AYAZAZI: Partner Notification Among Adolescents and Young Adults with STIs in South Africa

Pooja Chitneni¹, Mags Beksinska², Janan J. Dietrich³, Manjeetha Jaggernath³, Patricia Smith⁴, Kalysha Closson⁴, David Lewis^{5,6}, Jenni Smit², Thumbi Ndung'u⁷, Mark Brockman⁴, Glenda Gray^{3,8}, Lynn T. Matthews⁹, Angela Kalda⁴ on behalf of the AYAZAZI Research Team

1. Harvard combined ID fellowship Boston, MA 2. Maternal Adolescent and Child Health (MatACH) Research Unit (MRU), University of the Witwatersrand, Faculty of Health Sciences, Johannesburg, South Africa 3. Perinatal HIV Research Unit (PHRU), University of the Witwatersrand, Faculty of Health Sciences, Johannesburg, South Africa 4. Faculty of Health Sciences, Simon Fraser University, Burnaby, British Columbia, Canada 5. Centre for HIV and STIs, National Institute for Communicable Diseases, Johannesburg, South Africa 6. Marie Bashir Institute for Infectious Diseases and Biosecurity & Sydney Medical School-Westmead, University of Sydney, Sydney, Australia 7. HIV Pathogenesis Programme and Africa Health Research Institute, University of KwaZulu-Natal, Durban, South Africa 8. South African Medical Research Council, Cape Town, South Africa 9. Massachusetts General Hospital: Division of Infectious Diseases and Center for Global Health, Boston, MA

Introduction

- Sexually transmitted infections (STIs) continue to rise each year with Sub-Saharan Africa accounting for the highest STI incidence worldwide (> 90 million/year).¹
- Adolescents and youth are at a higher risk of acquiring STIs compared to older groups.²
- STIs predispose to higher rates of HIV acquisition.³
- STI cure depends on eradication of exposure and thus, requires partner treatment.
- In South Africa, partner notification and treatment are recommended, though not widely implemented.
- The limited existing data suggest reinfection rates as high as 60% among South Africa adolescents.⁴

Objectives:

- To assess the frequency with which adolescent and young adults notify partners of a new STI diagnosis
- To assess STI reinfection rates in relation to partner notification

Methods

- AYAZAZI (meaning "Knowing Themselves" in Zulu) was a youth-centered prospective cohort study assessing socio-behavioral and biomedical HIV risk factors among a cohort of 425 adolescents and young adults (16-24 years) conducted between 2014 and 2016 at two study sites in South Africa:
 - Durban, KwaZulu-Natal Province - MatCH Research Unit – 220 participants
 - Soweto, Gauteng Province - Perinatal HIV Research Unit – 205 participants
- Inclusion criteria: age 16-24, HIV-negative or unknown serostatus and willingness to consent/assent
- All participants completed youth-administered questionnaires, objective STI/GTI testing, HIV testing, and (for women) pregnancy testing at baseline and 12 months.
- Durban participants completed an additional questionnaire at six months on STI/GTI treatment and partner notification (n=63).
- STI testing included:
 - NAAT for *Neisseria gonorrhea* (NG), *Chlamydia trachomatis* (CT), *Trichomonas vaginalis* (TV), and *Mycoplasma genitalium* (MG)
 - Genital ulcer swabs for *Herpes Simplex Virus 2* (HSV2) and *Treponema pallidum*
- GTI testing included
 - Microscopy among women for *Bacterial vaginosis* (BV) and *Candida*
- The primary outcomes were partner notification among those with STIs at baseline and recurrence of previous STI at the 12 month time-point.
- The retention rate over the 12 month period was 92%
- Data were analyzed with STATA using descriptive statistics.

Table 1. Durban vs. Soweto participant study activities

	Baseline- STI objective testing and questionnaire	6 Months – STI treatment and partner notification questionnaire	12 Months - STI objective testing and questionnaire
Durban	X	X	X
Soweto	X		X

Results

Figure 1. Flow chart of participants included in study*

*5 participants from each site did not undergo baseline STI/GTI testing.

Table 2: Baseline demographics of AYAZAZI Durban six month survey participants with STI or GTI by gender

Total Survey Participants (n=63)	Female N (%) (n=55)	Male N (%) (n=8)
Age		
17-20	28 (50.9)	5 (62.5)
21-25	27 (49.1)	3 (37.5)
Monthly Income (ZAR)		
≤ 400	15 (27.3)	5 (62.5)
401-1600	31 (56.4)	2 (25.0)
≥ 1601	9 (16.4)	1 (12.5)
Housing: Formal housing	38 (69.1)	8 (100)
Food insecurity Moderate to high	4 (7.3)	1 (12.5)
Current Student	38 (69.1)	7 (87.5)
Number of lifetime partners (n=52)		
1 partner	18 (40.9)	0 (0)
≥2 partners	26 (59.1)	8 (100)
Consistent condom use in past 6 months (n=52)	7 (15.9)	2 (25.0)
Inter-partner violence (IPV) in lifetime*	8 (14.6)	4 (50.0)
STI treatment in the last 6 mos.	5 (9.1)	0 (0)

*IPV = women threat of violence against them, men perpetration of violence against others

Figure 2. Total STIs in Durban cohort*

*37 individuals had STIs and 6 individuals had ≥1 STI co-infections

Figure 3. Participants who notified primary partner of STI

- The 6 Durban participants who did not notify their partners of STI listed their reasons as the following:
 - Afraid of partner judgment
 - Embarrassed
 - Broke up or did not see partner again
 - Did not know they had STI

Figure 4. Partner notification and treatment of STI (n=23)

Table 3: Six month Durban STI treatment questionnaire by gender

Total Survey Participants (n=63)	Female N (%) (n=55)	Male N (%) (n=8)
STI/GTI diagnosed at baseline (n=63)	STI 15 (27.3)	GTI (BV or Candida) 40 (72.7)
Total STIs (n=23)	15 (27.3)	8 (100)
Treatment given for STI/GTI (n=61)	15 (100)	36 (94.7)
Number of partners in the past six months (n=52)		
1 partner	12 (85.7)	22 (73.3)
≥2 partners	2 (14.3)	8 (26.7)
Self-perceived HIV-risk		
Low to no risk	8 (53.3)	23 (57.5)
Medium to High	7 (46.7)	17 (42.5)
Notified partner (n=62)	13 (86.7)	18 (46.2)
Partner treated (n=63)	5 (38.5)	5 (27.8)

Reinfection at 12 months:

- Of 37 participants with a STI at baseline, 2 women had the same STI (Chlamydia) at 12M follow-up.
 - 1 female participant told her partner, and he received treatment.
 - 1 female participant's partner notification information is missing.

Conclusion

- The majority of youth (74%) notified their partners of STI. A higher proportion of women (87%) to men (50%) notified their partners (Figure 3), indicating that men may need more targeted education.
- Transient partners, embarrassment, fear of judgment, and lack of knowledge of STIs were all reasons why youth did not notify partners of STIs.
- While 74% of youth notified partners of STI only 26% of their partners were treated, indicating that the step from partner notification → treatment is the primary gap in the treatment cascade (Figure 4). Partner-delivered partner medications could bridge this gap and allow more partners to receive STI treatment.
- All 37 Durban participants with STI received treatment. 2 people had reinfection resulting in a 5.4% reinfection rate for all STIs. One reinfection was in a woman who reported partner treatment.

Limitations

- The small sample size is a large limitation of this study.
- Relying on participant report of partner notification/treatment and not having documentation is an additional limitation.

References

- World Health Organization. Sexually Transmitted Infections: The importance of a renewed commitment to STI prevention and control in achieving global sexual and reproductive health 2013.
- Braxton J, Carey D, Davis D, et al. Centers for disease control and prevention. Sexually Transmitted Disease Surveillance 2014. Atlanta: U.S. Department of Health and Human Services, 2015.
- Ward, H. & Rönn, M. The contribution of STIs to the sexual transmission of HIV. Curr. Opin. HIV AIDS 2010; 5:305–310.
- Barnabas, S.L., et al., Converging epidemics of sexually transmitted infections and bacterial vaginosis in southern African female adolescents at risk of HIV. Int. J. STD AIDS, 2017: p. 956462417740487.

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