Primary Outcomes of SYV (Voice of Youth) Mental Health Intervention: A Randomized Trial in Tanzania

874

Dorothy E. Dow[1, 2, 3], Elizabeth Senkoro[3], David Arthur[2,4], John A. Gallis[2,4], Elizabeth L. Turner[2,4], Sandy Askew[2], Getrud J. Mollel[5], Eunice Ketang'enyi[6], Lilian Komba[7], George Sigalla[5], Karen O'Donnell[8], Blandina T. Mmbaga[2,3, 9-11]

[1]Duke University Medical Center, Department of Pediatrics, Durham, NC, United States; [2]Duke Global Health Institute, Durham, NC, United States; [3]Kilimanjaro Christian Medical Center-Duke Collaboration, Moshi, Tanzania; [4]Duke Department of Biostatistics & Bioinformatics, Duke University, Durham, NC, United States; [5]Ifakara Health Institute, Ifakara, Tanzania; [6]Baylor College of Medicine Children's Foundation of Tanzania, Mwanza, Tanzania; [7]Baylor College of Medicine Children's Foundation of Tanzania, Mbeya, Tanzania; [8]Center for Child and Family Policy, Sandford School of Public Policy, Durham, NC, United States; [9]Kilimanjaro Christian Medical Centre, Department of Pediatrics, Moshi, Tanzania; [10]KCMC University, School of Medicine, Moshi, Tanzania; [11]Kilimanjaro Clinical Research Institute, Moshi, Tanzania

BACKGROUND

- Adolescents and young adults with HIV (AYAWH) experience increased morbidity and mortality compared to peers not living with HIV.
- Adolescence is a critical developmental stage with unique challenges faced by AYAWH related to forming new peer groups, stigma, disclosure, and emerging mental disorders that can result in worse HIV and mental health (MH) outcomes.
- This trial evaluated whether the Sauti ya Vijana (SYV, The Voice of Youth) intervention could improve viral outcomes by improving mental health and adherence.

METHODS

- **SYV intervention:** a manualized, peer-led, group-based MH and life skills intervention co-created with AYAWH in Tanzania.
  - Delivered by peer group leaders age 23–29 years with lived experiences of HIV.
  - Ten group sessions, two with caregivers & two individual sessions



- **Location**: four geographically distinct regions of Tanzania (right)



- **Inclusion:**
  1. AYAWH aged 10–24 years;
  2. Fully aware of their HIV status;
  3. Able to attend weekly SYV sessions SOC;
  4. Prescribed antiretroviral therapy (ART) for ≥ 6 months
- **Trial design:** individually randomized group-treatment trial to SYV arm or enhanced standard of care (eSOC)
  - The **primary outcome was viral suppression (VS)** of HIV RNA <400 copies/mL at 6 months.
  - Secondary outcomes included:
    - ART adherence (3Q self-report, scale 0-100);
    - MH: depression(PHQ9,0-27); anxiety(GAD7,0-21);
    - Coping/self-efficacy (CSE) (scale 0-130);
    - HIV knowledge (HIV-KQ-18) (% correct)
- **Statistical Analysis:** Data were analyzed using modified Poisson generalized estimating equation (GEE) models for binary outcomes and Gaussian distribution GEE models for continuous outcomes to account for clustering.

Results at 6 month follow-up

Primary outcome of viral suppression was high in both arms at baseline, with no difference between arms at six months. Mental distress improved in both arms. HIV knowledge and coping/self-efficacy were significantly higher in the SYV arm compared to eSOC.

RESULTS

- **Demographics:** N=690 participants; Mean age was 17.5 years; 50% were female; 81% had perinatal HIV acquisition
- **Antiretroviral therapy:** 88% were receiving tenofovir, lamivudine, dolutegravir (TLD)
- **Primary Outcome: Viral suppression was high at baseline (87%),** leaving limited room for improvement. Suppression remained high at 6 months in both arms, with no between-arm difference.
- **Secondary Outcomes:**
  - There was a **clinically meaningful reduction in depression and anxiety symptoms** in both arms, though no significant difference between arms at 6 months.
  - **HIV knowledge and coping/self-efficacy were significantly higher in SYV compared to eSOC at 6 months.**

Table 1: Regression results for primary and secondary outcomes at 6-months.

Outcome		Baseline N=690		6-months N=609		Estimated Risk Ratio (95% CI)*
		SYV (N=349)	eSOC (N=341)	SYV (N=309)	eSOC (N=300)	
Viral suppression	HIV RNA <400 copies/mL	298 (86%)	298 (88%)	267 (87%)	267 (89%)	0.98 (0.93, 1.04)
Adherence	(>=75)	208 (60%)	193 (57%)	182 (59%)	168 (56%)	1.06 (0.90, 1.24)
Mental Health Symptoms	PHQ-9 ≥ 5	76 (22%)	85 (25%)	31(10%)	37 (12%)	0.80 (0.49, 1.33)
	GAD-7 ≥ 5	29 (8%)	42 (12%)	10 (3%)	13 (4%)	0.65 (0.29, 1.46)
						Estimated Mean Difference (95% CI)*
HIV Knowledge	% correct Mean(SD)	**60 (18)**	59 (19)	**68 (19)**	61 (20)	**6.1** (2.8, 9.4)
Coping & self-efficacy (CSE)	Mean(SD)	**79 (26)**	79 (24)	**86 (23)**	81 (25)	**4.6** (1.0, 8.2)

Regression was adjusted for site, sex, randomization wave, viral suppression at baseline, and age; *dichotomous measures; +continuous measures

CONCLUSIONS

- AYAWH had high levels of VS at baseline that was sustained at 6 months with no difference between SYV and eSOC arms.
- Reduced mental distress was observed in both arms at 6 months, suggesting the importance of MH screening and referral and the possibility of knowledge spillover (contamination) from SYV to the eSOC arm.
- Increased CSE and HIV knowledge in the SYV arm compared to eSOC suggests that SYV can improve important aspects of HIV care for AYAWH in Tanzania.

ACKNOWLEDGMENTS We are forever grateful to the participants, caregivers, group leaders, expert group leaders, supervisors, research assistants, and **the entire SYV team** across all sites who have put their heart and soul into making SYV a success towards improving the lives of AYAWH.

Special thank you to our funder, **the National Institute of Mental Health**. Grant number R01MH124476.

PLAIN LANGUAGE SUMMARY

The SYV trial introduced MH screening and referral for all participants reporting moderate to severe symptoms. Half of youth additionally received the SYV curriculum. Levels of viral suppression were high (87%) at enrollment and maintained (88%) at 6 months. Over half of youth with mental distress at baseline had symptom resolution at 6 months. Those who received SYV content had increased HIV knowledge & coping and self-efficacy skills compared to those only receiving screening and referral.

REFERENCES

(SYV is featured in the 2025 WHO Disclosure guidelines)

1. Mollel GJ, Ketang'enyi E, Komba L, et al. Study protocol for Sauti ya Vijana (The Voice of Youth). PLoS One 2024. **PMID: 39186768**
2. Chow D, Pronyk P, Mgimba R, et al. Integrating a mental health referral system within adolescent HIV clinics in Tanzania. AIDS. **PMID: 40528414**.
3. Agina C, Nasuwa F, Mosha J, et al. Peer-led interventions: Exploring the peer group leader experience in SYV. PLOS Mental Health. 2026. **PMID: 41662108**.

Corresponding author: Dorothy.dow@duke.edu