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"I Have Actually not Lost any Adolescent Since I Started Engaging Them one on one:" Training Satisfaction and Subsequent Practice among Health Providers Participating in a Standardized Patient Actor Training to Improve Adolescent Engagement in HIV Care

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Abstract

Background: Poor health care worker (HCW) interactions with adolescents negatively influence engagement in HIV care. We assessed the impact of standardized patient actor training on HCW competence in providing adolescent HIV care in Kenya. Methods: We conducted pre-post cross-sectional surveys and qualitative exit interviews during a stepped wedge randomized trial. Cross-sectional surveys assessed self-rated competence in providing adolescent services before and after the intervention, and training satisfaction. In-depth interviews with a subset of HCW participants one year after training. Results: Over 90% of HCWs reported satisfaction with the training and there was significant improvement in self-rated competence scores (mean = 4.63 [highest possible score of 5] post-training vs 3.86 pre-training, $p < 0.001$). One-year following training, HCWs reported using skills in patient-centered communication and structuring an adolescent clinical encounter. Conclusions: This SP training intervention improved self-rated competence and showed sustained perceived impact on HCW skills in adolescent HIV service provision one year later.

Keywords

adolescent, HIV, Kenya, training, standardized patient actor

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Introduction

Sub-Saharan Africa (SSA) accounted for 59% of all new HIV infections in 2019, with half occurring among adolescents and young adults (AYA).[1] Among AYA living with in HIV (ALHIV) in SSA, poor retention in care and suboptimal viral suppression are common.[2,3] In response to these trends, the WHO recommends widespread implementation of adolescent and youth-friendly services (AYFS) as a promising strategy in improving adolescent health outcomes.[4–7]

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Emerging evidence indicates that AYFS provision, including both trained adolescent health care workers (HCWs) and structural changes like adolescent clinic days, has potential to improve AYA engagement in HIV care in SSA.[8,9] Availability of adolescent friendly services including designated spaces has been associated with higher retention and viral suppression among adolescents.[10,11]

While international and national guidelines have been developed on how to offer adolescent-friendly services,[4,12] implementation varies, and health care workers (HCWs) report being unsure on how to operationalize adolescent and youth-friendly care provision.[13] Furthermore, providers report a disconnect between their cultural values and the non-stigmatizing behaviors required for adolescent HIV services.[14]

Standardized patient actor (SP) training is a clinical education approach that is effective for improving quality of care, including HCW empathy and patient-centered communication skills.[15,16] We conducted an SP training intervention with adolescent care providers in Kenya to improve their competencies to offer adolescent and youth-friendly services for AYA living with HIV.[17] This analysis, nested within the trial, explored process outcomes of the SP training intervention, including HCW self-reported competence before and after the training, HCW satisfaction with the training, and durability of skills gained following completion of the training.

Methods

Study Design

We collected both qualitative and quantitative data within a 5-year stepped-wedge trial of a standardized patient actor training intervention that had a primary aim of improved retention of AYA in HIV care. Cross-sectional surveys assessed satisfaction with training, and self-rated ability in providing adolescent HIV services before and after the training. To assess application and durability of skills in routine service provision to AYA, we conducted in-depth interviews with 18 HCWs one year after training. The data were collected between 2016 and 2019.

SP Training Intervention

The two-day training intervention, refined during a pilot phase,[18] included didactic sessions and exercises in adolescent national guidelines for HIV care, communication skills, values clarification, and motivational interviewing. These were followed by HCWs rotating through seven video-recorded SP encounters reflecting adolescent care issues including prevention with positives, family planning, disclosure and adherence, gender-based violence, neurocognitive delay, sexual identity, and depression, followed by a group debriefing session.

Professional actors were recruited through a local casting agency and received a 5-day training from an SP methodology consultant. The actors were trained on role playing seven case scripts that mimic common issues in adolescent HIV care. Additionally, the SPs were trained on giving immediate verbal feedback, completing feedback forms on various aspects of HCW communication following each encounter. Each actor was assigned a specific case and a common practice case that they had to master and portray with realism by end of the training. Actors had a one-day refresher training just before each training wave to review their case scripts and go through a practice session with the study trainers.

Ethical Approval and Informed Consent

This study was approved by University of Nairobi/Kenyatta National Hospital Ethical Review Board (P476/06/2016) and the University of Washington Institutional Review Board (#51926). All HCW participants provided written informed consent before taking part in study procedures.

Population and Setting

We trained 95 HCW from 24 HIV care facilities across 4 counties in Kenya, between 2016 and 2019. The training was conducted in 4 waves, 9 months apart. A pre-training period of 6 months was used to recruit HCW for training. Additional recruitment was done before each training wave at facilities that were scheduled for training. Eligible HCWs included nurses, clinical officers, and psychosocial/adherence counselors; were ages 18 and older; and provided HIV services to AYA. We purposively selected 6 HCWs from each training wave for interviews, aiming for equal distribution across cadres and intervention wave, until saturation was reached after three waves.

Data Collection

Quantitative: HCW pre-training surveys collected data on socio-demographic characteristics, clinical experience, and prior training in AYA care. Self-rated competence in interacting with AYA was evaluated before training and immediately post-training using Likert scale items (1 = *strongly disagree* to 5 = *strongly agree*).[19] The self-rated competence domains in caring for AYA included aspects on HCW knowledge (understanding issues ALHIV face, feeling sufficiently trained to offer AYFS), skills (effective communication, sufficient clinical and emotional skills), abilities (confidence in providing care) and attitudes (empathy, comfort interacting with ALHIV). In addition, HCWs rated case difficulty in communication and medical decision-making (1 = *very challenging* to 5 = *very easy*), realism and relevance of each SP encounter (1 = *very irrelevant/ unrealistic* to 5 = very *relevant/ realistic*). Overall satisfaction with the training was also evaluated (1 = *strongly dissatisfied* to 5 = *very satisfied*).

Qualitative: Selected HCWs were interviewed at their respective clinic sites approximately 12 months after participating in the SP training. The overall goal was to assess skills that were in use one year after training and HCW's perceived impact on adolescent outcomes. We continued to conduct interviews until saturation of key themes was reached.[20] Interview topic guides explored training components that healthcare workers

found useful, skills they gained through the training, how the training could be improved, skills that they are currently using in working with their AYA clients, barriers and facilitators to skills utilization, and views on quality of care provided to adolescents. In addition, HCWs were asked about the potential impact of their acquired skills on AYA retention. Interviews were conducted in English, audio recorded and transcribed verbatim in English.

Data Analysis

The goal of this mixed methods analysis was to understand how providers trained with the SP intervention used their skills in practice and perceived impact on AYA retention in care. The qualitative component was primary. Quantitative data on self-rated competence were included to enhance qualitative results at the analysis stage. Descriptive variables were summarized using medians, interquartile ranges (IQR) and proportions.

Pre and post training self-rated competence responses from the Likert scale items were merged, defining "agree" and "strongly agree" as "competent" and "neutral", "disagree" and "strongly disagree" as "not comptetent", and summarized as proportions for each of the 8 competence domains. Further, the Likert scale was converted to a numeric scale and the pre and post training competence scores reported as means (standard deviation). Generalized estimating equations (correlation structure = independence) compared the difference in mean self-rated competence scores pre and post training. Since HCW were enrolled in the study at different times (waves) throughout the study, we adjusted for wave in the models. We reported mean differences, 95% confidence intervals (95%CI), and p-values from Wald tests for each domain and overall score. We adjusted for age at recruitment in all models assessing the effect of training on competence Completed IDI transcripts were uploaded to Dedoose[21] for analysis. An initial codebook was developed by two coders from the study team based on a subset of transcripts and literature review. Additional codes were that emerged during the coding process were included in the final codebook. Using the final codebook, all transcripts were coded by one coder and then coding reviewed by a second coder. Disagreements in coding were resolved through discussion.[22,23] Using content analysis, preliminary themes were arrived at through an iterative process of review and discussion by the two coders then reviewed by the larger study team and further refined. We descriptively compared how qualitative themes of skills gained and used were compared/contrasted to competence scores.

Results

Trainee Characteristics

The majority of HCWs trained were female 76.8% and the median age was 33 years (29-41). The median years of experience providing HIV care overall was 4 (2-6.5) years and providing HIV care to AYA was 3 years (1-5) (Table 1). Slightly more than a third (36.8%) of HCW had received training in providing youth friendly services in the past, and 16.8% had received additional training in counseling AYA on substance use or mental illness.

Satisfaction with Training

Of the trained HCWs, 65.3% were satisfied that the training was the right length, however 29.5% felt the length was long or too long. Most (94%) were satisfied with the training format, 95% were satisfied with the ability of the SPs, and 97% were satisfied with the relevance of the training to their work (Table 2). All HCWs were satisfied with trainers' ability, and 96.8% were

Table 1. Characteristics of Health Care Worker Participants in a Standardized Patient Actor Training Intervention in Kenya (n = 95).

HCW Characteristic	Median (IQR) or n (%)
Age	33 (29-41)
Female	73 (76.8)
Years of education completed	17 (15-18)
Professional role	
HTS Counselor	15 (15.8)
Adherence counselor	19 (20.0)
Nurse	27 (28.4)
Clinical officer	34 (35.8)
Years providing HIV care	4 (2-6.5)
Years providing HIV care to adolescents	3 (1-5)
AYA seen per week	3 (2-5)
Majority of patients cared for	
Adults (25 and older)	81 (85.1)
AYA (10-24 years)	12 (12.8)
Children (0-9 years)	2 (2.1)
HCW trained in adolescent/youth friendly services	35 (36.8)
HCW receiving other adolescent HIV care trainings	6 (6.3)
HCW trained in counseling adolescent substance use/depressive illness	16 (16.8)

Table 2. HCW Satisfaction with Standardized Patient Actor Training (n = 95).

Training aspect	N (%)
Length of training	
Too Short	5 (5.3)
Just right	62 (65.3)
Long	25 (26.3)
Too long	3 (3.2)
Satisfied with trainer ability	95 (100)
Motivational Interviewing skills useful	95 (100)
Satisfied with training relevance	92 (96.8)
Motivational Interviewing session relevance	92 (96.8)
Debrief session SP feedback useful	92 (96.8)
Debrief session Trainer feedback useful	92 (96.8)
Overall satisfaction with training	92 (96.8)
Satisfied with SP ability	90 (94.6)
Satisfied with training format	89 (93.6)
Satisfied with timing around clinical duties	76 (84.4)

Table 3. Perceived Improvement pre-Post Training among Health Care Workers Participating in a Standardized Patient Actor Training (n = 95).

Competence domain in care for HIV-infected AYA	HCWs reporting competence before training		HCWs reporting competence after training		Mean difference (95%CI)	*P*-value
	N (%)	Mean Score (SD)	N (%)	Mean Score (SD)		
Understand issues AYA face	86 (90.5)	4.17 (0.65)	95 (100.0)	4.83 (0.38)	0.68 (0.50-0.87)	p < 0.001
Effective communication	81 (85.3)	4.15 (0.71)	95 (100.0)	4.70 (0.46)	0.54 (0.34-0.74)	p < 0.001
Ability to empathize	78 (82.1)	4.12 (0.74)	95 (100.0)	4.68 (0.47)	0.61 (0.41-0.82)	p < 0.001
Comfortable interacting	85 (89.5)	4.31 (0.69)	95 (100.0)	4.77 (0.42)	0.48 (0.29-0.66)	p < 0.001
Sufficient clinical skills	58 (60.0)	3.68 (0.87)	92 (96.8)	4.49 (0.56)	0.79 (0.57-1.01)	p < 0.001
Sufficient emotional skills	54 (56.8)	3.58 (0.75)	88 (92.7)	4.40 (0.63)	0.82 (0.59-1.05)	p < 0.001
Sufficiently trained to offer YFS	32 (33.7)	2.99 (1.03)	89 (93.7)	4.49 (0.62)	1.54 (1.30-1.77)	p < 0.001
Confidence providing YFS	72 (75.8)	3.92 (0.81)	95 (100.0)	4.66 (0.48)	0.80 (0.58-1.02)	p < 0.001

Table 4. Age Adjusted Models for Assessing Impact of Competence on Training.

Competence domain	Mean difference (95%CI)	*P*-value
Understanding issues AYA face	0.68 (0.50-0.86)	p < 0.001
Effective communication	0.54 (0.34-0.73)	p < 0.001
Ability to empathize	0.61 (0.40-0.81)	p < 0.001
Comfortable interacting	0.47 (0.29-0.65)	p < 0.001
Sufficient clinical skills	0.78 (0.57-1.00)	p < 0.001
Sufficient emotional skills	0.82 (0.59-1.04)	p < 0.001
Confidence providing YFS	0.79 (0.58-1.01)	p < 0.001
Sufficiently trained to offer YFS	1.53 (1.30-1.76)	p < 0.001
Overall competence	0.78 (0.63-0.93)	p < 0.001

satisfied with feedback from both SPs and trainers. Only 35% were familiar with motivational interviewing before training. Following the training, all HCWs reported that the motivational interviewing skills were useful. More than 90% of HCWs reported that the cases were relevant and realistic. Cases about adherence/disclosure and neurocognitive delay were reported as the most challenging in communication with AYA by 82.1%, 79.0% HCWs respectively.

Self-Rated Competence

Among the eight aspects of self-rated HCW competence assessed, there was a significant improvement in the proportion of HCWs reporting competence in all domains following SP training with mean score change ranging from 0.48 to 1.54 with $p < 0.001$ (Table 3). There was a significant increase in overall mean self-rated competence after the training compared to before the training, (pre-training score mean = 3.86 [SD 0.57, post-training score mean = 4.63 [SD 0.35]. The overall mean difference was 0.78 [95% CI: 0.63−0.94], $p < 0.001$.

When we adjusted for age, education, and years of experience; number of years completed in school (education) and number of years working in HIV clinics (experience) were not associated with changes in competence after training; Mean difference 0.004 (95% CI: −0.014-0.022), $p = 0.634$ and Mean difference −0.009 (95% CI: −0.033−0.014) respectively. Older age was associated with a lower increase in overall competence after training, mean difference −0.010 (95% CI: −0.020 − [−0.003], $p = 0.01$ [Table 4].

Qualitative Interviews

Among the 18 participants who took part in the IDIs, 6 (33%) were nurses 5 (28%) were clinical officers and 7 (39%) were adherence counselors. Overall, participating HCWs commended the training for its unique format, noting that the practical skills gained were easy to remember and apply in their day-to-day interactions with AYA clients. They reported utilizing skills gained from the training conducted a year earlier, and that this had an impact on ALHIV's retention in care and viral suppression.

Three key themes emerged on experiences with the SP training intervention: (1) skills from the SP training that HCW used in practice; (2) impact of the SP training on HCW's attitudes towards ALHIV; and (3) durability of skills from SP training after one year. They also discussed facilitators and barriers to using these new skills, perceived impact of training, and gave recommendations for future trainings.

Skills from SP Training That HCWs Used in Practice

Patient-Centered Communication

Most HCWs reported that they used patient-centered communication approaches that they had learned in the SP training. Specifically, they gained patient-centered communication skills in establishing rapport, approaching sensitive topics, use of probing and active listening.

> "The other thing is that adolescents are the kind of people you have to establish a relationship with before handling them. Otherwise, you might miss everything. Actually, it (SP training) made me know how to handle the adolescents' right from welcoming them in the facility, the kind of question and how I should structure them in order to get information from them. Otherwise, if you go your own way then you might not get anything from the adolescents." **Counselor, Trained 2018**

In addition, HCW revealed that motivational interviewing skills gained were transformative to their interactions with ALHIV.

> **"**Apparently that session (motivational interviewing) changed the way I listen to other clients, okay listening was not part of me, I was like, listening needs a lot and then the way clients sometimes … they want to give you more, they want to talk and talk especially if they have something that is burdening them. But nowadays I don't feel bad I can sit and listen to somebody patiently, you know there is listening, you are there listening completely." **Nurse, Trained 2017**

Systematic Clinical Evaluation of ALHIV

HCWs noted that they lacked knowledge on how to structure a comprehensive adolescent visit within a short time frame. Most of the HCWs were aware of the adolescent checklist as provided in the Adolescent Package of Care (APOC) but they were not using it comprehensively or believed that they only needed to assess some but not all items. Some of the HCW participants acknowledged that they gained both communication and clinical assessment skills.

> **"**The systematic review, there are some areas when you are counseling a client, you feel that maybe somebody else, maybe the clinician will handle and then you miss out on some issues. I think the components of the session (Conducting a systematic clinical encounter), the way they were structured; they have been very useful." **Nurse, Trained 2018**

> "It (SPEED Training) has improved my counseling skills, how to motivate them to open up, and probing skills and I am able to do a detailed clinical assessment for the adolescents than before." **Clinical officer, Trained 2017**

Impact of the SP Training on HCW's Attitudes Towards ALHIV

The HCWs reflected on their values during the values clarification exercise and group debriefing sessions, and how those values affected service delivery to ALHIV. One year following the training, they reported being able to adopt more non-judgmental attitudes when interacting with ALHIV:

> "You see now, before I attended that training you see the youths were very shy and more so to those questions which we ask them but then after the training I had to develop strategies whereby I can now engage an adolescent or a youth without that youth feeling offended or rather initially I used to be judgmental towards the adolescents and the youth, since then… and more so there are those questions which you can ask an adolescent you find that they don'*t want to open up."* Counselor, Trained 2017

Prior to the training, HCWs participants revealed that they would be closed off, judgmental and to some extent harsh. Following the training, they felt they were empowered to identify and deal with their own negative attitudes towards AYA.

> "Ok, personally I was a bit closed, tough and motherly, but it brought an insight to me that I have to go to their level to be able to interact with them because if I maintain my sternness, my motherly level, they will not tell me what I need to know so that we help them**." Nurse, Trained 2018**

Durability of Skills 12 Months After the Training

HCWs noted that the training format using SPs was unique, brought specific ALHIV concepts to life, and made it easy to remember to use the skills gained.

> "I can still remember the case that we had about the orphans; I still remember that girl. The one who was brought by the sister, I realized that there are a lot of them who have been left with responsibilities to take care of maybe their sick siblings and they are not also comfortable with it." **Nurse, Trained 2017**

> "And this one was different because we went through the sessions, met the different actors presenting different cases and it was more interesting. You still carry that visual session as you meet an adolescent and as you walk through with an adolescent." Counselor, Trained 2018

HCWs reported applying the skills gained from the SP training in their daily routine care to improve the quality of services they provide to AYA 12 months after training.

> "I can say that all the objectives that were in SPEED training were relatively linked to my day-to-day work, so I have to apply everything that I learned in my day-to-day work. I can say that I had to do what I learnt in the interaction with the adolescents. Therefore, I do not think there is anything that will hinder me or rather stop me from using the skills that I acquired." **Counselor, Trained 2018**

While using the skills gained HCWs were confident that they were experiencing positive results in providing care to ALHIV.

> "Am still using them (the skills) up to today and I have seen a great change in the way I see patients and I am able to get a lot of information that help me in managing their condition." **Nurse, Trained 2018**

Overall HCW participants felt that the SP training had greatly enhanced their competence and confidence and they continued to apply the skills.

> "It gave me … the training made me have more confidence in handling the young adults and the adolescents. Because at least now I can talk to them freely and how I talk to them can make them open up easily so that I get more information as pertaining to handling their cases …" **Nurse, Trained 2018**

Facilitators and Barriers to Using Skills in Routine Care

There were barriers and facilitators to implementation of skills in the day-today care of ALHIV. Existing adolescent friendly services such as adolescent spaces within the clinic and separate adolescent clinic days made it easier for HCWs to use the skills. HCWs in clinics that had strong teamwork and supportive leadership were also motivated to use the skills gained.

> "One thing we have a specific day for adolescents so that day we specifically …it is for adolescents so one thing …they are in the same age group so if there is a client who has an issue with confidentiality or disclosure and doesn't what to be seen with other clients will feel at least comfortable and in that forum." Clinical officer, Trained 2017

On the other hand, the HCWs recognized that there were challenges that they had to navigate in as much as they were motivated to use the skills. These include lack of adolescent friendly spaces to offer adolescents services in and client-provider ratio. Some clinics lack adequate privacy since they have minimal clinic space that is shared among the healthcare workers thus, they do not feel confident and comfortable enough to explore AYA issues.

> "One of them is that we don't have space, one time I could have this space and another time I could have a very congested place to flow with the adolescent's.But now you find that we can have that time there but now you might have a special case where by you don't want interference and also staffing … it has interfered with this because you find that we are very few and many clients would come and they want the service very quickly." **Nurse, Trained 2018**

Perceived impact of training on retention of ALHIV in care and viral suppression After applying the skills gained for about 12 months, HCWs reported that the quality of services offered to adolescents and young adults at the respective clinics had improved. They revealed that these improvements in quality of care may have been one reason for the improved retention in care and viral suppression that they had observed.

> "Using the skills gained, I have seen improvements in retention, I have seen few deaths since then, I have only heard one case of death, I have seen the suppression (viral) rates have gone up. So, I think it has improved the performances in this clinic and other clinics I go to, we do not have a high VL (Viral Load) right now." **Counselor, Trained 2018**

The majority of the participants reported that improved services to AYA clients following use of skills over time may have contributed to ALHIV engaging better with providers, taking charge of their health, and lives including adhering to clinic visits.

> "Through the motivational interviewing I can say that … there has been a change in everything. In self-esteem, retention because I have actually not lost any adolescent since I started engaging them one on one when I started, I had almost talked to all of them now I started engaging them as a group, yeah, and they look forward to coming to the clinics, even on different sessions. So, I feel that it has impacted their lives." **Clinical Officer, Trained 2018**

Participants also noted that as they were putting the skills to use, many AYA appeared more comfortable discussing topics that were previously considered sensitive, such as contraceptive use and other sex related topics.

> **"**So many adolescents were closed up, there was that feeling-that something is not adding up. I could not just put my finger on this. After the SPEED training and getting more skills, I am able to navigate and now I can see that it's not hard for them to open up to me and tell me any challenge they are going through, ask for advice on anything. So, I get questions about anything from contraceptives, sex, if it's okay to have, all those things that were bottled up. "**Counselor, Trained 2018**

Recommendations for Future Trainings

Having reported high satisfaction with the training and appreciating the benefits they were experiencing in terms of improved engagement with ALHIV, the HCWs provided recommendations. Most of the HCW participants recommended continuous training to cater for staff turnover and refresher trainings for those already trained.

> "So, you find that most of these staffs that have been trained, some of them end up going to other facilities or exiting the program and those who remain is not easy again to be mentored. What I would say is that the training should be in such a way that… considering that the training was in November last year up to now … I think what it should be done to make it more effective is to keep on following up and to keep on doing refresher courses for the same. It will help to bring those who have not been trained on the same level with other caregivers (HCWs). **Counselor, Trained 2018**

Discussion

This analysis demonstrated that SP clinical training bridged an important gap by equipping HCWs with skills and improving attitudes in adolescent care. HCWs gained skills in establishing a rapport, motivational interviewing, using a systematic approach to the clinical visit, and adopting a non-judgmental approach. The training was perceived by HCWs to result in durable impact in their approach to AYA during the year following training. Improved levels of self-rated competence after training among the entire training cohort substantiated the qualitative findings (Table 5).

Table 5. Qualitative Findings Summary.

Theme	Sub theme	Example quote (s)
Skills from SP training that HCWs were using in practice	Patient-centered communication	"The other thing is that adolescents are the kind of people you have to establish a relationship with before handling them. Otherwise, you might miss everything. Actually, it (SP training) made me know how to handle the adolescents' right from welcoming them in the facility, the kind of question and how I should structure them in order to get information from them. Otherwise, if you go your own way then you might not get anything from the adolescents." Counselor, Trained 2018
	Systematic clinical evaluation of ALHIV	"It (SPEED Training) has improved my counseling skills, how to motivate them to open up, and probing skills and I am able to do a detailed clinical assessment for the adolescents than before." Clinician, Trained 2017
Impact of the SP training on HCW's attitudes towards ALHIV		"You see now, before I attended that training you see the youths were very shy and more so to those questions which we ask them but then after the training I had to develop strategies whereby I can now engage an adolescent or a youth without that youth feeling offended or rather initially I used to be judgmental towards the adolescents and the youth, since then… and more so there are those questions which you can ask an adolescent you find that they don't want to open up." Counselor, Trained 2017
Durability of skills 12 months after the training.	Facilitators and barriers to using skills in routine care	"I can say that all the objectives that were in SPEED training were relatively linked to my day-to-day work, so I have to apply everything that I learned in my day-to-day work. I can say that I had to do what I learnt in the interaction with the adolescents. Therefore, I do not think there is anything that will hinder me or rather stop me from using the skills that I acquired." Counselor, Trained 2018 "One thing we have a specific day for adolescents so that day we specifically …it is for adolescents so one thing …they are in the same age group so if there is a client who has an issue with confidentiality or disclosure and doesn't what to be seen with other clients will feel at least comfortable and in that forum." Clinician, Trained 2017
	Perceived impact of training	"Through the motivational interviewing I can say that … there has been a change in everything. In self-esteem, retention because I have actually not lost any adolescent since I started engaging them one on one when I started, I had almost talked to all of them now I started engaging them as a group, yeah, and they look forward to coming to the clinics, even on different sessions. So, I feel that it has impacted their lives." Clinician, Trained 2018

The SP training targeted improving HCW communication with AYA in HIV care including the use of patient-centered communication approaches, conducting a systematic clinical assessment, showing empathy and being non-judgmental, as recommended in Kenyan and WHO Adolescent Friendly Services (AFS) guidelines. Most HCWs reported never having received training in these core skills despite providing adolescent services for an average period of three years. Gaining these skills through the SP training helped them communicate and interact better with adolescents receiving HIV care services at the respective clinics. The training approach was useful in helping HCWs gain practical skills and evaluate their own attitudes towards AYA through the feedback sessions. HCW participants were also highly satisfied with the use of SPs. In previous studies, the use of simulation has been shown to improve HCW skills and yield better outcomes for patients/clients.[16,24]

It was apparent that HCWs providing HIV care to AYA recognized that they have been judgmental and have had negative attitudes towards AYA, since after the SP training they reported that they were now deliberate about being nonjudgmental. Further, HCWs in this study reported that they felt they were able to communicate issues better and AYA seemed more receptive. This was perceived to have some impact on retention in care and viral suppression rates among AYA receiving care in the facilities. These benefits further motivated the healthcare workers to continue using the skills they had gained as they felt they were getting through to adolescents and adolescents also getting more comfortable sharing their issues with them. In another quantitative study in South Africa, kind attitude of HCWs towards adolescents was associated with significant retention of adolescents in HIV care.[10] Improving empathetic and kind care by HCWs will likely result in better retention of AYA in HIV care.

Structuring an adolescent assessment helps the provider to comprehensively assess all the aspects of adolescent care needs. This forms a basis to identify and address adolescent needs. Providers appreciated the use of the adolescent checklist as provided for in the Adolescent Package of Care (APOC) as part of national guidelines. They gained confidence and acknowledged that it was possible to do the assessment within a short time. Facility context played an important role in supporting or hindering the use of skills by providers. Factors such as separate clinic spaces or separate clinic days which provide for confidentiality were important to allow providers to apply their skills. This further explains the importance of privacy and confidentiality to both adolescent clients and their providers.

Conclusion

Overall, the SP training intervention was appreciated and endorsed by HCWs and resulted in improved self-reported competence for adolescent-friendly care, as evidenced in our qualitative and quantitative results. SP encounters were perceived by HCWs to have provided sustained impact on HCW skills in adolescent service provision one year later. Given the unique needs of adolescents and the inadequacies HCWs feel regarding their skills talking with ALHIV, simulated patient training could enhance care and, in turn, may support retention and viral suppression among adolescents.

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Authorship

"H.M., C.M., K.W., M.N., A.O. and C.W performed the research. K.W., C.M., I.W., D.B., G.J., D.W. and P.K designed the research study. T.O trained the standardized patient actors. H.M and C.M analyzed the data. H.M wrote the paper and all the author reviewed."

Declaration of Conflicting Interests

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