Considering Theory-Based Reflection in the Service-Learning Training of Advanced Education in General Dentistry (AEGD) Residents

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Abstract: Columbia University College of Dental Medicine, in partnership with the Harlem United Community AIDS Center, has developed a service-learning (SL) program for use in the training of Advanced Education in General Dentistry (AEGD) residents. This article presents basic tenets of SL, their applicability for dentistry, and our experience implementing SL in care of people living with HIV/AIDS. It proposes that social-behavioral theory, when incorporated into the basic components of SL, can play a useful role in resolving a number of challenges inherent in competency-based training programs. Although the article provides examples of how a particular theory, the Theory of Planned Behavior, might be applied in the SL context, opportunities for the application of other social-behavioral theories potentially exist.

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Service-learning (SL) includes a series of principles that combine educational coursework, preparation, and reflection with community service and is constantly reviewed for improvement. SL opportunities allow students to practice while teaching them the context of provided service, the importance of bridging service and coursework, and the role of health professionals in the community.[1] Columbia University College of Dental Medicine, in partnership with Harlem United Community AIDS Center, has created and developed an SL program for use in the training of Advanced Education in General Dentistry (AEGD) residents over the past six years. This article presents the basic tenets of SL and their applicability for dentistry, describes how SL has been implemented by this partnership, identifies some of the challenges that have arisen during the course of implementing the program, and proposes that social-behavioral theory, when incorporated into the basic components of SL, can play a useful role in

addressing and resolving a number of the challenges that have arisen in addressing this competency-based training program.

Evolution of Service-Learning

The evolution of SL can be traced back to President Franklin D. Roosevelt's Civilian Conservation Corps in 1933. This program allowed unemployed young men to work and gain an education while supporting their families. The later formation of the Peace Corps by President John F. Kennedy in 1961 pushed experiential learning to the world stage. In 1984, Kolb published *Experiential Learning: Experience as the Source of Learning and Development,*[2] and by 1989 a number of college officials, local institutions, and national organizations had progressed in outlining the tenets of good practice in mixing learning and service. The implementation and discussion regarding SL continue today as institutions train health care professionals while dealing with the complexities of combining service and learning.

The first definition of SL came in 1969 from the Southern Regional Education Board (SREB): "the accomplishment of tasks that meet genuine human needs in combination with conscious educational growth."[3] In 1979, Sigmon of the SREB included three principles to define SL: 1) the community defines needed services, not the institution; 2) those served become servers and are served by their own actions; and 3) servers are learners and control learning expectations.[4] Principles two and three demonstrate the reciprocal element important to SL.

Throughout the literature, it has been emphasized that SL differs from community service, voluntarism, and other forms of experiential education.[5] Weigert[6] states six important factors differentiating SL from other experience-based learning: the student provides 1) relevant work, 2) that meets a community need, and 3) that is identified by the community, while the service involves 4) course objectives, 5) that are integrated through assignments, and 6) that are predetermined and reviewed.

SL is not the mere addition of service to a curriculum. It is the incorporation and combination of the two concepts of service and learning. The modern definition of the SL model reaffirms that "academic service-learning is a pedagogical model that intentionally integrates academic learning and relevant community service."[7] The SL model is designed for teaching and is not a doctrine for values, leadership, or social responsibility. A final key factor to the SL definition is the idea of the institution and community working together to strengthen each other.[7]

History of Service-Learning at Columbia University College of Dental Medicine

In 2001, Columbia University College of Dental Medicine (CDM) began a process of revising its curriculum for AEGD residents. This process was initiated for two main reasons. The first was to shift the focus of the existing curriculum framework from topic-based to competency-based. The second was to more formally incorporate teaching methodologies that integrated residents' service in real world experiences with their learning of advanced clinical dentistry. At the same time, one of CDM's key community partners, Harlem United Community AIDS Center (HU), was looking for a way to provide on-site, high-quality oral health care services to its multiple diagnosed HIV clients.

Building on this confluence of interests and in partnership with HU, a first Community-Based Dental Partnership Program (CBDPP) grant in 2002–05—titled Primary Oral Health Care for People with HIV/AIDS in Harlem, a Service-Learning Project—sought to address existing oral health disparities, shortages of primary oral health care providers in underserved areas, and a decline in the proportion of underrepresented minorities in the dental profession. It was charged to improve access to primary oral health care services in Harlem and to establish an SL program to improve the quality and outcomes of postdoctoral training in general dentistry. Within the SL framework, the project also sought to improve the competence of trainees in HIV/AIDS care and to increase access to dental care for people living with HIV/AIDS (PLWHA).

The development of this SL program represented a true partnership between CDM and HU. All aspects of curriculum development, implementation, and assessment were collaboratively developed by the partners, who met on a weekly basis during this period. In addition to input from partner providers and educators, the CBDPP team had access to additional expertise in the health and health care of PLWHA through Columbia University's College

of Physicians and Surgeons and Schools of Public Health and Nursing, as well as the university's additional data management, distance learning, and policy resources.

Ongoing Partnership with Harlem United Community AIDS Center

Our ongoing partnership with Harlem United Community AIDS Center (HU), in place since 2002—continuously funded by a series of CBDPP grants and now recently refunded—provides AEGD residents in the service-learning program with an opportunity to undergo training in a community-based organization (CBO) located in Central Harlem. HU has a major focus on providing services to PLWHA who have significant social, behavioral, and medical co-morbidities. It is a holistic CBO in which all personnel are involved in supporting all programs, including the dental program. Its programs have evolved since its founding twenty years ago to include medical, behavioral, dental, social services, educational, art therapy, diet and nutrition, recreational, housing, case management, and administrative services. Because its 266 professionals and staff address each of its 3,689 clients (in 2007) comprehensively, all support the integrated dental program in some way, whether directly or indirectly.

The dental program itself is situated within the Health Care Program, which also includes primary medical care, adult day health care, case management, mental health, and food and nutrition services. The dental program is staffed by five individuals: a full-time dentist, a part-time dentist, a full-time dental assistant, a part-time dental assistant who also functions as a dental educator, and a full-time receptionist. It is managed by a health care practice manager and a quality manager and overseen by the associate vice president of the Primary Care Program.

Location in Central Harlem, New York City

Harlem United Community AIDS Center is located in Harlem, New York City, a largely minority (African American and Hispanic) community (87 percent) with high rates of poverty (35 percent).[8] In recent years, due to its social history with issues concerning drug use and the AIDS epidemic, there has been an increasing need for health care and social services for its residents.[8]

In this underserved area, PLWHA were among the poorest and most needy segment of the population. HIV rates in this community have been driven by expansion of the epidemic, immigration of PLWHA into the area, increased longevity, and high levels of risk behaviors, particularly IV drug use.[9,10] New York City claims that it has the "largest and most heterogeneous HIV epidemic in the developed world" and reports that Harlem remains a neighborhood most extensively impacted. A report by the New York City Department of Health in 2007 showed that 95 percent (39,416 people) of the HIV non-AIDS cases and 83 percent (62,988 people) of the AIDS cases diagnosed in New York State were in New York City. The report showed that Manhattan has the highest rate of HIV diagnoses compared to the other four boroughs of New York City. Harlem was reported as having the second highest rate of HIV diagnoses per 100,000 (118.5) among forty-two New York City neighborhoods.[11] Also common to this vulnerable population is poor oral health.[12] Every known indicator of poor oral health status in U.S. adolescents and adults, including low income, low education, minority status, homelessness, and special needs status, is represented within this target population.[12-15]

CBDPP clients at HU come from across New York City and beyond, with heaviest participation by residents of Harlem and, to a lesser extent, the South Bronx. Residents of these communities and their targeted neighborhoods are poorer, more minority, and less educated than the New York City reference population. Their rates of hospitalization for drug and alcohol abuse tend to be higher, as are aggregate death rates related to drugs and for all causes. Age and gender distribution is similar for these communities as for New York City at large.[8,16]

CDM-HU Partnership: Key Service-Learning Components

The initial CBDPP grant resulted in the expansion of dental services for PLWHA in Harlem. In the first phase of the CBDPP program, a portion of the funds helped to build a two-chair (now three-chair) dental facility at HU. By building a dental facility at one of the largest HIV/AIDS multidisciplinary service providers in Harlem, it was possible to respond to clients' requests for on-site dental care and, in so

doing, significantly impact the health and well-being of PLWHA. In addressing these objectives, a mission of this project was to establish an SL program that provided primary care team training within a community-based program for PLWHA, with the further objective to improve the quality of the HIV/AIDS component of training for dental residents, improve the level of oral health of HU clients, and reduce health disparities among PLWHA served by HU. The project had both a didactic and a clinical component carried out both at CDM and HU. Through didactic courses offered within the AEGD residency program at CDM, clinical aspects of care for PLWHA were, and continue to be, well addressed.

The CBDPP-funded training located at HU focuses on achieving AEGD competencies, while raising social and behavioral issues with trainees and fostering behavioral change. Participating trainees gain an understanding of care for PLWHA through 1) reflection exercises and discussions with the HU dental director at the close of each day or rotation; 2) participation in multidisciplinary care management team meetings; 3) exposure to the HU environment, including having lunch with clients and discussing services with the multidisciplinary professional and lay staff; and 4) participating in educational group sessions run by the dental assistant whenever possible.

In addition, the project has an affective component: to promote change with respect to any negative HIV/AIDS stereotypes and stigmas held by residents, in order to develop a dentist who would customarily reflect on his or her experiences with patients and confront stigma and stereotyping with issues of HIV/AIDS or with any other groups or situations that face similar scrutiny. A further goal involves ongoing reciprocal learning and evaluation by involving the residents in the HU community, in order to develop a greater awareness and engagement with what constitutes health in the context of community, as seen both from the eyes of the HU therapeutic community and the HU client community.

Partnering with HU Clients

Most of the dental clients at HU lead complex lives affected not only by HIV/AIDS but also by medical, psychological, social, substance use, and behavioral co-morbidities. They are fully informed, on an individual basis, about the oral health implications of their medical conditions and their HIV/AIDS treatment. Those whose psychiatric or general medical prescriptions have oral consequences are informed about how to manage complications, and those whose street drug use and/or tobacco product use negatively impacts their oral health are also informed about these consequences and are encouraged to address their substance abuse. All are informed about the importance of obtaining and maintaining regular professional and daily oral health care and provided with guidance about how to access care.

Prior to the first CBDPP grant, HU clients were directly involved in advocating for establishing a dental clinic on the premises. During facility development, HU clients were regularly updated through their governance structure on clinic plans and progress and were invited to visit the buildout to see progress. Now that the clinic is maximally functional, HU clients are involved in program evaluation. Overall, HU's culture of openness, interdependence, and respect fully supports an environment in which input, feedback, and criticism are welcomed, honored, and acted upon in an ongoing way. Clients are quick to describe problems when they arise. These occurrences provide opportunities for immediate assessment of the problem and efforts to redress both the instance and the systemic problem that the instance may reveal.

In addition, at their initial visit to the HU dental clinic, clients are asked to complete a two-page survey describing their frequency of oral hygiene habits, smoking history, reasons for not seeing the dentist regularly, oral health quality of life, and self-assessed oral health status. This initial needs assessment identified a number of barriers to accessing dental care, as well as need for improvement to oral health maintenance among new patients at the HU dental clinic. Conducting this type of needs assessment permits us to educate the residents about the needs and concerns with which new clients present to the clinic and to consider ways in which to modify or expand the services provided by the clinic, so that the residents are able to complete their competencies in a manner that addresses their need for professional growth, as well as in a way that addresses the needs of the client.

Providing Community Service

Hands-on training is currently provided to two AEGD fellows each semester who provide patient care to PLWHA under the direct supervision of the HU dental director four days each week. During this time, residents have an opportunity to perform the

responsibilities and to develop competencies that involve the ability to collect and communicate information to the client in a manner in which the patient can understand and to which he or she can agree; to arrive at a correct diagnosis, an appropriate treatment plan, and a feasible prevention post-treatment plan with follow-up; and to work as part of an interprofessional health care team.

The setting in which this training occurs, the dental clinic at HU, provides comprehensive quality dental care, seeing approximately 200 clients and managing 250 to 300 visits monthly. The clinic offers a variety of comprehensive dental care services at a nonspecialized level, including diagnostic x-rays and exams, preventive care, emergency care, restorations, endodontics, prosthodontics, periodontics, and simple oral surgery, as well as referral to CDM specialty clinics for more complex procedures in all these specialty areas. Services are delivered each weekday in the present three-chair on-site clinic. Two AEGD residents provide day-long patient services four days each week during semester-long rotations, where they see six to ten patients each day and provide comprehensive dental care. Training at HU is limited to two residents each semester in response to clients' strong requests for provider continuity. Since these clients are often fearful or reticent about obtaining dental care, they highly value having their care provided by a small number of stable dentists.

Treatment plans are developed with consideration of each client's chief complaint, physical and psychological tolerances, reliability, health status, and comfort, as well as with consideration of objectively determined dental treatment needs identified on a thorough dental evaluation and examination. Any need for various services for each client is coordinated through weekly multidisciplinary care-coordination meetings (that trainees also attend) and daily through informal networking and coordination.

Reflection

At the close of the HU clinic session on a weekly basis, each resident is asked to consider four basic reflection questions designed to foster the accomplishment of skill-related competencies. These sessions are guided by the dental clinic director, who monitors the progress of the residents in acquiring the competencies associated with the program. Several approaches to question construction have been considered in the development of the reflection questions used. In particular, the Objective-Reflective-Interpretive-Decisional (ORID) model is one that is appropriate to the HU dental clinic setting as residents complete their clinic days. It suggests a progression of questions designed to move residents through a sequence of question types, moving from the more concrete and objective to the more personal and subjective: Objective—what procedures(s) and/or patient care activities did you participate in today? Reflective—were you satisfied or dissatisfied with how your patient care activities went today? Interpretive—did you learn anything new today? Decisional—what would you do differently, if you could, regarding today's activities?[17] In addition, two questions based on differing levels of reflection are included: the Microscope (makes the small experience large)—how was your overall experience at HU? and the Binoculars (makes what appears distant look closer)—how will your experience(s) impact your future patient care practices?[18] Such reflection questions support the learning of the competencies expected of the resident within the context of the population being served.[19]

Involving Social-Behavioral Theory

As dental educators across the country have improved their teaching with respect to HIV, AEGD fellows who come to us are increasingly well informed about the clinical aspects of care, yet often retain negative attitudes about providing this care. Residents' responses to questions pertaining to perceived risk and fear associated with HIV/AIDS reveal considerable negativity or, at the least, neutrality. In the past, when trainees were clinically less informed, we noted that improving their knowledge also improved their attitudes and led to greater comfort, confidence, and engagement. Now that trainees come to us with a higher level of clinical knowledge but negative attitudes, we must address the attitudes, prejudices, and misperceptions more directly.

The Theory of Planned Behavior (TPB) suggests that there are at least three key determinants of behavior: what a person views as the advantages and disadvantages of performing a behavior (attitudinal influence); how a person feels key individuals expect him or her to behave in this regard (normative influence); and identification of circumstances under which performance of a behavior is more or less difficult (behavioral control).[20] All of these facets of behavior are unique to the individual. In this case, it

is the resident who identifies the specific advantages or disadvantages of the behavior, as he or she views them, as well as the specific facilitators and barriers, and the key opinion holders that contribute to making a behavior more or less likely to be performed. Thus, we plan to add to the critical reflection questions or topics already in place such TPB theory-guided items as the following:

- What do you regard as the advantages to treating PLWHA? Conversely, what do you regard as the disadvantages?
- What makes it difficult to treat PLWHA? What makes it easier to treat them?
- Do persons important to you object or disapprove if you treat PLWHA? Do persons important to you approve or support you if you treat PLWHA?

By having the resident confront these questions, TPB would suggest that the resident is being asked to confront some of the key determinants impacting upon decision making with respect to willingness to treat HIV-positive patients. A guiding premise, we would argue, of reflective learning should be to arrive at an understanding with respect to what influences a resident to act or not act in a certain way, in anticipation that it is more likely that the resident will come to perform the desired behavior or achieve the desired competencies.

Impact and Assessment

To date, the information from the HU reflections has been collated and reviewed by the HU dental director, who then provides feedback to the respective resident(s), either individually or collectively. This form of interaction with the residents has provided the clinic director with an opportunity to provide on-site feedback in response to the reflections offered at the end of the clinic day. In addition, the information gained has been used to help in the design of an online portal in which the residents are able to use a collection of online tools that promote active learning and reflection, including personal homepages, blogs, and electronic portfolios to chart their professional development. This website has been designed with the anticipation that residents' use of the site will enable them to track the learning experience in the AEGD program as it progresses and help them reflect on their thoughts and feelings about the experiences they select to document. Information from the SL reflection is also provided to team members at their monthly meetings, thereby enabling a discussion of lessons learned in regards to ways in which to improve the service-learning experience for the residents and, concomitantly, the care provided for HU dental patients.

Furthermore, it is anticipated that the insights to be gained through theory-influenced guided reflection questions can be helpful in designing closed-ended pre-intervention/post-intervention questionnaires for assessment of teaching impact. For some social-behavioral theories, there are standard methods of measuring the theoretical constructs involved and developing measurement scales. If such instruments are routinely used before and after the delivery of SL initiatives, the data provided can advance understanding of whether or not the SL program has contributed to changes in the underlying theoretical constructs, e.g., attitudes toward the desired behavior(s), subjective norms, and perceived behavioral control. The development of systematic approaches to measuring SL impact, informed by the more qualitative, in-depth approaches we have described, can lead to increased systematic assessment, understanding, and accountability for the SL process. Information from residents' reflections at HU can provide information on the impact of the SL program on theory-defined determinants of dental residents' involvement in treating PLWHA and HU clients' oral health behaviors—key behavior(s) we seek to influence.

Conclusion

In a 2006 article, Yoder identified ten components important to a service-learning (SL) educational experience that might also be included in a dental curriculum.[21] We believe that our program encompasses these ten components: 1) an academic link; 2) a sustained community partnership; 3) establishment of SL educational and service objectives; 4) broad preparation of the SL student prior to the SL experience; 5) opportunities for sustained service; 6) reciprocal learning; 7) guided reflection; 8) community engagement; 9) ongoing evaluation and improvement; and 10) the potential for community-engaged scholarship encompassing research, teaching, and service. In Yoder's and others' work,[2,22] guided reflection is identified as a pivotal component of the SL experience. It is the activity that is most responsible for integrating the SL experience with the competency-based clinical experience of the dental

resident, enabling the resident to practice his or her clinical skills in accordance with the educational goals of the SL experience.

Lack of standardization, and the sometimes subjective nature of competencies, can make it difficult to utilize universal guiding principles when developing evaluation strategies of the service-learning experience. This is particularly true when training fellows to provide high-quality dental care, which remains a primary goal of the program; but the complex roles of race, poverty, discrimination, and other socioeconomic and environmental variables in oral health and health care are also emphasized. We have suggested that SL can potentially be improved via a more systematic approach to the use of social-behavioral theories that facilitate the accomplishment of desired competencies via opportunities for residents' reflection, provided at the end of the clinic day with the HU dental clinic director and through the online blog made available as part of the AEGD curriculum. Although we have provided a few examples of how a particular theory, TPB, might be applied in the SL context, many other opportunities for the application of social-behavioral theories exist.

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