

CyberSenga: A culturally tailored Internet-based HIV prevention program for adolescents in Mbarara, Uganda

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* Thank you for your interest in this presentation. Please note that analyses included herein are preliminary. More recent, finalized analyses may be available by contacting CiPHR for further information.

Background

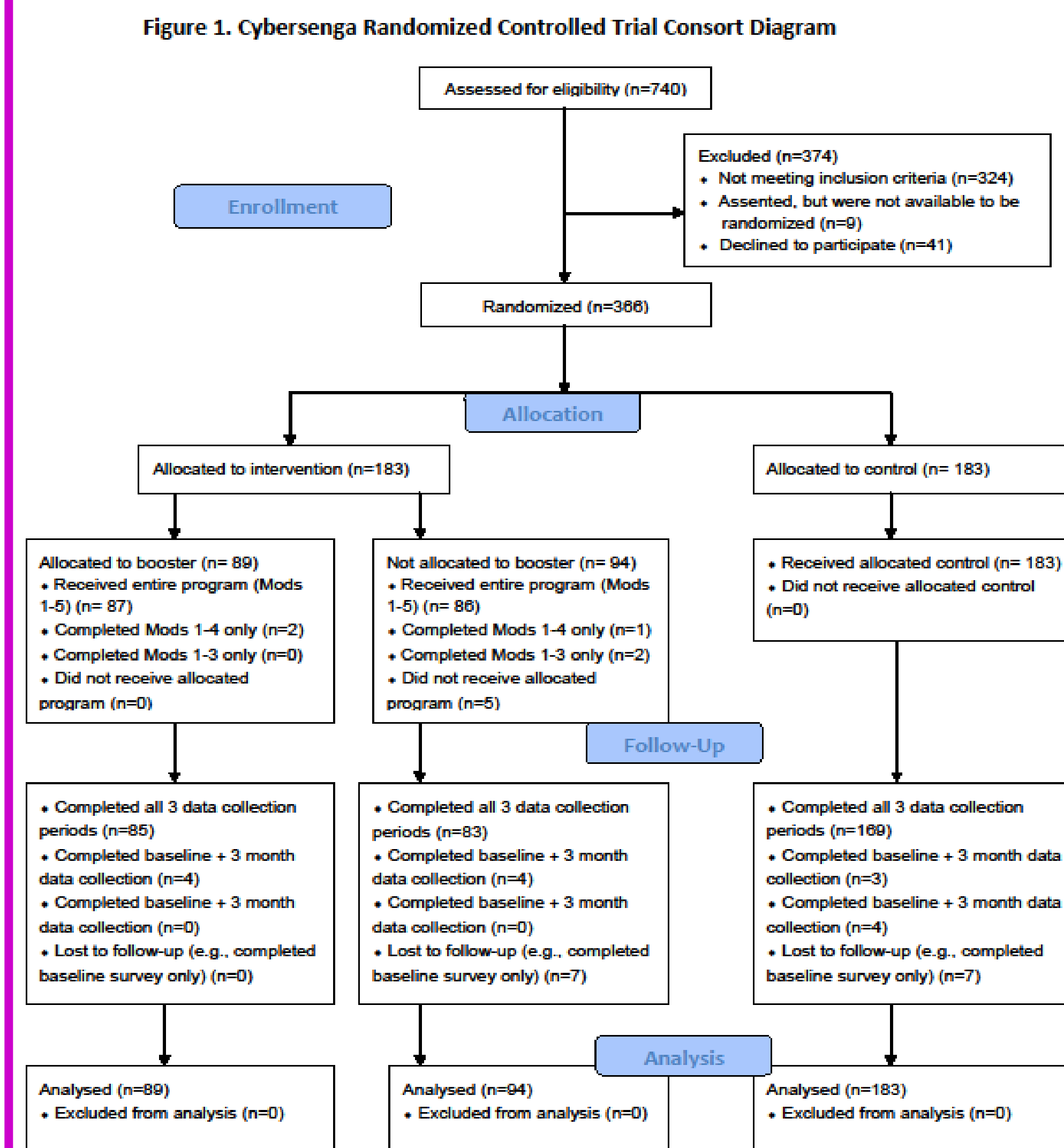
An estimated 4.3% of females and 1.1% of males between the ages of 15 and 24 years are HIV positive in Uganda.¹ Despite an impressive decrease in HIV incidence rates, recent data suggest stabilization and perhaps even an increase in national rates of new cases.¹

Many adolescent behavioral trends are encouraging (e.g., age at first sex is increasing, teen pregnancy is decreasing), but data suggest that condom use may be decreasing among 13-19 year olds in recent years.² This may be because only 15% of Ugandan schools provide life skills-based HIV education.¹ Given that heterosexual transmission contributes to 76% of new HIV infections,² this limited access to HIV prevention programs for adolescents is concerning. Increasing availability of evidence-based HIV prevention programs for young people in Uganda is urgently needed and may have an impact on future incidence rates.

Data suggest that almost half of secondary school students (45%) in Mbarara have used the Internet at least once.³ Anticipating a trend towards more ubiquitous internet access, we developed and tested CyberSenga, a culturally relevant Internet-based HIV prevention program for secondary school students.

References: 1. Government of Uganda. UNGASS Country Progress Report Uganda: January 2008-December 2009. Available at: http://data.unaids.org/pub/Report/2010/uganda_2010_country_progress_report_en.pdf. 2. Biraro S, Shafer LA, Kleinschmidt I, et al. Is sexual risk taking behaviour changing in rural south-west Uganda? Behaviour trends in a rural population cohort 1993-2006. Sex Transm Infect. 2009;85(Suppl 1):i3-i11. 3. Ybarra M, Kiwanuka J, Emenyonu N, Bangsberg D. Internet use among Ugandan Adolescents: Implications for HIV intervention. Public Library of Science - Medicine 2006;3:e433.

Consort Table



Sample characteristics

Participant characteristics at baseline	Intervention	Control
	M (SD)	M (SD)
Age (years; range: 13-19)	16.0 (1.4)	16.2(1.5)
	n(%)	n(%)
Male	152 (83%)	155 (85%)
Current grade	58 (32%)	56 (31%)
S.1	1 (1%)	0 (0%)
S.2	47 (26%)	50 (27%)
S.3	72 (39%)	58 (32%)
S.4	63 (34%)	75 (41%)
Father's highest level of education: University graduate	63 (34%)	71 (39%)
Mother's highest level of education: University graduate	52 (28%)	59 (32%)
Ever had sex vaginal or anal sex	58 (32%)	56 (31%)
Had sex in the past two years	47 (26%)	45 (25%)

Results

Sixty-three percent (n=229) of participants were abstinent males and 15% (n=54) were abstinent females; and 22% (n=80) were sexually active males and 1% (n=3) were sexually active females. Ninety-five percent of participants completed 3-month follow-up and 93% 6-month follow-up assessments.

At 3-months post-intervention, among initially abstinent youth, intervention participants were significantly less likely to report recent (past 3 months) sexual intercourse (12%) than control participants (23%; $\chi^2(1)= 5.7, p=0.02$).

At 6-months post-intervention, among initially sexually active youth, trends suggested that those in the intervention + booster arm were less likely to report recent sexual intercourse (20%) versus those in the intervention without the booster (43%) or the control group (45%; $\chi^2(2)= 3.9, p=0.15$). At 6-month follow-up, among initially abstinent youth who reported recent sexual intercourse, those who received the intervention+ booster arm seemed to, on average, engage in fewer unprotected sex acts (16% of sex acts) compared to those in the intervention (20%) and control groups (28%; $F(2) = 0.23, p=.79$)

Intervention description

Intervention participants were assigned to one of four versions of the program with content tailored for: abstinent boys; sexually active boys; abstinent girls; and sexually active girls. Youth who reported having had sex less recently than the past two years were coded as engaging in 'secondary abstinence'; these youth were included in the 'abstinent' group. Five 1-hour modules were delivered once a week over a five week period. Topics included: 1) HIV prevention information; 2) Problem solving and communication skills; 3) Norms for sexual behavior ; 4) Condom skills; and 5) Healthy relationships. A booster session provided a review of these five modules.

Study Limitations

Only two of the schools had Internet at the time of the study. As such, we brought Internet into the schools through a 'cybercafe' that included netbooks and a battery-powered internet router weekly. Whether this type of program is feasible in a less controlled environment with more variable Internet access (and technology support) is unknown.

Conclusion

The CyberSenga program is associated with sustained abstinence in the short-term among youth abstinent at baseline; and is suggestive of affecting HIV preventive behavior among sexually active youth in the longer term.

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Study Methodology

Of the 2,647 students on the class lists across the four schools, we aimed to randomly identify and screen 1,333 students. The target numbers varied by class and school, and were estimated based upon the Internet exposure rates for boys and girls separately, observed in a quantitative survey conducted in 2009. In February, 2011, 740 students were screened, and 416 eligible youth were identified. Of these, 375 provided signed consent and assent forms and 41 declined to participate. Nine participants who signed the assent form subsequently declined at the baseline survey.

Participants were randomized by a computer program after the baseline survey so that the arms could be balanced on sexual experience within youth biological sex. Of the 366 youth randomized, 183 were assigned to the CyberSenga intervention, and 183 to the 'treatment as usual' control group. Data were collected from all youth at baseline (March, 2011), the beginning of Term II (June, 2011), and again at the beginning of Term III (September). The intervention was delivered in March directly after the baseline survey. Half of the intervention participants were randomly assigned to a Booster module, which was delivered in July, 2011. Analyses were intention-to-treat; missing participants were assumed to have had sex.