Characterizing Male Sexual Partners of Adolescent Girls and Young Women in Mozambique

Quantitative Results from Beira, Quelimane, and Xai-Xai Districts

June 2018

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MEASURE Evaluation

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Cover photo: Robert Harding, Flickr Creative Commons

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ABBREVIATIONS

AGYW	adolescent girls and young women
AOR	adjusted odds ratio
DREAMS	Determined, Resilient, Empowered, AIDS-free, Mentored, and Safe
FGD	focus group discussion
IMASIDA	Immunization, Malaria and HIV/AIDS Indicator Survey
INE	Instituto Nacional de Estatística
LCA	latent class analysis
MISAU	Ministério da Saúde
OVC	orphans and vulnerable children
PEPFAR	United States President's Emergency Plan for AIDS Relief
SAAJ	Serviços Amigos do Adolescente e Jovem
SRG	stakeholder reference group
UNAIDS	Joint United Nations Programme on HIV/AIDS
USAID	United States Agency for International Development

EXECUTIVE SUMMARY

Key points

- Globally, adolescent girls and young women, ages 15–24 years, are disproportionately affected by HIV/AIDS. In 2016, approximately 400,000 of this group were newly HIV-positive. Despite the epidemiological and human rights imperative to support AGYW in remaining AIDS-free, programming to date has had limited success.
- One strategy for preventing HIV infection among AGYW is to prevent their HIV-negative male sexual partners from acquiring HIV and to reduce the infectiousness (the ability to transmit the virus) of those male partners who are HIV-positive. That strategy would be easier to implement if programs had more information about the characteristics of AGYW's male sexual partners.
- This is the first study meant to characterize the male sexual partners of AGYW in Mozambique—a country where HIV prevalence among youth ages 15–24 years is more than three times higher among females than males: 9.8 percent versus 3.2 percent.
- Results of this study illuminate sexual risk behaviors in the context of different types of relationships, the characteristics of male sexual partners of AGYW, and their health-seeking behavior and HIV service preferences. This information should be used by programs to better reach male sexual partners of AGYW with HIV prevention and care programming.

Background

Adolescent girls and young women (AGYW) ages 15–24 years are disproportionately affected by the HIV epidemic. Globally, in 2016, approximately 400,000 AGYW acquired HIV (Joint United Nations Programme on HIV/AIDS [UNAIDS], 2017). Despite the epidemiological and human rights imperative to support AGYW in remaining AIDS-free, programming for this population to date has had limited success, in comparison with other prevention initiatives.

In Mozambique, the burden of the HIV epidemic rests heavily on AGYW. HIV prevalence among youth ages 15–24 years is more than three times higher among females than males: 9.8 percent versus 3.2 percent (Ministério da Saúde [MISAU], Instituto Nacional de Estatística (INE), & ICF International, 2015). Early sexual debut, a lack of knowledge about HIV prevention, multiple sexual partners, low condom use, and ultimately, poverty and gender norms that restrict choices contribute to AGYW's vulnerability.

One strategy for reducing HIV incidence among AGYW is to provide prevention programming for their HIV-negative sexual partners and care and treatment for their HIV-positive sexual partners. A better understanding of the characteristics of male sexual partners of AGYW and the risk dynamics of various types of sexual partnerships can inform programming. With this in mind, the United States Agency for International Development (USAID)/Mozambique asked MEASURE Evaluation, which is funded by USAID and the United States President's Emergency Plan for AIDS Relief (PEPFAR), to study the

characteristics of men who have recently engaged in sexual activity with AGYW, the dynamics of these relationships, and the factors that influence men's engagement with HIV/AIDS prevention and care services. In Mozambique, the burden of the HIV epidemic rests heavily on AGYW. HIV prevalence among youth ages 15–24 years is more than three times higher among females than males: 9.8 percent versus 3.2 percent (MISAU, INE, ICF International, 2015). Early sexual debut, a lack of knowledge about HIV prevention, multiple sexual partners, low condom use, and ultimately, poverty and gender norms that restrict choices contribute to AGYW's vulnerability.

Purpose and Objectives

To address this information gap, MEASURE Evaluation conducted a two-part study involving first, focus groups with five subgroups of AGYW and second, a venue-based intercept survey of men. Data presented here relate to the survey. This study had three research questions:

1. Who are the sexual partners of AGYW?
2. Is sexual risk-taking behavior (i.e., multiple recent sexual partners and unprotected sex) among AGYW and their male partners associated with certain sexual partner characteristics (e.g., age, education, employment, income, or other factors)?
3. To what extent are male sexual partners of AGYW using/willing to use different types of HIV and AIDS services?

Methods

Data are from a quantitative survey using a venue-based intercept design. We conducted anonymous, face-to-face, one-on-one interviews with males age 18 and above using a short, electronic survey instrument with close-ended questions that asked about their sexual partnerships, demographics (theirs and those of their most recent AGYW sexual partner), HIV testing and knowledge of HIV status, male circumcision, condom use, participation in HIV services, and preferences for and barriers to HIV services. Men were recruited from a diversity of venues (bars, restaurants, schools, beaches, etc.). Venues for the survey were purposively selected from a list generated from AGYW during focus group discussions as places where their male sexual partners spend time, with input from a stakeholder reference group in each study district. We aimed to survey 930 men who reported recent sex with an AGYW across three districts: Quelimane, Beira, and Xai-Xai Districts (310 in each).

We analyzed the data in several steps. First, we used frequency distributions to explore characteristics of the full sample of men who reported ever having sex. Next, we compared characteristics of men by those who reported sex with an AGYW in the past 12 months versus those who did not. All subsequent analyses were restricted to men who reported having had sex with a AGYW in the past 12 months. A series of bivariate analyses were conducted to examine associations between: characteristics and risk-taking behaviors of AGYW and their male partners; and men's characteristics and their use of health services. For each research question, we also conducted multi-variate logistic regression. Finally, we conducted latent class analysis and regression to better understand predictors of men's risky behaviors.

Findings

In total, 1140 men consented to participate in the survey. Eighty-six percent (n=981) of men surveyed reported having had sex with a AGYW in the 12 months prior to survey. Men reporting an AGYW sexual partner in the past 12 months were younger, and more likely to have a steady girlfriend.

The average age of men surveyed was 29 years (range: 18–64 years). Approximately half (55%) were married, and one-quarter (25%) reported high mobility (travelling for more than one month in the past 12 months). Approximately half of the sample had completed primary education and more than 90% of the sample reported employment in the past year. Two-thirds of men's last reported AGYW sexual partners were ages 20–25 at the time of the survey. One-third of these AGYW sexual partners were classified as steady partners by men and almost half were reported to be attending secondary school. Almost one quarter of the men's most recent AGYW sexual partners were employed and over 40% were either mothers or currently pregnant.

Using multivariable analysis, we identified male characteristics associated with AGYW characteristics. Men who reported that their most recent AGYW sexual partner was younger (under age 19) were younger, more likely to be studying, and had lower educational attainment, than men whose most recent AGYW sexual partner was ages 20–24 years. Men who reported that their most recent AGYW sexual partner was school-age but out-of-school were characterized by less education and higher mobility, compared to men that did not report that their most recent AGYW sexual partner was school-age and out-of-school . Men reporting that their most recent AGYW sexual partner was pregnant or a mother were more likely to be married and highly mobile, compared to those reporting that their most recent AGYW sexual partner was not pregnant or not yet a mother.

Sixty percent of men reported condom use at last sex with their last AGYW partner, and 41 percent reported consistent (always) condom use. Men with younger AGYW partners had a higher odds of reporting consistent condom use with their AGYW partner, whereas men with AGYW partners that were mothers or pregnant had a lower odds of reporting consistent condom use. Similarly, men who were married to or living with AGYW partners were significantly less likely to report consistent condom use with that AGYW partner. Jeito was the preferred condom brand.

Latent class analysis and latent class regression showed that the majority of men were categorized as high risk. Compared to men in the "low risk" group, those in the "high risk" group were significantly more likely to be younger, and less likely to be married or cohabiting.

Participants reported extremely high rates of HIV testing—83 percent reported ever being tested for HIV. The majority of men preferred to be tested at a public hospital and most were interested in workplace testing. About three quarters of the sample (76%) reported being circumcised. Of those not circumcised, most were interested in circumcision and listed the public hospital as their preferred venue for circumcision.

We asked men about their preferences on when to access services. The highest scoring time was Sunday evening; however, a majority of respondents indicated that weekend mornings and evenings were convenient times to access HIV services. During the work week, mornings were preferred, followed by evenings. However, on Fridays, men were just as likely to note that mornings and evenings were

convenient. A minority of men responded that afternoons, on any day of the week, were convenient for seeking HIV services.

Programmatic Implications

Our findings provide concrete guidance for programs addressing male sexual partners of AGYW. This new understanding leads to the following recommendations for adjusting existing programs or adapting program design that may be helpful in reducing the HIV burden on AGYW:

- To reach sexual partners of AGYW, HIV **programs should target men who are younger** (under 30 years old) and who are single, encouraging them to use condoms consistently with girlfriends, to get circumcised, and to get tested and discuss their HIV status with their partners. Targeting young men with multiple prevention strategies is important; latent class analysis found that different risk behaviors were highly linked, in that men who reported inconsistent condom use were also likely to report multiple concurrent partners.
- We recommend **in-school HIV prevention and testing programming** to reach school age male sexual partners of AGYW with messaging about condom use, limiting numbers of sexual partner, HIV testing, voluntary male medical circumcision, as well as a mechanism for sensitizing boys and girls alike on gender issues.
- We encourage the **expansion of youth-friendly, integrated family planning/HIV health services both in and outside of health facilities.** Specific efforts should be made to attract male clients, who are much less likely to participate in sexual health and HIV services compared to women.
- We recommend **trialing workplace testing and behavior change campaigns** particularly within sectors employing men with less education – for example, mining and fishing companies, in part to address the machismo culture that disempowers women.
- Programs should **promote condoms at child clinics/routine vaccination sites, and antenatal clinics,** educating males on the importance of condom use with their partners.
- Programs should **target AGYW with school-based as well as community-based self-efficacy/empowerment/life skills trainings.**

INTRODUCTION

Adolescent girls and young women, ages 15–24 years, have been identified as a population extremely vulnerable to acquiring HIV (Karim, Baxter, & Birx, 2017; Dellar, Dlamini & Karim, 2015). In countries with generalized HIV epidemics in sub-Saharan Africa, adolescence marks an increase in HIV prevalence, and gender disparities in HIV prevalence emerge and expand dramatically (Idele, et al., 2014).

In 2016, globally approximately 400,000 adolescent girls and young women (AGYW) ages 15–24 years were newly infected with HIV (UNAIDS, 2017). Twenty-two percent of new infections among youth and adults ages 15–49 years were among AGYW (UNAIDS, 2017). Recent estimates from seven African countries found that the prevalence of HIV among women ages 15–25 is more than twice the prevalence among their male counterparts (Brown, et al., 2018).

Despite the epidemiological and human rights imperative to support AGYW in remaining AIDS-free, programming to date has had limited success compared to other prevention initiatives, such as preventing mother to child transmission and reducing HIV among younger children (Karim, Baxter, Birx, 2017). Less than half of AGYW living with HIV know their HIV status (Brown et al, 2018) and treatment uptake and viral suppression rates among adolescents and young people, especially among females, are extremely low globally (Lamb et al, 2014, Auld et al, 2014, Denison et al, 2015). Furthermore, while other age groups have experienced declines in AIDS-related deaths, adolescent AIDS-related deaths increased by about 50 percent between 2005–2012 (Idele, et al., 2014).

In Mozambique the epidemiological challenges are vast, even compared with global statistics. While other countries in the region are experiencing a decline in HIV prevalence, Mozambique is faced with escalating prevalence. Thirteen percent of men and women ages 15–49 are living with HIV, *up from* 11.5 percent in 2009 (MISAU, INE, & ICF International, 2015). There is a higher prevalence of HIV among women (15.4%) compared to men (10.1%). The difference between sexes is much starker among youth ages 15–24 years: the prevalence of HIV among females is more than three times the prevalence among males (females: 9.8%; males 3.2%) (MISAU, INE, & ICF International, 2015).

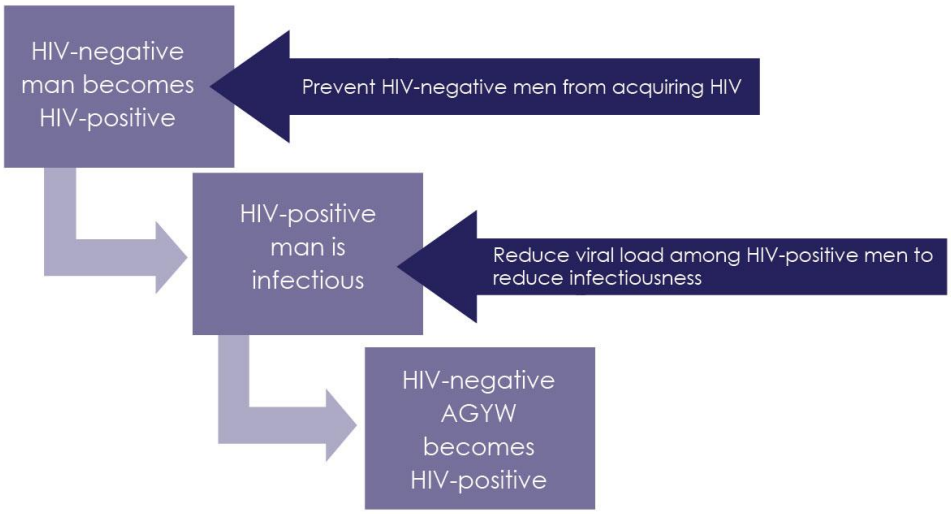
Early sexual debut, a lack of knowledge about HIV prevention, multiple sexual partners, low condom use, and ultimately an environment that restricts choices due to poverty and gender norms, contribute to the vulnerability of adolescents, and AGYW in particular, to HIV in Mozambique. Twenty-five percent of females and 24 percent of males ages 15–24 years report having their first sexual experience before the age of 15 (MISAU, INE, & ICF International, 2015). However, knowledge about HIV prevention is low among AGYW. Less than 47 percent of females ages 15–24 years correctly responded to questions on the two major prevention methods (limiting relationships to one uninfected sexual partner and using condoms). Knowledge among males in the same age group is slightly higher at 55 percent (56% of men overall report prevention knowledge) (MISAU, INE, & ICF International, 2015). Multiple sexual partners are also very common, especially among men: 21 percent of men ages 15–49 (18% of males ages 15–24) report two or more sexual partners in the previous year, although this has been decreasing over time (MISAU, INE, & ICF International, 2015). Three percent of AGYW report multiple sexual partners in the past 12 months (MISAU, INE, & ICF International, 2015). Multiple concurrent sexual partnerships are also widely reported among those who report multiple sexual partners: 77 percent of females and males report two or more partners at the same time. AGYW with two or more sex partners in the past twelve months were twice as likely to be living with HIV (MISAU, INE, & ICF International, 2015). Condom use is low among those that report multiple sexual partnerships in the past 12 months – only

one-quarter report condom use at last sex, although data indicate that this has increased over time (MISAU, INE, & ICF International, 2015). Indeed, women and girls are disempowered to insist on condom use. Only 61 percent of women agree that a wife can ask her husband to use a condom if he has an STI, down from 71 percent in 2003 (MISAU, INE, & ICF International, 2015). A study conducted among school girls in Maputo found that youth's economic dependency on their partners hindered their ability to negotiate safe sexual behavior (Machel, 2001). A study conducted among married couples found that female economic independence facilitated condom negotiation with their husbands (Bandali, 2011). Another ethnographic study of young women in Maputo found that, in the context of high unemployment and limited economic opportunities for women, engaging in multiple and transactional sexual relationships created a pathway for women to gain financial and material resources; however, condom negotiation was compromised due to women's economic dependence on their partners (Hawkins, Price & Mussa, 2009).

HIV testing is a critical first step in supporting adolescents and young adults living with HIV to enter care. While more than eighty percent of AGYW know where to get an HIV test, only 55 percent have ever tested and received their results (although nearly two-thirds of ever married and/or sexual active AGYW report a prior HIV test) (MISAU, INE, & ICF International, 2015). Of men ages 15–49 years, 80 percent know where to get tested, but only 38 percent have tested and received their results—though, again this has been increasing over time (MISAU, INE, & ICF International, 2015). Among sexually active youth ages 15–24 years, 38 percent of females and 18 percent of males report an HIV test and having received their results in the past 12 months. Among women and men ages 15–49 who tested HIV-positive during the IMASIDA survey, 36.5 percent of all HIV positive women and 22 percent of HIV positive men were found to be virally suppressed (MISAU, INE, & ICF International, 2015).

While it is known that the prevalence and risk of HIV is high among AGYW in Mozambique, there are significant gaps in knowledge that are critical to informing AGYW prevention programming. We know that the majority of HIV-negative AGYW are at risk of acquiring HIV predominantly through sexual transmission from HIV-positive male partners. To prevent AGYW from acquiring HIV, one strategy is to prevent HIV among male sexual partners of AGYW and reduce the infectiousness of male sexual partners of AGYW who are HIV-positive (by controlling their viral load): see Figure 1.

Figure 1. HIV prevention pathways for AGYW



However, little is known about the characteristics of AGYW's sexual partners, which constrains efforts to reach them with HIV services and, thus, limits efforts to ultimately reduce HIV prevalence among AGYW. The U.S. President's Emergency Plan for AIDS Relief (PEPFAR) through the DREAMS initiative has recognized the importance of characterizing male partners of AGYW and the lack of current knowledge (PEPFAR, 2016). In Mozambique, comprehensive AGYW programs under the DREAMS initiative are underway in six districts: Xai-Xai, Cidade de Xai-Xai, Chokwe, Nicoadala, Cidade de Quelimane and Cidade da Beira. In order to fill the knowledge gap about male partners of AGYW and strengthen these programs, USAID asked MEASURE Evaluation to undertake a study to provide insight into the characteristics of men who have recently engaged in sexual activity with AGYW, relationship dynamics, and factors that influence men's engagement with HIV and AIDS prevention and care services. In Mozambique, this has not been previously studied.

This was a two-part study. Part I was a qualitative study of AGYW using focus group discussions to obtain information on their male sexual partners. Findings from this part of the study have been reported, see: do Nascimento et al, 2018. Part II was a brief, anonymous, intercept survey of boys and men age 18 and above conducted at venues identified by AGYW as places where their sexual partners can be found.

Research Questions

This survey component of this study was guided by three primary research questions:

1. Who are the sexual partners of AGYW?
    - 1.1 How do male sexual partners of AGYW characterize themselves in terms of demographics, location of residence, occupation?
    - 1.2 Do male partner profiles differ among different subgroups of AGYW? If so, how?
2. Is sexual risk-taking behavior (i.e., partner concurrency and unprotected sex) among AGYW and their male partners associated with certain sexual partner characteristics (e.g., age, education, employment, income, or other factors)?
    - 2.1 Does the type relationship affect sexual risk taking?
3. To what extent are male sexual partners of AGYW using/willing to use different types of HIV and AIDS services?
    - 3.1 What service factors (location, time, staff, type) affect willingness to use, by type of service?
    - 3.2 What are the barriers to uptake of services?

METHODS

Study Setting

The study took place in three districts in Mozambique: Cidade de Quelimane (Zambézia Province), Cidade de Beira (Sofala Province), and Xai-Xai (Gaza Province); see Figure 2.

Figure 2. Map of Mozambique

These districts were selected and determined by USAID to be reflective of the HIV epidemic in all DREAMS districts. Information about the study districts is presented in the Table 1.

Table 1. Characteristics of study settings (MISAU, INE, & ICF International, 2015)

	Quelimane, Zambézia	Beira, Sofala	Xai-Xai District, Gaza
Location	Urban	Urban	Peri-urban
HIV prevalence*	15.1%	16.3%	24.4%
Female (15–49 years)	16.8%	18.8%	28.2%
Male (15–49 years)	12.5%	13.0%	17.6%
Female (15–24 years)	14.3%	11.6%	15.9%
Male (15–24 years)	4.1%	1.0%	2.1%
% of males ages 15–49 years circumcised*	47.6%	20.1%	47.5%
Males ages 15–24 years	66.0%		
% tested for HIV in past 12 months, and received results*	26%	24%	48%
Female (15–49 years)	25.7%	23.6%	48.0%
Male (15–49 years)	15.9%	31.8%	26.1%
Female (15–24 years)	32.2%		
Male (15–24 years)	15.5%		

*Provincial data

Study Design

We conducted anonymous, face-to-face, one-on-one interviews with men age 18 and above, using a short survey instrument of close-ended questions in public venues. This method was chosen to enable reach of a wide cross-section of men with different demographic profiles who report sexual relationships with AGYW. By interviewing men at venues, often surrounded by their peers, the study team determined that members of the target population may feel less prone to giving socially-desirable responses—of particular concern if we were interviewing men at their homes, near their spouses.

Outcome Measures

The study aimed to elicit demographic information on men – both those reporting sex with AGYW in the 12 months prior to study as well as the demographic characteristics of the AGYW sexual partners of these men. The following outcome measures were included:

- Number of different partners (of all ages and ages 15–24) with whom respondent has had sex in past 12 months
- % who report that they used a condom at last sex with most recent AGYW partner
- % who report consistent condom use with most recent AGYW partner
- % reporting giving gifts or money to most recent AGYW sexual partner
- % who know where to get condoms
- % who report HIV testing
- % who report being circumcised
- % who are considering becoming circumcised
- % who report acceptability (preferences) of various HIV prevention and care services

- % who report various barriers to HIV testing, circumcision
- % who know where to go for various HIV prevention and care services
- % who report sex with men
- % who report alcohol use

Sampling

Since voluntary male medical circumcision for HIV-negative male partners of AGYW is a key intervention of DREAMS, our indicator for sample size calculations was prevalence of men who have been circumcised. Using a conservative estimate of 51% for this indicator, 5% margin of error, an estimated design effect of 2.0 and estimated response rate of 80%, we calculated a required study sample size of 930 men. We aimed to recruit men from at least 10 different venues in each of the three study districts.

Venues were selected as follows: during FGDs with AGYW, we elicited information on where we might find different types of male sexual partners of AGYW, during a time that they would be available to participate in a 15-minute, anonymous interview. (do Nascimento, et al, 2018, describes the focus group component of this study.) After each FGD, data collectors listed all venues mentioned and we worked with FGD participants to agree on their "top 10" list of venues. When all the FGDs in a given district were complete, these venue lists were combined. Suggested venues included schools, bars and barracas, restaurants, clubs, community centers, parks, market areas, and the beach. We then discussed this list of venues with the stakeholder reference groups (SRG), which we had formed in each district to advise on data collection. The SRGs, composed of members of government and PEPFAR implementing partners, assisted in determining if the venues were adequately diverse to attract a diversity of men. The SRG in Xai-Xai added five new venues to improve diversity.

We worked with establishment owners/staff and local government to gather permissions to recruit at the venues. In some instances, we were not able to get permissions, or upon visiting a venue, we found it under construction or closed, or we could not find the venue listed. These venues were not replaced. In Xai-Xai, as the number of accessible venues dropped below 10 (our target number), we added venues during field work – a nearby barraca, a plaza and market areas. The numbers of venues listed, visited, added, and recruited from, are outlined in the table below.

Table 2. Venue selection

District	Listed by AGYW	Added by SRG	Visited		Added during field work	Used in recruitment
			Accessible	Not accessible		
Beira	23	0	11	12	0	11
Xai-Xai	16	5	9	12	4	13
Quelimane	28	0	14	14	0	14

Data Collection

Instrument. A data collection tool was designed to elicit information on study outcomes, as presented above. The data collection tool was developed in English, then translated into Portuguese. The Portuguese version was field-tested in Maputo,. For men reporting an AGYW partner, the survey took approximately 17 minutes (median) to administer.

Recruitment and data collection procedures. Recruitment and data collection was led by a Mozambican firm called Verde Azul. Verde Azul hired experienced male data collectors from the study provinces who spoke the local dialects to conduct the study. Wearing study IDs, the data collectors approached men at the venues, introducing themselves and the study. Data collectors explained that they were conducting brief, anonymous interviews about health with men ages 18 years and older. If the potential participant was willing, and judged to be of sound mind (i.e., sober), the data collector read the information sheet and consent form to the man and sought informed consent. Consent was documented by both the respondent and data collector. Interviews were conducted using electronic data capture on tablet computers in a private space outside the venue. (Note: Most venues were outdoors; therefore, participants and data collectors sought a private area near the venue to conduct the interview, such as on a bench opposite the venue.) No personal identification information was captured. Men were offered a 100-metical mobile phone voucher for participating in the study (less than US$1.50[1]).

Quality control. The data collection team included survey data collectors, a district supervisor, and a senior researcher. The entire team participated in a five-day training, which included multiple simulations and a field practical (trainings were conducted in each district with the local data collection team though all supervisors participated in the first training and data collection in Xai-Xai district in order to promulgate lessons learned). Supervisors monitored each data collection team throughout the data collection period, moving among two-man teams to check on progress and quality of work, clarify questions in the questionnaire, and advise on how to solve any challenges. The senior researcher oversaw data collector training and data collection across all districts. Daily, supervisors checked completed questionnaires for errors or inconsistencies and then uploaded the complete and verified questionnaires to the server. The senior researcher then checked the data for quality and completeness online.

[1] The exchange rate was roughly 60 meticals to 1 USD at the time of survey.

Data Analysis

We analyzed the data in several steps using STATA 15. First, we used frequency distributions to explore characteristics of the full sample of men who reported ever having sex. Next, we compared characteristics of men who reported sex with an AGYW in the past 12 months with those who did not. All subsequent analyses were restricted to men who reported having had sex with an AGYW in the past 12 months. A series of bivariate analyses were conducted to examine associations between: a) men's characteristics and characteristics of their most recent AGYW partner; b) men's characteristics and their risk-taking behaviors with their most recent AGYW partner; and c) men's risk-taking behaviors with their most recent AGYW partner and characteristics of their AGYW partners. We used frequency distributions to understand men's use of health services; and bivariate analyses to examine associations with men's characteristics and their use of health services. For each research question, we also conducted multi-variable logistic regression.

Finally, we conducted latent class analysis (LCA) to uncover subgroups of people as defined by distinct response patterns on multiple HIV risk behaviors. Since HIV risk behavior is multi-dimensional construct and includes numerous types of behaviors (condom use, multiple partners, etc.), LCA can be used to understand HIV risk behavior comprehensively by examining the construct of risk as a whole, instead of examining individual risk behaviors. Unlike traditional regression approaches that can include only a few interaction terms before becoming too difficult to interpret, LCA estimates the effects of multiple risk behaviors simultaneously, thus helping to identify individuals at greatest risk for HIV. This method allows identification of specific groups of men with distinct patterns of high-risk behaviors, which can then inform targeting of HIV prevention interventions. The observed variables in our LCA model included three of more partners in the past 12 months (yes versus no); consistency of condom use with the last partner (always versus sometimes or never), circumcised (yes versus no); and heavy alcohol use (getting drunk several times or more per week) (yes versus no). We described the classes by adding predictors to the latent class analysis and examined sociodemographic characteristics associated with class membership.

Ethics Review

This study adhered to the three Belmont principles of ethics that guide researchers in conducting safe research: respect for persons, beneficence, and justice. Ethical clearance was obtained from Health Media Labs, Inc. in the United States and the Comitê Nacional de Bioética para a Sáude (CNBS) in Mozambique.

RESULTS

Results are outlined below. All tables, except for one capturing the response rate, can be found in Appendix 1.

Response Rate

In total, 1176 men from among the 1520 who were approached were eligible and consented to participate in the survey. We approached 344 men who were determined to be either 1) ineligible due to being under 18 years or intoxicated, or 2) did not provide consent. The most common reasons for refusal were lack of time and the HIV subject matter of the interview.

Interviews under four minutes (for men not reporting sex with an AGYW) or eight minutes (for men reporting sex with an AGYW) were deemed invalid, affecting 3.1% of the sample (n=36). The final sample included 1140 men, representing a response rate of 75 percent. Please see details by district in the table below.

Table 3. Response rate, by district

	Quelimane	Xai-Xai	Beira	Total
Number of men approached	433	558	529	1520
Number of men who consented and started interview	377	407	392	1176
Number of men who refused or were deemed ineligible due to intoxication and interview was not started	56	151	137	344
Interim response rate	87.1% (377/433)	72.9% (407/558)	74.1% (392/529)	77.4% 1176/1520)
Number of valid interviews	369	401	370	**1140**
Number of invalid interviews	8	6	22	36
% valid of completed interviews	97.9%	98.5%	94.4%	96.9%
Final response rate	**85.2% (369/433)**	**71.9% (401/558)**	**69.9% (370/529)**	**75.0% (1,140/1,520)**

Sample Characteristics

Sample characteristics are presented in Appendix 1, Table A1.1. The average age of men surveyed was 29 years (range: 18–64 years). Approximately half (54.7%) were married, and just under half (42.9%) were single, with the rest widowed or divorced. One-quarter (24.7%) reported high mobility (travelling for more than one month in the past 12 months), with one in ten (11.8%) reporting travelling outside of

Mozambique in the 12 months prior to survey. Educational attainment varied: one quarter of men surveyed had some primary education, one quarter had some secondary, one quarter had completed secondary and one quarter had some tertiary. Thirty percent (29.2%) were studying at the time of survey. Nine in ten men (91.4%) reported work in the 12 months prior to survey, with 84.8 percent reporting work in the seven days prior to survey. Men surveyed most commonly described their employment as "sales and services" (30.4%), followed by specialized labor (18.4%); nine percent of men report professional jobs. Approximately one-third (32.4%) of men reported monthly income under 5,000 meticals[2], one-quarter (26.1%) reported monthly income between 5,000–9,999 meticals, and one-quarter (26.6%) reported monthly income between 10,000–39,999 meticals. Only four percent (4.1%) reported monthly income in excess of 40,000 meticals.

Characteristics of Male Sexual Partners of AGYW

Eighty-six percent (n=981) of men surveyed reported having had recent sex with an AGYW, i.e., within the 12 months before the survey (see Appendix 1, Table A1.1). In the bivariate analysis, compared with men who did not report a recent AGYW sexual partner, men reporting recent sex with an AGYW were younger (27 years versus 43 years, $p<0.001$), less likely to be married (50.9% versus 82.0%, $p<0.001$), uneducated (6.1% versus 13.0%, $p<0.001$), and to have worked in the 12 months prior to survey (90.5% versus 99.6%, $p<0.01$). Men reporting recent sex with an AGYW were also more likely to be currently studying (31.7% versus 12.2%, $p<0.001$) than men who did not report recent sex with an AGYW. Over 40% of men who reported having an AGYW partner, reported drinking alcohol to the point of drunkenness, either often (i.e., a few times per week) or sometimes (i.e., a few times per month). Less than one percent of men reported having sex with men in the past 12 months (n=9).

In multivariable analysis, age, a steady partner, and education were variables significantly associated with recent sex with an AGYW. After controlling for all other demographics (except profession[3]), younger men (adjusted odds ratio [AOR]: 0.84, $p<0.001$) and men reporting having a steady girlfriend (AOR: 3.6, $p<0.05$) were more likely to report a recent AGYW sexual partner. Men with low educational attainment (i.e., less than primary education) were less likely to report a recent AGYW sexual partner (AOR: 0.37, $p<0.05$).

We asked male survey participants who reported sex with a AGYW in the past 12 months to provide information about their *most recent* AGYW sexual partner. Appendix 1, Table A1.2 describes the characteristics of the participants' most recent AGYW sexual partner, and the types of relationships between survey participants and these AGYW. One-third (33.9%) of men reported that their most recent AGYW sexual partner was younger than 20 years old at the time of the survey. Over one-quarter of school-age AGYW sexual partners (i.e., 19 years old or younger) were not attending school at the time of survey (26.6%). About 40 percent of recent AGYW sexual partners were pregnant or mothers (14.79% were pregnant, postpartum, and/or breastfeeding). One-quarter (23.1%) of recent AGYW sexual partners were working. One-quarter (27.7%) of men reported that they gave their most recent AGYW sexual partner money for sex. The nature of the relationships between men surveyed and their most recent AGYW sexual partners varied, the most common responses were "steady partner" (33.3%), wife or live-in partner (16.7%), friend (18.4%), and irregular partner (10.5%). Four percent of men reported that they

[2] The exchange rate was roughly 60 meticals to 1 USD at the time of survey.
[3] There were 14 response categories for profession, and responses were scattered; therefore, including profession in the analysis would have been prohibitively complex.

"just met" their most recent AGYW sexual partner, and only seven men (less than 1%) reported that their most recent AGYW sex partner was a sex worker.

We ran analyses to better understand the link between characteristics of men and characteristics of their sexual partners, and particularly to determine if men reporting recent sex with an AGYW who was younger (under 20 years old), out of school, or a mother or pregnant (subgroups of AGYW defined by PEPFAR/DREAMS[4]), exhibited specific characteristics. Data are presented in Appendix 1, Table A1.3.

Men reporting that their most recent AGYW sexual partner was young (i.e., 19 years or younger) compared to those reporting that their most recent AGYW sexual partner was 20–24 years, were more likely to be young themselves (23 years versus 30 years, $p<0.001$), currently studying (48.2% versus 23.2%, $p<0.001$), and single (74.1% versus 34.5%, $p<0.001$); also, they were less likely to be internationally mobile (5.7% versus 13.9%, $p<0.001$) and working (71.4% versus 90.7%, $p<0.001$). In the multivariable analysis, young men (AOR: 0.82, $p<0.001$), men currently studying (AOR: 1.92, $p<0.01$), and men with only primary education (compared to the highest education level) were more likely to have young partners (AOR: 1.85, $p<0.05$), after controlling for mobility, travel outside the country, and employment status.

Men whose most recent AGYW sexual partner was school-age (i.e., 19 years old or younger) but not attending school at the time of survey, compared to those reporting a sexual partner who was in-school or not school age, were more likely to be mobile (39.8% versus 23.6%, $p<0.001$), less likely to be currently studying (26.5% versus 56.6%, $p<0.001$), and relatedly, to have completed secondary and tertiary education (15.7% versus 26.5%, $p<0.05$ and 6.0% versus 21.5%, $p<0.01$, respectively). Men whose school-age partners who were not in school were more likely to be working (89.2% versus 78.5%, $p<0.05$), less likely to be single (63.9% versus 78.5%, $p<0.01$), and more likely to have multiple sexual partners (85.3% versus 70.7%, $p<0.05$). Similarly, the multivariable analysis controlling for male demographic variables showed that mobile men (AOR: 3.1, $p<0.01$), men with less than secondary education (compared to the highest level of education; AOR: 4.8, $p<0.05$) had higher odds of reporting a school-age AGYW sexual partner not attending school; while men currently studying had lower odds (AOR: 0.49, $p<0.05$) of reporting an AGYW partner not attending school.

Men reporting that their most recent AGYW sexual partner was pregnant or a mother, compared to those reporting a sexual partner who was not pregnant or a mother, were older (29.5 versus 25.9 years, $p<0.001$), less likely to be single (24.81% versus 64.0%, $p<0.001$), less likely to be currently studying (18.5% versus 40.7%, $p<0.001$), and more likely to be working (97.2% versus 85.9%, $p<0.001$) and to have more than one partner in the past three months (88.0 % versus 75.7%). In the multivariable analysis, we saw that married men (compared to single men, AOR: 7.06, $p<0.01$) had a significantly higher odds of reporting a AGYW partner who is pregnant or a mother, while men that are currently studying (0.59, $p<0.01$) had a lower odds of reporting a AGYW partner who is pregnant or a mother.

[4] Of note, the subgroup of interest to PEPFAR is AGYW who are pregnant/post-partum and/or breastfeeding. We included "mother" in the latter subgroup as there were an insufficient number of reports of sexual partnerships with pregnant/post-partum and breastfeeding women for meaningful analysis.

Men's Sexual Risk Behavior

In Appendix 1, Table A1.4, we present data on men's reported risk-taking behaviors, by male background characteristics. Sixty percent (60.3%) of men reported condom use at last sex, and 41 percent reported consistent (i.e., always) condom use. Men who reported condom use at last sex, compared to those that did not, were more likely to be single (55.1% versus 37%, $p<0.001$), currently studying (38% versus 22.1%, $p<0.001$), and have tertiary education (29.1% versus 17.5%, $p<0.001$), and less likely to be working (81.4% versus 87.9%, $p<0.01$). After controlling for all demographics, except profession, in the multivariable analysis, older men (AOR: 1.03, $p<0.05$) and men currently studying (AOR: 1.64, $p<0.01$) had higher odds of using a condom at last sex; while men with primary education or less (AOR: 0.61, $p<0.05$) and married men had lower odds of using a condom at last sex (compared to single men, AOR: 0.36, $p<0.05$). Men currently studying had higher odds of reporting consistent condom use (AOR: 1.68, $p<0.001$), whereas men with primary education or less (AOR: 0.53, $p<0.01$) and married men (compared to single men, AOR: 0.24, $p<0.001$) had a lower odds of reporting consistent condom use.

Forty-six percent (46.1%) of men reported having three or more sex partners in the previous 12 months. Men reporting this, compared to men who reported only one sexual partner in the previous 12 months, were more likely to be single (50.8% versus 35.7%, $p<0.001$) and internationally mobile (14% versus 10%, $p<0.05$). In the multivariable analysis, younger age (AOR: 0.98, $p<0.05$), and mobility (AOR: 1.66, $p<0.03$) were associated with higher odds of reporting multiple sexual partners. Men with lower income (AOR: 0.47, $p<0.05$) had lower odds of reporting multiple sexual partners than did men with higher income. Finally, compared to men with the highest level of education, men with secondary education or less had higher odds of reporting having more than one sex partner (AOR: 1.76, $p<0.01$).

In Table 4 we present results of the latent class analysis for men's sexual risk behavior. We used four dichotomous indicators of risk behavior to identify classes, or groups, of male sexual partners of AGYW: three or more partners in the past 12 months; consistent condom use with the last partner; circumcision status; and heavy alcohol use (getting drunk several times per week or more). We used latent class regression to identify predictors of men's sexual risk behavior and examined models based on two, three, and four classes. Using Akaike information criteria and Bayesian information criteria, we examined results from two-, three-, and four-class models to determine the model that was the best fit for the data. We also examined the model for conceptual relevance. We determined that the three-class model was statistically and conceptually most robust.

Table 4. Latent class analysis results of men's sexual risk behaviors

	Class 1: Low Risk	Class 2: High Risk – Inconsistent Condom Use	Class 3: High Risk – Multiple Partners
Latent class prevalence (% of men in this category)	9%	28%	63%
Item–response probabilities			
Indicators			
Three or more partners in past 12 months	0.28	0.36	0.59
Consistent condom use with last AGYW partner	0.99	0.14	0.42
Circumcised	0.78	0.48	0.89
Heavy drinking in past 3 months	<0.001	0.34	0.50

Using the four indicators to profile men into three classes produced the following risk categories:

- **Low risk—**Nine percent of men surveyed fit this typology; these men had high levels of consistent condom use.
- **High risk—inconsistent condom use:** This category was characterized by inconsistent condom use, along with a moderate probability of having multiple partnerships, being circumcised, and heavy drinking in the past three months. Twenty eight percent of men surveyed were classified in this group.
- **High risk—multiple partners:** This category was characterized by having multiple partners in the past 12 months, a moderate probability of inconsistent condom use, a high probability of being circumcised and a moderate probability of heavy drinking in the past three months. Sixty-three percent of men surveyed were classified in this group.

Latent class multivariable regression was used to examine the relationship between demographic factors and class membership. Compared to men in the low-risk group, those in the high-risk–inconsistent condom-use group were significantly more likely to be younger (AOR: 0.51, $p<.05$); and less likely to be married or cohabiting (AOR: 0.05, $p=.051$). No other sociodemographic characteristics, including education level, international mobility, or income level were associated with class membership.

In Appendix 1, Table A1.5A, we present data on men's reported risk-taking behavior, by the characteristics of their last AGYW sexual partner (see Appendix 1, Table A1.2). Men reporting that their most recent AGYW sexual partner was less than 20 years of age, compared to those who reported

AGYW sexual partners ages 20–24 years, were more likely to report condom use at last sex (64.8% versus 58.1%, $p<0.05$). These men also had higher odds of reporting consistent condom use (AOR: 1.42, $p<0.03$). Similarly, men reporting that their most recent AGYW sexual partner was employed, compared to those who reported an unemployed AGYW sexual partner were more likely to report condom use at last sex (66.8% versus 58.2%, $p<0.05$). Men reporting that their most recent AGYW sexual partner was school-age but not attending school, compared to those reporting an in-school or non-school age AGYW sexual partner, were less likely to consistently use condoms (39.0% versus 57.1%, $p<0.01$) or report condom use at last sex (69.4% versus 54.2%, $p<0.05$, respectively). Men reporting that their most recent AGYW sexual partner was a mother and/or pregnant were less likely to report condom use at last sex, compared to those reporting sex with AGYW who were not mothers or pregnant at the time (45.8% versus 69.7%, $p<0.001$). Men with AGYW partners who were mothers or pregnant had lower odds of reporting consistent condom use (AOR: 0.44, $p<0.001$).

In Appendix 1, Table A1.5B we present data on men's reported risk-taking behavior, by the type of relationship they currently or previously had with their most recent AGYW sexual partner. Men were more likely to report condom use at last sex with AGYW sexual partners that they just met (79.5%), and AGYW to whom they reported giving money for sex (67.5%), compared to their wives (24.2%, $p<0.01$). Men whose AGYW partners were not their wives also had a significantly higher odds of consistent condom use, for example, men whose AGYW partners were steady (but not live-in) partners had five times the odds of always using a condom (AOR: 5.13, $p<0.001$); men whose AGYW partners were sex workers had 15 times the odds (AOR:15.59, $p<0.05$) of always using a condom compared to men who were married or living with their AGYW partners.

Men's Uptake and Perception of Sexual Health Services

Appendix 1, Table A1.6A documents men's reports of recent HIV testing, HIV testing preferences, circumcision status and interest, recent condom use purchases, and condom preferences. Appendix 1, Tables A1.6B, A1.6C and A1.6D compare male characteristics according to their HIV testing, circumcision, and condom purchasing practices and preferences.

Participants reported high rates of HIV testing: 82.8 percent reported ever being tested for HIV, and over 99 percent of those tested received their results. Men who reported HIV testing were more likely to be currently studying (34.2% versus 23.8%, $p<0.05$), to have completed more education ($p<0.001$), and to be paid in cash for their work (99.6% versus 97.3%, $p<0.01$), compared to men who did not report HIV testing. In the multivariable analysis, education and payment in cash were significantly related to testing. After controlling for other demographics, men with primary school education or less were less likely to be tested compared to men with the highest level of education (AOR: 0.27, $p<0.01$), and men paid fully or partially in cash were more likely to be tested compared to men not paid in cash (AOR: 11.49, $p<0.05$), after controlling for other demographics.

The most commonly cited reasons for not testing (among those not tested) included: not wanting to know one's HIV status (22.5%), worry that results would not be kept confidential (15%) and worry that someone would see them at the testing site (13.8%).

The majority of men reported that their preferred testing site was the public hospital (91.4%), with 8.6 percent and 3 percent citing Serviços Amigos do Adolescente e Jovem (SAAJs)—the adolescent health clinics—and their workplace, respectively, as their preferred testing sites. The survey specifically inquired

about interest in workplace testing; 84.7 percent of men indicated interest in this. Men open to workplace testing were more likely to be currently studying (33.9% versus 20.8%, $p<0.01$) and single (49.6% versus 40.3%, $p<0.05$). The only factor that remained significant in multivariate analysis was "currently studying".

Three-quarters (76%) of men surveyed reported that they were circumcised. Men who reported being circumcised were younger (27 years versus 28 years, $p<0.05$), more likely to be currently studying (36.2% versus 17.5%, $p<0.001$), had completed more education ($p<0.001$), reported higher incomes ($p<0.001$), were more likely to be single (51.1% versus 37.9%, $p<0.01$) and were less likely to report having more than one sex partner in the three months prior to survey ($p<0.05$), compared to men were not circumcised. In multivariable analysis, only education was correlated with circumcision: men with primary school education or less were less likely to be circumcised compared to men with the highest level of education.

Nearly nine in ten (88.1%) uncircumcised men reported interest in circumcision. Uncircumcised men interested in becoming circumcised were younger (27 years versus 35 years, $p<0.001$), more likely to be have travelled away from home for more than one month over the 12 prior to survey (28.5%, versus 10.7%, $p<0.05$), more likely to have some secondary education (29.5% versus 7.1%, $p<0.05$), compared to uncircumcised men not interested becoming circumcised. Men in higher income categories were less likely to report interest in circumcision (2.42% versus 10.7%, $p<0.05$). In multivariable analysis only younger age was correlated with interest in circumcision.

The majority of men (98%) reported knowledge of where to buy condoms and most (84.6%) had bought condoms in the past 12 months. The most preferred condom brand was Jeito (75.2%). There were no clear socio-demographic differences between men who knew where to buy condoms and those that did not. Men who bought condoms in the 12 months prior to survey were more likely to have completed more education ($p<0.05$), be working (85.1% versus 77.7%, $p<0.05$), and be working for money (99.5% versus 97%, $p<0.01$) compared to men who had not bought condoms in the past 12 months.

Men were asked to describe their preferences on when to access HIV services, indicating their agreement or disagreement regarding whether various days and times of day (morning, afternoon, evening) were convenient to access services. Sunday evening obtained the highest frequency of "acceptable" responses (67.3% agreed that this time was convenient); however, a majority of respondents indicated that weekend mornings and evenings were convenient times to access HIV services. During the work week, men were more likely to agree that mornings were convenient for them to access services, followed by evening, expect on Fridays, where men were just as likely to agree that mornings and evenings were convenient. A minority of men agreed that afternoons, on any day of the week, were convenient for seeking HIV services.

DISCUSSION

HIV prevention, testing and care among AGYW is critical in curbing the HIV epidemic in sub-Saharan Africa and Mozambique. To date, prevention efforts among adolescents have been far less successful than with other groups. One strategy for reducing HIV incidence among AGYW is to target their male sexual partners with both prevention programming (for HIV-negative sexual partners) and with care and treatment (for HIV-positive sexual partners). A better understanding of the characteristics of male sexual partners of AGYW and the risk dynamics in various types of sexual partnerships, can inform programming. Our study adds to the evidence base by characterizing male partners of AGYW in Mozambique.

The sample of men reporting sex with an AGYW was diverse in terms of demographic characteristics; however, younger men (under 30 years) were more likely to report recent sex with an AGYW. Importantly, over 40 percent of male sexual partnerships of AGYW reported drinking to the point of being drunk at least a few times per month.

Overall, we found that male partners of AGYW reported high levels of risk behavior (e.g., multiple sexual partners, low condom use, and high alcohol consumption), but they also reported a high uptake of HIV testing, purchasing condoms, and many reported being circumcised. While 60 percent of men reported condom use at last sex, only 41 percent reported consistent (i.e., always) condom use. Furthermore, almost half of the male partners of AGYW (46.1%) reported having three or more sex partners in the previous 12 months.

Education for men and women has been identified as an important, modifiable factor in HIV prevention research (Cho, et al., 2011; Hallfors, et al., 2011; Baird, et al., 2010) . We also found that current school enrollment and education level had important influences on HIV risk behaviors. Men with less education had significantly lower odds of reporting consistent condom use. This was similarly reported in a study of miners in Mozambique (Martins-Fonteyn, et al., 2017). And, men with less education had significantly higher odds of reporting having more than one sex partner than men with more education.

Younger age was associated with the uptake of higher risk behaviors and belonging to the higher risk—inconsistent condom use class (per the latent class analysis conducted). The adolescent period is characterized by considerable shifts in physical, social and cognitive ability, and weak impulse control, which support higher risk taking. Targeting young men for HIV prevention messaging and services is a critical step in mitigating risk among AGYW and risky behavioral norms that are established in early adulthood.

Also, income was associated with risk behavior. Men reporting lower incomes were less likely to report multiple partners than men with higher incomes. Hawkins, Price & Mussa's (2009) ethnographic research in Mozambique found that male wealth, but not their marital status, was a driving factor in young women's engagement in romantic or sexual relationships, which may explain why low income was protective against multiple partners in our study.

USAID, through the DREAMS initiative in Mozambique, has outlined several subgroups of AGYW that are particularly at risk of acquiring HIV. Specifically, these subgroups are AGYW under 20 years; AGYW who are school-age, but not attending school; and pregnant, postpartum, or breastfeeding AGYW. This study sought to understand how male sexual partners and sexual risk-taking behaviors differed between

these subgroups. Men reporting that their most recent AGYW partner was younger (i.e., 19 years old or younger) were likely to be in that age group themselves or just slightly older, and currently studying. Condom use was more commonly reported by men in sexual partnerships with younger AGYW than those in sexual partnerships with older AGYW (i.e., 20- to 24-year-olds).

Mobile men and men with less education had a higher odds of reporting school-age out-of-school sexual partners. Condom use within sexual partnerships with school-age, out-of-school AGYW, as well as with AGYW with low educational attainment, was less commonly reported than within sexual partnerships with AGYW attending school or with higher educational attainment. A study conducted by Patrão and McIntyre (2017) in Mozambique reported similar findings on the correlation between education of AGYW and condom use self-efficacy.

The DREAMS initiative in Mozambique identified a third subgroup of pregnant, postpartum, or breastfeeding AGYW at high risk of acquiring HIV. (As above, we included "mother" in the latter subgroup as there were an insufficient number of reports of sexual partnerships with pregnant/post-partum and breastfeeding women for meaningful analysis.) Unsurprisingly, married men had significantly higher odds of reporting an AGYW partner who was pregnant or a mother. Men who reported that their most recent AGYW sexual partner was a mother or pregnant, were less likely to report condom use at last sex than those in relationships with AGYW who were not pregnant or mothers.

Unemployed youth are not one of the DREAMS subgroups, but we found that condom use was less common in partnerships with unemployed AGYW. Similarly, Machel's qualitative research with school girls in Mozambique found that economic dependency made it difficult to negotiate condom use (Machel, 2001).

Risk behaviors were also associated with relationship type. Men reporting that their most recent sexual partnership with an AGYW was casual or transactional were more likely to report condom use in this partnership than those reporting longer-term relationships. Men who identified their AGYW partners as sex workers were 15 times more likely to use a condom than those who reported their AGYW partners were their wives. Our findings mirror some qualitative research that has been conducted in Mozambique. For example, Bandali's work with married couples found that condom use was difficult to negotiate in the context of marriage, gender norms, and fear of HIV infection (Bandali, 2011). We also found condom use among men married to AGYW was low. These findings are echoed in the qualitative findings from this study (do Nascimento et al., 2018).

When we explored risk profiles of men using latent class analysis, we found that the majority of men are partaking in multiple risk behaviors. Sixty-three percent of men were characterized by having multiple partners in the past 12 months, along with moderate probability of inconsistent condom use, and moderate probability of heavy drinking in the past three months (high-risk–multiple partners class). However, this group was also characterized by a high likelihood of being circumcised. Additionally, while results from bivariate analyses found that male partners' higher income was associated with multiple AGYW partners, results from LCA did not find that income was associated with high risk behaviors. This is likely because we defined risky behaviors in LCA using various risk variables, only one of which is having multiple partners. A study using longitudinal data from AGYW in rural South Africa, also conducted LCA to characterize male partners and risk of HIV infection among AGYW. The analysis similarly found that risk behavior was high across profiles; however, risk of HIV infection varied between the groups due to partner types. Compared to AGYW with monogamous HIV-negative partners, those

with older, out of school partners who did not use condoms consistently were at three times the risk of acquiring HIV. AGYW with partners the same age as them and who did not use condoms consistently were at two times the risk of acquiring HIV. Additionally, AGYW who were cohabitating with their partners were at reduced risk of acquiring HIV, despite an 82% probability of reported transactional sex and 97% probability of inconsistent condom use.

Despite high levels of risk behaviors reported, participants reported extremely high rates of HIV testing—82.8 percent reported ever being tested for HIV. This was significantly higher than nationally representative surveys have found (MISAU, INE, & ICF International, 2015).[5] This could be due to our sampling strategy (perhaps mobile testing is offered at the recruitment venues we used) or social desirability bias—men answered that they had tested because they thought that was what interviewers wanted to hear. Education was related to HIV service uptake, in that men with higher than primary education were more likely to report HIV testing. Barriers to testing included not wanting to know one's status and concerns around confidentiality and privacy.

About three quarters of the sample (76%) reported being circumcised. Again, this is much higher than rates found in national surveys.[6] Of those not circumcised, most were interested in circumcision and listed the public hospital as their preferred venue for circumcision.

The majority of respondents indicated that their preferred location for accessing HIV-related services was the public hospital, though upon asking, nearly 85 percent indicated that they would be open to workplace HIV testing. Men indicated that weekends were the most convenient time for them to access HIV services.

This study has limitations. First, this study elicited personal information on sexual risk behaviors, which is subject to self-report bias. This study also asked participants about their sexual history over the 12 months prior to survey, which may be subject to recall bias. Furthermore, the study asked men to discuss their relationships with AGYW ages 15–24, but participants may not have been an accurate judge of girls' ages. It is possible that some of the data captured relationships with girls younger than 15 and women older than 24. In addition to age, men might not have reported accurate information regarding other AGYW characteristics, especially if their most recent sexual partner was someone they just met (approximately 5% of the sample). Also, male participants must have been ages 18 years or above due to ability to consent, which omits information about younger males' relationships with AGYW. Finally, study findings have limited generalizability beyond study settings. Male survey respondents were not representative of all male sexual partners of AGYW due to venue selection.

[5] The proportion of men ages 15–49 who report an HIV test in the last 12 months and who have received the results of that test varies between 15.9% and 31.8% in study provinces, per the IMASIDA study: see Table 1.

[6] The proportion of men ages 15–49 who report being circumcised varies between 20.1% and 47.6% in study provinces, per the IMASIDA study: see Table 1.

RECOMMENDATIONS

This research can inform future programming. Based on our findings, we recommend the following programming strategies:

To reach sexual partners of AGYW, HIV **programs should target men who are younger** (under 30 years old) and who are single, encouraging them to use condoms consistently with girlfriends, to get circumcised, and to get tested and discuss their HIV status with their partners. Targeting young men with multiple prevention strategies is important, because the LCA found that different risk behaviors were highly linked, in that men who reported inconsistent condom use were also likely to report multiple concurrent partners.

In-school HIV prevention and testing programming has been studied and shown to be effective in improving knowledge and attitudes around HIV and increased HIV testing (Michielsen, et al., 2010; Harrison, et al., 2010; Napierala, Doyle & Ross, 2011; Gallant, Maticka-Tyndale, 2004; Paul-Ebhohimhen, Poobalan & van Teijlingen, 2008). Such programming could be an effective strategy to reach school age male sexual partners of AGYW with messaging about condom use, limiting numbers of sexual partner, HIV testing, voluntary male medical circumcision, as well as a mechanism for sensitizing boys and girls alike on gender issues.

Condom use and HIV testing uptake is positively associated with education (i.e., currently studying and attainment of a secondary or tertiary level of education)—condoms and HIV testing need to be promoted among men who are less educated/not in school. To reach out of school youth and men beyond school-age, as well as to reduce the vulnerability of AGYW, in particular those who are married or in a serious relationship, we encourage the **expansion of youth-friendly, integrated family planning/HIV health services both in and outside of health facilities.** Mozambique already has youth-friendly sections of health facilities referred to as *Serviço Amigo do Adolescente e Jovem* – SAAJs. There is evidence that clinics can become "friendlier" through training clinicians and minor infrastructure improvements services (Dick, et al., 2006), and also that youth may be better serviced by family planning/HIV services outside of the health facility (Denno, Chandra-Mouli & Osman, 2012). Specific efforts should be made to attract male clients, who are much less likely to participate in sexual health and HIV services compared to women (Cornell & McIntyre, 2011).

Data also indicate that workplace testing initiatives may be popular if confidentiality and privacy issues can be surmounted. We recommend **trialing workplace testing and behavior change campaigns** particularly within sectors employing men with less education—for example, mining and fishing companies, in part to address the machismo culture that disempowers women. Workplace testing, although not without its challenges, has been shown to be effective in other settings (e.g., Corbett et al, 2006).

Men were less likely to report condom use with AGYW ages 20–24 (compared to those ages 15–19 years), wives, and live-in partners (compared to casual partners), and AGYW who are mothers, pregnant, or postpartum (compared to those that are); subgroups that are likely all related. Programs should **increase the availability and promotion of condoms at child clinics/routine vaccination sites, and antenatal clinics**. Programs should also educate males on the importance of condom use with their partners.

Targeting AGYW with HIV prevention programming is also critical. As almost half of men surveyed reported that their AGYW sexual partners were attending secondary school, we recommend

school-based as well as community-based self-efficacy/empowerment/life skills trainings. The Go Girls Toolkit (https://www.k4health.org/toolkits/go-girls) is being widely promoted as an essential component to AGYW empowerment related to HIV.

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APPENDIX 1. DATA TABLES

Table A1.1. Sample characteristics total and by AGYW partner status

	Total sample (n=1140)		AGYW partner (n=981)		No AGYW partner (n=159)	
	n	years	n	years	n	years
Mean age, years [standard error]***		29.31 [.26]		27.33 [.22]		41.5 [.76]
Age range		(18, 64)		(18, 58)		(26, 64)
	n	%	n	%	n	%
Mobility						
Traveled for more than one month of the past 12 months	282	24.74	246	25.08	30	21.58
Traveled outside of Mozambique in the past 12 months†	135	11.84	109	11.11	23	16.55
Currently studying***	333	29.21	311	31.70	17	12.23
Highest level of completed education						
Less than primary***	85	7.46	60	6.12	18	12.95
Completed primary	199	17.46	174	17.74	24	17.27
Some secondary	285	25.00	251	25.59	29	20.86
Completed secondary*	285	25.00	256	26.10	24	17.27
Completed more than secondary	286	25.09	240	24.46	44	31.65
Employment						
Worked in the past 7 days†	967	84.82	824	84.00	131	94.24
Worked in the past 12 months**	1,042	91.40	888	90.52	137	99.56
Principal occupation						
Professional/technical/management*	103	9.04	82	8.36	20	14.39
Administrative/desk work*	41	3.60	31	3.16	9	6.47
Sales and services†	346	30.35	307	31.29	34	24.46
Long-distance truck driver	9	0.79	8	0.82	1	0.72
In-city driver	44	3.86	36	3.67	7	5.04
Miner	0	0.00	0	--	0	--
Teacher	68	5.96	55	5.61	13	9.35
Police	28	2.46	23	2.34	4	2.88
Specialized labor	210	18.42	183	18.65	23	16.55
Nonspecialized labor	93	8.16	81	8.26	10	7.19
Domestic service	57	5.00	48	4.89	9	6.47
Agriculture**	13	1.14	7	0.71	5	3.60
Other	29	2.54	26	2.65	2	1.44

	Total sample (n=1140)		AGYW partner (n=981)		No AGYW partner (n=159)	
	n	years	n	years	n	years
Missing**	99	8.68	94	9.58	2	1.44
Worked throughout the year***						
Yes	878	77.02	735	74.92	129	92.81
No	162	14.21	151	15.39	8	5.76
Missing	100	8.77	95	9.68	2	1.44
Paid fully or partially with money	1,031	99.04	879	99.10	135	98.54
Income (meticals)						
<1,000	46	4.04	41	4.18	4	2.88
1,000–4,999**	323	28.33	295	30.07	21	15.11
5,000–9,999	297	26.05	257	26.20	36	25.90
10,000–19,999	203	17.81	170	17.33	31	22.30
20,000–39,999*	100	8.77	78	7.95	22	15.83
>40,000***	47	4.12	28	2.85	17	12.23
Missing	124	10.88	112	11.42	8	5.76
Marital status						
Single***	489	42.89	470	47.91	10	7.19
Married or living together***	623	54.65	499	50.87	114	82.01
Widowed/divorced***	28	2.46	12	1.22	15	10.79
Dating status						
Currently dating***	455	44.78	436	44.44	19	11.95
Have steady partner**	387	38.7	374	38.12	10	7.19
Ever drank alcohol in the past three months[1]	--	--	713	62.54	--	--
Frequency of drunkeness[1]						
Several times per week	--	--	87	8.87	--	--
A few times per month	--	--	319	32.52	--	--
Rarely	--	--	228	23.24	--	--
Never	--	--	79	8.05	--	--
N/A	--	--	268	27.32	--	--
Sex with male partner in past 12 months			9	0.92		

AGYW versus no AGYW: † p<0.10 *p<0.05 **p<0.01 ***p<0.001; [1]This question was asked only among men who reported an AGYW partner (n=981).

Table A1.2. Characteristics of most recent AGYW sexual partner (as reported by male participant) (n=981)

	n	%
Current age (at time of survey)		
Ages 13–19 years	332	33.91
Ages 20–25 years[1]	647	66.09
Education		
Attending primary	104	9.12
Attending secondary	524	45.96
Attending higher education	107	9.39
Not currently attending school	222	19.47
School-age (≤19 years), not currently attending school (n=332)	48	14.46
Employed	226	23.13
Childrearing		
Mother	358	36.64
Pregnant	53	5.49
Breastfeeding	63	6.44
Postpartum	28	2.86
Any: mother and/or pregnant and/or breastfeeding and/or postpartum	395	40.7
Given money for sex by this male partner	271	27.65
Relationship		
Wife/live-in partner	190	16.67
Steady partner	379	33.25
Irregular partner	120	10.53
Ex-partner	17	1.49
Friend	210	18.42
Colleague/student	12	1.05
Just met	44	3.86
Sex worker	7	0.61

[1]Men were asked for the *current* age of their most recent female sexual partner between the ages of 15–24 years. The recall period was 12 months and therefore data collectors accepted ages of up to 25 years for sexual partners (assuming they were 24 years old at the time of last sexual intercourse.

Table A1.3. Characteristics of men reporting sex with AGYW, by characteristics of AGYW[1]

	Current AGYW age			Pregnant or mother			School attendance among AGYW ≤19 years)		
	13–19 (n=332)	20–25 (n= 647)	p-value	Yes (n=395)	No (n=575)	p-value	Attending (n=242)	Not attending (n=83)	p-value
Mean age, years [standard error]***	22.82 [.26]	29.66 [.27]	***	29.49 [.33]	25.87 [.29]	***	22.71 [.31]	23.08 [.51]	
Age range	(18,52)	(18,58)		(18, 58)	(18, 56)		(18, 52)	(18, 47)	
Mobility (%)									
Traveled for more than one month of the past 12	27.41	23.96		26.33	24.70		23.55	39.76	**
Traveled outside of Mozambique in the past 12 months	5.72	13.91	***	12.91	9.74		5.79	6.02	
Currently studying (%)	48.19	23.18	***	18.48	40.70	***	56.61	26.51	***
Education (%)									
Less than primary	5.12	6.65	***	9.11	4.17	**	3.31	10.84	**
Completed primary	19.58	16.85		21.52	15.30	*	12.81	39.76	***
Some secondary	34.34	21.17	***	23.80	26.61		35.95	27.71	
Completed secondary	23.49	27.36		22.28	29.22	*	26.45	15.66	*
Completed more than secondary	17.47	27.98	***	23.29	24.70		21.49	6.02	**
Employment (%)									
Worked in the past 7 days	71.39	90.73	***	92.66	78.09	***	66.12	84.34	**
Worked in the past 12 months	81.63	95.05	***	97.22	85.91	***	78.51	89.16	*
Principal occupation (%)									
Professional/technical/management	3.61	10.82	***	8.86	8.00		4.13	2.41	
Administrative/desk work	0.90	4.33	**	3.29	2.78		1.24	0.00	
Sales and services	32.53	30.60		31.65	30.96		28.51	39.76	†

	Current AGYW age			Pregnant or mother			School attendance among AGYW ≤19 years)		
	13–19 (n=332)	20–25 (n= 647)	p-value	Yes (n=395)	No (n=575)	p-value	Attending (n=242)	Not attending (n=83)	p-value
Long-distance truck driver	0.00	1.24	*	0.76	0.87		0.00	0.00	
In-city driver	2.41	4.33		4.56	2.96		2.07	3.61	
Miner	0.00	0.00		0.00	0.00		0.00	0.00	
Teacher	1.81	7.57	***	7.59	4.35	*	2.07	1.20	
Police	1.51	2.78		3.80	1.39	*	2.07	0.00	
Specialized labor	18.67	18.70		20.00	17.91		20.66	14.46	
Nonspecialized labor	10.54	6.96	†	6.84	9.22		11.16	9.64	
Domestic service	4.82	4.95		6.08	4.17		2.07	13.25	***
Agriculture	1.20	0.46	***	1.27	0.35	†	1.24	1.20	
Other	3.61	2.16		2.53	2.78		3.31	3.61	
Missing	18.37	5.10	***	2.78	14.26	***	21.49	10.84	*
Worked throughout the year (%)									
Yes	62.95	81.14	***	84.30	68.87	***	58.26	75.90	**
No	18.37	13.76		12.41	17.04		19.83	13.25	
Missing	18.67	5.10		3.29	14.09		21.90	10.84	
Paid fully or partially with money (%)	98.52	99.35		99.48	98.79		99.47	95.95	*
Income (%) (meticals)									
<1,000	6.02	3.25	*	3.54	4.70		4.96	8.43	
1,000–4,999	39.46	25.19	***	28.86	31.30		38.84	40.96	
5,000–9,999	19.58	29.68	**	30.89	23.13	**	19.83	19.28	
10,000–19,999	9.04	21.48	***	21.52	14.09	**	7.85	10.84	
20,000–39,999	3.61	10.20	***	8.35	7.65		4.13	2.41	

	Current AGYW age			Pregnant or mother			School attendance among AGYW ≤19 years)		
	13–19 (n=332)	20–25 (n= 647)	p-value	Yes (n=395)	No (n=575)	p-value	Attending (n=242)	Not attending (n=83)	p-value
>40000	1.51	3.55	†	2.53	2.78		1.65	1.20	
Missing	20.78	6.65	***	4.30	16.35	***	22.73	16.87	
Marital status (%)									
Single	74.10	34.47	***	24.81	64.00	***	78.51	63.86	**
Married or living together	25.90	63.68	***	73.42	35.13	***	21.49	36.14	**
Widowed/divorced	0.00	1.85	*	1.77	0.87		0.00	0.00	
Dating status (%)									
Currently dating	67.47	32.77	***	24.81	58.26	***	70.66	60.24	†
More than one partner in past 3 months	75.00	83.83	**	87.99	75.68	***	70.74	85.29	*

† p<0.10 *p<0.05 **p<0.01 ***p<0.001; [1]p-values are based on chi-square statistics from bi-variate analysis

Table A1.4. Men's risk-taking behaviors, by their demographic characteristics, among those who had sex with AGYW[1]

	Condom use at last sex			Condom use frequency			Three or more partners in the past 12 months		
	Yes (n=592)	No (n=389)	P-value	Always (n=389)	Inconsistent (n=558)	P-value	Yes (n=522)	No (n=610)	P-value
Mean age, years [standard error]***	27.16 [.29]	27.60 [.34]		26.79 [.36]	27.72 [.29]		27.69 [.33]	30.74 [.29]	
Age range	(18, 58)	(18, 52)		(18, 58)	(18, 52)		(18, 60)	(18, 64)	
Mobility (%)									
Traveled for more than one month of the past 12	25.00	25.19		25.71	24.55		26.44	23.28	
Traveled outside of Mozambique in the past 12 months	10.47	12.08		9.77	12.01		13.98	10.00	*
Currently studying (%)	38.01	22.11	***	40.87	25.27	***	31.80	26.89	†
Education (%)									
Less than primary	4.73	8.23	*	3.60	8.24	**	5.94	8.69	†
Completed primary	13.68	23.91	***	13.62	21.15	**	18.01	17.05	
Some secondary	25.34	25.96		26.48	24.91		26.05	24.10	
Completed secondary	27.20	24.42		27.51	24.91		26.44	23.61	
Completed more than secondary	29.05	17.48	***	28.79	20.79	*	23.56	26.56	

	Condom use at last sex			Condom use frequency			Three or more partners in the past 12 months		
	Yes (n=592)	No (n=389)	P-value	Always (n=389)	Inconsistent (n=558)	P-value	Yes (n=522)	No (n=610)	P-value
Employment (%)									
Worked in the past 7 days	81.42	87.92	**	78.92	88.53	***	86.02	84.26	
Worked in the past 12 months	88.18	94.09	**	86.63	93.91	***	91.76	91.31	
Principal occupation (%)									
Professional/technical/management	9.63	6.43	†	9.00	7.89		8.43	9.67	
Administrative/desk work	4.05	1.80	*	3.60	2.87		4.21	3.11	
Sales and services	27.36	37.28	**	26.48	34.95	**	28.16	32.30	
Long-distance truck driver	0.84	0.77		1.03	0.54		1.72	0.00	**
In-city driver	3.55	3.86		3.60	3.76		4.02	3.61	
Miner	0.00	0.00		0.00	0.00		0.00	0.00	
Teacher	7.43	2.83	**	6.94	4.66		4.41	7.38	*
Police	2.20	2.57		2.06	2.69		2.68	2.30	
Specialized labor	18.07	19.54	†	17.99	19.35		20.88	16.39	

	Condom use at last sex			Condom use frequency			Three or more partners in the past 12 months		
	Yes (n=592)	No (n=389)	P-value	Always (n=389)	Inconsistent (n=558)	P-value	Yes (n=522)	No (n=610)	P-value
Nonspecialized labor	7.26	9.77		9.00	7.71		8.43	7.70	
Domestic service	4.90	4.88		4.37	5.38		4.79	5.25	
Agriculture	0.17	1.54	*	0.00	1.25	*	1.15	1.15	
Other	2.53	2.83		2.57	2.69		2.87	2.30	
Missing	11.99	5.91	**	13.37	6.27	***	8.24	8.85	
Worked throughout the year (%)									
Yes	72.30	78.92	*	69.92	78.85	**	77.59	76.89	
No	15.88	14.65		16.71	14.70		13.98	14.26	
Missing	11.82	6.43		13.37	6.45		8.43	8.85	
Paid fully or partially with money (%)	99.04	99.18		99.70	98.66		98.95	99.10	
Income (%) (meticals)									
<1,000	3.38	5.40		3.60	4.84		2.68	5.25	*
1,000–4,999	30.41	29.56		30.08	30.47		28.16	28.20	

	Condom use at last sex			Condom use frequency			Three or more partners in the past 12 months		
	Yes (n=592)	No (n=389)	P-value	Always (n=389)	Inconsistent (n=558)	P-value	Yes (n=522)	No (n=610)	P-value
5,000–9,999	21.28	33.68	***	21.34	30.29	**	26.25	26.07	
10,000–19,999	17.91	16.45		19.28	16.13		17.82	17.87	
20,000–39,999	9.63	5.40	*	8.48	6.99		10.73	7.21	*
>40,000	3.89	1.29	*	2.57	2.69		3.83	4.43	
Missing	13.51	8.23	*	14.65	8.60	**	10.54	10.98	
Marital status (%)									
Single	55.07	37.02	***	58.35	40.14	***	50.77	35.74	***
Married or living together	43.07	62.72	***	40.62	58.78	***	47.70	61.15	***
Widowed/divorced	1.86	0.26	*	1.03	1.08		1.53	3.11	†
Dating status (%)									
Currently dating	50.84	34.70	***	52.44	38.89	***	49.60	39.88	**

† p<0.10 *p<0.05 **p<0.01 ***p<0.001; [1]p-values are based on chi-square statistics from bi-variate analysis

Table A1.5A. Men's risk-taking behaviors, by AGYW demographic characteristics, among those who had sex with AGYW[1]

	Current age			Employment			Pregnant/Mother			Education			
	13–19 years (n=332)	20–25 years (n=646)	P-Value	Employed (n=226)	Not employed (n=750)	P-Value	Pregnant/mother (n=395)	Not pregnant/not mother (n=575)	P-Value	Attending primary (n=104)	Attending secondary (n=524)	Attending higher education (n=107)	School age but not attending school (n=82)
Condom use at last sex													
Yes (n=591)	64.8	58.1	*	66.8	58.2	*	45.8	69.7	***	47.1**	66.8***	69.2*	54.2*
No (n=388)	35.2	41.9		33.2	41.8		54.2	30.3		52.9	33.2	30.8	45.8
Condom use frequency													
Always (n=389)	51.9	35.6	***	41.4	41.1		24.7	52.1	***	29.8*	47.8***	43.7	26.2**
Inconsistent (n=557)	48.2	64.3		58.6	58.9		75.3	47.9		70.2	52.1	56.3	61.0

Table A1.5B. Males' risk-taking behaviors, by type of relationship with AGYW, among those who had sex with AGYW[1]

	Relationship type								Given money for sex		
	Wife/live-in partner (n=190)	Steady partner (n=379)	Irregular partner (n=120)	Ex-partner (n=17)	Friend (n=209)	Colleague/student (n=12)	Just met (n=44)	Sex Worker (n=7)	Yes (n=270)	No (n=708)	P-Value
Condom use at last sex											
Yes (n=591)	24.2***	64.9*	72.5*	64.7	71.9***	83.3	79.5**	85.7	67.5	57.7	**
No (n=388)	75.8	35.1	27.5	35.3	28.1	16.7	20.5	14.3	32.5	42.3	
Condom use frequency											
Always (n=389)	8.4***	43.4	55.2**	41.2	54.6***	58.3	64.7**	75.0	47.9	38.6	*
Inconsistent (n=557)	91.6	56.7	44.8	58.9	45.4	41.7	35.3	25	52.2	61.4	

† p<0.10 *p<0.05 ** p<0.01 ***p<0.001; [1]p-values are based on chi-square statistics from bi-variate analysis

Table A1.6A. Health service utilization among those who had sex with AGYW (n=981)

	Total	
	n	%
HIV testing		
Tested for HIV and received results	764	82.15
Tested for HIV but did not receive results	6	0.65
Never tested for HIV	160	17.2
Reason for not testing		
Do not know where to go	5	3.13
Getting tested is too costly	1	0.63
Testing site is too far	4	2.50
I am worried my results will not be kept confidential	24	15.00
I am worried that someone will see me	22	13.75
I am not at risk for HIV	18	11.25
I do not want to know my status	36	22.50
Lack of time	33	3.36
Fear of needles/results	14	1.43
I am not sick or have signs of HIV	9	0.92
No interest	9	0.92
Other		
Don't know	8	5.00
No response	1	0.63
Preferred testing site (up to 2 responses possible)		
Public hospital	897	91.44
Private hospital	122	12.44
SAAJ/ATS	84	8.56
Mobile clinic	35	3.57
Pharmacy	33	3.36
Workplace	29	2.96
Home testing	57	5.81
Other	35	3.57
No preference	24	2.45
Interested in workplace HIV testing	827	84.73
Reason not interested in workplace testing		
Have another preferred location	27	18.49
Don't want health services at work	45	30.82

	Total	
	n	%
Don't trust results would be kept secret	74	50.68
Circumcision		
Circumcised	746	76.04
Interested in circumcision	207	88.09
Reason not interested in circumcision (up to 3 responses possible)		
It will change the way I enjoy sex	1	3.57
It looks strange	2	7.14
I am not having sex	0	0.00
My friends are not circumcised	1	3.57
My partner does not want me to get circumcised	0	0.00
Women don't like it	0	0.00
Don't have time	5	17.86
It is against my religion/culture	5	17.86
I am too old	6	21.43
I don't like pain/needles	9	32.14
It is unnecessary	4	14.29
Other	2	7.14
Don't know	1	3.57
No response	2	7.14
Preferred place for circumcision (up to 2 responses possible)		
Public hospital	212	90.21
Private hospital	25	10.64
SAAJ/ATS	15	6.38
Traditional healer/provider	2	0.85
Other	18	7.66
Don't know	1	0.43
No response	7	2.98
Condom purchases and preferences		
Knows where to buy condoms	961	97.96
Bought condoms in past 12 months	813	84.60
Preferred condom brand (up to 2 responses possible)		
Jeito	723	75.23
No preference	99	10.30
Prudence	85	8.66

	Total	
	n	%
Kamsutra	78	8.12
Trust	25	2.60
Condomi	16	1.66
Preventor	3	0.31
Femidom	1	0.10
Other	128	13.32
Don't know	3	0.31
No response	4	0.42
Preferred location to get condoms (up to 2 responses possible)		
Hospital	641	65.34
Store	494	50.36
Pharmacy	284	28.95
SAAJ/ATS	41	4.18
APE/Activist	40	4.08
Clinic	14	1.43
Outreach worker	10	1.02
Other	23	2.34
No preference	41	4.18
Don't know	4	0.41
No response	4	0.41
Preferred day and time to go to health facility (respondents answered yes or no)		
Sunday		
Morning	249	59.00
Afternoon	104	24.64
Evening	284	67.30
Monday		
Morning	208	63.61
Afternoon	74	22.63
Evening	133	40.67
Tuesday		
Morning	162	56.84
Afternoon	68	23.86
Evening	135	47.37
Wednesday		
Morning	196	60.68
Afternoon	64	19.81

	Total	
	n	%
Evening	137	42.41
Thursday		
Morning	171	61.51
Afternoon	67	24.10
Evening	124	44.60
Friday		
Morning	169	54.52
Afternoon	78	25.16
Evening	158	50.97
Saturday		
Morning	286	63.56
Afternoon	96	21.33
Evening	261	58.00

Table A1.6B. Differences in HIV testing by male characteristics, among those who had sex with AGYW (n=981)[1]

	Ever been tested for HIV			Received HIV results, among those tested			Would get tested at workplace		
	Yes (n=770)	No (n=160)	p-value	Yes (n=764)	No (n=6)	p-value	Yes (n=827)	No (149)	p-value
Mean age, years [standard error]***	27.59 [.25]	26.79 [.56]		27.62 [.25]	23.83 [2.69]		27.12 [.23]	28.15 [.63]	†
Age range	(18, 56)	(18, 54)		(18, 56)	(18, 34)		(18, 56)	(18, 54)	
Mobility (%)									
Traveled for more than one month of the past 12	24.94	21.25		24.87	33.33		25.03	25.50	
Traveled outside of Mozambique in the past 12 months	12.21	8.13		12.17	16.67		11.25	10.74	
Currently studying (%)	34.16	23.75	*	34.29	16.67		33.86	20.81	**
Education (%)									
Less than primary	4.42	11.25	***	4.45	0.00		5.80	6.71	
Completed primary	13.51	29.38	***	13.09	66.67	***	17.29	19.46	
Some secondary	24.94	26.88		25.00	16.67		26.00	24.16	
Completed secondary	29.09	18.13	**	29.19	16.67		25.88	28.19	
Completed more than secondary	28.05	14.38	***	28.27	0.00		25.03	21.48	
Employment (%)									
Worked in the past 7 days	84.16	85.00		84.03	100.00		83.68	85.23	
Worked in the past 12 months	90.52	91.25		90.45	100.00		90.08	92.62	
Principal occupation (%)									
Professional/technical/management	10.26	1.88	**	10.34	0.00		8.59	7.38	
Administrative/desk work	3.77	1.25		3.80	0.00		2.66	5.37	†
Sales and services	28.96	37.50	*	28.93	33.33		29.99	38.93	*
Long-distance truck driver	1.04	0.00		1.05	0.00		0.85	0.67	
In-city driver	4.03	2.50		3.93	16.67		3.75	3.36	

	Ever been tested for HIV			Received HIV results, among those tested			Would get tested at workplace		
	Yes (n=770)	No (n=160)	p-value	Yes (n=764)	No (n=6)	p-value	Yes (n=827)	No (149)	p-value
Miner	0.00	0.00		0.00	0.00		0.00	0.00	
Teacher	6.49	2.50	*	6.54	0.00		6.05	2.68	†
Police	2.47	1.88		2.49	0.00		2.06	4.03	
Specialized labor	18.18	24.38	†	18.06	33.33		19.47	14.77	
Nonspecialized labor	7.53	10.00		7.46	16.67		8.22	8.72	
Domestic service	3.90	8.13	*	3.93	0.00		4.47	6.71	
Agriculture	0.52	1.25		0.52	0.00		0.85	0.00	
Other	3.25	0.00	*	3.27	0.00		3.02	0.00	*
Missing	9.61	8.75		9.69	0.00		10.04	7.38	
Worked throughout the year (%)									
Yes	74.94	75.63		74.87	83.33		74.24	77.85	
No	15.32	15.63		15.31	16.67		15.60	14.77	
Missing	9.74	8.75		9.82	0.00		10.16	7.38	
Paid fully or partially with money (%)	99.57	97.26	**	99.71	83.33	***	99.19	98.55	
Income (%) (meticals)									
<1,000	3.51	5.63		3.53	0.00		4.11	4.70	
1,000–4,999	27.40	37.50	*	27.49	16.67		29.63	32.21	
5,000–9,999	26.62	25.00		26.57	33.33		26.48	24.16	
10,000–19,999	18.83	14.38		18.98	0.00		17.41	16.78	
20,000–39,999	8.96	5.00	†	8.90	16.67		7.86	8.72	
>40,000	3.51	0.63	†	3.40	16.67	†	2.90	2.68	
Missing	11.17	11.88		11.13	16.67		11.61	10.74	

	Ever been tested for HIV			Received HIV results, among those tested			Would get tested at workplace		
	Yes (n=770)	No (n=160)	p-value	Yes (n=764)	No (n=6)	p-value	Yes (n=827)	No (149)	p-value
Marital status (%)									
Single	46.23	53.75	†	46.20	50.00		49.58	40.27	*
Married or living together	52.47	45.63		52.49	50.00		49.33	58.39	*
Widowed/divorced	1.30	0.63		1.31	0.00		1.09	1.34	
Dating status (%)									
Currently dating	42.86	50.00	†	42.80	50.00		46.19	35.57	*
More than one partner	27.59	26.79		27.62	23.83		27.12	28.15	**

† p<0.10 *p<0.05 ** p<0.01 ***p<0.001; [1]p-values are based on chi-square statistics from bi-variate analysis

Table A1.6C. Differences in circumcision by male characteristics, among those who had sex with AGYW[1]

	Circumcised			Interested in Circumcision		
	Yes (n=746)	No (n=235)	p-value	Yes (n=207)	No (n=28)	p-value
Mean age, years [standard error]***	27.04 [.25]	28.27 [.48]	*	27.36 [.45]	35.00 [1.98]	***
Age range	(18, 58)	(18, 54)		(18, 54)	(18, 54)	
Mobility (%)						
Traveled for more than one month of the past 12	24.66	26.38		28.50	10.71	*
Traveled outside of Mozambique in past 12 months	11.93	8.51		8.21	10.71	
Currently studying (%)	36.19	17.45	***	18.36	10.71	
Education (%)						
Less than primary	3.89	13.19	***	10.63	32.14	**
Completed primary	13.54	31.06	***	31.88	25.00	
Some secondary	25.20	26.81		29.47	7.14	*
Completed secondary	29.36	15.74	***	15.46	17.86	
Completed more than secondary	28.02	13.19	***	12.56	17.86	
Employment (%)						
Worked in the past 7 days	82.98	87.23		86.47	92.86	
Worked in the past 12 months	89.54	93.62	†	92.75	100.00	
Principal occupation (%)						
Professional/technical/ management	8.85	6.81		6.28	10.71	
Administrative/desk work	3.62	1.70		1.45	3.57	
Sales and services	28.69	39.57	**	39.61	39.29	
Long-distance truck driver	1.07	0.00		0.00	0.00	
In-city driver	4.02	2.55		2.90	0.00	
Miner	0.00	0.00		0.00	0.00	
Teacher	6.70	2.13	**	1.93	3.57	
Police	2.82	0.85	†	0.48	3.57	†
Specialized labor	18.63	18.72		17.87	25.00	
Nonspecialized labor	7.37	11.06	†	11.11	10.71	
Domestic service	4.02	7.66	*	8.70	0.00	
Agriculture	0.80	0.43		0.48	0.00	
Other	2.82	2.13		1.93	3.57	
Missing	10.59	6.38	†	7.25	0.00	

	Circumcised			Interested in Circumcision		
	Yes (n=746)	No (n=235)	p-value	Yes (n=207)	No (n=28)	p-value
Worked throughout the year (%)						
Yes	73.46	79.57	†	78.74	85.71	
No	15.82	14.04		14.01	14.29	
Missing	10.72	6.38		7.25	0.00	
Paid fully/partially with money (%)	99.25	98.64		98.44	100.00	
Income (meticals)						
<1,000	3.89	5.11		5.31	3.57	
1,000–4,999	28.28	35.74	*	34.78	42.86	
5,000–9,999	23.46	34.89	**	34.78	35.71	
10,000–19,999	18.90	12.34	*	13.04	7.14	
20,000–39,999	9.65	2.55	***	1.45	10.71	**
>40,000	3.49	0.85	*	0.97	0.00	
Missing	12.33	8.51		9.66	0.00	†
Marital status (%)						
Single	51.07	37.87	***	39.61	25.00	
Married or living together	47.99	60.00	**	57.97	75.00	†
Widowed/divorced	0.94	2.13		2.42	0.00	
Dating status (%)						
Currently dating	47.05	36.17	**	38.16	21.43	†
More than one partner	27.04	28.27	*	27.36	35.00	***

† p<0.10 *p<0.05 ** p<0.01 ***p<0.001; [1]p-values are based on chi-square statistics from bi-variate analysis

Table A1.6D. Differences in condom access by male characteristics, among those who had sex with AGYW[1]

	Knows where to buy condoms			Bought condoms in past 12 months		
	Yes (n=961)	No (n=20)	p-value	Yes (n=813)	No (n=148)	p-value
Mean age, years [standard error]***	27.35 [.23]	26.45 [1.4]		27.32 [.24]	27.55 [.68]	
Age range	(18, 58)	(19, 42)		(18, 56)	(18, 58)	
Mobility (%)						
Traveled for more than one month of the last 12	25.18	20.00		25.34	24.32	
Traveled outside of Mozambique in last 12 months	11.24	5.00		11.93	7.43	
Currently studying (%)	31.95	20.00		32.84	27.03	
Education (%)						
Less than primary	6.04	10.00		5.29	10.14	*
Completed primary	17.69	20.00		17.59	18.24	
Some secondary	25.08	50.00	*	24.23	29.73	
Completed secondary	26.43	10.00	†	26.69	25.00	
Completed more than secondary	24.77	10.00		26.20	16.89	*
Employment (%)						
Worked in the last 7 days	83.98	85.00		85.12	77.70	*
Worked in the last 12 months	90.53	90.00		90.77	89.19	
Principal occupation (%)						
Professional/technical/ management	8.53	0.00		8.86	6.76	
Administrative/desk work	3.23	0.00		3.44	2.03	
Sales and services	30.80	55.00	*	30.01	35.14	
Long-distance truck driver	0.83	0.00		0.86	0.68	
In-city driver	3.75	0.00		4.06	2.03	
Miner	0.00	0.00		0.00	0.00	
Teacher	5.72	0.00		6.52	1.35	*
Police	2.39	0.00		2.34	2.70	
Specialized labor	18.73	15.00		18.33	20.95	
Nonspecialized labor	8.22	10.00		8.49	6.76	
Domestic service	4.89	5.00		4.92	4.73	
Agriculture	0.62	5.00	*	0.49	1.35	
Other	2.71	0.00		2.34	4.73	†
Missing	9.57	10.00		9.35	10.81	

	Knows where to buy condoms			Bought condoms in past 12 months		
	Yes (n=961)	No (n=20)	p-value	Yes (n=813)	No (n=148)	p-value
Worked throughout the year (%)						
Yes	75.03	70.00		76.01	69.59	†
No	15.30	20.00		14.64	18.92	
Missing	9.68	10.00		9.35	11.49	
Paid fully/partially with money (%)	99.08	100.00		99.46	96.97	**
Income (%)(meticals)						
<1,000	4.06	10.00		3.81	5.41	
1,000–4,999	29.66	50.00	†	28.66	35.14	
5,000–9,999	26.22	25.00		26.94	22.30	
10,000–19,999	17.59	5.00		17.47	18.24	
20,000–39,999	8.12	0.00		8.61	5.41	
>40,000	2.91	0.00		3.44	0.00	*
Missing	11.45	10.00		11.07	13.51	
Marital status (%)						
Single	47.97	45.00		47.72	49.32	
Married or living together	50.78	55.00		50.80	50.68	
Widowed/divorced	1.25	0.00		1.48	0.00	
Dating status (%)						
Currently dating	44.43	45.00		44.65	43.24	
More than one partner	27.35	26.45		27.32	27.55	

† p<0.10 *p<0.05 ** p<0.01 ***p<0.001; [1]p-values are based on chi-square statistics from bi-variate analysis

APPENDIX 2. DISTRICT-LEVEL ANALYSES

Table A2.1. Descriptive analysis of full sample, men who report sex with AGYW and those who do not, all districts

	Total Sample (n=1140)		AGYW partner (n=981)		No AGYW partner (n=139)	
	n	%	n	%	n	%
Age (mean)***		29.31		27.33		42.70
Age range		(18, 64)		(18, 58)		(26, 64)
Mobility						
% who have traveled for more than one month of the past 12	282	24.74	246	25.08	30	21.58
% how have traveled outside of Mozambique in the past 12 months†	135	11.84	109	11.11	23	16.55
Currently studying***	333	29.21	311	31.70	17	12.23
Highest level of completed education***						
Less than primary	85	7.46	60	6.12	18	12.95
Completed primary	199	17.46	174	17.74	24	17.27
Some secondary	285	25.00	251	25.59	29	20.86
Secondary	285	25.00	256	26.10	24	17.27
Beyond secondary	286	25.09	240	24.46	44	31.65
Employment						
Worked in the past 7 days†	967	84.82	824	84.00	131	94.24
Worked in the past 12 months*	75	43.35	64	40.76	6	75.00
Principal occupation*						
Professional/technical/management	103	9.04	82	8.36	20	14.39
Administrative/desk work	41	3.60	31	3.16	9	6.47
Sales and services	346	30.35	307	31.29	34	24.46
Long-distance truck driver	9	0.79	8	0.82	1	0.72
In-city driver	44	3.86	36	3.67	7	5.04
Miner	0	0.00	0	0.00	0	0.00
Teacher	68	5.96	55	5.61	13	9.35
Police	28	2.46	23	2.34	4	2.88
Specialized labor	210	18.42	183	18.65	23	16.55
Nonspecialized labor	93	8.16	81	8.26	10	7.19
Domestic service	57	5.00	48	4.89	9	6.47
Agriculture	13	1.14	7	0.71	5	3.60
Other	29	2.54	26	2.65	2	1.44
Missing	99	8.68	94	9.58	2	1.44
Worked throughout the year***						
Yes	878	77.02	735	74.92	129	92.81
No	162	14.21	151	15.39	8	5.76
Missing	100	8.77	95	9.68	2	1.44
Paid fully or partially with money	1031	99.04	879	99.10	135	98.54
Income***						
<1,000	46	4.04	41	4.18	4	2.88
1,000-4,999	323	28.33	295	30.07	21	15.11

	Total Sample (n=1140)		AGYW partner (n=981)		No AGYW partner (n=139)	
	n	%	n	%	n	%
5,000-9,999	297	26.05	257	26.20	36	25.90
10,000-19,999	203	17.81	170	17.33	31	22.30
20,000-39,999	100	8.77	78	7.95	22	15.83
>40,000	47	4.12	28	2.85	17	12.23
Missing	124	10.88	112	11.42	8	5.76
Marital status***						
Single	489	42.89	470	47.91	10	7.19
Married or living together	623	54.65	499	50.87	114	82.01
Widowed/divorced	28	2.46	12	1.22	15	10.79
Dating status						
Currently dating***	455	88.01	436	90.46	15	60.00
Have steady partner*	387	85.05	374	85.78	10	66.67
Ever had sex	1132	99.30	981	100.00	139	100.00

AGYW v no AGYW: † p<0.10 *p<0.05 p<0.01 p<0.001

Table A2.2. Descriptive analysis of full sample, men who report sex with AGYW and those who do not, in Beira District

	Total sample (n=370)		AGYW partner (n=321)		No AGYW partner (n=41)	
	n	%	n	%	n	%
Age (mean)***		30.36		28.85		42.22
Age range		(18, 63)		(18, 56)		(27, 63)
Mobility						
% who have traveled for more than one month of the past 12	91	24.59	81	25.23	7	17.07
% how have traveled outside of Mozambique in the past 12 months	43	11.62	38	11.84	4	9.76
Currently studying	93	25.14	85	26.48	4	9.76
Highest level of completed education						
Less than primary	23	6.22	22	6.85	0	0.00
Completed primary	57	15.41	52	16.20	5	12.20
Some secondary	73	19.73	61	19.00	12	29.27
Secondary	94	25.41	84	26.17	5	12.20
Beyond secondary	123	33.24	102	31.78	19	46.34
Employment						
Worked in the past 7 days	323	87.30	279	86.92	40	97.56
Worked in the past 12 months*	17	36.17	13	30.95	1	100.00
Principal occupation						
Professional/technical/ management	50	13.51	44	13.71	5	12.20
Administrative/desk work	15	4.05	10	3.12	4	9.76
Sales and services	105	28.38	91	28.35	12	29.27
Long-distance truck driver	5	1.35	4	1.25	1	2.44
In-city driver	15	4.05	13	4.05	2	4.88
Miner	0	0.00	0	0.00	0	0.00
Teacher	21	5.68	18	5.61	3	7.32
Police	7	1.89	6	1.87	0	0.00
Specialized labor	62	16.76	54	16.82	7	17.07
Nonspecialized labor	31	8.38	28	8.72	2	4.88
Domestic service	22	5.95	19	5.92	3	7.32
Agriculture	2	0.54	1	0.31	1	2.44
Other	4	1.08	3	0.93	1	2.44
Missing	31	8.38	30	9.35	0	0.00
Worked throughout the year*						
Yes	292	78.92	248	77.26	39	95.12
No	48	12.97	44	13.71	2	4.88
Missing	30	8.11	29	9.03	0	0.00
Paid fully or partially with money	340	100.00	292	100.00	41	100.00
Income*						
<1,000	7	1.89	7	2.18	0	0.00
1,000-4,999	96	25.95	89	27.73	5	12.20

	Total sample (n=370)		AGYW partner (n=321)		No AGYW partner (n=41)	
	n	%	n	%	n	%
5,000-9,999	93	25.14	79	24.61	11	26.83
10,000-19,999	76	20.54	65	20.25	11	26.83
20,000-39,999	45	12.16	38	11.84	7	17.07
>40,000	21	5.68	13	4.05	7	17.07
Missing	32	8.65	30	9.35	0	0.00
Marital status***						
Single	147	39.73	141	43.93	2	4.88
Married or living together	212	57.30	175	54.52	33	80.49
Widowed/divorced	11	2.97	5	1.56	6	14.63
Dating status						
Currently dating*	128	81.01	121	82.88	4	50.00
Have steady partner	111	86.72	106	87.60	3	75.00
Ever had sex	366	98.92	321	100.00	41	100.00

AGYW v no AGYW: † p<0.10 *p<0.05 p<0.01 p<0.001

Table A2.3. Differences in HIV testing, by male characteristics, among those who had sex with AGYW, in Beira District

	Ever been tested for HIV, and received results			Would get tested at workplace		
	Yes (n=255)	No (n=46)	p-value	Yes (n=266)	No (n=55)	p-value
Age (mean)	29.18	28.35		28.66	29.76	
Age range	(18, 56)	(19, 48)		(18, 56)	(18, 43)	
Mobility (%)						
Traveled for more than one month of the past 12	24.71	19.57		25.56	23.64	
Traveled outside of Mozambique in past 12 months	13.73	4.35	†	11.65	12.73	
Currently studying (%)	29.80	17.39	†	28.20	18.18	
Education (%)						
Less than primary	4.31	17.39	***	5.26	14.55	*
Completed primary	10.98	32.61		15.41	20.00	
Some secondary	18.82	15.22		21.05	9.09	
Completed secondary	29.02	17.39		25.56	29.09	
Completed more than secondary	36.86	17.39		32.71	27.27	
Employment (%)						
Worked in the past 7 days	87.45	82.61		86.09	90.91	
Worked in the past 12 months	90.59	91.3		89.85	96.36	
Principal occupation (%)						
Professional/technical/management	16.86	2.17	†	13.16	16.36	*
Administrative/desk work	3.53	2.17		2.26	7.27	
Sales and services	25.49	32.61		28.57	27.27	
Long-distance truck driver	1.57	0.00		1.50	0.00	
In-city driver	3.53	4.35		4.51	1.82	
Miner	0.00	0.00		0.00	0.00	
Teacher	7.06	0.00		6.02	3.64	
Police	1.57	4.35		1.13	5.45	
Specialized labor	16.86	19.57		18.80	7.27	

	Ever been tested for HIV, and received results			Would get tested at workplace		
	Yes (n=255)	No (n=46)	p-value	Yes (n=266)	No (n=55)	p-value
Nonspecialized labor	7.45	13.04		7.89	12.73	
Domestic service	4.71	13.04		4.14	14.55	
Agriculture	0.39	0.00		0.38	0.00	
Other	1.18	0.00		1.13	0.00	
Missing	9.80	8.70		10.53	3.64	
Worked throughout the year (%)						
Yes	78.04	67.39		76.69	80.00	
No	12.55	23.91		13.16	16.36	
Missing	9.41	8.70		10.15	3.64	
Paid fully/partially with money (%)	100.00	100.00		100.00	100.00	
Income (%)						
<1,000	1.18	4.35	†	2.63	0.00	
1,000-4,999	24.31	41.30		25.56	38.18	
5,000-9,999	24.71	19.57		25.94	18.18	
10,000-19,999	21.57	17.39		19.92	21.82	
20,000-39,999	13.33	8.70		11.28	14.55	
>40,000	5.10	0.00		4.14	3.64	
Missing	9.80	8.70		10.53	3.64	
Marital status (%)						
Single	43.53	45.65		44.36	41.82	
Married or living together	54.51	54.35		54.14	56.36	
Widowed/divorced	1.96	0.00		1.50	1.82	
Dating status (%)						
Currently dating	37.65	36.96		38.72	32.73	

AGYW v no AGYW: † p<0.10 *p<0.05 p<0.01 p<0.001

Table A2.4. Differences in circumcision, by male characteristics, among those who had sex with AGYW, in Beira District

	Circumcised			Interested in Circumcision		
	Yes (n=107)	No (n=214)	p-value	Yes (n==91)	No (n=16)	p-value
Age (mean)	28.45	29.64		28.65	35.31	**
Age range	(18, 56)	(18, 54)		(18, 54)	(19, 54)	
Mobility (%)						
Traveled for more than one month of the past 12	24.77	26.17		30.77	0.00	*
Traveled outside of Mozambique in past 12 months	13.08	9.35		9.89	6.25	
Currently studying (%)	30.84	17.76	*	18.68	12.50	
Education (%)						
Less than primary	3.74	13.08	***	8.79	37.50	**
Completed primary	11.68	25.23		25.27	25.00	
Some secondary	15.42	26.17		30.77	0.00	
Completed secondary	31.31	15.89		14.29	25.00	
Completed more than secondary	37.85	19.63		20.88	12.50	
Employment (%)						
Worked in the past 7 days	85.98	88.79		87.91	93.75	
Worked in the past 12 months	89.72	93.46		92.31	100.00	
Principal occupation (%)						
Professional/technical / management	14.49	12.15		10.99	18.75	
Administrative/desk work	2.80	3.74		3.30	6.25	
Sales and services	26.17	32.71		31.87	37.50	
Long-distance truck driver	1.87	0.00		0.00	0.00	
In-city driver	3.74	4.67		5.49	0.00	
Miner	0.00	0.00		0.00	0.00	
Teacher	7.48	1.87		2.20	0.00	
Police	2.34	0.93		1.10	0.00	
Specialized labor	15.89	18.69		18.68	18.75	
Nonspecialized labor	7.48	11.21		10.99	12.50	
Domestic service	5.61	6.54		7.69	0.00	
Agriculture	0.47	0.00		0.00	0.00	
Other	0.93	0.93		0.00	6.25	
Missing	10.75	6.54		7.69	0.00	
Worked throughout the year (%)						
Yes	74.30	83.18	†	83.52	81.25	
No	15.42	10.28		8.79	18.75	
Missing	10.28	6.54		7.69	0.00	
Paid fully/partially with money (%)	100.00	100.00		100.00	100.00	
Income (%)						

	Circumcised			Interested in Circumcision		
	Yes (n=107)	No (n=214)	p-value	Yes (n==91)	No (n=16)	p-value
<1,000	1.40	3.74	***	3.30	6.25	
1,000-4,999	24.77	33.64		29.67	56.25	
5,000-9,999	19.63	34.58		37.36	18.75	
10,000-19,999	21.50	17.76		18.68	12.50	
20,000-39,999	15.89	3.74		3.30	6.25	
>40,000	6.07	0.00		0.00	0.00	
Missing	10.75	6.54		7.69	0.00	
Marital status (%)						
Single	46.26	39.25		42.86	18.75	
Married or living together	52.34	58.88		54.95	81.25	
Widowed/divorced	1.40	1.87		2.20	0.00	
Dating status (%)						
Currently dating	39.72	33.64		37.36	12.50	†

AGYW v no AGYW: † p<0.10 *p<0.05 p<0.01 p<0.001

Table A2.5. Descriptive analysis of full sample, men who report sex with AGYW and those who do not, in Quelimane District

	Total Sample (n=369)		AGYW partner (n=325)		No AGYW partner (n=39)	
	n	%	n	%	n	%
Age (mean)***		28.64		26.44		46.10
Age range		(18, 58)		(18, 54)		(30, 58)
Mobility						
% who have traveled for more than one month of the past 12	81	21.95	73	22.46	8	20.51
% how have traveled outside of Mozambique in the past 12 months**	33	8.94	24	7.38	9	23.08
Currently studying***	113	30.62	110	33.85	2	5.13
Highest level of completed education**						
Less than primary	23	6.23	14	4.31	6	15.38
Completed primary	75	20.33	65	20.00	10	25.64
Some secondary	106	28.73	98	30.15	6	15.38
Secondary	84	22.76	76	23.38	8	20.51
Beyond secondary	81	21.95	72	22.15	9	23.08
Employment						
Worked in the past 7 days	317	85.91	278	85.54	36	92.31
Worked in the past 12 months	22	42.31	19	40.43	2	66.67
Principal occupation†						
Professional/technical/ management	20	5.42	16	4.92	4	10.26
Administrative/desk work	12	3.25	10	3.08	2	5.13
Sales and services	145	39.30	134	41.23	10	25.64
Long-distance truck driver	2	0.54	2	0.62	0	0.00
In-city driver	20	5.42	17	5.23	3	7.69
Miner	0	0.00	0	0.00	0	0.00
Teacher	22	5.96	18	5.54	4	10.26
Police	8	2.17	5	1.54	3	7.69
Specialized labor	52	14.09	46	14.15	5	12.82
Nonspecialized labor	27	7.32	24	7.38	3	7.69
Domestic service	21	5.69	19	5.85	2	5.13
Agriculture	6	1.63	3	0.92	2	5.13
Other	4	1.08	3	0.92	0	0.00
Missing	30	8.13	28	8.62	1	2.56
Worked throughout the year						
Yes	297	80.49	258	79.38	36	92.31
No	41	11.11	38	11.69	2	5.13
Missing	31	8.40	29	8.92	1	2.56
Paid fully or partially with money	335	98.82	293	98.65	38	100.00
Income						
<1,000	24	6.50	22	6.77	1	2.56
1,000-4,999	111	30.08	101	31.08	7	17.95
5,000-9,999	101	27.37	88	27.08	13	33.33

	Total Sample (n=369)		AGYW partner (n=325)		No AGYW partner (n=39)	
	n	%	n	%	n	%
10,000-19,999	55	14.91	46	14.15	9	23.08
20,000-39,999	27	7.32	24	7.38	3	7.69
>40,000	10	2.71	7	2.15	3	7.69
Missing	41	11.11	37	11.38	3	7.69
Marital status***						
Single	146	39.57	141	43.38	3	7.69
Married or living together	212	57.45	180	55.38	29	74.36
Widowed/divorced	11	2.98	4	1.23	7	17.95
Dating status						
Currently dating***	143	91.08	137	94.48	6	60.00
Have steady partner**	127	88.81	124	90.51	3	50.00
Ever had sex	369	100.00	325	100.00	39	100.00

AGYW v no AGYW: † p<0.10 *p<0.05 p<0.01 p<0.001

Table A2.6. Differences in HIV testing, by male characteristics, among those who had sex with AGYW, in Quelimane District

	Ever been tested for HIV, and received results			Would get tested at workplace		
	Yes (n=234)	No (n=67)	p-value	Yes (n=273)	No (n=51)	p-value
Age (mean)	26.84	26.45		26.24	27.59	
Age range	(18, 52)	(18, 54)		(18, 52)	(18, 54)	
Mobility (%)						
Traveled for more than one month of the past 12	21.37	20.90		22.71	19.61	
Traveled outside of Mozambique in past 12 months	8.55	5.97		8.06	3.92	
Currently studying (%)	35.90	29.85		37.73	13.73	**
Education (%)						
Less than primary	2.56	8.96	*	4.76	1.96	
Completed primary	14.96	25.37		18.32	27.45	
Some secondary	29.91	31.34		30.77	27.45	
Completed secondary	26.92	17.91		23.44	23.53	
Completed more than secondary	25.64	16.42		22.71	19.61	
Employment (%)						
Worked in the past 7 days	85.04	91.04		84.62	90.20	
Worked in the past 12 months	91.45	92.54		90.84	94.12	
Principal occupation (%)						
Professional/technical/management	5.98	2.99		5.86	0.00	
Administrative/desk work	3.85	1.49		2.93	3.92	
Sales and services	38.89	46.27		38.83	54.90	
Long-distance truck driver	0.85	0.00		0.37	1.96	
In-city driver	6.41	2.99		4.76	7.84	
Miner	0.00	0.00		0.00	0.00	
Teacher	5.98	4.48		6.23	1.96	
Police	1.28	1.49		1.47	1.96	
Specialized labor	13.68	16.42		14.65	11.76	
Nonspecialized labor	8.12	7.46		7.33	7.84	

	Ever been tested for HIV, and received results			Would get tested at workplace		
	Yes (n=234)	No (n=67)	p-value	Yes (n=273)	No (n=51)	p-value
Domestic service	4.70	5.97		6.23	1.96	
Agriculture	0.43	2.99		1.10	0.00	
Other	1.28	0.00		1.10	0.00	
Missing	8.55	7.46		9.16	5.88	
Worked throughout the year (%)						
Yes	79.49	82.09		78.39	84.31	
No	11.54	10.45		12.09	9.80	
Missing	8.97	7.46		9.52	5.88	
Paid fully/partially with money (%)	99.53	96.77	†	98.79	97.92	
Income (%)						
<1,000	5.98	7.46		6.23	9.80	
1,000-4,999	29.06	34.33		32.23	23.53	
5,000-9,999	27.78	26.87		26.74	29.41	
10,000-19,999	15.38	14.93		14.29	13.73	
20,000-39,999	8.55	2.99		6.96	9.80	
>40,000	2.56	1.49		2.20	1.96	
Missing	10.68	11.94		11.36	11.76	
Marital status (%)						
Single	41.03	44.78		45.79	31.37	
Married or living together	57.26	55.22		53.11	66.67	
Widowed/divorced	1.71	0.00		1.10	1.96	
Dating status (%)						
Currently dating	40.60	41.79		44.32	31.37	†

AGYW v no AGYW: † p<0.10 *p<0.05 p<0.01 p<0.001

Table A2.7. Differences in circumcision, by male characteristics, among those who had sex with AGYW, in Quelimane District

	Circumcised			Interested in circumcision		
	Yes (n=255)	No (n=70)	p-value	Yes (n=66)	No (n=4)	p-value
Age (mean)	26.75	25.33	†	25.17	28.00	
Age range	(18, 54)	(18, 45)		(18, 45)	(18, 40)	
Mobility (%)						
Traveled for more than one month of the past 12	22.35	22.86		22.73	25.00	
Traveled outside of Mozambique in past 12 months	9.02	1.43	*	1.52	0.00	
Currently studying (%)	38.82	15.71	***	16.67	0.00	
Education (%)						
Less than primary	3.53	7.14	***	7.58	0.00	
Completed primary	14.12	41.43		39.39	75.00	
Some secondary	30.59	28.57		30.30	0.00	
Completed secondary	25.10	17.14		18.18	0.00	
Completed more than secondary	26.67	5.71		4.55	25.00	
Employment (%)						
Worked in the past 7 days	85.49	85.71		86.36	75.00	
Worked in the past 12 months	90.98	92.86		92.42	100.00	
Principal occupation (%)						
Professional/technical/ management	5.88	1.43		1.52	0.00	
Administrative/desk work	3.92	0.00		0.00	0.00	
Sales and services	37.65	54.29		54.55	50.00	
Long-distance truck driver	0.78	0.00		0.00	0.00	
In-city driver	6.27	1.43		1.52	0.00	
Miner	0.00	0.00		0.00	0.00	
Teacher	6.27	2.86		1.52	25.00	
Police	1.96	0.00		0.00	0.00	
Specialized labor	14.51	12.86		12.12	25.00	
Nonspecialized labor	7.06	8.57		9.09	0.00	
Domestic service	5.10	8.57		9.09	0.00	
Agriculture	0.78	1.43		1.52	0.00	
Other	0.78	1.43		1.52	0.00	
Missing	9.02	7.14		7.58	0.00	
Worked throughout the year (%)						
Yes	79.22	80.00		78.79	100.00	
No	11.37	12.86		13.64	0.00	
Missing	9.41	7.14		7.58	0.00	
Paid fully/partially with money (%)	99.14	96.92		96.72	100.00	
Income (%)						

	Circumcised			Interested in circumcision		
<1,000	6.67	7.14	**	7.58	0.00	**
1,000-4,999	27.84	42.86		43.94	25.00	
5,000-9,999	25.88	31.43		30.30	50.00	
10,000-19,999	16.86	4.29		4.55	0.00	
20,000-39,999	9.02	1.43		0.00	25.00	
>40,000	2.75	0.00		0.00	0.00	
Missing	10.98	12.86		13.64	0.00	
Marital status (%)						
Single	47.06	30.00	*	30.30	25.00	
Married or living together	51.76	68.57		68.18	75.00	
Widowed/divorced	1.18	1.43		1.52	0.00	
Dating status (%)						
Currently dating	45.49	30.00	*	30.30	25.00	

AGYW v no AGYW: † p<0.10 *p<0.05 p<0.01 p<0.001

Table A2.8. Descriptive analysis of full sample, men who report sex with AGYW and those who do not, in Xai-Xai District

	Total sample (n=401)		AGYW partner (n=335)		No AGYW partner (n=59)	
	n	%	n	%	n	%
Age (mean)***		28.96		26.75		40.78
Age range		(18, 64)		(18, 58)		(26, 64)
Mobility						
% who have traveled for more than one month of the past 12	110	27.43	92	27.46	15	25.42
% how have traveled outside of Mozambique in the past 12 months	59	14.71	47	14.03	10	16.95
Currently studying**	127	31.67	116	34.63	11	18.64
Highest level of completed education**						
Less than primary	39	9.73	24	7.16	12	20.34
Completed primary	67	16.71	57	17.01	9	15.25
Some secondary	106	26.43	92	27.46	11	18.64
Secondary	107	26.68	96	28.66	11	18.64
Beyond secondary	82	20.45	66	19.70	16	27.12
Employment						
Worked in the past 7 days*	327	81.55	267	79.70	55	93.22
Worked in the past 12 months	36	48.65	32	47.06	3	75.00
Principal occupation						
Professional/technical / management	33	8.23	22	6.57	11	18.64
Administrative/desk work	14	3.49	11	3.28	3	5.08
Sales and services	96	23.94	82	24.48	12	20.34
Long-distance truck driver	2	0.50	2	0.60	0	0.00
In-city driver	9	2.24	6	1.79	2	3.39
Miner	0	0.00	0	0.00	0	0.00
Teacher	25	6.23	19	5.67	6	10.17
Police	13	3.24	12	3.58	1	1.69
Specialized labor	96	23.94	83	24.78	11	18.64
Nonspecialized labor	35	8.73	29	8.66	5	8.47
Domestic service	14	3.49	10	2.99	4	6.78
Agriculture	5	1.25	3	0.90	2	3.39
Other	21	5.24	20	5.97	1	1.69
Missing	38	9.48	36	10.75	1	1.69
Worked throughout the year***						
Yes	289	72.07	229	68.36	54	91.53
No	73	18.20	69	20.60	4	6.78
Missing	39	9.73	37	11.04	1	1.69
Paid fully or partially with money	356	98.34	294	98.66	56	96.55

	Total sample (n=401)		AGYW partner (n=335)		No AGYW partner (n=59)	
	n	%	n	%	n	%
Income***						
<1,000	15	3.74	12	3.58	3	5.08
1,000-4,999	116	28.93	105	31.34	9	15.25
5,000-9,999	103	25.69	90	26.87	12	20.34
10,000-19,999	72	17.96	59	17.61	11	18.64
20,000-39,999	28	6.98	16	4.78	12	20.34
>40,000	16	3.99	8	2.39	7	11.86
Missing	51	12.72	45	13.43	5	8.47
Marital status***						
Single	196	48.88	188	56.12	5	8.47
Married or living together	199	49.63	144	42.99	52	88.14
Widowed/divorced	6	1.50	3	0.90	2	3.39
Dating status						
Currently dating***	184	91.09	178	93.19	5	71.43
Have steady partner	149	80.98	144	80.90	4	80.00
Ever had sex	397	99.00	335	100.00	59	100.00

AGYW v no AGYW: † p<0.10 *p<0.05 p<0.01 p<0.001

Table A2.9. Differences in HIV testing, by male characteristics, among those who had sex with AGYW, in Xai-Xai District

	Ever been tested for HIV, and received results			Would get tested at workplace		
	Yes (n=275)	No (n=47)	p-value	Yes (n=288)	No (n=43)	p-value
Age (mean)	26.85	25.74		26.54	26.74	
Age range	(18, 52)	(18, 47)		(18, 47)	(18, 53)	
Mobility (%)						
Traveled for more than one month of the past 12	28.00	23.40		26.74	34.88	
Traveled outside of Mozambique in past 12 months	13.82	14.89		13.89	16.28	
Currently studying (%)	37.09	21.28	*	35.42	32.56	
Education (%)						
Less than primary	6.18	8.51	**	7.29	2.33	
Completed primary	13.45	31.91		18.06	9.30	
Some secondary	26.55	31.91		26.04	39.53	
Completed secondary	31.27	19.15		28.47	32.56	
Completed more than secondary	22.55	8.51		20.14	16.28	
Employment (%)						
Worked in the past 7 days	80.00	78.72		80.56	72.09	
Worked in the past 12 months	89.45	89.36		89.58	86.05	
Principal occupation (%)						
Professional/technical/management	8.00	0.00	*	6.94	4.65	
Administrative/desk work	4.00	0.00		2.78	4.65	
Sales and services	23.64	29.79		22.92	34.88	
Long-distance truck driver	0.73	0.00		0.69	0.00	
In-city driver	2.18	0.00		2.08	0.00	
Miner	0.00	0.00		0.00	0.00	
Teacher	6.55	2.13		5.90	2.33	
Police	4.36	0.00		3.47	4.65	
Specialized labor	22.91	40.43		24.65	27.91	

	Ever been tested for HIV, and received results			Would get tested at workplace		
	Yes (n=275)	No (n=47)	p-value	Yes (n=288)	No (n=43)	p-value
Nonspecialized labor	6.91	10.64		9.38	4.65	
Domestic service	2.55	6.38		3.13	2.33	
Agriculture	0.73	0.00		1.04	0.00	
Other	6.91	0.00		6.60	0.00	
Missing	10.55	10.64		10.42	13.95	
Worked throughout the year (%)						
Yes	68.00	74.47		68.06	67.44	
No	21.09	14.89		21.18	18.60	
Missing	10.91	10.64		10.76	13.95	
Paid fully/partially with money (%)	99.59	95.24	*	98.83	97.30	
Income (%)						
<1,000	3.64	4.26		3.47	4.65	
1,000-4,999	29.09	38.30		30.90	34.88	
5,000-9,999	27.27	27.66		26.74	25.58	
10,000-19,999	19.64	10.64		18.06	13.95	
20,000-39,999	5.09	4.26		5.56	0.00	
>40,000	2.55	0.00		2.43	2.33	
Missing	12.73	14.89		12.85	18.60	
Marital status (%)						
Single	53.09	74.47	**	57.99	48.84	
Married or living together	46.55	23.40		41.32	51.16	
Widowed/divorced	0.36	2.13		0.69	0.00	
Dating status (%)						
Currently dating	49.45	74.47	**	54.86	44.19	

AGYW v no AGYW: † p<0.10 *p<0.05 p<0.01 p<0.001

Table A2.10. Differences in circumcision, by male characteristics, among those who had sex with AGYW, in Xai-Xai District

	Circumcised			Interested in Circumcision		
	Yes (n=277)	No (n=58)	p-value	Yes (n=50)	No (n=8)	p-value
Age (mean)	26.21	29.29	**	27.92	37.88	***
Age range	(18, 58)	(18, 53)		(18, 43)	(23, 53)	
Mobility (%)						
Traveled for more than one month of the past 12	26.71	31.03		32.00	25.00	
Traveled outside of Mozambique in past 12 months	13.72	15.52		14.00	25.00	
Currently studying (%)	37.91	18.97	*	20.00	12.50	
Education (%)						
Less than primary	4.33	20.69	***	18.00	37.50	
Completed primary	14.44	29.31		34.00	0.00	
Some secondary	27.80	25.86		26.00	25.00	
Completed secondary	31.77	13.79		14.00	12.50	
Completed more than secondary	21.66	10.34		8.00	25.00	
Employment (%)						
Worked in the past 7 days	78.34	86.21		84.00	100.00	
Worked in the past 12 months	88.09	94.83		94.00	100.00	
Principal occupation (%)						
Professional/technical/ management	7.22	3.45	†	4.00	0.00	
Administrative/desk work	3.97	0.00		0.00	0.00	
Sales and services	22.38	34.48		34.00	37.50	
Long-distance truck driver	0.72	0.00		0.00	0.00	
In-city driver	2.17	0.00		0.00	0.00	
Miner	0.00	0.00		0.00	0.00	
Teacher	6.50	1.72		2.00	0.00	
Police	3.97	1.72		0.00	12.50	
Specialized labor	24.55	25.86		24.00	37.50	
Nonspecialized labor	7.58	13.79		14.00	12.50	
Domestic service	1.81	8.62		10.00	0.00	
Agriculture	1.08	0.00		0.00	0.00	
Other	6.14	5.17		6.00	0.00	
Missing	11.91	5.17		6.00	0.00	
Worked throughout the year (%)						
Yes	67.51	72.41		70.00	87.50	
No	20.22	22.41		24.00	12.50	
Missing	12.27	5.17		6.00	0.00	
Paid fully/partially with money (%)	98.77	98.18		97.87	100.00	
Income (%)						

	Circumcised			Interested in Circumcision		
	Yes (n=277)	No (n=58)	p-value	Yes (n=50)	No (n=8)	p-value
<1,000	3.25	5.17		6.00	0.00	
1,000-4,999	31.41	31.03		32.00	25.00	
5,000-9,999	24.19	39.66		36.00	62.50	
10,000-19,999	18.77	12.07		14.00	0.00	
20,000-39,999	5.42	1.72		0.00	12.50	
>40,000	2.17	3.45		4.00	0.00	
Missing	14.80	6.90		8.00	0.00	
Marital status (%)						
Single	58.48	44.83	*	46.00	37.50	
Married or living together	41.16	51.72		50.00	62.50	
Widowed/divorced	0.36	3.45		4.00	0.00	
Dating status (%)						
Currently dating	54.15	48.28		50.00	37.50	

AGYW v no AGYW: † p<0.10 *p<0.05 p<0.01 p<0.001

Table A2.11. Health service use among those who had sex with AGYW, by district

	Total (n=981)		Quelimane (n=325)		Beira (n=321)		Xai-Xai (n=335)	
	n	%	n	%	n	%	n	%
HIV testing								
Ever been tested for HIV	770	82.8	235	77.81	257	84.82	278	85.54
Received results for HIV test (among those tested)	764	99.22	234	99.57	255	99.22	275	98.92
Reason for not testing								
Do not know where to go	5	3.13	4	5.97	1	2.17	0	0
Getting tested is too costly	1	0.63	0	0	1	2.17	0	0
Testing site is too far	4	2.5	4	5.97	0	0	0	0
I am worried my results will not be kept confidential	24	15	8	11.94	9	19.57	7	14.89
I am worried that someone will see me	22	13.75	10	14.93	6	13.04	6	12.77
I am not at risk for HIV	18	11.25	8	11.94	4	8.7	6	12.77
I do not want to know my status	36	22.5	11	16.42	11	23.91	14	29.79
Lack of time	33	3.36	12	3.69	9	2.8	12	3.58
Fear of needles/results	14	1.43	5	1.54	1	0.31	8	2.39
I am not sick or have signs of HIV	9	0.92	6	1.85	2	0.62	1	0.3
No interest	9	0.92	5	1.54	3	0.93	1	0.3
Other								
Don't know	8	5	3	4.48	4	8.7	1	2.13
No response	1	0.63	0	0	0	0	1	2.13
Preferred testing site (up to 2 responses possible)								
Public hospital	897	91.44	298	91.69	286	89.1	313	93.43
Private hospital	122	12.44	39	12	45	14.02	38	11.34
SAAJ/ATS	84	8.56	15	4.62	16	4.98	53	15.82
Mobile clinic	35	3.57	5	1.54	18	5.61	12	3.58
Pharmacy	33	3.36	20	6.15	4	1.25	9	2.69

	Total (n=981)		Quelimane (n=325)		Beira (n=321)		Xai-Xai (n=335)	
	n	%	n	%	n	%	n	%
Workplace	29	2.96	10	3.08	13	4.05	6	1.79
Home testing	57	5.81	23	7.08	11	3.43	23	6.87
Other	35	3.57	10	3.08	13	4.05	12	3.58
No preference	24	2.45	10	3.08	9	2.8	5	1.49
Interested in workplace HIV testing	827	84.73	273	84.26	266	82.87	288	87.01
Reason not interested in workplace testing								
Have another preferred location	27	18.49	15	28.85	5	9.62	7	16.67
Don't want health services at work	45	30.82	20	38.46	17	32.69	8	19.05
Don't trust results would be kept secret	74	50.68	17	32.69	30	57.69	27	64.29
Circumcision								
Circumcised	746	76.04	255	78.46	214	66.67	277	82.69
Interested in circumcision	207	88.09	66	94.29	91	85.05	50	86.21
Reason not interested in circumcision (up to 3 responses possible)								
It will change the way I enjoy sex	1	3.57	0	0	1	6.25	0	0
It looks strange	2	7.14	0	0	0	0	2	25
I am not having sex	0	0	0	0	0	0	0	0
My friends are not circumcised	1	3.57	0	0	1	6.25	0	0
My partner does not want me to get circumcised	0	0	0	0	0	0	0	0
Women don't like it	0	0	0	0	0	0	0	0
Don't have time	5	17.86	1	25	2	12.5	2	25
It is against my religion/culture	5	17.86	1	25	4	25	0	0
I am too old	6	21.43	1	25	4	25	1	12.5
I don't like pain/needles	9	32.14	1	25	5	31.25	3	37.5
It is unnecessary	4	14.29	0	0	2	12.5	2	25
Other	2	7.14	0	0	2	12.5	0	0
Don't know	1	3.57	0	0	1	6.25	0	0
No response	2	7.14	1	25	1	6.25	0	0

	Total (n=981)		Quelimane (n=325)		Beira (n=321)		Xai-Xai (n=335)	
	n	%	n	%	n	%	n	%
Preferred place for circumcision (up to 2 responses possible)								
Public hospital	212	90.21	65	92.86	97	90.65	50	86.21
Private hospital	25	10.64	3	4.29	15	14.02	7	12.07
SAAJ/ATS	15	6.38	6	8.57	2	1.87	7	12.07
Traditional healer/provider	2	0.85	0	0	1	0.93	1	1.72
Other	18	7.66	2	2.86	8	7.48	8	13.79
Don't know	1	0.43	0	0	0	0	1	1.72
No response	7	2.98	2	2.86	4	3.74	1	1.72
Condom purchases and preferences								
Knows where to buy condoms	961	97.96	310	95.38	318	99.07	333	99.4
Bought condoms in past 12 months	813	84.6	264	85.16	272	85.53	277	83.18
Preferred condom brand (up to 2 responses possible)								
Jeito	723	75.23	248	80	224	70.44	251	75.38
No preference	99	10.3	28	9.03	31	9.75	40	12.01
Prudence	85	8.66	12	3.69	49	15.26	24	7.16
Kamsutra	78	8.12	24	7.74	36	11.32	18	5.41
Trust	25	2.6	14	4.52	4	1.26	7	2.1
Condomi	16	1.66	6	1.94	8	2.52	2	0.6
Preventor	3	0.31	1	0.32	2	0.63	0	0
Femidom	1	0.1	0	0	0	0	1	0.3
Other	128	13.32	18	5.81	57	17.92	53	15.92
Don't know	3	0.31	2	0.65	1	0.31	0	0
No response	4	0.42	0	0	2	0.63	2	0.6
Preferred location to get condoms (up to 2 responses possible)								
Hospital	641	65.34	224	68.92	224	69.78	193	57.61
Store	494	50.36	176	54.15	137	42.68	181	54.03

	Total (n=981)		Quelimane (n=325)		Beira (n=321)		Xai-Xai (n=335)	
	n	%	n	%	n	%	n	%
Pharmacy	284	28.95	71	21.85	103	32.09	110	32.84
SAAJ/ATS	41	4.18	10	3.08	6	1.87	25	7.46
APE/Activist	40	4.08	19	5.85	8	2.49	13	3.88
Clinic	14	1.43	5	1.54	8	2.49	1	0.3
Outreach worker	10	1.02	4	1.23	4	1.25	2	0.6
Other	23	2.34	1	0.31	7	2.18	15	4.48
No preference	41	4.18	12	3.69	14	4.36	15	4.48
Don't know	4	0.41	4	1.23	0	0	0	0
No response	4	0.41	0	0	0	0	4	1.19
Preferred day and time to go to health facility								
Sunday								
Morning	249	59	88	72.13	68	56.67	93	51.67
Afternoon	104	24.64	22	18.03	29	24.17	53	29.44
Evening	284	67.3	74	60.66	80	66.67	130	72.22
Monday								
Morning	208	63.61	74	70.48	56	66.67	78	56.52
Afternoon	74	22.63	20	19.05	17	20.24	37	26.81
Evening	133	40.67	42	40	34	40.48	57	41.3
Tuesday								
Morning	162	56.84	47	56.63	45	61.64	70	54.26
Afternoon	68	23.86	19	22.89	12	16.44	37	28.68
Evening	135	47.37	41	49.4	34	46.58	60	46.51
Wednesday								
Morning	196	60.68	74	75.51	41	51.25	81	55.86
Afternoon	64	19.81	15	15.31	13	16.25	36	24.83
Evening	137	42.41	33	33.67	44	55	60	41.38
Thursday								

	Total (n=981)		Quelimane (n=325)		Beira (n=321)		Xai-Xai (n=335)	
	n	%	n	%	n	%	n	%
Morning	171	61.51	55	66.27	47	68.12	69	54.76
Afternoon	67	24.1	15	18.07	15	21.74	37	29.37
Evening	124	44.6	35	42.17	29	42.03	60	47.62
Friday								
Morning	169	54.52	60	58.82	38	53.52	71	51.82
Afternoon	78	25.16	21	20.59	17	23.94	40	29.2
Evening	158	50.97	55	53.92	39	54.93	64	46.72
Saturday								
Morning	286	63.56	109	75.69	76	59.38	101	56.74
Afternoon	96	21.33	18	12.5	25	19.53	53	29.78
Evening	261	58	76	52.78	77	60.16	108	60.67

AGYW v no AGYW: † p<0.10 *p<0.05 p<0.01 p<0.001

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