-based approaches, skill-building activities, counseling approaches, and contact or interactions with PLWH. Of the 14 effective interventions, only two received a good quality rating for internal validity, stigma reduction, and outcome

measures. The authors recommended that future studies pay greater attention to internal validity to maximize the potential for statistical and public health significance. Four of the 11 HCP studies included in the Stangl and colleagues (2013) review were interventions conducted with nurses in China (Williams et al., 2006), India (Pisal et al., 2007), African countries (Uys et al., 2009), and with nursing students in Hong Kong (Yiu, Mak, Ho, & Chui, 2010). Most interventions included in the review combined information with skills building and contact with PLWH, and demonstrated a positive impact on HIV knowledge, infection control practices, and willingness to treat PLWH. However, none of the studies included nurses in North America. Stangl and colleagues (2013) concluded that more research was needed to assess the influence of stigma reduction on key behavioral and biomedical outcomes related to HIV prevention and care efforts.

Uys and colleagues (2009) designed a stigma reduction intervention that paired nurses and PLWH to collectively facilitate HIV information sharing and increase empowerment for nurses in five African countries. Although stigma reduction and increased self-esteem were observed by participants living with HIV after the intervention, results did not demonstrate statistically significant decreases in stigma scores for nurses, as measured by a self-administered questionnaire.

Mentorship Models

Clinical mentorship is one approach to enhance HIV care and decrease stigma (WHO, 2014). Mentorship may be defined as a one-on-one relationship that occurs either informally or formally through the assignment of mentors and mentees. According to Latham, Hogan and Ringl (2008), a mentor is a supportive facilitator and partner who works with a mentee in an “evolving learning relationship that is focused on meeting mentee learning goals to foster professional growth” (p. 35). To maximize this relationship, self-reflection and awareness by mentors is required for growth and development, as well as to model self-directed learning (Latham et al., 2008). Chen and Lou (2014), following a systematic review of the efficacy and application of mentorship programs for nurses, defined mentorship as “a long-term and one-to-one interpersonal relationship that encourages the personal and professional development of the mentee” (p. 434). These authors suggested that effective mentorship programs required long-term multidimensional teaching strategies. Recent mentorship models highlighted the benefits and challenges of involving individuals with diverse skill sets, areas of expertise, and mentorship qualities (Callaghan et al., 2009; Copley & Nelson, 2012).

Canadian HIV Mentorship Models

An HIV mentorship model for physicians called the Canadian HIV/AIDS Mentorship Program (Throop et al., 1998) and a nursing mentorship program (Paquin & Lambert, 2000) were implemented in the late 1990s. Unfortunately, the Federal Government of Canada stopped funding the programs in 1998. More recently, Solomon and colleagues (2011) implemented and evaluated a model linking PLWH with experienced HIV clinicians to mentor junior rehabilitation professionals new to HIV care (mentees). Having both a clinical mentor and a mentor living with HIV was perceived by mentors and mentees as a strength,

and honored the Greater Involvement of People living with AIDS principles (Travers et al., 2008). Hence, we built on this work to include mentors living with HIV as a key component in the nursing mentorship intervention. Engaging PLWH with nurses was participatory, inclusive, and emphasized education as a practice where everyone participated in decision-making processes (Boal, 1996; Freire, 1996).

Adult Learning Theory–Transformative Education

Our HIV nursing mentorship intervention was based on mentoring and adult learning theory, particularly transformative education. Transformative education is a form of adult learning that is contextually based, and can be described as intuitive and holistic (Baumgartner, 2001). Transformative learning is grounded in the personal experiences of mentors and mentees, with critical reflection central to the process. Mentees must be provided with opportunities to critically reflect on their beliefs and assumptions, and the premises of their experiences (Merriam & Caffarella, 1999). Transformative education parallels the tenets of mentoring and lifelong learning, which are critical in nursing. This approach is important, as evidence has suggested that traditional continuing education and dissemination approaches have little impact on clinical behavior (Liljestrand, 2004). Hence, transformative education can specifically address underlying attitudes and stigmatizing practices for nurses in HIV care.

Building on research by Mill and colleagues (2009) and the Solomon and colleagues (2011) HIV mentorship initiative for rehabilitation professionals, we implemented and evaluated a community-based model of mentorship for nurses in Canada. The goal of the mentorship intervention was to increase the capacity of nurses to provide comprehensive HIV care for PLWH in Canada. The primary research question addressed in this study was: *What self-assessed changes occurred in knowledge, attitudes, and practices of nurse mentees, nurse mentors, and PLWH mentors who participated in the mentorship intervention in HIV care?*

Methods

Study Design Approaches and Principles

We used a community-based research approach for the mentorship intervention design and evaluation. Community-based research has the potential to contribute to capacity building and community development (Caine & Mill, 2016; Hacker et al., 2012; Israel et al., 2010) and to benefit both the research endeavor and the stakeholders involved (Flicker, Savan, Kolenda, Mildenerberger, 2007). Our inclusion of PLWH as co-investigators and advisors to this research, as well as PLWH mentor participants, ensured that the research was grounded in Greater Involvement of People living with AIDS principles (Travers et al., 2008).

HIV Nursing Mentorship Intervention

Using a conceptual framework developed by the team, based on the philosophy of transformative education and community-based research, the intervention content and mode of delivery was collaboratively determined by nurse mentor, PLWH mentor, and nurse mentee participants at each site, the community advisory committee, and research team members. Participants were able to tailor content and format to their practice environments

and learning needs. At three sites, the mentorship intervention consisted of three face-to-face workshops at baseline, 6 months, and 12 months (intervention completion). At the fourth site, the intervention was 6 months in duration and comprised of two workshops due to funding time constraints and participant preferences. Monthly group meetings with mentors and mentees were held at each site between workshops to continue dialogue and learning. The mentees were not paired with a specific mentor; instead, mentees had access to a collective group of nurse and PLWH mentors and nurse mentees at each site.

Mentors and mentees were provided with an honorarium to partially compensate them for their time to attend face-to-face workshops during the mentorship intervention. To promote and enable participation, continuing education credits were provided by the Faculty of Extension at the University of Alberta to nurses and PLWH mentors who completed a minimum of 100 hours of the intervention.

Face-to-face workshops—At least one principal investigator, one local co-investigator, and a research assistant facilitated each workshop. An introductory workshop was held with mentors and mentees at each of the four sites to provide opportunities for participants to form relationships, meet members of the research team, and begin the process of knowledge acquisition in relation to HIV care, treatment, and prevention. During the first workshop, small group discussions centered on case vignettes, key political and social issues that influenced care, and issues related to specific populations over-represented by HIV infection at each site. Health care providers from a variety of disciplines (medicine, pharmacy, social work, rehabilitation) were invited to the workshops to build interdisciplinary knowledge through didactic and experiential learning methods. In addition to drawing on practice experiences, we conducted a body-mapping activity with participants at each site as a component of the intervention. Body mapping is a creative approach used to inquire into life experiences through art. In HIV education, body mapping has been used as a treatment information and support tool, a tool for self-discovery, and a means of building community (Maina, Chorney, Sutanyenko, & Caine, 2013).

In keeping with transformative education, the structure and content for the second and third workshops were developed during the first workshop in collaboration with participants at each site. Topics such as legal issues, culturally safe care, and stigma were common across all sites; however, the depth of discussion differed depending on the needs of participants and context of the site. We used a variety of resources including videos, guest speakers (HCP, policy- and decision-makers, and Aboriginal elders), case vignettes, and body-mapping activities at each site. In the final workshop (at 12 months at three sites; at 6 months at one site) participants reflected on the intervention in a group, enabling them to acknowledge each other's participation and contributions.

Monthly discussion meetings—Informal engagement was encouraged for participants throughout the intervention, with mentors and mentees collaborating to determine topics for discussion at monthly meetings. Nurse and PLWH mentors co-facilitated meetings between workshops with the support of the local co-investigator and/or collaborating agency. A variety of virtual technologies (Webinar and teleconference) were available to provide mentorship opportunities in a convenient and accessible manner. Based on participant

preferences, however, most meetings occurred face to face. Some meetings included site visits to HIV services. Across all sites, a primary focus of meetings was to examine the lived realities of PLWH, health system engagement, and interdisciplinary practices in HIV care. Other meetings focused on HIV prevention, pathophysiology, pharmacology, and initiation and maintenance of antiretroviral treatment, as well as counseling of PLWH and their families. The overall estimated time commitment of the intervention was 2 hours per week for workshops, meetings, and interviews for 1 year. Further description and discussion of the intervention implementation process are provided elsewhere (Caine et al., 2015).

Evaluation Approach

We used a mixed-methods evaluation design to examine self-assessed changes in knowledge, attitudes, and practices over the course of the mentorship intervention. Mentors and mentees completed pre- and postintervention questionnaires, and engaged in three semi-structured interviews immediately before the intervention, at the 6-month workshop, and at the 12-month workshop (excluding one site where the intervention lasted 6 months).

Research ethics approval for the study was obtained from research ethics boards at the University of Alberta, University of Calgary, University of Victoria, Dalhousie University, McMaster University, University of New Brunswick, University of British Columbia, First Nations University of Canada, and Langara College, and organizational approval was obtained at seven partnering service organizations, community organizations, and participating clinical agencies at each site. Written informed consent was obtained from all participants. Several strategies recommended by Morse (2015) were incorporated into the study design to enhance the rigor of the study: prolonged engagement with participants, triangulation of methods, de-briefing of research team members following each stage of the evaluation, and the development of a coding framework.

Target Populations and Recruitment

The target populations of interest were nurses working clinically who were experienced in HIV care (mentors), nurses less experienced in HIV care (mentees), and PLWH (mentors). In order to assess the intervention in different service contexts and with different patient populations, we implemented the mentorship intervention in two urban and two rural sites in Canada. Eligibility criteria included (a) English-speaking nurses and PLWH, (b) living within 50 km of one of the study sites, and (c) willing to participate for the duration of the mentorship intervention. In addition, nurse mentors needed to have several years of experience in HIV prevention and/or care and PLWH mentors needed to have had an HIV diagnosis for at least 1 year prior to participation. We did not specify the number of years of experience, as the level of experience varied across regions; we always invited those with the most extensive experience. Nurse mentees and mentors were required to be registered in a provincial jurisdiction.

Convenience and network sampling were used to recruit participants. Nurses were actively recruited via contacts with CANAC members and local co-investigators, or passively recruited through posters placed in health care facilities. PLWH mentors were recruited with

the assistance of collaborating service organizations, which also provided support to the PLWH mentors during the intervention.

Data Collection

Quantitative measurement of HIV knowledge, attitudes, and practices—

Researchers have used a variety of tools to assess HIV knowledge, practices, and attitudes, including stigma, toward PLWH. For example, the AIDS Attitude Scale, which was developed for health care providers (Froman, Owen, & Daisy 1992; Froman & Owen, 1997) and the AIDS Attitude Scale-G, which was developed for the general public (Froman & Owen, 2001) have been developed, validated, and used in a number of studies to assess attitudes toward HIV. Survey instruments to measure knowledge, attitudes, and practices have been constructed based on these tools (Delobelle et al., 2009). However, given changes in HIV treatment and care over time and the development of these instruments for use in low- and middle-income countries with a very different context of care, these instruments were not appropriate for use in the current Canadian context.

We adapted evaluation tools used by Solomon and colleagues (2011) and the Canadian HIV Providers' Survey (Worthington et al., 2008) from an HIV rehabilitation services context to a nursing care context to assess HIV knowledge, practices, and attitudes toward PLWH. Our questionnaire consisted of ordinal scale questions to assess the self-perceived knowledge, attitudes, and practices of nurses. Areas assessed included knowledge of HIV disease (8 items), nursing and HIV (10 items), attitudes about HIV (7 items), attitudes about mentoring (4 items), and HIV and nursing practice (nursing practice readiness [3 items] and HIV service linking [2 items]). We also included questions on sociodemographic, education/training, and practice experience.

The paper-based survey questionnaire was completed by all nurse mentor and mentee participants immediately prior to the first workshop and at the end of the day of the final workshop. Research team members with expertise in HIV care and quantitative research evaluated the instruments; three research team members had used the tools prior to this study.

Qualitative interviews—We conducted individual, semi-structured interviews at baseline, 6 months (all sites), and 12 months (at three sites with 12-month interventions) with nurse mentors and mentees and PLWH mentors to explore the knowledge, attitudes, and practices of participants. Participants were asked about their motivations for participating, previous experiences with HIV, attitudes about HIV, and goals for the mentorship intervention. In the second and third interviews, we also asked whether, and in what ways, knowledge, attitudes, and professional or personal practices had changed. Interviews were conducted in private settings by one of the research team members and lasted approximately 30 minutes. Interviews were audio-recorded and transcribed verbatim.

Analysis

Quantitative Data

Survey questionnaire data were entered into SPSS (version 22; IBM, Armonk, NY), cleaned, and verified for accuracy. Participant characteristics at program completion were identified (Table 1). Frequency tables were produced for all variables. Pre- and posttest measures were recoded from Likert scales into dichotomous categories for bivariate analysis in order to provide sufficient cell size for analysis (e.g., from a 4-point ordinal knowledge scale to two categories: *not at all knowledgeable/slightly knowledgeable* compared to *knowledgeable/very knowledgeable*, see Tables 2 and 3). We used the McNemar test for paired proportions (i.e., change over time) to assess for significant change ($p < .05$) in self-assessed knowledge, attitudes, and practices from pre- to postmentorship intervention.

Qualitative Data

To analyze the qualitative data, we first developed a coding framework using a subset of interview data. This subset included 15 interview transcripts from the first introductory workshop site. We refined the coding framework during the analysis as we gained new insights about the data and relationships between the themes. The analysis occurred simultaneously with data collection. We used NVIVO9 qualitative software (QSR International, Doncaster, Victoria, Australia) to assist with labeling, revising, and retrieving codes and writing memos. Morse's (1994) taxonomy, including comprehending, synthesizing, theorizing, and re-contextualizing data, was used to guide the inductive and iterative content analysis.

The final coding framework included 28 themes, and of these, two themes (*new insights and awareness* and *informing practice*) from the 6- and 12-month interviews related to perceived changes in knowledge, attitudes, and practices. These two themes were reviewed by the first and second authors to look for insights to confirm, augment, or contradict results from pre- and postsurvey comparisons.

Results

Participants

Participants at two urban sites and one rural site completed the 12-month intervention, and a 6-month intervention at one rural site. At baseline (beginning of the intervention), across all four sites, there were 40 nurse mentees (range 8–12 per site), eight PLWH mentors (range 1–3 per site), and eight nurse mentors (range 2–3 per site). Twenty-eight nurse mentees (70%) and 14 mentors (87%; six PLWH mentors, eight nurse mentors) completed the intervention. Fifteen percent (6 of 40) of the nurse mentees withdrew from the intervention due to prolonged illness, moving out of province, and work scheduling conflicts. Participants were not excluded for missing a workshop. Rather, we documented participation in each of the sessions in order to provide valuable information on the feasibility of engaging in the mentorship intervention from the mentor and mentee perspective. Six mentees had incomplete pre- or posttest questionnaire data and, thus, were not included in the

quantitative analysis. Two mentors were unable to complete the posttest survey questionnaire.

Table 1 displays characteristics of the nurse mentees and mentors who completed the intervention. Nurse mentees came from diverse levels of education and practice experiences, including sexually transmitted infection clinics, prison clinics, long-term care, acute care, and mental health. Most nurse participants were younger than 50 years of age (82%) and reported having some previous training in HIV (71%). None reported that they had never cared for an HIV-infected patient.

All of the nurse mentors had specialized in HIV care for more than 10 years, and the majority (79%) were older than 40 years of age. The majority of PLWH mentors (70%) had been living with HIV for more than 10 years, and had a range of experiences, such as being of Aboriginal heritage, an immigrant, or refugee; using injection drugs; or being a member of a sexual minority (e.g., gay, queer, two-spirit), that enriched the data. In Table 1, mentors are not displayed by mentor type to preserve confidentiality.

Changes in Knowledge, Attitudes, and Practices

Mentees—knowledge—Pre- and postintervention questionnaire responses indicated statistically significant differences in self-assessed knowledge specific to HIV disease in three of eight areas: knowledge of the epidemiology of HIV, psychosocial aspects of HIV, and health and social policies related to HIV (all $p < .05$). There were statistically significant changes in all 10 items assessing knowledge in nursing and HIV, including items capturing the lived experiences of HIV, such as stigma and the episodic nature of HIV, as well as knowledge of how nursing may contribute to health promotion/disease prevention, management of clients with HIV, and the roles and contributions of other health and social service providers (Table 2).

Interviews with mentees provided more nuanced information about the ways the mentorship intervention changed knowledge. Many nurse mentees described how involvement in the intervention changed their awareness of HIV, stating it, “opened my eyes and my thought process” and “helped broaden my learning experience.” One participant believed that her heightened awareness of HIV resulted in her willingness to engage in discussions about HIV care:

I think I’m more aware when people are talking about HIV around me ... you’re listening to what people are saying, and you try and give a different side to things, or to question why they believe that ... I’ve still got gaps in my knowledge that need to be filled, but it’s more—it’s heightened when anyone talks about HIV, I’m more aware of it, and I feel like I want to kind of make comment. (Urban mentee)

Recent graduate mentees reflected that they received little HIV education in their health professional degree programs: “I just recently graduated 2 years ago, I didn’t learn—my learning was very minimal ... as for going into depth regarding pre- and post-counseling, going into CD4 counts, all those stuff, I had no clue” (Rural mentee). Nurse mentees with more practice experience also highlighted the benefits of the mentorship intervention as an opportunity for continuing education: “The update on the HIV medications was very helpful,

[be]cause it had been a few years, so I wasn't aware of the newer meds, the newer regimes; that presentation was particularly helpful" (Urban mentee).

A key interview theme was the integral role that PLWH played in the mentorship model by actively enhancing HIV knowledge:

Coming into the study, I knew that it was a teamwork relationship, but it just kind of further enhanced it and just kind of further showed even more that it's a mutual respect, and they [PLWH] draw on our strength, and we draw on their strength ... So it really broke that down and made it as like you're walking with them, beside them, and not you're leading them. (Urban mentee)

Mentees indicated that PLWH mentors broadened their knowledge about the experience of living with HIV, and specifically highlighted the benefits of mentors providing insight into the complex psychosocial challenges faced by people living with HIV:

That [having PLWH mentors] really opened my eyes to see that it was more than just disease, it's an entire—it basically affects who they are and how they function and where they live and maintain a job and all that stuff, which I never really thought of before. ... [Be]cause it's, "Wow, this really impacts them." So I thought that was huge. (Urban mentee)

Mentees particularly appreciated PLWH mentors sharing the challenges faced living with HIV over time. They appreciated hearing this historical perspective because, in clinic, they "don't hear the whole back story all the time," they only hear, "what's been going on recently with patients." As one mentee stated: "Just hearing similarities into how they felt when they were first diagnosed as being positive, and the massive effect that has on someone's emotional family, community" (Urban mentee).

By sharing personal experiences, PLWH mentors enhanced mentee knowledge about stigma, legal issues surrounding disclosure, and the emotional health challenges they faced. One mentee said, "You can always get over the medical stuff, but sometimes the social stuff, the stigma, the prejudices, the ignorance probably hurts them more. So being cognizant of that and recognizing that it still does exist." Another mentee acknowledged that stigma toward PLWH was an issue in the nursing profession: "I always knew that there was stigmatization regarding people with HIV, but now I'm definitely more aware of how the stigmatization is even within nurse professionals, which kind of was eye opening to me as well" (Urban mentee).

The mentorship intervention provided knowledge about physical, psychosocial, and mental health challenges that may be faced by specific PLWH. Mentors enhanced mentee knowledge and awareness about issues faced by groups such as Aboriginal people living with HIV:

I was always aware that some of the Aboriginal people are at a disadvantage, but I think just listening today, I was really surprised at just the connection between ... mental health and addictions and how they kind of go hand in hand (with HIV). (Urban mentee)

Enhanced knowledge about the practical supports and services available to clients in the community was another prominent knowledge theme. Learning about the “resources and the structure of the system” provided mentees with a foundation from which they felt better equipped to support their clients:

And knowing the big picture—government, politics, health authorities—what can we do, where do we start, is the big question ... so I’m already thinking ahead, what can we do to offer them the smoother transition to community, knowing what are the barriers in care they had experienced? (Urban mentee)

Mentees reflected on the intersection of patients’ psychosocial issues with nursing care, and engagement and retention in HIV care:

There’s so many other things that go on in a person’s life; there’s all the things, there’s all the complex issues that are going on for people that they also need support with. So it’s not as straightforward as going to the clinic. It’s building that relationship and supporting them, and all the way, even if it is to get them bus tickets to come to the clinic and they just do it robotically, but they’re building up that relationship. (Urban mentee)

Nurse mentees acknowledged that the HIV population was changing, and that the mentorship intervention helped them realize that nursing in HIV care would become increasingly integrated into more generalized and older adult care. Thus, using the knowledge they gained from the mentorship intervention, particularly the information provided by PLWH mentors, nurses reflected deeply on the implications for patients living with HIV and nursing practice.

Mentees—attitudes—Attitudes of mentees about HIV showed little change from survey responses, with the exception of the statement, Nursing services are less available to people living with HIV/AIDS compared to people living with other chronic illnesses or conditions, where agreement with this statement increased significantly postintervention. Little change was reported in attitudes about mentoring: few mentees disagreed with statements about the purpose and focus of mentorship preintervention; hence, it was not possible to calculate test statistics for these items (Table 2). However, results from the qualitative interviews suggested that some mentees developed more positive attitudes as a result of the intervention, reflected on their attitudes as a result of their interactions with PLWH mentors, and recognized that they had preconceptions about their patients living with HIV:

I didn’t think I had any judgment or preconceived ideas, but I realize that I have ... You know, I didn’t think I was judging people; I still don’t think that. It just makes me realize that you’ve got—that we’ve all got these preconceived ideas about things. (Urban mentee)

Mentees believed the intervention resulted in a shift in their judgmental attitudes about gay men, injection drug users, and people with mental health issues. One mentee reflected on previous interactions with injection drug users:

You don’t mean to be judgmental, but for some reason, you always think when your voice says, “Injecting drugs is bad,” that *your* voice is going to be the one that gets

through to the patient ... But you're not meaning to impart judgment on them, but by preaching and lecturing, that's the one thing that I kind of found myself very aware of when I have these people in my care, in my triage chair. (Rural mentee)

Mentees also believed that the length of the intervention helped promote attitude change:

I think it strips you down to your vulnerability and acknowledging, "I don't know that, and I've made judgments about that, and I understand now when you explain that to me that that is judgmental, what I've said, and that's because I'm lacking knowledge." So I think with mentorship, I think it has to be a long period of time, it has to be in an atmosphere of trust, because to really learn, you have to strip all of those judgments and preconceived ideas, which makes you very vulnerable as a person and as a health care provider, because it can make you look stupid. (Urban mentee)

Mentees—practice readiness and service linking—In terms of their practice readiness, only self-assessed preparation to assess and treat clients with HIV showed significant change from pre- to postintervention. After the intervention, nine (33%) of the mentees who at preintervention had felt *not at all sure* or *unsure* of their readiness indicated they felt *prepared* or *very prepared* to assess and treat clients with HIV. Similar to the attitudinal items, there were no mentees at baseline who were unwilling to treat PLWH, or who felt that their profession was not important, that there was no change post intervention. While all participating mentees had some contact with patients living with HIV (Table 1), the quantitative results indicated no significant change in linking with other services for PLWH after the mentorship intervention; McNemar tests for the items on linking with agencies that served PLWH and complementary/alternative medicine serving PLWH were nonsignificant (Table 2).

As with attitude change, qualitative interviews provided a more nuanced picture of mentees' self-perceived changes in practice readiness and engagement with other services. Several mentees indicated that the mentorship intervention better equipped them for interactions with PLWH in their practices, and enhanced their abilities to engage with and care for patients living with HIV. Two mentees specifically shared that their involvement in the intervention enabled them to give an HIV positive test result to patients in a more compassionate way. One nurse mentee shared:

My first experience with telling somebody that they were HIV-positive actually came *after* the project started ... And then I went for a big lapse until the last month, where I've had to tell two people, and I can honestly say that I believe that I did a much better job with these last two people that I've seen in the last month ... And I think that is completely because of what I've learned in the group ... And I was comfortable just sitting there while they were crying, and not saying a word; you know, just comfortable to let them cry. (Urban mentee)

Others believed that the mentorship intervention provided them with "a little more confidence," made them feel "comfortable in discussing HIV," and provided the skills to "relax ... and just establish your relationship with clients." One mentee said having knowledge and referral information was part of these changes in readiness:

So for me, doing this project has meant learning a whole bunch more and feeling a lot more confident about what I'm saying. It means that I have connections in—when I have someone newly diagnosed, if I have a question, I have a whole bunch of people that I can contact outside of my own workplace if I have further questions. (Urban mentee)

Mentees believed that the intervention enhanced their abilities to listen and “have a better understanding” about their clients and have empathy for the complexity of health challenges faced by clients in order to better meet the needs of PLWH:

There isn't a lot of time for reflection and for understanding, and for understanding how the client feels, and I think that that's the knowledge that I really address, is making sure that I make more time in my practice to listen to what clients are telling me, and to really try and understand where they're coming from. (Urban mentee)

Other mentees felt that the mentorship intervention directly influenced their practices by encouraging individuals to be tested for HIV. When asked for a specific example of how their practices had changed, one mentee stated:

More of encouraging people when they come in to be tested and not to be afraid, and try to get them—[be]cause most people are afraid to be tested because they don't want to know. They see it as more of a death sentence; they don't realize that you can live longer, a normal life, with HIV ... (Rural mentee)

Mentees remarked that the knowledge they gained from the mentorship intervention better equipped them to provide information and answer questions for their patients. Specifically, mentees developed an awareness of other services such as service organizations or needle exchange clinics available to PLWH. This enabled them to refer their clients to needed services. Mentees also felt that the mentorship intervention changed the way they interacted with other professionals in practice, made procedural improvements to their work environments, and changed service delivery. One mentee described her work to create organizational change:

Our teaching sheets on HIV were outdated, so I've talked to our educator about getting those updated. I'm also working on trying to make sure at our workplace that there's sort of a consistent package that we hand out to newly diagnosed patients so they have a support system from the time they leave our office to the time they see their doctor at their first appointment. (Urban mentee)

Another mentee described her expanded understanding of what was needed at a systems level:

We need to step back and relook at how we need to redesign our programs to meet the high-risk population. We've been almost always looking at the prevention part, but really, the tertiary care, the secondary care, those challenges are quite prevalent. (Rural mentee)

Mentees also felt that their involvement in the HIV mentorship intervention enabled them to share their new knowledge with colleagues. One of the mentees commented: “it's not just

my own practice that's been shaped, I think it's been others—the whole team has really been able to learn from my experiences here.” A rural mentee stated that her involvement in the intervention led to further opportunities for continuing education:

I know so much more now, and I started sharing that with some of my co-workers, too, what we were learning, so *they* were really interested, but obviously, couldn't join the study ... So we got some education actually brought into our hospital, so that wouldn't have come about at all without the study. (Rural mentee)

Finally, mentees believed that learning more about the lived experience of HIV had increased their desire to advocate for change in the health system to improve the lives of PLWH. As a rural mentee commented:

It has really opened my eyes to hear from a lived experience ... It has given me the push to go further and to advocate and to speak on the behalf of, and also the areas that need to be improved, not only with my staff, but also my colleagues that I work with in the region ... it just makes me see the whole total picture. (Rural mentee)

Mentors—knowledge, attitudes, and practices—Given the level of HIV experience (and small sample size) of the mentors, there were no statistically significant self-assessed changes noted from the survey results in knowledge, attitudes, or practices by the mentors at the conclusion of the intervention (Table 3). However, as with the nurse mentees, qualitative interviews provided a venue for nurse and PLWH mentors to express their perceptions of augmented knowledge, attitudes, and practices that were attributed to the mentorship intervention.

While nurse mentors were those with experience in HIV care, they too provided accounts of increased knowledge from the intervention. Nurse mentors stated they “absolutely learned stuff along the way,” and described how they also learned from the PLWH mentors: “Learning from the PLWH has been really valuable for me. And also, even the educational—like, the guest speakers that we've had and stuff like that, I've learned definitely from. Point-of-care testing is an example” (Urban nurse mentor).

For some nurse mentors, engagement in the mentorship intervention reinforced best practices surrounding communication and understanding when working with PLWH in their practices. An urban mentor commented:

It [mentorship intervention] enhanced and reinforced for me that I have to be open and communicative and understanding, all the basic signs of listening skills with my patients. Because ... I have to somehow build rapport over the phone, so it involves your tone of your voice, and my voice is kind of harsh-sounding sometimes, so it's just all-round communication, and this course has helped with that. (Urban nurse mentor)

For PLWH and nurse mentors, participating in the mentorship intervention also allowed them to gain knowledge about HIV and hear from experts. In addition, they found that the process helped them learn about themselves and reflect on practice. As one mentor living with HIV said:

So, I'm learning more about myself going through this as well. Because we have the [intervention] team, and then we have the lawyer come with criminalization, informed consent, there's a lot of mixed, kind of confusion sometimes in it all. It just brings my own feelings up, so I ... learned a lot about myself and how things feel for me in these situations that come up, even with stigma. And then I kind of—like, I process and, like, learning—I'm continuously learning. (Urban PLWH mentor)

In parallel with the nurse mentees, nurse mentors shared that the intervention allowed them to reflect on the importance of patient-centered care:

Just stepping back and thinking about what really is the patient's perspective, and what exactly is patient-centered care ... there's an inherent power imbalance between nurses, for example, and patients ... and it's really made me think about what do we mean by patient-centered care or meeting the patient's needs on their terms? ... I think it's been a really good reminder for me to always take it back to the patient. (Urban nurse mentor)

Several nurse mentors also reflected on the self-confidence they had gained in relation to expertise:

I think I've gained some confidence. Sometimes we don't really feel like we know very much, but then being in this role in the group has sort of—you know, it's validated my knowledge and my experience, so I think that carries through when I go to work. (Urban nurse mentor)

PLWH mentors developed new knowledge about the role of nursing in HIV care and nurses' daily work environment. This allowed them to appreciate the complexity and challenges nurses faced in practice:

I think it was just being with the other people and learning from them. Their context is something that I don't see on a daily basis, and their work structure partly also is something that was interesting, because I understand the hospital, but I don't know the internal workings when they talk about rotations and different things. (Urban PLWH Mentor)

Nurse mentors did not directly describe any changes in practice, but PLWH mentors believed that their involvement in the intervention led them to be more comfortable and open with friends regarding their status:

It's interesting, because I've been more open, especially with my friends, about my status and about this group, and how I think it's making a difference, not only in my own life and my future with HIV...but also helping others. (Urban PLWH Mentor)

Thus, mentors also described changes in knowledge, attitudes, or behaviors that they related to the mentorship intervention.

Discussion

Registered nurses are accountable for providing competent nursing care, advancing nursing excellence, and ensuring positive health outcomes in the public interest (Canadian Nurses Association [CNA], 2015a). The CNA has stated that quality practice environments must encompass opportunities for professional development that “include formal and continuing education, mentoring and online learning resources” (CNA, 2015b, 2). Negative attitudes of nurses toward caring for PLWH persist and nurses have a responsibility to develop strategies to overcome these attitudes and underlying beliefs (Pickles, King, & Belan, 2012). Waluyo and colleagues (2015) suggested that work-place interventions that incorporated the common values of compassionate care and human dignity may be effective in reducing HIV-related stigma perpetuated by nurses. Nurses can dispel stigma and myths associated with HIV when they are prepared to advocate, recognize, and address these issues (Vance & Denham, 2008). Relf and colleagues (2011) argued that recognizing and retaining nurses who were competent in HIV care in the workforce would enhance access to quality care for PLWH. Nurses equipped with competencies in HIV care would be more “confident in their abilities to provide fair and equitable treatment and will clearly know the scope of their practice” (Relf et al., 2011, p. S7).

Our mentorship intervention showed promise as a model to help less HIV-experienced nurses change knowledge, attitudes, and practices with PLWH, thereby reducing stigmatizing attitudes and increasing knowledge and attitudes that promoted more comprehensive and holistic service delivery. Pre- and postintervention quantitative results suggested that mentees who participated in the intervention improved knowledge (particularly related to psychosocial aspects of HIV, health, and social policies related to HIV, and nursing and HIV), attitudes, and practice preparedness. Changes were observed across both rural and urban settings. Due to a ceiling effect and the small sample size, it was difficult to demonstrate any significant changes postintervention. Results from qualitative interviews confirmed the quantitative findings, and suggested more subtle changes in attitudes and practices not captured by the questionnaire, and highlighted some of the mechanisms by which change occurred. Mentee comments documented increased knowledge of the complexities and contexts surrounding HIV as a disease, and willingness and preparedness to engage with patients living with HIV.

Nurse and PLWH mentors also indicated that they benefitted from the mentorship intervention. Although quantitative results did not show any statistically significant changes in knowledge, attitudes, and practices for these participants, qualitative interviews suggested that mentors also benefitted from the interactions, gaining confidence, updating knowledge, and, for PLWH mentors, gaining an understanding of health services procedures, nursing practice, and self-knowledge.

The time and space for critical reflection and the role of PLWH mentors were two key mechanisms that emerged repeatedly in the interviews. The function of critical reflection in transformative learning is to develop new knowledge about the social, political, and ethical implications of experiences, which, in return, supports individual development (Freshwater, 2002). Individual and cognitive development are inherent within, as well as an outcome of,

transformative learning (Merriam & Caffarella, 1999) and were reflected in the participant experiences in our study.

Nurse mentors and mentees valued learning about the lived experiences of the PLWH mentors, a finding also reported by Solomon and colleagues (2011). Nurses were surprised to learn that HIV stigma and discrimination were real and continued to persist for those living with the disease. As patient involvement in health care research receives more attention, Armstrong, Herbert, Aveling, Dixon-Woods, and Martin (2013) stated, “it is clear that patient involvement can add an extra dimension to a clinical community that does not mimic the work of professionals and is not limited to tokenism” (p. 9). Meaningful PLWH involvement in research, education, and care must attend to individual differences in motivation to participate as mentors, professional needs, and perceptions about the importance of HIV in health care. In addition, mentorship education must attend to geographic differences in the structured and social political nature of HIV care across Canada, particularly local histories of activism in health care (Kielmann & Cataldo, 2010). The adaptability of our process is a strength that allows the intervention to be tailored to local context and learner needs. Syed, Sulaiman, Hassali, and Lee (2013) further noted that interventions that assess patients’ understanding and expectations should be a critical part of HIV management.

As suggested by our intervention, mentoring can transform work environments and empower nurses. Mentorship can provide experienced nurses a sense of purpose by allowing them to share expertise and provide mentees with the sense that they are contributing to their teams and work environments (Latham et al., 2008). Our mentorship intervention enabled nurses with a desire to learn more about HIV care to build knowledge and confidence, and influence nursing practice, while also providing a venue for more experienced HIV nurses to build confidence and expand knowledge. Finally, the intervention also enabled PLWH mentors to learn and increase self-knowledge as it related to HIV care.

Limitations

Our results are foundational and exploratory based on the following aspects of the research design: the flexible implementation of the mentorship intervention that was tailored to each site; our modest sample size; the quasi-experimental design (i.e., self-selection/nonrandomized participants, and lack of control/comparison groups); and nonstandardized survey instruments and possible social desirability effects in instrument response, coupled with self-assessed change and ceiling effects. However, the inclusion of both quantitative (questionnaire) and qualitative (interview) data provided rich information about the intervention and its properties, and potential areas of effect. Due to small sample sizes and the unique nature of the intervention tailored specifically to each site, we were unable to compare changes in knowledge, attitudes, and practices across urban and rural settings. Nevertheless, we observed positive changes in all settings. Comparing the impact of mentorship in urban versus rural settings may be an area for future inquiry. We believe that this intervention will be of interest and potentially useful to others looking to implement training and mentoring in HIV care. Further study will lead to more rigorous evaluation tools for future interventions.

Conclusion

A mentorship intervention using a transformative education approach, and with the inclusion of PLWH throughout, can promote positive changes in knowledge, attitudes, and practice behaviors for nurse mentees as well as PLWH and nurse mentors. The mentorship intervention can potentially assist nurses to become more competent in their knowledge, attitudes, and practices when caring for PLWH.

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Key Considerations

- Nurses should be encouraged to engage in continuing education in the area of HIV care, treatment, and prevention to increase knowledge of the complexities and contexts surrounding HIV as a disease and their willingness and preparedness to engage with patients living with HIV.
- Long-term group mentoring in HIV care can transform work environments and empower nurses. Critical to these efforts are opportunities to share expertise, to build and expand knowledge, and to gain confidence.
- The time and space for critical reflection and the inclusion of mentors who are people living with HIV (PLWH) are essential mechanisms in HIV education.
- Meaningful PLWH involvement in research, education, and care must attend to individual differences in motivation to participate as mentors, professional needs, and perceptions about the importance of HIV in health care.

Table 1Participant Characteristics at Program Completion (*N* = 42)

Characteristic	Nurse Mentees (<i>n</i> = 28)		PLWH and Nurse Mentors (<i>n</i> = 14) ^a	
	<i>n</i>	Percent ^b	<i>n</i>	Percent ^b
Age group (years)				
20–29	4	14	1	7
30–39	10	36	1	7
40–49	9	32	7	50
50–59	5	18	4	29
>60	0	0	1	7
Gender				
Male	1	4	4	29
Female	27	96	10	71
Rank				
Nursing assistant	3	11	0	0
Enrolled nurse	0	0	1	7
Registered nurse	23	82	6	43
Registered psychiatric nurse	1	4	0	0
Certified pediatric nurse	1	4	0	0
Missing/not applicable	0	0	7	50
Highest education qualification				
Diploma	10	36	4	29
Degree	14	50	5	36
Honors	2	7	0	0
Masters	2	7	0	0
Other	0	0	2	14
Missing/not applicable	0	0	3	21
Work environment				
Hospital	11	40	5	36
Primary health care	16	57	5	21
Missing/not applicable	1	4	6	43
Years professional experience				
<5 years	4	14	0	0
5–10 years	7	25	3	21
>10 years	17	61	6	43
Missing/not applicable	0	0	5	36
Frequency caring for PLWH				
Never	0	0	1	7
Rarely	10	36	0	0
Sometimes (>1/month)	7	25	1	7
Often (>1×/week)	10	35	4	29
Very often (>5×/week)	1	4	5	36

Characteristic	Nurse Mentees (<i>n</i> = 28)		PLWH and Nurse Mentors (<i>n</i> = 14) ^a	
	<i>n</i>	Percent ^b	<i>n</i>	Percent ^b
Missing/not applicable	0	0	3	21
Any training in HIV?				
Yes	20	71	10	71
No	8	29	1	7
Missing/not applicable	0	0	3	21

Note: PLWH = people living with HIV.

^aSix mentors living with HIV, eight Nurse Mentors—not displayed by mentor type to preserve confidentiality.

^bMay not add to 100% due to rounding.

Table 2Nurse Mentee Self-Assessed Postintervention Changes in Knowledge, Attitudes, and Practices ($n = 28$)

Knowledge	Nurse Mentee Participants Indicating Lower Level of Knowledge ^a at Preintervention:		
	Postintervention: Lower Level of Knowledge ^a <i>n</i> (Item Total %)	Postintervention: Higher Level of Knowledge ^b <i>n</i> (Item Total %)	McNemar Test <i>p</i> -Value
HIV Disease			
Transmission of HIV	0 (0)	3 (11)	<i>c</i>
Diagnosis of HIV infection	1 (4)	5 (19)	.063
Prevention of HIV	1 (4)	4 (15)	.125
Treatment medications for HIV	13 (48)	7 (26)	.180
Epidemiology of HIV	9 (33)	7 (26)	.016 ^d
Pathogenesis of HIV	11 (41)	6 (22)	.289
Psychosocial aspects of HIV	5 (19)	12 (46)	<.001 ^d
Health and social policies related to HIV	11 (41)	11 (41)	.006 ^d
Nursing and HIV			
Range of disability associated with HIV infection	7 (27)	9 (35)	.004 ^d
Impairments	9 (33)	10 (37)	.002 ^d
Activity limitations	10 (39)	10 (39)	.002 ^d
Participation restrictions	10 (40)	10 (40)	.002 ^d
Episodic course of HIV infection	11 (42)	10 (39)	.002 ^d
Health promotion/disease prevention and HIV clients	1 (4)	15 (56)	.001 ^d
Stigma/discrimination and HIV	1 (4)	11 (41)	.001 ^d
How models of nursing may be applied to the management of clients with HIV	8 (30)	13 (48)	.007 ^d
Roles and contributions of health care and social service professionals in the care of PLWH at different stages of the disease	4 (15)	18 (67)	<.001 ^d
Skills in communicating, planning, and decision-making with a group of interdisciplinary professionals	4 (15)	12 (46)	.003 ^d
Attitudes	Nurse Mentee Participants Indicating Disagree or Strongly Disagree at Preintervention:		
	Postintervention: Somewhat Disagree or Strongly Disagree <i>n</i> (Item Total %)	Postintervention: Somewhat Agree or Strongly Agree <i>n</i> (Item Total %)	McNemar Test <i>p</i> -value
Attitudes about HIV			
Nurses currently possess adequate knowledge and skills to assess and treat people living with HIV	16 (59)	6 (22)	.289
Nurses who provide services for people living with HIV/AIDS need specialized training in the area of HIV/AIDS	0 (0)	1 (4)	1.00
Working with people living with HIV/AIDS is similar to working with individuals with other chronic illnesses	5 (19)	2 (8)	.688
Many nurses are uncomfortable with the idea of working with people living with HIV/AIDS	4 (15)	4 (15)	1.00

Attitudes	Nurse Mentee Participants Indicating <i>Disagree</i> or <i>Strongly Disagree</i> at Preintervention:		McNemar Test <i>p</i> -value
	Postintervention: <i>Somewhat Disagree</i> or <i>Strongly Disagree</i> <i>n</i> (Item Total %)	Postintervention: <i>Somewhat Agree</i> or <i>Strongly Agree</i> <i>n</i> (Item Total %)	
Nursing services are less available to people living with HIV/AIDS compared to people living with other chronic illnesses or conditions	5 (19)	8 (31)	.008 ^d
Serving people with HIV is more demanding than serving clients with other chronic illnesses or conditions	12 (44)	6 (22)	1.00
I personally feel that nursing for people living with HIV/AIDS should be a larger priority	3 (11)	3 (11)	1.00
Attitudes about mentoring			
Purpose is to facilitate the professional development of mentee through guidance and counsel	1 (4)	1 (4)	<i>c</i>
Relationship characterized as ongoing partnership based on trust, knowledge, and mutual respect	0 (0)	0 (0)	<i>c</i>
Role is to help mentee identify with the professional environment, navigate difficult situations, and help build self-confidence and creative and independent thinking	0 (0)	0 (0)	<i>c</i>
Focus is to develop self-awareness and the ability of mentee to express his/her thoughts or ideas	1 (4)	1 (4)	<i>c</i>
Nurse Mentee Participants indicating <i>Not at All</i> or <i>Uncertain</i> at Preintervention:			
Practices	Postintervention: <i>Not at All</i> or <i>Uncertain</i> <i>n</i> (Item Total %)	Postintervention: <i>Prepared/Willing/Important</i> or <i>Very prepared/Very Willing/Very Important</i> <i>n</i> (Item Total %)	McNemar Test <i>p</i> -Value
HIV and Nursing Practice Readiness			
How prepared do you feel to assess and treat clients with HIV?	3 (11)	9 (33)	.004 ^d
How willing are you to assess and treat clients with HIV?	0 (0)	0 (0)	<i>c</i>
How important do you feel the role of your profession is in the care of people living with HIV/AIDS?	0 (0)	0 (0)	<i>c</i>
Nurse Mentee Participants indicating <i>No</i> at Preintervention:			
	Post-Intervention: <i>No</i> <i>n</i> (Item Total %)	Post-Intervention: <i>Yes</i> <i>n</i> (Item Total %)	McNemar Test <i>p</i> -Value
Service Linking			
Link with agencies that serve People living with HIV	2 (7)	6 (22)	.508
Link with complementary/alternative medicine that serves people living With HIV	17 (65)	5 (19)	.727

^a *Not at All* or *Slightly Knowledgeable*.

^b *Knowledgeable* or *Very Knowledgeable*.

^c Indicates where McNemar Test *p*-value could not be computed.

^d Indicates McNemar test is statistically significant at $p < .05$.

Table 3

Nurse and PLWH Mentor Self-Assessed Postintervention Changes in Knowledge, Attitudes, and Practices ($N = 14$)

Knowledge	Mentor Participants Indicating <i>Lower Level of Knowledge</i> at Preintervention:		McNemar Test <i>p</i> -Value
	Postintervention: <i>Lower Level of Knowledge^a</i> <i>n</i> (Item Total %)	Postintervention: <i>Higher Level of Knowledge^b</i> <i>n</i> (Item Total %)	
HIV disease			
Transmission of HIV	0 (0)	0 (0)	<i>c</i>
Diagnosis of HIV infection	0 (0)	1 (8)	1.000
Prevention of HIV	0 (0)	0 (0)	<i>c</i>
Treatment medications for HIV	2 (15)	1 (8)	1.000
Epidemiology of HIV	4 (31)	2 (15)	.500
Pathogenesis of HIV	5 (39)	2 (15)	.500
Psychosocial aspects of HIV	2 (15)	3 (23)	.625
Health and social policies related to HIV	3 (23)	1 (8)	1.000
Nursing and HIV			
Range of disability associated with HIV infection	3 (33)	1 (11)	1.000
Impairments	1 (11)	2 (22)	1.000
Activity limitations	1 (10)	2 (20)	.500
Participation restrictions	1 (11)	3 (33)	.250
Episodic course of HIV infection	2 (20)	2 (20)	1.000
Health promotion/disease prevention and HIV clients	1 (10)	1 (10)	1.000
Stigma/discrimination and HIV	0 (0)	0 (0)	<i>c</i>
How models of nursing may be applied to the management of clients with HIV	4 (40)	1 (10)	1.000
Roles and contributions of health care and social service professionals in the care of people living with HIV at different stages of the disease	2 (20)	0 (0)	.500
Skills in communicating, planning, and decision-making with a group of interdisciplinary professionals	3 (30)	0 (0)	1.000
Attitudes	Mentor Participants Indicating <i>Disagree or Strongly Disagree</i> at Preintervention:		McNemar Test <i>p</i> -value
	Postintervention: <i>Somewhat Disagree or Strongly Disagree</i> <i>n</i> (Item Total %)	Postintervention: <i>or Somewhat Agree or Strongly Agree</i> <i>n</i> (Item Total %)	
Attitudes about HIV			
Nurses currently possess adequate knowledge and skills to assess and treat people living with HIV/AIDS	6 (46)	3 (23)	1.000
Nurses who provide services for people living with HIV/AIDS need specialized training in the area of HIV/AIDS	2 (15)	2 (15)	<i>c</i>
Working with people living with HIV/AIDS is similar to working with individuals with other chronic illnesses	2 (17)	3 (25)	.625
Many nurses are uncomfortable with the idea of working with people living with HIV/AIDS	2 (15)	2 (15)	1.000

Attitudes	Mentor Participants Indicating <i>Disagree</i> or <i>Strongly Disagree</i> at Preintervention:		McNemar Test <i>p</i> -value
	Postintervention: <i>Somewhat Disagree</i> <i>Strongly Disagree</i> <i>n</i> (Item Total %)	Postintervention: or <i>Somewhat Agree</i> or <i>Strongly Agree</i> <i>n</i> (Item Total %)	
Nursing services are less available to people living with HIV/AIDS compared to people living with other chronic illnesses or conditions	3 (23)	0 (0)	.500
Serving people with HIV is more demanding than serving clients with other chronic illnesses or conditions	5 (39)	1 (8)	1.000
I personally feel that nursing for people living with HIV/AIDS should be a larger priority	0 (0)	0 (0)	<i>c</i>
Attitudes about mentoring			
Purpose is to facilitate the professional development of mentee through guidance and counsel	1 (8)	0 (0)	1.000
Relationship characterized as ongoing partnership based on trust, knowledge, and mutual respect	0 (0)	0 (0)	<i>c</i>
Role is to help mentee identify with the professional environment, navigate difficult situations, and help build self-confidence and creative and independent thinking	0 (0)	0 (0)	<i>c</i>
Focus is to develop self-awareness and the ability of mentee to express his/her thoughts or ideas	0 (0)	0 (0)	<i>c</i>
Mentor Participants indicating <i>No</i> at Postintervention:			
Practices	Time 2: <i>No</i> <i>n</i> (Item Total %)	Time 2: <i>Yes</i> <i>n</i> (Item Total %)	McNemar Test <i>p</i> -Value
Service linking			
Link with agencies that serve people living with HIV	0 (0)	2 (18)	1.000
Link with complementary/alternative medicine that serves people living with HIV	7 (70)	0 (0)	1.000

PLWH = persons living with HIV.

^aNot at All or Slightly Knowledgeable.

^bKnowledgeable or Very Knowledgeable.

^cIndicates where McNemar Test *p*-value could not be computed.