**Professional Identity Formation in HIV Care: Development of Clinician Scholars in a longitudinal, mentored training program**

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**Abstract**

**Introduction:** The Clinician Scholars Program (CSP) is designed to improve the capacity and quality of HIV Care by training clinicians in underserved areas. A mentoring approach is used to deliver individualized educational opportunities over the course of a year focused on preparing clinicians to provide high-quality patient-centered HIV care. Evaluation of the program has illustrated increases in knowledge, skills, and practice behavior, yet critical domains remain unexplored, particularly the potential for the program to affect professional identity formation and networking between individual clinicians.

**Methods:** Qualitative exit interviews (*N* = 50) were conducted over 4 years of the CSP. Interviews were transcribed and analyzed using an open-coding process with multiple coders. Interrater reliability was assessed. Themes related to professional development and networking emerged.

**Results:** Thematic analysis revealed changes in several professional development domains, including: self-efficacy, HIV care clinician identity, and career development. In addition, clinicians began to develop key connections with mentors, other clinicians, and health systems – gaining a foundation in the HIV care community, enabled and strengthened by growth in professional confidence and competence within the clinician’s care context.

**Discussion:** Evaluations of clinical training programs often focus on knowledge and skill gains without addressing professional identity development and place within the care community. This study illustrates that a longitudinal clinician training program has the potential to influence professional identify development, particularly affect how clinicians view themselves as a resource in the HIV care community and begins to facilitate necessary connections to other clinicians and the wider care system.

**Keyword Options:** Professional Identity Formation, HIV/AIDS Care, Clinical Capacity, Networking, Mentoring, Professional Development, Qualitative Research, Clinician Training, AIDS Education and Training Centers

**Introduction**

 An urgent need exists for clinicians who can provide quality HIV care in underserved areas. While HIV incidence has remained steady, mortality has dropped due to advances in HIV treatment, resulting in an increase in people living with HIV/AIDS in the United States[1](#_ENREF_1). Simultaneously, a shortage in HIV care capacity is looming due to retirement of first generation clinicians[2](#_ENREF_2). Disparities in access disproportionally affect minority populations in the United States[3](#_ENREF_3). To address this issue, the Clinician Scholars Program (CSP) was created within an AIDS Education and Training Center2, recruiting existing minority or minority-serving clinicians who are well-situated to fill care gaps. The CSP aims to increase Scholars’ clinical competency while facilitating the development of professional identity as an HIV care clinician and connecting Scholars to a larger network.

 Professional identity formation (PIF) for physicians is defined as, “a representation of self, achieved in stages over time during which the characteristics, values, and norms of the medical profession are internalized, resulting in an individual thinking, acting, and feeling like a physician”[4](#_ENREF_4) (p. 1447). For the purposes of the CSP, and in recognition of clinicians from a variety of professions who participate, physician would be substituted with “HIV clinician” for our paper. The CSP aims to assist clinicians to incorporate HIV management into their evolving professional identities.

Relationships are integral in adopting professional values within professional identity formation[5](#_ENREF_5). Relationships are at the heart of the CSP, such as those between a Scholar and Mentor, between cohort members, and in networking with clinicians outside the cohort. Social support among colleagues can be a protective factor against the burnout often experienced by HIV clinicians[6](#_ENREF_6), making the establishment of a network valuable for workforce maintenance. A clinician’s understanding of their role in relation to their larger community is critical to the formation of their identity. Therefore, opportunities to be connected to the larger network are a crucial part of an individual clinicians’ development, and of the CSP. It is the combination of the individual and collective factors that optimize PIF[7](#_ENREF_7).

The CSP is a longitudinal, mentored program that assists Scholars in achieving their goals while meeting a set of core capabilities[2](#_ENREF_2). The CSP pairs each Scholar with a Mentor and other experienced HIV clinicians, and Scholars learn by managing complicated cases in real time. The clinical Mentors provide ongoing support which engages the Scholars in the network. The tailored nature of the program allows Scholars to build upon existing knowledge and guide their own professional development.

 While PIF is becoming central to medical education[5](#_ENREF_5), little published research exists that examines the potential for HIV clinical training programs to achieve this outcome. This article aims to examine the role of the CSP on PIF, filling a current void in the literature. Two research questions are explored:

1. How does the CSP influence the formation of professional identity in HIV care?
2. What relationships or connections facilitate professional identity within the HIV care community and the Scholars’ localized contexts?

**Methods**

Our desire to understand the impact of the Clinician Scholars Program guided the development of questions to explore the phenomenon of the CSP via the perspectives of participants. In particular, qualitative phenomenological approaches allow us to learn, often through a series of interviews, how a particular phenomenon is experienced[8](#_ENREF_8). Further, semi-structured interviews facilitate the understanding of such phenomena, since they allow each interviewee to express perspectives in their own voices[9](#_ENREF_9). Thus, open-ended questions were drafted to explore the CSP while allowing for flexibility to discuss unanticipated themes. Our desire to capture the richness and diversity of the Scholar experience imbued a maximum variation sampling approach[10](#_ENREF_10), including variation in clinical discipline, practice setting, and program goals. To maximize this diversity, we recruited from all four graduated CSP cohorts, and from all participating clinical disciplines, including: physicians, advance practice nurses, pharmacists, and dentists. The protocol was approved by the Institutional Review Board for use with human subjects.

First, trained interviewers conducted semi-structured, private, face-to-face interviews with 50 of 57 eligible Scholars to learn more about how the CSP contributed to changes in Scholars’ knowledge, skills, practice behavior, and future plans. Interviews were recorded and transcribed, and interviewers took notes during the interviews to verify data where needed. To enhance the trustworthiness of the data, analyst triangulation was part of the protocol, ensuring that data were viewed from multiple perspectives[9](#_ENREF_9). Multiple analysts participated in all aspects of the protocol, including interviewing, codebook development, coding, and conducting thematic analysis. A team of five analysts developed an a priori code book based on the interview guide. This initial codebook was then used to code one of the interviews using ATLAS.ti (version 7; ATLAS.ti Scientific Software Development GmbH, Berlin, Germany). Comparing the first interview and discussing discordance among the coders resulted in codebook revisions. A second interview was coded following the same procedure. Further, we regularly considered the varied extend of experience in HIV clinician training among the team, and how this might influence coding when compared to team members with less programmatic history – a reflexivity process that kept such potential bias open and in discussion, enhancing trustworthiness of the data[10](#_ENREF_10). Similarly, to enhance interpretative rigour, we used interrater reliability processes to further discussion among the four coders about discordant coding, and to expand the codebook[10](#_ENREF_10). While the emphasis was on understanding the different perspectives, we also calculated Fleiss’ kappa and Krippendorf’s alpha that demonstrated moderate to excellent agreement (Range .47-.85 on Fleiss’ kappa; .48-.85 on Krippendorff’s alpha). Following this process, the remaining 48 transcripts were divided among four of the analysts who met at regular intervals. Initial analysis yielded three domains as outcomes of the program: clinical capacity enhancement, PIF, and engagement in HIV clinician network. Clinical capacity enhancement was reported previously[11](#_ENREF_11) and the latter two are presented in this paper. We assigned each code to one or more of these three domains and conducted a subsequent analysis of each domain to determine themes, including purposeful examination of negative cases to further examine potential researcher bias[10](#_ENREF_10). Analyst-crafted summaries of each theme, along with the conceptual model containing the domains, became the foundation for this paper.

The purposeful sample included 50 of 57 Scholars who graduated between 2012 and 2015, from a myriad of settings across the Midwest and in a variety of clinical professions, representing 88% of eligible participants. Forty-four percent (n=22) were advanced practice nurses, 26% (n=13) were physicians, and 24% (n=12) were pharmacists. A majority worked in community health centers (32% or n=16), HIV clinics (22% or n=11), and academic health centers (18% or n=9). Other places of employment included infectious disease clinics, pharmacies, community-based organizations, correctional facilities, private practices, and hospital-based clinics. All Scholars reported at least 50% of their patient population were minorities. Three fourths of Scholars were female (76% or n=38) and 69% (n=34) were White, while 16% identified as African American (n=8) and 14% (n=7) identified as Asian. Only 4% indicated they were of Hispanic origin. Scholars had a mean age of 43 years, with the largest group being in their thirties. Almost half (48% or n=24) indicated that they had 1-2 years of experience caring for HIV patients and 28% (n=14) had 3-5 years of experience.

**Findings**

The CSP has three interconnected outcome domains. Their relationship to one another can be seen in Figure 1 below. While previously published research describes the increases in clinical capability, including changes in HIV care management, linkage and retention in care, management of co-morbidities and initiating pre-exposure prophylaxis[2](#_ENREF_2),[11](#_ENREF_11), the findings of the current study describe the other two domains: forming a professional identity, and establishing a place within a HIV clinician network.

FIGURE 1 HERE

***Professional Identity Formation Domain***

All cohorts were asked how the CSP affected their professional identity. Analysis of interviews revealed that many Scholars began to develop a professional identity, or expanded their development to date, along the following themes:

More than one-third of participants described the CSP as facilitating their *identifying as an HIV care clinician* or enhancing their interest to work with patients affected by HIV. Many worked in settings that lacked experienced HIV care clinicians; thus, this was an important step in expanding capacity. For example, one Scholar stated,

“*I do, and I feel like that's more of I guess who I am professionally, and before, I wouldn't be confident enough to say that I was an HIV specialist, and now I can say I'm an HIV specialist, like a new HIV specialist.  I could say that”* (Physician Assistant).

For those Scholars who were already providing HIV care, the CSP helped either affirm or intensify plans to continue in HIV care. Several indicated specific interest in primary care of HIV positive patients.  Still others hoped to broaden the scope of service for their HIV patients, such as working with pre-exposure prophylaxis (PrEP), hepatitis C, or HIV medication adherence. For example, one Scholar stated,

*“I would hope to still provide healthcare services to the clients. I would hope to still be an educator tool, someone they can talk to, be supportive of the staff or the clients or the patients that I work with to help them with disease management. Talk to them about treatment adherence, talk to them about the medication, the side effects, how to get through the side effects. Also provide support in ways of support groups, maybe counseling, also maybe self-support”* (Advanced Practice Nurse).

  Overall, most Scholars expressed a very strong interest in working with HIV patients.Scholars varied on the percentage of HIV patients they anticipated seeing in future care, either by desire or the reality of their clinical settings. Overall, most indicated high willingness to provide HIV care in the future.  The responses clustered into three areas, a relatively small percent (less than 20%), about half of the patient populations, and a substantial percentage (between 80-100%). About a third of those who responded fit into each of these categories. For example, one Scholar stated,

“*All of it.  That's what I'd like to be, all of my patients here to be HIV care, but I think it'd be great even if I could have 50 percent of my population be HIV care just because I like to do it and I feel a sense of – I don't know, I just – satisfaction and fulfillment when I do it”* (Advanced Practice Nurse).

Many Scholars discussed their desire to serve populations with elevated risk or rates of HIV, including: women, African-Americans, men who have sex with men (MSM), patients in underserved communities, co-infected patients, and adolescents. One Scholar said,

*“I think it’s because the historical disadvantage of African Americans in our country and the seeming inadequacy of MSM HIV care because of their often Caucasian-ness. In the city, I know that there’s a large number of African American MSM and I would be happy to treat them, as well”* (Advanced Practice Nurse).

This suggests that Scholars understand the connection between patients they plan to see and filling gaps in care coverage. Others chose based on complexity, for example, one Scholar said,

*“The challenging ones. So, the noncompliance, the triple, double co-infected…”* (Pharmacist).

Scholars also discussed the type of setting where they expected to provide future HIV care.  Many reported they were interested in working in a clinic or community setting while others discussed choosing a setting where they would be more likely to find patients living with HIV.  For example, a Scholar stated,

*“I do consider sometimes working at a place…that serves homeless and HIV positive patients. If I cannot find an infectious disease job that is at a major academic institution that needs an NP, I would consider doing something like that just so I can have more of the experience that I want with resistance and Opportunistic Infections--just more HIV more days of the week”* (Nurse Practitioner).

Scholars reported ways the CSP program had helped them in *achieving career benchmarks in their professional* development. Frequently, Scholars reported that the CSP motivated them to pursue certification, most notably through the American Academy of HIV Medicine (AAHIVM), helped them prepare for the certification exam, and facilitated the path to successfully achieving certification. One Scholar stated,

*“I think that going through your program helped prepare for at least to take the test to get certified. It put me in contact with clinicians and case managers, and I’ve actually bounced some questions off of them for some help. So, I think the clinical scholars program didn’t drive me to get certification, I was already kinda down that path any way, but it definitely helped me get the knowledge”* (Pharmacist).

Another cluster of responses were related to employment. Some Scholars reported that the program helped them to advance in current positions, or secure new positions, for example one Scholar reported,

*“I needed to focus on HIV education anyway because my new job I took a year ago is all HIV and infectious disease, and I’m very green and new at it, so… I would have had to figure out how to do all this training and education on my own, anyways, and this was an absolute perfect timing, perfect vehicle to kick start my infectious disease career with HIV”* (Advanced Practice Nurse).

Some Scholars reported that the program helped them become involved or achieve success in scholarship including research, writing, or conference presentations. These included a Scholar who reported,

*“I actually wrote up the case with one of our physicians, and submitted it, and actually got to go to the CDC conference and present it”*(Advanced Practice Nurse).

Several Scholars reported that the CSP facilitated their work on publications or helped them prepare for teaching or training responsibilities. For example, a Scholar reported*,*

*“I would love to teach at the pharmacy school on HIV. I feel like I could be equipped to do so, and so that would be a direction in my career that I haven't even tapped the surface of but would be interested in doing.*” (Pharmacist).

Approximately a quarter of Scholars described an *increase in* *self-efficacy* through their ability to communicate. For these Scholars, communication with their patients was compromised by a lack of confidence in their HIV care capacity. In these cases, the increase in knowledge from CSP was key in raising their confidence levels.Approximately one-third of participants noted an increase in their confidence as an overarching change, not limited to communication, or care management. They described a general increase in confidence about their abilities, or decrease in fear, as exemplified in this quote:

*“And I feel I have this real great sense of accomplishment.  I just feel like I’ve learned so much.  I definitely haven’t killed anybody, and you know, I’m not afraid of anything really.  That patient that I was waiting for to come the other day… he’s like the sickest person I will ever meet or see or treat.  And I wasn’t afraid.  He’ll be here next week, and I won’t be afraid next week either”* (Advanced Practice Nurse).

For others, greater confidence also extended into visions of leadership,

“…*Again, in the beginning, I thought, "I just want to keep my head above water with this," and now I feel like I can take over…”* (Advanced Practice Nurse).

***HIV Provider Network Domain***

 Most Scholars linked with HIV clinicians internal and external to the CSP that facilitated learning from other clinicians, becoming a resource, and becoming better able to meet patients’ needs. These connections became community-level resources in many cases, benefiting individual Scholars, their colleagues, and the patients they serve.

A number of Scholars expressed a shift in *becoming a resource to others* for HIV clinical guidance in a network as a result of the CSP. Sometimes this resource sharing was in their own clinical setting, and at other times it extended to others in their system, as seen in the example below:

“*I’ve become a resource for other clinicians in the X health system. I don’t know if everyone knows that they can contact me, but some people do and have. So that’s nice. I also make my psychiatric clinician peers aware – that if they start someone on something like Carbamazepine and they’re also on Norvir, or Seliquil and Norvir – of drug-drug interactions. That’s good. It’s good to be a resource in that way*” (Advanced Practice Nurse).

In the context of knowledge sharing, many Scholars mentioned becoming a resource and sharing knowledge on PrEP, co-morbidities, drug interactions, and treatment adherence.

 “*I have a coworker here who doesn’t have experience treating HIV and initially she was giving me all of her patients. And now, I’m trying to give her the knowledge of treating HIV. So, then I just talk to her about her cases and review labs and help her order the right ones. Just to sort of demystify the provision of HIV care in an uncomplicated patient*” (Physician).

Scholars reported *engaging in a community of HIV providers.* They expressed their satisfaction with the relationships they established with Mentors, Program staff, and other clinicians in the CSP. These relationships facilitated the development of a network to serve as a resource going forward. For example, a Scholar commented,

*“I gained the relationship with the other pharmacist in (my) City. So, if I have questions, I can contact her. I guess that’s probably invaluable”* (Pharmacist).

Many Scholars mentioned positive relationships with other Scholars that were established during the two-day central orientation and often lasted throughout the program. One Scholar described how these relationships became a consistent mutual resource,

*“because when we were starting we tend to help each other. We formed an e-mail group, for example, so we know each other’s e-mail and sometimes we post questions. Or sometimes they ask, “Do you know a particular clinician who will be able to – a surgeon or a specialist, endocrinologist, because most of the time I think most of the clinicians in our cohort are also from federally qualified health centers and then we serve the same population, un-insured, sometimes undocumented, so they face the same issues as we do socially, meaning no insurance, no coverage”* (Physician).

Scholars described being exposed to a variety of approaches to care from different professionals, enriching their own individual style in providing care, becoming aware of the role of other professionals in the care team, learning how other clinical settings divide responsibilities, and appreciating the benefits of inter-professional care teams. For example,

a Scholar described the collaborating experience with another Scholar from another profession:

*“But I think, like I said, one example with my co-scholar who was an NP. Being in the room with her and the patient asks what are the side effects and what about this and not that she didn’t know the answer, but really understanding that I probably really knew the answer and would turn and say she can answer that for you. And vice versa. If there was something we were talking about the medication and it kind of veered off to something else and had a question about something else that was more tailored toward her specialty area, being able to pass it on saying she can answer that a little bit better. I think also too with that the patient then understands and knows that everyone knows what they are talking about because we all talked about it together in the room. Together. We did it as a team. So, when they go to the pharmacy, they shouldn’t get a different answer from the pharmacist as they would’ve gotten from the physician. And I think that’s an important piece too that you learn that working with patients”* (Pharmacist).

 The CSP also provided opportunities for Scholars to meet, interact, and collaborate with other healthcare professionals outside the program, such as via attending conferences. Interactions with clinicians outside the program offered Scholars a sense of connection to a community of HIV clinicians, allowing them to get to know healthcare professionals of varying disciplines at other health clinics. One Scholar reported*,*

*“I was able to get to know other clinicians in several health clinics…I think that is one of the most useful things that I will be able to, you know, get from this experience”* (Physician).

About a third of the Scholars reported *enhanced ability to meet patients’ needs and* that these relationships helped them to bridge gaps in care, as demonstrated in the following example,

*“I’ve been out to the offices to explain how we can help, and so they’ve started sending me their patients, and upon doing this, I’m able to take very good care of their patients”* (Pharmacist).

Similarly, about a third of the Scholars expressed value in interacting with other clinicians to get help on clinical cases, as noted by a Scholar,

*“I think the most useful was the interaction with the Mentors as well as the other Scholars to help with difficult cases. I guess. Like the ability to contact them if I needed to. The network”* (Physician).

**Discussion & Conclusions**

This study builds on our prior work in evaluating impacts of the CSP on Scholars’ abilities to provide high quality HIV care. Previously published research described increases in clinical capabilities, knowledge, skills and practice behaviors[2](#_ENREF_2),[11](#_ENREF_11) resulting from participation in CSP. The current study focused on evaluating impacts of the CSP on Scholars’ PIF and engagement in a HIV provider network. Each of these domains contain themes which are presented in Figure 1. We found evidence that a majority of Scholars experienced substantial gains in strengthening of PIF as HIV clinicians which included identifying as an HIV care clinician, achieving important advances in their career development, and attaining enhanced self-efficacy. Scholars also reported making more meaningful connections within their localized context, becoming a resource to others and helping patients to navigate the health care system as a result of the CSP.

Our findings provide evidence that CSP was a key factor in the initiation or further enhancement of Scholars’ professional identity as an HIV clinician. Enhanced communication skills were most commonly cited as parts of a new or improved skill set. These skills have been identified as one of the pillars of PIF in the early literature[12](#_ENREF_12). Many Scholars singled out the ability to elect to work in underserved communities as a strong added benefit due to his or her ongoing participation in CSP. Of equal importance, we found evidence that CSP led many Scholars to enhanced career opportunities, engagement in scholarship, or the development of care and prevention programs. Several studies have identified career advancement as critical to resilience and job satisfaction, factors which are positively associated with PIF[5](#_ENREF_5).

Our results show that many Scholars experienced critical gains in self-efficacy that facilitate successful application of clinical skills. Self-efficacy is a task-specific predictor of behavior[13](#_ENREF_13). Mentorship was one of the catalysts that was reported to have facilitated growth in professional identity and becoming part of a network. The CSP, embedded within a clinician’s care context, may also have strengthened network utilization. We also found evidence that the presence of mentoring was associated with an increased likelihood that the Scholar became a teacher and mentor. Other studies have shown that attending to learner’s PIF within a developmental trajectory of the professional life cycle enhances learning and gains in self-efficacy[5](#_ENREF_5).

Our findings confirm that networking opportunities further enhanced Scholar PIF, allowing for exchange of resources and for Scholars to transform from early practitioners to confident clinicians, patient care managers and teachers. The individual quotes from the Scholars reinforce the observation that PIF is the core foundational process experienced by a health professional in training along the development continuum[12](#_ENREF_12). Importantly, we believe that each of these professional advances, when applied together as a whole - i.e. increased self-efficacy, identification as an HIV professional, and expansion of and active engagement in one's HIV clinician network - help to improve the capacity of HIV clinicians in providing quality care and increase the likelihood of patients' positive movement across the care continuum.

Finally, we observed that most Scholars linked with other HIV clinicians and specialists in their region, an action that facilitated learning from other clinicians, becoming a resource, and becoming better able to meet patients’ needs. These linkages are particularly important in expanding a clinician’s resources as providing access to specialists is a critical part of an HIV primary care clinician’s job. In other words, holistic care of HIV patients is augmented by having a network of care providers that the clinician can reach out to when needed. The Scholar’s descriptions of these activities closely resemble the curricular/extracurricular factors contributing to socialization, self-awareness, and the development of core values and moral leadership that are described by Wald[5](#_ENREF_5).

There are several limitations to our study. First, our study evaluates a specific training program and the results may only be transferable to similar, longitudinal training programs. Second, our reliance on self-reported data which were collected face-to-face implies that a social desirability bias may apply. Nonetheless, our methods are appropriate, given the available sample size, the breadth of clinician scope, and the unique, tailored nature of the program. We also note that this analysis is by definition exploratory, given the relative paucity of studies that address PIF in HIV care clinicians. The science in this topic area is as yet quite young, and the available evidence for comparison is scant and disparate.

Future studies could examine these emergent domains in more granular detail across programs and by using mixed-methods approaches. An important unanswered question is the relationship between growth in professional identity and subsequent job performance, exploring the predictive validity of PIF as a predictor of future performance. It would also be of great interest to link these analyses to continuous quality improvement data on common HIV clinical parameters, such as retention in ambulatory care, successful virologic suppression, and mortality, and to overall job satisfaction and productivity. Overall, the impacts of PIF could be studied at the clinician, patient and health system levels.

The participants in CSP represented various health professions, including advance practice nurses, physicians and pharmacists. Future studies could examine profession specific differences in PIF and elements of the learning experiences that need tailoring. As we evolve our thinking from a “Triple Aim” that includes improving patient experiences of care, improving patient outcomes and reducing cost, an emerging fourth pillar or “Quadruple Aim” includes clinician and care team well-being[14](#_ENREF_14). The US National HIV/AIDS Strategy identified a growing shortage of physicians and primary care clinicians providing HIV care as an urgent priority in the United States, underscoring the need for ensuring the well-being of clinicians who choose to engage in HIV care[15-17](#_ENREF_15). Future studies should examine whether enhancements in PIF are correlated with clinician well-being. If such correlation is found, training should more purposefully include models that facilitate PIF.

In summary, we found compelling evidence that the CSP played a critical role in the PIF of the participants. Active engagement of learners in a specifically tailored learning program, with mentoring within the clinicians’ practice setting, was a key factor in strengthening clinicians’ self-confidence and. Our findings provide new evidence that can be used to inform future education and scholarship.

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**Professional Identity Formation in HIV Care: Lessons for Practice**

Participation in a longitudinal, mentor-based training program was a key factor in the initiation or further enhancement of scholars’ professional identity as an HIV caregiver, with critical gains in self-efficacy to prompt the use of new skills.

Networking opportunities further enhanced scholar capacity, allowing for exchange of resources and for scholars to transform from early practitioners to confident clinicians, care managers, and educators.

Our findings support the literature that emphasizes the importance of relationships; future programs should consider the value of mentorship and networking as primary strategies to form relationships that enhance capacity and build professional identity.