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Let us fight and support one another: adolescent girls and young women on contributors and solutions to HIV risk in Zambia

Stefani A Butts[1]
Lauren E Parmley[1]
Maria L Alcaide[1]
Violeta J Rodriguez[1]
Annette Kayukwa[2]
Ndashi Chitalu[2]
Stephen M Weiss[1]
Deborah L Jones[1]

[1]Department of Psychiatry and Behavioral Sciences, University of Miami Miller School of Medicine, Miami, FL, USA; [2]Department of Pediatrics, University of Zambia, Lusaka, Zambia

Abstract: In Zambia, adolescent girls and young women (AGYW) are disproportionately affected by human immunodeficiency virus (HIV), social, cultural and economic factors making them particularly vulnerable. This study was designed to understand the context in which AGYW are at risk and to identify perceived drivers of the epidemic and potential strategies to reduce HIV risk. Focus group discussions were conducted with AGYW in Zambian districts with the highest HIV prevalence from February through August 2016. The focus group guide addressed HIV risk factors and strategies for HIV prevention in AGYW. Focus group discussions were recorded, translated and transcribed, themes identified and responses coded. Results suggest that gender inequality undermined potentially protective factors against HIV among AGYW. Poverty and stigmatization were major barriers to accessing available HIV prevention services as well as primary risk factors for HIV infection. Sponsorship to support AGYW school attendance, programs for boys and girls to foster gender equality and financial assistance from the government of Zambia to support AGYW most in need were proposed as strategies to reduce HIV risk. Results highlight the utility of using community-based research to guide potential interventions for the affected population. Future research should explore the use of multilevel interventions to combat HIV among AGYW.

Keywords: HIV, sub-Saharan Africa, prevention, adolescent girls, women, Zambia

Background

The highest incidence of human immunodeficiency virus (HIV) occurs in sub-Saharan Africa, and adolescent girls and young women (AGYW; aged 15–24) are disproportionately affected. Seven thousand new infections occur weekly among AGYW, and Acquired Immunodeficiency Syndrome is also the leading cause of death in this group.[1] Early sexual debut, early pregnancy (rates of pregnancy by age 19 are 20% in urban and 36% in rural areas), and age disparate sex are common among AGYW in Zambia[1–3] and are associated with HIV acquisition. Stigma surrounding sexual activity among girls and young women is also prominent in Zambia and is another major contributor to HIV infection.[4] Clearly, there is a need to identify sustainable solutions to the drivers of the HIV epidemic among AGYW.[1,5]

Individual, cultural and structural drivers fuel the epidemic in sub-Saharan Africa by influencing AGYW decisions regarding sexual behavior, sexual partners, and HIV testing, treatment and adherence.[1,6,7] Thirteen percent of Zambia's AGYW are infected with HIV, as compared to 7% of their male counterparts.[5] Gender inequality places AGYW at increased risk for HIV, especially in relationships arising from sexual coercion or those that escalate to sexual or intimate partner violence (IPV),

Correspondence: Deborah L Jones
1400 NW 10th Ave., Miami,
FL 33136, USA
Tel +1 305 243 2041
Email djones@med.miami.edu

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constituting nonconsensual sex rather than sexual decision making. Gender inequality has been long recognized as a major underlying component to women's vulnerability to HIV acquisition by influencing social, economic and cultural factors. However, there is a paucity of stratagem that attempt to counteract gender inequality, as well as change to AGYW status.[7,8] Poverty, a cause of reduced educational attainment and increased reliance on sex exchange and sex work,[8] also underlies HIV transmission.[9] Limited access to HIV prevention methods, for example, condoms and information, and HIV stigma and reduced access to medical care contribute to both risk and transmission.[10–12]

Individual perceptions of risk determine, in part, behavior and influence decision making.[13] This study was designed to explore the HIV risk among AGYW in Zambia through the eyes of the affected population.[13] Study goals were to identify contributors to HIV risk, for example, individual, cultural and structural drivers of the HIV epidemic and strategies to reduce risk among Zambian AGYW. AGYW were recruited to provide guidance on methods to reduce risk in their own communities. It was hypothesized that information obtained from AGYW in Zambia would provide community and culturally congruent strategies to address and mitigate HIV risk among this group, thereby strengthening the potential for their uptake and sustainment.

Subjects and methods

Prior to commencement of the study, approval was obtained from the University of Miami Institutional Review Board and the Research Ethics Committee of the University of Zambia. The study was conducted in Zambian districts with the highest HIV prevalence, Lusaka Province (Lusaka and Chongwe Districts), Copperbelt Province (Chingola, Kalulushi, Kitwe, Mufulira, Ndola and Chililabombwe districts) and Southern Province (Livingstone and Mazabuka Districts). Organizational heads of schools and community organizations from which AGYW were recruited were briefed on the study's objectives and asked to refer candidates to participate in focus group discussions (FGDs). Written informed consent or assent was obtained at the time of enrollment; parental or guardian consent was obtained for all adolescents under the age of 18. Convenience sampling was conducted, and the study personnel established rapport by initiating informal conversation with the candidates.

Participants were adolescent girls and young adult women (N=225) recruited from community centers, clinics, nongovernmental organizations and local organizations (eg, Young Women's Christian Association, Young Men's Christian Association, schools and churches). Table 1 shows the number of participants by age group/province/district. Study personnel explained fully the study procedures and possible risks, which were minimal, of participation to each participant prior to administering consent. Participants were compensated for time and transportation, 50 Kwacha (~$5 USD) for adolescents and 100 Kwacha (~$10 USD) for young adults. As young adult participation may have required time away from employment, which could result in lost wages, young adults were compensated at a higher rate than adolescents. FGDs were conducted by trained study staff in private spaces at the local organizations and the audio recorded. FGDs consisted of six to eight participants and were gender concordant. Young adult FGD participants were between 20 and 24 years of age, and the adolescent FGD participants were 15–19 years. Each FGD lasted an average of 1½ hours.

The focus groups examined the perceived risk factors for AGYW as well as the strategies proposed by AGYW to address HIV prevention. Stem items and topics were created using an iterative, collaborative process guided by the DREAMS partnerships initiatives.[14] The interview framework was developed collaboratively by the University of Miami and University of Zambia teams, which included psychologists, adult and pediatric infectious disease physicians, social workers, psychometricians and teachers, and was also supplemented by previous research.[15,16] Proposed focal topics were reviewed and refined by the entire team; stem items were presented as open-ended questions and time was available in focus groups to address additional topics as they arose. Content of the FGD guide was reviewed and

Table 1 Number of participants by province and district

District	Lusaka	Chongwe	Ndola	Chingola	Kitwe	Kalulushi	Mufulira	Chililabombwe	Mazabuka	Livingstone	Total
Focus group discussions (adolescent and young adults)											
Young adult females (20–24 years)	36	6	6	6	8	6	6	6	6	12	96
Adolescent females (15–19 years)	38	8	8	8	8	6	8	6	18	24	129
Total	74	15	14	12	16	12	12	12	24	36	225

approved by the leaders of the participating facilities prior to recruitment at the facility.

Coding

All FGD recordings were reviewed by the Zambian team in local language (Nyanja, Bemba, Tonga, Lozi), which focused on key issues addressing sexual behavior within each age group. Transcripts were translated into English. Using open coding, the analytic process through which concepts are identified and their properties and dimensions are discovered in data, as prescribed by grounded theory.[17,18] Preliminary themes were identified by the Miami team from transcripts of three initial FGDs and final emerging themes were based on 15 subsequent transcripts; themes are summarized in Table 2. Using the final themes, coding was conducted simultaneously by the Zambian and Miami researchers. To validate the coding process, two senior coders were trained on the coding strategies; these senior coders then recoded all previously coded transcripts to ensure agreement between all coders. The same procedure was repeated with a third coder, reviewing nine transcripts. Coding and thematic disagreements, ~10%, were discussed until consensus was reached. Finally, meetings were conducted with the team to discuss and redefine codes and themes.

The Miami team consolidated all coded transcripts from each district by age group (FGD adolescents, 15–19, FGD young adults, 20–24); districts were combined separately, eg, all transcripts from "Lusaka" were consolidated and this method was repeated for each district. Community summaries were also developed by the Zambian team to ensure concurrence between teams.

Ethical approval

This research involves human participants, and University of Miami Miller School of Medicine Institutional Review Board and University of Zambia Research Ethics Committee approval was obtained prior to conducting any study-related procedures. The research has been performed in accordance with the ethical standards as laid down in the 1964 Declaration of Helsinki and its later amendments or comparable ethical standards. Written informed consent was obtained from all participants or the guardians, at study enrollment.

Results

FGDs were conducted with female adolescents (15–19 years) and young adult females (20–24 years). Young adult female FGDs comprised 96 participants from across all districts, and adolescent FGDs comprised 129 participants from across all districts (see Table 1 for FGDs by district). In total, two themes and five subthemes of contributors to HIV vulnerability in AGYW emerged from the FGD data (Table 1), these being community and culture. Subthemes within the community included stigma and community perception, poverty and sex exchange. Subthemes within regional culture included gender inequality, sexual violence and IPV. Within each theme, perceptions of challenges and proposed solutions were identified.

Table 2 Contributors to HIV vulnerability and suggested solutions

Contributors	Challenges	Solutions
Community		
Stigma and community perception	Feelings of shame and discrimination were associated with HIV. In particular, fear of being seen at clinics when attempting to access HIV resources. Fears relating to perceived lack of confidentiality by clinic staff within clinics	Education and HIV sensitization via door to door outreach, radio and TV programs were identified as ways to combat stigma and negative community perception of PLWH. Assurance of patient privacy could be achieved by enforcing harsh consequences for confidentiality breaches by clinic staff
Cultural		
Gender inequality	Women were identified as inferior to men. Men were sexual and financial decision makers in relationships	It was suggested that gender equality could be achieved from female empowerment by way of education, drama which depicted role models for AGYW and assertiveness training. Male buy in to the above activities was believed to be central in achieving gender equality
Sexual violence	Sexual assault, rape and sexual abuse were common and often times not reported, especially in rural regions. Sexual assaults on women were attributed to their style of dress, and as inciting sexual violence	Male sensitization on issues of sexual assault, rape and sexual abuse was said to be needed to eradicate their occurrences. It was believed Zambian law enforcement should be more involved in cases of sexual violence
IPV	Violence against female partners was common; some thought it acceptable, others did not. Acceptability of IPV was especially high in rural areas. IPV was often viewed as an act of love for a male partner to discipline or correct his female counterpart	Implementation and enforcement of laws that protected AGYW against violent partners was strongly suggested to discourage IPV. Couples-counseling focused on communication and nonviolent solutions to disagreements was also believed to be combative to IPV

Abbreviations: AGYM, adolescent girls and young women; HIV, human immunodeficiency virus; IPV, intimate partner violence; PLWH, people living with HIV.

Community

Stigma and community perception

Challenges

Most participants asserted that a major contributor to the persistence of HIV in Zambia is stigma. Stigma was a key barrier to HIV testing, adherence to treatment and disclosure; participants often expressed fear of rejection by their families and society if found to be HIV infected. HIV testing was also negatively impacted among AGYW by their parents' disapproval of their children being tested:

> Some of them are shy to get in line to get ARVs, [they think] "maybe my neighbor will see me". [FGD, Adolescent Female, Livingstone]
>
> When a person is tested and found HIV positive, some accept and start taking treatment and others do not. Some people don't accept because of discrimination from some family members. [FGD, Adolescent Female, Mufulira]
>
> Both female and males are not testing a lot because of fear of being found with HIV. [FGD, Adolescent Female, Kalulushi]
>
> Young people do not seek testing services because parents do not allow them. [FGD, Adolescent Female, Livingstone]

About half of the participants suggested that HIV-infected individuals fail to adhere to treatment due to fear and misconceptions relating to medication side effects, which further increased the risk of HIV infection and its spread in the community:

> Well this medication is just so powerful, because others, when they just start taking it, they start developing ringworms, on their faces and bodies, in the very beginning, when they are just starting to take medication. Others the medication does not react. Others their skin changes. It is all dependent on how the medication would react. Others it reacts well, they gain weight and others they lose weight, just like that. [FGD, Young Adult Female, Ndola]
>
> I think it is ignorance, I think some people don't know that ARVs are free, others think that if they start taking them they will die. [FGD, Adolescent Female, Kitwe]

Childlessness in young adulthood was perceived negatively, and young adult women believed that their communities stigmatized late childbearing. Women reported that social norms encourage women to have multiple children and criticize those who do not. Use of condoms within relationships was stigmatized and frowned upon; suggesting condom use to partners indicated mistrust, or even caused a relationship to dissolve:

> Here […] you would find a 14 year old girl with two children, and me I am 21 years and turning 22 years in December. If I had a first-born child, they would be surprised at the clinic; they would argue with me that I should have three children instead. [FGD, Young Adult Female, Ndola]
>
> Many of the men say that if a woman suggests that they use a condom then it means women do not trust them, so they would rather not use [a condom] to keep their relationship. [FGD, Adolescent Female, Mufulira]

Solutions

To combat stigma against HIV and practices that influence its spread, participants suggested rigorous sensitization via the media and promotion of health talks with trusted adults for youth. The training of peer counselors in HIV sensitization was suggested to encourage open communication about HIV with youth who might be uncomfortable talking to an adult about sensitive topics. Participants advocated for persistent messages advocating the importance of HIV voluntary counseling and testing to encourage the uptake of antiretroviral therapy (ART) and prevention strategies. Young adult participants insisted law enforcement should impose harsh consequences to parents who require their daughter to marry after they become pregnant. Participants in both age groups across all districts stressed the importance of informing and educating community members on HIV prevention strategies, and dispelling common myths about HIV, such as believing HIV will inevitably lead to death:

> Use the media like the radio to disseminate information on HIV. [FGD, Adolescent Female, Mufulira]
>
> What is needed is working hand in hand with guardians and parents to school going children about sexual matters. [FGD, Adult Female, Mufulira]
>
> Put up messages on voluntary counselling and testing and its importance, and the importance of condom use. [FGD, Adolescent Female, Mufulira]
>
> Marrying off children because they are pregnant, these people should be prohibited, if they are married off, the parents should be reported to the police. [FGD, Young Adult Female, Ndola]
>
> […] if the government could train youths so that they can get involved in the sensitization, I think it would make a very big difference in the sense that, there are times when us youths feel shy to talk to our parents, but for example, if

she is trained and I have a problem to talk to her concerning HIV/AIDS, I would feel very comfortable with her because she has got the same age level, so it is easy for us to even relate or it is easy for us to encourage or motivate ourselves like that, so I feel the government should take up a program or a project where it trains youths to go into peer teaching and sensitize around the community and institutions. [FGD, Young Adult Female, Kitwe]

Poverty and sex exchange

Challenges

Participants viewed poverty as the greatest risk factor for contracting HIV, and the omnipresence of poverty was noted by most. Unemployment was also a contributor to the high levels of sex work and sex exchange in Zambia. Participants felt poverty forced AGYW to engage in risky behavior, such as transactional sex, even after considering its health consequences. Also, adolescents believed that exposure to resources which may be reserved, or may only be available to those who are of high-income status, encouraged those who were financially insecure to seek these resources by means of sex exchange:

> The issue is to do with high poverty levels, behaviors like selling themselves or prostitution, because of frustration. For example, a person would have done so well at school, with good senior secondary education exam results, they get frustrated because they are not doing anything productive [cannot find work], and they have nowhere to take the results because their parents cannot afford to do anything about it. [FGD, Young Adult Female, Ndola]
>
> Even when a girl knows that the man has HIV, she will go ahead sleeping with him because she wants money. [FGD, Adolescent Female, Lusaka]
>
> The reason mainly is poor status of living and sometimes, it causes some girls to involve themselves in having many men [sexual partners] so that they can provide them with money. They say "Use what you have in order to get what you want". So they sell themselves in order to survive. Some they do it in order to survive. At the end of the day, they would find themselves in bad risky behaviors and at the end of the day, they will be found HIV infected. [FGD, Young Adult Female, Ndola]
>
> […] peer pressure, you are surrounded by rich people (ulunkmbwa) you see something from your friend and your heart moves "Me too, I want that!" So peer pressure, we need to work hard against that so that we don't become victims of HIV. [FGD, Adolescent Female, Livingstone]

While describing transactional sex as relatively commonplace, young adult women who were also sex workers reported that they are able to levy higher prices for sex without a condom. Thus, sex workers described engaging in unprotected sex to obtain higher rates, heightening their risk of HIV infection:

> Unprotected sex is more expensive than protected sex, hence we resort to have unprotected sex in an effort to acquire more money. [sex worker, FGD, Young Adult Female, Lusaka]

Participants described AGYW exchanging sex for school fees, transportation, money and food. In Livingstone, school girls engaged in sexual relationships with men who provided financial support. In some cases, children were encouraged or forced to engage in sex work by family members in order to financially support the households:

> Lack of money can be a contributing factor because if there is no money at home, it is easier to find a man to give it to you, and sex is done in exchange so that food and others can be bought. [FGD, Adolescent Female, Livingstone]
>
> I have also heard some girls take free rides to school and transport, the girl will think the driver is good to her offering her free transport, in the end she will accept being in a relationship that will result in sexual intercourse. [FGD, Adolescent Female, Lusaka]
>
> Some parents, they are forcing girl children to go with men, eg, neighbors. [FGD, Adolescent Female, Chililabombwe]

Young adult females reported that married women sometimes engaged in risky sexual behavior in response to financial hardship:

> [Lack of money] forces women to have extramarital affairs in search of money. [FGD, Young Adult Female, Chililabombwe]

Solutions

Participants believed that simply providing information on the dangers of HIV infection in sex exchange was not enough to curb these practices, and that AGYW needed alternative modes of income generation. The importance of education to alleviate poverty was emphasized by nearly all. The creation and expansion of sponsorship programs for school-aged AGYW were promoted to mitigate reliance on sex exchange among AGYW. Participants suggested that bursary programs be made available for young people who had completed

secondary school and wished to further their studies. Some young adults felt that existing programs could be made more accessible, as access to current programs required challenging navigation through the government bureaucracy. Participants emphasized the need for government assistance in job creation for AGYW involved in commercial sex exchange:

> Even if you told them [not to engage in sex exchange], they would tell you that "You won't put food on our table, you won't feed our children either", or "You won't feed or buy them clothing" […] if they could just find ways of helping people out, for example, if they are school eligible students, just as they have put in place the bursary schemes, let the process of access to bursary be easy, that would be better. Also this youth empowerment program let them make the processes easy for access then people can reduce the risks. People do this all because of poverty; also if they will be able to reduce poverty levels, then they would be able to reduce the risk factors of HIV infection. [FGD, Young Adult Female, Ndola]
>
> There is also what is called youth empowerment fund and development fund. This is not that common here […] there could be situations like one has completed their secondary school […] completed school quite alright but we have failed to proceed further with school. I have failed to go to school, sometimes I just feel angered, there is no one to sponsor me. Even if I apply for school or for bursary sponsorship, even there, they need someone to be in front, in higher positions to push for you to be put on bursary, so we have failed. [FGD, Young Adult Female, Ndola]
>
> There is need for government to assist women to find work so that they stop prostitution. [FGD, Adolescent Female, Livingstone]
>
> […] if only groups could be formed, so that the youth can be meeting in a specific area, that group can be empowered by the government for example, they can empower them with money, empower them with that so they are just kept busy, like that they can also be able to provide for themselves with the help of the government. [FGD, Young Adult Female, Ndola]

Young adults suggested technical skills training as an alternative to traditional, formal schooling. Participants felt that learning a skill would encourage entrepreneurship and increase the ability of AGYW to provide for themselves, which they believed could reduce sex exchange:

> […] It's not mandatory that you must go to school for you to acquire certain skills. Talk about tailoring, talk about catering, those are very wonderful skills which can be used to empower women and they come up with something that they are be able to support themselves. [FGD, Young Adult Female, Lusaka]

Culture

Gender inequality

Challenges

Young adult and adolescent girls described gender-specific expectations and perceptions of the role of women in Zambian culture, and reported a cultural expectation that women should be submissive and obey their husbands. Zambian culture was described as promoting male dominance both at and outside of the home and left women with little voice, examples of which were illustrated by the employment status of men in comparison with women. Descriptions of relationships between men and women emphasized the role of female deference to men, rather than one of mutual respect. It was believed that the diminished status of women in Zambia made them more vulnerable to acquiring HIV than their male counterparts:

> Women are so much more vulnerable because of tradition […] if I am married and I have a husband, my husband has all rights over me and I have no rights to refuse whether to sleep with him […]. [FGD, Adolescent Female, Livingstone]
>
> They [women] need to respect themselves [but] a woman must be humble and listen to their husband. [FGD, Adolescent Female, Ndola]
>
> A woman is not supposed to answer back a man. A woman is supposed to apologize to the man even if she is not wrong. [FGD, Adolescent Female, Livingstone]
>
> The main challenge is the way society holds or looks at women, it is rare that society respects women and gives them higher positions, even leadership positions are given to men. So because of that, we have seen where most of the people in leadership positions are men and it has an effect. Even when we look at the political situation, we only have one woman who is a political leader, and because she is a woman, she does not receive more votes. So society does not really encourage women to be stronger leaders than men. [FGD, Young Adult Female, Kitwe]
>
> A woman should respect herself in the presence of men and keep herself properly, and in doing so she will gain respect from them in return. [FGD, Young Adult Female, Livingstone]

Adolescents cited Zambian proverbs that, while demonizing the behavior in women, promote sexual prowess in men.

These proverbs promoted the value that women would and should accept infidelity from male partners:

> […] even in cultural beliefs […] men are allowed to have several sexual partners, I mean like in a home setup, I think this is a Bemba Proverb meaning, "Promiscuity of a man cannot break a home" when we consider that men out there are allowed to do anything they want like have sex or they can even have children outside marriage and not even be faithful to their partners, whilst for a woman it is an abomination […]. [FGD, Young Adult Female, Kitwe]

Age disparate sex was described by adolescents as a major risk factor for HIV. Participants observed that older men preferred to marry or engage in sexual relationships with girls in their mid to late teens, and early pregnancies were more common in rural areas and in certain cultures. These practices were believed to heighten HIV risk for AGYW, as they were sought after by sexually experienced men who were more likely to be HIV positive:

> Also, the older men have a tendency of going out with smaller girls, especially those about 15 or 19 years old. I don't know why men are very much targeting this age group. [FGD, Young Adult Female, Ndola]
>
> For us in the cities we have more information, but when you go to those [rural areas], they have less information and they are left behind. The last time I checked when I went to visit my grandma at the village, someone 13 years old, she is even carrying a child behind and they are even calling her mummy […] she is so young […]. [FGD, Adolescent Female, Livingstone]
>
> So they find themselves having sex with older boys and older men, and you find that these men are also experienced in sex and may have slept with so many women, so they are at risk of infection. [FGD, Young Adult Female, Mufulira]
>
> Gender norms are killing us, and cultural practices should be done away with to reduce HIV infection. [FGD, Young Adult Female, Livingstone]
>
> The ages of these older sexual partners are around 40, 50, 70 years and above, let me just say starting from 35 and above, even those that are as old as being my grandfather. [FGD, Young Adult Female, Ndola]

Parents were reported to prefer educating male children over female, and in many Zambian cultures, marriage displaced education for AGYW:

> Talk of our culture, most traditions they think men are more important than women, that is why they prefer to educate men than women, because they think women will just get married. [FGD, Adolescent Female, Kitwe]
>
> They say one cannot manage to go to school whilst married, for example, the husband at home would be waiting for you to wash their clothes, the children would want to be cooked for, you have to wake up early to prepare all that, so how can you manage with education. [FGD, Young Adult Female, Chililabombwe]

Solutions

The majority asserted that community sensitization, involving both men and women, on women's rights could alleviate gender inequality in Zambia. Sensitization was perceived to be needed most and anticipated to have the greatest impact in rural areas. Participants felt that enhancing the role of women could also be achieved through education for AGYW, as education could lead to gainful employment and the shift to financial self-reliance, which would shift the power dynamic toward AGYW. Although the promotion of gender equality was wanted and accepted by most, some warned that this could incite violence from male partners who were not in agreement with this ideology. To remedy this, programs promoting gender equality were suggested to advise AGWY to be cautious when asserting themselves and to include safety strategies for those women and girls who encountered violence:

> So what we are saying is that as young as we are, let us not rush into marriage, we have seen from our suffering friends in marriages that this [education] is our weapon to act against what men are doing. So, just as we are seated here, let us aim to complete school. So let us fight, and at least have a job to keep us busy or contribute to household expenses, someone cannot look down on you like that. [FGD, Young Adult Female, Chililabombwe]
>
> We should introduce awareness campaigns and put up institutions that can support women and also educate women about their rights and duties in life. [FGD, Adolescent Female, Kitwe]
>
> My concern is the people who are in rural areas need information. Like very deep in rural areas there are no radios and television, so it's better to go into the same areas and sensitize to them the needed information about what's happening here […] with more field facilitators to reach rural areas [to talk] about women's rights and HIV. [FGD, Young Adult Female, Lusaka]
>
> By educating [the community] and respecting the rights of a woman, when a woman is educated she is respected by her husband. [FGD, Adolescent Female, Ndola]

> Certain groups that promoting gender [equality], you would find that most women just after coming from a program on gender they are beaten the very day after telling them about gender, because when they go they would refuse even cooking, that it is gender. She would be beaten by a man; they [men] are not used to [women asserting their rights]. So the information needs to be complete, and from time to time, they should be checking on them to check on their progress. [FGD, Young Adult Female, Lusaka]

Across districts, participants suggested AGYW-centered activities to promote gender equality. These activities included forming women's groups or clubs to create and promote a sense of unity. Some felt that if women assumed traditionally male positions, how women are viewed in Zambian society could improve. Although there were provisions for small business loans available to AGYW, strategies to ensure good business practices among AGYW were not in place; teaching AGYW business principles was promoted to ensure the success of existing loan programs:

> This goes to every woman in Zambia, we need to support one another. [FGD, Adolescent Female, Lusaka]
>
> Sensitizing fellow women about issues of HIV starting with schools eg setting up clubs [can help enhance the role of women]. [FGD, Adolescent Female, Chongwe]
>
> We would advise even if one is not educated, they can just acquire knowledge through clubs or any skills development. You will be surprised, that they would even be happy and productive. [FGD, Young Adult Female, Chililabombwe]
>
> Women should take up work that men do, so that they can be accepted in the work setup. [FGD, Young Adult Female, Mufulira]
>
> These groups that we are talking about, they should give complete information, don't give half-baked information, such as "Now, women form groups of five people each, there are loans available". Can you give a loan to a person who is as vulnerable as me, who is not business minded? You give me a loan of K5,000, you find that even that money you will fail to repay it […]. Why, because your mind is not prepared, you have not been taught anything. [FGD, Young Adult Female, Lusaka]

Male involvement and support were perceived to be imperative to achieving gender equality, and men were encouraged to be involved and support activities to enhance the role of women. Fathers were needed to be more involved in their children's, and particularly daughters', lives and to verbalize their love for and expectations of their children:

> Fathers, too, to be involved, they should tell their daughters that they love them, so that if a boy tells them, it will not be new to them. [FGD, Young Adult Female, Livingstone]
>
> The father must also know everything that is happening between the boy and the girl child, because sometimes, where maybe a female parent dies, the father is the only person remaining to groom those children. [FGD, Adolescent Female, Chililabombwe]
>
> Use men in activities that support women's affairs, women need to be respected by men. [FGD, Young Adult Female, Chongwe]
>
> A woman is considered to be a helper, so a man should be supportive to the women. [FGD, Adolescent Female, Chililabombwe]

Sexual violence

Challenges

Forced sex was a risk factor for HIV infection, and women were expected to have sex with their husband or significant other and could not refuse sex from partners. Early marriages, sexual coercion with the promise of employment and sexual assault, as well as reluctance among law enforcement officials to take action, were believed to increase HIV risk:

> If the wife denies sex, the husband would force her definitely. [FGD, Adolescent Female, Ndola]
>
> Men force women to have sex because they think sex is an obligation and women get infected in the process. [FGD, Adolescent Female, Chongwe]
>
> Many girls are forced to have sex by some older boys who at times are HIV positive. [FGD, Adolescent Female, Livingstone]
>
> Sometimes when you go out there to look for employment, there would be some people who would request you to have sexual relations with them in exchange with employment, this is very common, so, so common here, if you refuse them you will not be employed, you see. [FGD, Young Adult Female, Ndola]

Solutions

Participants in all districts consistently reported one primary suggestion to subdue sexual violence: enforcement of the legal consequences for sexual violence. The creation

of harsher laws against sexual violence was promoted as a deterrent to perpetrators of this crime:

> Once you are caught violating another person you should be arrested. [FGD, Young Adult Female, Livingstone]
>
> The government should come up with new laws to punish people who defile, meaning to add to the years, increasing the years, and the matter of death sentence should be introduced. [FGD, Adolescent Females, Lusaka]

Intimate partner violence

Challenges

All participants perceived physical violence and IPV as the norm in marriages and relationships. Some reported that women believed violence was a sign of love. IPV was described as more common and acceptable and less reported in rural areas than in urban areas:

> Violence is allowed for love because you beat the people you love in order to correct. [FGD, Adolescent Female, Lusaka]
>
> If a man does not beat you, it means he doesn't love you, because if you meet your boyfriend with another girl, and when you ask him about her, he should be able to beat you for asking him. If he doesn't, then he doesn't love you. [FGD, Adolescent Female, Lusaka]
>
> Violence in rural areas is happening but many cases are not reported, but for the urban areas, gender-based violence cases are reported to the police. [FGD, Young Adult Female, Livingstone]
>
> The women in rural areas feel it is normal for a man to beat them up, but not in urban areas. [FGD, Adolescent Female, Livingstone]

Solutions

Proposed solutions to IPV were precautionary in nature. Financial self-sufficiency and independence could act as a contingency plan for AGYW who experience IPV and allow AGYW to abandon violent relationships by eliminating financial reliance. Education and financial shrewdness for AGYW were emphasized as an element of becoming financially independent. Financial self-reliance was also seen to increase respect for AGYW from male partners and to increase AGYW self-efficacy:

> Married women should be self-empowered and know how to manage finances. [FGD, Young Adult Female, Livingstone]
>
> We educate a girl child, it also helps us to know our rights [about] […] gender-based violence, a guy cannot hit you if you know your rights, it helps us to know the rights we have. [FGD, Adolescent Female, Chililabombwe]
>
> As women, we need to know our rights and generally know our worth and we need to keep ourselves properly. [FGD, Adolescent Female, Mufulira]
>
> It is important that even if you are a married woman, you have to involve yourself in business activities, such as selling tomatoes, ice block, and the like. If you fully depend on the man, those are circumstances where a woman has no say in the home, they cannot speak out even if things are bad, and the man would beat her anyhow because they know she cannot go anywhere even if he abused her. [FGD, Young Adult Female, Livingstone]

Discussion

This study examined perceived individual, cultural and structural drivers for HIV risk and explored community-based strategies for HIV prevention in Zambia among AGYW. Pervasive socially and culturally based gender inequality were primary contributors to HIV vulnerability, as well as poverty, HIV and sexual stigma, sexual violence and IPV. As a result, solutions to mitigate risk largely promoted activities to foster gender equality and empowerment, sensitization of AGYW to issues associated with empowerment, government sponsorship and support for education, skill development and legal protections. HIV prevention messages were needed on a widespread and consistent basis.

Gender inequality may be the most influential HIV risk factor for AGYW in Zambia. As reported by Jewkes and Morrell,[19] gender inequality heightened nearly all HIV risk factors for AGYW and appeared to reduce condom negotiation self-efficacy in AGYW, bar AGYW from gainful employment, encourage violence within relationships and limit educational advancement. Multilevel interventions, especially those including education, that address cultural and structural barriers to advancing the status of women, for example, discrimination, culturally accepted IVP and traditional gender roles, should be developed and implemented with this population, as such interventions have been shown to improve health and safety in other risk groups.[20,21] Examples of structural interventions that have the potential to curb gender inequality, and by extension HIV include eliminating school fees for girls, enforcement of domestic violence laws, affirmative action to increase female presence in the workplace, banning child marriage and provision of

grants from nongovernmental organization and government agencies to those in need.[21–23] Cluver et al[22] have evidenced that receipt of cash transfers or grants is associated with reduction in risky sexual behaviours among girls in South Africa. A systematic review of gender-responsive interventions by Remme et al[23] has identified that strategies which tackle gender inequalities have had multiple societal benefits regarding HIV. Perhaps the most evident, even though small, example of change with regard to gender equality in an African setting can be seen in Lesotho's policy experiment. After governmental mandates required that 30% of all newly elected single-member electoral divisions be female, community members in female-led electoral divisions perceived the influence of male traditional leaders to be diminished and seemed to be accepting this change.[24]

Male support was perceived to be essential to enhancing the status of women, and the need to socialize men to value equality over the power of traditional masculinity was emphasized. Violence against women and promoting self-gratification to the detriment of women, for example, not using condoms, was pervasive. While encouraging the involvement of men in traditionally female roles has previously been suggested as a strategy to improve gender equality,[20] women promoted gender-based sensitization for both men and women, in tandem with formal education as a strategy to eradicate gender inequality, especially in rural areas. This intervention was presented as a positive foundation for increasing equality, as well as promoting equality through adulthood, as many women living in rural areas had ingrained attitudes of subservience. While providing successful outreach to women in remote areas may be difficult, if successful, it can provide a powerful example for AGYW in their homes and communities.[19]

Providing economic opportunities to AGYW can reduce the risk of HIV associated with poverty and sexual transactions, and programs that provide capital and financial counseling as well as the create competitive roles for women in the service, sewing and tourism industries are well suited to the Zambian setting. However, while these programs are a platform for AGYW to rise above poverty,[25–27] without government economic support and a movement to change gender roles, their success is uncertain. Economic barriers associated with poverty, such as lower levels of education and increased necessity of sex work and exchange, are known contributors to HIV risk among AGYW.[9] Government intervention and support are essential in order for AGYW to combat poverty.

Perceived stigma led to avoidance of HIV testing and promoted parents to avoid HIV testing for their children. Outreach programs and sensitization are needed to address continuing misconceptions about HIV and ART. The benefits of ART must be widely and clearly publicized, to encourage those at risk to obtain HIV testing and treatment.[4] Community sensitization for both HIV-infected and at-risk individuals must emphasize the importance of support systems for people living with HIV, to enhance acceptance of those living with HIV and of HIV testing and treatment.[4,28]

This study has limitations. Information was obtained by self-report and may have been subject to social desirability bias. As the data incorporate only FGD, there was no triangulation of data sources. The indirect method of assessing some constructs may have lessened the experiential value of findings. Lastly, as the study utilized open coding, the subjective nature of this qualitative data analysis may have resulted in some coding bias. Many of these limitations are inherent in qualitative research, and future studies could use quantitative methods. Finally, gaps in the study sample and catchment, such as migrant populations and remote areas, exist and should be addressed in future research.

The study provided valuable insights into drivers of HIV risk and community-based solutions for gender inequality, poverty and stigma. Future programmatic research addressing inequality and HIV should explore the use of multilevel interventions that include education and intensive sensitization to combat contributors to HIV risk. In addition, the creation of income generating tools, skill building and comprehensive HIV prevention and care information should be evaluated. Although communities may require tailored prevention strategies, the current study illustrates the utility and potential transferability of sustainable strategies for Zambia and sub-Saharan African communities where HIV rates among AGYW are high.

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Disclosure

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