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Training Exposure and Self-Rated Competence among HIV Care Providers Working with Adolescents in Kenya

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Abstract

Lack of health care worker (HCW) training is a barrier to implementing youth-friendly services. We examined training coverage and self-reported competence, defined as knowledge, abilities, and attitudes, of HCWs caring for adolescents living with HIV (ALWH) in Kenya. Surveys were conducted with 24 managers and 142 HCWs. Competence measures were guided by expert input and Kalamazoo II Consensus items. Health care workers had a median of 3 (interquartile range [IQR]: 1-6) years of experience working with ALWH, and 40.1% reported exposure to any ALWH training. Median overall competence was 78.1% (IQR: 68.8-84.4). In multivariable linear regression analyses, more years caring for ALWH and any prior training in adolescent HIV care were associated with significantly higher self-rated competence. Training coverage for adolescent HIV care remains suboptimal. Targeting HCWs with less work experience and training exposure may be a useful and efficient approach to improve quality of youth-friendly HIV services.

Keywords

Africa, communication, adolescent, competence, training

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Introduction

More than 80% of HIV-positive adolescents live in sub-Saharan Africa,[1,2] and progress in treatment outcomes and AIDS-related deaths within this age-group lags behind both adults and children.[2–6] To address this inequity in health outcomes, the Kenyan Ministry of Health has enacted a national strategic plan that aims to improve adolescent HIV services through health care worker (HCW) capacity-building and rapid expansion of youth-friendly health services (YFHS).[7,8] Youth-friendly health services, as defined by the World Health Organization, includes multiple components, including open clinic hours and locations to facilitate easy youth access, and staff trained in communication with adolescents.[9,10] Training, both to understand national guidelines and to learn the necessary skills, forms a critical component of a facility's YFHS package.

In a systematic review of YFHS, lack of HCW training in communication with adolescents and lack of competence in

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What Do We Already Know about This Topic?

Health care workers (HCWs) in Kenya have reported feeling ill-prepared to care for adolescents living with HIV (ALWH), and poor provider–patient interactions have been consistently cited as a barrier to linkage to and retention in HIV care.

How Does Your Research Contribute to the Field?

Health care worker viewed themselves as more competent in care components such as understanding, respect, and empathy, suggesting that HCWs may feel they have the capacity to deliver high quality care to ALWH but perceive themselves as lacking the skills or training to actually deliver this care effectively.

What Are Your Research's Implications toward Theory, Practice, or Policy?

This study demonstrates a need for ongoing HCW training in the care of ALWH in Kenya, in communication and interpersonal skills as well as clinical care, to optimize the implementation of youth-friendly health services.

negotiating sensitive issues were barriers to implementation in low- and middle-income countries.[11] Studies in Kenya reported lack of awareness of national guidelines by HCWs[12] and lack of confidence among HCWs in their ability to provide YFHS.[13,14] Health care workers reported that training in YFHS was either unavailable or insufficient and doubted their own ability to set personal and cultural values aside in order to carry out YFHS. Poor provider–patient interactions have been consistently cited by adolescents living with HIV (ALWH) as a barrier to care linkage and retention.[15–17]

Self-assessment of competence is an established component of self-regulating professions like health care and is useful in identifying training needs and in setting goals.[18,19] Low self-assessment of an HCW's competence in performing a skill, such as patient-centered communication, may indicate that the HCW could be avoiding certain topics or situations where that skill is required.[18–20] Conversely, in a variety of global settings and across HCW cadres, high self-rated competence related to specific skills and content areas has been shown to be associated with accurate understanding of and willingness to discuss sensitive topics.[20–23]

To inform optimal rollout of YFHS, this study examines training coverage, as well as the characteristics, facility context, and self-reported competence of HCWs working with ALWH in Kenya. An improved understanding of HCW training needs, as well as correlates of health worker competence related to adolescents, will inform training planning, with a vision toward higher quality YFHS services.

Methods

Study Design

This study was a cross-sectional, secondary data analysis from a randomized trial of a training intervention for HCWs caring for ALWH in Kenya. Self-reported data were collected from facility managers and HCWs enrolled in the larger intervention trial. Among a subset of HCWs receiving the training intervention, clinical performance scores were assessed by standardized patient (SP) actors and expert reviewers. Standardized patients were trained to portray ALWH and to assess HCW communication and empathy skills from the perspective of their patient role. Staff with expertise in clinical care and adolescent HIV reviewed video recordings of the SP encounters to assess clinical and communication skills.

Setting and Population

Participants were recruited from 24 high-volume public health care facilities in Nairobi, Kiambu, Homa Bay, and Kisumu Counties, Kenya, between November 2016 and May 2017. Facilities were eligible if they had at least 40 adolescents currently engaged in HIV care, used an electronic medical record system, and were not enrolled in a concurrent adolescent intervention. From within each enrolled facility, a facility manager and up to 10 HCWs were identified for study participation. Eligible HCW participants were at least 18 years of age and employed at the facility for at least 3 months or under a 1-year contract. The HCW cadres included clinical and medical officers, nurses, and counselors; peer counselors were excluded.

Data Collection

Cross-sectional surveys were conducted in English using tablets equipped with Open Data Kit.[24] Facility managers reported staffing levels, patient volume, and services offered. Health care workers reported sociodemographic characteristics, professional cadre, training history, and self-rated professional competence. The primary outcome was individual HCW self-rated competence in providing care to ALWH. Recommendations from the Kalamazoo II Consensus, a 2002 conference summarizing teaching and evaluation of communication and interpersonal skills, guided competence questions.[25,26] We also adapted items from a survey originally designed for self-assessment of health care students' clinical performance during simulated patient training in the United States.[27] Tools were pilot-tested in Kenya for comprehension and relevance and included 8 statements of provider knowledge (understand ALWH issues, feel sufficiently trained), skills (effective communication, clinical needs, emotional needs), abilities (confidence in abilities), and attitudes (comfort with ALWH, empathy).[28,29] Responses options used a 5-Likert scale, ranging from strongly agree to strongly disagree. Competence was calculated as the total score for all 8 items. The SP checklists used Likert scale responses and were developed based on previous

SP assessments of provider interactions.[30] Expert reviewers scored items as "performed" or "did not perform."

Statistical Analysis

Descriptive statistics were generated from HCW and facility surveys. Total self-rated competence scores were converted into a 1 to 100 scale and summarized across participants using medians and interquartile ranges (IQR). Univariate regression assessed associations between each covariate and individual HCW self-rated competence. Potential confounding factors were identified based on prior studies and included education level, cadre, years of experience in HIV care, ALWH client volume, and history of relevant training.[20,31–35] Multivariable linear regression models were developed by evaluating models with each of the a priori selected confounders of age and sex, except where age was hypothesized to be collinear with other variables, then including variables that changed the primary outcome association by >10%.[36] Analyses accounted for clustering by facility and used robust standard errors using Stata version 15.0.

Ethical Considerations

Voluntary written informed consent was obtained from each participant prior to data collection. Ethical approval was received from the institutional review board of the University of Washington (#00002035) and the Kenyatta National Hospital/ University of Nairobi Ethics and Research Committee (P476/06/2016).

Results

Data were collected from 24 facility managers and 142 HCWs. Most facilities were at the subcounty (41.7%) or health center (33.3%) level. Facilities provided care for a median of 83 (IQR: 40-153) ALWH and employed a median of 11 (IQR: 5.0-18) HCWs (Table 1). Eight (33.3%) facilities reported ever having a special program or training in adolescent care and/or adolescent HIV care, and 5 facilities (20.8%) offered youth-friendly space, services, or providers.

Health care worker respondents were mostly female (71.8%), a median of 33 years old (IQR: 29-39), and nearly all reported postsecondary education (95.8%). The HCWs reported a median of 4 years (IQR: 2-8) of experience providing HIV care for all-age populations and slightly fewer years in providing care specifically to ALWH (median = 3 years, IQR:1-6). Most (78.2%) described primarily caring for adults older than 24 years, and 40.1% reported receiving any special training in providing YFHS, "Adolescent Package of Care," or care of ALWH. Fewer (21.8%) reported any special training in counseling of patients with depression, substance abuse, or gender-based violence.

The median self-rated competence score HCWs was 78.1 (IQR: 68.8-84.4) on a scale of 1 to 100, and they responded "strongly agree" most often in response to statements describing comfort level with ALWH (53.5%), ability to empathize with adolescents (40.1%), and ability to effectively communicate with ALWH (37.3%). The HCWs responded "strongly agree" less frequently on technical aspects of care, including possessing sufficient skills to address the clinical needs of ALWH (21.1%) and training in YFHS (10.6%;

Table 1. Characteristics of Participating Facilities (n = 24) and Sociodemographic Characteristics of Participating HCWs (n = 142).

	Median (IQR) or n (%)
Health facility type	
Teaching and referral hospital	1 (4.2)
County referral hospital	5 (20.8)
Subcounty hospital	10 (41.7)
Health center	8 (33.3)
Number of adolescents (10-19) in active follow-up, n = 23	83 (40-153)
Number of adolescents (10-19) currently on ART, n = 23	82 (42-148)
Total number of staff members at clinic who work with ALWH[a]	11 (5-18)
History of training in the care of ALWH	8 (33.3)
Youth-friendly services space, providers, or services available	5 (20.8)
HCWs	
Age (years)	33 (29-39)
Sex	
Male	40 (28.2)
Female	102 (71.8)
Highest level of education started	
Secondary	6 (4.2)
Diploma program	97 (68.3)
Degree program	39 (27.5)
HCW cadre	
Clinical/medical officer	45 (31.7)
Nurse[b]	40 (28.2)
Counselor	57 (40.1)
Number of years caring for PLWH (of any age)	4 (2-8)
Number of years caring for ALWH (ages 10-19)	3 (1-6)
Number ALWH cared for in an average work week	
≤5	49 (34.5)
6-10	35 (24.7)
11-15	23 (16.2)
≥16	35 (24.7)
Received training in the care of ALWH	57 (40.1)
Received training in the counseling of patients with depression, substance abuse problems or exposure to gender-based violence	31 (21.8)
Received any of the above types of training	69 (48.6)
Satisfaction with any of the above past training (range: 1-100), n = 69	80.0 (75.0-90.0)
Composite self-rated competence score (range: 1-100), n = 142	78.1 (68.8-84.4)

Abbreviations: ALWH, adolescents living with HIV; ART, antiretroviral therapy; HCW, health care worker; IQR, interquartile range; PLWH, people living with HIV.

[a]Does not include peer counselors.

[b]Nurses who also reported counseling duties were described as nurses.

Table 2. HCW Agreement with Each Self-Rated Competence Statement (n = 142).

	HCWs responding "strongly agree," n (%)	Median self-rated competence score (IQR)
Knowledge		
I feel sufficiently trained to offer "youth-friendly services"	15 (10.6)	60 (60-80)
I understand the issues that HIV-positive adolescents face	52 (36.6)	80 (80-100)
Skills		
I can communicate with HIV-positive adolescent patients effectively	53 (37.3)	80 (80-100)
I have sufficient skills to address the clinical needs of HIV-positive adolescent patients	30 (21.1)	80 (60-80)
I have sufficient skills to address the emotional needs of HIV-positive adolescent patients	23 (16.2)	80 (60-80)
Abilities		
I feel quite confident in my ability to care for HIV-positive adolescents	45 (31.7)	80 (80-100)
Attitudes		
I feel quite comfortable interacting with HIV-positive adolescent patients	76 (53.5)	100 (80-100)
I can empathize with an adolescent patient's situation and/or concerns effectively	57 (40.1)	80 (80-100)
Total of all statements		78.1 (68.8-84.4)

Abbreviations: HCW, health care worker; IQR, interquartile range.

Table 2). Among optional open-ended responses provided by 103 HCWs, 77.7% requested training in the care of ALWH, and among those who had previously undergone relevant training (n = 69), 55% indicated a need for "refresher" or updated training.

In univariate analysis, years of experience caring for HIV-positive individuals of any age (per year coefficient = 1.04, $P = .003$) and for adolescents (per year coefficient = 1.08, $P = .001$) were associated with higher competence scores. Competence was also higher among those who reported caring for a moderate number (11-15 compared to $\leq$5) of ALWH in an average work week ($\beta = 7.06$, $P = .02$) and with prior training in adolescent care ($\beta = 6.38$, $P = .002$). Although not statistically significant, male HCWs rated themselves higher than female HCWs ($\beta = 4.18$, $P = .07$). In multivariable analysis, higher number of years of experience in caring for ALWH ($\beta = 1.04$, $P = .001$) and history of training in adolescent HIV care ($\beta = 5.28$, $P = .009$) remained statistically significant after adjusting for both a priori confounders (age and sex) and potential confounders which changed the outcome by >10% (Table 3).

In a subset of HCWs (n = 29) who received study training, actors rated HCWs highly on clarity of communication (median = 96.0, IQR: 93.0-100), respect (median = 89.0, IQR: 86.0-93.0), and acting friendly and kind (median = 89.0, IQR: 86.0-93.0); lowest rated skills were communication techniques such as making empathetic statements (median = 57.0, IQR: 46.0-68.0) and encouraging the patient to ask questions (median = 64.0, IQR: 57.0-75.0). Expert reviewer scores were lower: empathetic and nonjudgmental statements (median = 65.0, IQR: 61.0-72.0), conducting a psychosocial assessment (median = 58.0, IQR: 50.0-63.0), providing counseling and information (median = 56.0, IQR: 49.0-64.0), and reviewing medical history (median = 50.0, IQR: 38.0-63.0).

Discussion

In this analysis, 60% of HCWs working with ALWH had not received training in the care of ALWH. Likewise, most facilities offering services to ALWH did not offer YFHS, and only 21% of facilities had designated spaces, times, or staff dedicated to providing quality care to ALWH. High turnover of trained personnel has been reported in other settings and may contribute to the variable training exposure and lack of services following national rollout efforts.[37,38] Despite these barriers, HCWs reported a moderately high degree of self-rated competence in providing services to this population.

Variables significantly associated with increased competence, including years of relevant experience and prior relevant training, were plausible and similar to those identified in previous studies.[20,30,33–34] The fact that HCWs tended to rate themselves higher in areas such as understanding, respect, and empathy suggests HCWs may feel they have the capacity to deliver high-quality care to this population but perceive themselves as lacking the skills or training to deliver this care effectively. Competence is defined in the literature as involving knowledge, skills, abilities, and attitudes or traits.[19,28] Using this framework, HCWs in this study appear to have rated themselves higher in areas involving abilities and attitudes. This is encouraging, as Kak et al[19] state knowledge and skills as more amenable to change through training.

Whether association between training and competence translates to improved practice is unclear. Prior analyses in Kenyan HIV care programs demonstrated an association between the proportion of HCWs within a facility who have been trained in adolescent-friendly care and increased retention among ALWH in care.[39] This is supported by research showing that the degree to which an HCW considers themselves to be confident and competent performing a skill is associated with externally rated application of that skill in practice.[20,21] However, in the subset analysis of training interactions, external ratings were lower than HCW's self-assessments, suggesting that confidence may not translate to objective competence. The patient actors rated providers especially low in communication skills, while technical reviewers noted deficiencies in clinical assessments and history-taking.

Table 3. Univariate and Multivariable Association between Individual HCW Characteristics and Self-Rated Competence (N = 142).

	Median self-rated competence score (IQR)	Univariate		Adjusted	
		Coefficient (95% CI)	*P* value	Coefficient (95% CI)	*P* value
Age					
≤29 (n = 43)	75.0 (65.6-81.3)	Reference			
30-39 (n = 66)	75.0 (68.8-84.4)	1.61 (−3.96 to 7.12)	.555		
≥40 (n = 33)	81.3 (71.9-87.5)	4.31 (−2.73 to 11.36)	.218		
Per year		0.14 (−0.24 to 0.52)	.463	0.12 (−0.28 to 0.52)[a]	.535
Sex					
Male (n = 40)	78.1 (71.9-89.1)	Reference			
Female (n = 102)	75.0 (65.6-84.4)	−4.18 (−8.70 to 0.34)	.068	−3.99 (−8.92 to 0.94)[b]	.107
Highest level of education started					
Secondary (n = 6)	75.0 (71.9-81.3)	Reference			
Diploma program (n = 97)	78.1 (68.8-87.5)	0.63 (−9.11 to 10.36)	.895		
Degree program (n = 39)	75.0 (65.6-84.4)	−1.40 (−11.0 to 8.15)	.764		
HCW cadre					
Clinical/medical officer (n = 45)	75.0 (65.6-81.3)	Reference			
Nurse (n = 40)	78.1 (68.8-84.4)	2.37 (−4.42 to 9.16)	.478	3.08 (−2.45 to 8.62)[c]	.261
Counselor (n = 57)	78.1 (71.9-87.5)	4.93 (−1.15 to 11.02)	.107	5.16 (−1.28 to 11.61)[c]	.111
Number of years caring for PLWH (any age)					
Below median (n = 72)	73.4 (67.2-81.3)	Reference			
Above median (n = 70)	81.3 (71.9-87.5)	6.42 (1.25 to 11.60)	.017		
Number of years caring for ALWH (ages 10-19)					
Below median (n = 73)	75.0 (68.8-81.3)	Reference			
Above median (n = 69)	78.1 (68.8-87.5)	4.37 (−0.57 to 8.78)	.053		
Per year		1.08 (0.51 to 1.65)	.001	1.04 (0.49 to 1.59)[a]	.001
Number of ALWH cared for in an average work week					
≤5 (n = 49)	75.0 (68.8-81.3)	Reference			
6-10 (n = 35)	78.1 (68.8-84.4)	4.36 (−2.21 to 10.93)	.183	3.11 (−2.95 to 9.16)[d]	.300
11-15 (n = 23)	78.1 (71.9-87.5)	7.06 (1.48 to 12.66)	.015	3.78 (−1.93 to 9.48)[d]	.184
≥16 (n = 35)	78.1 (68.8-87.5)	5.79 (−0.91 to 12.50)	.087	4.11 (−2.52 to 10.73)[d]	.212
Received training in the care of ALWH					
No (n = 85)	75.0 (68.8-81.2)	Reference			
Yes (n = 57)	81.3 (75.0-90.6)	6.38 (2.56 to 10.21)	.002	5.28 (1.48 to 9.08)[d]	.009
Received training in the counseling of patients with depression, substance abuse problems, or exposure to gender-based violence					
No (n = 111)	78.1 (68.8-84.4)	Reference			
Yes (n = 31)	78.1 (68.8-87.5)	3.10 (−2.24 to 8.44)	.241		

Abbreviations: ALWH, adolescents living with HIV; CI, confidence interval; HCW, health care worker; IQR, interquartile range; PLWH, people living with HIV.
[a]Adjusted for sex.
[b]Adjusted for age.
[c]Adjusted for age and sex.
[d]Adjusted for sex and number of years caring for ALWH.

Strengths of this analysis included the use of multiple assessment tools and inclusion of several counties within Kenya. The measure used to analyze self-rated competence was not a single indicator but a compilation of 8 statements, each focused on a specific aspect of quality care. This analysis also had some limitations. Through this cross-sectional analysis, we could not infer the direction of these associations or causality, HCWs self-report may be subject to social desirability bias, and sites included in this analysis may not be representative.

Youth-friendly health services are key to ensuring equity in access to HIV care across age groups[7]; however, implementing these services appropriately requires adequate coverage of provider training. This analysis demonstrates a need for improved training rollout processes to support high-quality adolescent HIV care and an emphasis on communication skills and empathy in addition to clinical education. Future training may have the most impact when directed at HCWs with fewer years of work experience or who have never received training, with attention to workforce turnover at trained facilities. More research is needed to determine optimal timing, length, and format of repeated training in this population, as well as associations between provider competence and ALWH outcomes.

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