ADOLESCENT IN TRANSITION IN WEST AFRICA (ATWA) OUTCOME EVALUATION

2021-22 Endline Report

THE UCSD CENTER ON GENDER EQUITY AND HEALTH, GRADE AFRICA, AND SAVE THE CHILDREN

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GRADE Africa

Save the Children

GEH

Center on Gender Equity and Health • UC San Diego School of Medicine

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LIST OF ACRONYMS AND KEY PHRASES

ASRHR	Adolescent Sexual and Reproductive Health Rights
ATWA	Adolescent Transitions in West Africa
CFA	Confirmatory Factor Analysis
DHS	Demographic and Health Surveys
EPA	Exploratory Factor Analysis
FGC	Female Genital Cutting
GAGE	Gender and Adolescence Global Evidence
GEAS	Global Early Adolescent Study
GEE	Generalized Estimating Equations (GEE)
GEM	Gender Equitable Men Scale
IS	In-school
LSE	Life Skills Education
MELR	Mixed Effects Liner Regression
MHM	Menstrual Hygiene Management
MPNS	Menstrual Practice Needs Scale
MPQ	Menstrual Practices Questionnaire
OOS	Out-of-school
OR	Odds ratio
SRH	Sexual and reproductive health
SRHR	Sexual and Reproductive Health Rights
UCSD-GEH	University of California San Diego, Center on Gender Equity and Health
VYAs	Very young adolescents
Y/O	Year olds

BACKGROUND

The Adolescent in Transition in West Africa (ATWA) program is funded by the Dutch Ministry of Foreign Affairs. The four-year program aims to influence and promote positive adolescent sexual and reproductive health and rights (SRHR) outcomes by addressing some of the interrelated drivers of poor sexual and reproductive health and rights (SRHR) among very young (ages 10-14 years) and older (ages 15-19 years) adolescents in eight regions of the Liptako Gourma area of West Africa, an area that covers eastern Burkina Faso, southwestern Niger, and a small portion of southeast and central Mali.

Spanning from December 2019 until November 2023, the program will improve the sexual and reproductive health and rights of adolescents by catalyzing the provision of Life Skills Education (LSE) in school settings, and in Niger and Mali outside of school settings as well. Teachers, mentors, and peers will engage adolescent girls and boys in learning about SRHR, building critical life skills and improving attitudes, behaviors and norms towards gender and SRHR. Alongside the provision of LSE, the program will increase access to, and uptake of, quality adolescent-responsive SRH services and contraception among adolescents by improving the quality and youth-friendliness of services, including the attitudes, skills and knowledge of service providers. Overall objectives of the project include:

> **Impact**: Improved sexual and reproductive health and rights of adolescents
> **Outcome 1**: Improved sexual and reproductive health and rights and gender equality knowledge, intent, and behaviors among adolescents
> **Outcome 2**: Ensure health facilities offer quality adolescent responsive SRH services that are used by adolescent girls and boys

Overall, ATWA seeks to provide SRHR information to 472,180 adolescents through 2,573 teachers in 2,148 primary schools (adolescents ages 10 to 14) and 425 secondary schools (adolescents ages 14 to 19), 48,000 out-of-school adolescents, 1,704 health workers, and 500 health centers. Additionally, 212,090 girls in 2,537 schools in Niger, Mali and Burkina Faso are to be provided with the knowledge, materials, and facilities to manage their menstruation in a hygienic and dignified fashion. ATWA also aims to provide 48,000 out-of-school adolescents in Niger and 4,368 in Mali with quality ASRHR information in small groups by mentors.

To evaluate the intervention's impact, an external outcome evaluation was carried out each year of implementation by research partners, the Center on Gender Equity and Health at the University of California San Diego (UCSD-GEH), and GRADE Africa. At the time of writing in October 2022, one year of implementation has been completed. The evaluation design is a pre- and post-test with a comparison group. Endline (post-test) data are used to contrast differences between the control and intervention groups, after accounting for baseline (pre-test) levels of outcome indicators. In each of the three countries, an intervention and a control group are identified and interviewed at the start and end of each of the two intervention years. This report provides findings from the Year 1 endline survey conducted in May and June 2022.

ATWA INTERVENTION & DOSE

The ATWA intervention in school is based on various existing MOE teacher training curricula and guidelines on life skills and SRH, that were adapted to each context and complemented with additional topics to include a range of SRHR themes. The MOEs in each country opted for an integrated approach whereby subject teachers are requested to integrate SRHR themes in their lesson plans for particular grades. Teachers are free to decide what and how to integrated the subject matter into their lessons. The out-of-school intervention is based on adapted GREAT ! material with a step-by-step guide for mentor-facilitated small group based activities on SRHR that was again adapted to each context. All training material was adapted with and validated by the respective ministries of education. All in all, a variety of SRHR themes are provided to adolescents that vary by country, type of school (primary or secondary school), grade, teachers, and out-of-school small groups. Topics in the questionnaire have been derived from the wider range of lesson themes and include: Puberty; Menstrual Hygiene & Management; HIV, STIs & Pregnancy Knowledge; Contraception; Personal Sexual History; Health Services; Gender Attitudes & Norms; Gender-Based Violence; Self-Efficacy; Child Marriage; and Female Genital Cutting (FGC).

While the core curricula of ATWA shares the common themes of Life Skills Education, Puberty, SRHR, and Menstrual Hygiene Health and Management, there were substantive differences by country in the final curricula. These differences are summarized for each country below, and presented in greater detail in Appendix A. In Burkina Faso (as summarized in Table 1):

- Information about health services, gender, sexual and gender-based violence (SGBV), and self-efficacy was not included in the curriculum.
- Only the Burkinabe adolescents received information about Female Genital Cutting (FGC) (adolescents in Mali and Niger did not receive this information).

Table 1 | Themes Included in the Burkina Faso Curriculum

Burkina Faso				
	Primary school		Secondary school	
Theme	**Included in curriculum**	**Taught by teachers**	**Included in curriculum**	**Taught by teachers**
Puberty	yes	yes	yes	yes
Menstrual Hygiene Management	yes	yes	yes	yes
HIV, STIs & Pregnancy Knowledge	yes	yes	yes	yes
Contraception	yes	yes	yes	yes
Health Services	no	no	no	no
Gender Attitudes	no	no	no	no
Gender-Based Violence	no	no	no	no
Self-Efficacy	no	no	no	no
Female Genital Cutting	yes	yes	yes	yes

In Mali (as summarized in table 2):

- Only out-of-school adolescents received information regarding Child Marriage.
- None of the adolescents learned about the consequences of unsafe abortion or FGC.
- Although topics such as (1) HIV, STIs, and Pregnancy Prevention; and (2) Contraception were deemed too sensitive for primary school students, teachers nevertheless provided information about (1) HIV, STI and Pregnancy Prevention to this group.
- The curriculum also includes life skills that are unrelated to SRHR.
- In-school adolescents (both primary and secondary) did not learn about peer pressure or self-efficacy related to sexual pressure and this was not included in the curriculum.

Table 2 | Themes Included in the Mali Curriculum

Mali				
	Primary school		Secondary school	
Theme	**Included in curriculum**	**Taught by teachers**	**Included in curriculum**	**Taught by teachers**

Puberty	yes	yes	yes	yes
Menstrual Hygiene Management	no	yes	yes	yes
HIV, STIs & Pregnancy Knowledge	no	yes	yes	yes
Contraception	no	no	yes	no
Health Services	no	no	no	no
Gender Attitudes	no	no	no	no
Gender-Based Violence	no	yes	yes	yes
Self-Efficacy	no	no	no	no
Female Genital Cutting	no	no	no	no

In Niger (as summarized in table 3):

- FGC was not included in the curriculum because it is not common among the population in the geographic target areas.
- Only out-of-school adolescents received information regarding child marriage. Information related to child marriage was not included in the school curriculum, thus most students did not receive information about this.
- Gender and sexuality are not included in secondary school curriculum, thus secondary school students did not receive information related to sexuality and gender.

Table 3 | Themes Included in the Niger Curriculum

Niger				
	Primary school		**Secondary school**	
Theme	**Included in curriculum**	**Taught by teachers**	**Included in curriculum**	**Taught by teachers**
Puberty	yes	yes	yes	yes
Menstrual Hygiene Management	yes	yes	yes	yes
HIV, STIs & Pregnancy Knowledge	yes	yes	yes	yes
Contraception	yes	yes	yes	yes
Health Services	no	no	yes	no
Gender Attitudes	yes	no	no	no
Gender-Based Violence	no	no	yes	yes
Self-Efficacy	no	no	yes	yes
Female Genital Cutting	no	no	no	no

In light of these differences, the outcome evaluation survey was tailored by country, age, and school status of the adolescents. Additional information about the survey items is provided below in the section, 'Survey Tool Development.'

Upon finalization of the curricula with the MOEs, trainers were trained in teaching the curricula who subsequently trained teachers from each school involved in the ATWA intervention (for in-school adolescents). Mentors of community-based groups (for out-of-school adolescents) were trained by Save the Children and partner staff. It should be noted that:

- While in all three countries, curricula are integrated, in Burkina Faso, the Ministry of Education spread one curriculum out over several grades and the content is different for each grade. For the implementation of the he ATWA program the Ministry of Education implements SRH education in CM 1, CM 2, 3rd level and 6th level of school. Consequently, the students do not receive the full curriculum in one school year but only the content and subjects that correspond with the grade they attend. Teachers are thus restricted to the lesson themes determined by the MOE for specific grades and are at liberty to teach those parts of the curriculum as they see fit.
- In Mali, schools only started teaching in March 2022, so teachers may have given all, part, or none of the SRHR information related to the content in the survey, and this may vary by teacher, class, school, and geographic area. It is also important to note that in some schools in Mali, education was provided by a health worker.
- In Niger, curricula are integrated but not all teachers have provided all lessons as planned.

The intervention "dose" – or the lessons received by each adolescent who participated in ATWA – differs in important ways. The dose was dependent upon: (1) the final curricula in each country (and the variations in topics as noted above); (2) the decisions of the teacher in each school/community-based group regarding which of the lessons within the curricula they wanted to teach; (3) the political context in Mali that caused a severe delay in the start of the intervention; and (4) the ongoing security concerns which led to difficulty in monitoring and follow up in the three countries. Due to these reasons, we see a wide variation in what 'dose' of the ATWA program each school within the intervention arm received, as summarized in Table 4.

Table 4 | Intervention Dose by Country

Dose (% of Total Lessons Taught)	Burkina Faso *15 Sessions Possible*	Mali *12 Sessions Possible*	Niger *12 Sessions Possible*
0%	0 schools (0 lessons)	6 schools (0 lessons)	3 schools (0 lessons)
1-19%	4 schools (1-2 lessons)	3 schools (1-2 lessons)	1 schools (1-2 lessons)
20-39%	9 schools (3-5 lessons)	5 schools (3-4 lessons)	2 schools (3-4 lessons)
40-59%	9 schools (6-8 lessons)	8 schools (5-7 lessons)	9 schools (5-7 lessons)
60-79%	3 schools (9-11 lessons)	2 schools (8-9 lessons)	6 schools (8-9 lessons)
80-100%	0 schools (12-15 lessons)	0 schools (10-12 lessons)	2 schools (10-12 lessons)

As described below in the section 'Statistical Analyses,' the evaluation study examines how this variation in dose impacts results.

OUTCOME EVALUATION - STUDY DESIGN & METHODOLOGY

The overall objective of the evaluation is to evaluate the efficacy of the ATWA program in improving the knowledge, attitudes, behavioral intentions and other precursors of behavior change related to menstrual hygiene and other ASRHR outcomes. To assess ATWA's efficacy towards these outcomes, a repeated cross-sectional cluster randomized trial design is employed, with data collection occurring via administration of a quantitative survey to adolescents in both the intervention and control groups by trained enumerators. The survey is fielded among a cross-sectional sample at each of the four evaluation time points: baseline Year 1 (December 2021), endline Year 1 (June 2022), baseline Year 2 (anticipated October 2022), endline Year 2 (anticipated May 2023).

STUDY POPULATION

The ATWA intervention aims to reach male and female very young and older adolescents, ages 10 to 14 years and 15 to 19 years, respectively. The geographic focus of ATWA is eight regions of the Liptako Gourma area, an area that covers eastern Burkina Faso, southwestern Niger, and a small portion of southeast central Mali. The intervention will be implemented in: Sikasso, Gao, Mopti, and Ségou regions of Mali; Boucle de Mouhoun, Nord, and Centre-Nord regions in Burkina Faso;

and Tillabery region in Niger. The situation in the Liptako Gourma area is characterized by insecurity and violence, including against schools and health centers, and conservative attitudes towards adolescents' SRHR.

Although the intervention is largely school-based, ATWA also reaches a smaller percentage of adolescents who are not enrolled in schools via community small group settings. Adolescents who are not enrolled in school may be out of school either temporarily due to political instability or COVID-related school closures, or for longer durations due to familial considerations.

SURVEY TOOL DEVELOPMENT

In coordination with Save the Children, UCSD-GEH drew upon the ATWA M&E Framework (Appendix B) and each country's curricula (as described above) to develop a quantitative survey designed to assess evaluation indicators and other key intervention topics. The resulting survey tool includes 12 themes: Respondent Demographics; Puberty; Menstrual Hygiene & Management; HIV, STIs & Pregnancy Knowledge; Contraception; Personal Sexual History; Health Services; Gender Attitudes & Norms; Gender-Based Violence; Self-Efficacy; Child Marriage; and Female Genital Cutting (FGC).

The construction of indicators for each of the 12 themes was guided by the following previously-validated surveys: the 2020 edition of the Performance Monitoring for Action (PMA2020), Demographic and Health Surveys (DHS), the Johns Hopkins University's Global Early Adolescent Study (GEAS), Gender and Adolescence: Global Evidence (GAGE), Menstrual Practices Questionnaires (MPQ), and the Menstrual Practice Needs Scale (MPNS-36). The demographic indicators were defined using the PMA2020 and the GEAS, while the gender attitudes and norms were defined using the GEAS after factor analysis. Contraceptive use measures among adolescents aged 10-14 and 15-19 were also defined using the GEAS. Finally, the analysis of practices during menstruation was assessed using the MPQ. In addition, UCSD researchers in collaboration with Save the Children-Netherlands staff created new indicators reflective of the unique ATWA programmatic mandate.

After initial development, the survey tool was circulated among Save the Children country offices in Burkina Faso, Mali, and Niger and reviewed to ensure included item topics matched the country's curricula and to ensure cultural considerations were made with respect to item wording

and appropriateness of topics for adolescents, especially very young adolescents. This review process resulted in variation of the items asked in each country by adolescent sex, age, and school status. The same survey used at baseline was used at endline, with only minor modifications. These modifications between baseline and endline include the addition of three questions for Malian respondents regarding whether they received SRH education from peers, teachers, or another person (Items 908A, 908B, and 908C). The final survey tool used in the endline data collection is presented in Appendix C. A list summarizing items asked of each respondent category (e.g., among in-school Malians ages 10 to 14 versus out-of-school Nigeriens ages 15 to 19) is provided in Appendix D.

SAMPLING FRAME

In a coordinated effort, Save the Children, GRADE Africa, and UCSD-GEH identified key demographic variables within Burkina Faso, Mali, and Niger that were hypothesized to contribute to variation in intervention effectiveness. These variables included: region, province, school type (primary/secondary), and urbanicity (rural/urban). Based on these considerations, sampling frames of schools (for in-school adolescents) and communities (for out-of-school adolescents) were developed for each of the three countries (provided in Appendix E). Following the sampling frame development, intervention sites were randomly selected. For each intervention site identified (i.e., a school or community), a control site was matched based on region, province, school type, and urbanicity.

The study design required that the control sites (i.e., the comparison groups for the intervention sites) be schools and communities that: 1) had not yet been targeted by the ATWA project; and 2) be a minimum of 5 kilometers away from an ATWA intervention site to minimize the potential for contamination effects between the control and intervention groups.

As indicated in the detailed baseline and endline technical report by GRADE Africa (Appendix F), fifty schools were selected in each country, with twenty-five assigned as intervention schools and the remaining twenty-five assigned as control schools. Of the twenty-five schools in each study arm, seventeen were primary schools and eight were secondary schools. This balance between primary and secondary schools was determined based on the population targeted by ATWA (i.e., the intervention targeted more primary school students than secondary school students). Fifteen students were randomly selected at each primary school, and ten students were randomly selected

at each secondary school. In total, it was planned that 670 students be selected to participate in each country.

In addition to the in-school sample, data collection was planned in eight communities in Mali (where schools are closed) and in eight communities in Niger (where adolescents were not attending school). Four of the eight communities would be selected as "intervention communities" and the remaining four communities would be selected as "control communities." Fifteen adolescents would be selected in each community, for a total of 120 out-of-school adolescents in Mali and Niger, respectively.

Thus, as summarized in Table 5, the planned sample included a total of 2,250 adolescents for inclusion in Year 1 baseline data collection, with a repeated sample of the same size planned for Year 1 endline data collection (1,125 adolescents in the intervention group and 1,125 adolescents in the control group at each wave (baseline and endline)). This sample size was determined based on power calculations of outcome indicators and budget considerations. Additional detail is provided in Section 1.4 of the GRADE Technical Report Phase 2 (Endline) (Appendix F.2).

Table 5 | Planned sample of adolescents by country and school status

Region	School level	Sample Size
Burkina Faso		
Boucle du Mouhoun	Primary	180
	Secondary	40
	Total	**220**
Nord	Primary	210
	Secondary	80
	Total	**290**
Centre-Nord	Primary	120
	Secondary	40
	Total	**160**
	Overall Country Total	**670**
Niger		
Tillabéri	Primary	510
	Secondary	160
	Out-of-School	120
	Overall Country Total	**790**
Mali		
Gao	Primary	120
	Secondary	40
	Out-of-School	60
	Total	**220**

Mopti	Primary	180
	Secondary	60
	Total	**240**
Ségou	Primary	120
	Secondary	40
	Out-of School	60
	Total	**220**
Sikasso	Primary	90
	Secondary	20
	Total	**110**
	Overall Country Total	**790**
	Total Planned Sample	**2,250**

Due to security risks, at both baseline and endline data collection, several data collection sites in each country were replaced with alternative schools or communities. During baseline data collection, eleven schools in Burkina Faso and four schools in Mali were replaced with alternate sites, as were ten schools and three communities in Niger. During endline data collection, some schools were replaced, while others were not surveyed at all: eight schools in Burkina Faso were replaced with alternate sites, while in Niger, five schools were not surveyed (and were not replaced) as all alternative schools were within the same "Red Zone," wherein authorities did not allow data collection to be conducted due to heightened security risks. See Sections 2.6 of the baseline and endline technical reports for additional detail and information on the changes to the sampling frame required due to security risks (Appendix F.1 and F.2).

Final sample sizes at baseline and endline by study group and key demographic variables are provided in the evaluation results section (see Tables 8 – 11).

Commitment to Ethical Research and Child Safe Programming

Study protocols were prepared and submitted to Ethics Committees in each of the three countries in addition to the UCSD Institutional Review Board (IRB) (IRB Determination #210928). The study is also registered on ClinicalTrials.gov, an online database by the U.S. National Library of Medicine of randomized trials (ClinicalTrials.gov Identifier: NCT05396664). Regional educational directors in each of the three countries were informed of the study by the GRADE Africa team, as were provincial and departmental directors. Save the Children country office representatives informed local school officials, as well as the administrative and customary authorities within selected communities. Before the start of both baseline and endline data

collection, enumerators completed a six- and four- day trainings, respectively, in which they were provided guidance and training on:

- ethical principles of research and data collection procedures;
- best practices for translation of survey questions, consent and assent forms to local languages
- safety protocols for conducting data collection in communities with heightened security risks; and
- data collection procedures using e-tablets programmed in CommCare, the mobile data collection platform.

Data Collection Procedures: Baseline and Endline

Before the start of baseline data collection in December 2021, study objectives and timelines for the project were shared with local authorities and school directors. Following this key stakeholder consultation process, participant lists were obtained via school directors at each school and, for out-of-school adolescents, from local authorities in Niger and Mali. The data collection team then used a Random Number Generator application to randomly select individuals from these lists.

Informed consent was obtained via parental written consent and verbal assent in local languages. In addition, care was taken to match female adolescents with female enumerators, and male adolescents with male enumerators. The sex-matched enumerator then administered the survey using electronic tablets programmed using CommCare. A monitoring and quality control tracking system for data collection was developed and updated daily.

Endline data collection occurred using these same processes between May 12 to June 5, 2022 in Burkina Faso, between May 16 to June 3, 2022 in Niger, and between June 3 to June 23, 2022 in Mali. For schools that were accessible and not closed due to security risks, data collection teams surveyed the same sample of adolescents that participated in baseline data collection. Enumerators surveyed other adolescents only when those who had participated in the baseline survey were not available to be interviewed at endline. In Burkina Faso, a new random sample of students was conducted in the schools which replaced those that were closed or otherwise inaccessible. Additional detail about this sampling process is provided in Section 2.6 of the endline technical report (Appendix F).

Outcome Evaluation Indicators

The ATWA M&E Framework (provided in Appendix B) includes both monitoring and evaluation indicators. Table 6 provides a summary of the evaluation indicators included in the report, and the associated report sections in which they are discussed. The full table of evaluation indicators by country along with results is provided in Appendix G. Emphasis for the outcome evaluation is placed on outcome indicators. However, data were also generated on the longer-term impact indicators; as such, information on the impact indicators is also included in this report for completeness.

Table 6 | List of ATWA outcome evaluation indicators by corresponding report section

Outcome 1: Improved sexual and reproductive health and rights and gender equality knowledge, intent, and behaviors among adolescents		
Indicator	**Indicator Definition**	**Report Section**
[1.1] Proportion of adolescents with intent to use modern contraception	Number of adolescents who respond yes to planning to use modern contraception in the future [timeframe may be defined by country program], disaggregated by method	5. Contraception & Sexual Activity
[1.2] Proportion of sexually active adolescents reporting using a condom at last sex	*Numerator*: Number of adolescents who respond yes to having used a condom at last sex *Denominator*: Number of sexually active adolescents surveyed	5. Contraception & Sexual Activity
[1.3] Proportion of sexually active unmarried adolescents who use a condom consistently in the last 6 months	*Numerator:* Number of adolescents who respond yes to having used a condom every time they had sex in the last 6 months *Denominator:* Number of adolescents surveyed who are sexually active and unmarried	5. Contraception & Sexual Activity
[1.4] Proportion of adolescents with gender equitable attitudes through average score on gender equitable attitude scale	*Numerator:* Proportion of adolescents with significant increase in average score on gender equitable attitude scale *Denominator:* Number of adolescents surveyed	7. Gender Attitudes & Norms
[1.5] Average number of modern contraceptive methods known among women 10-14 and 15-19 years old	Average number of modern contraceptive methods known to female adolescents ages 10-14 and 15-19 in the survey	5. Contraception & Sexual Activity
[1.6] Proportion of adolescents with correct knowledge about body changes during puberty, the menstrual cycle, fertility and conception, pregnancy risk and prevention.	Composite indicator of 9 items measuring proportion of adolescents who respond correctly to a series of questions on puberty, menstruation, pregnancy risk and prevention	2. Puberty
[1.7] Proportion of adolescents with correct knowledge about STI risk and prevention and treatment	Composite indicator measuring proportion of adolescents who responded correctly to series of 4 questions on STI prevention and treatment	4. HIV, STI, & Pregnancy Knowledge
[1.8] Proportion of adolescents with comprehensive knowledge of HIV prevention	Composite indicator measuring proportion of adolescents who responded correctly to series of 6 questions on HIV prevention	4. HIV, STI, & Pregnancy Knowledge
[1.9] Proportion of adolescents with knowledge of where to seek SRH	*Numerator*: Proportion of adolescents that knows where to seek SRH services.	6. Access to Health Services

services, including where to get tested for HIV, where to get condoms, and where to get contraceptives	*Denominator*: Number of adolescents surveyed	
[1.10] Proportion of girls who report properly disposing of absorbent materials (sanitary napkins or menstrual cloth)	*Numerator:* Number of postmenarchal girls who report properly disposing of absorbent materials (sanitary napkins or menstrual cloth) (i.e., putting into the rubbish) *Denominator:* Number of girls who use absorbent materials (sanitary napkins or menstrual cloth)	3. Menstrual Hygiene & Management
[1.11] Proportion of girls who report hygienically washing and drying reusable menstrual cloth	*Numerator*: Number of girls who report hygienically washing and drying reusable menstrual cloth *Denominator*: Number of girls who washed and reused menstrual materials	3. Menstrual Hygiene & Management
Output 1.2: Adolescent girls in Niger, Mali and Burkina Faso, and out-of-school adolescent girls in Niger have the knowledge, materials, and in-school facilities to manage their menstruation in a hygienic, healthy, and dignified fashion		
Indicator	**Indicator Definition**	**Report Section**
[1.2.3] Proportion of girls and boys that can answer a basic set of four questions about menstruation	*Numerator:* Number of girls and boys that can answer a basic set of questions about menstruation correctly *Denominator:* Surveyed adolescents	2. Puberty
[1.2.4] Proportion of girls that know how to hygienically manage menses	*Numerator:* Number of girls that can answer a set of five questions correctly about how to hygienically manage menses *Denominator*: Surveyed female adolescents	3. Menstrual Hygiene & Management
[1.2.6] Proportion of girls and boys that can identify that menstruation is a normal biological function of the female body	*Numerator*: Number of girls and boys that answer a question correctly regarding that menstruation is a normal biological function of the female body *Denominator:* Surveyed adolescents	2. Puberty
IMPACT: Improved sexual and reproductive health and rights among adolescents		
Indicator	**Indicator Definition**	**Report Section**
[1] Decrease in adolescent birth rate *(NB: adolescent parity is used as a proxy as we do not assess births by year in this study)*	[1] The average number of births to female respondents ages 15-19	4. HIV, STI, & Pregnancy
[2] Decrease in proportion of adolescents who have ever been pregnant or caused a pregnancy	[2] The percent of adolescent females who have ever been pregnant + the percent of adolescent males who have ever caused a pregnancy	4. HIV, STI, & Pregnancy
[3] Increase in need for family planning satisfied with modern contraception	[3A] Percentage of [sexually active] adolescents age 15-19 years currently *married or in union* who have their need for family planning satisfied with modern contraceptive methods	5. Contraception & Sexual Activity
	[3B] Percentage of female adolescents (15-19) who are sexually active and who have their need for contraception satisfied with modern methods	5. Contraception & Sexual Activity
[4] Increase in adolescent modern contraceptive prevalence rate (CPR)	[4] The percent of sexually active adolescents (15-19) who are currently using (or whose	5. Contraception & Sexual Activity

	partner is using) a modern contraceptive method. "Currently" is defined as 'at last sex'.	
[5] Decrease in proportion of adolescents married	[5A] Percentage of women 10-19 years old who were married or in union before age 18. *[Note: this is the percentage of the* sample *living with spouse before age 18.]*	10. Child Marriage
	[5B] Percentage of women 10-19 years old who were married or in union before age 15. *[Note: this is the percentage of the* sample *living with spouse before age 15.]*	10. Child Marriage
**Indicators not included in this list are assessed using monitoring data and are not included in this report.*		

STATISTICAL ANALYSES

As noted above, the study design is pre-/post-test with a control group. In other words, we have data from baseline and endline from both the intervention and control groups. With these data, we fit a series of regression models to the individual-level data, using robust standard errors to allow for intracluster correlation[1] (i.e., similarities between adolescents who attend the same school or—in the case of out-of-school adolescents—those who live in the same community). Regression models also include cluster-level baseline values of each indicator to account for any differences at baseline between the intervention and control groups.

For binary outcomes (i.e., indicators that assessed proportions), Generalized Estimating Equations (GEE) for logistic regression were used and odds ratios (ORs) are presented. For continuous outcomes (i.e., indicators that assessed averages), Mixed Effects Linear Regression (MELR) were used and outcome mean levels are presented. Both of these regression techniques (GEE and MELR) allow for intracluster correlation, thus taking into account the cluster randomized controlled trial study design in which students are sampled via their schools, villages, or communes. For in-school adolescents, the cluster is modeled as the school and for out-of-school adolescents the cluster is either the village or commune (depending on data availability).

Primary analyses as presented in this report were conducted on an intention-to-treat basis, meaning the intervention arm adolescents were assessed as having received the intervention regardless of their actual 'dose' of the program (i.e., how many sessions they attended). Dose was also assessed, using a binary variable in which adolescents receiving 0-59% of possible sessions in their country were coded as '0' (no or insufficient dose) and adolescents receiving 60-100% of possible sessions coded as '1' (sufficient or full dose of the ATWA program). In instances where findings from the dose analyses (i.e., per protocol analyses) differed significantly

[1]Hayes, R. J., & Moulton, L. H. (2017). *Cluster randomised trials*. Chapman and Hall/CRC.

from the findings from the intention-to-treat analyses, the findings are denoted with an eyedropper dosing icon.

Evaluation findings for the overall three-country combined sample are provided within the report's main tables. Country-disaggregated findings are provided in Excel tabular format (Appendix G).

In addition to analyses for indicators included in the M&E Framework (as outlined above in Table 6), this report also provides information on the following topics: gender-based violence, self-efficacy, and female genital cutting, in sections 8, 9, 10, and 11, respectively. Results for these topics present descriptive statistics and findings from omnibus chi-square tests ($\chi 2$) to test for statistical significance across categories of responses.

Results Tables: Interpretation Guide

Within each of the results tables, the main effect is shown first. The main effects results include: 1) descriptive statistics—unadjusted values of the outcome measures for the intervention and control groups; and 2) Regression results—these results are those from either the GEE or MELR regression models, and adjust for baseline levels in the outcome measures as assessed at the cluster-level.[1]

After the main effects results are results from interaction models. These models allow an understanding of whether there were differential intervention effects by four adolescent sub-groups: sex (male/female); age group (10-14/15-19); school status (in-school/out-of-school); and marital status (married/single). *Only in the event of a statistically significant interaction term are results disaggregated by stratifying variable (sex, age, school or marital status)*. That is to say, if the interaction term was not statistically significant ($p>0.05$), this was an indication that there were no statistically significant differences by sub-group (sex, age, school or marital status) and therefore no additional results are presented. In certain circumstances the interaction models failed to converge due to zero observations in certain 'cells' of the stratified data. For example, under Indicator 2, the school status interaction model failed to converge because no in-school adolescents in the intervention reported a pregnancy. These instances are noted in Stata coding language (e.g., 1.arm#1.schoolenrol_cat != 0, where 1.arm means the intervention group (as opposed to 0.arm is the control group) and 1.schoolenrol means in-school adolescents).

The columns within the spreadsheet are as follows (please see Table 7 below for an example):

- The column titled 'n' provides the sample sizes by study arm in the main effects results, or, in the case of the interaction models, for the overall sample.
- The column titled 'Mean/%' provides the descriptive statistics of either the mean (in the case of continuous outcome variables) or the proportion (in the case of binary outcome variables).
- The column titled 'parameter estimate' provides the results from the beta parameters (for both the main effect and interaction models). These parameters are either the coefficient (the mean of a continuous outcome measure such as score on a scale) for linear regression, or the odds ratio (OR) for logistic regression (binary outcomes), indicating the odds that the intervention group had the outcome relative to the control group. Cells that do not contain 'OR' are results from a continuous measure.
- The column titled '95% CI' represents the 95% confidence interval surrounding the parameter estimates.
- Finally, the column titled 'p-value' contains the p-values. Any p-values that are less than 0.05 (the threshold for statistical significance) are denoted with green shading.

Table 7 | Example of results table

Main Effects					
	Descriptive Statistics		Regression Results		
	n	%	parameter estimate	95% CI	p-value
Control	408	1.96%	OR = 1.35	(0.33, 5.52)	p = 0.675
Intervention	445	2.02%			
Interaction Terms					
sex (M,F) * studygroup	853	NA	OR = 0.02	(0.0002, 1.47)	p = 0.073
age (<15, >=15) * studygroup	*1.arm#0.agecat != 0 predicts failure perfectly*				
school status (IS,OOS) * studygroup	*1.arm#1.schoolenrol_cat != 0 predicts failure perfectly*				
marital status * studygroup	853	NA	OR = 15.11	(0.82, 278.82)	p = 0.068

YEAR 1 OUTCOME EVALUATION – BASELINE AND ENDLINE RESULTS

Overall, a total of 2,244 adolescents participated in the Year 1 Baseline Survey, with 670 from Burkina Faso, 786 from Mali, and 788 from Niger. At Year 1 Endline, there were 2,069 adolescent

participants, with 670 from Burkina Faso, 772 from Mali, and 627 from Niger. Most, but not all, adolescents surveyed at baseline were also surveyed at endline. The reason for this is largely due to instability/insecurity of the areas surveyed as well as students being missing from school for reasons related to the start of the rainy season. These challenges are described in greater depth within section 2.8 of the endline technical report (Appendix F.2).

1. SOCIO-DEMOGRAPHIC CHARACTERISTICS

The average age of respondents across all three countries at the time of the endline survey was 13.5 years old (min=10 years, max 21 years). There were 1,023 boys (49.4% of the total sample) and 1,046 girls included in the sample. The vast majority (98.7%) of adolescents were unmarried. Among the 28 married adolescents, 5 (17.9%) were between the ages of 10 and 14 years. Given the very small sample of married respondents (n=28), analyses disaggregated by marital status should be interpreted with caution. Respondent characteristics by country and study wave (baseline/endline) are provided in Tables 8-11, with the overall sample totals provided in the right-most two columns (those labeled 'three-country combined').

Table 8 | Burkina Faso responded characteristics by intervention period

	Burkina Faso Baseline (n=670)	**Burkina Faso Endline** (n=670)	**Three-Country Combined Baseline (n=2,244)**	**Three-Country Combined Endline (n=2,069)**
Sex				
Male	331 (49.4%)	331 (49.4%)	**1,114 (49.6%)**	**1,023 (49.4%)**
Female	339 (50.6%)	339 (50.6%)	**1,130 (50.4%)**	**1,046 (50.6%)**
Age				
10-14 years	497 (74.2%)	488 (72.8%)	**1,622 (72.3%)**	**1,510 (73.0%)**
15-19 years	173 (25.8%)	182 (27.2%)	**622 (27.7%)**	**559 (27.0%)**
School Status				
Primary	510 (76.1%)	511 (76.3%)	**1,524 (67.9%)**	**1,453 (70.2%)**
Secondary	160 (23.9%)	159 (23.7%)	**480 (21.4%)**	**438 (21.2%)**
Out-of-School	0 (0.0%)	0 (0.0%)	**240 (10.7%)**	**178 (8.6%)**
Marital Status				
Unmarried	669 (99.9%)	667 (99.5%)	**2,200 (98.0%)**	**2,040 (98.6%)**
Married	1 (0.1%)	3 (0.5%)	**44 (2.0%)**	**28 (1.4%)**

Table 9 | Mali respondent characteristics by intervention period

	Mali Baseline (n=786)	Mali Endline (n=772)	Three-Country Combined Baseline (n=2,244)	Three-Country Combined Endline (n=2,069)
Sex				
Male	392 (49.9%)	388 (50.3%)	**1,114 (49.6%)**	**1,023 (49.4%)**
Female	394 (50.1%)	384 (49.7%)	**1,130 (50.4%)**	**1,046 (50.6%)**
Age				
10-14 years	593 (75.5%)	577 (74.7%)	**1,622 (72.3%)**	**1,510 (73.0%)**
15-19 years	193 (24.5%)	195 (25.3%)	**622 (27.7%)**	**559 (27.0%)**
School Status				
Primary	160 (20.3%)	499 (64.6%)	**1,524 (67.9%)**	**1,453 (70.2%)**
Secondary	120 (15.2%)	155 (20.1%)	**480 (21.4%)**	**438 (21.2%)**
Out-of-School	508 (64.5%)	118 (15.3%)	**240 (10.7%)**	**178 (8.6%)**
Marital Status				
Unmarried	769 (97.8%)	763 (99.0%)	**2,200 (98.0%)**	**2,040 (98.6%)**
Married	17 (1.2%	8 (1.0%)	**44 (2.0%)**	**28 (1.4%)**

Table 10 | Niger respondent characteristics by intervention period

	Niger Baseline (n=788)	Niger Endline (n=627)	Three-Country Combined Baseline (n=2,244)	Three-Country Combined Endline **(n=2,069)**
Sex				
Male	391 (49.6%)	304 (48.5%)	**1,114 (49.6%)**	**1,023 (49.4%)**
Female	397 (50.4%)	323 (51.5%)	**1,130 (50.4%)**	**1,046 (50.6%)**
Age				
10-14 years	532 (67.5%)	445 (71.0%)	**1,622 (72.3%)**	**1,510 (73.0%)**
15-19 years	256 (32.5%)	182 (29.0%)	**622 (27.7%)**	**559 (27.0%)**
School Status				
Primary	506 (64.4%)	443 (70.6%)	**1,524 (67.9%)**	**1,453 (70.2%)**
Secondary	160 (20.4%)	124 (19.8%)	**480 (21.4%)**	**438 (21.2%)**
Out-of-School	120 (15.3%)	60 (9.6%)	**240 (10.7%)**	**178 (8.6%)**
Marital Status				
Unmarried	762 (96.7%)	610 (97.3%)	**2,200 (98.0%)**	**2,040 (98.6%)**
Married	26 (3.3%)	17 (2.7%)	**44 (2.0%)**	**28 (1.4%)**

Respondent characteristics by country and study group (control/intervention) are provided in Table 7. As shown, there is largely an even balance on all key demographic characteristics between the intervention and study arms. For example, by sex in the overall sample, the intervention group was comprised of 49.0% male and 51.0% female respondents and the control group was comprised of 49.9% male and 50.1% female respondents.

Table 11 | Respondent characteristics by country and study group

	Burkina Faso Intervention: n=335 Control: n=335	**Mali** Interv.: n=386 Control: n=386	**Niger** Interv.: n=312 Control: n=315	**Combined** Interv.: n=1,033 Control: n=1,036
Sex				
Male	I: 162 (48.4%) C: 169 (50.5%)	I: 194 (50.3%) C: 194 (50.3%)	I: 150 (48.1%) C: 154 (49.0%)	**I: 506 (49.0%)** **C: 517 (49.9%)**
Female	I: 173 (51.6%) C: 166 (49.5%)	I: 192(49.7%) C: 192 (49.7%)	I: 162 (51.9%) C: 161 (51.0%)	**I: 527 (51.0%)** **C: 519 (50.1%)**
Age				
10-14 years	I: 243 (72.5%) C: 245 (73.1%)	I: 280 (72.5%) C: 297 (76.9%)	I: 219 (70.2%) C: 226 (71.7%)	**I: 742 (71.8%)** **C: 768 (74.1%)**
15-19 years	I: 92 (27.5%) C: 90 (26.9%)	I: 106 (27.5%) C: 89 (23.1%)	I: 93 (29.8%) C: 89 (28.3%)	**I: 291 (28.2%)** **C: 268 (25.9%)**
School Status				
Primary	I: 256 (76.4%) C: 255 (76.1%)	I: 247 (64.0%) C: 252 (65.3%)	I: 222 (71.1%) C: 221 (70.2%)	**I: 725 (70.2%)** **C: 728 (70.3%)**
Secondary	I: 79 (23.6%) C: 80 (23.9%)	I: 79 (20.5%) C: 76 (19.7%)	I: 57 (18.3%) C: 67 (21.3%)	**I: 215 (20.8%)** **C: 223 (21.5%)**
Out-of-School	---	I: 60 (15.5%) C: 58 (15.0%)	I: 33 (10.6%) C: 27 (8.5%)	**I: 93 (9.0%)** **C: 85 (8.2%)**
Marital Status				
Unmarried	I: 335 (100.0%) C: 332 (99.1%)	I: 381 (99.0%) C: 382 (99.0%)	I: 301 (96.5%) C: 309 (98.1%)	**I: 1,017 (98.5%)** **C: 1,023 (98.7%)**
Married	I: 0 (0.0%) C: 3 (0.9%)	I: 4 (1.0%) C: 4 (1.0%)	I: 11 (3.5%) C: 6 (1.9%)	**I: 15 (1.5%)** **C: 13 (1.3%)**

2. PUBERTY

Outcome 1 of the ATWA intervention is sexual and reproductive health and rights and gender equality knowledge, intent, and behaviors among adolescents. Output 1.6 of the ATWA intervention is that adolescent girls in Niger, Mali and Burkina Faso, and out-of-school adolescent girls in Niger have the knowledge, materials, and in-school facilities to manage their menstruation in a hygienic, healthy, and dignified fashion.

Outcome Indicator 1.6: Knowledge about body changes during puberty, the menstrual cycle, and fertility

Outcome indicator 1.6 is the proportion of adolescents with correct knowledge about body changes during puberty, the menstrual cycle, fertility and conception, pregnancy risk and prevention. This was assessed using a composite indicator which measured the proportion of adolescents who responded correctly to the following nine questions:

- 401: True or false: It is normal that each adolescent boy and girl experiences changes in their body at different times as they grow up.
- 403: True or false: Only girls go through puberty, not boys.
- 404: True or false: It is normal for a young teenager to wake up and find that he has wet his underwear through ejaculation.
- 405: True or false: Boys grow hair on their face, bodies, and genital areas as they go through puberty.
- 614: True or false: A boy can get a girl pregnant before he has his first (ever) ejaculation. (Modified for Malian respondents to read: True or false: A boy can get a girl pregnant before the start of puberty.)
- 615: True or false: A boy can be fertile every day of the month.
- 616: True or false: It is normal for a girl to have periods that don't come at the same time each month.
- 617: When in the menstrual cycle is a girl is most likely to get pregnant if she has sex?
    - Options: During menstruation; In the first 10 days of the cycle; During ovulation; In the last 10 days of the cycle; Other; Don't know; Refused
- 618: Which of the following statements is true about pregnancy?
    - Options: You cannot get pregnant or cause a pregnancy if you are not in love; You cannot get pregnant having sex standing up; Having sex for the first time cannot cause a pregnancy; All of the above are false; Other; Don't know; Refused

As shown in the spreadsheet summarizing the survey items by respondent type (Appendix D), only the Nigerien and Burkinabe adolescents ages 15-19 years were asked all nine questions. Burkinabe adolescents aged 10-14 years were not asked 617 as this question was deemed too sensitive by local stakeholders. None of the Malian respondents were asked 618, and none of the Malian in-school adolescents ages 10-14 years were asked 614, 616, 617 due to concerns regarding the sensitive nature of these questions.

Among the 730 adolescents who responded to all nine questions about puberty, the menstrual cycle, and fertility, only 9.04% (n=66) answered all nine questions correctly. Table 12 presents evaluation results. As shown, a total of 7.71% of adolescents in the control group answered all nine questions correctly, and 10.35% of the adolescents in the intervention group answered all nine questions correctly. This difference was not, however, statistically significant (p=0.610). There were also no differences in this indicator by sex; females had slightly higher odds of answering all nine questions correctly (OR=1.16), however this was not statistically significant (p=0.610). The remaining interaction models for age, school status, and marital status did not converge.

Table 12 | Outcome Indicator 1.6: Knowledge about body changes during puberty, the menstrual cycle, and fertility

(Proportion of adolescents answering all 9 questions correctly)

Main Effects					
	Descriptive Statistics		Regression Results		
	n	%	parameter estimate	95% CI	p-value
Control	363	7.71%	OR = 0.74	(0.23, 2.38)	p = 0.610
Intervention	367	10.35%			
Interaction Terms					
sex (M,F) * studygroup	730	NA	OR = 1.16	(0.23, 2.38)	p = 0.610
age (<15, >=15) * studygroup	*0.arm#0.agecat !=0 predicts failure perfectly*				
school status (IS,OOS) * studygroup	*1.arm#.schoolenrol_cat !=0 predicts failure perfectly*				
marital status * studygroup	*0.mar_stat !=1 predicts failure perfectly*				

Output Indicator 1.2.3: Knowledge and beliefs about menstruation

To assess output indicator 1.2.3, a series of four basic questions about menstruation were posed to respondents. These included:

- 402: True or false: For most girls their monthly bleeding comes every 14 days.
- 406. True or false: If a girl bleeds from her vagina every month, it is a sign of disease.
- 407: True or false: Menstruation is dirty or impure.
- 408: True or false: Used sanitary napkins can be used to cast a spell.

In the overall sample, only 2.3% of respondents (48/2,068 adolescents) answered all four questions about menstruation correctly. As shown in Table 13, a total of 2.03% of adolescents in the control group (21/1,036 adolescents) answered all four questions correctly and 2.62% of adolescents in the intervention group (27/1,032 adolescents) answered all four questions correctly. However, this difference was not statistically significant (OR=1.01, p=0.954).

Interaction terms were not significant by sex (p=0.497) or age (p=0.246). The interaction models for school and marital status failed to converge.

Table 13 | Output Indicator 1.2.3: Knowledge and beliefs about menstruation

(Proportion of girls and boys that can answer a basic set of four questions about menstruation)

Main Effects					
	Descriptive Statistics		Regression Results		
	n	%	parameter estimate	95% CI	p-value
Control	1,036	2.03%	OR = 1.02	(0.46, 2.26)	p = 0.954
Intervention	1,032	2.62%			
Interaction Terms					
sex (M,F) * studygroup	2,068	NA	OR = 0.50	0.07, 3.62)	p = 0.497
age (<15, >=15) * studygroup	2,068	NA	OR = 0.34	(0.05, 2.11)	p = 0.246
school status (IS,OOS) * studygroup	*o.arm#o.schoolenrol_cat != 0 predicts failure perfectly*				
marital status * studygroup	*o.mar_stat != 1 predicts failure perfectly*				

Output Indicator 1.2.6: Menstruation a normal biological function

Output Indicator 1.2.6 is the proportion of girls and boys that can identify that menstruation is a normal biological function of the female body. To assess this indicator, respondents were asked to respond to a true/false item stating that if a girl bleeds from her vagina every month, it is a sign of disease. In the combined sample, at total of 54.36% (1,123/2,066) of respondents answered this question correctly.

As indicated in Table 14, among adolescents in the control group, 50.19% (519/1,034 adolescents) correctly identified that menstruation is a normal biological function of the female body, compared to the 58.53% of adolescents in the intervention group (604/1,032 adolescents). This difference was marginally statistically significant, with adolescents in the intervention group being 1.3 times more likely to correctly identify menstruation as a normal biological function, as compared to adolescents in the control group (OR=1.29, p=0.058).

Table 14 | Output Indicator 1.2.6: Menstruation a normal biological function

(Proportion of girls and boys that can identify that menstruation is a normal biological function of the female body)

Main Effects					
	Descriptive Statistics		Regression Results		
	n	mean	parameter estimate	95% CI	p-value
Control	1,034	50.19%	**OR = 1.29**	(0.99, 1.67)	**p = 0.058**
Intervention	1,032	58.53%			
Interaction Terms					
sex (M,F) * studygroup	2,066	NA	OR = 0.71	(0.43, 1.17)	p = 0.179

age (<15, >=15) * studygroup	2,066	NA	OR = 0.92	(0.56, 1.51)	p = 0.745
school status (IS,OOS) * studygroup	2,066	NA	**OR = 0.42**	(0.22, 0.80)	**p = 0.008**
In-School (IS)					
Control	949	51.53%	OR = 1.16	(0.88, 1.53)	p = 0.298
Intervention	940	58.19%			
Out of School (OOS)					
Control	85	35.29%	**OR = 2.82**	(1.41, 5.63)	**p = 0.003**
Intervention	92	61.96%			
marital status * studygroup	2,066	NA	**OR = 0.15**	(0.02, 1.06)	**p = 0.057**
Married					
Control	13	84.62%	**OR = 0.19**	(0.04, 0.88)	**p = 0.033**
Intervention	15	53.33%			
Unmarried					
Control	1,021	49.76%	**OR = 1.33**	(1.02, 1.74)	**p = 0.038**
Intervention	1,017	58.60%			

Interaction effects by sex and age were not statistically significant (p=0.179 and p=0.745, respectively). Interaction effects by school status were significant (p=0.008). Subsequent disaggregated analyses indicated no intervention effect among in-school adolescents. However, out-of-school adolescents in the intervention group were nearly 3 times more likely to identify menstruation as a normal biological function of the female body, when compared to out-of-school adolescents in the control group (OR=2.82, p=0.003). The interaction term for marital status was also marginally statistically significant (p=0.057). Subsequent analyses by married and unmarried adolescents showed a higher proportion of married adolescents in the control group as compared to the intervention group with knowledge about menstruation as a normal biological function of the female body (OR=0.19, p=0.033). Among unmarried adolescents, we see a statistically significant intervention effect, with unmarried adolescents in the intervention group being 1.3 times more likely to report menstruation was a normal biological function (OR=1.33, p=0.038).

3. MENSTRUAL HYGIENE & MANAGEMENT

Proper menstrual hygiene and management among adolescent girls is a key component of the ATWA intervention in each of the three countries. This aspect of the project is assessed via three indicators that examine girls' behaviors surrounding disposal and washing of menstrual materials and hygienically managing menses. Survey questions about menstrual hygiene and management

were asked only of postmenarchal girls, which was a total of 401 (38.3%) of the 1,046 girls in the ATWA endline sample.

Outcome Indicator 1.10: Proper disposal of menstrual materials

Outcome Indicator 1.10 is the proportion of girls who report properly disposing of absorbent materials (sanitary napkins or menstrual cloth) (i.e., putting used materials into the trash/rubbish). To assess this indicator, postmenarchal girls were asked where they most often disposed of their used menstrual materials during their last period (survey item 510). Among menarcheal girls, 6.8% (21/310 girls) put their materials in the trash. The majority (58.9%) of girls put used materials in the toilet/latrine, despite the fact that no girls reported using tampons (most reported using disposable sanitary pads).

Evaluation results are shown in Table 15. A total of 7.33% of adolescent girls in the control group (11/150 girls) put their menstrual materials in the trash, compared to 6.25% of adolescent girls (10/160) in the intervention group. This difference was not statistically significant (p=0.908). The interaction effect by age was marginally statistically significant (p=0.054), whereas the interaction effect for school status was not statistically significant (p=0.762). The interaction model for marital status failed to converge.

Table 15 | Outcome Indicator 1.10: Proportion of girls who report properly disposing of absorbent materials (sanitary napkins or menstrual cloth)

Main Effects					
	Descriptive Statistics		Regression Results		
	n	mean	parameter estimate	95% CI	p-value
Control	150	7.33%	OR = 1.06	(0.41, 2.76)	p = 0.908
Intervention	160	6.25%			
Interaction Terms					
sex (M,F) * studygroup	*NA – Indicator pertains only to female respondents*				
age (<15, >=15) * studygroup	310	NA	**OR = 0.17**	(0.03, 1.03)	**p = 0.054**
Ages 10-14					
Control	53	7.55%	OR = 2.29	(0.49, 9.74)	p = 0.304
Intervention	57	10.53%			
Ages 15-19					
Control	97	7.22%	OR = 0.45	(0.16, 1.30)	p = 0.142
Intervention	103	3.88%			
school status (IS, OOS) *studygroup	103	NA	OR = 1.46	(0.13, 16.44)	p = 0.762
marital status (married, single)	*0.arm#1.mar_stat !=0 predicts failure perfectly*				

Outcome Indicator 1.11: Washing and drying of reusable materials

Outcome indicator 1.11 is the proportion of girls who report hygienically washing and drying reusable menstrual materials. Overall, of girls who washed or reused menstrual materials, 59.69% (114/191 girls) reported that they soaked their materials (Indicator 1.11.A); and of these, 96.5% (110/114 girls) reported they used soap or detergent when soaking materials (Indicator 1.11.B). Among girls who washed menstrual materials, 28.8% (55/191 girls) reported they always exposed their washed materials to the sun (Indicator 1.11.C), 88.0% (168/191 girls) reported that the materials were always dry before their reuse (Indicator 1.11.D), and only 4.7% (9/193 girls) reported that the materials were ironed before reusing them (Indicator 1.11.E). As shown in Table 16, no intervention effects were seen for any of these five indicators. Interaction terms by school status were statistically significant for Indicator 1.11.A (p=0.031), soaking menstrual materials, and Indicator 1.11.C (p=0.011), exposing washed materials to the sun. Subsequent disaggregated analyses by school status for Indicator 1.11.A showed that among in-school adolescent girls, participants from the control group were 2.8 times more likely to report soaking their menstrual materials when compared to participants from the intervention group (OR= 2.84, p=0.011). Soaking menstrual materials did not significantly differ between study arms among out-of-school adolescent girls (p=0.110). For Indicator 1.11.C, disaggregation by school status demonstrated statistically significant intervention effects among in-school and out-of-school adolescent girls. Among in-school adolescent girls, girls in the intervention group were 2.2 times more likely to expose their menstrual materials to the sun every time when drying them (OR=2.24, p=0.050). In contrast, among out-of-school girls, intervention participants were *less* likely to expose their menstrual materials to the sun every time when drying them (OR=0.06, p=0.017); in other words, among out-of-school girls, girls in the control group were 16.9 times more likely to expose their menstrual materials to the sun as compared to the girls in the intervention group (OR for reversed arm=16.86, p=0.017).

Dose analyses indicate that female adolescents who received 60% or more of the ATWA sessions were statistically significantly more likely to report soaking their menstrual materials as compared to adolescents in the control group and those who did not receive a larger 'dose' of the ATWA sessions (OR=3.82, p=0.044).

Table 16 | Outcome Indicator 1.11 Proportion of girls who report washing and drying reusable menstrual materials

1.11.A: Girls who soaked menstrual materials among those who washed/reused materials					
Main Effects					
	Descriptive Statistics		Regression Results		
	n	mean	parameter estimate	95% CI	p-value
Control	81	48.15%	OR = 1.85	(0.91, 3.80)	p = 0.091
Intervention	110	68.18%			
Interaction Terms					
sex (M,F) * studygroup	*NA – Indicator pertains only to female respondents*				
age (<15, >=15) * studygroup	191	NA	OR = 0.54	(0.13, 2.27)	p = 0.403
school status (IS,OOS)	191	NA	**OR = 7.01**	(1.20, 40.97)	**p = 0.031**
In-School (IS)					
Control	72	47.22%	**OR = 2.84**	(1.27, 6.36)	**p = 0.011**
Intervention	91	74.73%			
Out of School (OOS)					
Control	9	55.56%	OR = 0.36	(0.10, 1.26)	p = 0.110
Intervention	19	36.84%			
marital status * studygroup	191	NA	OR = 0.34	(0.02, 7.32)	p = 0.493

1.11.B: Girls who used soap when soaking menstrual materials					
Main Effects					
	Descriptive Statistics		Regression Results		
	n	mean	parameter estimate	95% CI	p-value
Control	39	92.31%	OR = 6.22	(0.67, 57.93)	p = 0.109
Intervention	75	98.67%			
Interaction Terms					
sex (M,F) * studygroup	*NA – Indicator pertains only to female respondents*				
age (<15, >=15) * studygroup	*note: 1.arm#1.agecat != 0 predicts success perfectly*				
school status (IS,OOS)	*note: 1.schoolenrol_cat !- 0 predicts success perfectly*				
marital status * studygroup	*note: 0.mar_stat != 1 predicts success perfectly*				

1.11.C: Girls who exposed menstrual materials to the sun every time when drying them					
Main Effects					
	Descriptive Statistics		Regression Results		
	n	%	parameter estimate	95% CI	p-value
Control	81	22.22%	OR = 1.43	(0.67, 3.07)	p = 0.343
Intervention	110	33.64%			
Interaction Terms					
sex (M,F) * studygroup	*NA – Indicator pertains only to female respondents*				
age (<15, >=15) * studygroup	191	NA	OR = 0.48	(0.13, 1.73)	p = 0.264
school status (IS,OOS)	191	NA	**OR = 24.62**	(2.27, 267.49)	**p = 0.008**

In-School (IS)					
Control	72	20.83%	**OR = 2.24**	(1.00, 5.00)	**p = 0.050**
Intervention	91	39.56%			
Out of School (OOS)					
Control	9	33.33%	**OR = 0.06**	(0.01, 0.60)	**p = 0.017**
Intervention	19	5.26%			
marital status * studygroup	*note: 1.arm#1.mar_stat != 0 predicts failure perfectly*				

1.11.D: Girls who reported their menstrual materials were always dry before reusing them					
Main Effects					
	Descriptive Statistics		Regression Results		
	n	mean	parameter estimate	95% CI	p-value
Control	81	95.06%	OR = 0.39	(0.22, 2.32)	p = 0.130
Intervention	110	82.73%			
Interaction Terms					
sex (M,F) * studygroup	*NA – Indicator pertains only to female respondents*				
age (<15, >=15) * studygroup	191	NA	OR = 2.39	(0.11, 1.32)	p = 0.401
school status (IS,OOS)	*0.arm#0.schoolenrol_cat !=0 predicts success perfectly*				
marital status * studygroup	*1.arm#1.mar_stat != 0 predicts success perfectly*				

1.11.E: Girls who reported ever using an iron on menstrual materials before re-use					
Main Effects					
	Descriptive Statistics		Regression Results		
	n	mean	parameter estimate	95% CI	p-value
Control	94	5.32%	OR = 0.69	(0.08, 16.10)	p = 0.636
Intervention	99	4.04%			
Interaction Terms					
sex (M,F) * studygroup	*NA – Indicator pertains only to female respondents*				
age (<15, >=15) * studygroup	193	NA	Or = 1.16	(0.08, 16.10)	p = 0.913
school status (IS,OOS)	*193*	NA	OR = 14.00	(0.70, 279.43)	p = 0.084
marital status * studygroup	*Note: 0.arm#1.mar_stat != 0 predicts failure perfectly*				

Output Indicator 1.2.4: Hygienically managing menses

Output indicator 1.2.4 is the proportion of girls that know how to hygienically manage menses. This was evaluated using a composite indicator which measured the proportion of girls who responded in the following ways to the following five questions:

- 505: Do you agree or disagree: You change the materials every 4-8 hours, or whenever needed (for example, when they are very full) *(stating agree somewhat or strongly agree)*

- 506: During your last menstrual period, how often did you wash your hands BEFORE changing your menstrual materials? *(stating washed every time)*
- 507: During your last menstrual period, how often did you wash your hands AFTER changing your menstrual materials? *(stating washed every time)*
- 508: How frequently did you wash your genitals during your last menstrual period? *(stating washed genitals at least twice a day)*
- 509: When you washed your genitals, did you use soap? *(stating used soap every time)*

Overall, 41.4% (166/401) of postmenarchal girls reported they hygienically managed menses. As indicated in Table 17, 35.64% (67/188) of postmenarchal girls in the control group know how to hygienically manage their menses and 46.48% (99/213) of postmenarchal girls in the intervention group know how to hygienically manage their menses. This difference corresponds to girls in the intervention group being 1.6 times more likely to know how to hygienically manage menses, though this difference was not statistically significant (OR=1.56, p=0.097). No differences were seen by age, school status, or marital status (p=0.729, p=0.970, and p=0.093, respectively).

Table 17 | Output Indicator 1.2.4: Proportion of girls that know how to hygienically manage menses

Main Effects					
	Descriptive Statistics		Regression Results		
	n	mean	parameter estimate	95% CI	p-value
Control	188	35.64%	OR = 1.56	(0.92, 2.65)	p = 0.097
Intervention	213	46.48%			
Interaction Terms					
sex (M,F) * studygroup	*NA – Indicator pertains only to female respondents*				
age (<15, >=15) * studygroup	401	NA	OR = 0.85	(0.34, 2.14)	p = 0.729
school status (IS,OOS)	401	NA	OR = 1.05	(0.07, 15.09)	p = 0.970
marital status * studygroup	401	NA	OR = 3.64	(0.81, 16.44)	p = 0.093

4. HIV, STI, & PREGNANCY

The ATWA intervention aims to increase adolescents' knowledge of STI risk, prevention and treatment, as well as knowledge of HIV prevention.

Outcome Indicator 1.7: STI risk, prevention and treatment knowledge

This outcome was evaluated using a composite indicator which measured the proportion of adolescents who responded correctly to the following questions on STI prevention and treatment:

- 602: True or false: A boy/girl can get an STI or HIV the first time that he/she has unprotected sexual intercourse.
- 606. True or false: Using a condom can protect against STIs/HIV
- 607: True or false: For both men and women, signs of a sexually transmitted infection include redness, burning, or sores on the genitals
- 609: True or false: People can reduce their risk of contracting STIs and the HIV virus by having one sexual partner.

All adolescents in each of the three countries were asked the above-mentioned questions, with the exception of primary students in Mali who were only asked question 607 (as the other questions were deemed too sensitive). Overall, 51.74% (805/1,556) of adolescents who were asked all four questions on STI risk, prevention, and treatment answered all four correctly. As indicated in Table 18, 47.2% (368/779) of adolescents in the control group correctly answered all four questions correctly, and 56.2% (437/777) of adolescents in the intervention group correctly answered all four questions, a difference that was not statistically significant (p=0.083).

Table 18 | Outcome Indicator 1.7: Proportion of adolescents with correct knowledge about STI risk and prevention and treatment

Main Effects					
	Descriptive Statistics		Regression Results		
	n	mean	parameter estimate	95% CI	p-value
Control	779	47.24%	OR = 1.39	(0.96, 2.03)	p = 0.083
Intervention	777	56.24%			
Interaction Terms					
sex (M,F) * studygroup	1,556	NA	OR = 1.27	(0.66, 2.44)	p = 0.482
age (<15, >=15) * studygroup	1,556	NA	OR = 1.13	(0.58, 2.20)	p = 0.711
school status (IS,OOS)	1,556	NA	**OR = 0.37**	(0.18, 0.75)	**p = 0.006**
In-School (IS)					
Control	695	47.34%	OR = 1.16	(0.79, 1.70)	p = 0.461
Intervention	685	55.47%			
Out of School (OOS)					
Control	84	46.43%	**OR = 2.09**	(1.10, 3.98)	**p = 0.025**
Intervention	92	61.96%			
marital status * studygroup	1,556	NA	OR = 1.35	(0.14, 12.59)	p = 0.793

Interaction effects by sex, age, and marital status were not significant (p=0.482, p=0.711, p=0.793, respectively); however, interaction effects by school status were significant (OR=0.37,

p=0.006). Results disaggregated by school status show that out-of-school adolescents in the intervention group were 2.1 times (p=0.025) more likely to answer all four questions about STI prevention and treatment correctly, compared to out-of-school adolescents in the control group. These differences in STI treatment and prevention knowledge between study arms were not statistically significant among in-school adolescents (p=0.461).

Outcome Indicator 1.8: HIV prevention knowledge

This outcome was evaluated using a composite indicator which measured the proportion of adolescents who responded correctly to the following six questions on HIV prevention:

- 602: True or false: A boy/girl can get an STI or HIV the first time that he/she has unprotected sexual intercourse.
- 606. True or false: Using a condom can protect against STIs/HIV.
- 608: True or false: People can get HIV from mosquito bites.
- 609: True or false: People can reduce their risk of contracting STIs and the HIV virus by having one sexual partner
- 610: True or false: HIV is transmitted by sharing food.
- 612: True or false: A person can take a tablet every day to protect against HIV.

In-school Malian adolescents ages 10-14 years were not asked any of these questions as they were deemed too sensitive.

Overall, only 10.14% (159/1,568) of adolescents who were asked all six questions, answered all of them correctly. As indicated in Table 19, 8.43% (66/783) of adolescents in the control group and 11.85% (93/785) of adolescents in the intervention group answered all six questions on HIV prevention correctly. This difference between intervention and control groups was not statistically significant (p=0.125), nor were interaction effects by sex, age, school status, and marital status (p=0.223, p=0.745, p=0.407, and p=0.584, respectively).

Table 19 | Outcome Indicator 1.8: Proportion of adolescents with comprehensive knowledge of HIV prevention

Main Effects					
	Descriptive Statistics		Regression Results		
	n	mean	parameter estimate	95% CI	p-value
Control	783	8.43%	OR = 1.45	(0.90, 2.33)	p = 0.125
Intervention	785	11.85%			
Interaction Terms					

sex (M,F) * studygroup	1,568	NA	OR = 1.72	(0.72, 4.09)	p = 0.223
age (<15, >=15) * studygroup	1,568	NA	OR = 0.84	(0.29, 2.44)	p = 0.745
school status (IS,OOS)	1,568	NA	OR = 1.45	(0.60, 3.52)	p = 0.407
marital status * studygroup	1,568	NA	OR = 1.11	(0.13, 9.48)	p = 0.584

Impact Indicator 1: Decrease in adolescent birth rate

Impact indicator 1 is the decrease in adolescent birth rate among female respondents ages 15-19 years. We use adolescent parity among female respondents as a proxy for this indicator. At endline data collection, there were a total of 12 births among 271 female respondents ages 15-19 years. Eight girls reported having had one birth, and two girls reported having two births. This translates to an average of 0.044 births among all female respondents ages 15-19 years. Note, however, that these births did not necessarily occur during the year of intervention; due to the repeated cross-sectional study design, we cannot determine whether the births occurred before the start of the ATWA intervention. As such, these results should be interpreted as a description of the cohort, rather than attributable to the intervention. As shown in Table 20, by study group, the average number of births was 0.048 births among the control group and 0.041 births among the intervention group. This difference was not statistically significant (p=0.577).

There was a statistically significant interaction between school status and study arm (p=0.004), indicating differential effects of the intervention between in-school and out-of-school female adolescents ages 15-19. Disaggregation by school status showed no intervention effects among out-of-school-school adolescents (p=0.175); however, in-school adolescents in the intervention had a statistically significantly lower birth rate than those in the control group (0.052 vs. 0.000, p=0.044). Further, the interaction term by marital status demonstrated statistically significant differences between married and single, female adolescents ages 15-19 (p<0.001). This indicates a statistically significant difference between married and unmarried adolescents. Stratified analyses did not reach statistical significance (p=0.198 and p=0.070). Unmarried girls in the intervention group had no reported births as compared to an average of 0.035 births among unmarried girls in the control group.

Table 20 | Impact Indicator 1: Decrease in adolescent birth rate (girls ages 15-19 only)

Main Effects					
	Descriptive Statistics		Regression Results		
	n	mean	parameter estimate	95% CI	p-value

Control	125	0.048	-0.016	(-0.071, 0.039)	p = 0.577
Intervention	146	0.041			
Interaction Terms					
sex (M,F) * studygroup	*NA - Indicator pertains only to female respondents*				
age (<15, >=15) * studygroup	*NA - Indicator pertains only to female respondents*				
school status (IS,OOS) * studygroup	271	NA	**-0.271**	(-0.453, -0.089)	**p = 0.004**
In-School (IS)					
Control	116	0.052	**-0.048**	(-0.095, -0.001)	**p = 0.044**
Intervention	121	0.000			
Out of School (OOS)					
Control	9	0.000	0.225	(-0.100, 0.551)	p = 0.175
Intervention	25	0.240			
marital status * studygroup	271	NA	**0.370**	(0.183, 0.558)	**p<0.001**
Married					
Control	10	0.200	0.292	(-0.153, 0.736)	p = 0.198
Intervention	11	0.545			
Unmarried					
Control	115	0.035	-0.035	(-0.073, 0.003)	p = 0.070
Intervention	135	0.000			

Impact Indicator 2: Decrease in adolescent pregnancy

Impact indicator 2 is the decrease in the proportion of adolescents who have ever been pregnant or caused a pregnancy. At endline, 17 of 853 (2.0%) of female and male adolescents older than age 15 have ever been pregnant or caused a pregnancy. As shown in Table 21, this proportion was relatively similar between the control and intervention groups (1.96% and 2.02%, respectively). This difference was not statistically significant (p=0.675) indicating no intervention effect. No statistically significant differences were seen by sex (p=0.073) or marital status (p=0.068). Interaction terms for school status did not converge. This is because in-school adolescents in the intervention had zero pregnancies.

Table 21 | Impact Indicator 2: Decrease in proportion of adolescents who have ever been pregnant or caused a pregnancy

(Among all married males and females – and unmarried males/females age 14 or older)

Main Effects					
	Descriptive Statistics		Regression Results		
	n	%	parameter estimate	95% CI	p-value
Control	408	1.96%	OR = 1.35	(0.33, 5.52)	p = 0.675
Intervention	445	2.02%			

Interaction Terms					
sex (M,F) * studygroup	853	NA	OR = 0.02	(0.0002, 1.47)	p = 0.073
age (<15, >=15) * studygroup	*1.arm#0.agecat != 0 predicts failure perfectly*				
school status (IS,OOS) * studygroup	*1.arm#1.schoolenrol_cat != 0 predicts failure perfectly*				
marital status * studygroup	853	NA	OR = 15.11	(0.82, 278.82)	p = 0.068

5. CONTRACEPTION & SEXUAL ACTIVITY

A large focus of the ATWA evaluation indicators centers on adolescent behaviors and knowledge surrounding contraception and sexual activity. This section provides findings on seven indicators, two of which are impact indicators.

Outcome Indicator 1.1: Intent to use modern contraception

Outcome Indicator 1.1 is the proportion of adolescents with the intent to use modern contraception in the future. This question was asked in Mali among secondary students and OOS adolescents and Burkina Faso among all adolescents. This question was deemed too sensitive to ask primary students in Mali, and this topic was not covered in the curriculum in Niger, thus younger Malian and Nigerien adolescents were not assessed on this indicator. Overall, 66.13% (621/939) of respondents in these two countries stated their intent to use modern contraception in the future. As shown in Figure 1, there are large and statistically significant differences by sex in the selected methods planned for future use ($\chi 2$ $p<0.001$). Statistically significant differences are also seen by age (Figure 2) ($\chi 2$ $p<0.001$).

Figure 1 | Outcome Indicator 1.1: Intent to use modern contraception (by sex)

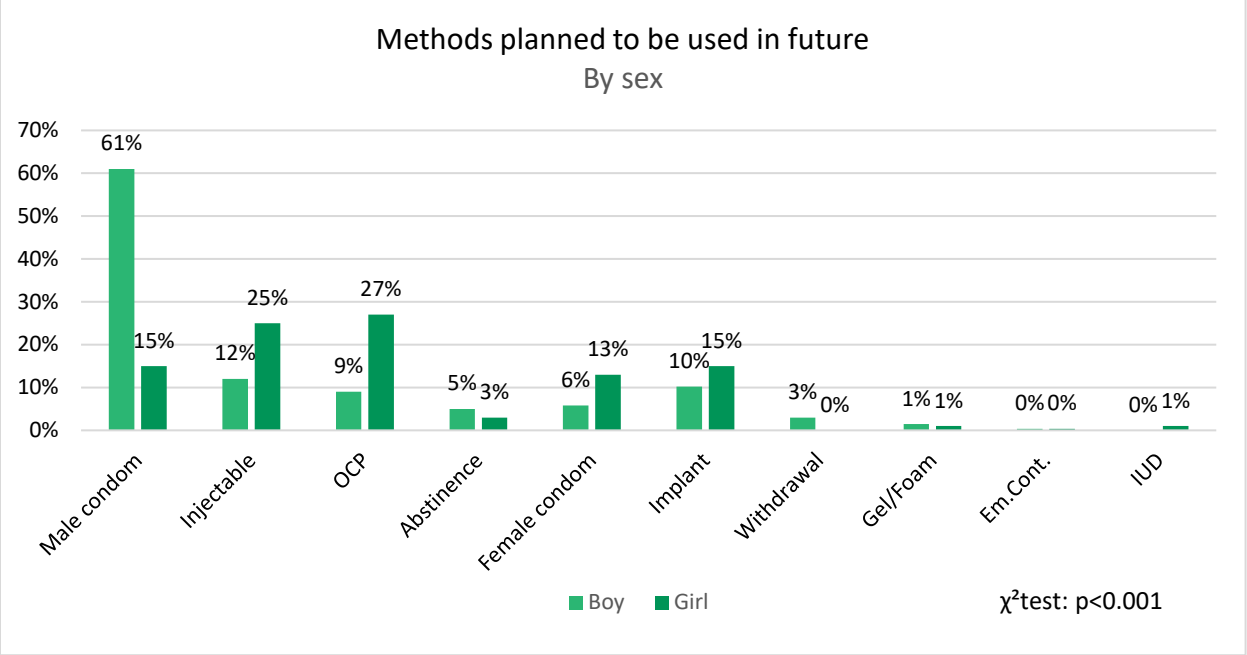
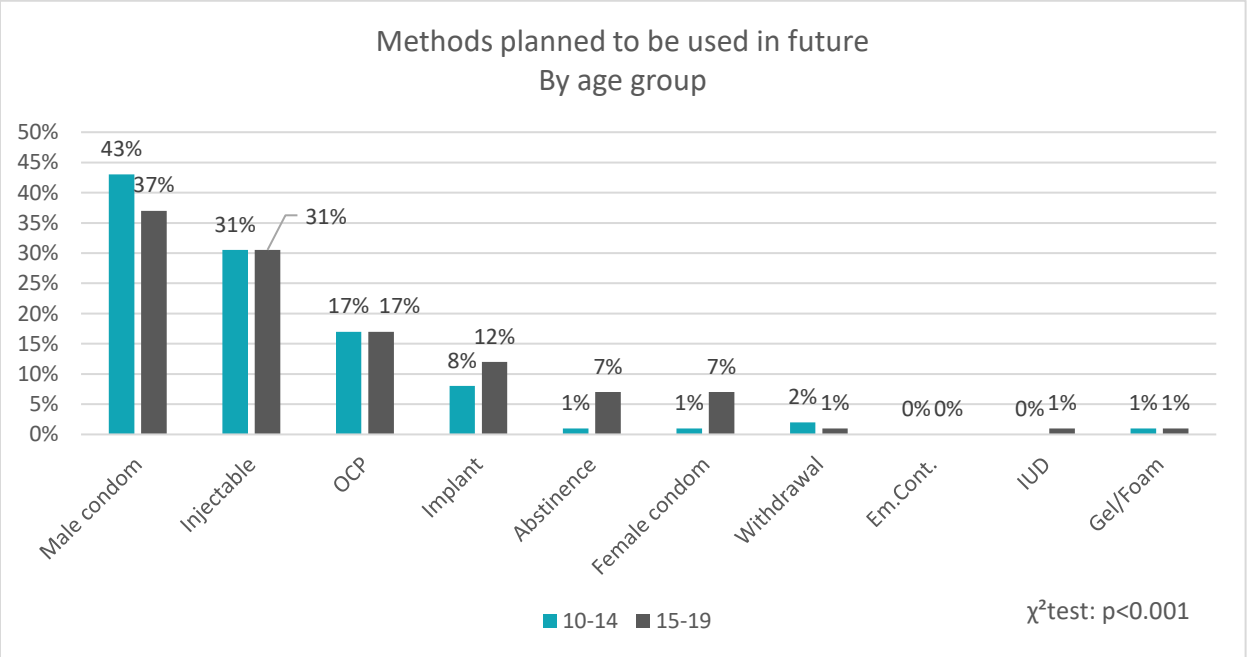


Figure 2 | Outcome Indicator 1.1: Intent to use modern contraception (by age)



By study group, and as shown in Table 22, 63.95% (298/466) of adolescents in the control group versus 68.29% (323/473) of adolescents in the intervention group reported the future intention to use modern contraception. This difference was not statistically significant (p=0.937). Interaction effects by sex, age, and school status were not statistically significant (p=0.146, p=0.395, and p=0.363, respectively). The interaction model for marital status failed to converge as zero married adolescents in the intervention group reported no intention to use modern contraception in the future.

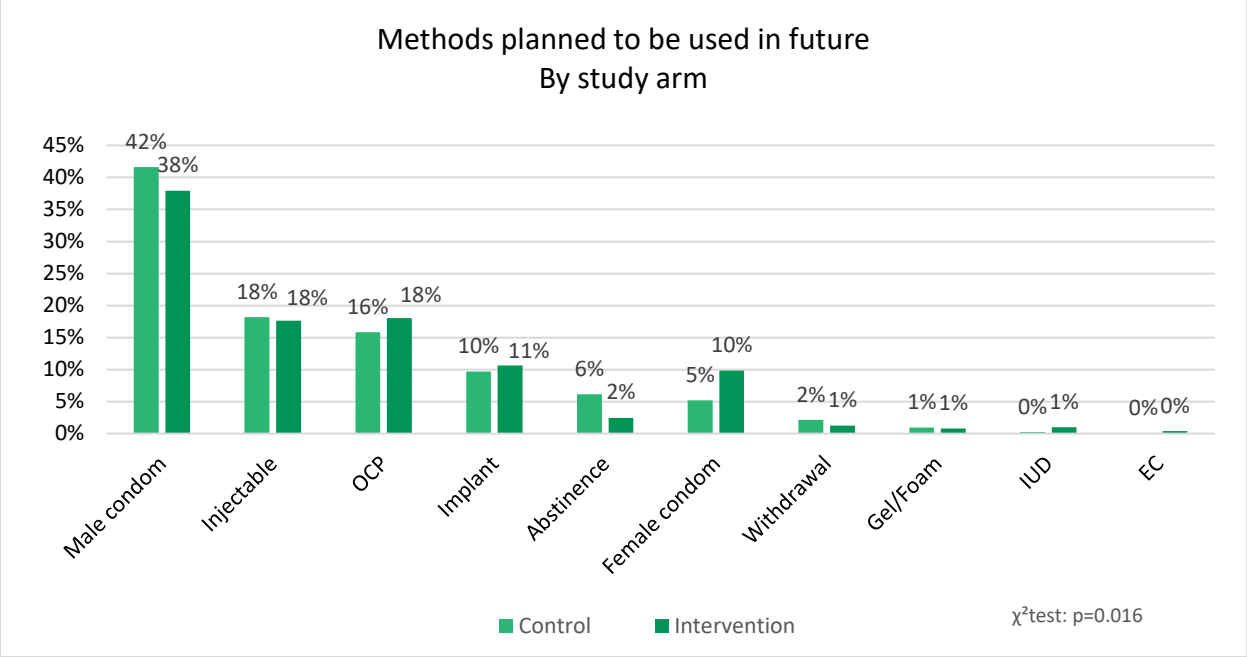
Dose analyses indicate that adolescents who received 60% or more of the ATWA sessions had a statistically significantly higher chance of stating they intended to use modern contraception in the future (OR=4.31, p<0.001).

Table 22 | Outcome Indicator 1.1: Intent to use modern contraception

Main Effects					
	Descriptive Statistics		Regression Results		
	n	%	parameter estimate	95% CI	p-value
Control	466	63.95%	OR = 0.98	(0.61, 1.58)	p = 0.937
Intervention	473	68.29%			
Interaction Terms					
sex (M,F) * studygroup	939	NA	OR = 1.91	(0.80, 4.54)	p = 0.146
age (<15, >=15) * studygroup	939	NA	OR = 0.67	(0.27, 1.68)	p = 0.395
school status (IS,OOS) * studygroup	939	NA	OR = 1.71	(0.54, 5.47)	p = 0.363
marital status * studygroup	*1.arm#1.mar_stat != 0 predicts success perfectly*				

Figure 3 shows the types of methods planned for future use by study arm. As shown, the differences between the intervention and control groups are statistically significant (p=0.016, under omnibus chi-square test). For example, more adolescents in the control group stated their intent to use male condoms than adolescents in the intervention group, while the reverse was seen for female condoms.

Figure 3 | Outcome Indicator 1.1: Intent to use modern contraception (by study arm)



Outcome Indicator 1.2: Condom use at last sex

Outcome Indicator 1.2 is the proportion of sexually active adolescents reporting using a condom at last sex. Questions related to this indicator were asked in Mali among secondary students and OOS adolescents, and in Burkina Faso among all adolescents. These questions were considered too sensitive to ask of primary students in Mali, and as mentioned above, questions related to personal sexual history were not asked in Niger because the topic was not covered in the curriculum. Of all sexually active adolescents surveyed (n=71), 60.6% (43/71 adolescents) reported using a condom at last sex. By study group, and as shown in Table 23, 60.0% (21/35) of sexually active adolescents in the control group reported using a condom at last sex. Among sexually active adolescents in the intervention group, 61.1% (22/36) reported condom use at last sex. The difference between control and intervention groups in the main effects model was not statistically significant (p=0.159). Interaction terms by sex, age, and school status were not statistically significant (p=0.203, p=0.735, and p=0.078, respectively). The interaction model for marital status failed to converge (none of the married adolescents reported using condoms at last sex).

Table 23 | Outcome Indicator 1.2: Condom use at last sex

Main Effects					
	Descriptive Statistics		Regression Results		
	n	mean	parameter estimate	95% CI	p-value
Control	35	60.0%	OR = 0.42	(0.12, 1.41)	p = 0.159
Intervention	36	61.1%			
Interaction Terms					
sex (M,F) * studygroup	71	NA	OR = 0.22	(0.021, 2.27)	p = 0.203
age (<15, >=15) * studygroup	71	NA	OR = 0.46	(0.0053, 40.59)	p = 0.735
school status (IS,OOS)	71	NA	OR = 7.27	(0.80, 65.79)	p = 0.078
marital status * studygroup	*o.mar_stat !=1 predicts failure perfectly*				

Outcome Indicator 1.3: Consistent condom use

Outcome Indicator 1.3 is the proportion of sexually active, unmarried adolescents who reported using a condom consistently in the last six months. Questions related to Indicator 1.3 were asked in Mali among secondary students and OOS adolescents, and in Burkina Faso among all adolescents. This question was considered too sensitive to ask primary students in Mali, and as mentioned above, questions related to personal sexual history were not covered in the curriculum in Niger. Among all surveyed sexually active, unmarried adolescents, 63.49% (40/60 adolescents) used a condom consistently within the last six months. By study group, as shown in Table 24, 65.63% (21/32) of sexually active, unmarried adolescents in the intervention group reported consistent condom use in the last 6 months. Among the control group, 67.86% (19/28) of sexually active, unmarried adolescents reported consistent condom use in the last 6 months. The difference between control and intervention groups was not statistically significant (p=0.619) and interaction terms by sex, age and school status were not statistically significant (p=0.313, p=0.958, and p=0.354, respectively). Given the indicator only pertains to unmarried adolescents, the interaction term was not assessed for marital status.

Table 24 | Outcome Indicator 1.3: Consistent condom use

Main Effects					
	Descriptive Statistics		Regression Results		
	n	mean	parameter estimate	95% CI	p-value
Control	28	67.86%	OR = 0.73	(0.22, 4.07)	p = 0.619
Intervention	32	65.63%			
Interaction Terms					
sex (M,F) * studygroup	60	NA	OR = 0.23	(0.01, 4.07)	p = 0.313

age (<15, >=15) * studygroup	60	NA	OR = 0.90	(0.02, 41.85)	p = 0.958
school status (IS,OOS)	60	NA	OR = 3.45	(0.25, 47.16)	p = 0.354
marital status * studygroup	*NA – Indicator pertains only to unmarried adolescents*				

Outcome Indicator 1.5: Known modern contraceptive methods

Outcome Indicator 1.5 is the average number of modern contraceptive methods known to female adolescents ages 10-14 (Indicator 1.5.A) and 15-19 (Indicator 1.5.B). The ten possible modern methods assessed in the outcome evaluation survey included: contraceptive implant, IUD, injectables, birth control pills, emergency contraception, male and female condoms, diaphragm, foam/jelly, and the standard days method. Questions related to known contraceptive methods were asked of both primary and secondary students in Burkina Faso, and among secondary students and OOS adolescents in Mali and Niger. Younger, in-school Malian and Nigerien adolescents were not assessed on this indicator, as this topic was not covered in the curriculum.

As shown in Figure 4, the three most commonly known modern methods among all of the female adolescents were injectables, oral contraceptive pills, and male condoms. For each contraceptive type (except for diaphragm), a greater proportion of adolescent girls in the intervention group were able to identify modern methods, when compared to adolescent girls in the control group.

Figure 4 | Knowledge of modern methods (among female respondents, by intervention group)

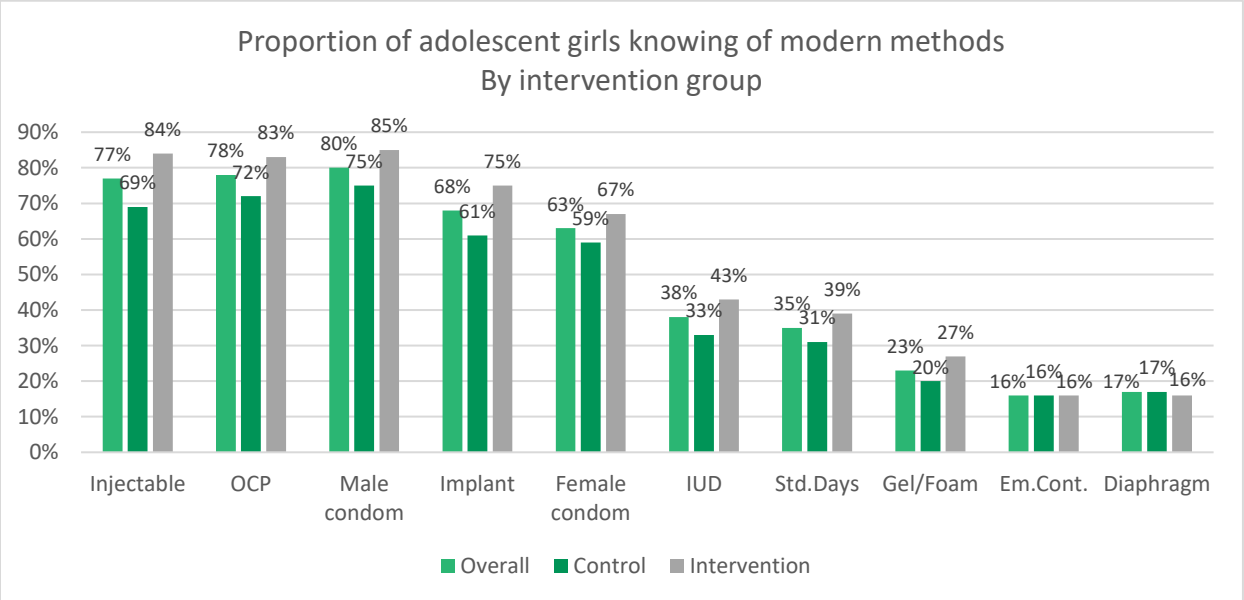
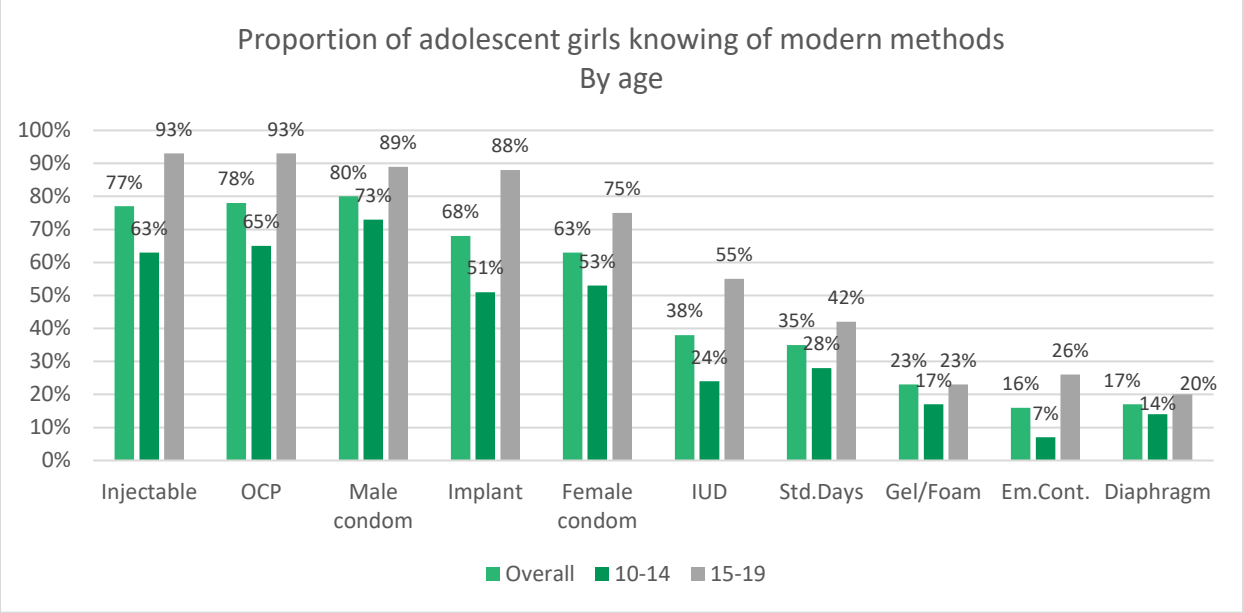


Figure 5 shows a greater proportion of older adolescents had heard of all types of methods as compared to the very young adolescents (ages 10-14 years).

Figure 5 | Knowledge of modern methods (among female respondents, by age)



On average, in the overall sample, female adolescents ages 10-14 reported knowing 3.9 modern contraceptive methods (out of the possible 10). By study group, the average number of modern contraceptives known among female adolescents 10-14 years old was higher among the intervention group compared to the control group (4.49 vs. 3.41) (see Table 25). However, this difference between control and intervention groups of adolescents 10-14 years old was not statistically significant (p=0.211). The interaction term by school status was not statistically significant (p=0.393).

Table 25 | Outcome Indicator 1.5.A: Average number of modern contraceptive methods known among females ages 10-14 years

1.5.A: Average number of modern contraceptives known among women 10-14 years old					
Main Effects					
	Descriptive Statistics		Regression Results		
	n	mean	parameter estimate	95% CI	p-value
Control	156	3.410	0.63	(-0.36, 1.63)	p = 0.211
Intervention	148	4.486			
Interaction Terms					
sex (M,F) * studygroup	*NA – Indicator pertains only to female respondents*				

age (<15, >=15) * studygroup	*NA – Indicator pertains only to female respondents*				
school status (IS,OOS)	304	NA	1.03	(-1.33, 3.38)	p = 0.393
marital status * studygroup	*1.arm#1.mar_stat identifies no observations in the sample*				

Dose analyses indicate that female adolescents who received 60% or more of the ATWA sessions knew a statistically significantly higher number of modern contraceptive methods (3.022, p=0.005).

Among female adolescents ages 15-19, the average number of modern contraceptives known was slightly higher among the intervention group compared to the control group (6.22 vs. 5.98 known methods) – see Table 26. This difference between control and intervention groups of female adolescents ages 15-19 was not statistically significant (p=0.502). The interaction term for school status achieved statistical significance and therefore stratified analyses were conducted among in-school and out-of-school adolescents. In-school ATWA participants on average reported 6.62 known methods, as compared to 5.97 average methods known among those in the control group; this difference was only marginally statistically significant (p=0.057). Although the sample size was small for out-of-school respondents, a statistically significant difference between the intervention and control group was noted, with adolescents in the control group on average knowing more methods than adolescents in the intervention group (6.13 methods in control group vs. 4.36 in intervention group, p=0.049).

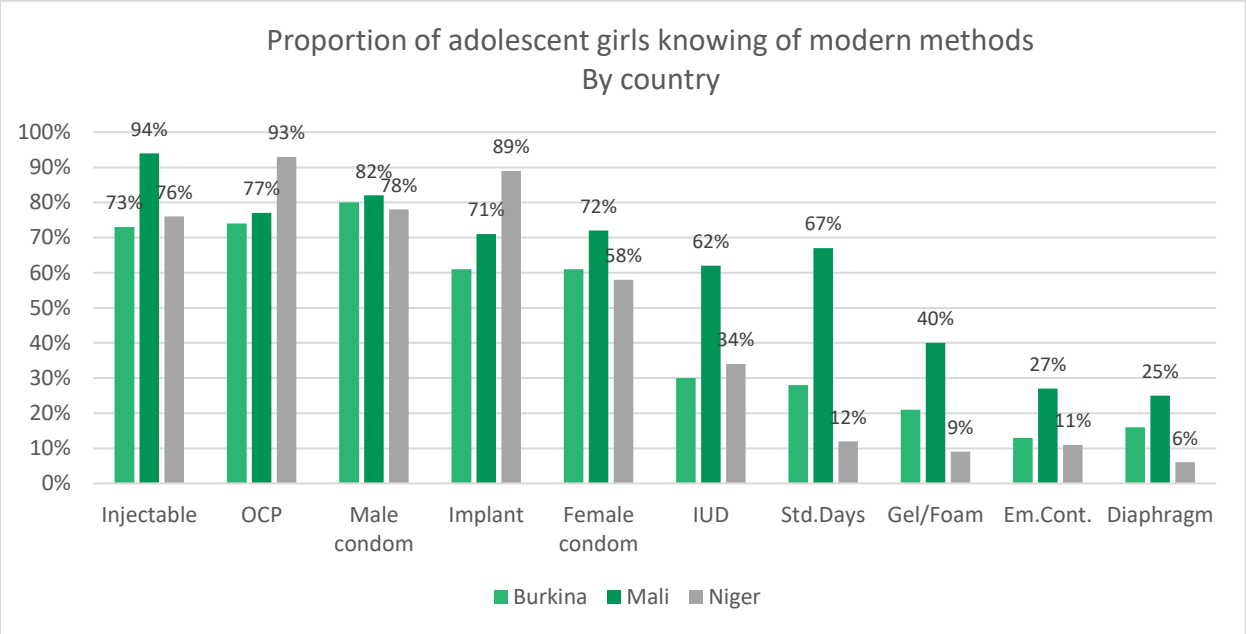
Table 26 | Outcome Indicator 1.5.B: Average number of modern contraceptive methods known among females ages 15-19 years

1.5.B: Average number of modern contraceptives known among women 15-19 years old					
Main Effects					
	Descriptive Statistics		Regression Results		
	n	mean	parameter estimate	95% CI	p-value
Control	122	5.975	0.258	(-0.49, 1.01)	p = 0.502
Intervention	143	6.224			
Interaction Terms					
sex (M,F) * studygroup	*NA – Indicator pertains only to female respondents*				
Age (<15, >=15) *studygroup	*NA – Indicator pertains only to respondents age 15-19*				
school status (IS,OOS) * studygroup	265	NA	**1.989**	(0.24, 3.74)	**p = 0.026**
In-School (IS)					
Control	114	5.965	**0.792**	(-0.02, 1.60)	**p = 0.057**
Intervention	118	6.619			
Out of School (OOS)					
Control	8	6.125	**-1.803**	(-3.60, -0.01)	**p = 0.049**

Intervention	25	4.360			
marital status * studygroup	265	NA	0.364	(-1.39, 2.12)	p = 0.684

Figure 6 shows variation in methods known by female respondents across the three countries, with the injectables being the most widely known method among Malian respondents, oral contraceptive pills being the most widely known method among Nigerienne respondents and male condoms being the most widely known method among Burkinabé respondents.

Figure 6 | Knowledge of modern methods (among female respondents, by country)



Impact Indicator 3: Need for family planning satisfied with modern contraception

Impact indicator 3A is the proportion of sexually active female adolescents ages 15-19 years *currently married or in union* who have their need for family planning satisfied with modern contraceptive methods. Questions related to Indicator 3 were asked in Mali among secondary students and OOS adolescents, and in Burkina Faso among all adolescents. This question was considered too sensitive to ask primary students in Mali, and as mentioned above, questions related to personal sexual history were not asked in Niger because the topic was not covered in the curriculum. As shown in Table 27, none of the sexually active married adolescents sampled at endline reported using modern contraceptive methods the last time they had sexual intercourse.

Table 27 | Impact Indicator 3A: Need for family planning satisfied with modern contraception (among sexually active married females)

3A: Increase in need for family planning satisfied with modern contraception among adolescents currently married or in union					
Main Effects					
	Descriptive Statistics		Regression Results		
	n	mean	parameter estimate	95% CI	p-value
Control	0	*None of the married adolescents used contraception the last time they had sex*			
Intervention	0				

Impact indicator 3B is the proportion of sexually active female adolescents ages 15-19 years who have their need for family planning satisfied with modern contraceptive methods. Overall, 50% (17/34) of sexually active female adolescents reported having their need for family planning satisfied with modern contraceptive methods. As indicated in Table 28, 56.3% (9/16) of sexually active female adolescents ages 15-19 in the control group reported having their need for family planning satisfied with modern contraceptive methods. Among the intervention group, 44.4% (8/18) of sexually active female adolescents ages 15-19 reported having their need for family planning satisfied with modern contraceptive methods. The difference between control and intervention groups was not statistically significant (p=0.259) indicating no intervention effect. The interaction models for school and marital status did not converge.

Table 28 | Impact Indicator 3B: Need for family planning satisfied with modern contraception (among sexually active females, aged 15-19)

3B: Increase in need for family planning satisfied with modern contraception among sexually active female adolescents ages 15-19 years					
Main Effects					
	Descriptive Statistics		Regression Results		
	n	mean	parameter estimate	95% CI	p-value
Control	16	56.3%	OR = 0.31	90.04, 2.35)	p = 0.259
Intervention	18	44.4%			
Interaction Terms					
sex (M,F) * studygroup	*NA – Indicator pertains only to female respondents*				
age (<15, >=15) * studygroup	*NA – Indicator pertains only to female respondents*				
school status (IS,OOS)	*1.arm#0.schoolenrol_cat != 0 predicts failure perfectly*				
marital status * studygroup	*0.mar_stat != 1 predicts failure perfectly*				

Impact Indicator 4: Adolescent modern contraceptive prevalence rate

Impact indicator 4 is the proportion of sexually active adolescents (ages 15-19) who are currently using (or whose partner is using) a modern contraceptive method. Questions used to assess

Indicator 4 were asked of adolescents ages 15-19 in Mali (both OOS and secondary students) and secondary students in Burkina Faso. These questions were not asked among adolescents 15-19 years in Niger, as this topic was not covered in the curriculum. At endline, 64.06% (41/64) of sexually active adolescents ages 15-19 reported using a modern contraceptive method at last sex. As shown in Table 29, 66.7% (20/30) of sexually active adolescents ages 15-19 in the control group and 61.8% (21/34) of sexually active adolescents ages 15-19 in the intervention group reported using a modern contraceptive method the last time they had sex. This difference was not statistically significant (p=0.670), indicating no intervention effect. No differences were seen by age (p=0.718) or school status (p=0.426). The interaction model for marital status failed to converge.

Table 29 | Impact Indicator 4: Increase in adolescent modern contraceptive prevalence rate

Main Effects					
	Descriptive Statistics		Regression Results		
	n	mean	parameter estimate	95% CI	p-value
Control	30	66.7%	OR = 0.71	(0.15, 3.35)	p = 0.670
Intervention	34	61.8%			
Interaction Terms					
sex (M,F) * studygroup	*NA – Indicator pertains only to female respondents*				
age (<15, >=15) * studygroup	1,046	NA	OR = 1.68	(0.10, 27.60)	p = 0.718
school status (IS,OOS)	1,046	NA	OR = 0.20	(0.00, 10.17)	p = 0.426
marital status * studygroup	*o.mar_stat != 1 predicts failure perfectly*				

6. ACCESS TO HEALTH SERVICES

Alongside the provision of life skills education, the ATWA program seeks to increase access to quality adolescent-responsive SRH services.

Outcome Indicator 1.9: Knowledge of where to seek SRH services

Outcome Indicator 1.9 is the proportion of adolescents with knowledge of where to seek SRH services, assessed via the proportion of adolescents who state they know where to go to get tested for HIV, for STI treatment, where to get contraception (birth control), and where go to get condoms. Questions asking adolescents if they knew where to get condoms, where to get STI treatment, and where to get tested for HIV were posed to all adolescents in each of the three countries. The question asking adolescents if they knew where to get contraception was not asked

of boys, and was deemed too sensitive to ask of adolescent girls ages 10-14 years. Thus, this question was asked of all adolescent girls 15-19 in Mali, Burkina Faso, and Niger. Overall, 37.8% (782/2,069) of surveyed adolescents knew where to get all three SRH resources: condoms, STI treatment and HIV testing. By study group, and as shown in Table 30, 36.9% of adolescents in the control group reported knowledge of where to seek SRH services, and 38.72% of adolescents in the intervention group reported knowledge of where to seek SRH services. This difference did not, however, achieve statistical significance (p=0.512). Interaction terms by sex, age, school status, and marital status were not statistically significant (p=0.281, p=0.410, p=0.328, and p=0.618, respectively).

Table 30 | Outcome Indicator 1.9: Knowledge of where to seek SRH services

Main Effects					
	Descriptive Statistics		Regression Results		
	n	mean	parameter estimate	95% CI	p-value
Control	1,036	36.87%	OR = 0.90	(0.66, 1.23)	p = 0.512
Intervention	1,033	38.72%			
Interaction Terms					
sex (M,F) * studygroup	2,069	NA	OR = 0.73	(0.41, 1.30)	p = 0.281
age (<15, >=15) * studygroup	2,069	NA	OR = 0.79	(0.45, 1.38)	p = 0.410
school status (IS,OOS)	2,069	NA	OR = 1.42	(0.70, 2.86)	p = 0.328
marital status * studygroup	2,068	NA	OR = 1.54	(0.28, 8.43)	p = 0.618

7. GENDER ATTITUDES & NORMS

One of the core elements of the ATWA program is to support the formation of positive gender attitudes and norms. Outcome evaluation indicators have been designed to assess this area.

Outcome Indicator 1.4: Gender Equitable Attitudes

Outcome Indicator 1.4 captures adolescents with gender equitable attitudes, which is evaluated based on mean scores on the Gender Equitable Attitude scale. This scale was created from the following six variables:

- 1001: Boys and girls should be equally responsible for household chores.
- 1002: It is acceptable for boys to get more education than girls. (reverse-coded)
- 1008: A man should have the final word about decisions in the home. (reverse-coded)
- 1009: A woman should obey her husband in all matters. (reverse-coded)

- 1010: Men should be the ones who bring money home for the family, not women. (reverse-coded)
- 1011: It is the responsibility of girls/women AND boys/men to prevent pregnancy if they are having sex.

Response options for all items were on a 5-point Likert scale, with 1 being the lowest possible score (least gender-equitable) and 5 being the highest possible score (most gender-equitable). Responses were averaged across the items to create an average score of Gender Equitable Attitudes (out of a possible 5).

In-school Malian adolescents were only asked item 1001, and Nigerien in-school adolescents ages 10-14 were only asked 1001 and 1002, as the other items were not covered in their curricula. As such, their scores are simply the average on responses to these items, rather than the full six-item Gender Equitable Attitudes scale. For all respondents, a "don't know" response was coded as missing.

The average score of all respondents on the Gender Equitable Attitude Scale was 3.10 (out of 5). As shown in Table 31, among the intervention group, the average score was 3.09 and among the control group, the average score was 3.12. The difference between intervention and control groups was not statistically significant (p=0.903). Interaction effects by sex, age, school status, and marital status were not statistically significant (p=0.583, p=0.468, p=0.781, and p=0.723 respectively).

Table 31 | Outcome Indicator 1.4: Gender equitable attitudes

Main Effects					
	Descriptive Statistics		Regression Results		
	n	mean	parameter estimate	95% CI	p-value
Control	1,033	3.116	-0.01	(-0.19, 0.17)	p = 0.903
Intervention	1,032	3.094			
Interaction Terms					
sex (M,F) * studygroup	2,065	NA	0.05	(-0.14, 0.24)	p = 0.583
age (<15, >=15) * studygroup	2,065	NA	0.12	(-0.21, 0.45)	p = 0.468
school status (IS,OOS)	2,065	NA	-0.07	(-0.57, 0.43)	p = 0.781
marital status * studygroup	2,065	NA	0.16	(-0.71, 1.03)	p = 0.723

As shown in Figures 7 through 12, there was variation in the types of gender equity statements the adolescents most agreed with, with a greater proportion of adolescents agreeing that there should be gender equity in household chore sharing (Figure 7), educational attainment (Figure 8), and pregnancy prevention efforts (Figure 12). Very low agreement was seen in statements assessing traditional gender norms, highlighting that traditional gender roles (men having the final say in decisions (Figure 9), women obeying her husband in all matters (Figure 10), and men serving as the primary income earner in the household (Figure 11) are prevalent.

Intervention effects by study arm were not statistically significant for five out of the six gender equity statements (see the omnibus chi-square results in Figures 7 through 12: p=0.469, p=0.427, p=0.581, p=0.697, and p=0.528, respectively). As shown in Figure 12, a larger proportion of adolescents in the intervention group strongly agreed with the statement, “It is the responsibility of boys AND girls to prevent pregnancy.”

Figure 7 | Agreement with Gender Equitable Statement 1001: "Boys and girls should be equally responsible for chores" by sex and intervention group

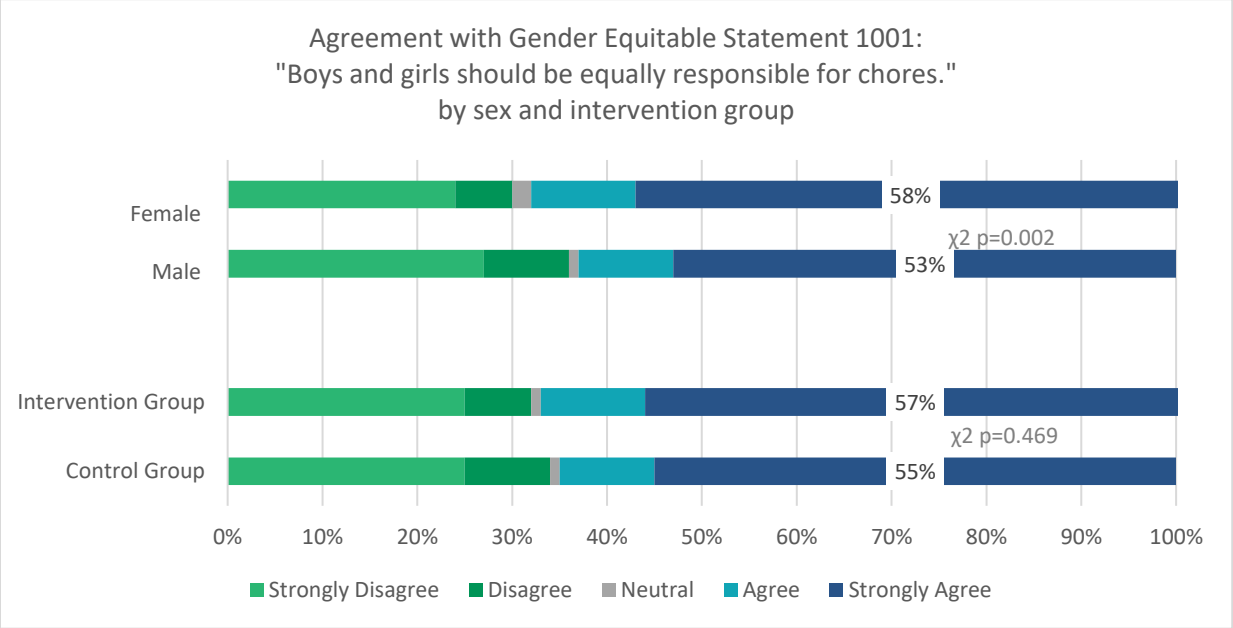


Figure 8 | Agreement with Gender Equitable Statement 1002: "It is OK for boys to get more education than girls." by sex and intervention group

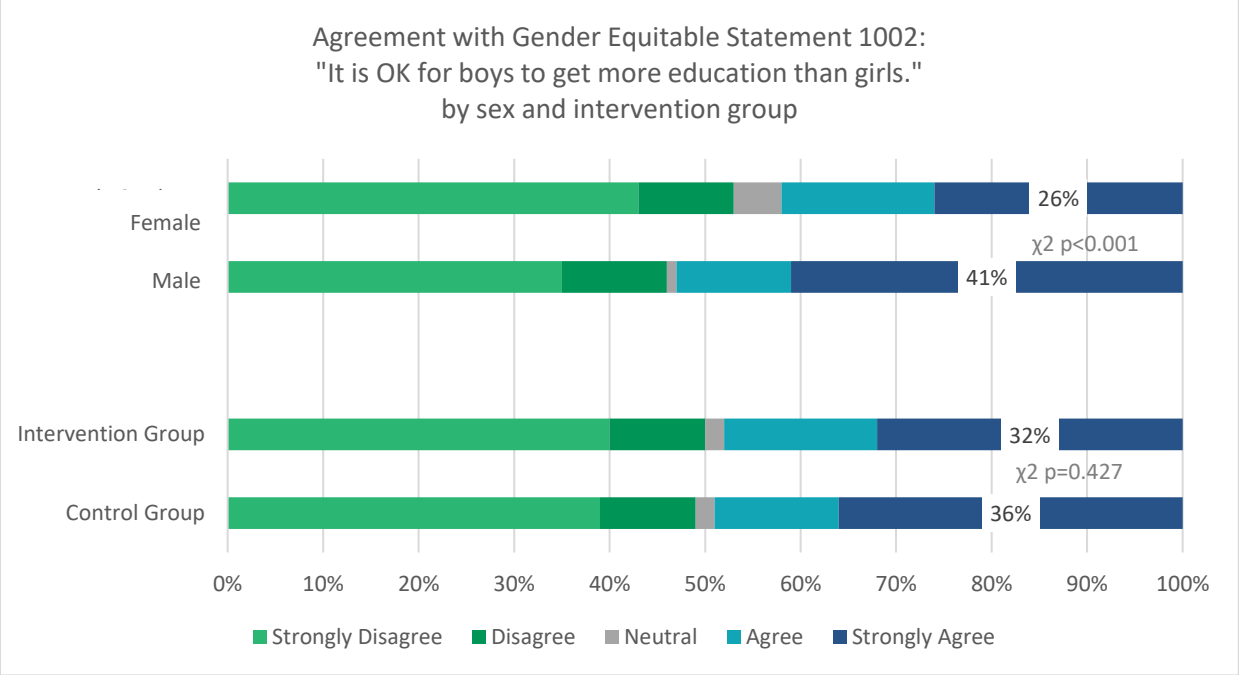


Figure 9 | Agreement with Gender Equitable Statement 1008: "A man should have the final word about household decisions." by sex and intervention group

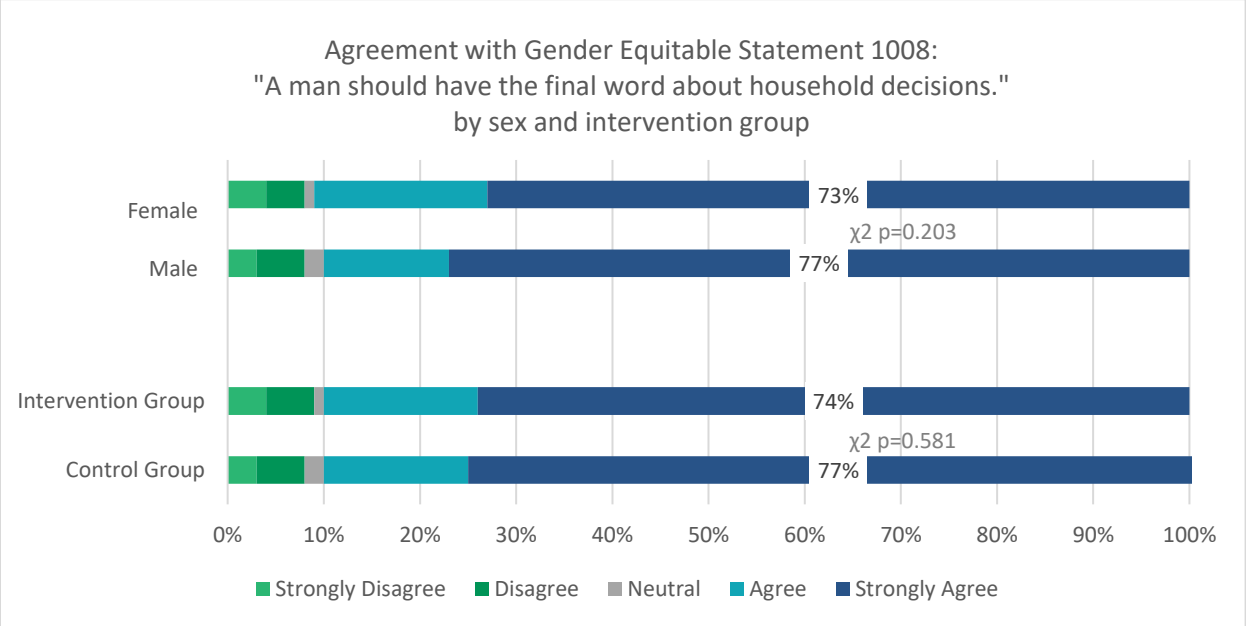


Figure 10 | Agreement with Gender Equitable Statement 1009: "A woman should obey her husband in all matters." by sex and intervention group

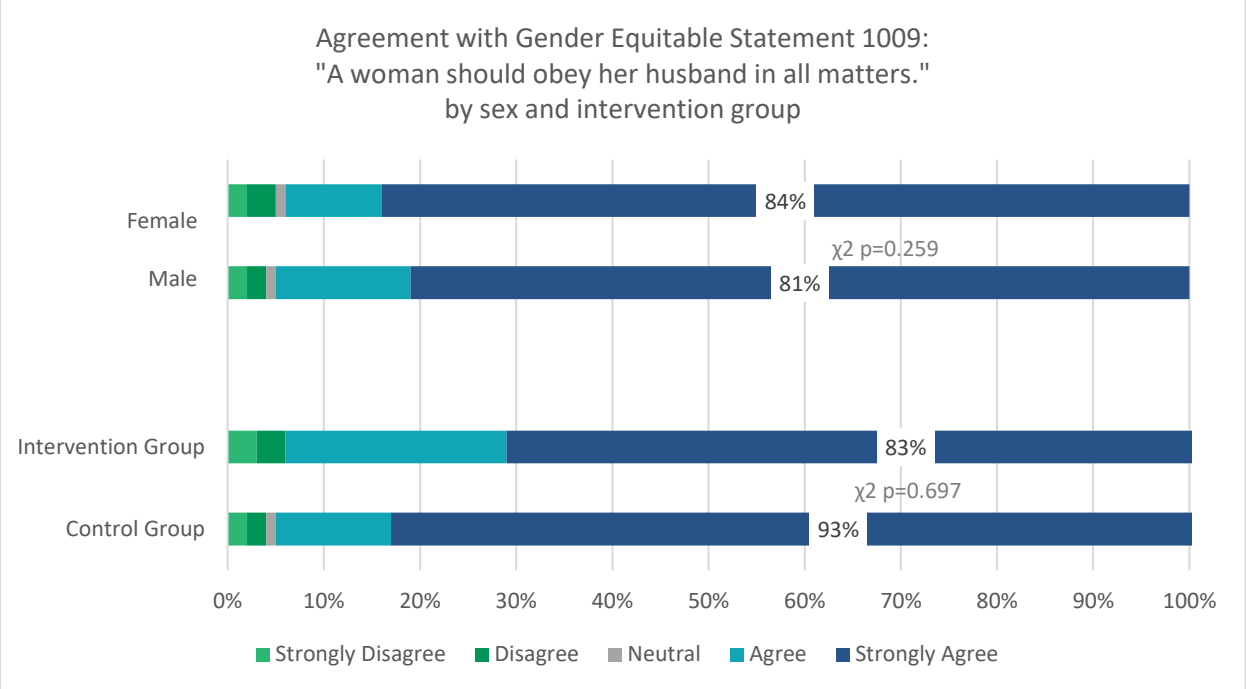


Figure 11 | Agreement with Gender Equitable Statement 1010: "Men should be the ones to bring money home." by sex and intervention group

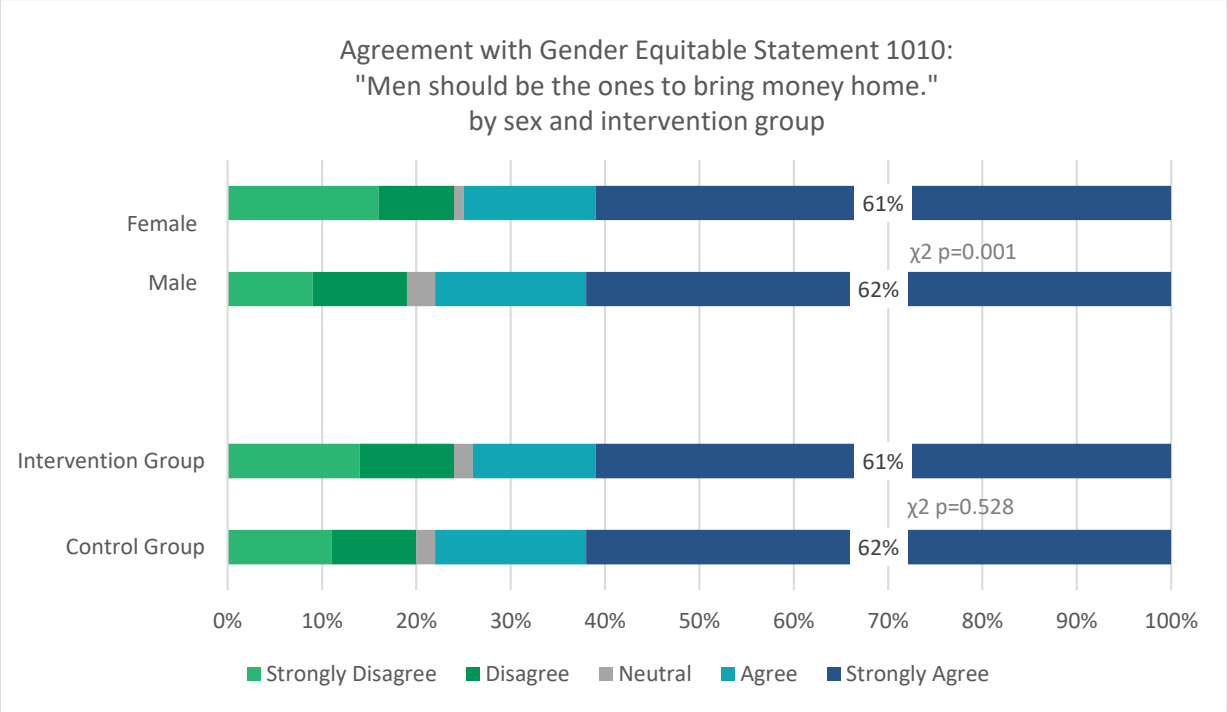
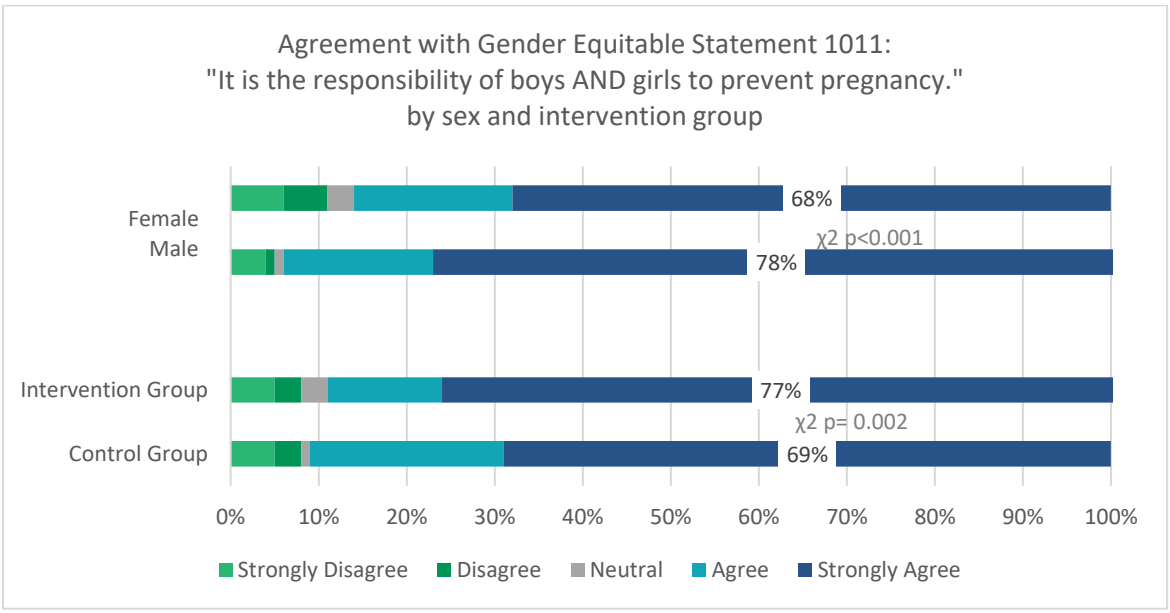


Figure 12 | Agreement with Gender Equitable Statement 1011: "It is the responsibility of boys AND girls to prevent pregnancy." by sex and intervention group



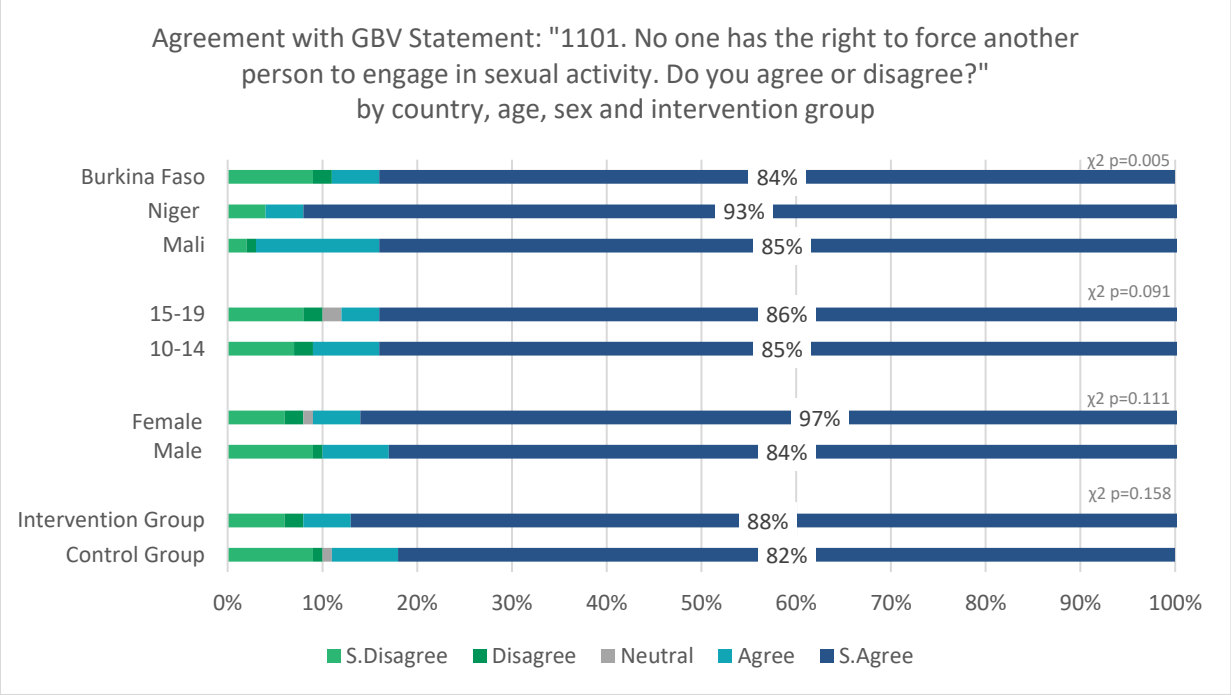
8. GENDER-BASED VIOLENCE

Although not included in the overall indicators in the M&E Framework, five survey items were included to assess adolescent views on gender-based violence. Country offices in Mali and Niger suggested these items not be asked of in-school adolescents as they were deemed too sensitive. As such, the responses to these questions represent only out-of-school adolescents ages 10-19 in Mali and Niger, and all adolescents in Burkina Faso (n=910). The five items were worded as follows:

- 1101. No one has the right to force another person to engage in sexual activity. Do you agree or disagree?
- 1102. If a girl refuses to have sexual intercourse with her boyfriend, it is acceptable for him to try and persuade her by using some force or pressure. Do you agree or disagree?
- 1103. It is acceptable for a man to slap or kick his wife if she does not follow his orders. Do you agree or disagree?
- 1104. A woman should tolerate violence for the sake of her family. Do you agree or disagree?
- 1105. If a woman is raped, she is usually at fault for putting herself in that situation. Do you agree or disagree?

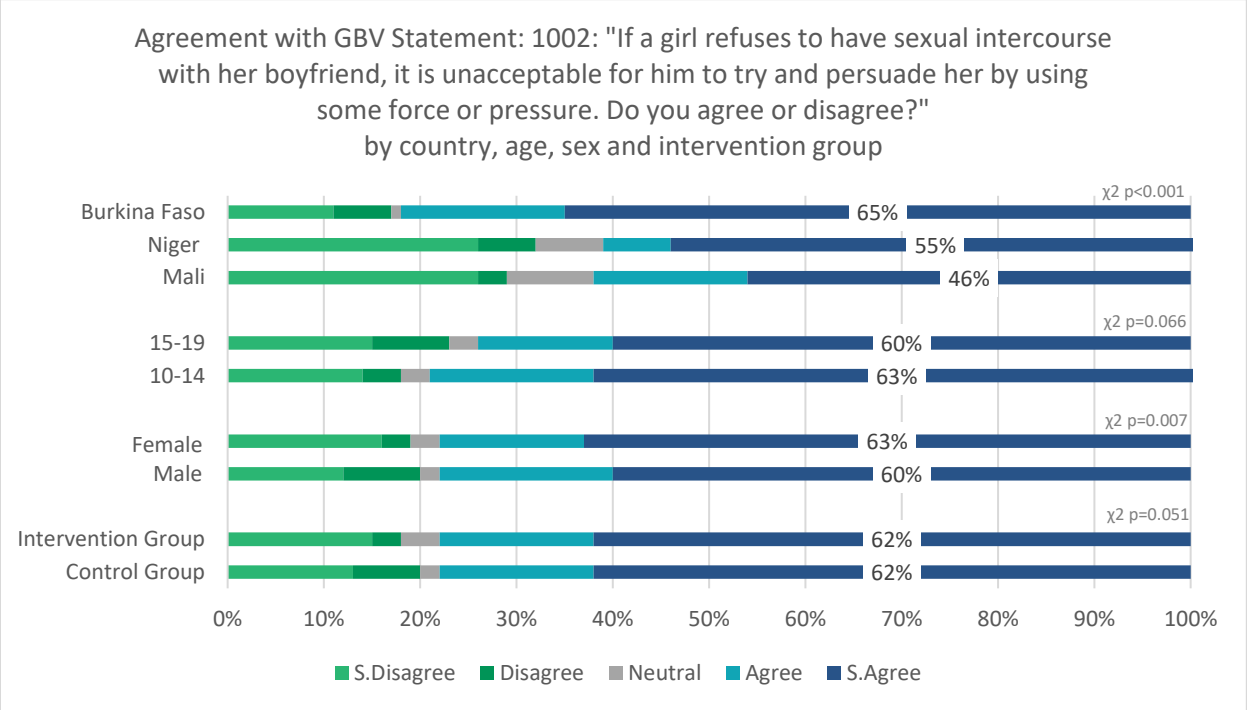
The vast majority of adolescents strongly agreed that no one has the right to force another person to engage in sexual activity (85.0%). As shown in Figure 13, by intervention group, 82.4% of adolescents in the control group and 87.6% of adolescents in the intervention group strongly agreed with this statement (this difference was not statistically significant ($\chi 2$ p=0.158)). By sex, 83.5% of males and 86.5% of females strongly agreed with the statement, but this difference did not reach statistical significance ($\chi 2$ p=0.111). By age group, 84.6% of 10-14 year-olds and 85.8% of 15-19 year-olds strongly agreed with this statement (this difference was not statistically significant ($\chi 2$ p=0.091)). By country, 84.4% of Burkinabe respondents, 92.9% of Malians, and 84.6% of Nigeriens strongly agreed with this statement (this difference was statistically significant ($\chi 2$ p=0.005)).

Figure 13 | Agreement that forced sex is inappropriate by country, age, sex, and intervention group



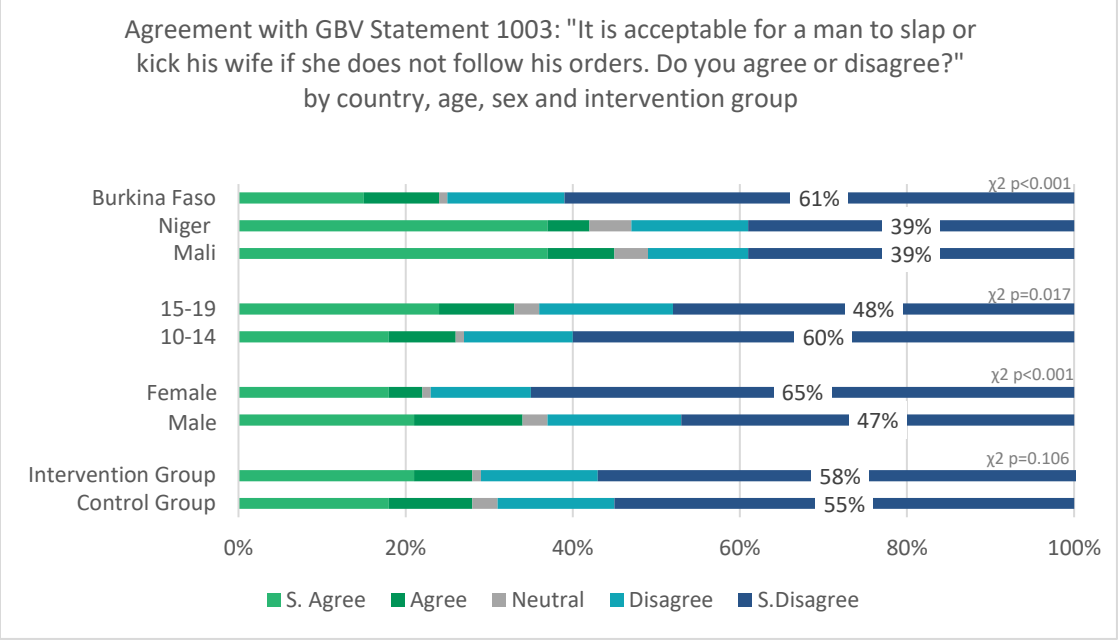
A smaller proportion of adolescents strongly agreed (61.7% in overall sample) that it is unacceptable to use pressure or force to persuade a girlfriend to have sex if she didn't want to. As shown in Figure 14, by intervention group, 61.7% of adolescents in both the intervention and control groups strongly agreed that it is unacceptable to pressure or force a girlfriend to have sex; a higher proportion of adolescents in the intervention group as compared to the control group strongly disagreed with this (meaning they felt it was acceptable to use pressure or force to persuade a girlfriend to have sex (15.1% in the intervention group, compared to 13.3% in the control group. This difference was marginally statistically significant (χ2 p=0.051). By sex, 62.9% of girls and 60.4% of boys strongly agreed this is unacceptable; this difference reached statistical significance (χ2 p=0.007). By age group, 62.5% of 10-14 year olds and 59.8% of 15-19 year olds found this unacceptable, but this difference was not statistically significant (χ2 p=0.066). Variation by country was seen, with 65.0% of Burkinabe respondents, 46.2% of Malian, and 54.6% of Nigerien respondents strongly agreeing that it is unacceptable to use pressure or force to persuade a girlfriend to have sex if she didn't want to (this difference was statistically significant (χ2 p<0.001)).

Figure 14 | Agreement with statement that it is unacceptable to persuade a girlfriend into having sex by use of pressure/force



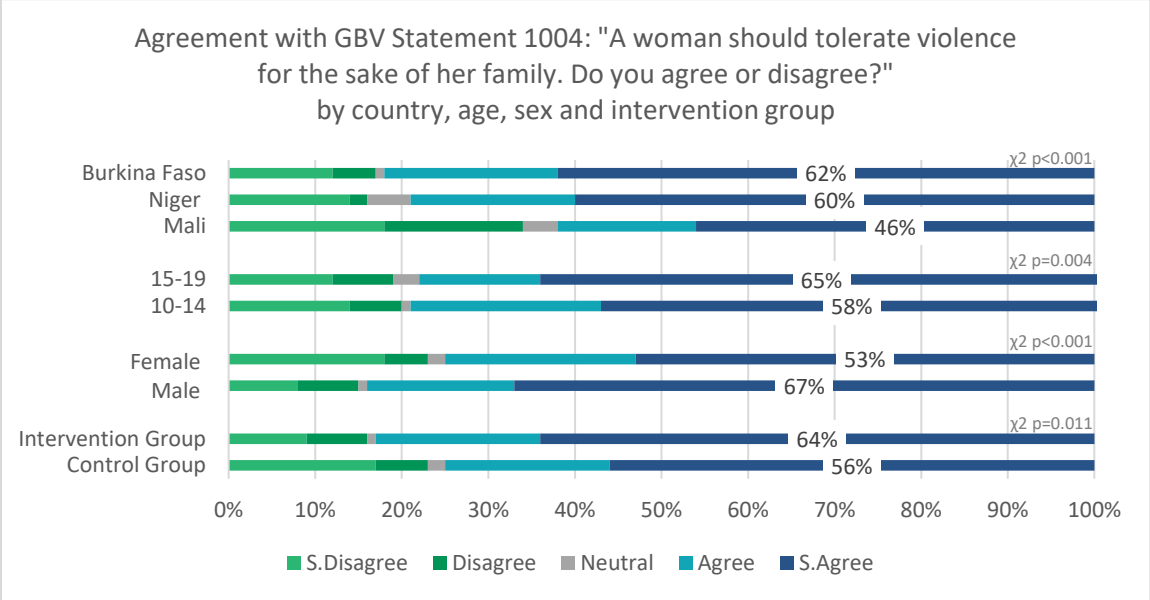
Overall, only 56.1% of respondents strongly *disagreed* with the statement that it is ok for a man to beat his wife for disobeying his orders. As shown in Figure 15, by intervention group, 57.6% of adolescents in the intervention group disagreed with the statement while 54.7% of adolescents in the control group disagreed (this difference was not statistically significant (χ2 p=0.106)). Differences between sexes were seen, with 64.9% of girls strongly disagreed with this statement in contrast to only 47.2% of boys disagreeing with this statement; this difference reached statistical significance (χ2 p<0.001). By age group, 60.0% of very young adolescents (ages 10-14 years) strongly disagreed with this statement as compared to 47.7% of older adolescents (ages 15-19 years); this difference was also statistically significant (χ2 p=0.017)). By country, 15.2% of Burkinabe respondents strongly agreed with this statement on wife beating and 60.6% strongly disagreed with the statement. Among Malian respondents, 36.8% strongly agreed and 39.3% strongly disagreed that it is ok for a man to beat his wife. Among Nigerien respondents, 36.8% strongly agreed and 38.6% strongly disagreed with the statement.

Figure 15 | Agreement with statement that it is ok for a man to beat his wife for disobeying his orders



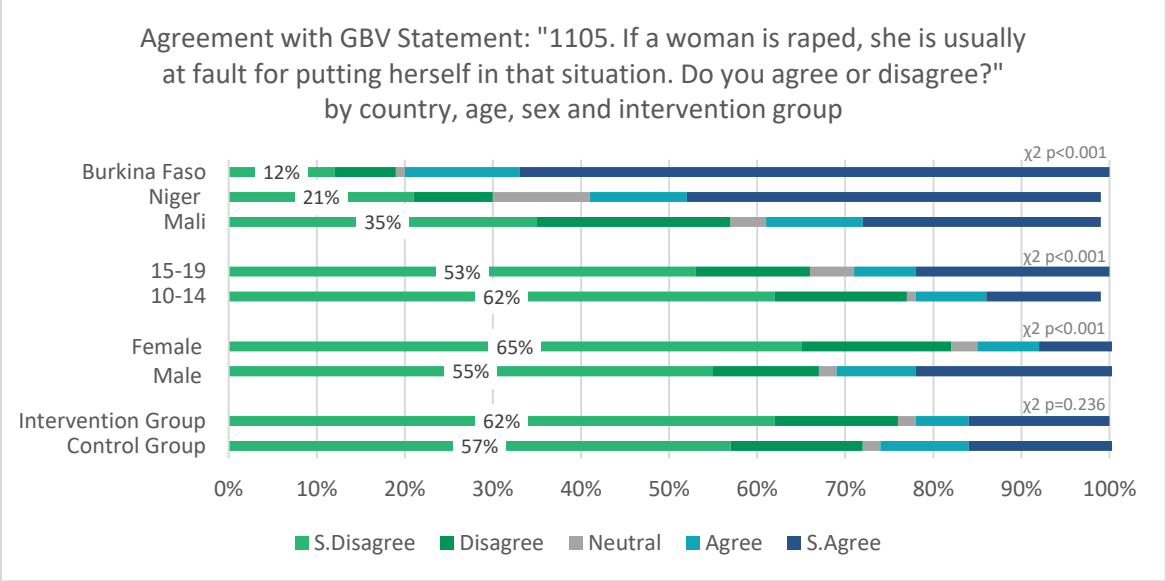
Overall, 59.9% of respondents (i.e., out-of-school respondents in Mali and Niger and all Burkinabe study participants) strongly agreed that a woman should tolerate violence for the sake of her family. As shown in Figure 16, by intervention group, adolescents in the intervention group strongly agreed at a higher rate than adolescents in the control group (64.0% versus 55.8%, respectively; this difference reached statistical significance (χ2 p=0.011). A majority of both boys and girls agreed with this statement, with 53.1% of girls strongly agreeing and 66.9% of boys strongly agreeing with this statement (see Figure 16). This difference was statistically significant (χ2 p<0.001). By age group, 57.8% of 10-14 year olds and 64.8% of 15-19 year olds strongly agreed; this difference was also statistically significant (χ2 p=0.004). By country, 62.4% of Burkinabe respondents, 46.2% of Malian, and 59.7% of Nigerien respondents strongly agreed with this statement; this difference reached statistical significance (χ2 p<0.001).

Figure 16 | Agreement with statement that a woman should tolerate violence for the sake of her family, by sex



Finally, in the overall sample 59.5% of respondents stated that they strongly disagreed with the statement that if a woman is raped, she is usually at fault for putting herself in that situation. As shown in Figure 17, responses varied by control and intervention groups, with 62.3% of adolescents in the intervention group strongly disagreeing that a woman is at fault for putting herself in that situation if she is raped and 56.7% of adolescents in the control group strongly disagreeing (a difference that is not statistically significant ($\chi 2$ p=0.236)). Differences by sex were seen, with 64.5% of females strongly disagreeing with this statement while only 54.5% of males strongly disagreed with this statement (this reached statistical significance ($\chi 2$ p<0.001)). By age group, 62.2% of 10-14 year olds and 53.6% of 15-19 year olds strongly disagreed that it was a woman's fault (this difference was statistically significant ($\chi 2$ p<0.001)). By country, 67.0% of Burkinabe respondents, 35.0% of Malian respondents, and 20.8% of Nigerien respondents strongly disagreed that it was a woman's fault if she was raped (this difference was statistically significant ($\chi 2$ p<0.001)).

Figure 17 | Agreement with statement that it is a woman's fault if she is raped



9. SELF-EFFICACY

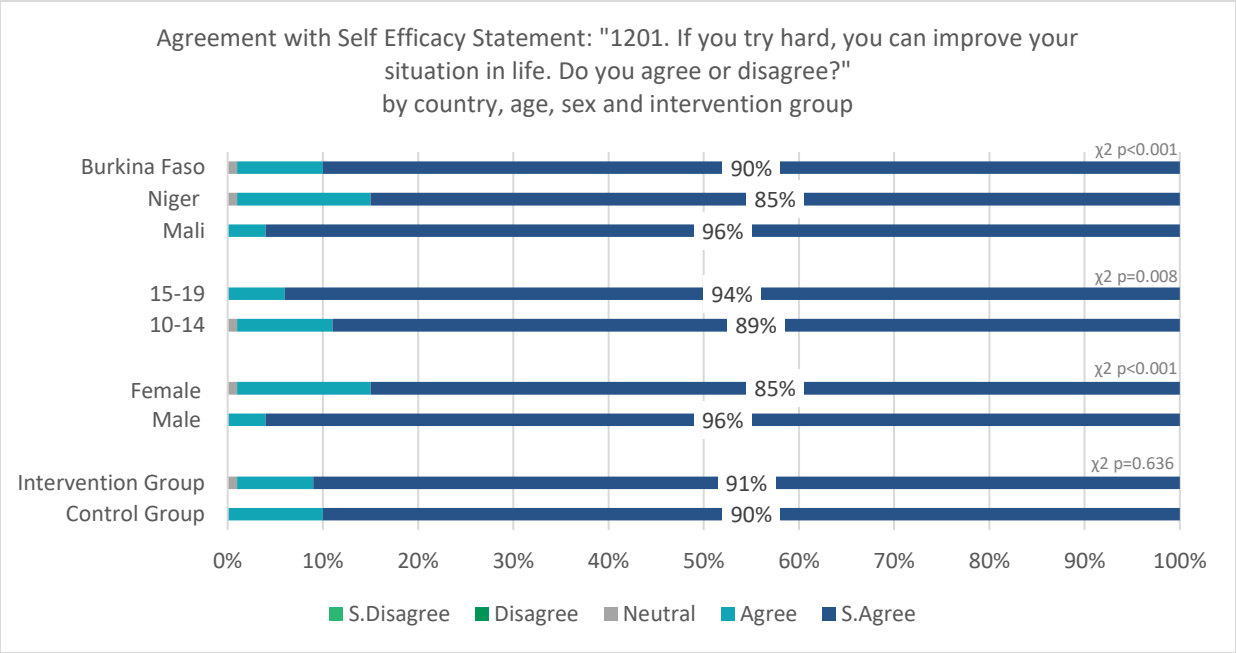
Although not included in the overall indicators in the M&E Framework, a number of survey items were included to assess adolescent self-efficacy with respect to general self-efficacy, self-efficacy surrounding puberty/change, self-efficacy surrounding unwanted sexual attention, self-efficacy in practicing safe sex, and ability to resist peer pressure. Response options for all items were a 5-point Likert scale where 5 is strongly agree, and 1 is strongly disagree.

Self-efficacy

The first question assessed general levels of self-efficacy and asked, "If you try hard, you can improve your situation in life." This question was asked of all adolescents in each of the three countries, with the exception of primary students in Niger (as this topic was not covered in the curriculum). The vast majority (90.4%) of adolescents strongly agreed that they could improve their situation in life if they tried hard. As shown in Figure 18, intervention arms were not statistically significantly different in their levels of strong agreement with this statement (91.2% intervention; 89.5% control ($\chi 2$ p=0.636)). By sex, a larger proportion of boys strongly agreed when compared to girls (95.8% of boys versus 85.0% of girls) (this difference was statistically significant ($\chi 2$ p<0.001)). By age, 88.5% of very younger adolescents (10-14 years) strongly agreed with this statement, and 94.1% older adolescents (15-19 years) strongly agreed (this difference was statistically significant ($\chi 2$ p=0.008)). By country, 95.1% of Burkinabe respondents strongly

agreed with this statement, 85.3% of Malian respondents, and 94.4% of Nigerien adolescents strongly agreed that they could improve their situation in life if they tried hard to do so (this difference was statistically significant (χ2 p<0.001)).

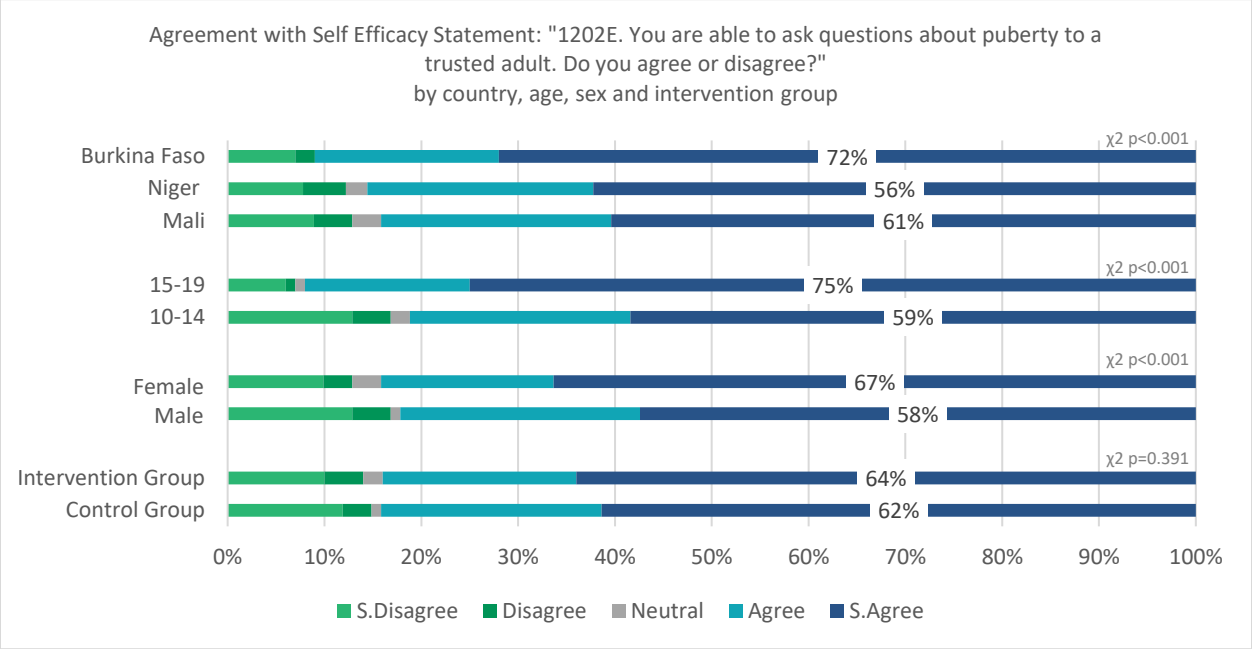
Figure 18 | Self-efficacy: Trying hard can lead to improvements in life



Self-efficacy in puberty

All respondents were asked for their agreement with the statement that they are able to ask questions about puberty to a trusted adult. Overall, 62.9% of all adolescents strongly agreed with the statement. As shown in Figure 19, the majority of adolescents in the control (61.5%) and intervention group (64.4%) strongly agreed that they could ask questions about puberty to an adult (this difference was not statistically significant (χ2 p=0.391)). Female students reported they strongly agreed to the statement at a slightly higher prevalence when compared to male students (58.2% vs. 67.6%) (this difference was statistically significant (χ2 p<0.001)). By age, older adolescents strongly agreed at higher rates than younger adolescents (75.0% vs. 58.5%) (this difference was statistically significant (χ2 p<0.001)). Rates of strong agreeance ranged from 55.7% in Niger to 60.9% in Mali and 71.9% in Burkina Faso (this difference was statistically significant (χ2 p<0.001)).

Figure 19 | Agreement with statement that adolescent can ask questions about puberty to a trusted adult



Self-efficacy related to unwanted sexual attention

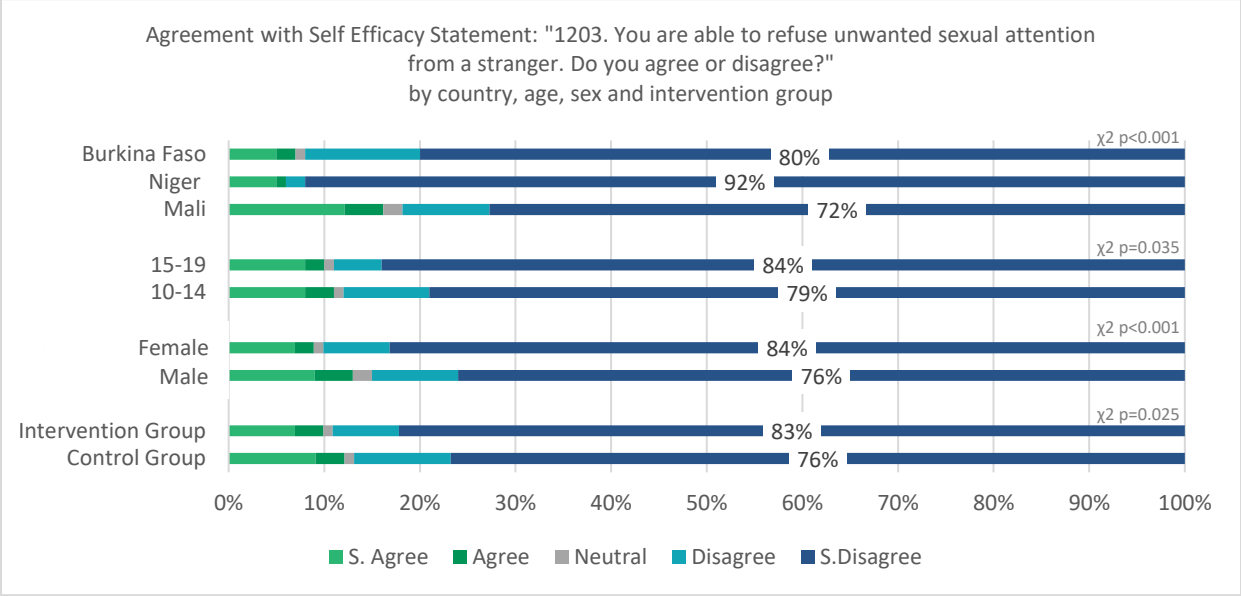
All respondents were asked three questions related to agreement about their self-efficacy related to unwanted sexual attention. These three items asked whether respondents agreed or disagreed with the following statements:

- 1203. You are able to refuse unwanted sexual attention from a stranger.
- 1204. If it happened, you could refuse unwanted sexual attention from a relative or someone else you know.
- 1205. You could tell a trusted adult about any unwanted sexual attention you may have experienced.

With respect to the first item, a majority (80.2%) of adolescents in the combined sample strongly agreed that they could refuse unwanted sexual attention from a stranger. As shown in Figure 20, when broken down by sub-group, we find that more (82.9%) adolescents in the intervention group than in the control group (77.5%) strongly agreed that they could refuse unwanted sexual attention from a stranger (this difference was not statistically significant ($\chi 2$ p=0.025)). By sex, 76.1% of boys and 84.2% of girls strongly agreed with this statement (this difference was

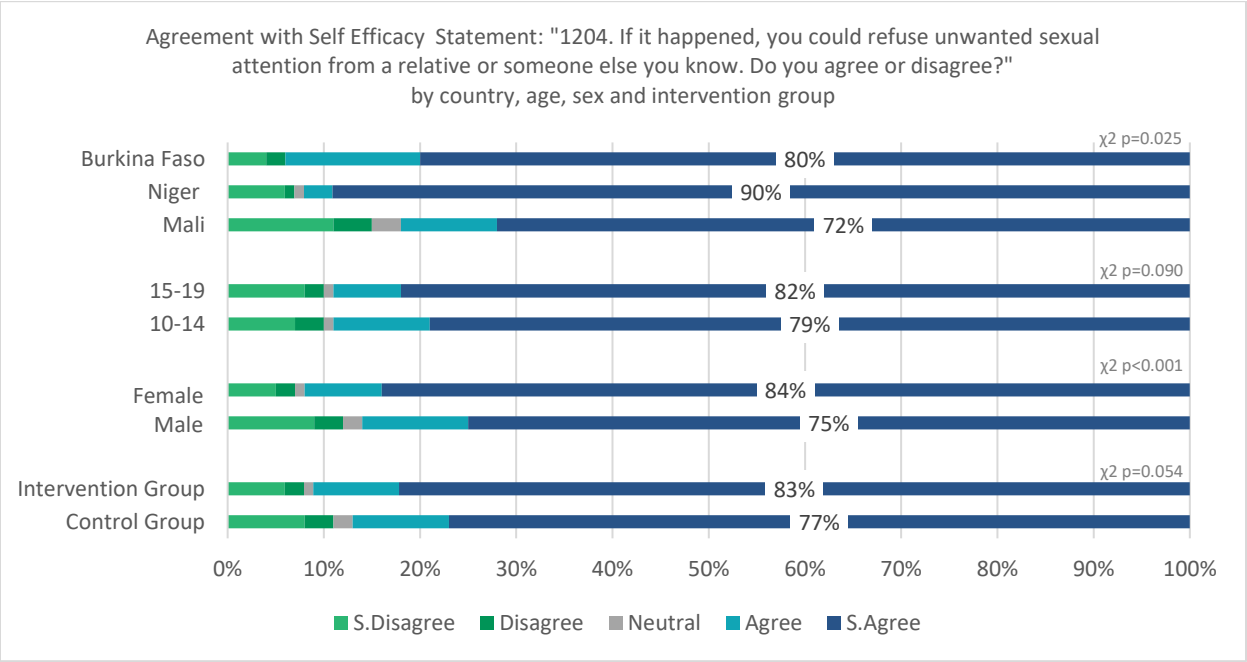
statistically significant (χ2 p<0.001)). A greater proportion of older adolescents (83.9%) than very young adolescents (78.8%) strongly agreed that they could refuse unwanted sexual attention from a stranger (this difference was statistically significant (χ2 p=0.035)). By country, 79.7% of Burkinabe respondents, 71.9% of Malian respondents, and 91.5% of Nigerien respondents strongly agreed they could refuse (this difference was statistically significant (χ2 p<0.001)).

Figure 20 | Proportion of adolescents agreeing they could refuse unwanted sexual attention from a stranger by country, age, sex, and intervention group



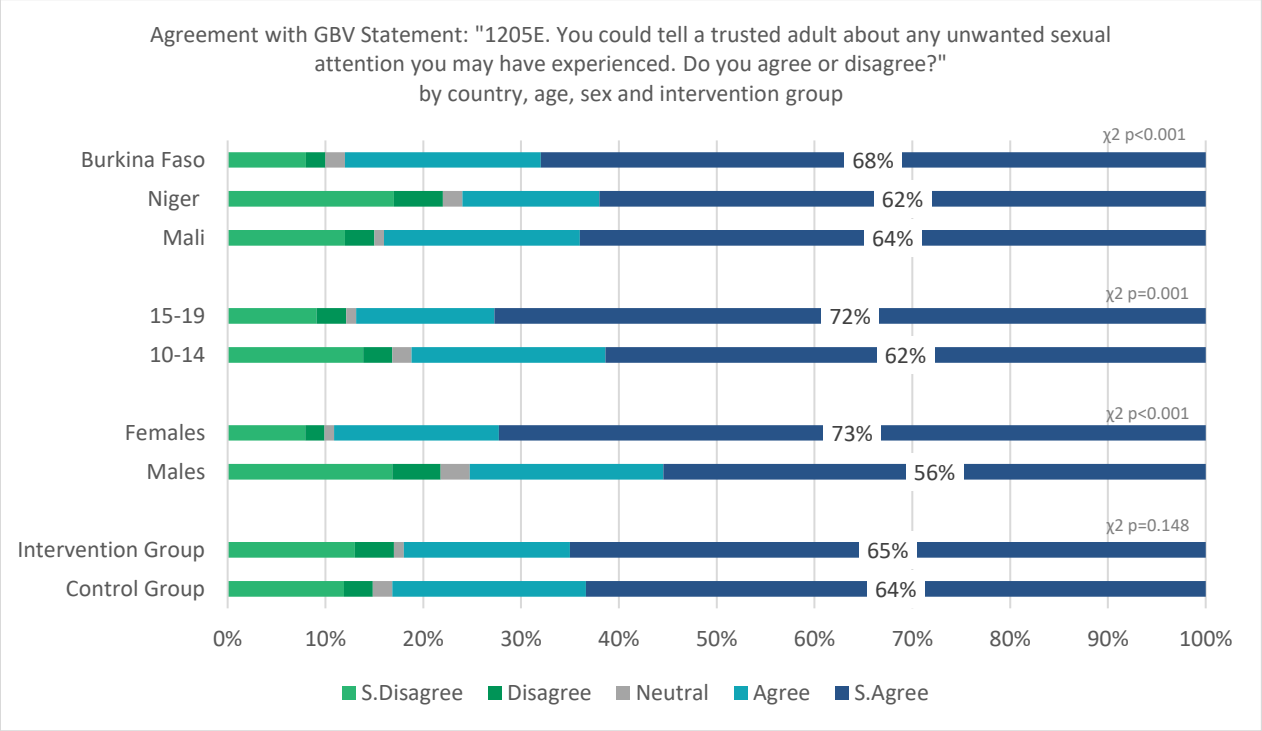
When asked if they could refuse unwanted sexual attention from a relative or someone else they knew, a smaller proportion of adolescents (as compared refusing attention from a stranger) strongly agreed they could refuse, with 79.8% adolescents in the overall sample strongly agreeing with the statement. As shown in Figure 21, among the intervention group 82.4% of adolescents strongly agreed while 77.3% of the control group strongly agreed (marginally statically significant, χ2 p=0.054). A smaller proportion of boys as compared to girls strongly agreed (75.4% of boys and 84.1% of girls, this difference was statistically significant (χ2 p<0.001)). By age, 79.2% of very young adolescents and 81.6% of older adolescents strongly agreed (this difference was not statistically significant (χ2 p<0.090)). By country, 80.2% of Burkinabe, 71.8% of Malian, and 89.7% of Nigerien respondents strongly agreed they could refuse unwanted sexual attention from a relative or someone else they knew (this difference was statistically significant (χ2 p<0.001)).

Figure 21 | Proportion of adolescents agreeing they could refuse unwanted sexual attention from a relative or someone they knew by country, age, sex, and intervention group



A small majority (64.4%) of adolescents in the combined three-country sample strongly agreed that they could tell a trusted adult about unwanted sexual attention they had experienced. Figure 22 demonstrates minimal differences by intervention groups (65.0% of intervention group vs. 63.8% of control group, this difference was not statistically significant (χ2 p=0.148)). By sex, fewer boys (55.8%) than girls (72.9%) strongly agreed with this statement (this difference was statistically significant (χ2 p<0.001)). By age, 61.6% of very young adolescents and 72.0% of older adolescents strongly agreed with this statement (this difference was statistically significant (χ2 p=0.001)). By country, 68.3% of Burkinabe respondents, 63.4% of Malian respondents, and 61.5% of Nigerien respondents strongly agreed they could tell a trusted adult about unwanted sexual attention they had experienced (this difference was statistically significant (χ2 p<0.001)).

Figure 22 | Proportion of adolescents agreeing they could tell an adult about unwanted sexual attention they had experienced



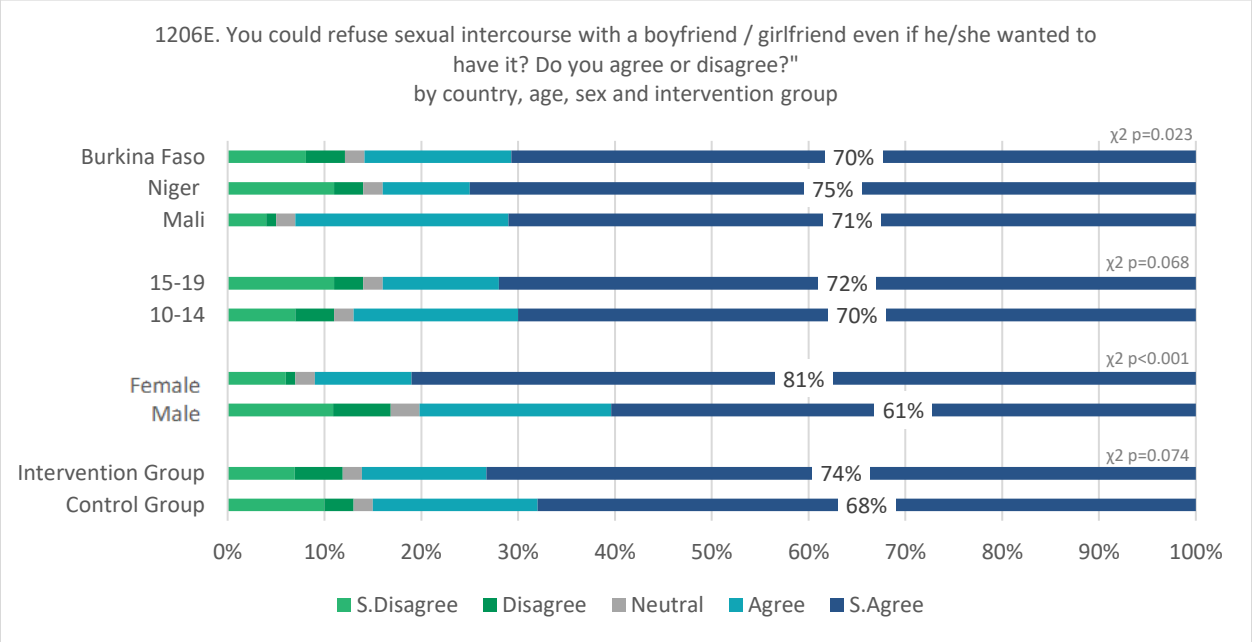
Self-efficacy in wanted and safe sex

Three survey items were designed to assess adolescents' perceived self-efficacy in refusing sexual intercourse with a partner, insisting on condom use even if a partner did not want to, and—among female adolescents—whether they would have confidence in their ability to use contraception.

The item assessing perceived self-efficacy in refusing sexual intercourse with a partner was not asked of in-school adolescents in Mali (n=654), nor among in-school very young adolescents in Niger (n=435), as this topic was not covered in their respective curricula. Exact item wording was as follows: "You could refuse sexual intercourse with a boyfriend / girlfriend even if he/she wanted to have it. Do you agree or disagree?" Over two-thirds (71.1%) of respondents in the overall sample strongly agreed and 85.9% agreed or strongly agreed with this statement. As shown in Figure 23 by intervention group, 73.9% of the intervention group strongly agreed compared to 68.3% of the control group (this difference was not statistically significant ($\chi 2$ p=0.074)). By sex, only 60.7% of boys strongly agreed as compared to 81.4% of girls strongly agreed with the statement (this difference was statistically significant ($\chi 2$ p<0.001)). By age, 70.3% of very young adolescents and 72.4% of older adolescents strongly agreed with the statement (this difference was not statistically

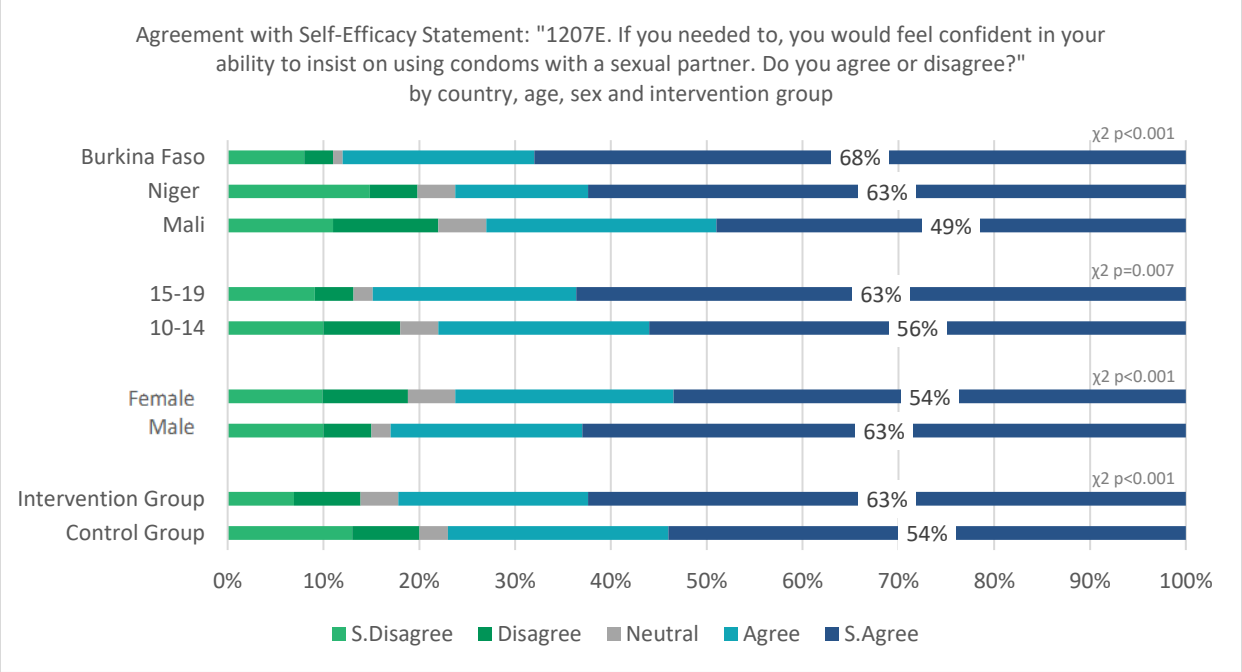
significant (χ2 p=0.068)). By country, 70.1% of Burkinabe respondents, 70.9% of Malian respondents, and 75.1% of Nigerien respondents strongly agreed that they could refuse sexual intercourse with a boyfriend/girlfriend even if he/she wanted to have it (this difference was statistically significant (χ2 p=0.023)).

Figure 23 | Self-efficacy in refusing unwanted sex with boyfriend/girlfriend



For the item assessing insistence on condom use, only very young in-school Nigerien adolescents were not assessed (n=435), as topics related to contraception and self-efficacy were not included in their curriculum and this question was deemed too sensitive to ask of adolescents 10-14 years. Of the remaining 1,464 adolescents, 58.7% strongly agreed with the item stating, "If you needed to, you would feel confident in your ability to insist on using condoms with a sexual partner." As shown in Figure 24, by intervention group, 63.2% of the intervention group strongly agreed compared to 54.2% of the control group (this difference was statistically significant (χ2 p<0.001)). This level of agreement was 63.0% among boys and 53.7% among girls (this difference was statistically significant (χ2 p<0.001)). By age, 56.2% of very young adolescents and 63.4% of older adolescents strongly agreed (this difference was statistically significant (χ2 p=0.007)). Strong agreement was indicated by 68.1% of Burkinabe respondents, 49.4% of Malian respondents, and 62.5% of Nigerien respondents (this difference was statistically significant (χ2 p<0.001)).

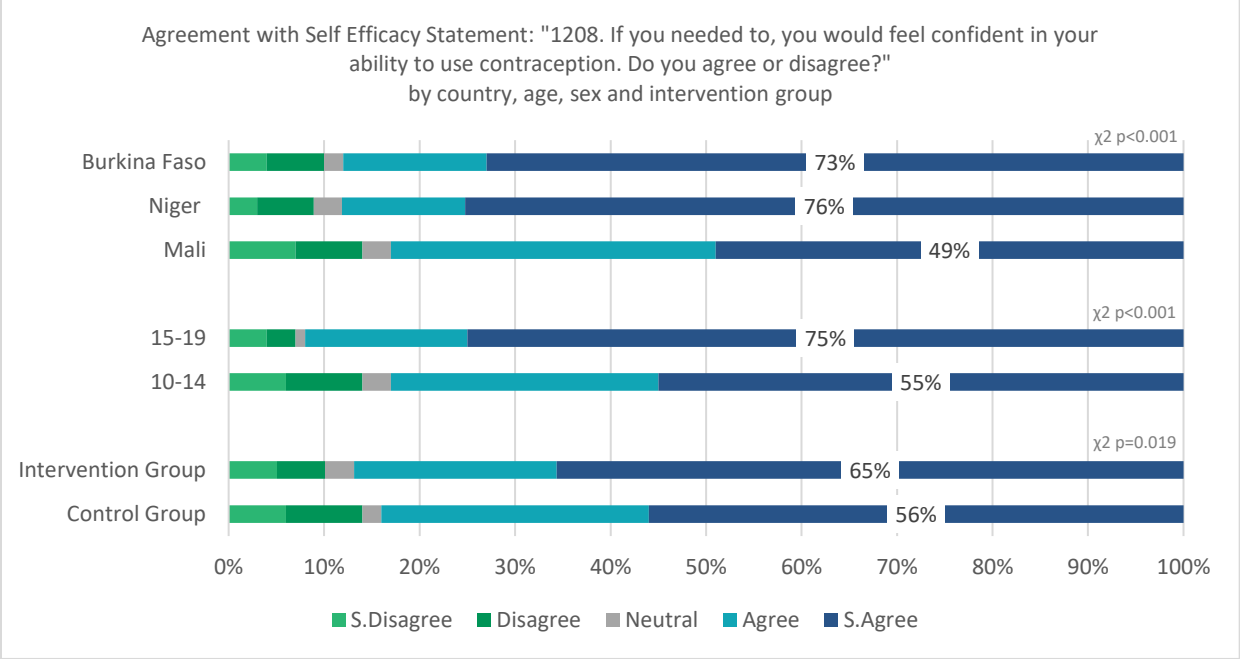
Figure 24 | Proportion of adolescents agreeing they could insist on condom use



Finally, adolescent girls (except for in-school Nigeriennes ages 10-14 (n=226) were asked, "If you needed to, you would feel confident in your ability to use contraception." This question was not asked of primary students in Niger, as topics related to contraception and self-efficacy were not included in their curriculum and this question was deemed too sensitive to ask of adolescents 10-14 years. Overall, 61.4% of adolescent girls strongly agreed and 24.2% agreed they would feel confident in their ability to use contraception with this statement. Figure 25 shows that by intervention group, 66.5% of the intervention group strongly agreed compared to 56.3% of the control group (this difference was statistically significant ($\chi 2$ p=0.019)).

By age, 54.9% of very young adolescents and 74.8% of older adolescents strongly agreed (this difference was statistically significant ($\chi 2$ p<0.001)). By country, 72.9% of Burkinabe respondents, 49.2% of Malian respondents, and 76.4% of Nigerienne respondents strongly agreed they would feel confident in their ability to use contraception (this difference was statistically significant ($\chi 2$ p<0.001)).

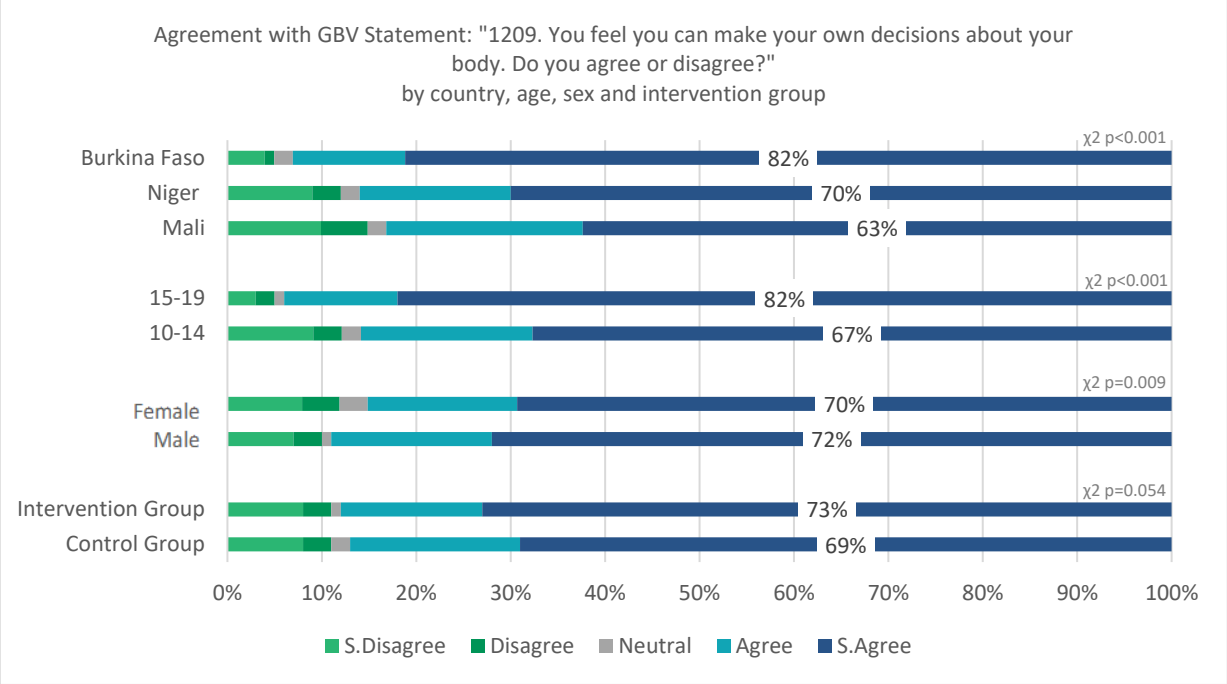
Figure 25 | Proportion of adolescents agreeing feel confident in their ability to use contraception



Self-efficacy in bodily autonomy

All adolescents in the sample were asked whether they agreed or disagreed with the following statement about bodily autonomy: “You feel you can make your own decisions about your body.” Overall, 71.1% of adolescents strongly agreed with this statement. As shown in Figure 26, by intervention group, 73.4% of the intervention group strongly agreed compared to 68.8% of the control group (marginal statistical significance (χ2 p=0.054)). By sex, a higher proportion of boys (72.4%) strongly agreed, as compared to 69.9% of girls (this difference was statistically significant (χ2 p=0.009)). By age, 67.1% of very young adolescents and 82.1% of older adolescents strongly agreed that they could make their own decisions about their body (this difference was statistically significant (χ2 p<0.001)). The proportion of adolescents strongly agreeing with the statement about bodily autonomy by country was 81.7% in Burkina Faso, 62.7% in Mali, and 70.3% in Niger (this difference was statistically significant (χ2 p<0.001)).

Figure 26 | Self-efficacy in bodily autonomy



Self-efficacy & peer pressure

To assess knowledge of peer pressure, adolescents were asked whether a series of statements about peer pressure were true. These included:

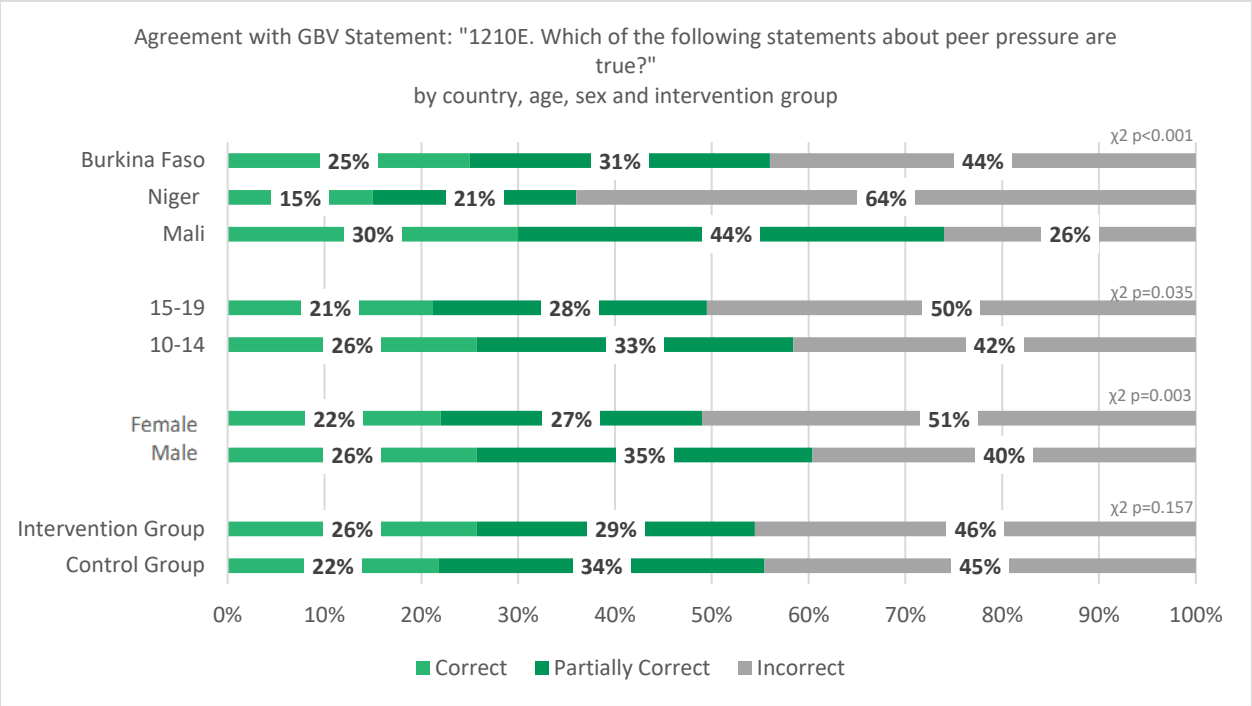
- 1210. Which of the following statements about peer pressure are true? (select all that apply)
    1. Peer pressure is when friends influence your attitudes, values and behavior.
    2. You are influenced by peers because you want to be accepted.
    3. Peer pressure is always negative. (incorrect)
- 1211. If it happens, you are able to resist negative peer pressure. Do you agree or disagree?

These questions were not asked of in-school Malian adolescents or very young adolescents in school in Niger, as topics related to self-efficacy and peer pressure were not included in their respective curricula.

Less than one-quarter (23.8%) of adolescents correctly defined peer pressure and chose its mechanism of action (i.e., correctly selecting both responses 1 and 2 above). Roughly a third (31.1%) chose one of the two correct responses (coded as 'partially correct'). As shown in Figure 27, by intervention group, 26.0% of the intervention group answered correctly compared to 21.7%

of the control group although overall the differences by study arm were not statistically significant (χ2 p=0.157). By sex, 25.6% of boys and 22.0% of girls answered correctly (this difference was statistically significant (χ2 p=0.003)). By age, 25.6% of very young and 21.3% of older adolescents answered correctly; interestingly a greater proportion of older adolescents answered incorrectly (this difference was statistically significant (χ2 p=0.035)). By country, the proportion of adolescents choosing both of the two correct statements about peer pressure was: 25.2% in Burkina Faso, 30.1% of the surveyed out-of-school respondents in Mali, and 15.0% in Niger (among out-of-school and older in-school adolescents, this difference was statistically significant (χ2 p<0.001)).

Figure 27 | Knowledge of peer pressure mechanism of action

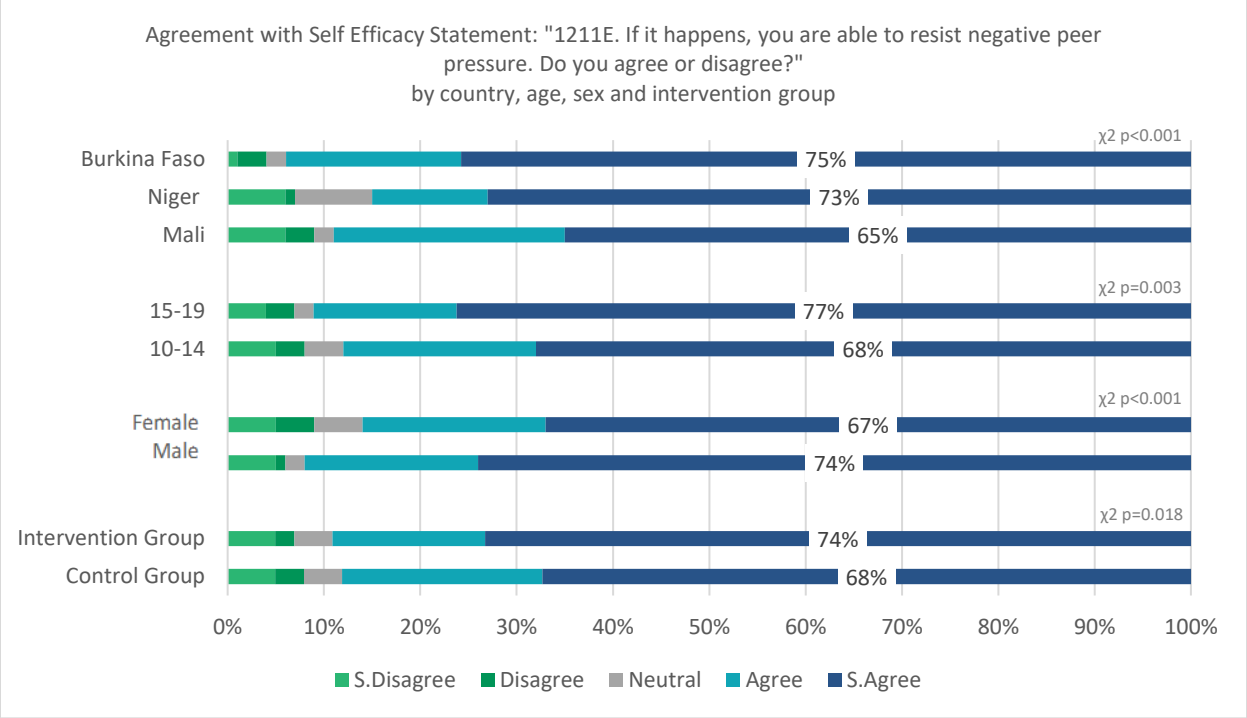


Finally, all adolescents were asked whether they would be able to resist negative peer pressure if they experienced it. Over two-thirds (70.7%) of adolescents in the overall sample strongly agreed that they could resist negative peer pressure.

As shown in Figure 28, adolescents in the intervention group had a higher level of strong agreement (73.5%) when compared to adolescents in the control group (67.9%), and this difference reached statistical significance (χ2 p=0.018). By sex, 74.1% of boys and 67.2% of girls strongly agreeing they could resist negative peer pressure (this difference was statistically

significant (χ2 p<0.001)). A greater proportion of older adolescents (77.3%) than very young adolescents (68.2%) strongly agreed they could resist negative peer pressure (this difference was also statistically significant (χ2 p=0.003)). By country, the proportion of adolescents strongly agreeing that they could resists negative peer pressure was 75.5% in Burkina Faso, 64.5% in Mali, and 73.3% in Niger (this difference was statistically significant (χ2 p<0.001)).

Figure 28 | Proportion of adolescents agreeing they could resist negative peer pressure



10. CHILD MARRIAGE

Two survey items assessed adolescent views on the appropriateness of child marriage, and three survey items assessed adolescents' perceptions on their ability to choose when and with whom to marry. The five items were worded as follows:

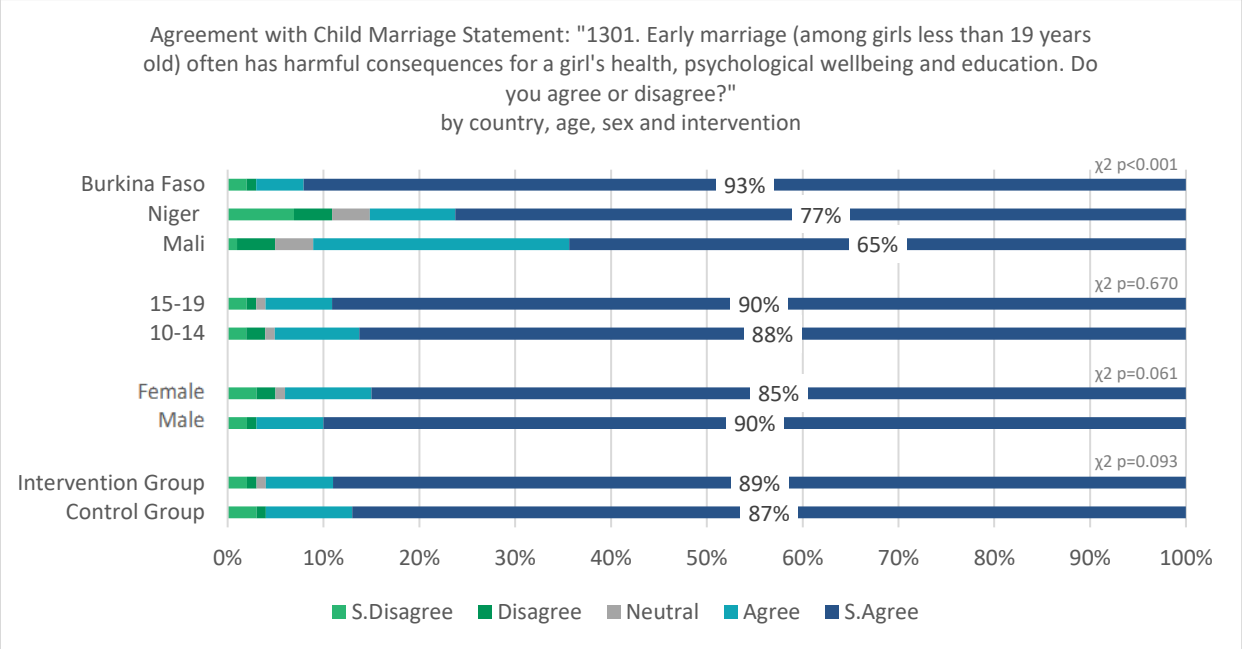
- 1301. Early marriage often has harmful consequences for a girl's health, psychological wellbeing and education. Do you agree or disagree?
- 1302. Early pregnancies carry high health risks for a young woman/girl and her baby. Do you agree or disagree?
- 1303. You have the right to choose whether, when and with whom you want to marry. Do you agree or disagree?

- 1304. If your mother/father want to marry you off, but you do not want to, would you be able to refuse?
- 1305. If your mother/father want to marry you off, but you do not want to, would you be able to seek help from a trusted adult to prevent your marriage?

Item 1301 was not asked of in-school respondents in Mali (n=654) or Niger (n=567); and item 1302 was not asked of in-school Malian respondents (n=654) or of very young in-school Nigerien respondents (n=435), as these topics were not covered in their respective curricula. Items 1303, 1304, and 1305 were asked of all respondents.

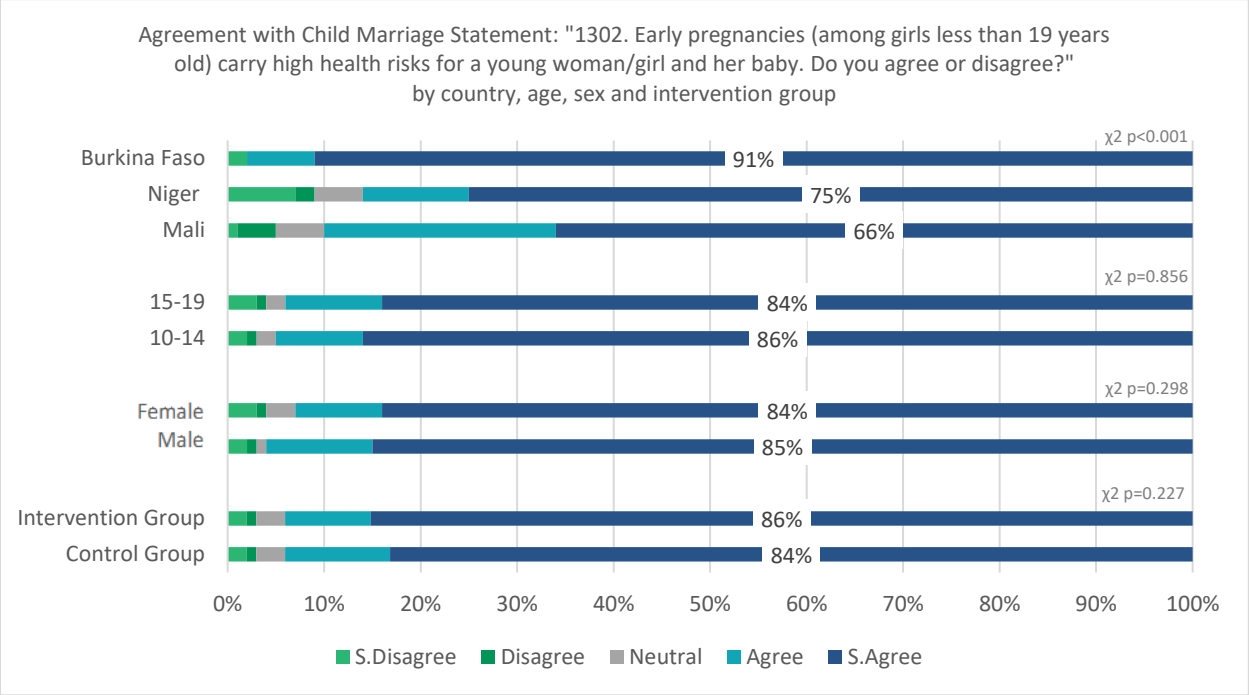
With respect to the first item (1301) in this series, a large majority (87.8%) of respondents (representing all Burkinabe respondents and OOS respondents in Mali and Niger) strongly agreed that early marriage often has harmful consequences for a girls' health, psychological wellbeing and education. As shown in Figure 29, adolescents in the intervention group had a slightly higher level of strong agreement (88.5%) when compared to adolescents in the control group (87.0%), though this difference was not statistically significant ($\chi 2$ p=0.093). This proportion was slightly higher among boys (90.2%) as compared to girls (85.4%), but again not statistically significant ($\chi 2$ p=0.061). It was relatively even across age category, with 86.7% of very young and 90.1% of older adolescents strongly agreeing (this difference was not statistically significant ($\chi 2$ p=0.670)). By country, the proportion of adolescents strongly agreeing that early marriage often has harmful consequences for a girls' health, psychological wellbeing and education was 92.7% in Burkina Faso, 64.7% among the OOS respondents in Mali, and 76.4% among the OOS respondents in Niger (this difference was statistically significant ($\chi 2$ p<0.001)).

Figure 29 | Proportion of adolescents agreeing that early marriage often has harmful consequences for a girl's health, psychological wellbeing and education



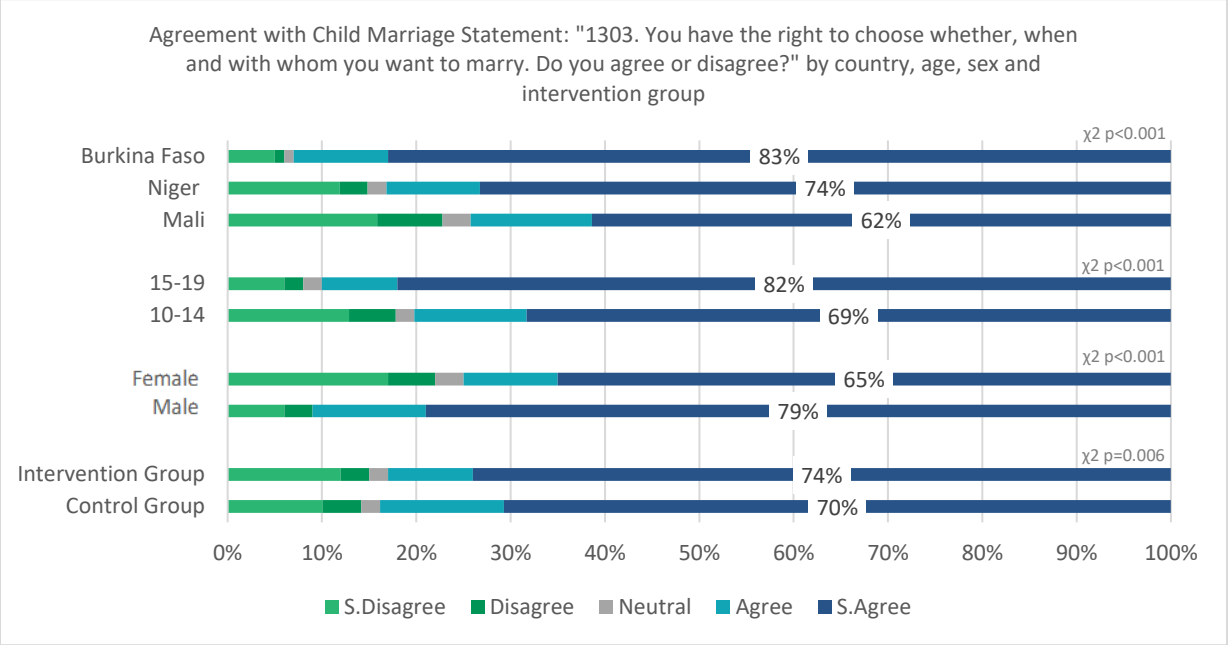
When asked whether early pregnancies carry high health risks for a young woman/girl and her baby, nearly all respondents (OOS Malians, OOS and older IS Nigeriens, and all Burkinabe respondents) strongly agreed (84.8%) or agreed (9.6%) that early pregnancies carry high health risks for a young woman/girl and her baby. As shown in Figure 30, adolescents in the intervention group had a higher level of strong agreement (85.9%) when compared to adolescents in the control group (83.8%), though this difference was not statistically significant (this difference was not statistically significant (χ2 p=0.227)). The proportion of adolescents by sex was quite even with 85.3% of adolescent males and 84.4% of adolescent females responding with strong agreement (this difference was not statistically significant (χ2 p=0.298)). Younger adolescents had a higher level of strong agreement (85.5%) as compared to older adolescents (83.9%) (this difference was not statistically significant (χ2 p=0.856). Burkina Faso had the highest proportion of adolescents indicating strong agreement (90.6%), followed by Niger (75.3%), and Mali (66.4%) (this difference was statistically significant (χ2 p<0.001)).

Figure 30 | Proportion of adolescents agreeing that early marriage often has harmful consequences for a girl's health, psychological wellbeing and education



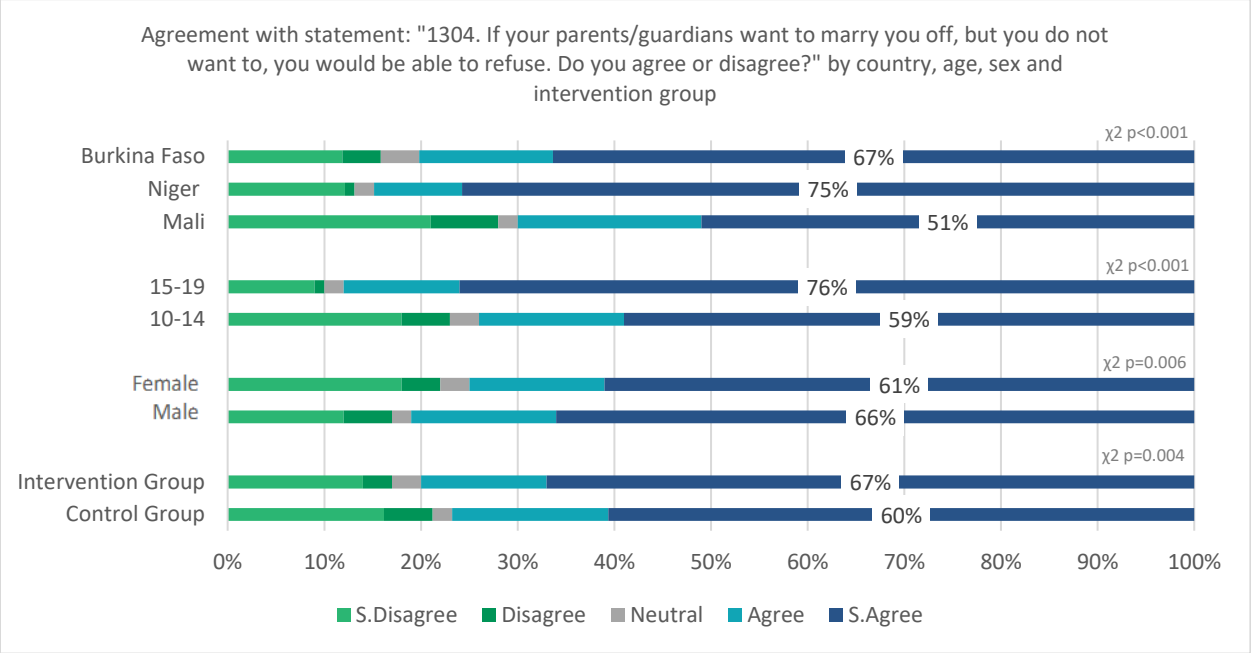
Less than three-quarters (72.1%) of respondents in the overall sample indicated strong agreement with the statement that they have the right to choose whether, when and with whom they want to marry, with 11.2% of respondents indicating they strongly disagreed. When examined by sub-group, as shown in Figure 31, adolescents in the intervention group had a higher level of strong agreement (74.1%) when compared to adolescents in the control group (70.1%), but they also had a higher level of strong disagreement (12.2% in intervention; 10.2% in control group) (this difference was statistically significant (χ2 p=0.006)). There is variation in this indicator by sex, with a greater proportion of girls strongly agreeing with this statement as compared to boys (65.4% of girls versus 79.0% of boys) (this difference was statistically significant (χ2 p<0.001)). By age, 68.5% of very young and 81.7% of older adolescents strongly agreed that they had the right to choose conditions of their marriage (this difference was statistically significant (χ2 p<0.001). By country, 82.6% of Burkinabe respondents, 61.9% of Malian respondents, and 73.5% of Nigerian respondents strongly agreed they had the right to choose whether, when, and with whom to marry (this difference was statistically significant (χ2 p<0.001)).

Figure 31 | Proportion of adolescents agreeing they have the right to choose whether, when, and with whom to marry



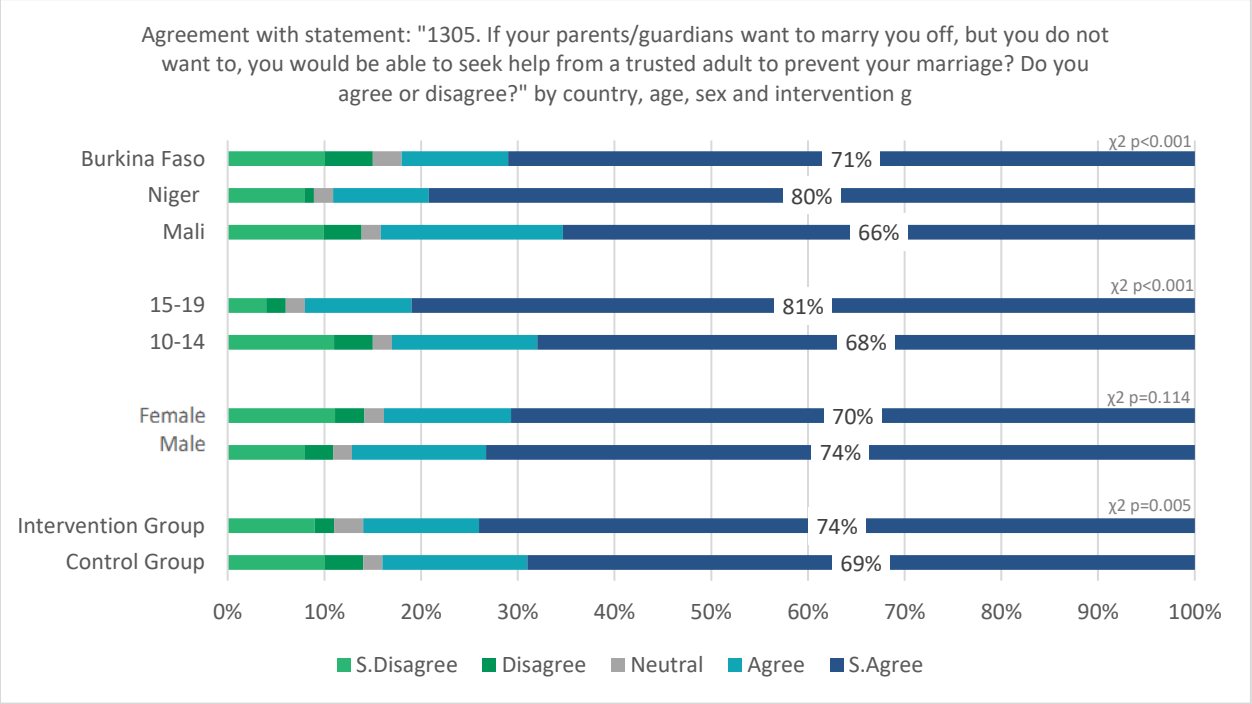
In the overall sample, a small majority (63.3%) of adolescents strongly agreed they could refuse if their mother/father wanted to marry them off, with 15.2% stating they strongly disagreed they could negotiate with their parents about an unwanted marriage. As shown in Figure 32, adolescents in the intervention group strongly agreed at higher rates and strongly disagreed at lower rates when compared to adolescents in the control group (67.0% versus 59.6% strong agreement, and 14.2% versus 16.3% strong disagreement by intervention and control group, respectively (this difference was statistically significant ($\chi 2$ p=0.004)). By sex, more boys strongly agreed compared to girls, with 60.8% of girls strongly agreeing and 65.9% of boys strongly agreeing (this difference was statistically significant ($\chi 2$ p=0.006)). Younger adolescents strongly agreed at lower rates as compared to older adolescents (58.7% versus 75.6%, respectively (this difference was statistically significant ($\chi 2$ p<0.001)). By country, 66.6% of Burkinabe respondents, 50.8% of Malian respondents, and 75.4% of Nigerien respondents indicated they strongly agreed they could negotiate if their mother/father wanted to marry them off, but the adolescent did not want to be married (this difference was statistically significant ($\chi 2$ p<0.001)).

Figure 32 | Proportion of adolescents agreeing they could refuse if their parents wanted them to get married



In the overall sample, when asked whether they would be able to seek help from a trusted adult to prevent being married, 71.7% of respondents strongly agreed that they would be able to do so. When examined by sub-group, as seen in Figure 33, 74.1% of adolescents in the intervention group and 69.4% of adolescents in the control group strongly agreed (this difference was statistically significant (χ2 p=0.005)). By sex, 73.5% of boys and 70.0% of girls strongly agreed, a difference that was not statistically significant (this difference was not statistically significant (χ2 p=0.114)). By age, 68.2% of younger and 81.3% of older adolescents strongly agreed (this difference was statistically significant (χ2 p<0.001)). Malian respondents had the lowest proportion of strong agreement (65.8%), followed by Burkinabe respondents (71.3%), and Nigerien respondents (79.6%) (this difference was statistically significant (χ2 p<0.001)).

Figure 33 | Proportion of adolescents agreeing they could seek help from a trusted adult to prevent their marriage if their parents did want to arrange their marriage



Impact Indicator 5: Decrease in adolescent marriage

Impact indicator 5 is the decrease in the proportion of women 10-19 years who were married or in union before age 18 and before age 15. Overall, 2.2% of girls (23/1,046 girls) were married before age 18 (Indicator 5.A) and 0.57% (6/1,046 girls) were married before age 15 (Indicator 5.B). Note that these adolescents may have been married before the start of the intervention. As shown in Table 32, the differences between the control and intervention groups on these indicators were relatively small and statistically insignificant (p=0.931 (5A) and p=0.826 (5B), respectively).

Table 32 | Impact Indicator 5: Decrease in adolescent marriage

Impact Indicator 5A: Decrease in proportion of female adolescents married before age 18					
Main Effects					
	Descriptive Statistics		Regression Results		
	n	%	parameter estimate	95% CI	p-value
Control	519	2.12%	OR = 1.06	(0.26, 4.24)	p = 0.931
Intervention	527	2.28%			
Interaction Terms					
sex (M,F) * studygroup	*NA – Indicator pertains only to female respondents*				

age (<15, >=15) * studygroup	1,046	NA	OR = 1.68	(0.10, 27.60)	p = 0.718
school status (IS,OOS) * studygroup	1,046	NA	OR = 0.20	(0.0041, 10.17)	p = 0.426
marital status * studygroup	*NA – Indicator pertains only to married respondents*				

Impact Indicator 5B: Decrease in proportion of female adolescents married before age 15					
Main Effects					
	Descriptive Statistics		Regression Results		
	n	%	parameter estimate	95% CI	p-value
Control	519	0.58%	OR = 1.28	(0.14, 11.62)	p = 0.826
Intervention	527	0.57%			
Interaction Terms					
sex (M,F) * studygroup	*NA – Indicator pertains only to female respondents*				
age (<15, >=15) * studygroup	*NA – Indicator pertains only to female respondents ages 10-14*				
school status (IS,OOS) * studygroup	*0.arm#0.schoolenrol_cat !=0 predicts failure perfectly*				
marital status * studygroup	*NA – Indicator pertains only to married respondents*				

Regression analyses that include interaction terms for school status did not indicate statistically significant effect modification, thus indicating no differential effects of the intervention by adolescent school status (in-school compared to out-of-school).

11. FEMALE GENITAL CUTTING

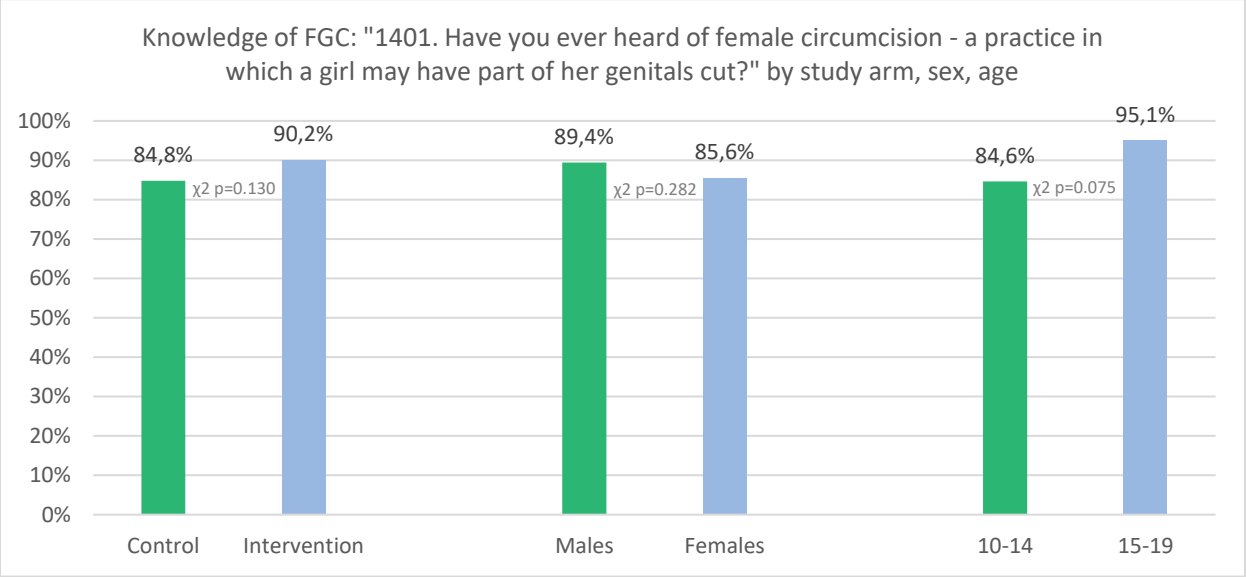
Finally, four survey items about female genital cutting (FGC) were included for Burkinabe respondents. These survey items were not asked of adolescents in Mali or Niger, as this topic was not included in their respective curricula. These included:

- 1401. Have you ever heard of female circumcision - a practice in which a girl may have part of her genitals cut? (yes/no)
- 1402. A girl should be circumcised. Do you agree or disagree?
- 1403. FGC causes serious physical and mental health complications for girls and women. Do you agree or disagree?
- 1404. Do you think that this practice should be continued? (yes/no)

A total of 87.5% of Burkinabe respondents had heard of FGC. As demonstrated in Figure 34, a greater proportion of adolescents in the intervention group as compared to the control group had heard of FGC (90.2% of intervention group, 84.8% of control group) although this difference was not statistically significant ($\chi 2$ p=0.130). Differences by sex and age were also not statistically

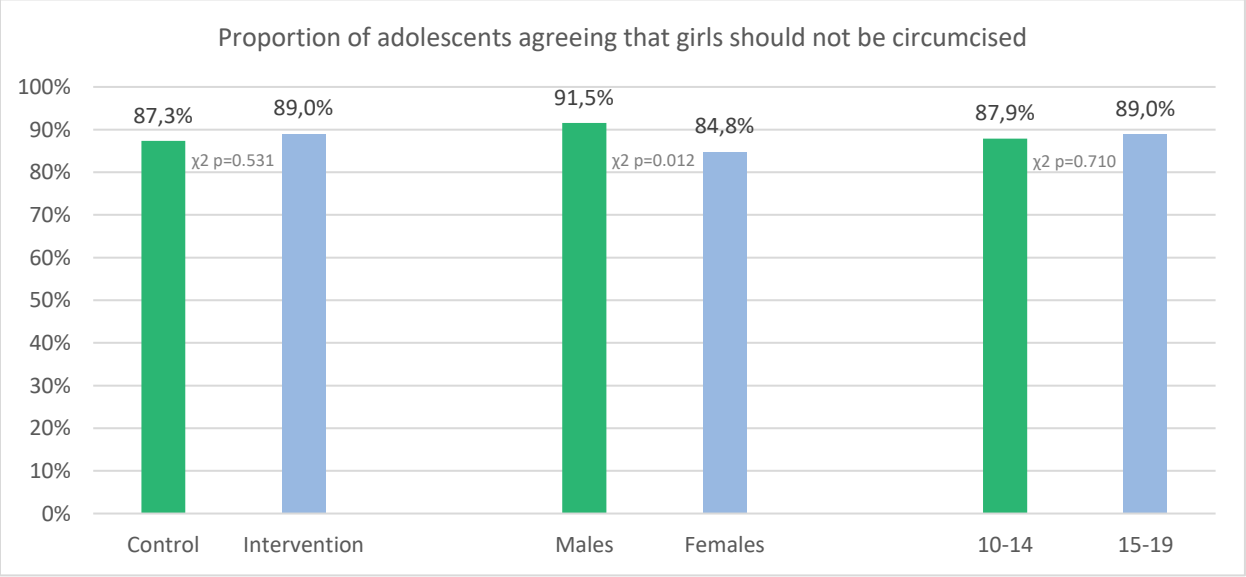
significant: 89.4% of boys, 85.6% of girls (χ2 p=0.282) had heard of FGC. A total of 84.6% of 10-14 year olds, 95.1% of 15-19 year olds had heard of FGC (χ2 p=0.075).

Figure 34 | Proportion of Burkinabe adolescents who have heard about female circumcision by intervention group, sex, and age



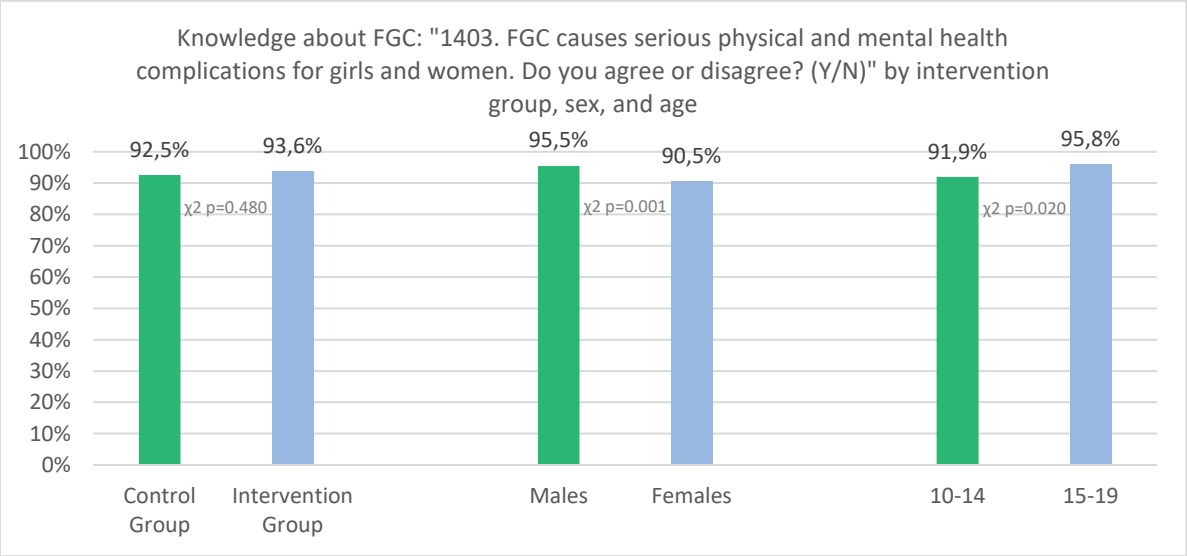
A majority (88.2%) of respondents stated a girl should not be circumcised. The only statistically significant differences by sub-group was between boys and girls, with 91.5% of boys versus 84.8% of girls agreeing that girls shouldn't be circumcised (χ2 p=0.012) (see Figure 35).

Figure 35 | Proportion of Burkinabe adolescents agreeing that girls should not be circumcised



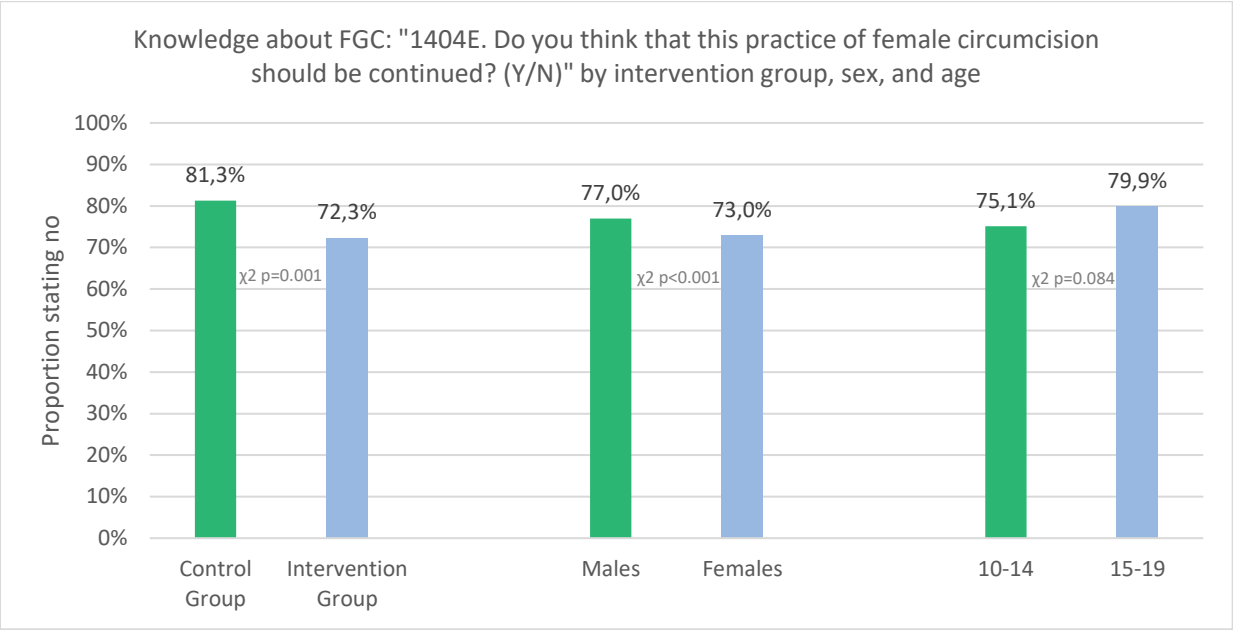
The vast majority (93.1%) of respondents agreed with the statement that FGC causes serious physical and mental health complications for girls and women. As shown in Figure 36, when broken down by sub-group, we find that a relatively similar proportion of control and intervention respondents agreed that FGC causes serious physical and mental health complications for girls and women (96.4% of intervention group, 93.6% of control group (this difference was not statistically significant (χ2 p=0.480)). The differences between sexes and age groups were statistically significant, with 95.5% of boys and 90.5% of girls (χ2 p=0.001) and 91.9% of 10-14 year olds and 95.8% of 15-19 year olds (χ2 p=0.020) agreeing with the statement that FGC causes serious physical and mental health complications for girls and women.

Figure 36 | Proportion of Burkinabe adolescents who agree that FGC causes serious physical and mental health complications for girls and women by intervention group, sex, and age



Finally, when asked whether the practice of female circumcision should be continued, roughly three-quarters (76.6%) of respondents stated it should *not* be continued. As shown in Figure 37, when disaggregated by sub-group, we see that a higher proportion of adolescents in the intervention group felt FGC should not be continued (81.3% of intervention group, 83.6% of control group (this difference was statistically significant (χ2 p<0.001)). More boys than girls felt the practice should not be continued (80.0% of boys, 71.1% of girls (this difference was statistically significant (χ2 p<0.001)). Finally, more of the youngest adolescents than the older adolescents felt the practice should not continue (76.6% of 10-14 year olds, 73.2% of 15-19 year olds (this difference was not statistically significant (χ2 p=0.084)).

Figure 37 | Proportion of Burkinabe adolescents stating FGC should *not* be continued (in overall sample, and by sex and age)



CONCLUSIONS

The Adolescent Transitions in West Africa (ATWA) project had a relatively limited impact in Year 1, likely due to the limitations related to program dose – that is the lessons received by adolescents As noted in the beginning of the report, the dose was impacted by: content of curricula; variations in topics that teachers are asked to cover in specific grades, and in what topics they decide to teach, as well as the delay of the in-school intervention in Mali, and ongoing security concerns which led to difficulty in monitoring and follow up in the three countries.

Despite these challenges, ATWA contributed to impact among adolescents on the following indicators: when assessed using intent to treat analyses (i.e., looking at differences between the control and intervention groups, regardless of intervention 'dose'), we see improvements in Indicator 1.5.A – more known modern contraceptive methods among in-school female 10-14 year-olds receiving 60% or more of the ATWA sessions; Indicator 1.7 – improved knowledge about STI risk, prevention, and treatment among out-of-school adolescents; Indicator 1.11.A – higher likelihood of soaking menstrual materials among in-school girls; Indicator 1.11.C – higher likelihood of exposing menstrual materials to the sun among in-school girls; and Indicator 1.2.6

– higher likelihood of identifying that menstruation is a normal biological function among out-of-school and unmarried adolescents in the intervention group (as compared to the control group).

When assessed using per protocol analyses (i.e., analyses that account for the school-level dose of the ATWA intervention), we also see improvements in Indicator 1.1 – increased intent to use modern contraception; 1.11.A) higher likelihood of soaking menstrual materials among all girls receiving 60% or more of the ATWA sessions.

The Year 1 evaluation used a strong, pre-/post-test design with control group. Although this study design is commonly used in evaluation design, a true longitudinal design wherein the same adolescents are surveyed at each time point would improve our ability to assess ATWA's impact on the outcome indicators. This longitudinal design was deemed too difficult to obtain during Year 1 given the significant political turmoil experienced in much of the implementing regions. The Year 2 evaluation, will however, use a longitudinal sampling strategy. This will allow a quasi-experimental study design and the use of a difference-in-differences statistical approach, enabling an even stronger way to assess ATWA impact in the lives of adolescents in these West African regions.

APPENDICES

Appendix A. ATWA Curriculum by Country

[please find attached]

Appendix B. ATWA M&E Framework

[please find attached]

Appendix C. ATWA Survey Instrument

[please find attached]

Appendix D. Survey Items by Respondent Type

[please find attached]

Appendix E. Sampling Frame by Country

[please find attached]

Appendix F. Data Collection Technical Reports (GRADE Africa)

[please find attached - F.1 - Baseline; F.2 - Endline]

Appendix G. Endline Findings by Country

[please find attached]