

EVALUATION OF THE AFRICAN YOUTH ALLIANCE PROGRAM IN GHANA



Impact on
Sexual and Reproductive Health Behavior
among Young People

2007



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Acknowledgments

This impact evaluation of the African Youth Alliance program (AYA) in Ghana is a collaborative research project funded by the Bill & Melinda Gates Foundation through a subcontract to John Snow, Inc. (JSI). The research would not have been possible without the support of many organizations and individuals, only some of whom are mentioned here.

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List of Abbreviations and Acronyms

ACCA	Association of Certified Chartered Accountants
ADH Programme	Adolescent Health Programme
ASRH	adolescent sexual and reproductive health
ATT	average effect of treatment on the treated
AYA	African Youth Alliance
BCC	behavior change communication
DHS	Demographic and Health Survey
EAs	enumeration areas
GSS	Ghana Statistical Service
HE	high exposure
HIV/AIDS	human immunodeficiency virus/acquired immune deficiency syndrome
HND	higher national diploma
IPs	implementing partners
IV	instrumental variable
ISSER	Institute for Statistical, Social, and Economic Research
JSI	JSI Snow, Inc. (Research and Training Institute)
LPS	life-planning skills
NA	not available
NGO	nongovernmental organization
NMIMR	Noguchi Memorial Institute for Medical Research
NSA	National Survey of Adolescents
OLS	ordinary least square
PATH	Program for Appropriate Technology in Health
PPAG	Planned Parenthood Association of Ghana
PRB	Population Reference Bureau
PSM	propensity score matching
RA	research assistant
SES	socioeconomic status
STI	sexually transmitted infection
UNAIDS	United Nations Joint Programme on HIV/AIDS
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
WHO	World Health Organization
YFS	youth-friendly services

Executive Summary

The Bill & Melinda Gates Foundation established the African Youth Alliance (AYA) program in 2000. AYA was designed to be an innovative, collaborative, and comprehensive prevention program for improving adolescent sexual and reproductive health (ASRH) among young people age 10–24 in Botswana, Ghana, Tanzania, and Uganda. In partnership with governments, nongovernmental organizations, and community-based and youth-serving groups, AYA set out to provide resources and technical interventions that encouraged healthy ASRH behaviors and that would ultimately improve and protect ASRH status. AYA represented a unique partnership between the United Nations Population Fund, Pathfinder International, and Program for Appropriate Technology in Health. The project was implemented between 2000 and 2006, with most field interventions ending by 2005.

The AYA program strategy focused on implementing and scaling up a defined set of integrated and comprehensive ASRH interventions using existing local institutions. The interventions were (a) policy and advocacy coordination; (b) institutional capacity building; (c) coordination and dissemination; (d) behavior change communication (BCC), including life-planning skills (LPS) and enter-education activities; (e) youth-friendly services (YFS); and (f) integration of ASRH with livelihood skills training. In each project country, the three lead agencies formed a secretariat and recruited the implementing partners (IPs). The overall approach was unique in its intention to implement all components simultaneously, while it built capacity and fostered coordination among established partners to scale-up ASRH services and to encourage sustainability.

In November 2005, the Bill & Melinda Gates Foundation awarded a contract to the Research and Training Institute of John Snow, Inc. (JSI), to evaluate the impact of AYA on sexual and reproductive behavior among the youth in Ghana, Tanzania, and Uganda. Botswana was not included in the evaluation because of resource constraints and because of the long period between the end of country program operations and the initiation of the evaluation.¹ This report presents the results of the Ghana evaluation. Analogous reports are available for Tanzania and Uganda, as is a synthesis report for the entire evaluation.

1. The AYA program ceased operating one year earlier in Botswana than in other countries.

The main objective of the evaluation was to determine whether exposure to AYA's comprehensive, integrated program resulted in improved ASRH knowledge, attitudes, and behaviors among youth age 17–22 in areas where AYA worked. The evaluation focused on youth exposure to three program components—YFS, BCC/LPS, and livelihood skills training. The evaluation studied localities where all six program components were implemented simultaneously (including policy and advocacy coordination, institutional capacity building, and coordination and dissemination). Using a post-test-only evaluation design, the evaluation compared knowledge, attitudes, and behavioral outcomes in the following:

1. Between intervention sites and control sites and
2. Between youths who were exposed to AYA programs and those who were not exposed to AYA.

Contents of Ghana Report

The first two sections of this report describe the country setting and the AYA program. The third section presents the evaluation design, analysis plan, sampling approach, fieldwork, and data collection instruments. The fourth section summarizes AYA's impact on knowledge, attitude, and behavioral outcomes among both female and male youths age 17–22. Finally, the report concludes with a discussion of the results and their implications for ASRH programming.

Background

The *modus operandi* of Ghana's AYA was to scale up existing ASRH programs, thereby expanding the scope and coverage of projects among 10- to 24-year-old youths. AYA IPs included a range of agencies, charities, community-based organizations, and government entities representing multiple sectors. In consultation with central and regional governments and the IPs, the AYA in Ghana (AYA/Ghana) targeted 20 of Ghana's 110 districts.

The conceptual framework used in this evaluation is based on the theory that adolescent development takes place under the influence of overlapping contexts, or ecological systems, within which adolescents live and develop. The framework holds that AYA interventions affected ASRH antecedents directly by interacting with young people or indirectly by influencing the context within which youths reside and by enhancing established ASRH programs. The causal pathway then assumes that antecedents (i.e., knowledge, attitudes, and self-efficacy) influence behavioral outcomes such as abstinence, partner reduction, and condom and contraceptive use.

The evaluation tests the hypothesis that unmarried and recently married² youths who are age 17–22 and who were previously exposed to AYA interventions were more likely than unexposed youths to report the desired ASRH outcomes targeted by the program. The evaluation design combined an intervention-control group strategy with a strategy that assessed the relationship between self-reported exposure to AYA and ASRH outcomes. In the intervention-control group strategy, responses are compared between youths in AYA program areas and youths in control areas where no AYA

2. *Recently married* was defined as those who were married within two years preceding the evaluation. As in the Demographic and Health Surveys, a *married couple* was defined as one in union and living together.

activities took place other than a mass media campaign. The self-reported exposure strategy focuses on program efficacy: the extent to which program interventions influenced outcomes among participants who were exposed. The design also used two different analytical techniques to determine impact: the propensity score matching (PSM) and the instrumental variable (IV) regression.

The data were generated by a sample household survey. The sample frame was generated by randomly selecting 105 census enumeration areas (EAs) in AYA treatment localities and 75 EAs in matched localities that were not exposed to AYA interventions. One sector was randomly selected within each EA, a house list was prepared, and all eligible households within each sector were studied. A total of 3,416 youths were ultimately interviewed.

The impact of AYA on selected ASRH behaviors and their antecedents was determined using three scenarios. Data conditioned on the intervention-control strategy were analyzed using the PSM technique. Data conditioned on self-reported exposure were analyzed using both a PSM and an IV approach. Conclusions were then based on the triangulation of findings from those three scenarios.

Exposure to AYA

Results suggest that AYA was moderately effective in reaching young people in the intervention areas. More than half of those interviewed had at least some AYA exposure. Almost 30 percent had “high exposure,” that is, they recalled having exposure to at least 3 of 10 possible AYA activities. Males were more likely than females to report AYA exposure. As expected, intervention-area respondents recalled significantly more AYA-supported programs when compared with control-area respondents. A fair number of control-area respondents, however, also reported exposure to AYA. Almost all self-reported AYA exposures involved peer educators. The second most frequent exposure category was youth-friendly clinics. The only categories *not* significantly higher in the intervention areas were TV programs and drama events.

Impact of AYA

A summary of results is shown in table ES.1. A plus sign (+) indicates a significant impact of AYA in the expected direction, and a negative sign (–) indicates significant negative impact. No sign indicates that the impact was not significant.

If one looks first at antecedents, spontaneous human immunodeficiency virus/acquired immune deficiency syndrome (HIV/AIDS) knowledge was significantly higher among both males and females who self-reported AYA exposure. Self-reporting females were more confident than self-reporting males that they could obtain condoms. Whether exposure was self-reported or by locality of residence, AYA-exposed females were more confident they could get their partners to use the condoms. Males under either exposure scenario were more confident they could correctly use condoms. Significant impacts were not found about all antecedents. One reason could be that they were already well established in the youth population surveyed; therefore, further gains would have been difficult to achieve.

Surprisingly, more impacts were seen among behavioral outcomes than antecedents, and all of those impacts were among females who self-reported their AYA exposures.

Table ES.I. Summary of AYA Effects on Selected Knowledge or Perception and on ASRH Behavioral Outcomes, AYA/Ghana/ JSI Evaluation, 2006

	Female	Male
Antecedents		
Has HIV/AIDS knowledge (spontaneous response)	+	+
Has HIV/AIDS knowledge (prompted response)		
Knows condom is protective against HIV/AIDS		
Has positive attitude toward condom users	–	+
Is confident could put on condom correctly	–	+
Believes he or she could insist that partner use a condom	+	
Is very confident in obtaining condom when needed	+	
ASRH behaviors		
Had delay of sexual debut	+	
Abstains from sex	+	–
Had fewer than two sex partners during past 12 months	+	
Had condom use at first sex	+	
Had condom use at last sex	+	
Ever used condom with current partner	+	
Always uses condom with current partner	+	
Used modern contraceptive at first sex	+	
Used modern contraceptive at last sex	+	

Most positively affected were condom and contraceptive use. Positive impacts were also noted for sexual debut and number of sexual partners. Most of those behavioral impacts were seen under both PSM and IV models. They are arguably AYA/Ghana's most notable achievements. It is remarkable that such impacts could be demonstrated, given the short duration of AYA program implementation.

Recommendations

The evaluation results support the following recommendations, which are grouped into three categories: (a) expanding interventions that appear to lead to a positive impact, (b) seeking creative alternatives to address program areas where limited impacts were seen, and (c) carrying out further data analysis or additional research.

- Overall, AYA achieved positive impacts on several ASRH outcomes among Ghanaian youths, particularly females. Future ASRH programs incorporating the AYA interventions will likely increase HIV/AIDS knowledge, self-efficacy, and condom and contraceptive use.
- Expanded ASRH programs in Ghana should incorporate new strategies and activities geared to changing antecedents and behaviors that were not measurably changed through AYA. Prime examples for males include self-efficacy in obtaining condoms, delayed sexual debut, partner reduction, and consistent condom and contraceptive use. New approaches are needed to encourage abstinence among both sexes. Most promising, according to the findings, will be continued efforts to provide appropriate clinical and outreach ASRH services for young people, both

married and unmarried. Those efforts should continue to emphasize (a) learning sexual negotiating skills and (b) making sex safe and noncoerced among those who are sexually active.

- Further analyses of those data are recommended to understand why AYA efforts did not have the intended impacts on all outcomes in all areas and among all subgroups. First, follow-up studies are needed to examine abstinence and sexual debut among younger age groups. A second area of interest is explaining observed counterintuitive male responses on two outcomes (HIV/AIDS knowledge and abstinence). Third, more detailed analyses may reveal why AYA had fewer impacts on sexual debut, abstinence, and partner reduction. Such analyses will help identify which of the AYA components (e.g., YFS, media, enter-education, LPS) could be retooled or expanded to affect the outcomes.
- Additional research beyond the current evaluation could also illuminate the best approaches for future ASRH programs in Ghana. In particular, qualitative research is needed to determine the most acceptable and effective approaches for reaching males. This research includes areas such as sexual debut, abstinence, partner reduction, and, in general, how best to reach and convince males to abstain or adopt safe sex practices. Costing data are required to determine the feasibility of scaling up the AYA approach.
- On a final note, this study demonstrates the usefulness of a triangulated methodological approach when a more rigorous baseline–endline experimental design is ruled out. The mixed-method scenarios are theoretically preferable to post-test-only designs. In the absence of a comparable baseline, the design used in this evaluation—triangulating post-test findings from three different analysis scenarios—controls several common threats to the validity (e.g., endogeneity, contamination, self-selection) that plague evaluation research. Demonstrating impacts under two or more scenarios increases internal reliability and offers convincing evidence that those impacts were real and significant.

Introduction

The AYA Program

In recent years, researchers have consistently concluded that comprehensive, multi-component programs may be more effective than narrowly focused programs in improving adolescent sexual and reproductive health (ASRH) outcomes (Focus on Young Adults 2001; UNICEF 2004; WHO 2006). Comprehensive programs combine strategies and interventions to simultaneously address the many different categories of risk and protective factors that influence the sexual and reproductive health behavior of young people and ultimately their health status (Karim et al. 2003; Kirby 1997, 2001; Senderowitz 2000). Such multicomponent programs typically work in both schools and communities, include a clinical services component, use mass media to promote positive ASRH messages, work with both youth and parents, coordinate program interventions among multiple stakeholders, and advocate with community and national leaders for an improved ASRH programming environment.

Drawing on this growing body of knowledge and practice, the Bill & Melinda Gates Foundation established the African Youth Alliance (AYA) program in 2000. AYA was an innovative, collaborative program to improve ASRH among young people ages 10 to 24 in Botswana, Ghana, Tanzania, and Uganda. By partnering with governments, nongovernmental organizations (NGOs), community-based groups, and youth-serving groups, AYA aimed to improve young people's lives by providing resources and support to encourage healthy ASRH behaviors. The project was a unique partnership between the United Nations Population Fund (UNFPA), Pathfinder International, and Program for Appropriate Technology in Health (PATH). AYA was active from 2000 to 2006, with most field interventions ending by 2005.

AYA Strategy

The AYA program strategy focused on implementing and scaling up a comprehensive set of integrated ASRH interventions using existing local institutions. In each AYA country, the three lead agencies formed a secretariat and assembled a team of implementing partners (IPs). The aim was to implement and scale up integrated, comprehensive, multicomponent ASRH interventions using existing institutions. To be chosen, an IP had to be delivering ASRH programs that conformed to AYA's technical criteria, or had to be well positioned to implement such programs. Further, the IPs

Table 1. Program Components

AYA Component	Objective	Lead Partner
Policy and advocacy coordination	Create an improved enabling and supportive environment.	UNFPA
Institutional capacity building	Strengthen IP institutional capacity to sustain ASRH outcomes.	Pathfinder
Coordination and dissemination	Establish, strengthen, or both coordination and dissemination mechanisms for improved ASRH partnerships.	UNFPA
BCC, including LPS and enter-education activities *	Increase knowledge, skills, norms, and positive attitudes toward adoption of safer sexual practices.	PATH
YFS	Increase use of quality, youth-friendly ASRH services.	Pathfinder
Integration of ASRH with livelihood skills training	Improve integration of ASRH into livelihood programs.	PATH

Note: BCC = behavior change communication; LPS = life-planning skills; YFS = youth-friendly services.

* Enter-education is entertainment directed to youth that is also educational. AYA used events such as drama, poetry, rap, choir, sports, etc., as opportunities to promote ASRH enter-education messages.

had to be capable of scaling up their ASRH activities in particular geographic areas identified by AYA and to do so in a coordinated fashion.

In each country, AYA focused on six key program components (see table 1) that formed the integrated package of interventions for addressing ASRH needs. The overall approach was unique in its intention to implement all components simultaneously, while building capacity and fostering coordination among established partners to scale up ASRH services and to encourage their sustainability. AYA was designed to leave a legacy of behavior change among young people reached directly by the program, as well as a supportive policy environment and the institutional capacity that would enable government, NGOs, and the private sector to sustain and expand AYA's interventions in years to come.

In addition, AYA pursued the following cross-cutting objectives that set a standard for program implementation across partners and intervention areas:

- Established internal and external partnerships for effective and integrated program design and implementation
- Maintained active participation of youth in program design and implementation
- Designed programs to reflect and address issues of gender equity and sexuality (including the rights of adolescents in terms of sexuality and reproductive health)
- Increased sustainability of ASRH programs
- Increased number of youth reached by institutionalizing effective programs

AYA Impact Evaluation

In November 2005, the Bill & Melinda Gates Foundation awarded John Snow, Inc., a contract to carry out an impact evaluation of AYA's projects in Ghana, Tanzania, and Uganda. Because its AYA program ended earlier and given budgetary and timing constraints, Botswana was not included in the evaluation. This report presents results

and conclusions from the Ghana survey. Analogous reports are available for Tanzania and Uganda as is a summary report for the entire evaluation.

The main objective in all three countries was to determine whether exposure to AYA's comprehensive, integrated programs resulted in improved ASRH behavioral outcomes among youth age 17–22 in areas where AYA worked. The evaluation focused on youth exposure to three program components—youth-friendly services, behavior change communication/life-planning skills, and livelihood skills training—in areas where all six program components were implemented simultaneously (including policy and advocacy coordination, institutional capacity building, and coordination and dissemination). A post-test-only research design was used to compare knowledge, attitudes, and behavioral outcomes (a) between intervention sites and control areas and (b) between youth who reported varying degrees of exposure to AYA programs and those who did not.

This evaluation examines the impact of the AYA program in areas where it was fully implemented. It does not attempt to address issues such as program scale, cost analysis, sustainability, or the impact of individual components of the AYA strategy. Rather, it complements other evaluations carried out by the AYA partners that examined such factors as institutional performance and program effectiveness for each key ASRH component (African Youth Alliance 2007; PATH 2005a, 2005b; Pathfinder International 2005a, 2005b, 2006a, 2006b).

In each country, JSI awarded a subcontract to a local research institution to gather information on AYA program implementation, to finalize evaluation design and sampling methodologies, to implement the data collection strategy, and to perform data entry and data cleaning. In Ghana, the Institute for Statistical, Social, and Economic Research at the University of Ghana–Legon performed this role.

Structure of the Report

This report begins with a description of Ghana and the AYA program. The next section describes the evaluation design, sampling, fieldwork, and data analysis. The following section then summarizes AYA's impacts on knowledge, attitude, and behavioral outcomes among both female and male youths age 17–22. The report concludes with a discussion and summary of results, their implications for ASRH programming, and some overall conclusions.

Country Setting

The Republic of Ghana was the first sub-Saharan African country to achieve independence (1957). It has a population of 20.5 million (2003) and a land area of 238,537 square kilometers. The country is divided into 10 geographic regions and 138 districts. About 44 percent of the population lives in urban areas (ORC Macro 2005). The main ethnic groups are the Akan, Ewe, and Ga, and about 63 percent of the population is Christian while 18 percent is Muslim. The remaining groups follow indigenous religions. Ghana's economy is relatively vibrant. Its 2005 per capita gross national product ranked third among 15 West African countries (United Nations 2006). Fifty-eight percent of Ghanaian adults were literate in 2004 (United Nations Development Programme 2006a).

Life expectancy at birth in Ghana is about 54 years (Energy Information Administration 2006). Infant mortality declined from 77 per 1,000 live births in 1983–88 to 64 per 1,000 in 2003. Much of the decline is the result of primary health care programs. By 2003, 69 percent of children age 12 months to 23 months were fully immunized (ORC Macro 2005). Following a series of dictatorships, Ghana adopted a new constitution in 1992. The country has since elected four successive democratic governments (United Nations Development Programme 2006b). Ghana is currently one of 16 less developed countries eligible to receive Millennium Challenge Account funding from the U.S. government (U.S. Agency for International Development 2006) (See table 2).

Youth Population and HIV/AIDS

This evaluation focuses on an emergent aspect of Ghana's fertility transition: adolescent sexual and reproductive health (ASRH). The transition began in the mid-1970s as modern contraceptives and primary health care became increasingly available. Modern contraceptive use among married couples doubled in one generation, from 13 percent in 1988 to 25 percent in 2003 (Hong et al. 2005). Changes in women's status accelerated this transition. By the early 1980s, Ghanaian women were attaining more schooling than Ghanaian men and were increasingly entering the paid labor force. These shifts increased the age at marriage among women, from 19.1 years in 1971 to 21.2 years in 1998 (United Nations 2003).

Similarly, age at first sex increased, but at a slower pace. In 1993, age at first sex was at 16.9 years for Ghanaian women compared with 17.4 years in 1998 (Awusabo-Asare, Abane, and Kumi-Kyereme 2004). Female educational levels and age at marriage con-

Table 2. Basic Socioeconomic and Demographic Indicators of Ghana

Indicator	Value	Year	Source
Total population	20,467,747	2003	U.S. Bureau of the Census 2002
Population age 10–24 years (%)	33.0	2006	PRB 2006
Annual population growth rate (%)	1.4	2003	U.S. Bureau of the Census 2002
Urban population (%)	38.4	2000	World Bank 2002
Life expectancy at birth in years (males/females)	(55.4/59.6)	2000	U.S. Bureau of the Census 2002
Infant mortality rate (per 1,000 live births)	64.3	2003	GSS, NMIMR, and ORC Macro 2004
Maternal mortality ratio (per 100,000 live births)	549	1990–2004	UNICEF 2006
Maternal mortality ratio (per 100,000 live births)	590	2002	WHO 2006
Contraceptive prevalence rate, modern methods (women age 15–49)	15.5	2003	GSS, NMIMR, and ORC Macro 2004
Contraceptive prevalence rate, modern methods (young women age 15–24)	NA	NA	NA
Unmet need for family planning (women age 15–49) (%)	34.0	2003	GSS, NMIMR, and ORC Macro 2004
HIV prevalence proportion (adults age 15–49) (%)	2.3	2006	UNAIDS 2006
HIV prevalence proportion (young women age 15–19 and 20–24) (%)	NA	NA	NA
HIV prevalence proportion (young men age 15–19 and 20–24) (%)	NA	NA	NA
HIV prevalence proportion (young adults age 15–19 and 20–24 years) (%)	NA	NA	NA
Gross primary school enrollment (%)	88.4	2005	World Bank 2002, 2006
Gross secondary school enrollment (%)	43.6	2005	World Bank 2002, 2007
Adult literacy rate people age 15 and older) (%)	70.7	2004	World Bank 2002, 2006
Gross national income per capita	450	2005	World Bank 2002, 2007
International poverty line (population below US\$2 a day) (%)	39.5	1999	World Bank 2002, 2006

Note: GSS = Ghana Statistical Service; PRB = Population Reference Bureau; NA = not available; NMIMR = Noguchi Memorial Institute for Medical Research; UNAIDS = United Nations Joint Programme on HIV/AIDS; UNICEF = United Nations Children's Fund; WHO = World Health Organization.

tinue to rise (ORC Macro 2005). One result is that more adolescents are exposed for longer periods to the risk of unwanted pregnancy and sexually transmitted infections.

Worldwide, more than half of human immunodeficiency virus/acquired immune deficiency syndrome (HIV/AIDS) cases occur among young people under age 22 to 24 (UNAIDS 2006). In sub-Saharan Africa, HIV/AIDS is most common among the poor and least educated (UNAIDS 2006). A range of risk factors—including poverty, low educational levels, and migration—makes African youth particularly susceptible. Migration increases the probability of unsafe sex through several mechanisms, including decreased social control, less parental supervision, and more frequent opportunities to engage in transactional sex (Fuglesang 1997). The risk of HIV/AIDS also follows social contours. Prevalence generally rises with civic unrest and income and with gender inequality (Piot and Aggleton 1998). In this regard, Ghana has been fortunate. Per capita income, health, and educational levels have steadily increased in recent years, and its HIV/AIDS epidemic has been relatively benign. After a period of moderate growth, the proportion of adults age 15 to 49 living with HIV/AIDS leveled off at

around 2.3 percent in 2006. This figure compares with 6.1 percent for all of sub-Saharan Africa (UNAIDS 2006). Although existing protective factors likely account for some of this finding, recent ASRH interventions in Ghana may also have helped keep the HIV/AIDS epidemic at bay.

Adolescent Reproductive Health Environment

Over the past decade, Ghana's health policymakers have placed increased importance on safeguarding reproductive health. In 1996, the Ministry of Health adopted its first set of reproductive health policies and standards. They were updated in 2003 to encompass sexual health and gender-based violence. The policies are implemented by public health institutions nationwide under the auspices of the Ghana Health Service Reproductive and Child Health Unit. In 2000, the Ghana National Population Council issued the country's first set of adolescent health policies. It has since functioned as an advisory and monitoring body for the Ministry of Health. Ghana's National AIDS Commission was established in 2002. It oversees a variety of HIV/AIDS control efforts that are public and nongovernmental organizations (NGOs) implemented and that are presently scaling up nationwide (Awusabo-Asare, Abane, and Kumi-Kyereme 2004).

Those entities provide a broad policy base for ASRH in Ghana. Specific strategies and objectives, however, are set by the Ghana Health Service through its Adolescent Health (ADH) Programme. Established in 1996, the ADH Programme aims to educate young people about ASRH issues and to make them regular users of the country's primary health care system (Odoy-Agyarko 2003). The ADH Programme has evolved in a constantly shifting programmatic setting.

In 1998, Ghana's HIV/AIDS control, family planning, and maternal and child health efforts were operating autonomously, each through a different department with a different set of donors. A sectorwide agreement for reproductive health subsequently evolved but USAID- and UN-supported ASRH agency projects remain outside of it (Mayhew 2002). Delivering and coordinating ASRH services amid Ghana's ongoing decentralization process has posed additional challenges (Mayhew 2003; Mayhew et al. 2005). Throughout, the ADH Programme has taken an evidence-based approach to developing ASRH interventions.

An early ASRH project was Ghana's West African Youth Initiative, carried out from 1994 to 1997. It featured a peer education strategy targeting in- and out-of-school youths. It showed that peer educators could increase ASRH knowledge and safe sex behaviors, but the impact was limited to in-school youth (Brieger et al. 2001). A number of NGOs have since implemented ASRH peer education projects in Ghana. A second study concluded that peers deployed by those NGOs were effective educators as well (Wolf, Tawfik, and Bond 2000).

The Ghanaian Adolescent Reproductive Health Survey, carried out in 1998, found that two-thirds of Ghanaians age 17 to 25 reported having their first sex between 15 and 19 years of age. Of those, only 20 percent reported using condoms. Further, only 28 percent of females were satisfied with their first sexual experience. Of sexually active females, 42 percent reported having become pregnant. Only a minority of youths practiced safe sex. About half had ever talked with their romantic partners about ways to

delay sex. Adults (respondents age 25 and older) agreed that youths should be informed and educated about ASRH (Tweedie and Witte 1998).

A series of subsequent studies have shown that Ghanaian youth are well informed about HIV/AIDS and contraception yet continue to engage in risky sex (Adih and Alexander 1999; Glover et al. 2003). The nationally representative National Survey of Adolescents, carried out in 2004, showed that 30 percent of females and 16 percent of males age 15 to 19 had had sex. Among respondents, 90 percent knew about modern contraceptives but only 50 to 60 percent of sexually active youths had used them (Awusabo-Asare, Abane, and Kumi-Kyereme 2006).

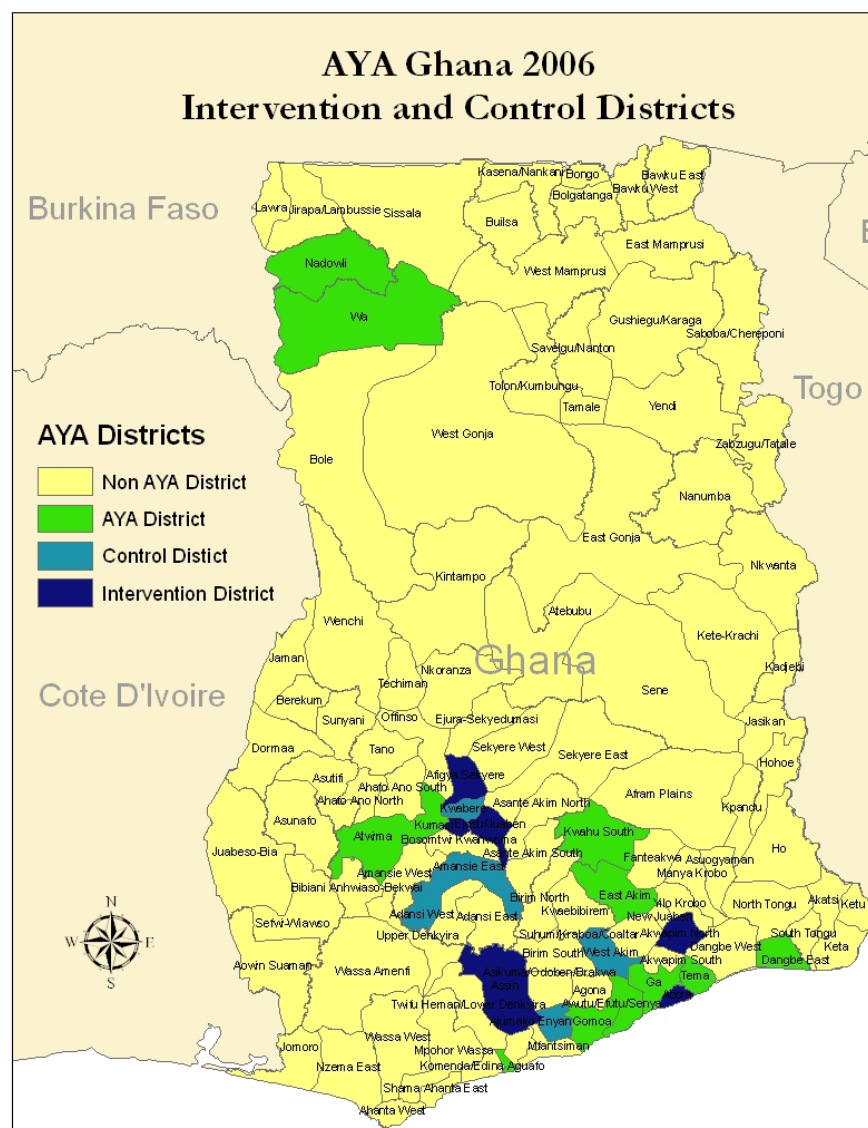
In 2000, the Ghanaian Health Service conducted an ASRH stakeholder study with assistance from the University of Ghana's Population Impact Project. The study found that adolescents were aware of the ASRH risks they faced but that they lacked the requisite knowledge and skills for avoiding those risks. Their parents were not as aware of the risks, nor were local leaders. Parents tended to ascribe ASRH problems to disobedience; policymakers ascribed them to poor parenting. A fourth group, opinion leaders, was aware of ASRH risks. Some opinion leaders, however, felt adolescents should not have access to family-planning services because it would encourage sexual activity. The results showed that consensus was lacking about ASRH matters. They suggested that a multicomponent approach, targeting various subgroups, would likely be appropriate to improve ASRH in the Ghanaian context. ASRH researchers in other countries have faced the same issues and have reached similar conclusions (Focus on Young Adults 2001; Senderowitz 2000; UNAIDS 2001).

AYA in Ghana

It was in this context that AYA was launched in 2001. Budgeted at US\$14 million, AYA/Ghana's modus operandi was to scale up existing ASRH programs, expanding the scope and coverage of projects among 10- to 24-year-old youths. In consultation with central and regional governments, AYA/Ghana targeted 20 of Ghana's 110 districts: Dangbe West, Dangbe East, Accra Metropolitan Area, Ga, and Tem in Greater Accra Region; Kumasi Metropolitan Area, Afigya Sekyere, Bosomtwi Atwima, Kwanwoma, and Ejisu-Juabeng in the Ashanti Region; Wa and Nadowli in the Upper West Region; Awutu Effutu Senya, Cape Coast, Assin, KEEA, and Gomoa in the Central Region; and Akim East, Akwapim North, and Kwahu South in the Eastern Region (figure 1).

AYA implementing partners (IPs) included a range of agencies, charities, community-based organizations, and government entities of multiple sectors. The main public sector IPs included the Ministry of Education/Ghana Education Service, the Ministry of Health/Reproductive and Child Health Unit, and the National Youth Council. Among private sector IPs were the Christian Health Association of Ghana, Planned Parenthood Association of Ghana (PPAG), and the Nurses and Midwives' Council for Ghana. In all, there were 12 IPs. Some but not all IPs fielded peer educators and nontraditional condom providers at the community level. Other IPs incorporated life-planning skills curricula for in- or out-of-school youth. A third subset of IPs worked only on the behavior change component—implementation of group presentations, enter-education efforts, and dissemination of mass media messages. Still another subset worked exclusively on policy and advocacy efforts involving youths and local leaders, whereas others implemented facility-based, youth-friendly services (YFS).

Figure 1. Map of Ghana, Showing AYA Intervention Districts and Control Districts



Most of the AYA/Ghana IPs addressed just one AYA component. The Ministry of Education, for instance, implemented life-planning skills for in-school youths while the Ghana Health Service concentrated on YFS. Occasionally, however, an IP implemented activities that cut across components. For example, PPAG provided YFS through static clinic sites but also deployed peer educators to work in the community.

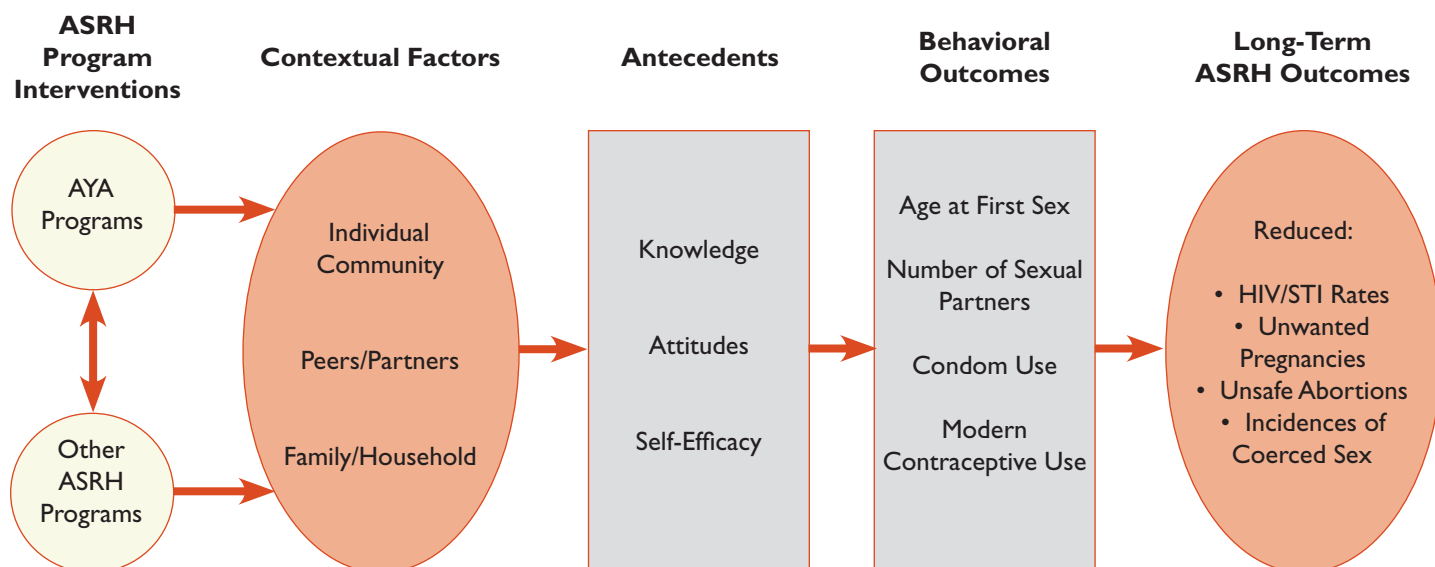
Part of the challenge to AYA, therefore, was (a) to work with IPs who focused on one aspect of the ASRH context, and who had multiple funding sources and donor obligations besides AYA, and (b) to encourage them to work together to produce an integrated component package. Interventions were introduced to the districts through various IPs at different times, but by year five, all six AYA components had been operational for at least 12 months in the 10 districts of this evaluation. (See the map of Ghana in figure 1.)

Methodology

Conceptual Framework

Figure 2 illustrates the conceptual framework motivating this evaluation. The framework is based on the theory that adolescent development takes place under the influence of overlapping contexts, or ecological systems, within which adolescents live and develop. Those contextual factors include the nuclear family, extended family, peer group, neighborhood, community, and institutions, such as school or the workplace (Brooks-Gunn et al. 1993; Duncan, Boisjoly, and Harris 2001). The contextual factors are expected to influence adolescent sexual and reproductive health (ASRH) behaviors and their antecedents (factors such as knowledge, attitudes, and self-efficacy that are presumed to act as precursors to behavior change).

Figure 2. The Conceptual Framework for the AYA Impact Evaluation



The framework holds that African Youth Alliance (AYA) program interventions affected ASRH antecedents either directly by reaching young people or indirectly by influencing the context within which youths reside and by enhancing established ASRH programs that target the youths. The causal pathway then assumes that antecedents (i.e., knowledge and attitudes) influence behavioral outcomes such as abstinence, partner reduction, and condom or contraceptive use. Finally, the improved ASRH behaviors should logically contribute to improved health conditions among youths. This framework is consistent with the health belief model (Janz and Becker 1984; Rosenstock 1974), social cognition (Bandura 1986), and other health behavioral models.

Hypothesis and Research Questions

This evaluation focuses on the relationship between AYA interventions, antecedents, and behaviors in areas where AYA worked and among youths who are exposed to AYA programs. It tests the hypothesis that unmarried and recently married³ youths who are age 17–22 and who were previously exposed to AYA interventions are statistically more likely than unexposed youths to report the desired ASRH outcomes targeted by the program. Specifically, it addresses the following research questions.

Antecedents

We asked how AYA affected these ASRH antecedents:

- Among 17- to 22-year-old unmarried and recently married youths, were those who were exposed to AYA more likely to have better knowledge about HIV/AIDS and condoms than were those not exposed to AYA?
- Among 17- to 22-year-old unmarried and recently married youths, were those who were exposed to AYA more likely to have more desirable attitudes about condoms than were those not exposed to AYA?
- Among 17- to 22-year-old unmarried and recently married youths, were those who were exposed to AYA more likely to have more self-efficacy regarding safe ASRH behavior than were those not exposed to AYA?

Behaviors

And we asked how AYA affected these ASRH behaviors:

- Were 17- to 22-year-old unmarried or recently married youths who were exposed to AYA more likely to abstain from sex or to delay first intercourse than were those not exposed to AYA?
- Among sexually active 17- to 22-year-old unmarried or recently married youths, were those who were exposed to AYA more likely to report fewer lifetime sexual partners than were those not exposed to AYA?
- Among sexually active 17- to 22-year-old unmarried or recently married youths, were those who were exposed to AYA more likely to use condoms than were those not exposed to AYA?

3. *Recently married* was defined as those who were married within two years preceding the evaluation. As in standard Demographic and Health Surveys, *married people* were defined as those who are in union and living together.

- Among sexually active 17- to 22-year-old unmarried or recently married youths, were those who were exposed to AYA more likely to use modern contraceptives than were those not exposed to AYA?

Evaluation Design

The evaluation had to overcome several important methodological challenges. First, baseline data were collected in each country, but they could not be used analytically to measure the impacts (African Youth Alliance 2006). The baseline data were not consistent across countries with respect to age of respondents, geographic coverage, or sample size, nor did they consistently define actual AYA intervention sites and program strategies. Second, there was a large time gap between the cessation of AYA interventions and the onset of data collection for the impact evaluation. Third, by design, AYA supported many partners and interventions without clearly distinguishing its own influence through unique “branding.” Moreover, there were other, concurrent ASRH programs in the country, some of which were implemented in the same areas as AYA.

The evaluation design addressed these issues in three ways. First, the design combined an intervention-control strategy (nonequivalent control group) with a strategy assessing the relationship between self-reported exposure to AYA and ASRH outcomes. Antecedents and behavioral outcomes of interest were analyzed using both strategies. Second, questionnaires were constructed to minimize recall bias and detect multiple sources of exposure to AYA. Third, the design used two analytical techniques to determine impact: propensity score matching (PSM) and instrumental variable (IV) regression. Confidence was maximized by triangulating the design strategies with the different analytic techniques.

The intervention-control strategy compares responses of youths who are in AYA program areas to responses of youths who are in control areas where no AYA activities, other than mass media campaigns, took place. Intervention (treatment) areas were purposively selected on the basis of AYA’s internal classification scheme. The scheme classified intervention areas (localities within clinic catchment areas) according to the number and duration of AYA strategies implemented. As mentioned, to qualify as an intervention area, all six AYA strategies had to have been implemented for at least 12 months. The strategy assumes all youths in each intervention area were exposed (intention-to-treat). Control areas were also selected purposefully on the basis of (a) close geographic proximity to the intervention areas and (b) cultural, demographic, and socioeconomic similarities. This intervention-control strategy is customarily used to demonstrate mean differences in outcomes. It addresses a program’s effectiveness in reaching its target population.

In the complementary, self-reported exposure strategy, attention focused on program efficacy: the extent to which program interventions influenced outcomes among those who participated. This strategy compared antecedents and outcomes between youths who reported high levels of exposure to AYA and either those who reported no exposure or those who lived in control areas. Exposure measures focused on youths’ direct experience with specified AYA components, in particular, youth-friendly services (YFS), behavior change communication/life-planning skills (BCC/LPS), and integration of ASRH into livelihood skills training. In intervention areas, it was assumed that respondents exposed to the earlier-mentioned program interventions would also be

Table 3. Exposure and Outcome Variables, AYA/Ghana/JSI Evaluation Survey, 2006

Exposure Variables	Outcome/Dependent Variables: Antecedents	Outcome/Dependent Variables: Sexual Behavior
Intervention-control strategy: <ul style="list-style-type: none"> • Living in intervention area Self-reported exposure strategy: <ul style="list-style-type: none"> • Exposure to mass media • Exposure to youth-friendly services • Exposure to peer educators • Exposure to life-planning skills • Exposure to enter-education (poem, dance, choir, sport, rap, club, and drama) 	<ul style="list-style-type: none"> • HIV/AIDS knowledge (spontaneous response) • HIV/AIDS knowledge (prompted response) • Belief that condom is protective against HIV/AIDS • Positive attitude toward condom users • Self-efficacy: very confident in obtaining condom when needed • Confident could put on condom correctly • Belief that could insist that partner use condom 	<ul style="list-style-type: none"> • Delay of sexual debut • Abstaining from sex during past 12 months • Fewer than two sex partners in past 12 months • Condom use at first sex • Condom use at last sex • Ever used a condom with current partner • Consistently uses condom with current partner • Modern contraceptive use during last sex • Modern contraceptive use during first sex

exposed to the other three AYA components (policy and advocacy coordination, institutional capacity building, and coordination and dissemination). The self-reported exposure strategy is statistically stronger than the case-control strategy in that it relies on more informative individual-level responses. Potential selection bias that could occur in this design (i.e., where young people who desire a certain outcome such as using condoms seek out services such as those supported by AYA, rather than AYA directly having an impact on youth behaviors) were recognized and controlled for using the analytic techniques described next.

Measurement of Key Variables

The evaluation measured three types of key variables: (a) exposure, (b) outcome or dependent variables (i.e., antecedents and ASRH behaviors), and (c) confounders or controls. Exposure variables measure respondent exposure to AYA interventions. Antecedent outcome variables measure factors such as knowledge, attitudes, and self-efficacy, which act as precursors to sexual behavioral change, thereby influencing the adoption or rejection of protective behaviors. Behavioral outcome variables measure changes in sexual and reproductive health behaviors. Control variables measure factors other than exposure to AYA (i.e., exposure to other ASRH programs, age, etc.) that may influence the outcomes and may potentially bias the estimates of impacts. Exposure and outcome variables are listed in table 3. Details on the definition of each variable are found in appendix C.

Capturing exposure to AYA was central to successful attribution of the impact and so deserves special discussion. For the intervention-control strategy, this exposure was straightforward—determined simply by whether or not the respondent was living in an intervention area. The challenge came in the self-reported exposure design. AYA was a complex program addressing ASRH issues among high-risk youth through a multitude of program approaches and interventions. Building the technical and managerial capacities of its implementing partners (IPs) was fundamental to its mission. AYA

encouraged IPs to take ownership of the AYA-funded interventions. Consequently, youths and other family members were more likely to associate AYA's ASRH activities with the IPs rather than with AYA itself.

Respondents' ability to recall their AYA experiences was also influenced by the time lag between the end of AYA activity and the collection of endline evaluation data. To increase the likelihood of accurate recall, the John Snow, Inc. (JSI), evaluation team worked with the AYA staff in the United States and Ghana and with the IPs in Ghana to develop a precise inventory of AYA strategies, interventions, events, and facilities. Specific AYA-related educational materials and messages were identified in the local argot. Exposure questions aimed to capture IP activities in localities that were exclusively AYA-funded (i.e., specific mass media programs and YFS), as well as activities funded jointly by AYA and other donors (i.e., United Nations, Family Health International peer education, and enter-education). The specific details about AYA interventions were incorporated into the questionnaires. Questions were sequenced to assess general and then specific knowledge of AYA interventions. Interviewers probed respondents on each exposure item to increase accuracy. They used checklists to identify specific ASRH topics addressed in each reported exposure.⁴

In the data analysis of intervention questions, a single "exposure to AYA" variable was constructed for the self-reported exposure design, using a scale of all 10 AYA-supported ASRH activities: radio programs, TV programs, *Junior Graphic* magazine, peer education, YFS, LPS, and the four enter-education programs. Each type of activity was assigned a value of 1 if a respondent reported being exposed, and had identified one or more ASRH topics covered in that activity, and a value of 0 if not. This generated a scale with a possible range from 0 to 10. A categorical AYA exposure variable was then created by collapsing the scale into three categories: (a) no AYA exposure, (b) exposure to one or two AYA activities (some exposure), and (c) exposure to three or more AYA activities (high exposure). For the self-reported exposure design, cases in the second category (some exposure) were dropped, so the analysis compared (high) exposure in intervention areas against no exposure. Control area respondents were assigned to the no-AYA exposure group.

Analysis Technique

As noted earlier, two complementary analytic techniques were used to address the methodological challenges: PSM and IV regression analysis. PSM has been shown (Rosenbaum and Rubin 1983; Rubin 1997) to be an effective and unbiased way to simulate an experimental design and to measure treatment impacts in non-experimental studies, particularly in post-test-only case-control designs such as this (World Bank 2006). The major assumption of the method is that all relevant variables (confounders) are included in the models.

PSM assigns each respondent a score representing his or her propensity for being exposed to AYA. The score is conditioned on individual characteristics that influence health-seeking behaviors, such as socioeconomic status, education, type of household, and family structure. Exposed respondents are matched to unexposed respondents with similar propensity scores. The differences in the probabilities of the outcome of

4. ASRH topics were pregnancy, condoms, sexually transmitted infections, HIV/AIDS, abstinence, being faithful, and voluntary counseling and testing.

interest between the matched exposed and unexposed pairs are averaged to get the treatment impact estimate. The analysis, therefore, does not simply compare behavioral outcomes between exposed and unexposed respondents, but rather between exposed respondents and unexposed respondents with similar characteristics and similar propensities or likelihood to be exposed to AYA. PSM was used to analyze data under the intervention-control strategy as well as the self-reported exposure strategy. Further details of the PSM technique are discussed in appendix C.

IV regression analysis incorporates the same variables used to generate the propensity scores. Its chief virtue is its ability to handle unobserved confounding variables that could bias results. This analysis partitions the influence of observed and unobserved factors on the outcome in question (i.e., ASRH antecedent or behavior). The technique first tests whether there is endogeneity (i.e., whether there are variables that are not measured in the evaluation but that are correlated with both exposure and outcome). An example would be personal motivation, which was not measured but is likely to influence both the likelihood that a respondent will seek health services (to be exposed to AYA) and will practice healthy behaviors. If endogeneity is detected, two equations are then used to explicitly estimate the contribution of AYA exposure to the probability of the outcome. The first equation incorporates IVs that are correlated with exposure to AYA but not with the outcome variable in the second equation (ASRH antecedent or behavior).

If the IV regression analysis does not detect endogeneity, a simpler, single-equation regression model, which controls for measured respondent characteristics, is sufficient to determine impact. IV regression was used to analyze only the self-reported exposure data. Further details on the IV regression approach are discussed in appendix D.

Analysis Plan

The analysis plan followed three scenarios that are based on the two design strategies and two analytic techniques. In scenario 1, the intervention-control data were analyzed using PSM. In scenario 2, the self-reported exposure data were analyzed using PSM. In scenario 3, the self-reported exposure data were again analyzed using IV regression. In all three scenarios, the models controlled for respondent characteristics, such as socioeconomic status and living conditions.⁵ Separate analyses were done for females and males. All data analyses were carried out in Stata version 9.2.

PSM and IV regression hold different sets of assumptions and use different statistical methods to answer the same question: did AYA influence ASRH outcomes? The overall evaluation is strengthened by capitalizing on the strengths of each approach and by minimizing potential biases. In general, the self-reported exposure strategy is statistically more precise than the intervention-control strategy, and the IV analysis is more conclusive than PSM. However, confidence increases when a treatment impact can be shown under multiple strategies (e.g., when a treatment impact can be shown using both PSM and IV regression techniques), because the latter rules out endogeneity, which might bias the former. Confidence is maximized when an AYA impact on a

5. For the intervention-control design, the models included controls for respondent's age, marital status, schooling status, religion, religiosity, employment, survivorship of mother and father, whether the respondent traveled for more than a month during the past 12 months, whether the respondent lived in the area since birth, geographical region of residence, and household socioeconomic status. For the self-reported exposure design, the control variables were similar but also included a variable measuring exposure to ASRH programs in general, including other non-AYA ASRH programs (referred as "exposure to other ASRH programs").

Table 4. Frequency Distribution of Sample by Area, Region/District, and Gender, AYA Impact Evaluation Survey, Ghana 2006

Region/District	Control			Intervention		
	Female	Male	Total	Female	Male	Total
Greater Accra Region						
Accra Metro Area	212	189	401	409	338	747
Eastern Region						
West Akim	98	97	195			
Akwapim North				93	90	183
Ashanti Region						
Amansi East	80	87	167			
Ejisu-Juabeng				145	105	250
Kumasi Metropolitan Area	208	77	285	193	192	385
Kwabre	117	90	207			
Afigya-Sekeyre				143	164	307
Central Region						
Ajumako	55	60	115			
Assin	30	28	58	53	63	116
TOTAL	800	628	1,428	1,036	952	1,988

given outcome is found consistently in all three scenarios. In the analysis of results we conclude that an impact occurred if results are significant only under the IV model, or under the PSM self-reported exposure approach when endogeneity has been ruled out. In sum, this methodological triangulation strengthens any inferences about estimated AYA treatment impacts.

Sampling Strategy

The sampling strategy was designed to meet the requirements of both the intervention-control and self-reported exposure strategies. As indicated earlier, AYA program implementers defined both a subset of intervention districts and the localities within those districts,⁶ where the full range of AYA-supported services had been carried out for at least one year. Control districts and localities were purposefully selected to resemble intervention areas in terms of urban–rural settings, ethnicity, local economic and infrastructure development, and child mortality levels. Control localities did not have any AYA activities other than the mass media campaign. Case and control areas were matched by inspection using locality-level data from Ghana’s 2000 household census.

Once localities were identified, two-stage stratified cluster sampling was used to obtain the required sample. Enumeration areas (EAs) were stratified by locality, and then 105 EAs from the intervention areas and 75 EAs from the control areas were randomly selected using probability proportional to size.⁷ The target sample size was 3,500. Actual sample size (3,416) is shown in table 4.

6. Districts are administrative areas, each of which has a population of approximately 140,000.

7. Intervention areas were oversampled compared with the controls (26 versus 21 localities) to ensure an adequate sample of exposed respondents for the self-reported exposure strategy.

Data Collection Instruments

The evaluation used three standardized questionnaires to conduct individual, household, and community informant interviews. The individual questionnaire captured information on location, identification, and background characteristics; exposure to life skills, YFS, and ASRH BCC; knowledge, attitudes, perceived risk, and motivation to avoid unsafe sex and unwanted pregnancy; sexual and other health behaviors; and gender attitudes. The household questionnaire included a roster of occupants, an inventory of household assets, and a series of questions to measure adults' perceptions of local ASRH issues. The community questionnaire was administered to local IP counterparts in the evaluation localities and to local government informants in each locality to document local ASRH activities and to gauge ASRH knowledge and attitudes.

JSI and Institute for Statistical, Social, and Economic Research (ISSER) staff members prepared the questionnaires and U.S.-based and local AYA partners and AYA Monitoring and Evaluation Technical Advisory Committee members reviewed them. So validity could be increased, wherever possible, questions and question sequences were taken from previously validated instruments such as the Demographic and Health Surveys. The ISSER team supervised adaptation and translation of the questionnaires into three local languages (Twi, Ga, and Fante). After the field test, the groups made final revisions to the instruments. English versions of the final questionnaires appear in appendix H. ISSER and JSI obtained Ghanaian Institutional Review Board approval before conducting the evaluation.

Data Collection and Data Entry

Fieldwork took place from April 20, 2006, to June 5, 2006, under the direction of ISSER and JSI staff members. Altogether there were five field teams (of males and females), each with a supervisor and a field director from ISSER. The five field teams consisted of 35 research assistants (RAs), or interviewers, all of whom were college juniors and seniors or graduates under age 35. RAs were assigned where possible to regions that spoke their native languages. RAs received one week of training, conducted by ISSER and JSI.

The training included a review of AYA's programs in Ghana, field procedures, and ethical issues. Survey techniques were also covered, including social desirability, objectivity, use of leading questions and probing, process of interviewing youth, and importance of maintaining privacy and obtaining informed consent. As described earlier, the training revolved around detailed review and translation of the questionnaires. The RAs practiced household listening and interviewing skills in a one-day pre-test in Madina, a densely populated suburb of Accra. The pre-test experiences were then discussed at a feedback meeting, and necessary adjustments were made.

Maps were collected from the Census Office for each sample EA and were provided to the five team supervisors. In the field, the teams divided each EA into segments of approximately 20–40 households each and then randomly selected one of those segments for study. The use of local community guides was essential to the process. The guides provided invaluable help in mapping EA boundaries, in identifying all eligible households, in introducing RAs, and in generally gaining community entry.

All households⁸ in the selected segments were visited, and attempts were made to interview all eligible youths in those households. The household questionnaire was to be completed only if the household had an eligible youth.

In the case of households with eligible youths who were not present at the first visit, or households with nobody at home, at least three visits were made before dropping the household from the list. Before conducting interviews, the RAs obtained informed consent from heads of household, from the youths themselves, and from the parents of 17-year-old youths. In all youth interviews, respondents and RAs were the same sex, and the interviews were conducted in private.

The teams successfully interviewed 3,416 youths, including 1,988 (1,036 females and 952 males) from 1,427 households in the intervention areas and 1,428 (800 females and 628 males) from 1,026 households in control areas.

Data from completed questionnaires were double-entered by ISSER staff members in Legon using the EpiInfo program. Standard fields and response sets were used to identify inconsistencies. Three machine-readable files were produced, respectively, for individuals, households, and localities.

Challenges and Limitations

Challenges encountered during fieldwork included the fact that some of the 2000 Census EA maps, particularly of peri-urban areas, were outdated. Urban areas in Ghana have expanded dramatically in recent years, with some locales transforming rapidly from slums into commercial areas. All five teams found it easier to locate female adolescents in the home and to locate respondents in the early morning hours or late afternoons to evenings. This timing caused delays as the teams often suspended data collection in the afternoon. Second, it resulted in some interviews being conducted late into the evening, potentially fatiguing the RA and respondent.

To reiterate, the evaluation tests whether exposure to AYA's comprehensive, integrated program resulted in improved ASRH knowledge, attitudes, and behaviors among youths in areas where AYA worked. Given this strictly defined scope, many important research questions are not addressed in this impact evaluation. For example, the evaluation does not test the relative effectiveness of any single component of the program, nor does it try to elucidate causal links between exposures, antecedents, and behaviors. Neither does the evaluation compare one country's performance against another's nor measure program outputs, such as people reached or service quality. Of note, some AYA components, such as policy and advocacy and coordination and dissemination, could have had higher, system-level impacts that were not picked up at the individual level. Some of those topics are addressed by AYA's own end-of-project evaluations (African Youth Alliance 2007). Results of the present impact evaluation should be considered alongside the findings of the other studies. Some additional limitations are described next.

8. A *household* was defined as a person or a group of persons generally bound by ties of kinship, who may or may not live together under a single roof or within a single compound, but who share a community of life, in that they are answerable to the same head and share a common source of income and livelihood.

Age Range of Respondents

The evaluation sample was restricted to 17- to 22-year-old youths in view of manageability, cost, and time constraints. It thus excludes younger Ghanaians who might also have been exposed to AYA. The actual sample is thus truncated, and it is possible that AYA differentially affected the older youths. To sample all potentially exposed youths (i.e., all 10- to 24-year-olds, both married and unmarried) and specifically targeted subgroups (10–14, 15–19, and 20–24), by sex, would have required a sample of more than 10,000 respondents. Consultation with evaluation stakeholders suggested that AYA likely reached this current 17–22 age cohort during its implementation (2000–2005). Most of the youths would have been unmarried at that time. Further, they are sufficiently homogeneous to be considered as a single study group. The actual sample size allows all key variables to be disaggregated by sex.

Intervention-Control Strategy

The intervention-control strategy not only has the advantage of simplicity but also poses limitations. In the absence of randomization, one cannot assume that control and intervention areas are equivalent. Further, program documentation states that AYA purposefully chose to work in areas with greater ASRH need. This program targeting implies that before AYA the high-risk ASRH behaviors were more prevalent among intervention-area youths than among those in control areas. Another threat to validity comes from the non-random distribution of other, non-AYA ASRH interventions. If intervention localities had fewer (or more) non-AYA ASRH programs than control localities, not accounting for those non-AYA programs could bias the results one way or another. Those and other factors must remain unobserved, potentially biasing estimated group-level impacts.

Other possible sources of bias in the intervention-control results include “dilution,” whereby AYA may have been overshadowed by large-scale interventions such as media campaigns, and mobility of respondents. The “intention-to-treat” approach in the intervention-control design and analysis (i.e., all individuals residing in treatment areas were treated as “exposed” even if only a relatively small portion of the target population was actually reached) is likely to underestimate the true AYA program impact on individuals. Likewise, interventions such as media campaigns that reach youths in widespread areas could blur the distinction between intervention and control groups, further underestimating the impact. Finally, young people are mobile and often travel to youth clinics, clubs, and so forth in neighboring towns and districts. Mobility of youth between intervention and control areas could dilute the attribution of impact to AYA-supported programs.

Despite those limitations, the intervention-control strategy has merits of simplicity because treatment status is assigned. Self-selection by respondents into treatment or control groups can thus be ruled out. Likewise, the strategy avoids potential measurement error that is associated with recalling exposure. Finally, the intervention-control strategy is a statistically conservative approach. The constraints described would most likely result in underestimation of the true program impact. This strategy is more likely to miss a true treatment impact than to infer that one exists when it did not.

Self-Reported Exposure Strategy

As mentioned, self-reports are generally more accurate measures of exposure because they rule out many measurement errors and other biases that can occur when exposure

status is assigned at the group level. However, the self-reported exposure strategy is also prone to endogeneity bias, discussed earlier, as well as possible issues of recall accuracy many months or even years after exposure.

This evaluation addressed those limitations in a number of ways. As discussed earlier, the ability to recall AYA-specific exposure was enhanced by the meticulous design of the data collection instrument. Qualitative data gathered through the community questionnaire and the AYA headquarters classification exercise further indicated that most of the AYA-specific activities in intervention areas were either fully or partly funded by AYA or carried out by non-AYA IPs, which adapted the AYA strategies. Therefore, it was not unreasonable to attribute any AYA program impacts to AYA-specific activities in the intervention area. Nevertheless, it was surely not possible to differentiate all AYA-specific interventions from non-AYA activities.

The self-selection bias or endogeneity associated with nonrandom self-reporting of program exposure was partly addressed by the IV regression. The errors associated with self-reported exposure could have been systematic or random. One kind of systematic error is the result of variables associated with exposure recall and with the outcome of interest (e.g., if youths with safe ASRH behavior were also more likely to recall exposure to AYA). Such errors are addressed by the IV regression. Random errors, including measurement errors in the self-reported AYA exposure variable, are not corrected. Given the dichotomous definition of exposure, they would tend to cause an underestimation of the impact of AYA.

Results

This section presents and discusses the detailed evaluation findings. It focuses on the extent to which Ghana's multicomponent African Youth Alliance (AYA) program affected adolescents' knowledge, attitudes, and sexual behaviors. Sample characteristics are first explored, including a comparison of the AYA sample with a nationally representative adolescent survey. Attention then focuses on AYA exposure, followed by the impact on outcomes of interest, which was analyzed by gender.

Background Characteristics of the Respondents

This section will describe individual and household characteristics of the sample.

Individual Characteristics

Individual characteristics of respondents are shown in table 5, for both intervention ($n = 1,988$) and control ($n = 1,428$) areas, and by the level of self-reported exposure to AYA. Overall, a most respondents were unmarried, had attended school, adhered to a Pentecostal religion, were not currently working, and had two surviving parents. Despite the large percentages who had both parents living, fewer than half of the respondents lived with both parents. Significant mean differences were observed for some variables between intervention and control areas, as well as across the three self-reported exposure levels.

Most of the differences are minor, but some illustrate important distinctions between those exposed and unexposed to AYA. If one considers the intervention-control contrasts, youths living in AYA-covered localities were more likely to be enrolled in school and were more likely to attend church daily than were youths living in control areas.

Sample characteristics differ more markedly across the self-reported categories. Males were relatively more likely than females to self-report high AYA exposure. Those with high exposure to AYA were also relatively more likely than those with low exposure to be in the younger age categories, to be in school, to attend church on a daily basis, and to live with their parents. Table 5 also shows the contribution of each region to the sample. Nearly half of the sample came from the Ashanti Region, which includes Kumasi, Ghana's second largest city. The Ashanti respondents were evenly distributed across the exposure categories. The next largest contribution

Table 5. Percentage Distribution of Respondents According to Individual Characteristics, by Intervention-Control and Self-Reported Exposure Design, AYA/Ghana/JSI Evaluation Survey, 2006

Individual Characteristics	Intervention-Control Design			Self-Reported Exposure Design ^a			
	Control (n = 1,428)	Intervention (n = 1,988)		None (n = 1,626)	Some (n = 815)	High (n = 960)	
Gender			*				**
Male	44.0	47.9		42.4	43.1	55.4	
Female	56.0	52.1		57.6	56.9	44.6	
Age							**
17–18	39.4	40.7		39.1	37.2	44.9	
19–20	33.9	33.1		34.0	34.4	32.1	
21–22	26.6	25.6		26.8	28.2	22.9	
Missing	0.1	0.7		0.1	0.3	0.1	
Marital status							*
Unmarried	96.2	95.6		95.3	96.9	97.2	
Married	3.7	4.0		4.6	3.1	2.8	
Missing	0.1	0.5		0.1	0.0	0.0	
Region			**				**
Greater Accra	28.1	37.6		29.3	37.1	38.2	
Eastern	13.7	9.2		13.4	7.4	9.6	
Ashanti	46.2	47.4		45.5	48.8	47.9	
Central	12.1	5.8		11.8	6.8	4.3	
Schooling			**				**
Never	7.3	5.2		9.3	6.3	0.6	
Ever	69.5	61.5		69.1	69.3	54.9	
Current	23.0	32.5		21.5	24.4	44.5	
Missing	0.1	0.8		0.1	0.0	0.0	
Religion							**
Muslim	8.5	9.0		9.4	8.7	8.0	
Catholic	12.3	10.2		12.3	9.9	10.1	
Protestant	26.2	26.9		25.2	23.2	32.4	
Pentecostal	48.8	48.1		48.4	52.8	45.5	
Other	4.0	5.0		4.6	5.4	4.0	
Missing	0.1	0.8		0.1	0.0	0.0	
Religiosity			**				
Daily	21.7	27.6		22.2	25.6	30.1	
Once a week	51.2	47.9		50.1	50.2	48.0	
Once a month	16.8	14.1		16.5	12.8	15.5	
Under once a month	6.7	6.6		7.3	7.7	4.8	
Not at all	0.8	1.4		1.1	1.7	0.7	
Missing	2.7	2.3		2.8	2.0	0.8	
Employment							
Never worked	56.4	54.7		55.7	54.7	56.5	
Currently working	43.4	44.5		44.2	45.3	43.5	
Missing	0.1	0.8		0.1	0.0	0.0	

Individual Characteristics	Intervention-Control Design			Self-Reported Exposure Design			
	Control (n = 1,428)	Intervention (n = 1,988)		None (n = 1,626)	Some (n = 815)	High (n = 960)	
Mother alive			*				
No	5.5	7.5		5.9	7.6	7.2	
Yes	94.3	91.8		93.9	92.4	92.8	
Missing	0.3	0.8		0.2	0.0	0.0	
Father alive							
No	15.5	16.6		15.6	18.7	15.0	
Yes	83.8	82.2		83.7	81.0	84.4	
Missing	0.8	1.2		0.7	0.4	0.6	
Respondent lives with ...							**
Spouse/spouse's family	2.0	1.9		2.6	1.8	0.9	
Parents	58.3	57.0		56.0	54.6	63.8	
Relatives (uncle/aunt/ grandparent)	30.0	29.6		30.6	30.8	28.0	
Others	9.5	10.7		10.8	12.8	7.3	
Missing	0.1	0.8		0.1	0.0	0.0	

The statistically significant difference of the individual characteristics between intervention- and control-area respondents and the difference between the self-reported exposure to AYA categories are marked with asterisks * = $p < .05$; ** = $p < .01$.

μ. Exposure definitions: None = respondents in control areas and those in intervention area who did not report exposure to any AYA-specific activities; Some = respondents in intervention area who reported exposure to one or two AYA-specific activities; High = respondents in intervention area who reported exposure to three or more AYA-specific activities.

came from Greater Accra where intervention-area youths were oversampled. Eastern and Central Regions contributed about a quarter of control and 15 percent of intervention-area respondents.

Household Characteristics

Some differences in household characteristics were also evident across intervention, control, and self-reported exposure categories (see appendix F, table F.1). For example, more intervention-area households were headed by females (59 percent versus 50 percent in control areas), and intervention-area household heads were also more likely to be single and to have a primary education. The occupation categories for household heads were similar except for business and salaried positions. Those in intervention areas were more likely engaged in business, whereas control area household heads were more likely to be in salaried positions.

Socioeconomic level—measured by household possessions, access to modern amenities, and housing materials—appears to be somewhat similar in intervention and control areas. However, the economic quintile variable, which incorporates all of those indicators, shows that control-area households were more likely to be in the poorest quintile. Differences were somewhat more notable across the self-reported categories. Those reporting high AYA exposure generally came from higher socioeconomic status households than did those without AYA exposure, as measured by household head education and by most sanitation and household asset variables.

In general, respondents who self-reported high AYA exposure came from relatively more affluent households than did those with little or no exposure, indicating that the AYA interventions followed socioeconomic gradients. This conclusion is logical in that poorer youths are generally harder to reach with any intervention. But the differentials also suggest there could be self-selection: more privileged youths may share unmeasured characteristics that made them more accessible to AYA. Selection issues are readdressed next.

Degree of Exposure among Target Youths

Before considering AYA's impact on adolescent sexual and reproductive health (ASRH), one needs to know whether the programs successfully reached young people. Showing (a) that youths participated in AYA and (b) that they could recollect specific ASRH messages up to two to three years later would itself indicate the program's effectiveness. Demonstrating high levels of exposure, especially in intervention localities, would suggest that implementing partners (IPs) did reach particular targeted groups with AYA-supported interventions.

Results suggest that AYA was moderately effective in reaching young people in target areas. Of the 3,401 respondents whose exposure status was determined, more than half (52 percent) had at least some AYA exposure, 24 percent had "some exposure," and 28 percent had "high exposure" (i.e., they recalled exposure to at least three AYA activities). (See table 5.) In general and as expected, respondents recalled significantly more AYA-supported programs in intervention areas when compared with control areas. But as table 6 shows, a fair number of respondents from control areas also reported exposure to AYA. This difference could be to the result of many factors.

Table 6. Percentage of Respondents Reporting Exposure to an AYA-Specific Activity by Intervention and Control Area, AYA/Ghana/JSI Evaluation Survey, 2006

	Control (n = 1,419)	Intervention (n = 1,973) ^a	
AYA specific exposure to ...			
At least one radio program	6.1	8.0	*
At least one TV program	74.9	75.3	
Read <i>Junior Graphic</i>	49.2	59.8	**
Visited youth-friendly clinic	1.9	8.5	**
Peer educator	20.5	30.6	**
Enter-education activities			
Poem	12.1	20.8	**
Sport	6.3	11.4	**
Club	17.9	25.0	**
Drama	33.1	34.7	

a. Exposure status of 9 respondents from the control area and 15 respondents from the intervention area was undetermined because of missing information.

Note: * = $p < .05$; ** = $p < .01$.

Table 7. Percentage of Respondents Reporting Exposure to a Particular AYA Component among Those Categorized as Exposed to AYA, According to Gender, AYA/Ghana/JSI Evaluation Survey, 2006

	Female (n = 428)	Male (n = 532)	
At least one AYA radio program	15.3	11.6	*
At least one AYA TV program	92.0	94.1	**
Read <i>Junior Graphic</i>	80.1	83.3	
Visited youth-friendly clinic	12.1	18.2	**
Peer educator	64.7	50.6	**
At least one enter-education activity	84.8	91.0	**

Note: * = $p < .05$; ** = $p < .01$.

Other ASRH interventions, it must be recalled, were occurring throughout Ghana during the AYA period, and those interventions incorporated many of the same strategies as AYA. AYA's strategy was to augment a subset of the implementing organizations without branding their interventions as being AYA supported. Some of the AYA IPs also worked in control areas, albeit without AYA support. Thus, it is logical that some interventions in control areas could be perceived as AYA supported even if AYA were not directly working in those areas. It is also possible that mobile youth from control areas could access AYA-supported programs by traveling to intervention sites. Despite all of those factors, as table 7 shows, the exposure measures are precise enough to show exposure differences in six of the eight possible AYA interventions.

Impact of AYA

This section reports multivariate regression results that indicate the extent to which exposure to the integrated AYA package of interventions affected ASRH behaviors. Each regression model controls for the same individual and household variables, including age, socioeconomic status, living arrangements, schooling, employment status, and region. As discussed in the methodology section, the impact of AYA on selected ASRH behaviors and their antecedents was determined using three scenarios. The intervention-control strategy was analyzed using the propensity score matching (PSM) technique, and the self-reported exposure strategy was analyzed using either a PSM or an instrumental variable (IV) regression. In the presence of endogeneity, the IV regression gives the most valid results. When the IV regression indicates no endogeneity, the PSM analysis of the self-reported exposure strategy alone is sufficient to measure impact. However, reported results are strongest when corroborated by more than one method.

Results are presented graphically for all key variables under all three analysis scenarios. An asterisk marks variables where AYA's impact was found to be statistically significant,⁹ on the basis of criteria described earlier. The difference in the paired bars (intervention-control or exposed and unexposed to AYA) approximates the magnitude of the AYA im-

9. In most cases, two-tailed p -value of .05 was the critical level to determine statistical significance; however, one-tailed p -value of .05 (or two-tailed p -value of .1) was also used in a few cases to determine statistical significance (see appendix G tables for details). All the p -values reported in this document are from two-tailed statistical tests.

pact. The bar heights can be meaningfully compared across scenarios 1 and 2, given that both use the same PSM method, but because scenario 3 uses IV methods, bar heights in that scenario are often not meaningful, especially when endogeneity is present.

Detailed results of the PSM models and IV regression models on all outcome variables are given in appendix G.¹⁰

Impact of AYA on Antecedents: Females

The regressions revealed significant AYA impacts on antecedents among female respondents in all three scenarios. As figure 3a shows, females in intervention areas were less likely than were control-area females to say they could put on a condom correctly but were more likely to say they could insist that a partner use condoms. Those results are supported by the bivariate results shown in appendix F (see table F.2) and by triangulation with scenario 2, where the pattern is identical (figure 3b). One interpretation is that, through AYA, young women gained a more realistic idea of the technical difficulties of condom use while gaining confidence that they could negotiate condom use. An impressive 69–73 percent of young Ghanaian women in control and intervention areas, respectively, reported confidence in insisting that their partners use condoms, thus demonstrating a degree of empowerment in sexual decision making. Scenario 2 also shows that females who self-reported AYA exposure were more knowledgeable about HIV and more confident they could obtain condoms if needed. In scenario 3 (figure 3c), two outcomes were found to be endogenous with self-reported AYA exposure, but only one outcome (spontaneous HIV knowledge) showed a significant AYA treatment impact.

Again triangulation supports the argument that AYA increased female HIV knowledge, even when confounding variables were controlled for. The bivariate results (table F.4) are also compatible with such multivariate results. There were no significant impacts on three female antecedents: prompted HIV knowledge, knowledge that condoms protect against HIV, and opinions about condom users. If one summarizes the results, females exposed to AYA were clearly better informed and prepared to engage in safe sex practices.

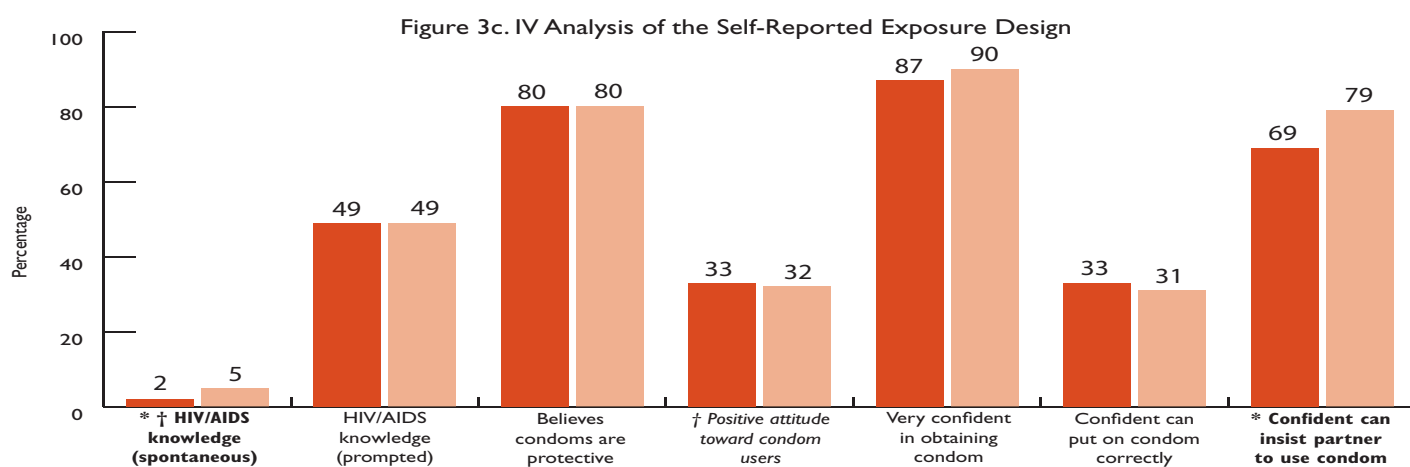
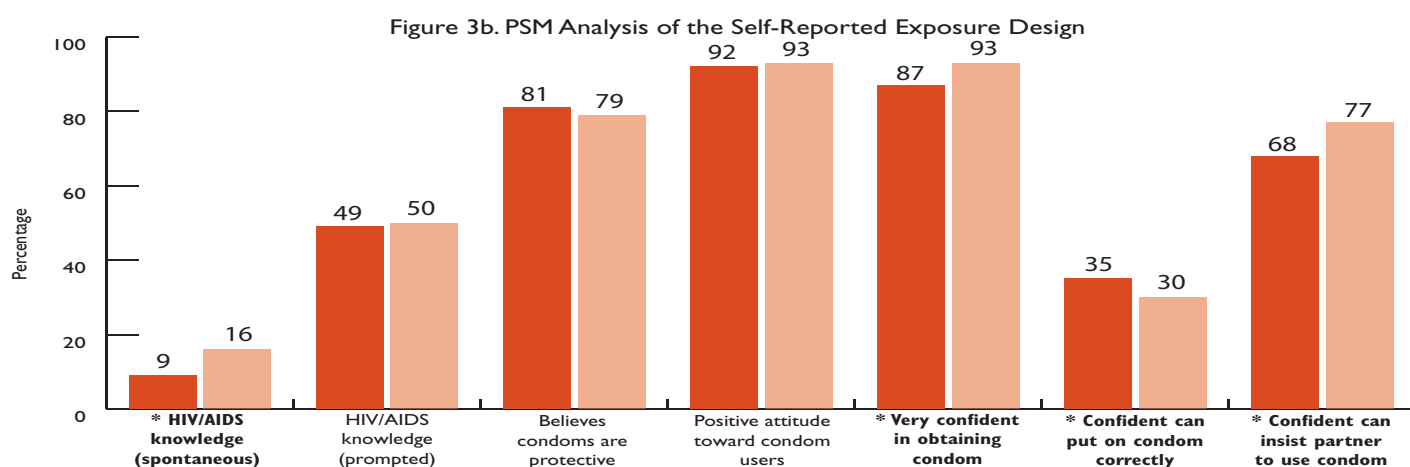
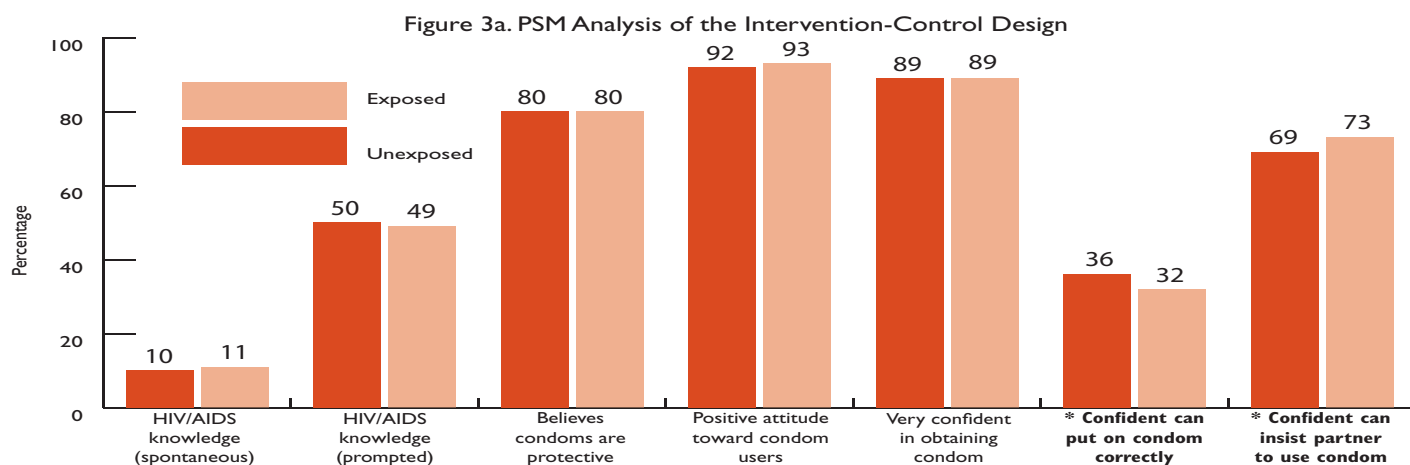
Impact of AYA on Antecedents: Males

The analyses also show that AYA affected ASRH antecedents among males under all three scenarios. There was a consistent, positive impact on self-efficacy. Under all three scenarios (figures 4a–4c), males exposed to AYA were more confident they could correctly put on a condom.

There were also positive impacts on HIV knowledge. The knowledge impacts, however, were inconsistent. If one compares two distinctly different knowledge items, males in intervention localities were less likely to know about HIV (prompted responses) or that condoms protect one from the virus. The same pattern appears in the bivariate intervention-control values (table F.2). The pattern is counterintuitive: One would expect that AYA male youths would be more knowledgeable about HIV and safe sex practices. Those negative results, however, are seen to be statistically insignificant in the corresponding models of scenarios 2 (figure 4b) and 3 (figure 4c).

10. The simple (unadjusted) cross-tabulation between exposure to AYA and the outcome variables are given in tables G.2 and G.3 of appendix G.

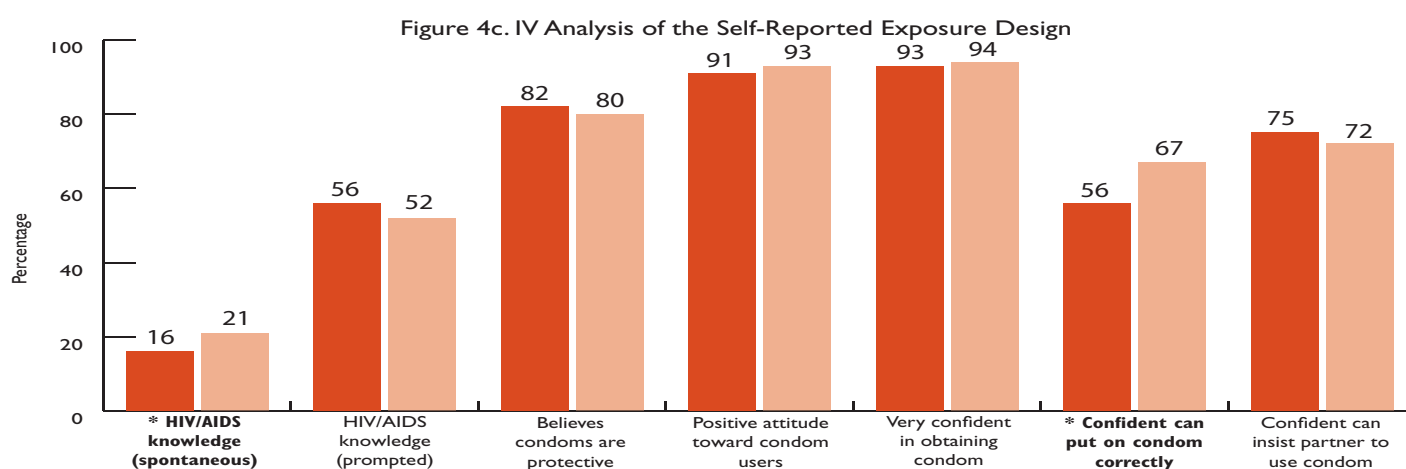
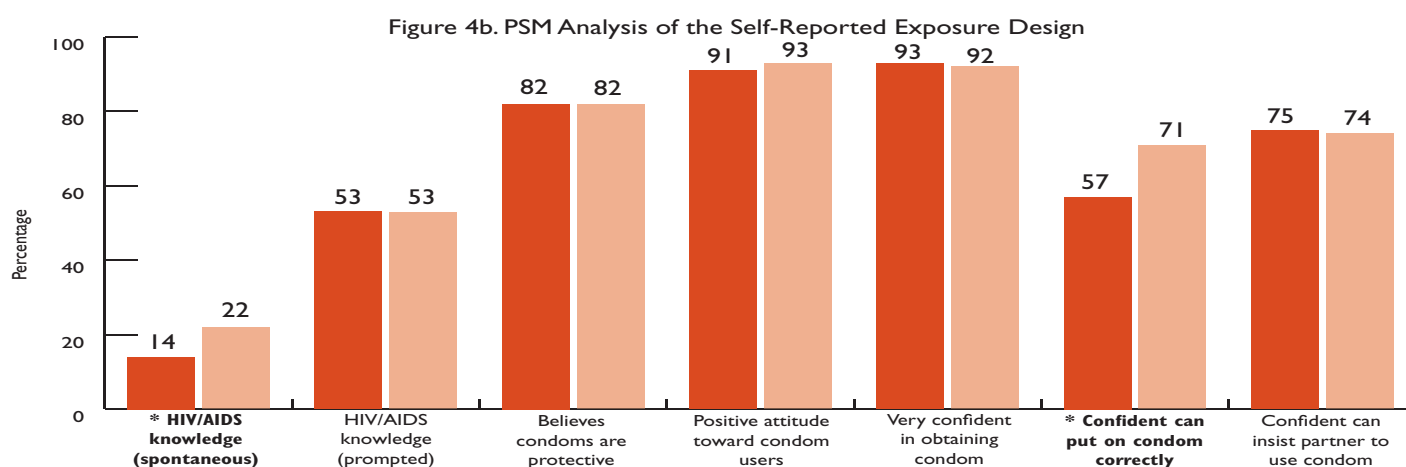
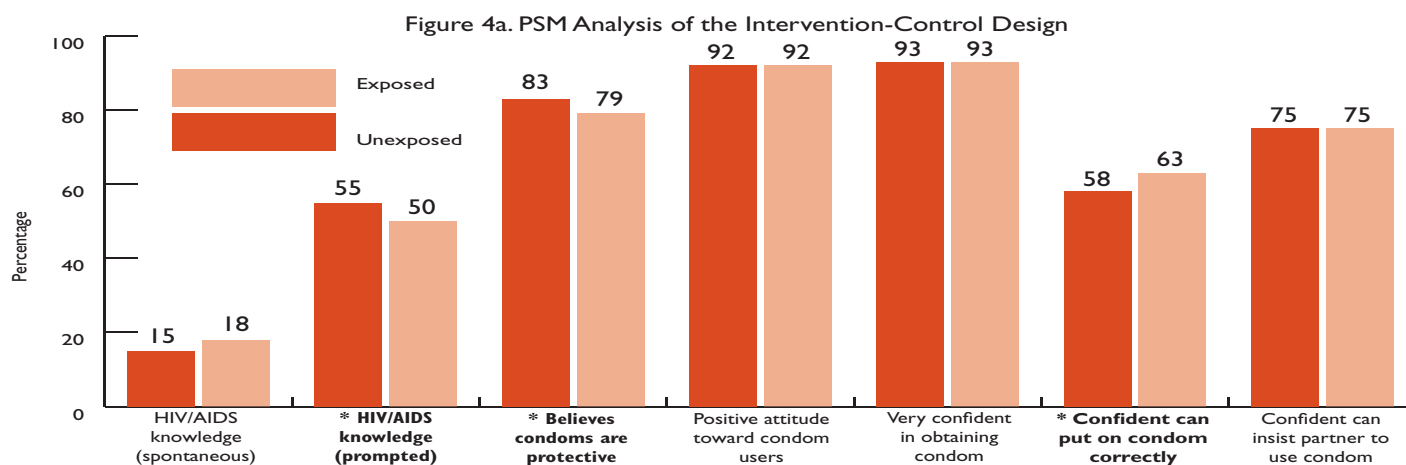
Figure 3. Impact of AYA on Antecedents of ASRH Behaviors among Females



* statistically significant difference between exposed and unexposed

† endogeneity detected

Figure 4. Impact of AYA on Antecedents of ASRH Behaviors among Males



* statistically significant difference between exposed and unexposed

† endogeneity detected

More positively, results suggested that AYA had a significantly positive impact on spontaneous HIV knowledge. One would expect spontaneous and prompted knowledge items to perform in a similar fashion because they tap the same underlying cognitive dimension, but figures 4a and 4b show this performance is not the case. Both self-reporting males and males living in AYA intervention areas showed higher scores on spontaneous HIV knowledge, as expected, though only the former impact was significant. The corresponding bivariate values are consistent with these multivariate results.

Taken together, the results suggest that AYA had a moderately positive impact on spontaneous knowledge and on perceived self-efficacy of condom use among males. But the positive impact was observed only among self-reporters, suggesting a possibility of positive self-selection among self-reporting males.

Comparing the male and female antecedent results prompts the following question: Why is confidence in correctly putting on condoms signed oppositely for males and females? Though one can only speculate, putting on condoms is primarily a male behavioral role; hence, most interventions may have been directed to males. Conversely, insisting that a partner use a condom may also be a more critical behavior for females to be able to practice; hence, the positive results for that variable were encouraging as well.

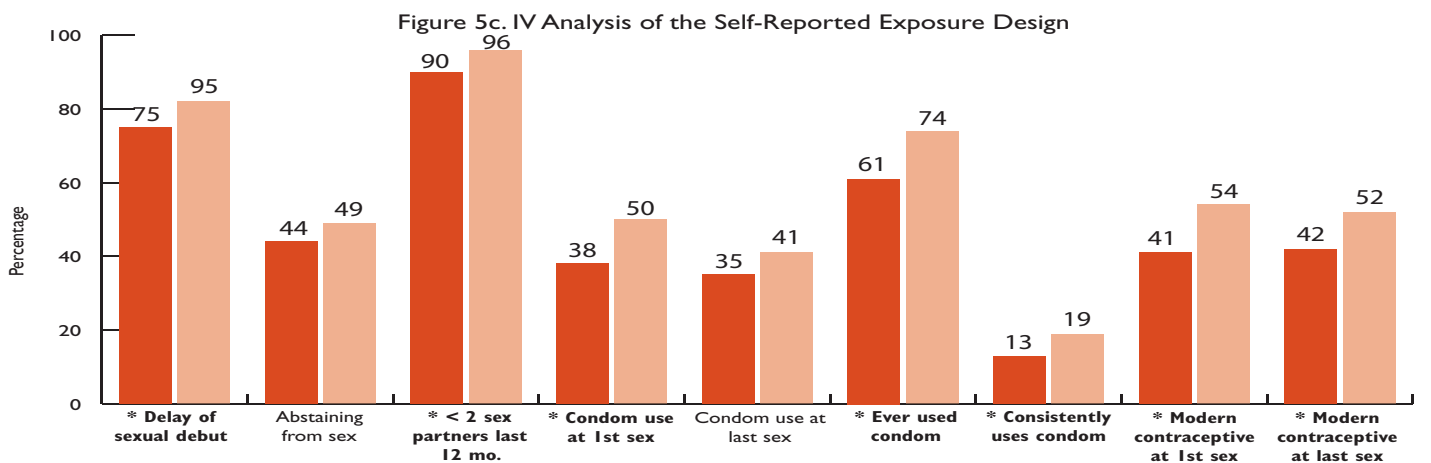
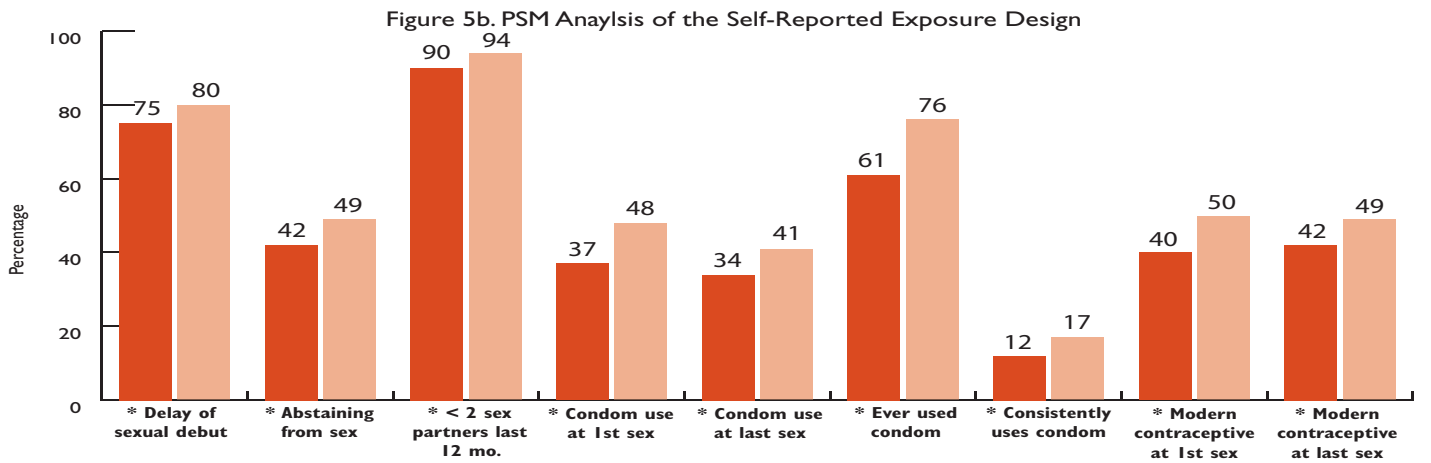
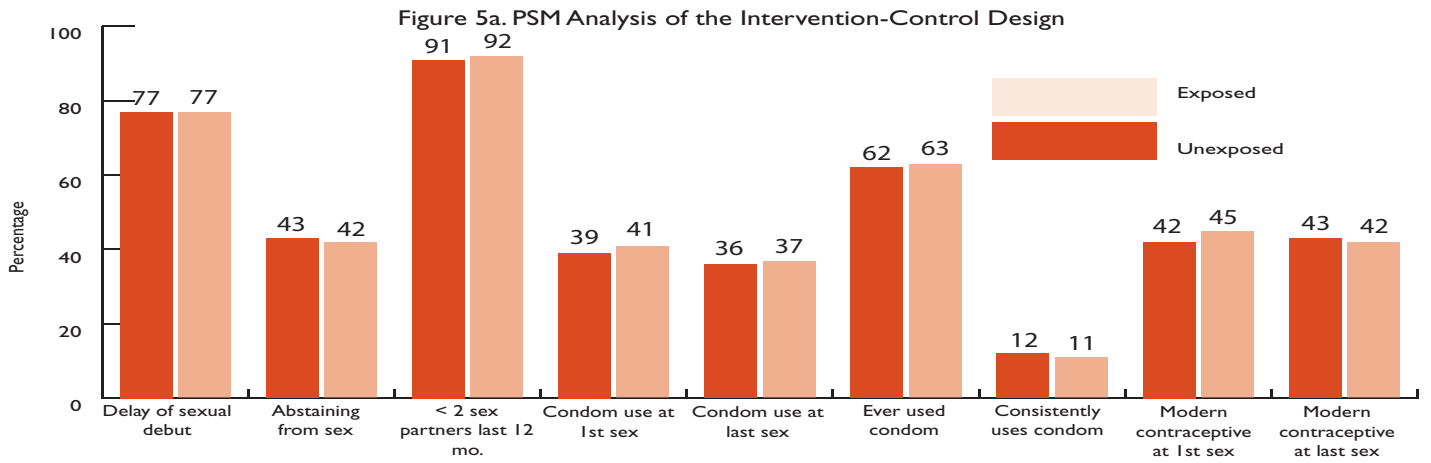
Impact of AYA on Selected Sexual Behaviors: Females

The female ASRH behavioral model results invite close examination. There was evidence of significant AYA treatment impacts on females' ASRH behaviors for all nine behavioral outcomes, particularly under scenarios 2 and 3. (In fact, no significant behavioral differences were seen in the multivariate models across intervention and control areas for either sex.) This result suggests that it is the weaker intervention-control design, not the PSM models, that fails to detect true treatment impacts (figure 5a). Triangulation between PSM (figure 5b) and IV methods (figure 5c) shows consistently salutary AYA treatment impacts among females in seven of the nine behaviors measured. Two outcomes, sexual abstinence and condom use at last sex, showed significant salutary treatment impacts under PSM but not IV. Overall, the female behavioral results provide even more convincing evidence of AYA impacts than the antecedent model results just reported. Given the conservative research design and methodological limitations described previously, such consistently observed impact on the entire range of measured outcomes appears to be an impressive achievement of the AYA program.

Impact of AYA on Selected Sexual Behaviors: Males

In contrast to the results for young females, the evaluation found no evidence that AYA induced safer sexual behaviors among males (figures 6a–6c). In fact, the one (borderline) significant impact under scenario 3 (figure 6c), on abstinence, is signed negatively. Negative slopes also appear for the abstinence variable in the corresponding scenario 1 and 2 models, but they are insignificant (appendix G, table G.2). There is also a consistently negative pattern for early sexual debut among males, but it is not significant under any scenario. Three candidate explanations for this pattern come to mind. One is that high condom availability, perceived decreased risk of HIV, or both made males more likely to have sex (behavioral disinhibition), a phenomenon that has been observed among young men in Uganda (Gray et al. 2003).

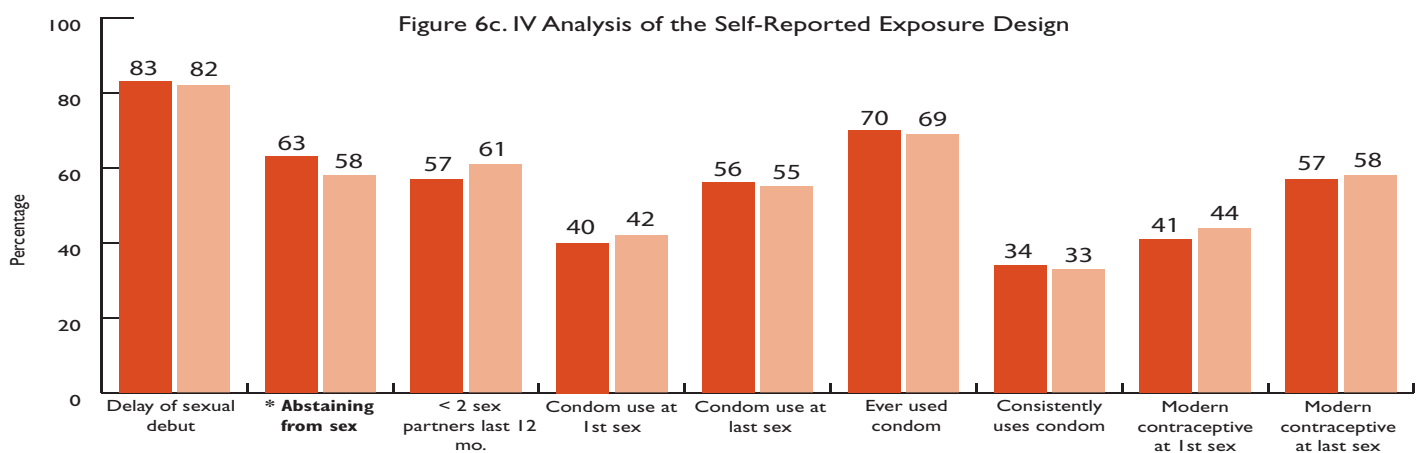
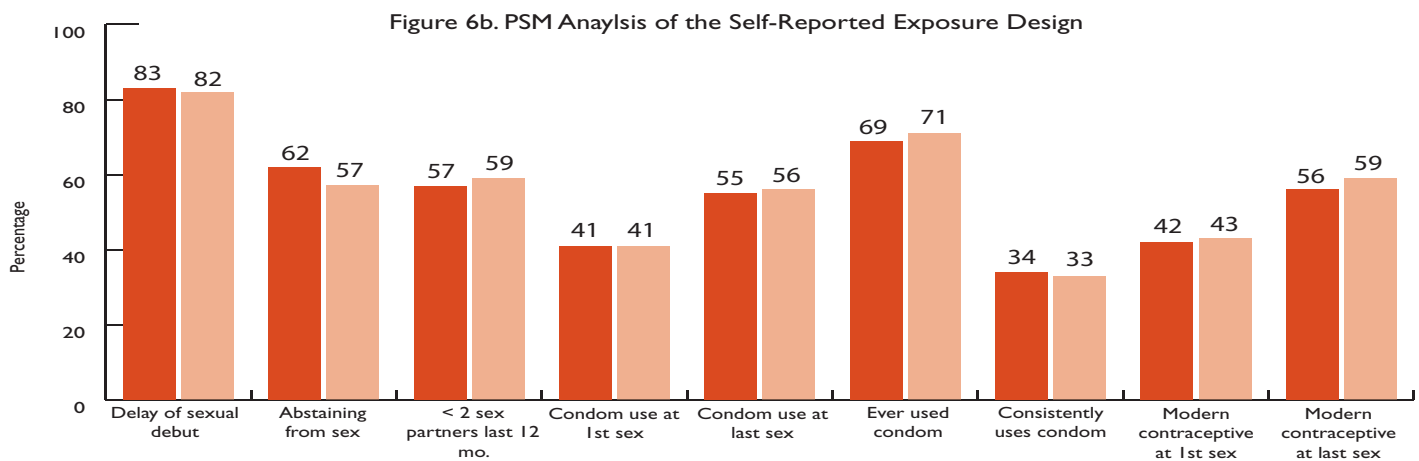
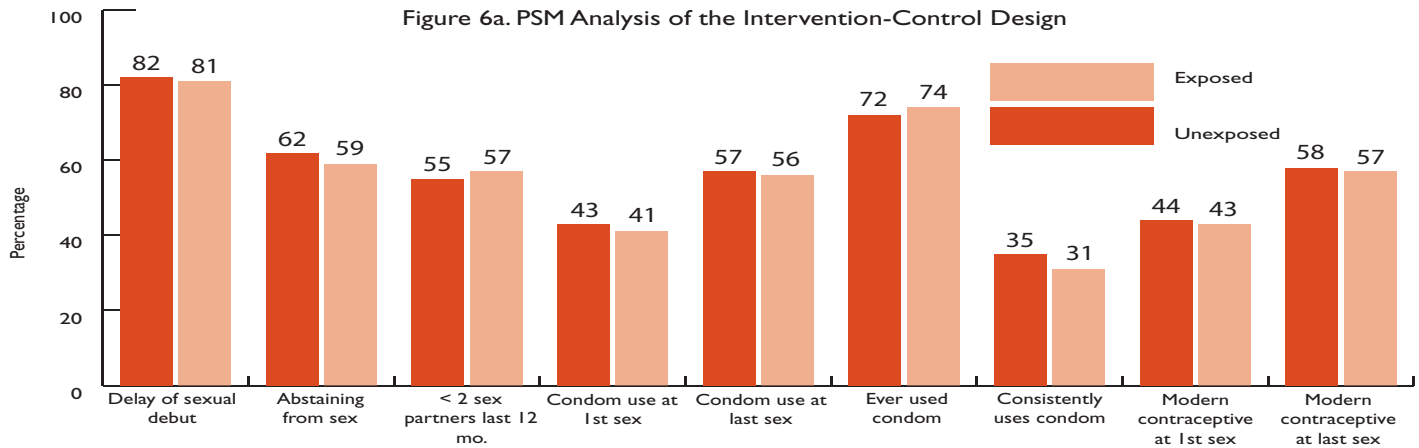
Figure 5. Impact of AYA on ASRH Behaviors among Females



* statistically significant difference between exposed and unexposed

† endogeneity detected

Figure 6. Impact of AYA on ASRH Behaviors among Males



* statistically significant difference between exposed and unexposed

† endogeneity detected

Table 8. Summary of AYA Impacts on Selected Knowledge/Perception and ASRH Behavioral Outcomes, AYA/Ghana/JSI Evaluation Survey, 2006

	Female	Male
Antecedents		
HIV/AIDS knowledge (spontaneous response)	+	+
HIV/AIDS knowledge (prompted response)		
Condom is protective against HIV/AIDS		
Positive attitude toward condom users		
Confident could put on condom correctly	–	+
Believes he or she could insist that partner use condom	+	
Very confident in obtaining condom when needed	+	
ASRH behaviors		
Delay of sexual debut	+	
Abstains from sex	+	–
Less than two sex partners during past 12 months	+	
Condom use at first sex	+	
Condom use at last sex	+	
Ever used condom with current partner	+	
Always uses condom with current partner	+	
Modern contraceptive used at first sex	+	
Modern contraceptive used at last sex	+	

Note: A plus sign (+) indicates a significant AYA impact in the expected direction, and a negative sign (–) indicates a significant negative impact. No sign indicates that the impact was not significant.

The present data do not allow a test for behavioral disinhibition. However, if it were operating, one might surmise that males exposed to AYA would also be more likely to report multiple partners, but such was not the case. As tables G.2, G.4, and G.6 show, exposure to AYA was consistently (but weakly) linked to males having fewer sexual partners under all three scenarios. A second possible cause for the counterintuitive AYA impact is a self-selection bias that is likely to remain in scenarios 1 and 2. Sexually more active males may have tended to self-report AYA exposure. Again, a thought experiment casts doubt on this explanation. The same selection process would most likely have produced counterintuitive negative slopes on the number of sexual partners, but the tables show that the opposite is true.

Finally, AYA targeted most abstinence messages to younger adolescents, and the older sample size in this evaluation may have missed many of the youths who had been exposed to such messages. But although this factor may explain lack of impact, it does not explain the negative impact observed. The full explanation certainly warrants further investigation.

Summary of Results

Multivariate model results are summarized in tables G.7 (antecedents) and G.8 (behaviors) of appendix G, as well as in table 8. Table 8 summarizes the triangulated modeling results, which were shown previously as figures, for both antecedents and behaviors and by gender. Any outcome that was significant in at least (a) the IV analysis, (b) the

PSM self-reported exposure analysis with no endogeneity, or (c) the multiple scenarios is marked with a positive or negative sign, depending on the direction of the impact. As can be seen, AYA had a positive impact on some antecedents for both males and females, but the interventions had opposing impacts regarding the confidence to correctly use condoms. Confidence was lower among AYA-exposed females but higher among the males with exposure. Exposure to AYA also increased females' confidence that they could convince their partners to use condoms.

Regarding sexual behaviors, all nine measured behaviors were affected in the expected directions for females, but there were no significant impacts on male behaviors. This differential impact by gender could be because the IPs focused more attention on females. Alternatively, female ASRH behaviors may be more open to change than male ASRH behaviors, or the interventions for one reason or another may have resonated better with young females than with males. All of these possibilities are worth further investigation to better understand the sharp differential on impacts by gender.

Tables G.7 and G.8 (see appendix G) provide more detail on the significant AYA impacts by scenario and gender. Several overall patterns in the tables are apparent. In all, 32 outcomes were modeled (7 antecedents and 9 behaviors modeled separately for males and females). In 12 of those cases, observed significant treatment impacts were corroborated by at least two out of three scenarios. This triangulation adds internal validity to the findings.

It is interesting to note that all but one of the significant behavioral treatment impacts occurred under scenarios 2 and 3, principally among females. This pattern suggests that self-reports were more sensitive than physical assignment to treatment or control groups in detecting AYA's behavioral impacts.

Comparison of AYA Evaluation Sample with 2004 Ghanaian National Survey of Adolescents 2004

As mentioned previously, the AYA evaluation sample was not meant to be nationally representative. However, confidence in the results reported here increases if it can be shown that characteristics and ASRH outcomes of the AYA sample resemble the rest of the country. Perhaps the closest comparison would be to the 2004 Ghanaian National Survey of Adolescents (NSA), which did use a nationally representative sample (Awusabo-Asare, Abane, and Kumi-Kyereme 2006). Table 9 compares selected characteristics and ASRH outcomes from the 17- to 19-year-olds in the AYA sample to a subsample of the NSA dataset, age 15 to 19. The data are aggregate means so differences and similarities are merely suggestive.

As table 9 shows, the AYA sample includes proportionately more youths from Greater Accra Region than did the NSA survey. AYA sample youths were also more likely to live in households in the lowest socioeconomic status quintile. Proportionately fewer AYA respondents were enrolled in school, but that is due in part to the sample age differences. Each of those factors, previous Ghanaian studies have shown, increases ASRH risks (Brieger et al. 2001; Glover et al. 2003; Karim et al. 2003).

Consistent with this finding, table 9 suggests that the AYA respondents were more likely to have initiated sex and to have had more sexual partners in the previous 12 months. The AYA respondents were also more likely to have used condoms at first

Table 9. Selected Mean ASRH Behaviors, by Gender, AYA/Ghana/JSI Evaluation Survey, 2006, and Ghana National Survey of Adolescents, 2004

Indicator	AYA 2006 (age 17–19)		NSA 2004 (age 15–19)	
	Male	Female	Male	Female
Greater Accra Region	0.31	0.33	0.10	0.14
Muslim	0.07	0.10	0.20	0.16
Currently in school	0.48	0.32	0.77	0.71
Poorest SES quintile	0.21	0.25	0.18	0.16
Ever had sex	0.35	0.54	0.16	0.30
Condom used at first sex	0.39	0.44	0.28	0.28
Contraceptive used at first sex	0.41	0.49	0.68	0.63
Contraceptive used in last sex	0.56	0.46	0.64	0.51
Ever used condom with current partner	0.66	0.64	0.48	0.44
Two or more partners in past 12 months	0.37	0.09	0.16	0.06

Source: Awusabo-Asare, Abane, and Kumi-Kyereme 2006.

Note: SES = socioeconomic status.

sex and with their current partners. Conversely, the NSA respondents more likely used modern contraceptives.

This informal comparison suggests that the AYA sample generally resembles the rest of Ghana, but there are some notable differences. AYA sample youths appeared to be subject to somewhat greater ASRH risks than other Ghanaian youths. However, they appear more likely to have used condoms. Although the AYA youths may have been less likely than NSA respondents to have used any modern contraceptives at first sex, the differences at last sex appear small. In both samples, half or more of all youths had used some form of modern contraception. This finding is about twice the estimated level for youths in the rest of West and Central Africa (Lloyd 2004).

Conclusion

To reiterate, the main objective of this evaluation was to determine whether exposure to comprehensive, integrated programs of the African Youth Alliance (AYA) resulted in improved adolescent sexual and reproductive health (ASRH) behavioral outcomes among youth ages 17 to 22. Triangulated results show the answer is affirmative although not for all outcomes and not for both sexes. The fact that AYA-specific treatment impacts could be detected at all in such an ASRH program-saturated setting is itself remarkable. Given the conservative research design, it is quite possible that more AYA treatment impacts would have been observed (among antecedents and perhaps among males) had there been pre- as well as post-exposure data and fewer attribution problems. Finally, the results shown here are consistent with results from other Ghanaian studies.

The main findings of the evaluation are summarized below in light of the original research questions.

Answers to Key Research Questions

Antecedents

Question 1: Among 17- to 22-year-old unmarried and recently married youths, were those who were exposed to AYA more likely to have better knowledge about HIV/AIDS and condoms than those who were not exposed to AYA?

Answer: Females and males who were exposed to AYA were more knowledgeable about HIV/AIDS and condoms than those who were not exposed to AYA (spontaneous knowledge score; no definitive impact was observed on prompted knowledge score). No significant impact was observed on the belief that condoms protect against HIV/AIDS.

Question 2: Among 17- to 22-year-old unmarried and recently married youths, were those who were exposed to AYA more likely to have more desirable attitudes about condoms than those who were not exposed to AYA?

Answer: No definitive impact was observed, but attitudes were overwhelmingly positive among both males and females.

Question 3: Among 17- to 22-year-old unmarried and recently married youths, were those who were exposed to AYA more likely to have more self-efficacy regarding safe ASRH behavior than those who were not exposed to AYA?

Answer: Females who were exposed to AYA reported more self-efficacy regarding confidence in obtaining condoms and insisting that their partner use condoms than those who were not exposed to AYA, but less self-efficacy regarding confidence to use condoms correctly. Males who were exposed to AYA reported greater self-efficacy regarding correct condom use than those who were not exposed to AYA.

Behaviors

Question 4: Were 17- to 22-year-old unmarried or recently married youths who were exposed to AYA more likely to abstain from sex or to delay first intercourse than those who were not exposed to AYA?

Answer: Females who were exposed to AYA were more likely to abstain from sex and more likely to delay sexual debut than those who were not exposed to AYA. Males who were exposed to AYA were less likely to abstain from sex than those who were not exposed to AYA.

Question 5: Among sexually active 17- to 22-year-old unmarried or recently married youths, were those who were exposed to AYA more likely to report fewer lifetime sexual partners than those who were not exposed to AYA?

Answer: Sexually active females who were exposed to AYA were more likely to report fewer lifetime sexual partners than those who were not exposed to AYA. No impact was detected among males.

Question 6: Among sexually active 17- to 22-year-old unmarried or recently married youths, were those who were exposed to AYA more likely to use condoms than those who were not exposed to AYA?

Answer: Sexually active females who were exposed to AYA were more likely to use condoms than those who were not exposed to AYA, by a wide margin. This includes use at first sex, use at last sex, ever used, and consistent use. No impact was observed among male respondents.

Question 7: Among sexually active 17- to 22-year-old unmarried or recently married youths, were those who were exposed to AYA more likely to use modern contraceptives than those who were not exposed to AYA?

Answer: Sexually active females who were exposed to AYA were more likely to use modern contraceptives than those who were not exposed to AYA, by a wide margin. This includes use at first sex and at last sex. No impact was observed among male respondents.

Recommendations and Considerations

This evaluation provides strong evidence of impact on ASRH knowledge, self-efficacy, and protective behaviors among Ghanaian youth, especially among young females.

Impact was especially notable with regard to young females' use of condoms and contraceptives. Despite these positive impacts, nationwide surveys continue to show that a large proportion of Ghanaian youths still lack essential ASRH knowledge and continue to engage in unsafe sex. More work is needed to minimize risks of HIV and unwanted pregnancy in this population.

Although the scope of this evaluation focused on providing answers to the seven research questions, and not on recommendations for future ASRH programs, some findings nevertheless clearly provide insights that can contribute to future planning. Recommendations tend to fall into one of several categories: expanding the interventions that appear to lead to positive impact; seeking creative alternatives to address areas with less impact; and carrying out further data analysis or additional research.

Replicate What Works

Overall, the AYA program achieved impressive positive impacts on several ASRH outcomes in Ghana, especially among females. This suggests that a comprehensive, scaled-up, multicomponent approach such as AYA's can be effective in improving certain key ASRH outcomes and that expanding such programs to other sites in Ghana could have similar impacts. In theory, when expanding to other sites, one would try to replicate those interventions associated with the most successful impacts (e.g., those focused on HIV/AIDS knowledge, some of the self-efficacy interventions, and female condom and contraceptive use). This evaluation did not test whether all six integrated program components are necessary to achieving optimal impact, but it does suggest that integrated programs make positive outcomes more likely.

Improve Methods for Achieving Overall Impact

When attempting to decide which areas to address in future ASRH programs, it is important to distinguish between variables that indicate positive baseline ASRH conditions but no AYA impact, and those that suggest poor baseline ASRH conditions on which AYA had an impact. For example, AYA did not have a positive impact on attitudes toward condom users, but attitudes were positive among over 90 percent of those surveyed. Similar results were found for belief that condoms protect against HIV/AIDS and confidence in obtaining condoms (males). However, AYA had a clear positive impact on many of the condom use outcomes (females), spontaneous HIV/AIDS knowledge (females), and confidence to use condoms correctly (males). Yet even among those exposed to AYA interventions, the percentage of positive responses for these behaviors was low—less than 55 percent in most cases. For future ASRH programs in Ghana, those practices that still show unsafe levels clearly need further work and improvement, whether AYA affected them. Because AYA did affect many outcomes that still need improvement, replicating the integrated approach would seem to make sense.

Appendix A

Interview Team Members

No.	Name	Degree	Field Experience	Languages	Age	ID Number
TWI GROUPS						
KUMASI (KMA) ASHANTI						
1.	Afia Serwaa Kusi-Appiah (F)	BA	6	Twi	24	Supervisor 301
2.	Matilda Antwi (F)	BA	4	Twi, Fante, Ga, Krobo	25	302
3.	Selikplim G. Kssiedu	MPhil	8	Twi, Ewe, Ga	31	303
4.	James Nyomakwa-Obimpeh	BA	1	Twi	27	304
5.	Janet Serwaa Boateng (F)	MPhil	7	Ewe, Twi	32	305 (314)
6.	Fauster Agbenyo	MA	10	Twi	35	306
OTHER ASHANTI						
1.	Simon Amwami	BSc	3	Twi, Fante	30	Supervisor 311
2.	Cynthia Henewaa Kuma (F)	BA	2	Twi	25	312
3.	Christian Damanka	BA	1	Twi	24	313
4.	Paul Osei-Kuffour	MA	9	Twi	28	314 (305)
5.	Ateku Abdul-Jalilu	BA	3	Twi, Ewe, Kotokoli	32	315
6.	Delali Gbedze (F)	BA	11	Twi, Ga	27	316
7.	Amewushika Hadjah (F)	Dip	NIL	Ga, Twi, Ewe	31	317
EASTERN REGION						
1.	Rabiu Mohammed Ali	BA	2	Twi Fante	34	Supervisor 201
2.	Paschalina Ampofo (F)	MPhil	3	Twi	27	202
3.	Ernest Seth Afful	BSc	5	Twi	25	203
4.	Jennifer Happy Adiku (F)	ACCA	4	Twi, Ga, Ewe, Krobo	27	204
5.	Delasi John Y. Ahamah	BA	1	Ga, Ewe, Twi	29	205
6.	Johnathan Addie-Amaning	HND	40	Twi, Ga Adangme	33	206
FANTE GROUP CENTRAL REGION						
1.	Arthur Daniel	BSc	5	Fante, Twi	26	Supervisor 401
2.	Afua Sarpong F. Gyamfi (F)	BA	5	Twi, Ga, Fante, Dangme	26	402
3.	Stephen Avumegah	BA	1	Fante, Twi	24	403
4.	Gifty Nyarko (F)	BA	4	Twi, Ga, Fante	24	404
5.	Edmund Fiifi Enchill	BA	3	Fante, Twi	24	405
6.	Atta-Plange Frederick	BA	4	Fante, Twi	26	406

No.	Name	Degree	Field Experience	Languages	Age	ID Number
GA GROUP GREATER ACCRA						
1.	Raphael Arku	MPhil	7	Twi, Ga, Ewe	26	Supervisor 101
2.	James Allotey-Annan	HND	15	Ga, Eng, Twi	29	102
3.	Edith Asi Nyamedor (F)	BA	1	Dangme, Twi, Ga	26	103
4.	Roseline Esi Ahene (F)	MPhil	2	Fante, Twi, Ga	27	104
5.	Grace Adzo Motey (F)	MPhil	2	Ga, Twi, Ewe	27	105
6.	Aryeetey Absalom Nii Ayi	BSc	2	Ga	26	106
7.	Eric Offei Darko	BA	3	Ga, Fante, Twi	26	107
8.	Comfort Barke Bonney (F)	MPhil	6	Twi, Ga, Krobo, Ewe	26	108
9.	Samuel Ebow Koomson	BSc	3	Ga, Twi, Fante	26	109
10.	Irene Maria Quarshie (F)	BA	1	Fante, Twi	23	110

HND = higher national diploma; ACCA = Association of Certified Chartered Accountants.

Appendix B

List of AYA IPs in Ghana

Ghana Health Service
Planned Parenthood Association of Ghana
Christian Health Association of Ghana
Nurses and Midwives' Council for Ghana
National Youth Council
Center for the Development of People
International Federation of Women Lawyers Ghana
Ministry of Education/Ghana Education Service
Ministry of Health/Reproductive Health Unit
National Youth Council
National Population Council**
Population Impact Project
Voluntary Services Organization

** coordination, no direct implementation

Appendix C

Measurement of Key Variables

This section describes how African Youth Alliance (AYA) program exposure, outcomes of interest (i.e., dependent variables), and control variables were constructed.

Defining Exposure to AYA

To define *exposure to AYA* as a single variable for the self-reported exposure design, researchers created an exposure scale from all 10 of the adolescent sexual and reproductive health (ASRH) activities mentioned in text: radio programs, TV programs, *Junior Graphic* magazine, peer education, youth-friendly services (YFS), life-planning skills (LPS), and the four enter-education programs. Each type of activity was assigned a value of 1 if a respondent reported being exposed, and a value of 0 if not, for a scale with a possible range of 0 to 10.

A categorical AYA exposure variable was then created by collapsing the scale into three categories: (a) no AYA exposure, (b) exposure to one or two AYA activities (some exposure), and (c) exposure to three or more AYA activities (high exposure). The high-exposure category was considered to represent exposure to the integrated AYA program. For the self-reported exposure design, cases in the second category (some exposure) were then dropped, so the final exposure variable was dichotomous—either (highly) exposed to AYA or not.

For the intervention-control design, the situation was simpler, because all respondents in the intervention areas were considered “exposed,” and all respondents in control areas were treated as “not exposed.” As table 6 shows, only a fraction of intervention area respondents were, in fact, exposed; a substantial portion of control-area respondents reported some exposure to AYA. This contamination could be to the result of mass media, youth mobility across intervention and control localities, and attribution errors.

Exposure to AYA

Based on previous work, exposure to the AYA program was defined in the following manner:

Exposure to Mass Media Programs

Survey respondents were asked if they had ever listened to AYA-sponsored reproductive health radio programs.¹ If the respondent answered affirmatively and could spontaneously recall at least one of the seven ASRH topics,² he or she was categorized as being exposed to AYA radio.

Respondents were also asked if they had ever seen AYA-sponsored television programs³ or had read a popular youth magazine, *Junior Graphic*, which AYA used to transmit ASRH messages. If they answered positively to either item and recalled at least one of the seven AYA ASRH topics, they were categorized as exposed to that item.

Exposure to Youth-Friendly Services

To measure adolescents' exposure to YFS, respondents were asked if they had ever visited a health facility that offered services mainly for youths (described through a series of filter questions). If the respondent reported “yes,” he or she was considered exposed to YFS.

Exposure to Peer Educators

Respondents were asked (a) if they had ever met a peer educator who was attached to a health facility that provided services for young people, (b) if they had met with a peer educator in the community, (c) if they had ever attended a youth talk,⁴ and (d) if the peer educator was affiliated with one of the AYA implementing partners (IPs). (The questionnaire included the names of AYA IPs that fielded peer educators.) Respondents who answered affirmatively to at least one of these four conditions were categorized as exposed to peer educators.

Exposure to Life-Planning Skills

Respondents were asked if they had ever attended a life-planning skills course in school. They were asked if the course was called “Life-Planning Skills” (the name of the AYA-supported curriculum), or was otherwise named. Those who replied affirmatively to LPS and could recall at least four of the seven ASRH topics discussed were considered exposed to AYA's LPS.

Exposure to Enter-Education

Enter-education activities combined entertainment with the promotion of AYA ASRH messages. AYA supported four different kinds of enter-education activities in different

1. The main AYA-sponsored radio program was titled *Curious Minds*.

2. ASRH topics included HIV/AIDS, voluntary counseling and testing for HIV/AIDS, sexually transmitted diseases, condoms; having sex with only one partner or being faithful, postponing or abstaining from sex, and pregnancy prevention/reproductive health.

3. The two TV responses were the Children's Channel and *It Pays to Wait*.

4. A youth talk was an AYA-sponsored activity where peer educators discussed a variety of ASRH topics in a small group setting.

parts of the country, including drama groups, poetry readings, sporting events, and youth clubs. Respondents were asked whether they had ever attended each of these activities and, for each activity mentioned, if they recalled any of the seven ASRH topics. Respondents were considered exposed to a given enter-education activity if he or she had attended the event and recalled four or more ASRH topics discussed. Overall exposure to enter-education was then measured on a scale of 0 to 4 on the basis of the number of events the respondent was exposed to with message recall.

Outcome or Dependent Variables: Antecedents

HIV/AIDS Knowledge

A scale representing the respondent's knowledge about ways to prevent HIV infection was constructed from this question: "What can a person do to avoid catching HIV/AIDS?" The question was open-ended with multiple responses allowed, and 10 different types of replies were recorded. A positive score of 1 was assigned for each correct reply, and negative 1 assigned to a wrong answer. A score for each respondent was created by summing scores for all of his or her replies. The values among all respondents ranged from -1 to +4 with a mean of 1.6. A dichotomous variable was then created from the scale, with 1 assigned to those who scored 3 or more (those with substantial knowledge) and with 0 assigned to those with scores below 3 (those with less knowledge).

Another scale representing respondents' knowledge of ways to prevent HIV was constructed using seven structured questions:

- Can a person get HIV through mosquito bites?
- Can a person get HIV by shaking hands?
- Can a person get HIV by sharing meals?
- Can HIV risk be reduced by limiting to one partner?
- Can the risk of HIV be reduced by using condoms?
- Is there treatment for HIV?
- Can HIV be cured?

A positive value of 1 was assigned to each right answer, and a value of 0 was assigned to each wrong answer or "don't know." As with the spontaneous knowledge scale described earlier, scores from these items were then summed to form a scale, which in this case ranged from 0 to 7 with a mean value of 4.9. As earlier, the scale was then converted into a dichotomous variable, with scores of 6 or 7 corresponding to respondents with substantial knowledge, and scores below 6 corresponding to those with less knowledge.

Concerning the "belief that condoms are protective against HIV," exploration revealed one variable that best captured this concept: the respondents' knowledge or belief that condoms protect against HIV/AIDS. This variable was coded 1 for those who reported that condoms were highly effective in preventing HIV and coded 0 for those who reported that condoms were not effective or were somewhat effective.

Condom Self-Efficacy

Confidence in obtaining condom when needed: This survey concern was a 5-point Likert-scaled item. Those who reported they were "very sure" or "sure" that they could get a condom if needed were given a value of 1 and 0 otherwise.

Confidence in being able to put on a condom correctly: Those who reported “yes” to the question “Do you feel that you are or would be able to put on and use a condom properly?” were coded 1, and respondents who were “not very sure” or “not sure” were coded 0.

Confidence in insisting partner use a condom: Those who reported “very sure” or “sure” that they could insist that their sexual partner use a condom were coded 1, and respondents who were “not very sure” or “not sure” were coded 0.

Positive attitude toward condom users: Respondents who reported that condom users were “responsible” or who felt that condom users were “protecting against HIV” were considered to have a positive attitude toward condom users and were coded 1; other responses were coded 0.

Outcome or Dependent Variables: Sexual Behavior

Most behavioral outcome variables were based on single questions from the individual questionnaires, most of which had simple yes/no answers. The delay of sexual debut was measured among all respondents; abstinence was measured among unmarried youth only; all other variables were measured on respondents who had ever had sex.

Measured on All Respondents

All respondents were asked to report on the following items.

Delay of sexual debut: Those who reported having first sex by age 16 or earlier were coded 1 (early debut); otherwise they were coded 0 (delayed debut).

Abstinence from sex during past 12 months: Unmarried respondents who did not report having had sex during the 12 months preceding the survey were coded 1 (currently abstaining). Unmarried respondents who reported having sex in the past year were coded 0 (not abstaining).

Measured Only on Sexually Active Respondents

Only sexually active respondents were asked about the following items.

Two or more sexual partners during past 12 months: Respondents reporting multiple partners were coded 1; respondents reporting one or no partners were coded 0.

Condom use at first sex: Sexually initiated youths who reported using condom at first sex were coded 1; otherwise they were coded 0.

Condom use at last sex: Sexually initiated youths who reported having used condom during last sex were coded 1; otherwise they were coded 0.

Ever used condom with current partner: Sexually initiated youths who reported ever using condoms with current sexual partner were coded 1; otherwise they were coded 0.

Consistent use of condoms with current partner: Sexually initiated youths who reported always using condoms with current sexual partner were coded 1; otherwise they were coded 0.

Modern contraceptive use during last sex: Sexually initiated youths who reported using a modern method of contraception during last sex were coded 1; otherwise they were coded 0.

Modern contraceptive use during first sex: Sexually initiated youths who reported using a modern method of contraception during first sex were coded 1; otherwise they were coded 0.

Control Variables

Exposure to Other (Non-AYA) ASRH Activities

This evaluation attempted to distinguish AYA exposures from exposure to other non-AYA program activities. Accordingly, exposure to ASRH programs in general and other non-AYA program activities were also measured. Research assistants were provided with lists of the names of the AYA IPs and AYA-affiliated health facilities. They used these lists to differentiate the two types of ASRH exposures. A scale variable was created that ranged from 0 and 7, indicating incremental exposure to one or more ASRH programs.

Sociodemographic Characteristics

The sociodemographic variables measured were age, marital status (married or not), religion (Protestant, Catholic, Muslim, or other religion), religiosity (goes to church/ or religious institute at least once a week), currently in school, currently working for wage, living with parents, mother alive, father alive, traveled out of the district during the past 12 months, living in the area since birth, geographical region of residence (Ashanti, Central, Eastern, Greater Accra), and socioeconomic status.

The socioeconomic status variable was constructed using the household questionnaire. (Household heads were the respondents.) A total of 15 items from the household survey questions corresponding to household assets, ownership of consumer items, and household characteristics, including materials used for building the households, were applied to construct this variable. The first set of questions included in this variable is household assets, ranging from owning a telephone to a motorcycle or a car. The second set of questions included type of dwelling, sanitation facilities, source of drinking water, and source of fuel for cooking. Principal component analysis is applied to generate a score for each item, which are not correlated with each other. Each household is then assigned a score for each item, and the scores are summed into a socioeconomic index for each household. A higher score for a household socioeconomic index indicates a wealthier household. The individual respondent residing in that household is ranked according to this index. The sample is then divided into quintiles from one (lowest) to five (highest).

Appendix D

Propensity Score Matching Technique

The propensity score matching (PSM) technique was applied to the intervention-control (scenario 2) and self-reported exposure strategies (scenario 3). Stata's "pscore" procedure was used. PSM is a nonparametric method that approximates a randomized experimental design in a statistical context (Rosenbaum and Rubin 1983). The method estimates unbiased treatment effects by controlling for confounding factors and by computing marginal probabilities of the outcome for intervention or exposed units and for controls or unexposed units that have been matched on observables. Instead of matching the subjects on all confounding factors, pre-intervention characteristics of each subject are combined into a single-index variable (propensity score), and this score is used to match intervention and control units. Units are thus matched on a single score that represents the probability of program participation. PSM makes the strong assumption that all relevant covariates and confounders are included in the model. This omitted variables issue is addressed in detail later.

PSM analyses follow two stages. In the first stage, a multivariate probit regression model is fitted to predict exposure, that is, the propensity score for program participation. If the goodness of fit of this first-stage model is adequate, the *balancing property* is satisfied. Meeting the balancing property test ensures that the distribution of the predictors used to obtain the propensity scores was not significantly different between the exposed and unexposed units within each block of scores. If the balancing property is not satisfied, the propensity scores is re-estimated using a different model specification until balance is achieved (for details, see Becker and Ichino 2002).

In the first-stage African Youth Alliance program (AYA) participation equations for the self-reported exposure strategy, there was a risk that one predictor—self-reported exposure to other adolescent sexual and reproductive health (ASRH) programs—would be endogenous with exposure to AYA. The PSM method does not control endogeneity, and endogeneity could bias the estimated treatment impact. To avert this bias, bivariate probits were used to check for endogeneity beforehand. If non-AYA participation was found to be endogenous with AYA participation for a given outcome, fitted values for non-AYA participation were derived from auxiliary probit equations and were substituted for the actual non-AYA participation measure in the participation equation.

In the second stage, the predicted probability of program participation, which is the propensity score, was used to estimate the treatment impact. The treatment impact estimate is the weighted average effect of treatment on the treated (ATT). The ATT is

a measure of the differences in the outcome variables between exposed and unexposed people or respondents. The matched youths are grouped into blocks and a treatment impact is computed for each block. The average of these treatment effects gives the final treatment impact estimate.

Four different estimators were used to perform the matching: (a) nearest neighborhood, (b) radius, (c) kernel, and (d) stratification. In nearest neighborhood matching, each exposed respondent is matched with the unexposed person or respondent with the closest propensity score, that is, the nearest neighbor. In radius matching, each exposed unit is matched with the unexposed unit whose propensity score falls in a predefined neighborhood of the exposed unit's propensity score. With kernel matching, all exposed units are matched with a weighted average of all control units with weights that are inversely proportional to the distance between propensity scores of the exposed and unexposed respondents.

Stratification matching divides the range of variation of propensity scores into intervals so that, within each interval, exposed and unexposed respondents have, on average, the same propensity. The matching technique ensures *common support* (i.e., that observations with propensity scores that do not match between exposed and exposed respondents are omitted from the analysis). For further details on the matching estimators, see Becker and Ichino 2002. The result is four separate ATT estimates. In practice, the estimates vary as a result of random error and differences in efficiency. Inferences are based on Wald tests. In this application, a treatment impact was reported if Wald tests were significant at the $p < 0$ level for any three of the four estimators.

Several threats to validity in the present PSM application should be mentioned. The first is that self-reported exposure could be recall biased. The PSM method does not account for recall bias unless it jointly and equally affects the outcome of interest, in which case it is treated as random error. The implication of this random misclassification is that the treatment impact will be biased toward the null. If however AYA exposure and the outcome are differentially recall biased, the ATT will, in turn, be biased in indeterminate fashion.

A second issue is potential omitted variables bias. For the intervention-control strategy, PSM approximates a post-test-only matched control group design in which it is assumed that controls are exposed to the same set of confounders as the intervention area units. This assumption is not true for the self-reported strategy. Omitted variables bias is a threat to the extent that the composition of intervention and control groups differs. In the self-report strategy there is no such assurance.

A third issue, specific to the intervention-control strategy, is the dilution impact caused by the intention-to-treat design. If few intervention area units were actually exposed to AYA, there is the risk of a Type II inferential error because the random component will dominate the systematic component.

Finally, the PSM models do not account for any unmeasured treatment effects resulting from non-AYA ASRH exposures (i.e., effects not correlated with the self-reported non-AYA exposure variable or caused by systematic non-AYA interventions in control localities).

The study, therefore, imposes the following assumptions. First, recall bias affected self-reported AYA exposure and outcomes in equal fashion. Second, the same sets

of omitted variables characterize intervention and control samples, as well as those who self-report AYA exposure and those who do not. Third, respondents with similar background characteristics had similar non-AYA ASRH exposures that were not measured by the self-reported non-AYA exposure indicator.

The major advantage of the PSM model over a simple regression model is that it is nonparametric. As such, the PSM models do not need to maintain the assumption that errors are normally distributed in the same manner as parametric models. In addition, with nonparametric estimators, the design impact inherent in cluster sample surveys does not influence the variance estimates of ATT. The PSM ATT variance estimates may, therefore, be more efficient when compared with simple parametric models and when there is significant unobserved cluster-level heterogeneity. However, the comparative efficiency gain of the PSM over parametric methods may be lost when observations are dropped to achieve common support.

Appendix E

Instrumental Variable (IV) Regression

All adolescent sexual and reproductive health (ASRH) behaviors and antecedents evaluated here were operationalized as indicator variables (i.e., binary response variables). In the absence of endogeneity, the following simple probit model gives an unbiased program treatment impact:

$$y_{1ij} = x_{1ij}\beta + y_{2ij}\gamma + u_{ij} \dots\dots\dots (1)$$

where y_{1i} is the propensity of the outcome of interest⁵ for individual i from cluster j ; x_{1i} is a vector of exogenous explanatory variables (i.e., respondent characteristics like age, marital status, education, religion, geographical region, etc.); β is the vector of coefficients estimating the impact of x_{1i} on y_{1i} ; y_{2i} is an indicator variable defining exposure to the African Youth Alliance (AYA) program; γ is the impact of y_{2i} on y_{1i} ; and u is a normally distributed error term that represents the variance of y_{1i} unexplained by x_{1i} and y_{2i} (i.e., unobserved factors influencing y_{1i}). The equation assumes that units i are independent and that there are no unobserved confounders (endogeneity) (i.e., u is not correlated with x_{1i} or y_{2i}). However, subsets of units i belong to each cluster j and share certain common characteristics. This grouping implies that individual variances may be underestimated. It also increases the probability that u is correlated with y_{2i} , for example, if the program was purposively targeted to certain clusters j (a form of endogeneity). The first problem, clustered observations, is easily handled. The present application uses Taylor series linearization to correct variances for the nonindependence of i (StataCorp 2005). However, if y_{2i} remains endogenous after controlling for x_{1i} , equation (1) gives biased and inconsistent estimates of γ (impact of AYA on y_{1i}).

In this study, the IV approach is used to test whether y_{2i} is endogenous with y_{1i} in equation (1). If y_{2i} is endogenous, then, in the following equation, u would be correlated with the error term (ε):

$$y_{2ij} = x_{1ij}\phi + x_{2ij}\alpha + \varepsilon \dots\dots\dots (2)$$

5. Such as, having high knowledge on ASRH, or using condom during last sex, or having two or more sexual partners during the past 12 months, or having one or the other outcome considered for this evaluation.

Here, x_2 is a vector of (instrumental) variables⁶ not identical to x_1 , ϕ is the partial correlation coefficient of x_1 on y_2 , and α is the partial correlation coefficient of x_2 on y_2 . If endogeneity is present, the unobserved variables that jointly influence exposure to AYA and the outcome of question will be present in both u and ε , and the error terms will be correlated. A bivariate probit model using maximum likelihood is used to simultaneously estimate equations (1) and (2) and to assess whether or not u and ε are correlated (see StataCorp 2005 for further details). The bivariate probit model allows correlation between the unobserved factors of the two simultaneous equations and gives an unbiased estimate of γ , assuming that u and ε are bivariate normally distributed. If the errors are correlated and if a likelihood ratio test indicates that the simultaneous two-equation probit model is more efficient than the two simple probit models estimated independently, then y_2 is considered endogenous and the (recursive) bivariate probit is the treatment effects model of choice. If not, the simple probit model using equation (1) is the most efficient unbiased treatment impact estimator. The bivariate probit procedure is implemented using Stata's **biprobit** command, with the **cluster()** option to correct variance estimates for the complex survey design. In this application, at least one instrumental variable is needed for the model to be identified. The instrumental variables x_2 are considered valid when α is statistically significant ($p < .05$) in equation (2) but not significant when x_2 replaces y_2 in equation (1).

The present analysis is further complicated when one attempts to control for y_3 , a variable defining exposure to other ASRH programs. The approach is to include y_3 as another predictor in equation (1). Like the variable indicating exposure to AYA, y_3 may also be endogenous with y_1 . As discussed in the measurement section of this report, y_3 is a continuous scale variable with higher scores indicating greater exposure to other ASRH programs. Following a procedure by Bollen, Guilkey, and Mroz (1995), the first step is to fit an ordinary least square (OLS) model predicting y_3 with x_1 , adding at least one instrumental variable⁷ as an additional predictor. The residual (i.e., the error term, let us say ω) of the OLS equation is obtained and used in the next step to test for endogeneity. This process is done by including ω and y_3 as joint predictors in equation (1). If the slope on ω is significant, y_3 is assumed to be endogenous with y_1 . When y_2 is not endogenous, this specification is sufficient for testing the endogeneity of y_3 . In the event that y_2 is also endogenous, y_3 and ω are included in both bivariate probit equations. If y_3 is found not to be endogenous, ω is dropped from the simple or bivariate probit model to get the unbiased treatment impact γ . If ω is significant (i.e., y_3 is endogenous), both ω and y_3 are dropped from the models and replaced by \hat{y}_3 (i.e., the predicted value of y_3 obtained from the first-stage OLS).

This procedure also yields an unbiased treatment impact estimate γ , controlling for y_3 . Because y_3 is a derived regressor, its standard error is not correctly estimated so inferences on non-AYA treatment effects are not valid (Wooldridge 2002). As in all IV models, the validity of the instrumental variables is ascertained beforehand.

6. Instrumental variables are correlated with exposure but not with the outcome of interest.

7. In this case, the instrumental variable is correlated with y_3 but not with y_1 or y_2 .

Appendix F

Distribution of Respondents: Sample Characteristics and Bivariate Analysis Results

Table F.1. Percentage Distribution of Respondents by Selected Household Characteristics, by Case-Control Areas and Self-Reported AYA Exposure Status, AYA Impact Evaluation Survey, Ghana 2006

Household Characteristic	Intervention-Control Design			Self-Reported Exposure Design			
	Control (n = 1,428)	Intervention (n = 1,988)		None (n = 1,626)	Some (n = 815)	High (n = 960)	
Gender of the household head			***				***
Male	50.1	40.6		49.2	42.9	38.4	
Female	49.9	59.4		50.8	57.1	61.6	
Missing	0.0	0.0		0.0	0.0	0.0	
Age of the HH head			*				**
15–24 years	7.6	9.0		8.4	10.4	6.7	
25–34 years	10.2	10.3		10.5	11.3	9.0	
35–49 years	37.6	39.9		37.2	35.8	44.7	
50 and older	44.7	40.7		43.8	42.5	39.6	
Missing	0.0	0.0		0.0	0.0	0.0	
Education of HH head			***				***
None	27.1	25.0		28.8	28.1	19.2	
Primary	7.6	13.7		8.5	15.2	12.1	
Secondary and above	65.3	61.3		62.7	56.7	68.8	
Missing	0.0	0.0		0.0	0.0	0.0	
Marital status of HH head			**				**
Married	64.9	60.4		64.2	58.9	62.2	
Separated/widow	23.7	25.3		23.6	24.2	26.3	
Single	11.5	14.3		12.2	16.9	11.6	
Missing	0.0	0.0		0.0	0.0	0.0	
Employment status of HH head			***				***
Unemployed	10.9	9.5		11.3	10.1	8.0	

Household Characteristic	Intervention-Control Design			Self-Reported Exposure Design			
	Control (n = 1,428)	Intervention (n = 1,988)		None (n = 1,626)	Some (n = 815)	High (n = 960)	
Temporarily employed	3.1	4.4		3.5	5.6	2.9	
Salaried	25.9	20.5		24.4	19.6	22.8	
Business	36.4	43.6		36.6	43.4	45.2	
Farming/fishing	23.7	22.1		24.2	21.2	21.0	
Missing	0.0	0.0		0.0	0.0	0.0	
Electricity			***				***
No	19.7	13.4		19.1	13.6	12.6	
Yes	80.3	86.6		80.9	86.4	87.4	
Missing	0.0	0.0		0.0	0.0	0.0	
Radio							***
No	12.0	13.8		26.1	13.3	9.4	
Yes	88.0	86.2		73.9	86.7	90.6	
Missing				0.0	0.0	0.0	
Television							**
No	37.7	35.3		39.0	35.2	32.3	
Yes	62.3	64.7		61.0	64.8	67.7	
Missing	0.0	0.1		0.0	0.0	0.0	
Refrigerator							***
No	57.1	54.7		59.0	55.5	49.8	
Yes	42.9	45.4		41.0	44.5	50.2	
Missing	0.0	0.0		0.0	0.0	0.0	
Bicycle			**				**
No	85.9	83.4		86.3	85.4	81.0	
Yes	14.2	16.6		13.7	14.6	19.0	
Missing	0.0	0.0		0.0	0.0	0.0	
Motorcycle							
No	97.9	98.1		98.0	98.4	97.7	
Yes	2.1	1.9		2.0	1.6	2.3	
Missing	0.0	0.0		0.0	0.0	0.0	
Automobile			*				
No	85.2	87.1		86.2	86.3	86.5	
Yes	14.9	12.9		13.8	13.7	13.5	
Missing	0.0	0.0		0.0	0.0	0.0	
Video			***				**
No	59.9	59.9		61.6	60.3	56.5	
Yes	40.1	40.1		38.4	39.8	43.5	
Missing	0.0	0.0		0.0	0.0	0.0	
Telephone			*				
No	91.2	92.8		91.8	92.9	92.0	
Yes	8.8	7.2		8.2	7.1	8.0	

Household Characteristic	Intervention-Control Design			Self-Reported Exposure Design			
	Control (n = 1,428)	Intervention (n = 1,988)		None (n = 1,626)	Some (n = 815)	High (n = 960)	
Missing				0.0	0.0	0.0	
Computer							***
No	90.4	91.8		91.0	93.1	89.9	
Yes	9.6	8.2		9.0	6.9	10.1	
Missing	0.0	0.0		0.0	0.0	0.0	
Flooring material							
Natural floor/incomplete	22.0	24.2		23.1	25.6	21.7	
Finished floor	78.0	75.8		76.9	74.4	78.3	
Missing	0.0	0.0		0.0	0.0	0.0	
Roof material							*
Thatch/grass/mud	89.9	88.4		90.2	89.5	86.8	
Corrugated iron	7.8	8.8		7.8	8.1	9.8	
Slabs/tiles/woods	2.2	2.8		2.1	2.5	3.4	
Missing	0.0	0.0		0.0	0.0	0.0	
Drinking water			***				***
Piped water into dwelling	33.3	41.8		32.8	43.2	43.1	
Public tap	37.4	40.3		38.7	40.6	38.8	
Open/protected well	22.6	11.9		21.3	10.8	12.7	
Spring/stream/river	5.5	3.7		5.9	3.4	2.6	
Water in bottle/packet	1.3	2.2		1.3	2.0	2.6	
Other	0.0	0.1		0.0	0.0	0.0	
Missing	0.0	0.0		0.0	0.0	0.0	
Toilet facility			***				***
Flush toilet	20.7	17.0		19.1	17.2	18.8	
Traditional pit latrine	26.5	13.4		25.3	13.7	12.3	
Ventilated pit latrine	46.3	63.3		49.0	63.8	62.1	
No toilet	6.4	6.3		6.6	5.3	6.9	
Missing	0.0	0.0		0.0	0.0	0.0	
Socioeconomic status			***				***
Poorest	25.2	19.1		26.0	19.6	16.2	
Poor	18.0	22.2		19.1	21.8	19.3	
Middle	18.0	22.2		18.1	21.0	19.3	
Rich	19.3	19.1		18.5	18.4	21.6	
Richest	19.5	19.6		18.3	19.1	21.9	
Missing	0.0	0.0		0.0	0.0	0.0	

Note: The p-values are from Pearson's chi-square statistics testing the difference of household characteristics between intervention and control respondents and between self-reported exposure status. Level of significance is marked with asterisks; *p < .1; **p < .05; ***p < .01. HH = head of household; SES = socioeconomic status.

Table F.2. Percentage Distribution of Respondents by Sex and Case-Control Area, According to Selected Antecedents and Behaviors, AYA Impact Evaluation Survey, Ghana 2006

Self-Efficacy	Male			Female		
	Control (n = 628)	Intervention (n = 952)		Control (n = 800)	Intervention (n = 1,036)	
How sure to get a condom						
Not sure	7.3	5.7		11.1	11.0	
Sure	90.9	92.5		87.9	86.3	
Missing	1.8	1.8		1.0	2.7	
Confident to put on a condom						
No	40.3	37.1		63.5	66.5	
Yes	56.5	59.4		35.3	29.5	
Missing	3.2	3.6		1.3	4.0	
Can condoms prevent HIV						
No	16.7	22.0	**	18.9	19.7	
Yes	81.4	74.7		77.1	75.5	
Missing	1.9	3.4		4.0	4.8	
Could insist a reluctant partner on using condom						
Not sure	24.8	26.2		30.8	24.0	**
Sure	73.7	71.4		68.5	73.0	
Missing	1.4	2.4		0.8	3.0	
Opinion on condom users positive						
No	7.3	7.6		6.1	5.5	
Yes	80.6	83.4		71.0	72.2	
Missing	12.1	9.0		22.9	22.3	
High knowledge score (spontaneous response)						
No	85.0	82.4		89.8	89.2	
Yes	15.0	17.7		10.3	10.8	
High knowledge score (prompted response)						
No	44.6	50.2	*	50.1	52.3	
Yes	55.4	49.8		49.9	47.7	
Ever had sex						
No	54.5	51.8		35.5	36.8	
Yes	45.2	47.4		64.5	62.6	
Missing	0.3	0.8		0.0	0.7	
Abstains from sex (among unmarried)						
No	34.7	35.6		49.7	45.3	
Yes	55.8	52.9		37.1	38.5	
Missing	9.5	11.5		13.2	16.2	

Self-Efficacy	Male			Female		
	Control (n = 628)	Intervention (n = 952)		Control (n = 800)	Intervention (n = 1,036)	
Sexual debut before age 17						
No	79.1	78.1		70.1	68.8	
Yes	17.7	17.2		21.4	19.6	
Missing	3.2	4.7		8.5	11.6	

Note: The *p*-values are from Pearson's chi-square statistics testing the difference of household characteristics between intervention and control respondents and between self-reported exposure status. Level of significance is marked with asterisks; **p* < .05; ***p* < .01.

Table F.3. Percentage Distribution of Sexually Active Respondents by Sex and Case-Control Area, According to Selected Sexual Behaviors, AYA Impact Evaluation Survey, Ghana 2006

Sexual Behavior	Male			Female		
	Control (n = 284)	Intervention (n = 451)		Control (n = 516)	Intervention (n = 648)	
Condom used in first sex						
No	56.3	57.4		53.9	47.5	
Yes	41.6	35.7		34.3	37.2	
Missing	2.1	6.9		11.8	15.3	
Condom used in last sex						
No	42.3	43.7		56.2	52.9	
Yes	55.6	49.5		32.0	31.9	
Missing	2.1	6.9		11.8	15.1	
Number of sexual partner in past 12 months						
One or none	42.6	44.6		70.9	67.9	
Two or more	34.5	30.2		7.2	6.0	
Missing	22.9	25.3		21.9	26.1	
Contraceptive used in last sex						
No	41.6	41.2		50.2	45.1	
Yes	56.3	51.9		38.0	39.8	
Missing	2.1	6.9		11.8	15.1	
Contraceptive used in first sex						
No	55.3	55.9		51.6	44.4	
Yes	42.6	37.3		36.6	40.3	
Missing	2.1	6.9		11.8	15.3	
Ever used condom with current partner						
No	27.5	31.0		37.8	33.5	
Yes	71.1	65.0		61.4	63.9	
Missing	1.4	4.0		0.8	2.6	

*

Sexual Behavior	Male			Female		
	Control (n = 284)	Intervention (n = 451)		Control (n = 516)	Intervention (n = 648)	
Consistently uses condom with current partner						
No	62.7	65.6		87.0	82.4	
Yes	34.2	27.9		12.0	14.2	
Missing	3.2	6.4		1.0	3.4	

Note: The *p*-values are from Pearson's chi-square statistics testing the difference of household characteristics between intervention and control respondents and between self-reported exposure status. Level of significance is marked with asterisks; **p* < .1.

Table F.4. Percentage Distribution of Respondents by Sex and Exposure Status, According to Selected Antecedents and Behaviors, AYA Impact Evaluation Survey, Ghana 2006

Self-Efficacy	Male				Female			
	None (n = 689)	Some (n = 351)	High (n = 532)		None (n = 937)	Some (n = 464)	High (n = 428)	
How sure to get a condom								**
Not sure	7.3	5.7	5.6		13.1	9.7	8.2	
Sure	90.6	93.5	94.0		85.5	88.2	90.4	
Missing	2.2	0.9	0.4		1.4	2.2	1.4	
Confident to put on a condom				***				**
No	41.8	41.9	32.1		64.0	63.8	70.3	
Yes	54.6	55.3	65.8		34.0	32.8	27.3	
Missing	3.6	2.9	2.1		1.9	3.5	2.3	
Can condoms prevent HIV				***				
No	17.1	25.6	19.9		17.9	19.8	22.2	
Yes	79.8	72.4	78.6		77.1	75.7	76.2	
Missing	3.1	2.0	1.5		5.0	4.5	1.6	
Could insist a reluctant partner on using condom								***
Not sure	24.1	25.4	28.2		31.6	25.2	19.2	
Sure	74.0	72.4	71.2		67.0	72.2	79.7	
Missing	1.9	2.3	0.6		1.4	2.6	1.2	
Opinion on condom users positive								
No	7.7	8.3	6.8		6.4	4.5	5.8	
Yes	79.8	80.3	88.0		69.2	69.4	80.8	
Missing	12.5	11.4	5.3		24.4	26.1	13.3	
High knowledge score (spontaneous response)				***				***
No	85.8	87.5	77.4		90.9	91.4	83.9	
Yes	14.2	12.5	22.6		9.1	8.6	16.2	
High knowledge score (prompted response)				*				***
No	46.9	53.0	45.3		51.4	52.8	48.8	
Yes	53.1	47.0	54.7		48.6	47.2	51.2	

Self-Efficacy	Male				Female			
	None (n = 689)	Some (n = 351)	High (n = 532)		None (n = 937)	Some (n = 464)	High (n = 428)	
Ever had sex								***
No	54.4	51.9	52.3		33.7	31.3	47.7	
Yes	45.3	48.2	47.7		66.3	68.8	52.3	
Missing	0.3	0.0	0.0		0.0	0.0	0.0	
Abstains from sex (among unmarried)								***
No	34.5	33.9	37.1		49.7	48.4	40.5	
Yes	56.1	52.6	52.5		35.5	32.4	48.9	
Missing	9.4	13.5	10.4		14.8	19.2	10.6	
Sexual debut before age 17								***
No	79.8	76.1	76.5		67.1	66.4	78.7	
Yes	16.6	18.8	17.9		23.0	20.5	15.0	
Missing	3.6	5.1	2.6		9.9	13.2	6.3	

Note: The p-values are from Pearson's chi-square statistics testing the difference of household characteristics between intervention and control respondents and between self-reported exposure status. Level of significance is marked with asterisks; * $p < .1$; ** $p < .05$; *** $p < .01$.

Table F.5. Percentage Distribution of Sexually Active Respondents by Sex and Exposure Status, According to Selected Sexual Behaviors, AYA Impact Evaluation Survey, Ghana 2006

Sexual Behavior	Male				Female			
	None (n = 312)	Some (n = 169)	High (n = 254)		None (n = 621)	Some (n = 319)	High (n = 224)	
Condom used in first sex								**
No	57.4	57.4	56.3		54.3	48.3	42.4	
Yes	39.4	33.1	39.4		32.2	35.4	46.9	
Missing	3.2	9.5	4.3		13.5	16.3	10.7	
Condom used in last sex								**
No	43.9	43.2	42.1		57.2	52.4	49.6	
Yes	52.9	47.3	53.5		29.3	31.4	40.2	
Missing	3.2	9.5	4.3		13.5	16.3	10.3	
Number of sexual partner in past 12 months								*
One or none	43.6	39.1	47.2		68.8	65.5	75.9	
Two or more	33.3	31.4	30.3		7.6	6.9	3.1	
Missing	23.1	29.6	22.4		23.7	27.6	21.0	
Contraceptive used in last sex								**
No	43.0	42.0	39.0		50.6	46.1	40.2	
Yes	53.9	48.5	56.7		35.9	37.6	49.6	
Missing	3.2	9.5	4.3		13.5	16.3	10.3	
Contraceptive used in first sex								**
No	56.4	56.8	53.9		51.7	45.5	39.3	

Sexual Behavior	Male				Female			
	None (n = 312)	Some (n = 169)	High (n = 254)		None (n = 621)	Some (n = 319)	High (n = 224)	
Yes	40.4	33.7	41.7		34.8	38.2	50.0	
Missing	3.2	9.5	4.3		13.5	16.3	10.7	
Ever used condom with current partner								**
No	30.1	29.6	29.1		39.0	37.0	23.2	
Yes	68.3	65.1	67.7		59.7	61.4	73.2	
Missing	1.6	5.3	3.2		1.3	1.6	3.6	
Consistently uses condom with current partner								**
No	63.8	69.2	62.2		86.8	86.5	75.0	
Yes	33.0	24.9	30.7		11.8	10.7	21.0	
Missing	3.2	5.9	7.1		1.5	2.8	4.0	

Note: The *p*-values are from Pearson's chi-square statistics testing the difference of household characteristics between intervention and control respondents and between self-reported exposure status. Level of significance is marked with asterisks; **p* < .05; ***p* < .01.

Appendix G

Model Results:

Results of Propensity Score Models with Four Different Matching Techniques Showing Average Treatment Effect of Those Living in the AYA Intervention Areas (Case) Compared with Those Not Living in AYA Areas (Control)

Table G.1. Results of Propensity Score Models with Four Different Matching Techniques Showing Average Treatment Effect of Those Living in the AYA Intervention Areas (Case) Compared with Those Not Living in AYA Areas (Control) on Selected Knowledge and Perception Measures, AYA/Ghana/JSI Evaluation, 2006

Knowledge/Perception	Method	Male			Female		
		ATT	SE		ATT	SE	
<i>High knowledge score (spontaneous response)</i> (N: male case = 944, control = 626; female case = 1,029, control = 800)	Crude	0.028	0.019		0.006	0.015	
	N. neigh.	0.032	0.025		0.022	0.019	
	Kernel ^a	0.027	0.020		0.013	0.013	
	Radius	0.026	0.020		0.005	0.015	
	Strat.	0.031	0.018	*	0.013	0.016	
<i>High knowledge score (prompted response)</i> (N: male case = 940, control = 625; female case = 1,020, control = 797)	Crude	-0.055	0.026	**	-0.018	0.024	
	N. neigh.	-0.058	0.035	*	-0.018	0.031	
	Kernel	-0.066	0.028	**	-0.012	0.021	
	Radius	-0.067	0.027	**	-0.013	0.024	
	Strat.	-0.059	0.028	**	0.002	0.025	
<i>Very confident in obtaining condom when needed</i> (N: male case = 935, control = 617; female case = 1,029, control = 800)	Crude	0.017	0.013		-0.001	0.015	
	N. neigh.	0.017	0.018		-0.004	0.019	
	Kernel	0.011	0.012		0.004	0.018	
	Radius	0.006	0.014		0.005	0.016	
	Strat.	0.011	0.013		0.003	0.016	
<i>Could put on condom correctly</i> (N: male case = 918, control = 608; female case = 995, control = 790)	Crude	0.032	0.026		-0.049	0.022	**
	N. neigh.	0.060	0.034	*	-0.065	0.029	**
	Kernel	0.048	0.026	*	-0.040	0.022	*
	Radius	0.060	0.027	**	-0.033	0.023	
	Strat.	0.043	0.027		-0.042	0.024	*

Knowledge/Perception	Method	Male			Female		
		ATT	SE		ATT	SE	
<i>Condom is protective against HIV</i> (N: male case = 920, control = 616; female case = 986, control = 768)	Crude	-0.057	0.021	***	-0.010	0.019	
	N. neigh.	-0.052	0.028	*	0.009	0.024	
	Kernel	-0.043	0.021	**	-0.004	0.019	
	Radius	-0.042	0.022	**	-0.001	0.020	
	Strat.	-0.047	0.021	**	0.009	0.022	
<i>Can insist partner to use condom</i> (N: male case = 929, control = 619; female case = 1,005, control = 794)	Crude	-0.016	0.023		0.062	0.021	***
	N. neigh.	0.015	0.031		0.048	0.028	*
	Kernel	-0.001	0.023		0.037	0.021	*
	Radius	0.000	0.024		0.053	0.022	**
	Strat.	-0.007	0.021		0.030	0.023	
<i>Positive opinion about condom users</i> (N: male case = 866, control = 552; female case = 805, control = 617)	Crude	0.000	0.015		0.009	0.014	
	N. neigh.	-0.005	0.020		0.019	0.016	
	Kernel	0.003	0.016		0.010	0.014	
	Radius	0.006	0.016		0.011	0.015	
	Strat.	0.004	0.017		0.010	0.015	

Note: ATT = average treatment effect of those treated; N. neigh. = nearest neighborhood; SE = standard error; Strat. = stratification method; * $p < .1$; ** $p < .05$; *** $p < .01$.

a. Bootstrapping was used to get the standard errors for kernel matching.

Table G.2. Results of Propensity Score Models with Four Different Matching Techniques Showing Average Treatment Effect of Those Living in the AYA Intervention Areas (Case) Compared with Those Not Living in AYA Areas (Control) on Selected Sexual Behavioral Outcomes, AYA/Ghana/JSI Evaluation, 2006

Behavioral Outcomes	Method	Male			Female		
		ATT	SE		ATT	SE	
<i>Early sexual onset</i> (N: male case = 907, control = 608; female case = 916, control = 732)	Crude	-0.002	0.020		-0.012	0.021	
	N. neigh.	0.011	0.026		0.021	0.026	
	Kernel ^a	0.003	0.022		0.003	0.024	
	Radius	0.004	0.021		-0.001	0.021	
	Strat.	0.008	0.021		0.014	0.021	
<i>Condom use at first sex</i> (N: male case = 420, control = 278; female case = 549, control = 455)	Crude	-0.041	0.038		0.050	0.031	
	N. neigh.	-0.014	0.043		0.026	0.035	
	Kernel	-0.036	0.038		0.044	0.034	
	Radius	-0.025	0.041		0.050	0.032	
	Strat.	-0.042	0.040		0.025	0.037	

Behavioral Outcomes	Method	Male			Female		
		ATT	SE		ATT	SE	
<i>Condom use at last sex</i> (N: male case = 420, control = 278; female case = 550, control = 455)	Crude	-0.037	0.039		0.014	0.031	
	N. neigh.	-0.004	0.044		-0.061	0.034	*
	Kernel	-0.029	0.037		-0.008	0.030	
	Radius	-0.037	0.041		0.002	0.032	
	Strat.	-0.034	0.041		-0.027	0.032	
<i>Ever used condom with current partner</i> (N: male case = 433, control = 280; female case = 631, control = 512)	Crude	-0.045	0.035		0.037	0.029	
	N. neigh.	0.020	0.040		-0.026	0.035	
	Kernel	-0.038	0.035		0.022	0.033	
	Radius	-0.028	0.038		0.021	0.030	
	Strat.	-0.045	0.037		0.010	0.030	
<i>Always use condom with current partner</i> (N: male case = 422, control = 275; female case = 626, control = 511)	Crude	-0.054	0.036		0.026	0.020	
	N. neigh.	-0.058	0.042		-0.007	0.024	
	Kernel	-0.047	0.035		0.013	0.025	
	Radius	-0.044	0.039		0.010	0.021	
	Strat.	-0.053	0.034		0.016	0.025	
<i>Two or more sex partners during past 12 months</i> (N: male case = 337, control = 219; female case = 479, control = 403)	Crude	-0.044	0.043		-0.010	0.019	
	N. neigh.	-0.020	0.046		-0.011	0.020	
	Kernel	-0.051	0.052		0.015	0.019	
	Radius	-0.050	0.047		0.007	0.020	
	Strat.	-0.048	0.046		0.011	0.020	
<i>Modern contraceptive used at last sex</i> (N: male case = 420, control = 278; female case = 550, control = 455)	Crude	-0.018	0.038		0.038	0.032	
	N. neigh.	0.020	0.043		-0.016	0.035	
	Kernel	-0.008	0.037		0.017	0.031	
	Radius	-0.016	0.041		0.033	0.033	
	Strat.	-0.014	0.041		0.002	0.030	
<i>Modern contraceptive used at first sex</i> (N: male case = 420, control = 278; female case = 549, control = 455)	Crude	-0.035	0.038		0.060	0.032	*
	N. neigh.	-0.001	0.043		0.041	0.035	
	Kernel	-0.028	0.038		0.050	0.027	*
	Radius	-0.017	0.041		0.053	0.033	
	Strat.	-0.033	0.040		0.033	0.038	
<i>Abstains from sex</i> (N: male case = 810, control = 551; female case = 825, control = 664)	Crude	-0.020	0.027		0.032	0.026	
	N. neigh.	-0.049	0.035		-0.004	0.031	
	Kernel	-0.026	0.028		-0.006	0.026	
	Radius	-0.037	0.028		-0.008	0.027	
	Strat.	-0.028	0.031		-0.022	0.028	

Note: ATT = average treatment effect of those treated; N. neigh. = nearest neighborhood; SE = standard error; Strat. = stratification method; * $p < .1$; ** $p < .05$; *** $p < .01$.

a. Bootstrapping was used to get the standard errors for kernel matching.

Table G.3. Results of Propensity Score Models with Four Different Matching Techniques Showing Average Treatment Effect of Those Reporting High Exposure (HE) to AYA Program Compared with Those Reporting No Exposure (NE) or Living in the Control (C) Areas on Knowledge and Perception Measures, AYA/Ghana/JSI Evaluation, 2006

Knowledge/Perception	Method	Male			Female		
		ATT	SE		ATT	SE	
<i>High knowledge score</i> (spontaneous response) (N: males HE = 532, NE/C = 689; females HE = 428, NE/C = 937)	Crude	0.083	0.021	***	0.071	0.018	***
	N. neigh.	0.095	0.030	***	0.067	0.025	***
	Kernel ^a	0.082	0.026	***	0.069	0.024	***
	Radius	0.085	0.023	***	0.065	0.021	***
	Strat.	0.076	0.025	***	0.070	0.021	***
<i>High knowledge score</i> (prompted response) (N: males HE = 532, NE/C = 689; females HE = 428, NE/C = 937)	Crude	-0.016	0.029		0.026	0.029	
	N. neigh.	0.019	0.040		0.009	0.038	
	Kernel	-0.006	0.029		0.042	0.031	
	Radius	-0.000	0.030		0.045	0.030	
	Strat.	-0.010	0.031		0.041	0.031	
<i>Very confident in obtaining condom</i> <i>when needed</i> (N: males HE = 530, NE/C = 674; females HE = 422, NE/C = 924)	Crude	0.018	0.015		0.050	0.019	***
	N. neigh.	-0.003	0.019		0.078	0.025	***
	Kernel	0.013	0.015		0.067	0.023	***
	Radius	0.013	0.015		0.063	0.018	***
	Strat.	0.008	0.014		0.069	0.019	***
<i>Could put on condom correctly</i> (N: males HE = 521, NE/C = 664; females HE = 418, NE/C = 919)	Crude	0.106	0.028	***	-0.067	0.028	**
	N. neigh.	0.181	0.040	***	-0.066	0.036	*
	Kernel	0.140	0.030	***	-0.044	0.024	*
	Radius	0.147	0.030	***	-0.043	0.028	
	Strat.	0.145	0.031	***	-0.046	0.024	*
<i>Condom is protective against HIV</i> (N: males HE = 524, NE/C = 668; females HE = 421, NE/C = 890)	Crude	-0.026	0.023		-0.037	0.024	
	N. neigh.	-0.012	0.032		-0.053	0.031	*
	Kernel	-0.007	0.025		-0.029	0.026	
	Radius	-0.005	0.024		-0.025	0.025	
	Strat.	-0.011	0.025		-0.031	0.025	
<i>Can insist partner to use condom</i> (N: males HE = 529, NE/C = 676; females HE = 423, NE/C = 924)	Crude	-0.038	0.026		0.127	0.026	***
	N. neigh.	-0.012	0.036		0.088	0.033	***
	Kernel	-0.021	0.023		0.109	0.027	***
	Radius	-0.026	0.027		0.120	0.026	***
	Strat.	-0.034	0.027		0.106	0.026	***
<i>Positive opinion about condom users</i> (N: males HE = 504, NE/C = 603; females HE = 371, NE/C = 708)	Crude	0.017	0.016		0.017	0.017	
	N. neigh.	0.030	0.023		0.018	0.020	
	Kernel	0.023	0.017		0.027	0.018	
	Radius	0.027	0.017		0.026	0.018	
	Strat.	0.018	0.016		0.030	0.017	*

Note: ATT = average treatment effect of those treated; N. neigh. = nearest neighborhood; SE = standard error; Strat. = stratification method; * $p < .1$; ** $p < .05$; *** $p < .01$.

a. Bootstrapping was used to get the standard errors for kernel matching.

Table G.4. Results of Propensity Score Models with Four Different Matching Techniques Showing Average Treatment Effect of Those Reporting High Exposure (HE) to AYA Program Compared with Those Reporting No Exposure (NE) or Living in the Control (C) Areas on Selected Sexual Behaviors, AYA/Ghana/JSI Evaluation, 2006

Behavioral Outcomes	Method	Male			Female		
		ATT	SE		ATT	SE	
<i>Early sexual onset</i> (N: males HE = 518, NE/C = 664; females HE = 401, NE/C = 844)	Crude	0.012	0.022		-0.095	0.025	***
	N. neigh.	0.008	0.031		-0.064	0.030	**
	Kernel ^a	0.017	0.023		-0.058	0.025	**
	Radius	0.021	0.024		-0.068	0.025	***
	Strat.	0.023	0.023		-0.055	0.023	**
<i>Condom use at first sex</i> (N: males HE = 243, NE/C = 302; females HE = 200, NE/C = 537)	Crude	0.004	0.043		0.153	0.041	***
	N. neigh.	0.033	0.049		0.105	0.039	***
	Kernel	-0.002	0.059		0.129	0.046	***
	Radius	0.016	0.046		0.148	0.042	***
	Strat.	-0.006	0.031		0.115	0.031	***
<i>Condom use at last sex</i> (N: males HE = 243, NE/C = 302; females HE = 201, NE/C = 537)	Crude	0.013	0.043		0.109	0.040	***
	N. neigh.	0.042	0.050		0.036	0.039	
	Kernel	0.017	0.054		0.073	0.048	
	Radius	0.022	0.046		0.089	0.042	**
	Strat.	0.013	0.031		0.069	0.031	**
<i>Ever used condom with current partner</i> (N: males HE = 246, NE/C = 307; females HE = 216, NE/C = 613)	Crude	0.005	0.039		0.154	0.038	***
	N. neigh.	0.044	0.048		0.152	0.037	***
	Kernel	0.012	0.047		0.162	0.034	***
	Radius	0.028	0.043		0.168	0.037	***
	Strat.	0.013	0.029		0.167	0.028	***
<i>Always use condom with current partner</i> (N: males HE = 236, NE/C = 302; females HE = 215, NE/C = 612)	Crude	-0.011	0.041		0.099	0.028	***
	N. neigh.	-0.030	0.048		0.055	0.029	*
	Kernel	-0.015	0.044		0.090	0.029	***
	Radius	-0.015	0.044		0.088	0.032	***
	Strat.	-0.025	0.030		0.087	0.024	***
<i>Two or more sex partners during past 12 months</i> (N: males HE = 197, NE/C = 240; females HE = 177, NE/C = 474)	Crude	-0.043	0.047		-0.060	0.024	**
	N. neigh.	-0.026	0.053		-0.009	0.020	
	Kernel	-0.028	0.043		-0.039	0.022	*
	Radius	-0.028	0.052		-0.053	0.021	**
	Strat.	-0.019	0.031		-0.039	0.013	***
<i>Modern contraceptive used at last sex</i> (N: males HE = 243, NE/C = 302; females HE = 201, NE/C = 537)	Crude	0.036	0.043		0.137	0.041	***
	N. neigh.	0.071	0.050		0.079	0.039	**
	Kernel	0.042	0.058		0.096	0.052	*
	Radius	0.044	0.046		0.111	0.042	***
	Strat.	0.038	0.031		0.090	0.031	***

Behavioral Outcomes	Method	Male			Female		
		ATT	SE		ATT	SE	
<i>Modern contraceptive used at first sex</i> (N: males HE = 243, NE/C = 302; females HE = 200, NE/C = 537)	Crude	0.019	0.043		0.158	0.041	***
	N. neigh.	0.054	0.049		0.095	0.039	**
	Kernel	0.015	0.058		0.131	0.046	***
	Radius	0.032	0.046		0.145	0.042	***
	Strat.	0.011	0.031		0.112	0.031	***
<i>Abstains from sex</i> (N: males HE = 494, NE/C = 601; females HE = 371, NE/C = 556)	Crude	-0.033	0.030		0.131	0.031	***
	N. neigh.	-0.056	0.040		0.073	0.037	**
	Kernel	-0.051	0.033		0.079	0.032	**
	Radius	-0.065	0.032	**	0.095	0.033	***
	Strat.	-0.045	0.036		0.072	0.035	**

Note: ATT = average treatment effect of those treated; N. neigh. = nearest neighborhood; SE = standard error; Strat. = stratification method; * $p < .1$; ** $p < .05$; *** $p < .01$.

a. Bootstrapping was used to get the standard errors for kernel matching.

Table G.5. Selected Coefficients from Probit or Biprobit Models, as Appropriate, Showing the Impact of Self-Reported AYA Exposure on Selected Knowledge/Perception Measures, AYA/Ghana/JSI Evaluation, 2006

Knowledge/Perception	Male			Female		
	Coeff	SE		Coeff	SE	
High knowledge score (spontaneous response)	0.175	0.099	*	0.651	0.224	**
High knowledge score (prompted response)	-0.092	0.085		-0.021	0.098	
Very confident in obtaining condom when needed	0.078	0.131		0.170	0.120	
Could put on condom correctly	0.331	0.087	**	-0.075	0.094	
Condom is protective against HIV	-0.073	0.094		0.002	0.100	
Can insist partner to use condom	-0.118	0.098		0.313	0.101	**
Positive opinion about condom users	0.157	0.121		-0.429	0.277	

Note: * $p < .1$; ** $p < .01$; SE = standard error. Yellow shaded cells indicate endogeneity was detected.

Table G.6. Selected Coefficients from Probit or Biprobit Models, as Appropriate, Showing the Impact of Self-Reported AYA Exposure on Selected Behavioral Outcomes, AYA/Ghana/JSI Evaluation, 2006

Behavioral Outcomes	Male			Female		
	Coeff	SE		Coeff	SE	
Early sexual onset	0.044	0.098		-0.254	0.098	**
Condom use at first sex	0.033	0.115		0.328	0.167	***
Condom use at last sex	-0.022	0.125		0.151	0.119	
Ever used condom with current partner	-0.035	0.120		0.379	0.126	***
Always use condom with current partner	-0.050	0.125		0.283	0.140	**
Two or more sex partners during past 12 months	-0.109	0.134		-0.440	0.189	**
Modern contraceptive used at last sex	0.034	0.126		0.251	0.123	**
Modern contraceptive used at first sex	0.076	0.117		0.323	0.120	***
Abstains from sex	-0.145	0.086	*	0.141	0.101	

Note: * $p < .1$; ** $p < .05$; *** $p < .01$; SE = standard error.

Table G.7. Comparison of the Impact of AYA on 17- to 22-Year-Old Male and Female Respondents on Selected Knowledge/Perception Measures Obtained from Three Different Types of Models, AYA/Ghana/JSI Evaluation Survey, 2006

Antecedent	Case-Control Design		Self-Reported Exposure Design			
	PSM		PSM		IV	
	Male	Female	Male	Female	Male	Female
HIV/AIDS knowledge (spontaneous response)			+	+	+	+
HIV/AIDS knowledge (prompted response)	-					
Believes that condom is protective against HIV	-					
Positive attitude toward condom users						
Very confident in obtaining condom when needed				+		
Confident could put on condom correctly	+	-	+	-	+	
Believes he or she could insist that partner use condom		+		+		+

Note: A plus sign (+) indicates significant impact of AYA in the expected direction; while a minus sign (-) indicates the opposite. The yellow shaded cells indicate endogeneity was detected.

Table G.8. Comparison of the Impact of AYA on 17- to 22-Year-Old Male and Female Respondents on Selected Sexual Behaviors Obtained from Three Different Types of Models, AYA/Ghana/JSI Evaluation Survey, 2006

Behavioral Outcome	Case-Control Design		Self-Reported Exposure Design			
	PSM		PSM		IV	
	Male	Female	Male	Female	Male	Female
Delay of sexual debut				+		+
Abstaining from sex during past 12 months				+	–	
Fewer than two sex partners during past 12 months				+		+
Condom use at first sex				+		+
Condom use at last sex				+		
Ever used condom with current partner				+		+
Consistently uses condom with current partner				+		+
Modern contraceptive used at first sex				+		+
Modern contraceptive used at last sex				+		+

Note: A plus sign (+) indicates significant impact of AYA in the expected direction; a minus sign (–) indicates the opposite. None of the outcomes were endogenous with self-reported exposure to AYA.

Appendix H

Data Collection Instruments

The following appendix contains the survey instruments used to conduct this evaluation. The first document is the household questionnaire administered to the head of household. The second document is the individual questionnaire administered to the eligible youth respondent by a same sex interviewer.

IDENTIFICATION					
Region	Accra Metro	#	Agfya-Sekyere	#	#
	Akwapim N.	#	Ejisu-Wabeng	#	#
	Assin	#	Kumasi Metro	#	#
District name					
Location	City	#	Small town	#	
	Large town	#	Village	#	
Locality name					
Cluster ID #					
Household #					
INTERVIEWER VISITS					
	1	2	3	Final visit	
Date	_____	_____	_____	Day	
Interviewer name	_____	_____	_____	Month	
Results	_____	_____	_____	Year	
Next visit	Date	_____		Interviewer #	
	Time	_____		Result*	
				Total # visits	
*Result codes	Completed	#	Refused	#	No eligible women
	Not at home	#	Partly completed	#	No household available
	Postponed	#	No eligible men	#	Other (specify)
* Language used in interview					_____
* Respondent's local language					_____
Translator used (1=not at all, 2=sometimes, 3=all the time)					_____
* Language codes 1 English 2 Twi 3 Ga 4. Ewe					
Time started	_____	Field edited by	Office edited by	Keyed by	
Time ended	_____				
Total minutes	_____				
Supervisor name and number					

Good morning/afternoon. My name is _____. As I mentioned a few minutes ago, we are collecting information in this community on a number of issues related to health, specifically the sexual and reproductive health of young people ages 17-22. In order to have a better sense of the environment in which young people in Ghana live, we are conducting a household survey that includes an individual interview with a young person from this household, as well as an interview with the household head to determine household conditions related to health. The first part of the interview involves collecting information on each household member, the second part will include questions about the physical characteristics of the house and household amenities, and the last part will involve your opinions on important health issues in Ghana. Please be assured that your answers will be kept confidential.

Note to interviewer: BE SURE to record the unique identification number(s) for the corresponding individual survey instrument(s) administered to the eligible youth in this household in the space below. DO NOT enter more than one number UNLESS there is more than one eligible respondent in the household and you conduct multiple interviews in the same household.

Unique individual identification number(s)

HOUSEHOLD ROSTER (1st page)

Line number	Relationship to household head	Sex	Age	Marital status	Highest level of education achieved by (NAME)	Current employment status	If employed, does (NAME) leave the community for his/her job?	Eligibility for individual questionnaire
Household head (1)	1	Male	0				Yes	Yes
2		Female	1				No	No
		Male	0				Yes	Yes
		Female	1				No	No
3		Male	0				Yes	Yes
		Female	1				No	No
4		Male	0				Yes	Yes
		Female	1				No	No
5		Male	0				Yes	Yes
		Female	1				No	No
6		Male	0				Yes	Yes
		Female	1				No	No
7		Male	0				Yes	Yes
		Female	1				No	No
8		Male	0				Yes	Yes
		Female	1				No	No
9		Male	0				Yes	Yes
		Female	1				No	No
10		Male	0				Yes	Yes
		Female	1				No	No

Relationship codes		Marital status codes		Education codes		Employment codes	
Head of household	1	Parent-in-law	8	Married	1	Not employed	1
Spouse/partner	2	Brother or sister	9	Living together	2	Retired	2
Son or daughter	3	Grandparent	10	Separated	3	Part time wage labor	3
Son or daughter-in-law	4	Adopted/foster child	11	Divorced	4	Full time salary	4
Grandchild	5	Domestic worker	12	Widowed	5	Selling goods	5
Parent	6	Friend/non related	13	Single	6	Casual labor	6
Niece/nephew	7	Other (specify)	14	Steady relationship	7	Farming (subsistence)	7
						Farming (paid labor)	8
						Fishing	9
						Full-time student	10
						Other (specify)	11

HOUSEHOLD ROSTER (2nd page)

Line number	Relationship to household head	Sex	Age	Marital status	Highest level of education achieved by (NAME)	Current employment status	If employed, does (NAME) leave the community for his/her job?	Eligibility for individual questionnaire
11		Male 0					Yes 1	Yes 1
12		Female 1					No 0	No 0
13		Male 0					Yes 1	Yes 1
14		Female 1					No 0	No 0
15		Male 0					Yes 1	Yes 1
16		Female 1					No 0	No 0
17		Male 0					Yes 1	Yes 1
18		Female 1					No 0	No 0
19		Male 0					Yes 1	Yes 1
20		Female 1					No 0	No 0

Relationship codes		Marital status codes		Education codes		Employment codes	
Head of household	1	Parent-in-law	8	Married	1	Not employed	1
Spouse/partner	2	Brother or sister	9	Living together	2	Retired	2
Son or daughter	3	Grandparent	10	Separated	3	Part time wage labor	3
Son or daughter-in-law	4	Adopted/foster child	11	Divorced	4	Full time salary	4
Grandchild	5	Domestic worker	12	Widowed	5	Selling goods	5
Parent	6	Friend/non related	13	Single	6	Casual labor	6
Niece/nephew	7	Other (specify)	14	Steady relationship	7	Farming (subsistence)	7
						Farming (paid labor)	8
						Fishing	9
						Full-time student	10
						Other (specify)	11

001	Respondent's line number (Write in blank.)		
001.20	Line number of eligible youth #1		
001.40	If married, is duration of marriage less than two years?	<input type="checkbox"/> not married <input type="checkbox"/> married less than 2 years -> continue interview <input type="checkbox"/> married more than 2 years -> end interview	
001.60	Line number of eligible youth #2		
001.80	If married, is duration of marriage less than two years?	<input type="checkbox"/> not married <input type="checkbox"/> married less than 2 years -> continue interview <input type="checkbox"/> married more than 2 years -> end interview	
002	How many people slept in this household last night, including regular household members and guests of the household?		
003	Now I would like to continue with some questions related to the physical characteristics of the household.		
004	What is the main source of drinking water for members of your household? (mark only one response)	Piped water inside the main dwelling 1 Piped water into the yard or plot Public tap 2 Open well inside the dwelling 3 Open well in the yard or plot 4 Protected well or borehole inside the dwelling 5 Protected well or borehole in the yard or plot 6 Protected public well 7 Surface water from spring 8 Surface water from river/stream 9 Surface water from pond/lake 10 Surface water from dam 11 Rainwater 12 Tanker truck 13 Bottled water 14 Satchel water 15 water venders 16 Other (specify) _____ 17 77	
005	What is the main type of toilet facility used by this household? (mark only one response)	Flush toilet 1 Traditional pit toilet 2 Ventilated improved pit (VIP) latrine 3 Bucket/pan No facility/bush/field/beach 4 5	
006	Does your household have:	Yes	No
	A. Electricity?	1	0
	B. A radio?	1	0
	C. A television?	1	0
	D. A video deck?	1	0
	E. A telephone?	1	0
	F. A refrigerator?	1	0
	G. A computer?	1	0
007	Does anyone in this household own:	Yes	No

	A. A bicycle?	I	0	
	B. A motorcycle or motor scooter?	I	0	
	C. A car or truck?	I	0	
	D. A tractor?	I	0	
	E. A oxen or donkey/cart?	I	0	
008	Interviewer: Record the main material used for the floor of the main dwelling of this household.	Natural floor (earth, sand, mud, mud mixed with dung)	1	
		Rudimentary floor (wood planks, bamboo)	2	
		Finished floor (parquet or polished wood, linoleum, ceramic tiles, cement, carpet, terrazzo)	3	
009	Interviewer: Record the main material used for the roof of the main dwelling of this household. (mark only one response)	Natural (thatch, mud)	1	
		Corrugated iron/sheet metal	2	
		Finished (stone, shingles, wood, tiles, concrete)	3	
		Other (specify) _____	77	
010	What is the main method of solid waste disposal in this household? (mark only one response)	Collected by the government/city council	1	
		Collected by the community association		
		Collected by private company	2	
		Dumped in compound		
		Dumped in street/empty plot	3	
		Burned	4	
		Buried	5	
		Composted	6	
		Recycled	7	
		Fed to animals	8	
			9	
			10	
011	What is the main type of fuel used for cooking in this household? (mark only one response)	Electricity	1	
		LPG/Natural gas	2	
		Biogas	3	
		Kerosene	4	
		Coal/Lignite	5	
		Charcoal	6	
		Firewood/straw	7	
		Dung	8	
		Other (specify) _____	77	
012	What is the main language of residents of this household?	FILL IN PER recommendations of local research org and pre-test results		
		English		
		Twi	1	
		Fante	2	
		Akan	3	
		Ga	4	
		Ewe	5	
		Other (specify) _____	6	
			77	
013	What is the main religion of this household?	Muslim	1	
		Catholic	2	
		Protestant	3	
		No religion	4	
		Other (specify) _____	77	
014	How many rooms does the household occupy in this compound? (Or how many rooms are in the household?)	_____		

015	How far away from this house is the nearest health facility? Please estimate the distance in kilometers.	_____		
	What kind of facility is it?	Public (GHS) health centre Public hospital or dispensary Other public (write: _____) NGO centre, hospital dispensary Private medical provider Traditional healer, midwife	1 2 3 4 5 6	
	Has any household member consulted a health facility in the past 12 months?	Yes No		
	Was it the nearest facility (above)?	Nearest (above) _____ Other facility _____		
	Who made the consultation?	Child 0-4 years Child 5-9 years Young person 10-19 years 20 years old or older	Adult 1 2 3 4	
	What was the reason for consulting the facility?	Family planning Antenatal, delivery, postnatal Well baby, immunizations Sick child Sick adult Other (write: _____)	1 2 3 4 5 6	
016	Now I would like to change the subject and ask you about your opinions regarding some important health concerns. Please remember that your answers are confidential and will not be shared with anyone.			
017	Have you ever heard of HIV or AIDS?	Yes No	1 0	→ 026
018	How can a person get HIV or AIDS? Probe after finished "Are there any other ways you know of?"	DO NOT read aloud. Circle 1 if mentioned; circle 2 if not mentioned.		
A	Sexual intercourse with an infected partner	1	2	
B	Sexual intercourse with prostitutes who are infected	1	2	
C	Homosexual contact with an infected partner	1	2	
D	Sexual intercourse with multiple partners	1	2	
E	Blood transfusion with blood from person with HIV/AIDS	1	2	
F	Using unsterilized needles or equipment	1	2	
G	Mother can pass HIV to baby during pregnancy	1	2	
H	Infected mother can pass to infant through breast milk	1	2	
I	HIV passed through kissing an infected person	1	2	
J	Sharing a meal with an infected person	1	2	
K	Mosquito bites can transmit HIV/AIDS	1	2	
L	Other (Specify)	77		

019	Do you personally know anyone who has died of AIDS?	Yes No	1 0		
020	Have there been any programs or events in this community to inform people about HIV/AIDS?	Yes No	1 0	→ 026	
021	When was the last such event that you heard of?	Past month Past year More than a year ago	1 2 3		
022	What kinds of events have taken place? Probe after finished: Were there any other activities that you remember?	DO NOT read aloud. Circle 1 if mentioned; circle 2 if not mentioned.			
A	Community gatherings	1	2		
B	Radio spots/shows	1	2		
C	TV spots/shows	1	2		
D	Newspaper articles	1	2		
E	Live performances (drama, skits, concerts)	1	2		
F	Other public events (Specify)	77			
023	Have there been any programs or events in this community specifically to inform young people about AIDS?	Yes No	1 0	→ 026	
024	When was the last such event that you heard of?	Past month Past year More than a year ago	1 2 3		
025	What kinds of events have taken place for young people related to ASRH or HIV/Aids?	DO NOT read aloud. Circle 1 if mentioned; circle 2 if not mentioned.			
A	Programs in secondary schools	1	2		
B	Programs in high school "A" levels	1	2		
C	Programs in primary schools	1	2		
D	Programs in vocational schools	1	2		
E	Youth clubs	1	2		
F	Programs at the local health facility	1	2		
G	Sports events where HIV/AIDS is discussed	1	2		
H	Dramas or concerts where HIV/AIDS is discussed	1	2		
I	Other public events (Specify)	77			
J	Youth-oriented radio shows	1	2		
K	Other mass media (Specify)	1	2		
026	How often do you talk about the following topics in this household?	Often	Sometimes	Occasionally or rarely	Never
A	Young people's health	1	2	3	4

B	The disease called HIV/AIDS	1	2	3	4	
C	Ways for young people to avoid pregnancy	1	2	3	4	
D	Ways for young people to prevent sexually transmitted diseases, including HIV/AIDS	1	2	3	4	
E	Abstinence from sexual intercourse	1	2	3	4	
F	having only one sexual partner	1	2	3	4	
G	Relationships between boyfriends and girlfriends	1	2	3	4	
027	Do you agree or disagree with the following statements?	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
A	Discussing family planning with young people encourages them to have sex.	1	2	3	4	5
B	It is important that sex education be taught in schools.	1	2	3	4	5
C	Students who are HIV positive should not be allowed in school.	1	2	3	4	5
D	Condoms should be available to youth in this community.	1	2	3	4	5
E	Pregnant students should be asked to leave secondary school.	1	2	3	4	5
F	Teenage students should be allowed to return to school after they give birth.	1	2	3	4	5
G	I would be willing to care for a friend or relative with HIV or AIDS in this household.	1	2	3	4	5
H	Young people should have access to reproductive health services in this community.	1	2	3	4	5

INDIVIDUAL YOUTH QUESTIONNAIRE
AYA IMPACT EVALUATION – 2006 – Ghana

IDENTIFICATION					
Region	Accra Metro	#	Agfya-Sekyere	#	
	Akwapim N.	#	Ejisu-Wabeng	#	
	Assin	#	Kumasi Metro	#	
District Name					
Location	City	#	Small town	#	
	Large town	#	Village	#	
Locality name					
Cluster ID #					
Household #					
INTERVIEWER VISITS					
	1	2	3	Final visit	
Date	_____	_____	_____	Day	
Interviewer name	_____	_____	_____	Month	
Results	_____	_____	_____	Year	
Next visit	Date	_____		Interviewer #	
	Time	_____		Result*	
				Total # visits	
*Result codes	Completed	#	Refused	#	No eligible women
	Not at home	#	Partly completed	#	Other (specify)
	Postponed	#	No eligible men	#	
* Language of questionnaire					_____
* Language used in interview					_____
* Respondent's local language					_____
Translator used (1=not at all, 2=sometimes, 3=all the time)					_____
Language codes	1 English 2. Twi 3 Fante 4. Akan 5 Ga 6. Ewe				
Time started	_____	Field edited by	Office edited by	Keyed by	
Time ended	_____				
Total minutes	_____				
Supervisor name and number					

I. BACKGROUND INFORMATION			
	As I mentioned just now, the purpose of this study is to gain a better understanding of young adult reproductive health issues here in Ghana, for example, pregnancy, HIV/AIDS, and sexual relationships, and to find out whether or not you have had experience with certain types of programs that are meant to improve reproductive health for young people. First, I would like to ask you some background questions about yourself and your family. This information helps us to understand the daily environment of young people in Ghana. Please remember that your answers will be kept confidential and your name is not recorded anywhere on the questionnaire.		Skip
Line_ no	Respondent's line number on household survey roster	Write: _____	
I01	Sex of respondent (DO NOT ASK.)	Male 0 Female 1	
I02	First, I would like to ask you some questions about your background and your family. In what month and year were you born?	Month _____ Don't know 99 Year _____ Don't know 99	
I03	How old were you on your last birthday? (COMPARE AND CORRECT 000 AND/OR 000 IF INCONSISTENT.)	Years old _____ Don't know 99	
	If respondent is less than 17 years old or older than 22 years old, STOP the interview and thank him/her for participating. Explain to the participant that s/he is not within the age range specified for the study.		
I03a	Are you married?	Yes 1 No 0	I07
I03b	Have you been married for more than 2 years?	Yes 1 No 0	
***	Compare the month and year that the respondent was married to the current month and year. If the respondent has been married more than 24 months (2 years), STOP the interview and thank him/her for participating. Explain to the participant that we are looking for people that are either unmarried or have been married less than 2 years.		
I04	Can you read and write in any language?	Yes 1 No 0	
I05	What is your religious affiliation?	Muslim 1 Catholic 2 Protestant 3 None 4 Other (specify) _____ 77	
I05a	How often do you go to church to pray?	Every day or almost every day 1 At least once a week 2 At least once a month 3 Less than once a month 4 Never 5 Other (specify) _____ 77 Don't know 99	
I06	Have you lived in this city/town/village since you were born?	Yes 1 No 0	I08
I07	How long have you lived here in [NAME of town/community]?	Record number of years _____	
I08	In the past 5 years, have you ever lived out	Yes 1	

	of [NAME of town/ community] for more than 6 months?	No	0	110
109	What district did you live in during this time?	_____		
110	Have you traveled outside this district in the last 12 months?	Yes No	1 0	
111	What is your current relationship status? (Circle "married – traditional or civil" if respondent has already stated s/he is married during screening.)	Married – traditional or civil Living together Separated Divorced Widowed Single Steady girlfriend/boyfriend Casual girlfriend/boyfriend	1 2 3 4 5 6 7 8	
112	For unmarried youth only: Have you ever had a boyfriend/ girlfriend?	Yes No	1 0	
113	Is your natural mother living?	Yes No Don't know	1 0 99	115
114	When did she die? (Write in response.)	Month_____ Year _____ Don't remember	99	
115	Is your natural father living?	Yes No Don't know	1 0 99	117
116	When did he die? (Write in response.)	Month_____ Year _____ Don't remember	99	
If either natural parent is deceased, skip to question 118.				
117	Do both of your parents live in the household with you?	Yes No	1 0	
118	Who do you live with right now?	Live with husband or wife only Live with husband's or wife's family Live with either mother or father Live with grandparents Live with aunt or uncle Live with other relatives Other (specify) _____	1 2 3 4 5 6 77	
119	Have you ever attended school?	Yes No	1 0	
120	Are you currently attending school?	Yes No	1 0	
121	Have you ever worked for a wage or salary?	Yes No	1 0	125
122	Are you currently working for a wage or salary?	Yes No	1 0	
123	What have you done in the past month to earn income for yourself?	Nothing Employed Selling goods/small business Casual labor Farming Other (specify) _____	1 2 3 4 5 77	125
124	Is this a part time or a full time job?	Part time Full time	0 1	

125	Who pays for your clothing? (Do not read; multiple responses allowed.)	Parents Other relative Self Boyfriend/girlfriend Other Not applicable	1 2 3 4 77 88			
126	Who pays for your food?	Parents Other relative Self Boyfriend/girlfriend Other Not applicable	1 2 3 4 77 88			
127	Who pays for your entertainment?	Parents Other relative Self Boyfriend/girlfriend Sugardaddy/mummy Not applicable	1 2 3 4 5 88			
128	For unmarried youth only: Of the following adult people, who would you say you spend the most time with? (Read aloud and prompt respondent to pick one.)	Mother Father Grandmother Grandfather Aunt Uncle Adult guardian (not a relative) Other adult (Specify) _____ No one (skip to Question #201)	1 2 3 4 5 6 7 77 99			
Please tell me if you strongly agree, agree, neither agree nor disagree, disagree or strongly disagree with the following statements about your relationship with this person.						
		Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
129	S/he supports and encourages me.	1	2	3	4	5
130	S/he gives me attention and listens to me.	1	2	3	4	5
131	S/he shows me affection.	1	2	3	4	5
132	S/he praises me.	1	2	3	4	5
133	S/he comforts me.	1	2	3	4	5
134	S/he respects my sense of freedom.	1	2	3	4	5
135	S/he understands me.	1	2	3	4	5
136	S/he trusts me.	1	2	3	4	5
137	S/he gives me advice and guidance.	1	2	3	4	5
138	S/he provides for my necessities.	1	2	3	4	5
139	S/he gives me money.	1	2	3	4	5
140	S/he buys me things.	1	2	3	4	5
141	S/he has open communication with me.	1	2	3	4	5
142	S/he spends time with me.	1	2	3	4	5
143	(If respondent is in school) S/he supports me in my school work.	1	2	3	4	5
Now I would like to ask you a few questions about this same person. Please tell me whether or not this person knows nothing, something, or a lot about this following topics:						
		Knows nothing about topic	Knows something about topic	Knows a lot about topic		
147	Where you go at night.	1	2	3		

148	Where you are most afternoons after school.	1	2	3	
149	How you spend your money.	1	2	3	
150	What you do with your free time.	1	2	3	
151	Who your friends are.	1	2	3	

2. EXPOSURE TO LIFE PLANNING SKILLS				
	In a few minutes, I'll ask you some questions about your health and knowledge of important health issues. First, though, we'll continue with some questions about your daily life and experience with different programs for young people.			
	<p><u>Note to interviewer:</u> Refer to Questions 119 and 120 to determine starting Question for this section of the survey.</p> <p>If the respondent is <u>currently</u> attending school, begin with Question 201.</p> <p>If the respondent <u>has ever attended</u> school but is <u>not currently</u> attending school, begin with Question 209.</p> <p>If the respondent <u>has never attended</u> school, begin with Question 227.</p>			Skip
201	What kind of school do you attend?	Primary school Middle school Secondary school	1 2 3	
202	Is this school a boarding school or a day school?	Boarding school Day school	1 2	
203	What is the name of the school you are attending? (WRITE IN NAME.)			
203a	Is that school located in this district?	Yes No		
204	Is that school located in this locality?	Yes No		
205	Have you changed schools in the last 2 years?	Yes No	1 0	208
206	What is the name of the school you attended before? (WRITE IN NAME.)			
207	Is that school located in this district?	Yes No	1 0	
207a	Is that school located in this locality?	Yes No		
208	Of the following people, who contributes the most towards paying your school fees/contribution?	Parents Self Boyfriend/girlfriend Other Not applicable	1 2 3 77 88	
	If respondent is currently attending school, skip to Question 215.			
209	Have you attended school in the last 5 years?	Yes No	1 0	
210	What is the name of the school you last attended? (WRITE IN NAME.)			
211	What was the last year that you attended this school? (Write in response.)			
211a	Is that school located in this district?	Yes No	1 0	
211b	Is that school located in this locality?	Yes No	1 0	
212	What is the highest level of school you	None	#	

	have completed?	Primary (P6) Middle (JSS3) Vocational Secondary (SSS3) Higher Other (specify)	# # # # # # # #	
214	Did/do you live in another place during the holidays from school?	Yes No	1 0	216
215	Which district did/do you live in during the holidays? [WRITE IN NAME.]	_____		
216	During the time you have attended school, have you ever participated in a Life Planning Skills class?	Yes No Don't know/don't remember	1 0 99	218
217	During the time you have attended school, have you ever heard about reproductive health issues, such as HIV/AIDS, in any class?	Yes	1	
218	Where was the class held?	In the classroom as a special topic In the classroom as part of a course Not in class; after school Other location (specify) _____	1 2 3 4	
219	Did you have to attend the class or was it optional?	I had to attend The class was optional	1 2	
220	What grade were you in when you took the Life Skills Planning class? (Record exact class in response.)	_____		
221	Can you remember any specific topics that were discussed during this class? (Write in responses.)	No	0	
222	Do you recall the following topics being discussed during the Life Planning Skills course or any class that you have had at school?			
A	Physical changes or changes to your body that occur during adolescence	Yes No Don't know/don't remember	1 0 99	
B	Communication between girlfriends and boyfriends about sex	Yes No Don't know/don't remember	1 0 99	
C	Relationship issues between men and women, such as power and control	Yes No Don't know/don't remember	1 0 99	
D	Pregnancy prevention and health concerns of pregnant adolescents	Yes No Don't know/don't remember	1 0 99	
E	Sexually transmitted infections	Yes No Don't know/don't remember	1 0 99	
F	HIV and/or AIDS	Yes No Don't know/don't remember	1 0 99	

G	Substance abuse	Yes No Don't know/don't remember	1 0 99	
H	Setting goals for your future and planning to achieve them, for example, getting a job	Yes No Don't know/don't remember	1 0 99	
223	Has your school ever held debates about ASRH during or after classes are over in the afternoon?	Yes No	1 0	232
224	Were these debates held during class, after school, or both?	During school After school Both during and after school	1 2 3	
225	Was attendance at these debates required or optional?	Required attendance Optional attendance	1 2	227
226	Did you attend one of these debates?	Yes No	1 0	
226a	Did your teacher ever give you a lecture or lesson in class about sexual and reproductive health issues?	Yes No	1 2	
226b	Did another student ever give you a talk about sexual and reproductive health issues?			
226c	Did you ever see a film in your school about sexual and reproductive health issues?			
226d	Did you ever see a skit or participate in a dance or other activity in your school which talked about sexual and reproductive health issues?			
226e	Did you ever meet with a teacher or other adult in your school in private to discuss sexual and reproductive health issues?			
227	Have you ever attended a technical or vocational school or training program?	Yes No	1 0	233
	Was there a "teen center" at your vocational school?	Yes No		
	If so, did you ever visit the teen center?	Yes No		
228	At your technical school, have you ever participated in a Life Skills Planning class?	Yes No	1 0	233
229	Where was the class held?	In the classroom as a special topic In the classroom as part of a course Not in class; after school Other location (specify) _____	1 2 3 4	
230	Did you have to attend the class or was it optional?	I had to attend The class was optional	1 2	
231	What grade were you in when you took the Life Skills Planning class? (Write in response.)	_____		
232	Do you recall the following topics being discussed during the Life Planning Skills course or any class that you have had at technical school?			
A	Physical changes or changes to your body that occur during adolescence	Yes No Don't know/don't remember	1 0 99	

B	Communication between girlfriends and boyfriends about sex	Yes No Don't know/don't remember	1 0 99	
C	Relationship issues between men and women, such as power and control	Yes No Don't know/don't remember	1 0 99	
D	Pregnancy prevention and health concerns of pregnant adolescents	Yes No Don't know/don't remember	1 0 99	
E	Sexually transmitted infections	Yes No Don't know/don't remember	1 0 99	
F	HIV and/or AIDS	Yes No Don't know/don't remember	1 0 99	
G	Substance abuse	Yes No Don't know/don't remember	1 0 99	
H	Setting goals for your future and planning to achieve them, for example, getting a job	Yes No Don't know/don't remember	1 0 99	
233	Have you ever attended a youth camp?	Yes No	1 0	301
234	Do you remember the name of the organization that sponsored the youth camp?	Yes No	1 0	236
235	What is the name of the organization that sponsored the camp? (Write in response.)	_____		
236	What year did you attend the youth camp? (Write in response.)	_____		
237	Do you recall the following topics being discussed at youth camp?			
A	Physical changes or changes to your body that occur during adolescence	Yes No Don't know/don't remember	1 0 99	
B	Communication between girlfriends and boyfriends about sex	Yes No Don't know/don't remember	1 0 99	
C	Relationship issues between men and women, such as power and control	Yes No Don't know/don't remember	1 0 99	
D	Pregnancy prevention and health concerns of pregnant adolescents	Yes No Don't know/don't remember	1 0 99	
E	Sexually transmitted infections	Yes No Don't know/don't remember	1 0 99	
F	HIV and/or AIDS	Yes No Don't know/don't remember	1 0 99	
G	Substance abuse	Yes No Don't know/don't remember	1 0 99	

H	Setting goals for your future and planning to achieve them, for example, getting a job	Yes	1	
		No	0	
		Don't know/don't remember	99	

3. EXPOSURE TO BEHAVIOR CHANGE COMMUNICATION					Skip
301	How often do you listen to the radio? Would you say you listen to the radio... (Read list and circle only one answer.)	Every day or almost every day	1		
		At least once a week	2		
		At least once a month	3		
		Less than once a month	4		
		Never	5		
		Other (specify)	77		
		Don't know	99		311
302	Have you ever seen or heard anything on the radio about: (Read topics aloud.)	A. Pregnancy prevention/ reproductive health	Yes 1 No 0		
		B. Condoms	Yes 1 No 0		
		C. Having sex with only one partner or fidelity	Yes 1 No 0		
		D. Postponing sex or not having sex/abstinence	Yes 1 No 0		
		E. HIV/AIDS	Yes 1 No 0		
		F. Sexually transmitted diseases/STD/VD	Yes 1 No 0		
		G. Voluntary counseling and testing/VCT for HIV/AIDS	Yes 1 No 0		
303	Have you ever listened to Curious Mind?	Yes	1		
		No	0		305
		Don't know/don't remember	99		305
304	Can you tell me what topics were discussed on this radio show? (DO NOT read aloud; mark all responses mentioned.)	Contraception or pregnancy prevention	1		
		HIV/AIDS			
		Early marriage	2		
		Reproductive health services catering specifically to youth	3 4		
		Sexually transmitted infections			
		Condom use	5		
		Abstinence	6 7		
305	Have you ever listened to [radio program #]2?	Yes	1		
		No	0		307
		Don't know/don't remember	99		307
306	Can you tell me what topics were discussed on this radio show? (DO NOT read aloud; mark all responses mentioned.)	Contraception or pregnancy prevention	1		
		HIV/AIDS			
		Early marriage	2		
		Reproductive health services catering specifically to youth	3 4		
		Sexually transmitted infections			
		Condom use	5		
		Abstinence	6 7		
307	Have you ever listened to [radio program #]3?	Yes	1		
		No	0		309
		Don't know/don't remember	99		309
308	Can you tell me what topics were discussed on this radio show?	Contraception or pregnancy prevention	1		
		HIV/AIDS			

	(DO NOT read aloud; mark all responses mentioned.)	Early marriage	2		
		Reproductive health services catering specifically to youth	3		
		Sexually transmitted infections	4		
		Condom use	5		
		Abstinence	6		
			7		
309	Have you ever listened to “ _____ ” Add a region wide non AYA name here]”?	Yes	1	311 311	
		No	0		
		Don't know/don't remember	99		
310	Can you tell me what topics were discussed on this radio show? (DO NOT read aloud; mark all responses mentioned.)	Contraception or pregnancy prevention	1		
		Young pregnancy			
		HIV/AIDS	2		
		Early marriage	3		
		Reproductive health services catering specifically to youth	4		
		Sexually transmitted infections	5		
		Condom use	6		
		Abstinence	7		
			8		
311	How often do you watch television? (Read list and circle only one answer.)	Every day or almost every day	1	318	
		At least once a week	2		
		At least once a month	3		
		Less than once a month	4		
		Never (skip to Question #318a)	5		
		Other (specify)	77		
		Don't know	99		
312	Do you ever watch international channels on TV?	Yes	1		
		No	0		
313	Have you ever seen or heard anything on the TV about: (Read topics aloud.)	A. Pregnancy prevention/ reproductive health	Yes No	1 0	
		B. Condoms	Yes No	1 0	
		C. Having sex with only one partner or fidelity	Yes No	1 0	
		D. Postponing sex or not having sex/abstinence	Yes No	1 0	
		E. HIV/AIDS	Yes No	1 0	
		F. Sexually transmitted diseases/STD/VD	Yes No	1 0	
		G. Voluntary counseling and testing/VCT for HIV/AIDS	Yes No	1 0	
314	Have you ever seen a show called [Note: Need the name of an AYA-related TV program here]?	Yes	1	316 316	
		No	0		
		Don't know/don't remember	99		
315	Can you tell me what topics were discussed on this TV show? (DO NOT read aloud; mark all responses mentioned.)	Contraception or pregnancy prevention	1		
		HIV/AIDS			
		Early marriage	2		
		Reproductive health services catering specifically to youth	3		
		Sexually transmitted infections	4		
		Condom use	5		
		Abstinence	6		
		Other ()	7		

			8	
316	Have you ever seen a show called “It pays to wait”?	Yes	1	
		No	0	318
		Don't know/don't remember	99	318
317	Can you tell me what topics were discussed on this TV show? (DO NOT read aloud; mark all responses mentioned.)	Contraception or pregnancy prevention	1	
		HIV/AIDS		
		Early marriage	2	
		Reproductive health services catering specifically to youth	3	
		Sexually transmitted infections	4	
		Condom use	5	
		Abstinence	6	
			7	
318a	Do you ever watch videos or DVDs?	Yes	1	
		No	0	
318b	Have you ever seen a video or DVD about: (Read topics aloud.)	A. Pregnancy prevention/ reproductive health		1
		Yes		
		No		0
		B. Condoms		1
		Yes		0
		No		
		C. Having sex with only one partner or fidelity		1
		Yes		0
		No		
		D. Postponing sex or not having sex/abstinence		1
		Yes		0
		No		
		E. HIV/AIDS		1
		Yes		0
		No		
		F. Sexually transmitted diseases/STD/VD		1
		Yes		0
		No		
		G. Voluntary counseling and testing/VCT for HIV/AIDS		1
		Yes		0
		No		
	[If respondent responds “yes” to any of the above:] Where did you see that video or DVD?	At a friend's home	1	
		In school	2	
		At a youth club meeting	3	
		In a public place	4	
		In a private club or bar	5	
		Other place (write: _____)	6	
318	Can you read a letter or newspaper in English easily, with difficulty, or not at all?	Easily	1	
		With difficulty	0	
		Not at all	99	327
319	How often do you read a newspaper? (Read list and circle only one answer.)	Every day or almost every day	1	
		At least once a week	2	
		At least once a month	3	

		Less than once a month	4	
		Never	5	
		Other (specify)	77	
		Don't know	99	327
320	Have you ever seen anything in the newspaper about: (Read topics aloud.)	A. Pregnancy prevention/ reproductive health	Yes No	1 0
		B. Condoms	Yes No	1 0
		C. Having sex with only one partner or fidelity	Yes No	1 0
		D. Postponing sex or not having sex/abstinence	Yes No	1 0
		E. HIV/AIDS	Yes No	1 0
		F. Sexually transmitted diseases/STD/VD	Yes No	1 0
		G. Voluntary counseling and testing/VCT for HIV/AIDS	Yes No	1 0
321	Have you ever read or seen a paper/newsletter called "Junior Graphic?"	Yes No Don't know/don't remember	1 0 99	323 323
322	Can you tell me what topics were discussed in this newsletter? (DO NOT read aloud; mark all responses mentioned.)	Contraception or pregnancy prevention HIV/AIDS Early marriage Reproductive health services catering specifically to youth Sexually transmitted infections Condom use Abstinence	1 2 3 4 5 6 7	
323	Have you ever read a newsletter called ["It's up to you"? [Note: This is a fake name..]]	Yes No Don't know/don't remember	1 0 99	325 325
324	Can you tell me what topics were discussed in this newsletter? (DO NOT read aloud; mark all responses mentioned.)	Contraception or pregnancy prevention HIV/AIDS Early marriage Reproductive health services catering specifically to youth Sexually transmitted infections Condom use Abstinence	1 2 3 4 5 6 7	
325	How often do you read a magazine? (Read list and circle only one answer.)	Every day or almost every day At least once a week At least once a month Less than once a month Never Other (specify) Don't know	1 2 3 4 5 77 99	327
326	Have you ever seen anything in a magazine about: (Read topics aloud.)	A. Pregnancy prevention/ reproductive health	Yes No	1 0
		B. Condoms	Yes No	1 0
		C. Having sex with only one partner or fidelity	Yes No	1 0

		D. Postponing sex or not having sex/abstinence	Yes No	1 0	
		E. HIV/AIDS	Yes No	1 0	
		F. Sexually transmitted diseases/STD/VD	Yes No	1 0	
		G. Voluntary counseling and testing/VCT for HIV/AIDS	Yes No	1 0	
323	Have you ever read a magazine called "GHAYA"?	Yes No Don't know/don't remember		1 0	0
322	Can you tell me what topics were discussed in this magazine? (DO NOT read aloud; mark all responses mentioned.)	Contraception or pregnancy prevention HIV/AIDS Early marriage Reproductive health services catering specifically to youth Sexually transmitted infections Condom use Abstinence		1 2 3 4 5 6 7	
327	Have you ever seen a poster or brochure about sexual and reproductive health for young people?	Yes No		1 0	
328	Have you ever seen a billboard about sexual and reproductive health for young people?	Yes No		1 0	
329	Do you belong to any clubs or organizations?	Yes No		1 0	332
330	Which of the following types of clubs or organizations to you belong to?	For in-school youth only: School clubs Religious clubs Sports clubs Scouts Voluntary clubs	Yes No Yes No Yes No Yes No	1 0 1 0 1 0 1 0	
331	Have you ever seen or heard anything at a club about: (Read topics aloud.) (If respondent belongs to more than one club, use additional forms at the end of this section to ask this question for up to 2 more clubs.)	A. Pregnancy prevention/ reproductive health B. Condoms C. Having sex with only one partner or fidelity D. Postponing sex or not having sex/abstinence E. HIV/AIDS F. Sexually transmitted diseases/STD/VD G. Voluntary counseling and testing/VCT for HIV/AIDS	Yes No Yes No Yes No Yes No Yes No	1 0 1 0 1 0 1 0 1 0	
332	Have you ever attended a live drama performance?	Yes No		1 0	336
333	Have you ever attended	Yes		1	

	[]“FILL IN name of AYA-sponsored play?	No Don't know/don't remember	0 99	
334	In the past 12 months, have you attended a live drama performance?	Yes No Don't know/don't remember	1 0 99	
335	Have you ever seen or heard anything at a live drama performance about: (Read topics aloud.)	A. Pregnancy prevention/ reproductive health B. Condoms C. Having sex with only one partner or fidelity D. Postponing sex or not having sex/abstinence E. HIV/AIDS F. Sexually transmitted diseases/STD/VD G. Voluntary counseling and testing/VCT for HIV/AIDS	Yes No Yes No Yes No Yes No Yes No Yes No	1 0 1 0 1 0 1 0 1 0 1 0
336	Have you ever attended a rap concert?	Yes No	1 0	339
337	In the past 12 months, have you attended a rap concert?	Yes No Don't know/don't remember	1 0 99	
338	Have you ever seen or heard anything at a rap concert about: (Read topics aloud.)	A. Pregnancy prevention/ reproductive health B. Condoms C. Having sex with only one partner or fidelity D. Postponing sex or not having sex/abstinence E. HIV/AIDS F. Sexually transmitted diseases/STD/VD G. Voluntary counseling and testing/VCT for HIV/AIDS	Yes No Yes No Yes No Yes No Yes No	1 0 1 0 1 0 1 0 1 0
339	Do you ever attend poetry readings?	Yes No	1 0	342
340	In the past 12 months, have you attended a poetry reading?	Yes No Don't know/don't remember	1 0 99	
341	Have you ever seen or heard anything at a poetry reading about: (Read topics aloud.)	A. Pregnancy prevention/ reproductive health B. Condoms C. Having sex with only one partner or fidelity D. Postponing sex or not having sex/abstinence E. HIV/AIDS	Yes No Yes No Yes No Yes No	1 0 1 0 1 0 1 0

		F. Sexually transmitted diseases/STD/VD	Yes No	1 0	
		G. Voluntary counseling and testing/VCT for HIV/AIDS	Yes No	1 0	
342	Do you ever attend traditional dance performances?	Yes No		1 0	345
343	In the past 12 months, have you attended a traditional dance performance?	Yes No Don't know/don't remember		1 0 99	
344	Have you ever seen or heard anything at a traditional dance performance about: (Read topics aloud.)	A. Pregnancy prevention/reproductive health B. Condoms C. Having sex with only one partner or fidelity D. Postponing sex or not having sex/abstinence E. HIV/AIDS F. Sexually transmitted diseases/STD/VD G. Voluntary counseling and testing/VCT for HIV/AIDS	Yes No Yes No Yes No Yes No Yes No	1 0 1 0 1 0 1 0 1 0	
345	Do you ever attend choir performances?	Yes No		1 0	348
346	In the past 12 months, have you attended a choir performance?	Yes No Don't know/don't remember		1 0 99	
347	Have you ever seen or heard anything at a choir performance about: (Read topics aloud.)	A. Pregnancy prevention/reproductive health B. Condoms C. Having sex with only one partner or fidelity D. Postponing sex or not having sex/abstinence E. HIV/AIDS F. Sexually transmitted diseases/STD/VD G. Voluntary counseling and testing/VCT for HIV/AIDS	Yes No Yes No Yes No Yes No Yes No	1 0 1 0 1 0 1 0 1 0	
348	Do you ever attend sporting events such as football matches?	Yes No		1 0	***
349	In the past 12 months, have you attended a sporting event?	Yes No Don't know/don't remember		1 0 99	
350	Have you ever seen or heard anything at a sporting event about: (Read topics aloud.)	A. Pregnancy prevention/reproductive health B. Condoms C. Having sex with only one partner or fidelity D. Postponing sex or not	Yes No Yes No Yes	1 0 1 0 1	

		having sex/abstinence	No	0	
		E. HIV/AIDS	Yes	1	
			No	0	
		F. Sexually transmitted diseases/STD/VD	Yes	1	
			No	0	
		G. Voluntary counseling and testing/VCT for HIV/AIDS	Yes	1	
			No	0	
340	Did you attend "The Challenge Cup"?	Yes	1		
		No	0		
		Don't know/don't remember	99		
341	Did you see or hear anything at a Challenge Cup game about: (Read topics aloud.)	A. Pregnancy prevention/ reproductive health	Yes	1	
			No	0	
		B. Condoms	Yes	1	
			No	0	
		C. Having sex with only one partner or fidelity	Yes	1	
			No	0	
		D. Postponing sex or not having sex/abstinence	Yes	1	
			No	0	
		E. HIV/AIDS	Yes	1	
			No	0	
		F. Sexually transmitted diseases/STD/VD	Yes	1	
			No	0	
		G. Voluntary counseling and testing/VCT for HIV/AIDS	Yes	1	
			No	0	
***	Now I would like to change the subject and ask you about another type of program for young people. In some places young people work as peer educators/providers or outreach workers to provide information and services related to adolescent sexual and reproductive health. Their job is to meet on a one-on-one or small group basis with other youth. I would like to ask you some questions about this type of program and will refer to the individuals who worked with them as peers.				
351	Have you ever participated in one of these programs as a trained peer who provides information and services to other youth?	Yes	1		
		No	0		
352	Do you know if there are any peer programs in this community?	Yes	1		
		No	0		
353	Have you ever met or seen a peer?	Yes	1		
		No	0		366
354	Have you ever spoken with a peer?	Yes	1		
		No	0		366
355	Have you spoken with a peer only once or more than one time?	Only one time	0		
		More than once	1		
355a	[Showphoto of t-shirt] Have you ever seen anyone in this locality wearing this t-shirt?	Yes	1		
		No	0		
	Interviewer note: If the respondent has only spoken <u>one time</u> with a peer, state that the next few questions are about that one encounter. If the respondent has met <u>more than one time</u> with a peer, state that the next few questions refer to the most recent encounter with a peer.				
356	Did the peer say that s/he was working for a specific group or organization?	Yes	1		
		No	0		358

357	Do you know for which agency the peer that you spoke with worked?	Planned Parenthood Foundation Ghana (PPFG)	1	
		Center for Development of People (CEDEP)	2	
		Christian Health Association of Ghana (CHAG)	3	
		National Youth Council (NYC)	4	
		Ministry of Education/Ghana Education Service	5	
		Other (specify) _____	77	
358	Where did the peer talk to you?	At a health center or clinic	1	
		On the street	2	
		At a social event for youth	3	
		At a club meeting	4	
		At someone's home	5	
		Don't know/don't remember	99	
359	When did the peer speak with you?	This week	1	
		Within the last week	2	
		Within the last month	3	
		Within the last 3 months	4	
		Within the last 6 months	5	
		Within the last year	6	
		Don't know/can't remember	99	
360	Did you discuss any of the following topics? (Read topics aloud.)	A. Pregnancy prevention/ reproductive health	Yes No	1 0
		B. Condoms	Yes No	1 0
		C. Having sex with only one partner or fidelity	Yes No	1 0
		D. Postponing sex or not having sex/abstinence	Yes No	1 0
		E. HIV/AIDS	Yes No	1 0
		F. Sexually transmitted diseases/STD/VD	Yes No	1 0
		G. Voluntary counseling and testing/VCT for HIV/AIDS	Yes No	1 0
361	Did the peer refer you to a health clinic for sexual and/or reproductive services?	Yes No	1 0	364
362	What type of clinic were you referred to?	Government health center	1	
		Private clinic	2	
		NGO clinic	3	
		*will need to be adapted locally	#	
363	Which particular clinics did the peer suggest going to?	#1 _____	Yes No	1 0
		FILL IN clinic name	No	0
		#2 _____	Yes No	1 0
		FILL IN clinic name	No	0
		#3 _____	Yes No	1 0
		FILL IN clinic name	No	0
		#4 _____	Yes No	1 0
		FILL IN clinic name	No	0
364	Did the peer have condoms available?	Yes No Don't know/don't remember	1 0 99	

365	Overall, which of the following services did the peer provide that were useful? (Read the list aloud to the respondent. Mark all responses.)	Gave me information about contraceptives Gave me information about HIV/AIDS Gave me information about other sexually transmitted diseases Told me where to go for more information Told me where to go for services Gave me condoms Provided other contraceptives Told me where to get condoms	1 2 3 4 5 6 7 8	
366	Did you ever attend a youth talk led by a peer?	Yes No	1 0	401
367	Did the peer discuss the following topics at the youth talk? (Read topics aloud.)	A. Pregnancy prevention/ reproductive health B. Condoms C. Having sex with only one partner or fidelity D. Postponing sex or not having sex/abstinence E. HIV/AIDS F. Sexually transmitted diseases/STD/VD G. Voluntary counseling and testing/VCT for HIV/AIDS	Yes No Yes No Yes No Yes No Yes No	1 0 1 0 1 0 1 0 1 0
368	Did the peer refer you to a health clinic for sexual and/or reproductive services?	Yes No	1 0	371
369	What type of clinic were you referred to?	Government health center Private clinic NGO clinic *will need to be adapted locally	1 2 3 #	
370	Did the peer suggest going to any of the following clinics?	FILL IN clinic name FILL IN clinic name FILL IN clinic name FILL IN clinic name	Yes No Yes No Yes No Yes No	1 0 1 0 1 0 1 0
371	Did the peer have condoms available?	Yes No Don't know/don't remember	1 0 99	
372	Overall, which of the following services did the peer provide that were useful? (Read the list aloud to the respondent.)	Gave me information about contraceptives Gave me information about HIV/AIDS Gave me information about other sexually transmitted diseases Told me where to go for more information Told me where to go for services Gave me condoms Provided other contraceptives Told me where to get condoms	1 2 3 4 5 6	

		7	
		8	

After Question # 410, add the question:

Additional response tables for respondents that belong to more than one club.

331 A	Have you ever you heard/seen anything at a meeting about: (Read each topic.)	A. Pregnancy prevention/ reproductive health	Yes	1	
			No	0	
		B. Condoms	Yes	1	
			No	0	
		C. Having sex with only one partner or fidelity	Yes	1	
			No	0	
		D. Postponing sex or not having sex/abstinence	Yes	1	
			No	0	
		E. HIV/AIDS	Yes	1	
			No	0	
		F. Sexually transmitted diseases/STD/VD	Yes	1	
			No	0	
		G. Voluntary counseling and testing/VCT for HIV/AIDS	Yes	1	
			No	0	

331 B	Have you ever you heard/seen anything at a meeting about: (Read each topic.)	A. Pregnancy prevention/ reproductive health	Yes	1	
			No	0	
		B. Condoms	Yes	1	
			No	0	
		C. Having sex with only one partner or fidelity	Yes	1	
			No	0	
		D. Postponing sex or not having sex/abstinence	Yes	1	
			No	0	
		E. HIV/AIDS	Yes	1	
			No	0	
		F. Sexually transmitted diseases/STD/VD	Yes	1	
			No	0	
		G. Voluntary counseling and testing/VCT for HIV/AIDS	Yes	1	
			No	0	

4. EXPOSURE TO YOUTH FRIENDLY SERVICES				
	Now I am going to change the subject and ask you some questions related to health services.			Skip
401	During the past 5 years, have you ever visited a health center or clinic for any reason?	Yes	1	
		No	0	
402	Have you ever heard of any clinics or health centers that offer services intended mainly for young people?	Yes	1	512
		No	0	
403	Where did you hear about these services? (DO NOT read aloud; mark all responses mentioned.)	Peer provider/outreach worker	1	
		Referred by peer educator	2	
		School nurse	3	
		Referred by a friend	4	
		Referred by a teacher	5	
		Referred by a health professional	6	
	(Probe: Did you hear about them from anyone else?)	Other (specify) _____	7	

404	For in-school youth only: Did anyone from one of these clinics ever come to your school and make a presentation about these services?	Yes No	1 0	
405	Have you ever visited any of these clinics that offers services mainly for young people?	Yes No	1 0	512
406	What is the name of the clinic or health facility that you went to for these services? (Name all if more than one.)	#1 _____ #2 _____ Fill in with clinic names		
407	In what district and locality is this clinic located? (Locate all if more than one.)	#1 _____ \ #2 _____ Fill in districts/localities where YFS services were located)		
408	How many times have you visited this clinic in the past year?	#1 _____ #2 _____ (Write in responses.)		
409	What services were you hoping to receive when you visited the clinic? (Do not read aloud. Mark all responses.)	Information about contraceptives Contraceptive method, including insertion of IUD Pelvic examination Information about sexually transmitted infections Screening or testing for sexually transmitted infections Treatment for sexually transmitted infections Information about HIV/AIDS prevention Condoms Voluntary counseling and testing for HIV/AIDS Prenatal care Delivery/postpartum care Post abortion care Other (specify) _____	1 2 3 4 5 6 7 8 9 10 11 12 77	
410	Did the clinic provide you with the services that you wanted?	Yes No Don't know/don't remember	1 0 99	412
411	Why didn't the clinic provide the services you needed? (Don't read aloud.)	Clinic was closed Counselor not available Contraceptives not available Nurse/counselor refused to provide service Other (specify) _____	77	
412	Are you satisfied with the services you received? Would you say that you are very satisfied, somewhat satisfied, neutral, somewhat dissatisfied or very dissatisfied?	Very satisfied Somewhat satisfied Neutral Somewhat dissatisfied Very dissatisfied	1 2 3 4 5	413 413
413	Why are you not satisfied with the services that you received?			
414	In your opinion, are these services readily accessible (i.e. easy to get to and use), somewhat accessible, no opinion, somewhat inaccessible, not accessible at all to adolescents?	Readily accessible Somewhat accessible No opinion Somewhat inaccessible Not accessible at all	1 2 3 4 5	

		Don't know/don't remember	99	
415	In your opinion, how affordable are the services you have received at this clinic? Are they very affordable, somewhat affordable, no opinion, somewhat expensive, very expensive?	Very affordable Somewhat affordable No opinion Somewhat expensive Very expensive Don't know/don't remember	1 2 3 4 5 99	
416	Would you recommend these services to a friend?	Yes No	1 0	418
417	Why would you not recommend these services to a friend? (Don't read aloud. Mark all responses.)	Services are expensive Inconvenient location Unfriendly staff Did not receive services needed Shy/reluctant to tell friend about reproductive health services	1 2 3 4 5	
418	If you needed health services, where would you go? (DO NOT read aloud; mark all responses mentioned.)	Government health clinic or hospital NGO clinic Private sector clinic Traditional healer Youth friendly services clinic Other (specify) _____	1 2 3 4 5 6	
419	If you wanted to obtain reproductive health advice, contraceptives, or condoms, where would you go?	Government health clinic or hospital NGO clinic Private sector clinic Traditional healer Pharmacy/drug shop Youth friendly services clinic Peer Other (specify)	1 2 3 4 5 6 7 77	
420	Have you ever met with a peer from a clinic that provides services specifically for adolescents?	Yes No	1 0	
421	Have you ever received either condoms or pills from a peer that works at the clinic?	Yes No	1 0	423
422	Where did you receive the condom? Did the peer give it to you in a clinic or during an encounter outside the clinic?	In the clinic Encounter outside the clinic	0 1	
423	Have you ever received other contraceptives from a peer that works at the clinic?	Yes No	1 0	501
424	Where did you receive the contraceptives? Did the peer give it to you in a clinic or during an encounter outside the clinic?	In the clinic Encounter outside the clinic	0 1	

5. PEERS/SOCIAL NETWORK			
	During this part of the interview, I would like to ask you about your interactions with a friend of yours that is close to your age. It is not necessary that you share his or her name with me; you can make up a name for him or her and if you mention a name, I will not write it down anywhere on this questionnaire.		Skip
501	Is [friend] male or female?	Male Female	0 1
502	How old is [friend]? (Probe: About how old?) (Write in response.	Age in years _____ Don't know	99
503	Where does [friend] live?	Same household Same compound Next door Same neighborhood Same locality Same district Other district Other (specify) _____	1 2 3 4 5 6 7 77
504	How close are you to [friend]? Is s/he a confidant, just a friend, an acquaintance, or someone you have met briefly?	Confidant Just a friend Acquaintance Someone met briefly	1 2 3 4
505	When was the last time you spoke with this friend?	Today This week This month More than a month ago	1 2 3 4
506	Have you ever spoken with [friend] about HIV/AIDS?	Yes No	1 0
507	How often do you speak with [friend] about HIV/AIDS?	Daily Several times each week Several times each month Seldom Never	1 2 3 4 5
508	What does [friend] think are the best ways to protect himself/ herself from getting HIV/AIDS?	Abstinence Having only one sexual partner Using condoms every time you have sex Condom use Prayer In God's hands Traditional medicine/charms Avoid sex with prostitutes or bargirls Avoid sex with people you think might be infected There is no protection from AIDS Other (specify) _____ Don't know *Need to make context specific based on local beliefs.	1 2 3 4 5 6 7 8 9 10 77 99
509	Have you ever spoken with [friend] about contraception or pregnancy prevention?	Yes No	1 0
510	How often do you speak with [friend] about contraception or preventing pregnancy?	Daily Several times each week Several times each month Seldom	1 2 3 4

		Never	5				
511	What does [friend] think are the best ways to prevent pregnancy?	Contraceptive use Withdrawal before ejaculation Having sex during the “safe” period *Need to make context specific based on local beliefs.	1 2 3				
512	Is [friend] married?	Yes No	1 0				
513	If friend is female: Does [friend] have any children?	Yes No	1 0				
	If friend is male: Has [friend] fathered any children?	Yes No	1 0				
514	If friend is unmarried or has no children: Do you think that friend has ever had sexual intercourse?	Yes No Don’t know	1 0 99				
515	If friend is female: Do you think that [friend] is at risk of getting pregnant?	Yes No Don’t know	1 0 99				
516	Do you think that [friend] has ever used contraceptives?	Yes No Don’t know	1 0 99				
517	Do you think that [friend] is at risk of getting HIV/AIDS?	Yes No	1 0				
Now I would like to change the subject a bit. We are done talking about that friend. Now let me ask you about the beliefs of all those young people you consider your friends. Please tell me whether or not you strongly, agree, agree, neither agree nor disagree, disagree, strongly disagree or do not know enough information to have an opinion for the following statements.							
		Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	Don’t know
518	Most of my friends believe that people should wait until they get married to have sex.	1	2	3	4	5	99
519	Most of my friends believe it is OK to have sex with a steady girlfriend or boyfriend.	1	2	3	4	5	99
520	Most of my friends believe it is OK to have sex with more than one partner in one month.	1	2	3	4	5	99
521	Most of my friends believe that condoms should always be used during sex, even if the two people know each other very well.	1	2	3	4	5	99
521a	Most of my friends believe that young people should have sex regularly in order to avoid health problems.	1	2	3	4	5	99

6. HIV/AIDS and OTHER STIs: KNOWLEDGE & ATTITUDES			
	Now, I would like to change the subject and ask for your opinions on some important health issues here in Ghana. Please do not worry about whether or not your answers are correct. I am interested in hearing what you have heard about these issues and your opinions. As with all other questions, your answers will be kept confidential.		Skip
601	Have you ever heard of diseases that are transmitted through sexual activity?	Yes No	1 0 604
602	Where did you hear about these diseases? (Do not read list; check all mentioned.)	School/teacher Community member Religious leader Friends Parent/family member Service provider/clinic Peer Educator Radio TV Newspaper Pamphlet Other (specify)	1 2 3 4 5 6 7 8 9 10 11 77
603	What are the signs of a sexually transmitted disease? (Do not read list; check all mentioned.)	Unusual and foul discharge from the penis/ vagina Painful urination Itching in the vagina or penis Pains in the lower abdomen Sores around the vagina or penis Other (specify) _____ Don't know	1 2 3 4 5 77 99
604	Have you ever heard of a disease called AIDS?	Yes No	1 0
605	Have you ever heard of Human Immunodeficiency Virus or HIV?	Yes No	1 0
	If respondent answers "no" to 604 AND 605, then go to Question # 632. Otherwise, continue with Question # 606.		
606	Can you tell me what causes HIV/AIDS? (DO NOT read aloud. Mark all answers mentioned by the respondent.) Probe: Any others?	Human Immunodeficiency Virus (HIV) Unsafe/unprotected sex Passed from mother to child during pregnancy Having multiple sex partners Mosquito bites Blood transfusions Sharing food with an infected person Other (specify) _____ Don't know/don't remember	1 2 3 4 5 6 7 77 99
607	How can you tell if a person has HIV? (DO NOT read aloud. Mark all answers mentioned by the respondent.) Probe: Any others?	Weight loss Skin rash Frequent illnesses Coughing for a long time By testing for HIV virus Pain in the joints Diarrhea Can't tell by looking at someone Other (specify) Don't know	1 2 3 4 5 6 7 8 77 99

608	How can one find out whether or not s/he has HIV/AIDS?	By taking HIV test By falling sick You can never know Other (specify) Don't know	1 2 3 77 99	
609	Can someone look healthy but still have HIV/AIDS?	Yes No Don't know	1 0 99	
610	Can someone who is looking healthy infect another person with HIV?	Yes No Don't know	1 0 99	
611	Would you ever consider taking a test to find out if you have HIV/AIDS?	Yes No Don't know	1 0 99	613
612	Why would you not want to take a test to know if you have HIV/AIDS? (DO NOT read aloud. Mark all answers mentioned by the respondent.)	No cure No treatment available Don't want to know my status for fear Fear losing my partner Not sexually active I am faithful to my partner Don't want others to find out if I have HIV I would lose my job if I had HIV Other (specify)	1 2 3 4 5 6 7 8 77	
613	Where can you obtain an HIV/AIDS test? *Will need to adapt for country context.	Hospitals Clinics Health centers AIDS information center Other (specify) Don't know	1 2 3 4 77 99	
614	What are the ways through which HIV/AIDS is spread from person to person? (Do not read list; check all mentioned.)	Human Immunodeficiency Virus (HIV) Unsafe/unprotected sex Passed from mother to child during pregnancy Having multiple sex partners Mosquito bites Blood transfusions Sharing food with an infected person Other (specify) _____ Don't know/don't remember	1 2 3 4 5 6 7 77 99	
615	What can a person do to avoid catching HIV/AIDS? (Do not read list; check all mentioned.)	Abstinence Having only one sexual partner Using condoms every time you have sex Condom use Prayer In God's hands Traditional medicine/charms Avoid sex with prostitutes or bargirls Avoid sex with people you think might be infected There is no protection from AIDS Other (specify) _____ Don't know *Need to make context specific based on local beliefs.	1 2 3 4 5 6 7 8 9 10 77 99	
616	Can a person get HIV/AIDS from mosquito bites?	Yes No Don't know	1 0 99	
617	Can a person become infected	Yes	1	

	with HIV/AIDS by shaking hands with someone who have HIV/AIDS?	No Don't know	0 99	
618	Can a person get HIV/AIDS from sharing a meal with someone who is infected?	Yes No Don't know	1 0 99	
619	Can the risk of HIV/AIDS transmission be reduced by having sex with only one faithful, uninfected partner?	Yes No Don't know	1 0 99	
620	Can the risk of HIV/AIDS transmission be reduced by using condoms?	Yes No Don't know	1 0 99	
621	What does "safer sex" mean to you? (Do not read list; check all mentioned.)	Abstain from sex Condom use Using a condom every time you have sex Using a condom when you have sex with prostitutes Avoid sex with more than one partner Avoid sex with prostitutes Avoid anal sex Other (specify) _____ Don't know	1 2 3 4 5 6 7 77 99	
622	Are there treatments for people who have HIV/AIDS that can keep them healthy for a long time?	Yes No	1 0	
623	Can AIDS be cured?	Yes No	1 0	625
624	How can AIDS be cured? (Do not read list; check all mentioned.)	Prayers Traditional medicine Modern medicine Other (specify) _____	1 2 3 77	
625	What are your main sources of information about HIV/AIDS? (Do not read list; check all mentioned.)	TV Radio Friends/peers Print material – posters, brochures Partner/boyfriend/girlfriend Community health worker Civil society organization/NGO Parents Schools/teacher Religious leader/church/mosque Other (specify) _____	1 2 3 4 5 6 7 8 9 10 77	
626	Which specific messages have you heard from your friends and family, on the radio or TV, at clinics or at school about how to prevent HIV/AIDS? (Don't read aloud. Mark all responses.)	Abstain is the best way to avoid AIDS Be faithful to one partner Always use a condom Unprotected sex can lead to AIDS or STDs AIDS will kill AIDS has no cure Other (specify) _____	1 2 3 4 5 6 77	
627	Which messages about HIV/AIDS have made you think the most? (Do not read list; check all mentioned.)	Abstain is the best way to avoid AIDS Be faithful to one partner Always use a condom Unprotected sex can lead to AIDS or STDs AIDS will kill AIDS has no cure Other (specify) _____	1 2 3 4 5 6 77	

628	Do you consider yourself to be at no risk, low risk, medium risk or high risk for catching HIV or STDs?	No risk Low risk Medium risk High risk Don't know/No answer	1 2 3 4 99	630 630
629	Why do you consider yourself at risk for HIV/AIDS? (Skip to 631 after asking this question.)	Have many sexual partners Partner died of AIDS Have sex without condoms Other (specify) Don't know/No answer	1 2 3 4 99	
630	Why do you not consider yourself at risk? (Do not read list; check all mentioned.)	I've never had sex I abstain from sex I am faithful to my partner We are faithful to each other I always use condoms Other (specify)	1 2 3 4 5 77	
631	Do you personally know anyone who has died of AIDS?	Yes No	1 0	
We've just spent quite a bit of time talking about sexually transmitted infections and HIV/AIDS. Now I would like to ask you several questions related to pregnancy and contraception.				
632	A menstrual cycle lasts one month; during that month, when is a woman most likely to conceive? (When is she fertile?)	During the 1 st 10 days During the 2 nd 10 days During the 3 rd 10 days Other (specify)	1 2 3 77	
633	Is it possible to become pregnant during the first time a woman has sexual intercourse?	Yes No	1 0	
634	Is it possible for a girl to get pregnant if the boy withdraws before ejaculation?	Yes No Don't know/don't remember	1 0 99	
635	Have you ever heard of a method used to protect a female from getting pregnant?	Yes No	1 0	701
636	What methods have you heard of? (Do not read list; check all mentioned.) *Adapt for local context with brand names, contraceptives that are available in the country.	Abstinence Pill IUD/IUCD Injectable/Depoprovera Norplant Diaphragm/Foam/Jelly/Cream Condom Female condom Non-penetrative/thigh sex Safe days/abstinence Female sterilization Male sterilization Calculation, rhythm, calendar, safe period Periodic abstinence Withdrawal Traditional methods Emergency contraceptive pill (ECP) Other (specify)	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 77	
636a	Let me be sure of your responses. Which methods did you say you have heard of?			

7. SEXUAL BEHAVIOR INFORMATION			
	Now I would like to ask you some personal questions about your sexual and reproductive health, including questions about your sexual experience. We know that some young people have sex and some have sex with more than one person. Please, answer the following questions honestly and remember that this information is confidential. Your name is not recorded on this questionnaire and I will not share your answers with anyone.		Skip
701	Do you have any children?	Yes No	1 0 704
702	<u>Females only:</u> How many children have you ever given birth to? <u>Males only:</u> How many children have you fathered?	Write in response: Number of children _____ Don't know	99
703	<u>For females only:</u> How old were you when you gave birth to your first child?	Write in response: Age _____ Don't know	99
704	<u>For females only:</u> Are you currently pregnant? <u>For Males only:</u> Are you going to be a father? Is anyone currently pregnant by you?	Yes No Don't know	1 0 99 706
705	Have you ever had sexual intercourse?	Yes No	1 0 901
706	How many partners have you had sexual intercourse with in the last 12 months?	Number of partners _____ Don't know/no answer	99
707	When was the last time you had sexual intercourse? Can you tell me how many months ago? (Subtract number of months from current month and write in number of months since last intercourse.)	____ this month ____ months ago ____ don't remember Don't know	97 98 99
708	How old were you the first time you had sexual intercourse?	Age in years _____ Don't know/no answer	99
709	How old was your first sexual partner during this first intercourse?	Age in years _____ Don't know	99
710	At the time your first had sex, what was your relationship with this partner?	Spouse Boyfriend/girlfriend Ordinary friend/acquaintance Teacher Employer Relative (specify _____) Sugar daddy/sugar mummy Stranger Sex worker Other (specify)	1 2 3 4 5 6 7 8 9 77
711	The first time you had sexual intercourse, did you or your partner use a method to prevent pregnancy?	Yes No	1 0 714
712	What method did you or your partner use? (DO NOT read list; check all methods mentioned.)	Pill IUD/IUCD Injections Norplant	1 2 3 4

		Diaphragm/Foam/Jelly	5	714
		Condom	6	
		Female sterilization	7	
		Male sterilization	8	
		Calculation, rhythm, calendar, safe period	9	
		Periodic abstinence	10	
		Withdrawal	11	
		Traditional methods	12	
		Emergency contraceptive pill (ECP)	13	
		Other (specify) _____	77	
713	Did you use a condom the first time you had intercourse?	Yes	1	
		No	0	
714	How did you feel about your first sexual intercourse? (Read aloud and ask respondent to tell you which response is closest to their feeling.)	Very unhappy	1	718
		Unhappy	2	
		OK	3	
		Happy	4	
		Very happy	5	
		Other (specify)	77	
		Don't know	99	
715	What was the circumstance of your first sexual intercourse?	Marriage	1	
		Desired to have sex with boyfriend/ girlfriend	2	
		Party	3	
		Drunk	4	
		Rewarded	5	
		Forced/raped	6	
		Other (specify)	77	
716	The first time you had intercourse, did you want to have sex, did it just happen or were you forced to have sex?	Wanted to have sex	1	
		Just happened	2	
		Forced to have sex	3	
717	Has someone ever forced you to do something sexual that you didn't want to do?	Yes	1	721
		No	0	
718	How old were you when this happened?	_____		
719	Did this happen more than once?	Yes	1	
		No	0	
720	What was your relationship with the person or people who forced you to have sex against your will? (Multiple responses are possible; check all mentioned.)	Spouse	1	
		Boyfriend/girlfriend	2	
		Friend of the same sex	3	
		Friend of the opposite sex	4	
		Teacher	5	
		Employer	6	
		Relative (specify _____)	7	
		Sugar daddy/mummy	8	
		Other (specify _____)	77	
721	During the past month, with how many partners have you had sexual intercourse?	_____		
		Don't know	99	
722	In your lifetime, with how many different partners have you had sex?	_____	99	

		Don't know	
723	About how many of your friends do you think have had sex?	None A few About half Most All	1 2 3 4 5

8. FOR SEXUALLY ACTIVE YOUTH ONLY			
	Now I would like to change the subject again and ask you some questions about pregnancy and contraception.		Skip
801	Have you ever used a contraceptive method to prevent pregnancy?	Yes No	1 0
802	Which of these methods have you ever used? (Do not read list; check all mentioned.)	Pill IUD/IUCD Injections Norplant Diaphragm/Foam/Jelly Condom Female sterilization Male sterilization Calculation, rhythm, calendar, safe period Periodic abstinence Withdrawal Traditional methods Emergency contraceptive pill (ECP) Other (specify)	1 2 3 4 5 6 7 8 9 10 11 12 13 77
803	Why have you not used any contraceptive method? (DO NOT read list; check all mentioned.)	Never used contraception Wanted to become pregnant Have sex rarely or occasionally Currently breastfeeding Partner refuses to use or let me use Fear of side effects Forbidden by religion Cost too much Health reasons Inconvenient Became pregnant while using in the past Not effective Not available Other (specify)	1 2 3 4 5 6 7 8 9 10 11 12 13 77
	Skip to Question 807 if the respondent is male.		
804	For females only: What do you think is your risk of becoming pregnant when you do not want to be ?	No risk Low risk Medium risk High risk	1 2 3 4
805	For females only: If you believe that your risk is "No risk or "Low risk" what is the main reason? (Multiple responses possible; check all mentioned.) *Need to add modern contraceptive methods available in Ghana. Skip to 807 after asking this	Abstinence/no sex Infrequent sex I take the contraceptive pill I always use a condom I use a condom together with another method I use natural methods (withdrawal, safe period) I use traditional methods I am still too young I am infertile It cannot happen to me	1 2 3 4 5 6 7 8 9 10

	question.	Other (specify)	77	
806	<u>For females only:</u> If you believe that your risk is “High risk what is the main reason? (Multiple responses possible; check all mentioned.)	I do not use a condom I do not use a contraceptive method I have unprotected sex frequently I have my menstrual period Other (specify)	1 2 3 4 77	
807	The last time you had sex, did you use a contraceptive method?	Yes No Don't know/don't remember	1 0 99	811 811
808	The last time you had sex, who made the decision about the use of contraceptives?	I made the decision about using contraceptives My partner made the decision about using contraceptives	0 1	
809	Which method did you use? (Multiple responses possible; check all mentioned.) *Need to adapt to local context with methods available in Ghana.	Pill IUD Injections Norplant Diaphragm/Foam/Jelly Condom Female sterilization Male sterilization Calculation, rhythm, calendar, safe period Periodic abstinence Withdrawal Traditional methods Emergency contraceptive pill (ECP) Other (specify)	1 2 3 4 5 6 7 8 9 10 11 12 13 77	901 901 901
810	Where did you obtain this/these methods? (Multiple responses possible; check all mentioned.) <u>Skip to 901</u> after asking this question.	Public facility (hospital or clinic) Private clinic (specify) Pharmacy Shops Mobile clinic Peer educator Friends Parent Community worker Other (specify)	1 2 3 4 5 6 7 8 9 77	
811	Why are you not using contraceptives now? (Multiple responses possible; check all mentioned.)	Have sex rarely or occasionally Want to become pregnant Currently breastfeeding Partner refuses to use or let me use Fear of side effects Forbidden by religion Cost too much Health reasons Inconvenient I am pregnant Not effective Not available Other (specify)	1 2 3 4 5 6 7 8 9 10 11 12 77	
812	Would you like to use a method in the future?	Yes No	1 0	

9. FOR ALL YOUTH			
	Now I would like to ask you about a specific way to prevent pregnancy and sexually transmitted diseases. Some of these questions may be similar to questions you have already answered, but we are asking them again in regards to this specific method of preventing pregnancy and sexually transmitted diseases.		Skip
901	Have you ever heard of condoms?	Yes No	1 0 912
902	From whom did you hear about condoms? (Multiple responses are possible; check all mentioned.)	Friend Teacher Parent Other relative (specify) Health service provider Peer education Religious leader Radio TV School Live drama Other (specify) Don't know/don't remember	1 2 3 4 5 6 7 8 9 10 11 12 77
903	Have you ever seen a condom?	Yes No	1 0
904	<u>For youth who have ever had sexual intercourse:</u> Have you ever used a condom?	Yes No	1 0
905	Do you know of a place where a young person can get condoms?	Yes No	1 0 907
906	Where can a young person go to get condoms? (DO NOT read aloud.) (Probe: Any others?) (Multiple responses possible)	Hospital/health center/clinic Mobile clinic Peer provider Pharmacy Private doctor Hairdresser Shop/kiosk Church School/school clinic Friend or relative Traditional healer Private sale by nurse Other (specify) _____	1 2 3 4 5 6 7 8 9 10 11 12 77
907	How sure are you that you could get a condom if you needed one?	Not very sure Not sure Sure Very sure	1 2 3 4
908	Do you feel that you are able to put on and use a condom properly?	Yes No	1 0
909	If you were going to have sex with someone and s/he did not want to use a condom, how sure are you that you could insist on using a condom?	Not very sure Not sure Sure Very sure	1 2 3 4

910	What do you think about people who use condoms? (Multiple responses possible; circle all mentioned.)	They are responsible They are protective They are promiscuous or loose I have no opinion Other (specify) _____	1 2 3 4 77	
911	Do you think it is easy or difficult for youth to obtain condoms?	Easy Difficult Don't know	1 2 99	913 913
912	Why is it difficult for youth to obtain condoms? (DO NOT read aloud. Multiple answers possible.)	Methods are too expensive Methods are too difficult to find Supply unreliable Provider/seller/nurse disapproves Parents/caretakers disapprove Other (specify) _____	1 2 3 4 5 77	
913	If someone wanted to have sex with you and you did not want to, how sure are you that you could refuse having sex with that person? (Read aloud.)	Not very sure Not sure Sure Very sure	1 2 3 4	

10. Gender issues						
Now I would like to change the subject again and ask you some questions relationships between men and women. Again, there are no right or wrong answers. We are interested in your opinion on these issues and will be asking whether or not you agree or disagree with a series of statements about men and women.						
Please tell me if you strongly agree, agree, neither agree nor disagree, disagree or strongly disagree with the following statements.		Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
1001	Girls are as physically capable as boys.	1	2	3	4	5
1002	Girls are as mentally capable as boys.	1	2	3	4	5
1003	Girls can earn as much as boys.	1	2	3	4	5
1004	Girls can do the same jobs as boys.	1	2	3	4	5
Is it justified for a man to hit his wife if she:						
1005	Talks with men outside the family.	1	2	3	4	5
1006	Does not fulfill her marital duties towards her husband.	1	2	3	4	5
1007	Spends money without her husband's permission.	1	2	3	4	5
1008	Goes out without her husband's permission.	1	2	3	4	5
1009	Answers back to her husband.	1	2	3	4	5
1010	Burns the food.	1	2	3	4	5
1011	Neglects the children.	1	2	3	4	5
Please tell me if you strongly agree, agree, neither agree nor disagree, disagree or strongly disagree with the following statements.						
1012	If the wife works outside the home, the husband must help her in the housework and childcare.	1	2	3	4	5
1013	Women must be wives and mothers only	1	2	3	4	5

	and not work.					
I014	Boys must help with housework just like girls.	1	2	3	4	5
I015	When there is not much money and the family cannot afford to educate all the children, boys and not girls should go to school.	1	2	3	4	5
I016	If the husband wants more children, the wife must obey him, even if she does not want to have children.	1	2	3	4	5
I017	A girl must obey her brother even if he is younger.	1	2	3	4	5
I018	Every family must have a son.	1	2	3	4	5
I019	It is necessary to give and receive dowry. *Replace dowry with local term.	1	2	3	4	5
I020	Girls should have prior knowledge about pregnancy, delivery, and family planning before marriage.	1	2	3	4	5
I021	Boys should have prior knowledge about pregnancy, delivery, and family planning before marriage.	1	2	3	4	5
I022	The husband should decide how to spend money at home.	1	2	3	4	5
I023	Men should decide whether or not a contraceptive method is used during sexual intercourse.	1	2	3	4	5
I024	A woman can insist on using a condom with her husband or partner if she suspects he is having sex with other partners.	1	2	3	4	5
I025	Bringing up children is the woman's responsibility alone.	1	2	3	4	5
I026	There are no jobs that are man or woman specific.	1	2	3	4	5
	If respondent has never had sexual intercourse, thank him/her for his/her time and ask if s/he has any questions. Record the end time of the interview on the identification sheet (first page).					

II. FOR SEXUALLY ACTIVE YOUTH ONLY				
	Now I would like to ask you some questions about your most recent sexual partner. You do not have to tell me this partner's name and the information that you tell me will be kept confidential.			Skip
I101	How would you describe your relationship with [partner]?	Spouse Boy/girlfriend Friend Stranger Sugar daddy/ mummy Relative (specify) Other (specify)	1 2 3 4 5 6 77	
I102	How old is s/he? (Write in age.)	_____		
I103	Does [partner] live in the same neighborhood/ village?	Yes No Don't know/don't remember	1 0 99	
I104	Is s/he still your sexual partner?	Yes No	1 0	

I 105	Did you ever talk with this partner about any of the following topics? (Circle all "yes" responses.)	Avoiding or delaying sex Ways to avoid pregnancy Condom use Avoiding HIV/AIDS Avoiding sexually transmitted infections	1 2 3 4 5	
I 106	Have you ever used a condom with this partner?	Yes No	1 0	I 1012
I 106.5	Who decided to use the condom the first time?	I made the decision My partner made the decision We decided together	1 2 3	
I 107	How often do you use a condom with this partner?	Always Usually Sometimes Rarely Never	1 2 3 4 5	
I 108	Have you used a condom with any other partners in the last month?	Yes No Only had one partner in the last month Don't know/don't remember	1 2 3 99	
I 109	Have you used a condom with any other partners in the last year?	Yes No Only had one partner in the last year Don't know/don't remember	1 2 3 99	
I 110	Who decided to use the condom the last time you had sex with [partner]?	I made the decision My partner made the decision We decided together	1 2 3	
I 111	Why did you use condoms during your last sexual encounter? (Multiple answers possible; mark all mentioned.)	To prevent pregnancy To protect against HIV/AIDS To protect against STIs Other (specify) _____	1 2 3 77	
I 112	What would you have done if your partner refused to use a condom?	Refuse to have sex Persuade him/her to use one Have sex anyway	1 2 3	
I 113	Where did you obtain the condom used during your last intercourse?	Hospital/health center/clinic Mobile clinic Peer provider Pharmacy Private doctor Hairdresser Shop/kiosk Church School/school clinic Friend or relative Traditional healer Private sale by nurse Other (specify) _____	1 2 3 4 5 6 7 8 9 10 11 12 77	
I 114	Why didn't you use a condom during intercourse with this partner? (Multiple answers possible. Circle all mentioned.)	Cost too much Health reasons Inconvenient/messy Does not protect me from HIV/AIDS Don't enjoy sex with condoms Condoms are unnatural Partner refused to use a condom Religion forbids condom use Wanted to get pregnant/ make partner pregnant Condom not available Other (specify) _____	1 2 3 4 5 6 7 8 9 10	

		77	
	This concludes the interview. Thank you for taking some time to share your opinions and experiences with us. This information will be very helpful for people who are working to provide services to young people here in Tanzania. Do you have any questions for me? I will be happy to answer them at this time.		

Record the end time of the interview on the identification sheet (first page).

Please take a few minutes to record any comments or reactions from the respondent and your general impressions of the interview in the space below.

Comments/reaction from respondent:

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