


Using Narrative Films to Combat HIV-Related Stigma in Western Kenya: An Exploratory Pilot Study of Adolescents Living With HIV and Their Caregivers

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Abstract

Objective. Interventions that effectively address HIV-related stigma are urgently needed to improve outcomes for adolescents living with HIV (ALHIV). We piloted a series of 4 short narrative films depicting Kenyan ALHIV's lived experiences of stigma and discrimination with 57 ALHIV and 50 adult caregivers of ALHIV in western Kenya. **Methods.** Participants completed either pre- and post-viewing questionnaires, including an HIV/AIDS-related stigma and discrimination scale, or participated in post-viewing focus group discussions. Three-month follow-up visits were conducted. **Results.** Caregivers endorsed significantly greater disagreement with stigmatizing statements on the scale at 3-month follow-up, whereas adolescents had no significant differences in scores. Participants reported they believed the films would have a positive impact on their communities and had led to changes in their own attitudes, beliefs and/or behavior. **Conclusion.** The *HIV Stigma Films* may show promise as an intervention to reduce stigmatizing attitudes and beliefs about HIV-infection, especially among caregivers of ALHIV.

Keywords

HIV, stigma, adolescents, media

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Introduction

HIV/AIDS remains the leading cause of death for adolescents in sub-Saharan Africa,¹ and HIV-related stigma, defined as “negative attitudes and beliefs about people with HIV,”² is widely recognized as having a significant impact on the morbidity and mortality of people living with HIV worldwide.^{2–6} In studies of children and adolescents living with HIV (ALHIV), stigma has been identified as a significant barrier to antiretroviral medication adherence and contributes to delays in the disclosure of HIV status to youth.^{7–9} These concerns are further amplified by the influence of HIV-related stigma on the mental health and quality of life of ALHIV.^{10,11} In many settings, misinformation about modes of HIV transmission is common, and HIV-infection is often thought to be the

result of “bad” or immoral behavior, resulting in the placement of blame on youth for their HIV status.¹¹ Given the negative impact that HIV-related stigma has on outcomes for this vulnerable population, interventions

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that address stigma and misinformation about HIV infection are urgently needed.

In sub-Saharan Africa, films, radio shows and other forms of mass media have been used for many years to deliver public health messages aimed at preventing the spread of HIV.^{12,13} Although less common, similar media-based interventions, such as radio programs, short films, and motion comics, addressing HIV-related stigma and discrimination have also been explored with some success.¹⁴⁻¹⁸ Few of these, however, have focused on reducing HIV-related stigma among young people specifically.¹⁸

In this study, we piloted a series of 4 short, narrative films depicting Kenyan ALHIV's lived experiences of stigma and discrimination with Kenyan ALHIV and caregivers of ALHIV. Through the collection of both quantitative and qualitative data, we sought to determine whether the films had an immediate and/or lasting impact on viewers' attitudes and beliefs about HIV infection, as well as explore participants' reactions to the films. We hypothesized that the films would decrease stigmatizing attitudes and beliefs about HIV infection and that this change would be sustained at a 3-month follow-up visit.

Materials and Methods

Setting and Population

Participants were recruited face-to-face using convenience sampling from 2 pediatric clinics run by the Academic Model Providing Access to Healthcare (AMPATH) in Eldoret, Kenya. AMPATH represents a long-standing collaboration between Moi Teaching and Referral Hospital (MTRH), Moi University School of Medicine, and a consortium of North American academic institutions.^{19,20} Eligible participants included ALHIV (ages 10-19 years) and caregivers of ALHIV (age ≥ 18). An adolescent's ability to participate was not contingent on their caregiver's enrollment and vice versa. To prevent accidental disclosure, participants were excluded if the adolescent was unaware of their HIV status.²¹

Study Design

Participants were randomly assigned to 1 of 2 study groups: questionnaire or focus group discussion (FGD). Adolescents and caregivers only completed study procedures with other adolescents and caregivers, respectively. Participants in the questionnaire group completed a series of questionnaires before and after viewing the 4 films. Pre-viewing questionnaires included the Stigma in AIDS Family Inventory (SAFI)²² and an HIV/AIDS-related stigma and discrimination scale.²³ Immediately

after viewing the films, participants were asked to complete the stigma and discrimination scale a second time, to assess immediate changes in viewers' attitudes and beliefs about HIV-infection.

Participants in the FGD group participated in a semi-structured post-viewing FGD led in Kiswahili by a female, Kenyan research assistant with a master's degree in public health who was trained and experienced in FGD facilitation. The research assistant did not have a prior relationship with study participants, and participants were told she was conducting these FGDs as part of a research project to better understand their perspectives on the *HIV Stigma Films*. FGDs were held in a private research office on the MTRH campus. Separate guides were created by the authors for adolescent and caregiver FGDs. They contained the same questions, covering participants' opinions on the films, perceptions of the potential impact of the films on viewers, and where and to whom they thought the films should or should not be shown, but had minor differences in phrasing for the adolescent versus caregiver perspective.

At a 3-month follow-up visit, those in the questionnaire group completed the stigma and discrimination scale for a third time and, if their caregiver had also chosen to participate, adolescents were asked whether they had noted any changes in their caregiver's behavior since their initial study visit. Those in the FGD group participated in a second semi-structured FGD facilitated by the same research assistant. Separate guides were, again, created for adolescents and caregivers, with topics covering perceived long-term impact of the films and changes in participant behavior.

HIV Stigma Films

The narrative films—*Michael*, *Afiya*, *Mosi*, and *Joshua*—were collaboratively developed by faculty and students at Indiana University-Purdue University Indianapolis and the Indiana University School of Medicine in the United States and Moi University in Eldoret, Kenya.⁶ Each film is approximately 10 to 15 minutes in length and tells the story of a Kenyan adolescent's lived experiences of HIV-related stigma and discrimination. Storylines were informed by prior FGDs with Kenyan ALHIV and their caregivers, as well as key informant interviews with community leaders. Audio for each film is in Kiswahili with English subtitles. The films are publicly available online at www.hiv-films.org.

Measures

The questionnaires used in this study were administered in either English or Kiswahili, depending on participant preference.

Stigma in AIDS family inventory (SAFI). The locally developed and validated SAFI questionnaires were administered to participants in the questionnaire group of the study prior to viewing the films (Supplemental Files 1 and 2).²² These 13- and 11-item measures for caregivers and adolescents, respectively, assess both perceived stigma and prior experiences of HIV-related stigma and discrimination.

HIV/AIDS-related stigma and discrimination scale. A 22-item HIV/AIDS-related stigma and discrimination scale was administered to participants in the questionnaire group prior to viewing the films, immediately post-viewing, and at 3-month follow-up (Supplemental File 3).²³ Its items are divided into 3 subscales—Shame, Blame, and Isolation; Discrimination; Equity. The 10-item Shame, Blame, and Isolation (Shame) subscale measures participants' level of agreement with stigmatizing statements about HIV-infection. The 8-item Discrimination subscale asks participants about the forms of discrimination faced by people living with HIV in their community. The 4-item Equity subscale assesses participants' attitudes regarding how people with HIV should be treated compared to those not living with HIV. Originally developed and validated for use with adults in Thailand and Zimbabwe, items from this scale have since been used successfully in other sub-Saharan African settings.²⁴ However, the tool has not been validated in Kenya, specifically. The measure was translated from English to Kiswahili by a trained, bilingual research assistant and independently back translated to English by a second research assistant to ensure the conceptual equivalence of items prior to its use.

Ethical Approval and Informed Consent

This study was approved by the Indiana University School of Medicine Institutional Review Board in Indianapolis, Indiana, USA and the Institutional Research Ethics Committee at the Moi University School of Medicine and MTRH in Eldoret, Kenya (approval number 0001831). Written informed consent was obtained from all participants over the age of 18 years and from legally authorized caregivers of minor participants under the age of 18 years. Written assent was obtained from all adolescent participants under the age of 18 years. Participants were reimbursed 500 Kenyan shillings (approximately 5 USD) for each study visit.

Analyses

Descriptive statistics, including participant characteristics, participants' prior experiences of HIV-related stigma and discrimination as evaluated on the SAFI, and mean

subscale scores on the HIV/AIDS-related stigma and discrimination scale, were calculated using SPSS Statistics Version 25 software. Likert scale responses to items on the stigma and discrimination scale were coded from 1 to 5 such that higher scores were indicative of greater disagreement with stigmatizing statements related to HIV-infection and statements regarding the forms of discrimination faced by people living with HIV. Positively phrased items were reverse coded. Cronbach's alpha values were calculated to explore subscale internal consistency in this population. Independent t-tests were conducted comparing adolescent and caregiver scores at each timepoint. Paired t-tests were conducted comparing participants' pre-viewing and post-viewing scores and pre-viewing and follow-up scores.

Audio recordings of the FGDs were transcribed and translated to English. Transcripts were qualitatively coded by 2 authors and thematically analyzed using Dedoose.²⁵ Initial codes were developed deductively from FGD guides. Transcripts were then iteratively coded with additional codes and sub-codes derived inductively from transcript content. Consistency between coders was checked at multiple stages of the coding process. Data saturation was achieved by the end of data collection, as new codes ceased to be identified. Emergent themes were identified, and representative quotes are provided in the results.

Results

Participant Characteristics

Fifty-seven ALHIV and 50 caregivers of ALHIV participated in the initial study visit (Table 1). The number of individuals who were approached but declined to participate was not tracked. The average age of adolescent participants was 15 years (range 11-19), with 70% identifying as female. The average age of caregiver participants was 43 years (range 18-66 years), with 82% identifying as female. Forty-three adolescents (75%) and 32 caregivers (67%) returned for a follow-up visit. The timing of the follow-up visits coincided with the 2017 election disputes in Kenya, which contributed to the observed attrition rates.²⁶

Questionnaire Group

Few adolescents reported prior experiences of HIV-related stigma and discrimination compared to caregivers (Table 2). Despite this, 89% reported it was important to hide their HIV status from others and 80% reported that their caregiver felt similarly. Both adolescents and caregivers reported that HIV-related stigma had had a negative impact on their mental health.

Table 1. Participant Characteristics.

Study group	Avg age (year)	Male (%)	Female (%)	Single (%)	Married (%)	Urban residence (%)	Rural residence (%)	Avg age at disclosure (year)	Adolescent attends school (%)	Employed (%)	Attended follow-up (%)
Adolescents (N=57)											
Questionnaire (n=35)	15	11 (31)	24 (69)	35 (100)	0 (0)	15 (43)	19 (54)	12	32 (91)	0 (0)	22 (63)
FGD (n=22)	15	6 (27)	16 (73)	22 (100)	0 (0)	9 (41)	8 (36)	12	21 (95)	0 (0)	22 (100)
Caregivers (N=50)											
Questionnaire (n=23)	43	1 (4)	22 (96)	7 (30)	14 (61)	6 (26)	10 (43)	12	21 (91)	8 (35)	16 (74)
FGD (n=27)	42	8 (30)	19 (70)	6 (22)	20 (74)	5 (19)	20 (74)	11	25 (93)	10 (37)	16 (59)

Table 2. SAFI Results for Questionnaire Group Participants.

SAFI questionnaire items	Frequency of reported "Ever Happened" (%)
Adolescents (N=35)	
Lost friends due to HIV status	2 (5.7)
Called names/bullied/insulted due to HIV	1 (2.9)
Experienced discrimination at home due to HIV	1 (2.9)
Experienced discrimination in neighborhood due to HIV	1 (2.9)
Experienced discrimination at church due to HIV	0 (0)
Experienced discrimination at clinic due to HIV	0 (0)
Experienced discrimination at school due to HIV	1 (2.9)
Experienced discrimination at another place due to HIV	0 (0)
Lost financial support/work due to HIV	0 (0)
Lost social support due to HIV	0 (0)
HIV stigma has made me feel stressed/anxious	5 (14)
HIV stigma has made me feel depressed/saddened	7 (20)
Choose not to play with others or go places due to HIV	1 (2.9)
Feel it is important to keep HIV status secret	31 (89)
Caregiver feels it is important to keep my HIV status secret	28 (80)
Future and hopes have changed in a negative way due to HIV	2 (5.7)
Delayed taking meds so others do not see	8 (23)
People in community think HIV is dirty/immoral/shameful	
No one thinks	22 (63)
A few people think	8 (23)
Most people think	5 (14)
Caregivers (N=22)	
Negatively judged due to child's HIV	7 (32)
Isolated/avoided due to child's HIV	6 (27)
Called names/insulted due to child's HIV	8 (36)
Experienced discrimination at home due to child's HIV	5 (23)
Experienced discrimination in neighborhood due to child's HIV	3 (14)
Experienced discrimination at church due to child's HIV	2 (9)
Experienced discrimination at clinic due to child's HIV	1 (5)
Experienced discrimination at work due to child's HIV	2 (9)
Experienced discrimination at another place due to child's HIV	0 (0)
Lost financial support/work due to child's HIV	4 (18)
Lost social support due to child's HIV	6 (27)
HIV stigma has made me feel stressed/anxious	7 (32)
HIV stigma has made me feel depressed/saddened	7 (32)
Not allowed child to play with others or go places due to child's HIV	2 (9)

(continued)

Table 2. (continued)

SAFI questionnaire items	Frequency of reported "Ever Happened" (%)
People in community think HIV is dirty/immoral/shameful	
No one thinks	10 (45)
A few people think	7 (32)
Most people think	5 (23)
Child is isolated/avoided due to HIV	2 (9)
Child has been called names/bullied/insulted	4 (18)
Child has experienced discrimination at home	1 (5)
Child has experienced discrimination in neighborhood	3 (14)
Child has experienced discrimination at church	1 (5)
Child has experienced discrimination at clinic	0 (0)
Child has experienced discrimination at school	0 (0)
Child has experienced discrimination at another place	1 (5)
HIV discrimination affected child socially	2 (9)
HIV discrimination affected child emotionally	5 (23)
HIV discrimination affected child's education	2 (9)
Child's future and hopes changed in a negative way	2 (9)

Table 3. Mean Total and Subscale Scores on the HIV/AIDS-Related Stigma and Discrimination Scale at Each Timepoint.

Study group	Shame, blame, and social isolation (SD)	Discrimination (SD)	Equity (SD)
All participants (n = 29)			
Pre-viewing	43.2 (2.6)	31.6 (8.1)	18.7 (2.1)
Post-viewing	42.9 (2.5)	28.8 (8.0)	18.7 (2.3)
Follow-up	44.4 (1.6)	36.5 (2.7)	19.8 (0.8)
Adolescents (n = 17)			
Pre-viewing	43.6 (2.2)	33.2 (7.6)	19.8 (1.0)
Post-viewing	43.3 (2.2)	29.9 (6.7)	18.5 (2.7)
Follow-up	44.2 (1.9)	36.9 (3.3)	19.6 (1.1)
Caregivers (n = 12)			
Pre-viewing	42.6 (3.2)	29.3 (8.6)	17.1 (2.4)
Post-viewing	42.3 (3.0)	27.2 (9.6)	18.8 (1.6)
Follow-up	44.7 (1.0)	35.8 (1.3)	20 (0)
Total possible	45	40	20

At baseline, participants endorsed high levels of disagreement with stigmatizing statements related to HIV-infection (Shame, $\alpha = .660$, and Equity, $\alpha = .388$, subscales) and statements regarding the forms of discrimination faced by people living with HIV (Discrimination subscale, $\alpha = .799$) (Table 3). To achieve an acceptable Cronbach's alpha for the Shame subscale, one item was removed for the purposes of our analyses (original $\alpha = .270$). Removal of any individual item did not result in improvement in internal consistency for the Equity subscale. Compared to caregivers, adolescents endorsed significantly greater disagreement with items on the Shame, $t(27) = 2.82$, $P = .013$ and Equity, $t(27) = 3.68$, $P = .003$, subscales at baseline. At the immediate post-viewing and follow-up timepoints, there were no significant differences in scores between adolescents and caregivers.

Immediately post-viewing, adolescents endorsed significantly greater agreement with items on the Discrimination subscale, whereas caregivers had no significant changes in scores but trended toward greater disagreement on the Shame and Equity subscales (Table 4). At follow-up, adolescents had no significant changes in scores from pre-viewing and caregivers endorsed significantly greater disagreement with items on all subscales.

In addition, 70% of adolescents whose caregiver also participated in an initial visit reported that their caregiver's behavior toward them had changed over the past 3 months. The reported behavior changes were exclusively positive and included increased encouragement of medication adherence, decreased fear of sharing food with the adolescent, and more frequent expressions of respect and of greater hope for the adolescent's future:

Table 4. Mean Differences in Total and Subscale Scores on the HIV/AIDS-Related Stigma and Discrimination Scale From Pre-viewing to Immediate Post-viewing and Pre-viewing to 3-Month Follow-up.

Study group	Timepoint	Shame, blame, and social isolation (95% CI)	Discrimination (95% CI)	Equity (95% CI)
All participants (n = 29)	Pre to post	0.30 (-0.96, 1.57)	-2.83 (-5.24, -0.42)*	0.00 (-1.26, 1.26)
	Pre to follow-up	2.03 (0.81, 3.25)*	4.86 (1.82, 7.90)*	1.10 (0.18, 2.03)*
Adolescents (n = 17)	Pre to post	-0.52 (-1.65, 0.61)	-3.29 (-5.40, -1.18)*	-1.24 (-2.76, 0.29)
	Pre to follow-up	0.67 (-0.39, 1.72)	3.71 (-0.27, 7.68)	-0.18 (-0.95, 0.60)
Caregivers (n = 12)	Pre to post	1.75 (-1.24, 4.74)	-2.17 (-7.74, 3.40)	1.75 (-0.21, 4.06)
	Pre to follow-up	4.42 (1.97, 6.86)*	6.50 (1.16, 11.84)*	2.92 (1.40, 4.44)*

Positive changes are indicative of a greater disagreement with subscale items at the second timepoint.

* $P < .05$.

“After watching the films, my caregiver [now] takes to me with helpful words, like I will live longer and. . . will always make it wherever I go. He treats me with respect at home.” One adolescent reported that their caregiver had stopped using corporeal punishment.

FGD Group

Seven initial FGD visits (3 adolescent; 4 caregiver) and 5 follow-up FGD visits (3 adolescent; 2 caregiver) were held. Group sizes ranged from 6 to 8 participants for caregivers and 7 to 8 for adolescents. FGDs ranged from 30 minutes to 1 hour in length.

Potential impact of the films. Throughout post-viewing and follow-up FGDs, caregivers and adolescents reported believing the films would have a positive impact on others in their communities. Participants noted that they would correct misinformation, increase “love” and decrease “hate” directed toward those living with HIV, and decrease HIV-related stigma and discrimination (Table 5). Caregivers frequently mentioned improvement in HIV testing rates as another potential positive outcome.

Participants also highlighted the ways in which the films would directly impact people living with HIV, suggesting they would give them hope, help them to feel less alone in their experiences, and provide encouragement for medication adherence (Table 5). While many foresaw a positive impact, some suggested that stigma reduction interventions were unnecessary.

Actual changes in attitudes, beliefs, and/or knowledge. Immediately post-viewing, many caregivers and adolescents expressed that the films changed some of their own attitudes, beliefs, and/or knowledge about HIV-infection in positive ways (Table 5). At follow-up, adolescents and caregivers reiterated this belief and shared positive lessons they had learned from the films, such as that medication adherence is important, no one

should discriminate against another person, and everyone is equal. However, a minority of the adolescents and caregivers revealed that the films had reinforced the importance of keeping one’s HIV status a secret and expressed fears they would become the victim of HIV-related stigma and discrimination themselves.

Actual changes in behavior. At follow-up, some adolescents and caregivers reported that viewing the films had led to a change in their own behavior, including improved medication adherence for adolescents and, for caregivers, changes in how they treat their child living with HIV (Table 5). Some caregivers also noted behavioral changes in their adolescent after watching the films, such as decreased self-isolation. Likewise, some adolescents noted behavioral changes in their caregivers, such as reminding them to take their medications and providing them with more food.

Acceptability and recall. The portrayals of stigma and discrimination in the films were reported to be accurate by both caregivers and adolescents and true of the experiences of people living with HIV in western Kenya. Participants suggested that the films should be shown widely, especially in their communities, schools, and churches, and would be appropriate for a variety of audiences. At follow-up, many continued to recommend wide dissemination of the films. Many were also noted to accurately recall several details of the films, though some did struggle to recall the films’ content or made inaccurate statements about their storylines.

Discussion

The results of this exploratory pilot suggest that the *HIV Stigma Films* show promise as an intervention to reduce HIV-related stigma, especially among caregivers of ALHIV. Caregivers’ scores immediately post-viewing trended toward greater disagreement with stigmatizing

Table 5. Focus Group Discussion Themes and Representative Quotes.

Theme	Representative quotes
Potential impact of the films	<p>“It is also a lesson to everybody to stop discriminating other people. They will see that it is a disease like any other and that people who have the disease need care. They need love and care. So at least it will help people have a better attitude toward the affected.” (Caregiver)</p> <p>“It will also remove stigmatization from those children who have been affected, because, when you look at the film[s] that we have watched, they have realized that they are not alone. . .they have their agemates who. . .have the same problem. . .” (Caregiver)</p> <p>“It will encourage them, because, if someone discriminates you, just know that you have a friend that you can encourage one another. Like Joshua, his grandmother encouraged him to continue taking the drugs. Afiya was encouraged by Lydia to continue taking the drugs. Michael, when his uncle arrived, he encouraged his brother who was Michael’s father. For Mosi, his friend helped him.” (Adolescent)</p> <p>“In our society, most people have learned about these issues. . .so there is no need to show the films. The people have learned not to isolate.” (Adolescent)</p>
Actual changes in attitudes, beliefs, and/or knowledge	<p>“They made me think a lot. Even when I will get another person’s child in that state, I will be encouraging him or her because that is what has gotten into my heart. It will make me encourage another person.” (Caregiver)</p> <p>“We should not hate them. We should stay tighter and play together like a brother and sister. If he or she brings you some work for help, you just help him or her nicely. You should not leave him or her to struggle.” (Adolescent)</p> <p>“Even if people have HIV, they are all the same.” (Adolescent)</p> <p>“Even that one of mine was happy about it. When we got home, she said; ‘Grandma, so there are bad people who can do such bad things to other children like that? May God help me so that I will not be doing that to my brother?. . .We should be working together without discriminating each other.’” (Caregiver)</p> <p>“I see that it teaches that. . .if someone knows about [my HIV status], he or she will start looking down on me. There are those who do not know and will think that I will infect them.” (Adolescent)</p> <p>“Joshua taught me that it is not a must that everybody should know about it. [My HIV status] should be a secret.” (Adolescent)</p>
Actual changes in behavior	<p>“When I serve food, I increase the one for that child [with HIV] compared to the rest.” (Caregiver)</p> <p>“My mother never used to remind me to take drugs, but she is reminding me right now. She buys me snacks, because, when I take those drugs, the drugs drain me of my energy.” (Adolescent)</p>

statements on the stigma and discrimination scale. At 3-month follow-up, caregivers endorsed significantly greater disagreement with items on all subscales.

These findings are consistent with studies of other media-based and educational-entertainment interventions that have demonstrated promise in reducing HIV-related stigma.^{14,15,18} However, much of this prior work has not followed participants after the immediate post-intervention period to gather data on potential long-term impact. Qualitative data from adolescents at 3-month follow-up suggest that many observed positive changes in their caregiver’s behavior after their caregiver’s initial visit. These behavioral changes included increased encouragement of medication adherence and decreased engagement in discriminatory behaviors. Many caregivers likewise reported in FGDs that they felt their attitudes and beliefs about HIV-infection and behavior toward their child had changed for the better.

Greater agreement with items on the Discrimination subscale was observed in both adolescents and caregivers

immediately post-viewing. The items on this subscale ask viewers the extent to which they agree or disagree with statements about the forms of discrimination people living with HIV face in their community. Thus, this finding is likely reflective of the films’ success in raising participants’ awareness of HIV-related stigma and discrimination.

Unlike caregivers, adolescents’ scores on the Shame and Equity subscales trended toward greater agreement immediately post-viewing. While the magnitude of this change was relatively small and statistically insignificant, it is possible that the films served as a reminder of youths’ painful experiences of HIV-related stigma and could have increased their negative beliefs about themselves and other ALHIV in the immediate post-viewing period. Despite many adolescents reporting positive changes in their attitudes and beliefs about HIV-infection in post-viewing FGDs, some reported they found the films distressing, as they increased their concern that they themselves would become the victims of HIV-related stigma and discrimination. In addition, the lack of

previous validation of the HIV/AIDS-related stigma and discrimination scale for use with adolescents may also have influenced these results. While further work is needed to better understand these findings, they do underscore the importance of ensuring that the *HIV Stigma Films* are accompanied by appropriate supportive services and educational materials for ALHIV viewers.

There were no statistically significant differences in scores for adolescents between pre-viewing and follow-up. However, adolescents started with high levels of disagreement with items on the scale, leaving little room for improvement. Caregivers had endorsed lower levels of disagreement at baseline, which improved at follow-up and became like that of adolescent participants. Similarly, adolescents reported prior experiences of HIV-related stigma and discrimination at a lower frequency than caregivers on the SAFI. This finding is consistent with the results of another study of Kenyan youth living with HIV and their caregivers using the same questionnaire.²² One possible explanation is that youth may be reluctant to report their prior experiences of HIV-related stigma and discrimination and any negative attitudes and beliefs about HIV-infection, as keeping these private may serve as a self-protective strategy.^{22,27} Youth may also have experienced less discrimination over their lifetime than adults.

Prior to viewing the *HIV Stigma Films*, most adolescents within the questionnaire group endorsed that it was important that they kept their HIV status a secret and that their caregivers felt similarly. Some caregivers and adolescents shared in post-viewing FGDs that the films had reinforced this belief, as well as fears that they would become the victims of HIV-related stigma and discrimination. Consistent with observed changes in Discrimination subscale scores post-viewing, this finding probably results from increases in participants' awareness of the forms of stigma and discrimination faced by Kenyan ALHIV. HIV-related perceived stigma, the belief that others hold stigmatizing beliefs and may or will discriminate against you for your HIV status, can be one of many factors influencing a person's adherence to antiretroviral medications and their decision to disclose their HIV status to others.²⁸⁻³⁰ These findings highlight the importance of the need for additional work to better understand the impact of the *HIV Stigma Films* on perceived stigma and viewers' beliefs related to HIV status disclosure.

Analyses of our qualitative data reveal that the films were generally viewed as acceptable and memorable. Participants reported that the films had positively changed their own attitudes and beliefs about HIV-infection, that they anticipated the films would have a positive impact on their communities and on people living with HIV, and that they would recommend the films be shown widely.

They also noted that the films had led to important positive behavioral changes, such as improved medication adherence and decreased self-isolation for adolescents and, for caregivers, increased encouragement of their child's medication adherence, increased sharing of food with their child, and more frequent expressions to their child of respect and of greater hope for their child's future.

Limitations

This pilot work was exploratory in nature and did not include a control group or adolescents not living with HIV. Further work to establish the *HIV Stigma Films* as an effective intervention to reduce HIV-related stigma and discrimination, such as through a large, randomized control trial, is needed to demonstrate that our quantitative findings would not have been observed by simple repeated administration of measures over time. Second, our study was vulnerable to social desirability bias, which may have led participants to respond in more desirable ways and exaggerate the positive impact of the films. The participants we recruited receive care at the same clinics and, therefore, may have known each other prior to the study, possibly influencing their responses. Third, while the HIV/AIDS-related stigma and discrimination scale has been validated with adults in other contexts, it has not been validated in Kenya or for adolescents, which may have impacted our results. Finally, our participants were recruited by convenience sampling, and most identified as female, which may limit the generalizability of these results.

Conclusions

The *HIV Stigma Films* may show promise as an intervention to reduce HIV-related stigma and discrimination in western Kenya, especially among caregivers of ALHIV. Our results highlight the potential positive impact of the films on viewers' behaviors and attitudes and beliefs about people living with HIV, as well as their potential negative impact on HIV-related perceived stigma. Further work through larger trials is needed to better understand the short and long-term positive and negative impacts of the films on viewers.

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Author Contributions

Brittany M. McCoy led study conception and design; contributed to data acquisition, analysis and interpretation; wrote the

first draft of the manuscript; and revised the manuscript based on co-author feedback. Carole I. McAteer contributed to study conception and design, data acquisition and analysis, and reviewed and contributed to the revised manuscript. Celestine Ashimosi contributed to data acquisition, analysis, and interpretation and reviewed and contributed to the revised manuscript. Josephine Aluoch contributed to study conception and design, data acquisition and analysis, and reviewed and contributed to the revised manuscript. C. Thomas Lewis contributed to study conception and design and reviewed and contributed to the revised manuscript. Winstone Nyandiko and Rachel C. Vreeman provided scientific oversight, led study conception and design, contributed to data interpretation, and reviewed and contributed to the revised manuscript. All authors gave approval for the final manuscript.

Data Availability Statement

The quantitative data that support the findings of this study are available from the corresponding author upon reasonable request. To protect participant anonymity and privacy, qualitative data will not be made available.

Declaration of Conflicting Interests

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Supplemental Material

Supplemental material for this article is available online.

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