PASSAGES PROJECT

GROWING UP GREAT!

GEAS Wave 2 Report

JULY 2019

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Passages

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TABLE OF CONTENTS

TABLE OF FIGURES

LIST OF TABLES

LIST OF ACRONYMS

ACASI. -- Audio Computer-Assisted Self-Interview
ASRH. --adolescent sexual and reproductive
CBOs. -- community-based organization
DRC. -- Democratic Republic of Congo
GBV. -- Gender-based violence
GEAS. -- Global Early Adolescent Study
GUG!. -- *Growing Up Great!*
HIV. -- *Human Immunodeficiency Virus*
IRH. -- Institute for Reproductive Health
IS. -- *In School*
JHSPH. -- *Johns Hopkins School of Public Health*
KSPH. -- Kinshasa School of Public Health
MOE. -- Ministry of Education
MOH. -- Ministry of Health
OOS. -- Out of School
PNSA. -- Programme National de la Santé des Adolescents
SGBV. -- sexual and gender-based violence
SRH. -- Sexual and reproductive health
STIs. -- sexually transmitted infections
USAID. -- United States Agency for International Development
VYAs. -- Very Young Adolescents

EXECUTIVE SUMMARY

Background

The Global Early Adolescent Study (GEAS) assesses the formation of gender norms and their relation to health and behavioral outcomes during adolescence. In Kinshasa, the study also evaluates the impact of Growing Up GREAT! (GUG!), a multi-level intervention that works with young adolescents, their families and other community stakeholders to shift norms about society and gender towards improved health. This report outlines the methodology, and cross-sectional and longitudinal findings of the second year of the study.

Methodology

This report divides the results into two sections; the first presents a comparison of cross-sectional distributions of key indicators between baseline and Wave 2 (a one-year interval) to assess average shifts across the control group. The second outlines the impact of the GUG! intervention using difference-in-difference analyses to compare average changes in the intervention vs. control group over time.

Results

Nearly 90% of baseline participants were followed up at Wave 2 and were able to be matched between rounds. Comparison of cross-sectional results among the control group between baseline and Wave 2 revealed persistent social disadvantage among out of school (OOS) compared to in school (IS) very young adolescents (VYAs,) who reported more adverse family and life events that occurred between baseline and Wave 2. A number of indicators improved over time with greater school engagement and performance, and increasing literacy rates, especially among boys. At the same time, while feelings of safety improved over time, a majority of adolescents recognized crime and the lack of safe places as a problem for adolescents in their neighborhood.

It should be noted that there was contamination between the intervention and control groups with 8 in 10 adolescents in the intervention group and 2 in 10 adolescents in the control reporting they attended a GUG! event since baseline. Evaluation of the intervention demonstrated little impact on perceptions of gender norms in the intervention vs. control group, except for endorsement of gender-equal sharing of household chores, where we observed higher likelihood of endorsement with exposure to GUG!, particularly among girls and OOS adolescents. IS adolescents in the intervention group had on average greater increase in sexual and reproductive health (SRH) knowledge compared to controls. Additionally, GUG! participation was associated with increased communication about contraception and sexual relationships among OOS adolescents; and the effect was particularly pronounced for adolescents under 12. Adolescents in the intervention group also had increased odds of knowing where to find condoms among OOS and contraception for both IS and OOS.

Limitations

Results are subject to bias due to social desirability, and from differential follow-up rates between school enrollment and study arms. Intervention impact evaluation results are also potentially subject to over- or under-estimation due to about 20% contamination rate cross study groups. Additionally, the depression symptom checklist has not been clinically validated among these samples.

Intervention Implications

The GUG! intervention appeared to be effective in shifting norms about gender as they pertain to household roles and to improve foundational outcomes related to SRH, including communication, awareness and perceived access to contraception. In particular, GUG! appeared to be particularly effective at improving key outcomes among OOS and younger participants, highlighting a potential role in early intervention to set early positive health trajectories and to mitigate social inequalities.

ABOUT THE GLOBAL EARLY ADOLESCENT STUDY

Overview

The Global Early Adolescent Study (GEAS) is the first global study to explore the process of gender socialization in early adolescence, and how this process informs health and behavioral trajectories for boys and girls throughout adolescence and across contexts.

Longitudinal study

The GEAS uses a longitudinal design to assess the relationship between evolving gender norms and a range of key health outcomes across the adolescent period - including sexual health, gender-based violence and mental health - as well as the ways this is influenced by factors at individual, family, community and societal levels. The study provides unique insights into how these relationships vary across cultures and by sex. In a subset of sites including Kinshasa, the GEAS is used in conjunction with a gender transformative intervention to assess shifts in individual gender beliefs and influences on health trajectories over time.

Kinshasa is the first longitudinal site of the GEAS and is operated by the Kinshasa School of Public Health (KSPH) in collaboration with the GEAS Coordinating Center at Johns Hopkins University. The project is jointly funded by the Bill & Melinda Gates Foundation and the United States Agency for International Development (USAID) as part of the global **Passages Project**. Passages is led by the Institute for Reproductive Health, Georgetown University (IRH) and a consortium of partners including the GEAS, Save the Children, Tearfund and FHI 360. The Passages Project, funded by USAID, aims to transform social norms at scale to promote family planning and reproductive health by testing and evaluating normative change interventions. Under the Passages Project, the GEAS serves to evaluate Growing Up GREAT!, an intervention led by Save the Children and its community-based organization (CBOs) partners to transform reproductive health and gender norms among very young adolescents (VYAs) ages 10-14 at baseline in Kinshasa.

Study setting

Emerging from more than three decades of war, with significant civil strife remaining in some of the eastern and central provinces, the Democratic Republic of Congo (DRC) is one of the poorest countries in the world ranking 176 out of 188 on the Human Development Index (UNDP, 2018). The high prevalence of sexual and gender-based violence (SGBV) - 57% of women reported sexual or physical violence at some point in their lives with 27% of those women reporting sexual violence (DHS, 2013-2014) – reveals deep-rooted gender-inequitable norms and practices that are predominant across the country. Women's rights are limited in several facets - including access to owning land, restricted civil liberties, minimal participation in the government and the labor force - resulting in women's higher rates of poverty and lower rates of literacy compared to men (Matundu Mbambi & Faray-Kele, 2010; DHS 2013-2014).

Kinshasa, where the GUG! intervention takes place, is the second largest city in sub-Saharan Africa with nearly 10 million inhabitants, comprising almost 15% of the entire country's population. The total population has rapidly increased in recent years with migration from conflict-affected areas in central and eastern DRC. The city is a complex, challenging and at times violent place to live, with high rates of poverty and unemployment, inequality, and low-quality education and health.

However, greater access to and use of services is also apparent: at 4.4 the total fertility rate in Kinshasa is lower than other parts of the country; and the modern contraceptive prevalence rate is also higher than other provinces at 21% (PMA2020).

In Kinshasa in 2018, 22% of girls 18-24 years had been married before age 18 and 13.6% had given birth by the age of 18 (PMA2020, 2018). These estimates are higher among the poorest adolescents, placing these girls at higher risk of pregnancy-related complications and death. Girls who are pregnant and/or childbearing are more likely than peers to drop out of school increasing the economic burden on themselves and their families. Literacy rates of 15-24 year olds indicate gender inequalities, with girls at 73.6% literacy compared with 91.2% for boys (DHS 2013-2014). In urban Kinshasa, the 16% of school-age children who are out-of-school (OOS) – are at even higher risk of sexually transmitted infections (STIs), pregnancy and gender-based violence (GBV) compared to their in-school (IS) peers. The communes of Masina and Kimbanseke, where the GUG! intervention and GEAS evaluation take place, represent some of Kinshasa's poorest and most challenging environments for both in- and out-of-school youth.

The government has been proactive in supporting youth with a specific department under the Ministry of Health (MOH) for adolescents, le Programme National de la Santé des Adolescents (PNSA), and a national family life education curriculum mandated by the Ministry of Education (MOE), although it is still under-resourced and developing capacities. This gap in policy and practice results in few younger adolescents who are able to access good quality, age-appropriate reproductive health information and services.

While it is true that many risks to adolescent reproductive health exist, it is equally true that pro-youth policies and national structures also provide direction, with significant opportunities for substantial improvements in health and well-being, especially if efforts are made to strengthen the foundations of sustainable development, including youth capacity and gender equality.

INTERVENTION

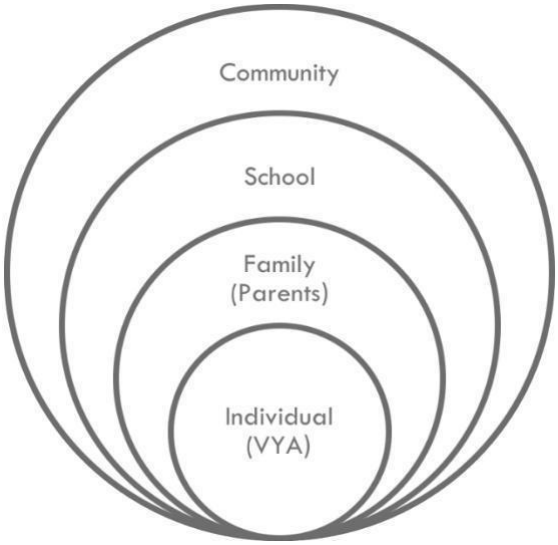
GUG! is a multi-level intervention for VYAs, their parents and caregivers and other influential community members. It uses an ecological approach to provide information and address social and gender norms related to reproductive health and wellbeing at each of these levels, with the goal of improving both IS and OOS VYAs' sexual and reproductive health outcomes in later adolescence. Specifically, GUG! aims to increase:

- VYAs' knowledge of puberty and reproductive development
- VYAs' and parents' gender-equitable behaviors (sharing of household chores, for example)
- VYA's use of family planning and other reproductive health services among as they age into older adolescence and romantic or sexual behaviors

GUG! was informed by other successful approaches for improving gender equity and reproductive health among adolescents, and it incorporates evidence-based recommendations for health interventions with young people. It purposefully targets VYAs, a critical demographic group, to reach them prior to the onset of puberty. This early intervention is intended to provide an opportunity to shape the health trajectory and proactively prevent reproductive and other health problems, rather than addressing health issues as they arise. It also employs a holistic approach to VYA health interventions, acknowledging the multiple layers of influence from parents, peers, teachers and community leaders.

The intervention package consists of the following components, which reflect the levels of the socio-ecological model shown in **Figure 1**.

Figure 1 | *The Socio-Ecological Model*



Activities for Very Young Adolescents

Both IS and OOS VYAs participate in weekly meetings of mixed sex groups using a set of interactive materials from the GUG! toolkit (see **Figure 2**) to discuss and reflect on norms. Participating VYAs are grouped into clubs with approximately 25 of their peers. IS VYAs participate in self-facilitated school-based clubs led by trained VYA leaders for the duration of the school year (about 20 sessions), while OOS VYAs participate in community-based clubs led by trained facilitators from local community-based organizations (about 28 sessions). All VYA clubs participate in one session led by a health provider trained in providing adolescent-friendly health services, and also a visit to the nearest facility to foster health system linkages and reduce stigma.

Activities for Parents and Caregivers

Parents of VYA club members participate in a series of guided discussions prompted by six different testimonial videos featuring parents in their communities who have adopted key outcome (target) behaviors related to gender, girls' education and communication about puberty and sexuality. Discussions are led by trained facilitators from CBOs and focus on the social norms underlying and driving health behaviors.

School-based Activities

Teachers and other school officials are engaged in several ways. Three focal point teachers at each school are oriented to the GUG! toolkit and provided with a resource document to help them link activities to the national life-skills curriculum. Teachers also serve as resources for VYA school clubs and mentors for VYA club leaders. School-based activities are intended to have a whole-school reach beyond VYA club members to support diffusion of new ideas and encourage social norm change. However, there is no prescribed number or frequency of IS sessions, so classroom-based use of intervention materials varies by school.

Activities for the Community

Community members are invited to participate in a fun and interactive game to explore norms around VYA health and gender, and to view and reflect on the video testimonials developed for parent sessions. Teamwork and debate during collaborative gameplay and reflections following the video viewings both provide opportunities for community members to discuss how norms influence behaviors that impact VYAs. An effort is made to engage traditional and religious leaders, as well as other influential persons in these activities.

Figure 2 | *The GUG! Toolkit*

Level	Activity	Materials
Individual (VYA)	In-school: about 20 weekly club sessions (peer-led) Out-of-school: about 28 weekly club sessions (adult facilitated)	Puberty workbooks (girls & boys) Storybooks (girls & boys) Activity Cards Game
Family (Caregivers)	Six video screenings and facilitated discussions	Testimonial videos
School	Classroom-based sessions (teacher-led; at will – no fixed frequency)	Resources for teachers that link to the National Family Life Education Curriculum
Health system	One provider-led session per VYA club One health center visit per VYA club	Guide for provider-led lesson Instructions for health center visit
Community	Collaborative community sessions (monthly)	Testimonial videos Community Game

GEAS STUDY DESIGN

This study in Masina and Kimbanseke, Kinshasa, combines **1) an observational research study that explores how perceptions of gender norms are co-constructed in early adolescence and how they predict a spectrum of outcomes and 2) an impact evaluation to assess the effects of the GUG! intervention among early adolescents in Kinshasa.** The observational and impact evaluation components are included in a single GEAS design in Kinshasa defined as a longitudinal quasi-experimental study with an intervention and a control arm, each divided into 2 subgroups, In School (IS) and Out of School (OOS) adolescents.

STUDY POPULATION

Eligibility criteria

Adolescents were initially included in the study if they were 10-14 years old at the time of baseline interview, had given assent to participate in the study, lived in the study neighborhoods of Masina or Kimbanseke, and if their parents or guardians consented to their child's participation in the study.

Baseline Sampling

Out of School

At baseline, adolescents were recruited using a multi-stage sampling procedure. First, neighborhoods in the two communes were sampled using simple random sampling procedure. In each selected neighborhood, OOS adolescents aged 10-14 years old were identified by Community-Based Organizations (CBOs) in partnership with Save the Children. The CBOs mapped the OOS adolescents living in the included neighborhoods and established a sampling list. They then narrowed this list to those adolescents who met the following criteria: left school over two years ago, did not expect to be enrolled in school the following year, and did not expect to leave their current neighborhood. Adolescents were then selected from this list by simple random sampling to establish groups of 25 children that were recruited for the intervention.

A similar process was used to recruit the OOS adolescents in the control group. With the help of CBOs, OOS adolescents were identified through the same mapping procedure. In each neighborhood, two separate lists were established by sex, and sorted by age in order to obtain an acceptable age distribution. These lists were numbered and subsequently used to draw a random sample (with backups) using random number generation in Microsoft Excel. The list of selected children was then given to the CBOs to contact parents and adolescents to invite them to participate in the survey. In the event a child and/or guardian refused to participate, replacement participants were selected from the backup list. This process was repeated until the required sample size was achieved.

In School

IS adolescents were recruited in the same neighborhoods as OOS adolescents to facilitate follow-up for the intervention groups and avoid contamination across study groups. Save the Children and CBOs conducted a mapping exercise of all schools in neighborhoods within the two selected municipalities that included all primary or secondary schools enrolling adolescents ages 10-14 within each municipality. Schools were grouped into school type (e.g. public, religious, or private). Twenty schools in each municipality were selected using Excel, with the expectation that each school would enroll 25 students in the survey. School leaders were invited to a meeting with the research team to provide an explanation of the survey, and subsequently establish a list of all pupils age 10-14 each in the control and intervention zones. In the event that the list included 25 adolescents or less, all children were contacted. If a school's list was greater than 25 students, simple random sampling was applied to select 25 participants, divided by sex. The list was given to the school leaders to facilitate contact with participants.

Altogether 2,842 adolescents completed the baseline study between June and November 2017.

Wave 2 sampling

The Kinshasa School of Public Health team followed two different approaches to re-contact IS and OOS participants for the second wave of data collection, though the information collected from each participant's family was consistent (name, age, sex, school at enrollment, and phone numbers).

- *In School* (IS) participants were contacted through school administration and teachers, using existing school channels to establish survey times and notify participants. Participants, who were in school at baseline but had left, transferred schools or moved, were tracked using existing information from teachers and school administrators, as well as neighborhood CBOs and resources. However, teachers and school administrators were limited in their ability to locate participating students who had changed schools between waves.
- *Out of school* (OOS) participants were located by KSPH in coordination with a team of representatives from non-governmental organizations and community-based associations working in the participating neighborhoods. In cases where OOS adolescents were difficult to reach, data collection teams contacted neighbors to collect additional information to locate participants.

Data collection began with a series of meetings with school administrators for data collection with IS adolescents and with CBOs for OOS adolescents to discuss the upcoming data collection activities as well as the challenges faced during baseline data collection. Two weeks before interviews were scheduled, members of the data collection team re-contacted school administrators or CBO representatives, with a list of participants surveyed from their school or area at baseline, in order to identify VYAs still living in the area or attending the school and available to be interviewed. School administrators and CBOs were then contacted by phone to provide the list of participants still available and to establish times and dates for survey administration. School administrators and CBOs were also asked to gather information about participants that had moved or left school, or moved homes in order to help reach those participants. All identified participants were invited to participate in Wave 2 using the same data collection procedures as baseline.

After finalizing interviews for the participants still available in their schools or original neighborhoods, the data collection team held meetings with entities involved in recruitment of both intervention and control group participants to reduce loss-to-follow up rates. During these meetings, the data collection team provided a list of participants who were not reached in their initial re-contact efforts, with contact information including addresses and phone numbers. After attempting to reach these participants by telephone (largely unsuccessful), data collectors were deployed to home addresses provided at baseline to attempt to reach additional participants. Data collectors then collected additional information, telephone numbers or physical addresses to reach participants whose families had moved in the interim. These extra efforts helped raise participant Wave 2 retention rates from 78% to 89% of the original sample.

STUDY INSTRUMENT

The **GEAS Wave 2 instrument in Kinshasa** mirrors the baseline survey with modifications to alleviate survey burden, adapt the instrument to maturing adolescents and improve on questions that were not informative at baseline. A set of questions was also included to assess exposure to the GUG! intervention.

Specifically, a number of questions in the sociodemographic sections were not asked in Wave 2, but replaced by questions exploring recent life events, which occurred since the last interview, including family illnesses/deaths, partnerships, schooling and employment. Lifetime adverse childhood experiences were not included in Wave 2, but adolescents were asked about specific adverse experiences occurring in the last year. In addition, questions on first sexual health experience were not repeated for adolescents who reported experiencing those events in baseline.

A set of new questions related to sexual and reproductive health and mental health were also introduced to strengthen or test the validity of current measures. A depression scale (the Patient Health Questionnaire-9) was added to the survey in Wave 2 in order to validate the GEAS depressive symptom checklist included in both the baseline and Wave 2 surveys. The Wave 2 survey also includes a validated scale to assess anxiety (the Generalized Anxiety Disorder-7 scale). Additional measures to complement baseline items assessing family planning knowledge were added using the series of questions on FP awareness derived from DHS and used in **PMA 2020**. The FP awareness questions were only asked to adolescents who turned 15, in order to compare our sample distribution with data collected among 15-year-old respondents in PMA 2020.

A few questions were revised, such as menstrual hygiene management, to solicit more informative responses in Wave 2.

DATA COLLECTION PROCEDURES

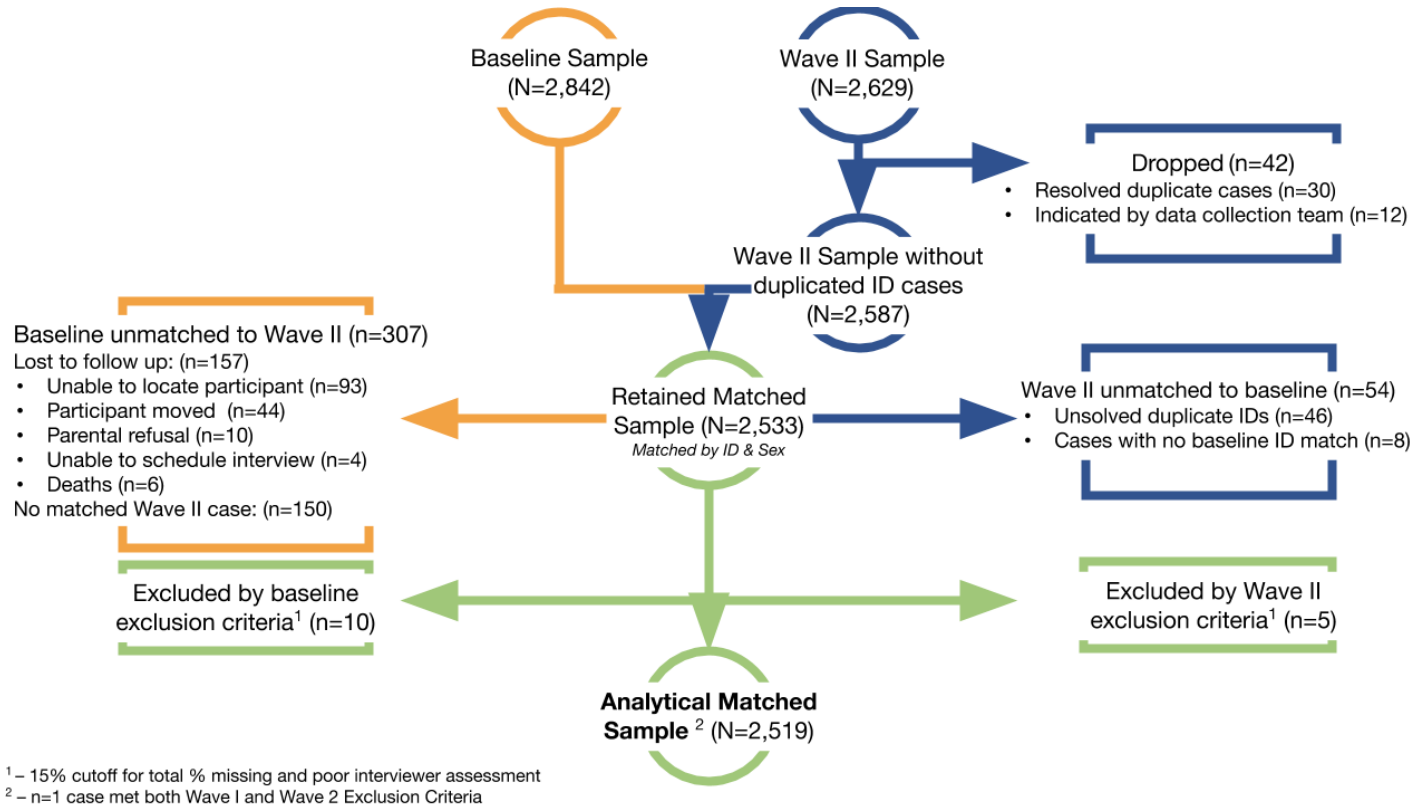
Data collection was conducted using face-to-face interviews with an interviewer, with sensitive questions administered using Audio Computer-Assisted Self-Interview (ACASI) to promote privacy. Whenever possible, interviewer and respondent sex was matched. The interviews on average took 1.5 hours including time for at least two breaks. For the adolescents who were reached through initial school and CBO contact, the interviews were organized by school and classroom for IS participants and in community spaces (Church, association spaces, or school spaces) for OOS VYAs. For participants reached through active searches, interviews were conducted at homes in a quiet space out of earshot from their parent or guardian. Each interviewer conducted a maximum of two interviews per day, and in the case of group interviews the number of data collectors sent was proportional to the number of expected participants.

Interviews were conducted in Lingala using tablets and uploaded to the SurveyCTO server. Data collectors received four days of refresher training on the questionnaires and a pretest prior to data collection.

GEAS WAVE 2 STUDY POPULATION

A total of 2,629 were re-interviewed at Wave 2 and 2,533 were matched to baseline respondents based on concordant identifiers (2,481 had matched ID and 54 were matched based on contact information). After correcting duplicated IDs, 307 baseline cases (from the original baseline sample of 2,842 cases) could not be matched to a Wave 2 observation: 157 adolescents from baseline were lost to follow up in Wave 2, 150 participants from baseline had no matched cases in Wave 2 based on registry or survey data) (**Figure 3**). Reasons for loss to follow up included inability to locate the participant (n=93), moving (n=44), refusal of their parent or guardian (n=10), inability to schedule interview (n=4), and deaths (n=6). Six participants died between baseline and Wave 2, five of whom due to illness and one from an accident. The KSPH team investigated each reported death to verify the circumstances surrounding the participant's death and facilitate proper reporting to the KSPH and JHSPH Ethical Review Committees. In addition, 54 young people interviewed in Wave 2 were not matched to original baseline respondents due either to unresolved duplicate IDs (n=46) or with no baseline ID match based on registry or survey data (n=8).

Figure 3 | *Study Sample Selection*

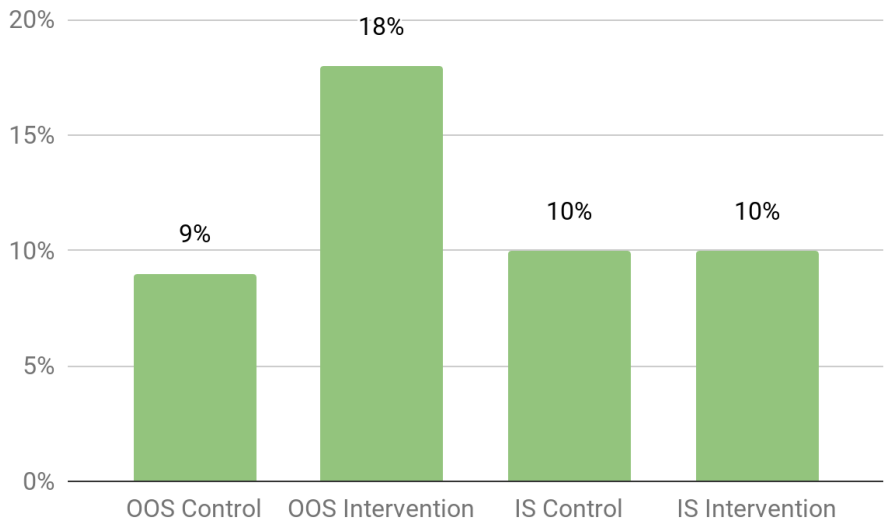


[1] – 15% cutoff for total % missing and poor interviewer assessment
[2] – n=1 case met both Wave I and Wave 2 Exclusion Criteria

Follow-up rates differed by study group, ranging from 9% loss to follow up in the OOS control group to 18% in the intervention OOS group (**Figure 4**). More girls than boys were lost to follow up in the IS group (11% vs. 8%, p=0.040), but no difference by sex was observed for OOS adolescents (13% of boys and 14% of girls lost to follow up, p=0.546). Across the sample, we observed higher loss to follow up rates among adolescents who lived without parents or grandparents (17% vs. 10-12% among those living with parents or grandparents, p=0.039), however rates were similar across family characteristics (wealth quintiles and parental structure at baseline) for school subsamples and no differences were observed by wealth quintile.
A more detailed description of loss-to-follow-up is presented in Appendix A.

Based on data quality, 14 of the matched participants were excluded from the analytical sample based on the share of survey questions to which they provided no meaningful response (i.e. "Don't know" or "Refuse" responses), or consistent assessment by the interviewer as poor response quality (i.e. poor perceived response accuracy or comprehension) in baseline (n=10) or Wave 2 (n=5).[1] A more detailed description of data quality procedures and excluded cases may be found in **Appendix B**. Based on success in matching across match ability of two rounds of data and exclusion criteria applied to each round, 2,519 observations were included in the report analysis.

***Figure 4** | Lost to Follow Up Rates by Study Group and School Status*



[1] One case met exclusion criteria for both baseline and Wave 2, resulting in the exclusion of 14 participants in total.

SECTION 1: GEAS WAVE 2 OBSERVATIONAL STUDY RESULTS (CONTROL GROUP)

SOCIODEMOGRAPHIC CHARACTERISTICS

Altogether, 12 IS boys (9%) and 19 IS girls (15%) had dropped out of school between waves 1 and 2, while 53 OOS boys (8%) and 58 out-school girls (9%) resumed school. The school-stratified samples reflect adolescents' school status at the time of each survey.

The characteristics of Wave 2 IS and OOS samples, presented in **Table 1b** remained rather stable compared to baseline, with the exception of age, grade and literacy which increased over time. The median age was just under 13 years among both IS and OOS adolescents. The literacy rate (measured by the ability to read a simple sentence) increased by less than 2% for IS boys and girls, but by 9% among OOS boys and 5% among OOS girls. The gender gap remained about the same for IS adolescents in Wave 2 (87% of IS boys and 79% of IS girls were literate in Wave 2) but widened among OOS adolescents (52% of OOS boys and 42% of OOS girls were able to read a simple sentence at Wave 2). The literacy gap between IS and OOS adolescents remained wide, with 36% more IS adolescents than OOS adolescents' literate at Wave 2 (83% vs. 47%).

The wealth index was not re-evaluated in Wave 2, but a number of adolescents reported recent life events that likely affected their economic circumstances (**Figure 5** and **Table 1a**). Less than 4% of each of the IS and OOS groups gained a job in the past year, though this was more common for both IS and OOS boys (6% vs. 2% for OOS and 5% vs. 2% for OOS). Under 1% of adolescents (IS and OOS) had lost a job in the past year. Additional family changes that may influence an adolescent's socio-economic status are presented in the next section.

***Figure 5** | Individual life Events during the year of follow up by Sex and School Status*

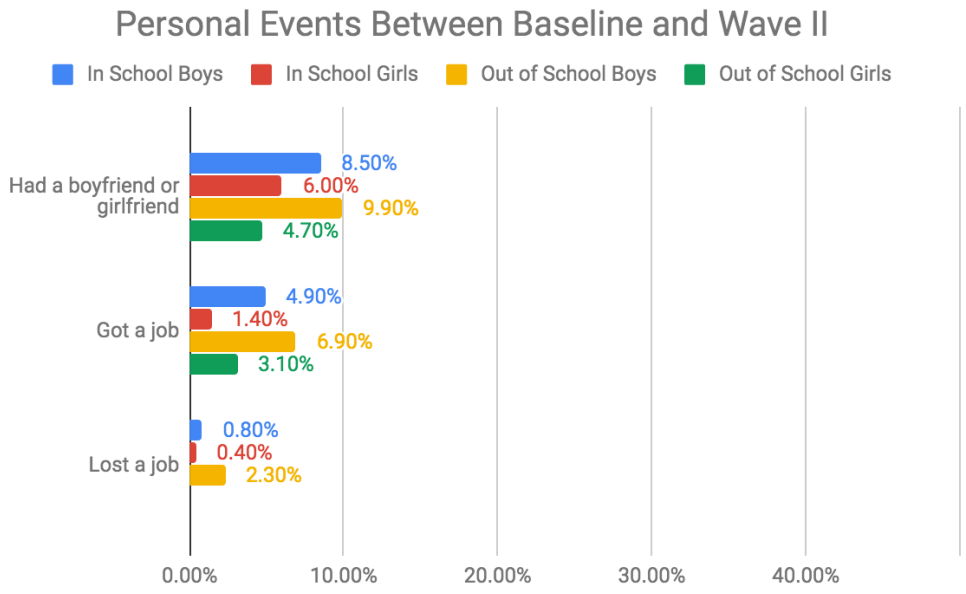


Table 1a - Personal and Family Events at Wave 2, Past Year

		In School (n=981)				Out of School (n=262)			
		Overall	Boy	Girl	p	Overall	Boy	Girl	p
Personal Events	Had a new romantic relationship	71 (7.24%)	42 (8.50%)	29 (5.95%)	0.124	25 (7.31%)	17 (9.88%)	8 (4.71%)	0.066
	Got a job	31 (3.16%)	24 (4.86%)	7 (1.44%)	**0.002**	13 (4.96%)	9 (6.87%)	4 (3.05%)	0.155
	Lost a job	6 (0.61%)	4 (0.81%)	2 (0.41%)	0.423	3 (1.15%)	3 (2.29%)	0 (0)	0.081
Family Events	Parent died	9 (0.92%)	1 (0.20%)	8 (1.64%)	**0.018**	4 (1.53%)	1 (0.76%)	3 (2.29%)	0.314
	Parent moved out	114 (11.62%)	58 (11.74%)	56 (11.50%)	0.906	34 (12.98%)	19 (14.50%)	15 (11.45%)	0.462
	Family member imprisoned	91 (9.28%)	46 (9.31%)	45 (9.24%)	0.969	29 (11.07%)	19 (14.50%)	10 (7.63%)	0.076
	Caregiver seriously Ill	130 (13.25%)	66 (13.36%)	64 (13.14%)	0.92	78 (29.77%)	42 (32.06%)	36 (27.48%)	0.418

Table 1b - Sample Description

	Baseline				Wave 2			
In-school Adolescents	Overall (N=901)	Boy (N=453)	Girls (N=448)	p-value	Overall (N=982)	Boy (N=494)	Girls (N=488)	p-value
Age mean + SD	12.03 + 1.41	12.08 + 1.43	11.99 + 1.40	0.36	12.91 + 1.45	12.92 + 1.47	12.89 + 1.43	0.749
10	176 (19.53)	84 (18.54)	92 (20.54)		16 (1.63)	8 (1.62)	8 (1.64)	
11	172 (19.09)	90 (19.87)	82 (18.3)		203 (20.67)	101 (20.45)	102 (20.9)	
12	184 (20.42)	91 (20.09)	93 (20.76)	0.247	194 (19.76)	101 (20.45)	93 (19.06)	
13	185 (20.53)	84 (18.54)	101 (22.54)		195 (19.86)	98 (19.84)	97 (19.88)	0.381^
14	184 (20.42)	104 (22.96)	80 (17.86)		191 (19.45)	84 (17)	107 (21.93)	
15					182 (18.53)	101 (20.45)	81 (16.6)	
16					1 (0.1)	1 (0.2)	0 (0)	
Neighborhood								
Kimbanseke	466 (51.72)	235 (51.88)	231 (51.56)	0.925				
Masina	435 (48.28)	218 (48.12)	217 (48.44)					
Ethnicity								
Kwilu-Kwango	271 (31.15)	120 (26.67)	151 (35.95)					
Bakongo (N or S)	331 (38.05)	185 (41.11)	146 (34.76)					
Kasai, Katanga, Tanganyika	81 (9.31)	47 (10.44)	34 (8.1)					
Lower Kasai	52 (5.98)	20 (4.44)	32 (7.62)	**0.001**				
Multiple ethnicities	37 (4.25)	27 (6)	10 (2.38)					
Other *	98 (11.26)	51 (11.33)	47 (11.19)					
Migration								
Adolescent born in Kinshasa	793 (88.01)	401 (88.52)	392 (87.5)	0.637				
Parent/caregiver born in Kinshasa	501 (55.6)	249 (54.97)	252 (56.25)	0.698				
Religion								
No religion	1 (0.11)	1 (0.22)	0 (0)					
Catholic	110 (12.21)	60 (13.25)	50 (11.16)					
Protestant	68 (7.55)	37 (8.17)	31 (6.92)					
Église de Réveil	474 (52.61)	229 (50.55)	245 (54.69)					
Muslim	7 (0.78)	3 (0.66)	4 (0.89)	0.771^				
African traditional religion / Animism	22 (2.44)	10 (2.21)	12 (2.68)					
Other Christian	194 (21.53)	98 (21.63)	96 (21.43)					
Other	25 (2.77)	15 (3.31)	10 (2.23)					
Literacy								
Able to read simple sentence	735 (81.58)	390 (86.09)	345 (77.01)	**<0.001**	815 (82.99)	430 (87.04)	385 (78.89)	**0.001**

Wealth Index								
Bottom 20 %	152 (16.96)	80 (17.78)	72 (16.14)					
20 - 40 %	165 (18.42)	91 (20.22)	74 (16.59)					
40 - 60 %	188 (20.98)	89 (19.78)	99 (22.2)	0.319				
60 - 80 %	182 (20.31)	82 (18.22)	100 (22.42)					
Top 20 %	209 (23.33)	108 (24)	101 (22.65)					
	Baseline				Wave 2			
Out-of-school Adolescents	Overall (N=342)	Boy (N=172)	Girls (N=170)	p-value	Overall (N=261)	Boy (N=131)	Girls (N=130)	p-value
Age mean + SD	11.88 ± 1.36	11.84 ± 1.35	11.92 ± 1.38	0.559	12.94 ± 1.39	12.93 ± 1.38	12.95 ± 1.41	0.931
10	74 (21.64)	38 (22.09)	36 (21.18)		6 (2.3)	2 (1.53)	4 (3.08)	
11	68 (19.88)	34 (19.77)	34 (20)		45 (17.24)	25 (19.08)	20 (15.38)	
12	75 (21.93)	41 (23.84)	34 (20)	0.889	46 (17.62)	20 (15.27)	26 (20)	
13	75 (21.93)	36 (20.93)	39 (22.94)		68 (26.05)	37 (28.24)	31 (23.85)	0.722^
14	50 (14.62)	23 (13.37)	27 (15.88)		55 (21.07)	28 (21.37)	27 (20.77)	
15					40 (15.33)	18 (13.74)	22 (16.92)	
16					1 (0.38)	1 (0.76)	0 (0)	
Neighborhood								
Kimbanseke	147 (42.98)	71 (41.28)	76 (44.71)	0.522				
Masina	195 (57.02)	101 (58.72)	94 (55.29)					
Ethnicity								
Kwilu-Kwango	138 (42.46)	65 (39.88)	73 (45.06)					
Bakongo (N or S)	83 (25.54)	46 (28.22)	37 (22.84)					
Kasai, Katanga, Tanganyika	38 (11.69)	23 (14.11)	15 (9.26)	0.255				
Lower Kasai	11 (3.38)	6 (3.68)	5 (3.09)					
Multiple ethnicities	16 (4.92)	9 (5.52)	7 (4.32)					
Other *	39 (12)	14 (8.59)	25 (15.43)					
Migration								
Adolescent born in Kinshasa	309 (90.35)	157 (91.28)	152 (89.41)	0.559				
Parent/caregiver born in Kinshasa	214 (62.57)	97 (56.4)	117 (68.82)	**0.018**				
Religion								
No religion	0 (0)	0 (0)	0 (0)					
Catholic	36 (10.53)	24 (13.95)	12 (7.06)					
Protestant	9 (2.63)	5 (2.91)	4 (2.35)					
Église de Réveil	203 (59.36)	94 (54.65)	109 (64.12)					
Muslim	3 (0.88)	2 (1.16)	1 (0.59)	0.366^				
African traditional religion / Animism	10 (2.92)	6 (3.49)	4 (2.35)					
Other Christian	71 (20.76)	35 (20.35)	36 (21.18)					
Other	10 (2.92)	6 (3.49)	4 (2.35)					
Literacy Able to read simple sentence	137 (40.06)	74 (43.02)	63 (37.06)	0.260	122 (46.74)	68 (51.91)	54 (41.54)	0.093
Wealth Index								
Bottom 20 %	123 (35.96)	64 (37.21)	59 (34.71)					
20 - 40 %	89 (26.02)	43 (25)	46 (27.06)					
40 - 60 %	81 (23.68)	36 (20.93)	45 (26.47)	0.567				
60 - 80 %	32 (9.36)	19 (11.05)	13 (7.65)					
Top 20 %	17 (4.97)	10 (5.81)	7 (4.12)					

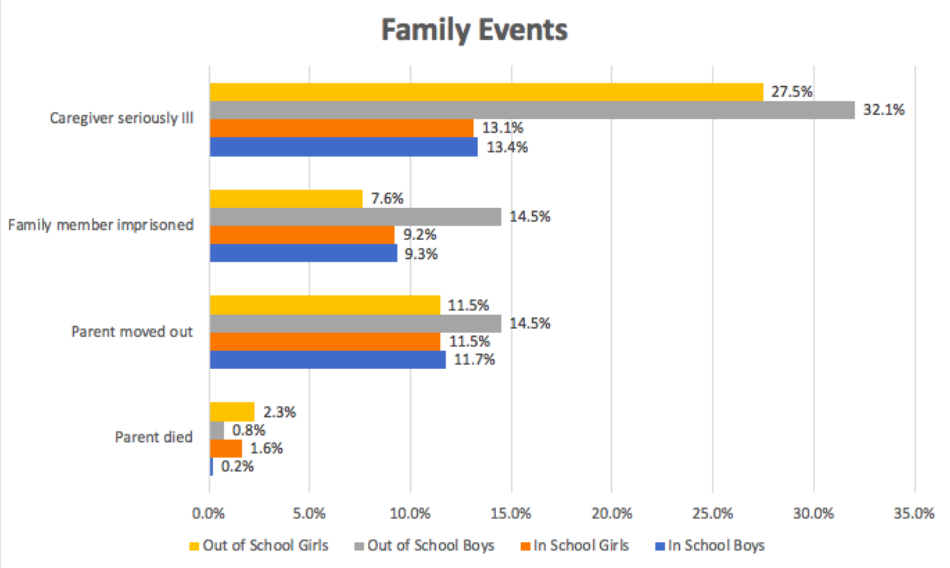
^ = Fisher's exact test

FAMILY STRUCTURE

At baseline, 66% of IS adolescents and 37% of OOS adolescents lived in two-parent households and 24% of IS adolescents and 41% of OOS lived in single-parent households, with the remainder living with grandparents or other non-parent guardians.

While family structure was not re-assessed in Wave 2, a series of questions on life events allows tracking significant family events over the course of follow up. Since baseline, 12% of adolescents reported changes in their family structure and 21% reported serious life events affecting their families. Both changes in family structure (16% among OOS and 12% among IS, p=0.027), including the death of a parent or a parent moving out, and serious events (32% among OOS and 21% for in- school p<0.001) were more common among OOS adolescents. By sex, experiencing imprisonment of a family member in the past year was more common among OOS boys (16%) than OOS girls (8%) (p=0.034). More detail is presented in **Figure 6**.

Figure 6 | *Family events since baseline by Sex and School Status*



Regarding caregiver connectedness among IS adolescents: 60% indicated that they felt close to their caregiver and 72% indicated they felt that their caregiver cared a lot about what they thought. Among OOS adolescents, connectedness to caregiver was comparatively lower (53% and 58% respectively). Between Waves 1 and 2 relationships with caregivers changed slightly overall with a 5 to 3% drop in caregiver closeness for IS adolescents and OOS adolescents, respectively.

OOS adolescents reported more caregiver monitoring (as defined by caregiver awareness about who adolescents' friends are, their whereabouts, and school performance for IS participants) than IS adolescents, with 70% indicating high monitoring versus 59% of IS adolescents (though the indicators for IS and OOS adolescents are not directly comparable). Caregiver monitoring was more common among girls than boys for both IS (3% higher) and OOS (9% higher) samples.

Trends over time indicated a substantial increase in caregiver monitoring for most groups since baseline except among OOS girls, where the rates remained stable. The increase ranged from +9%s among OOS boys to +23%s among IS girls. While girls were still more likely to be monitored than boys, the gender gap was reduced among OOS adolescents (from 19% to 9%).

Table 2 - Family

In School Adolescents	Baseline Overall (N=901)	Boy (N=453)	Girls (N=448)	p-value	Wave 2 Overall (N=982)	Boy (N=494)	Girls (N=488)	p-value
Household composition								
Both parents (married or cohabiting, includes parents and stepparents)	591 (65.89)	299 (66.3)	292 (65.47)	0.979				
Grandparents only (no parents)	62 (6.91)	32 (7.1)	30 (6.73)					
Other (no parents or grandparents)	31 (3.46)	15 (3.33)	16 (3.59)					
One parent only	213 (23.75)	105 (23.28)	108 (24.22)					
Mother only	176 (82.63)	84 (80)	92 (85.19)	0.318				
Father only	37 (17.37)	21 (20)	16 (14.81)					
Siblings								
No siblings	18 (2)	9 (1.99)	9 (2.01)					
1-2 siblings	140 (15.54)	71 (15.67)	69 (15.4)	0.359				
3-5 siblings	452 (50.17)	215 (47.46)	237 (52.9)					
6 or more siblings	291 (32.3)	158 (34.88)	133 (29.69)					
Gender of Siblings								
No siblings (W2 only)					15 (1.53)	5 (1.01)	10 (2.05)	
Sisters only	69 (7.81)	30 (6.76)	39 (8.88)		72 (7.33)	36 (7.29)	36 (7.38)	0.064
Brothers only	79 (8.95)	41 (9.23)	38 (8.66)	0.491	70 (7.13)	26 (5.26)	44 (9.02)	
Both brothers & sisters	735 (83.24)	373 (84.01)	362 (82.46)		825 (84.01)	427 (86.44)	398 (81.56)	
Caregiver connectedness								
Believes caregiver cares about what adolescent thinks (a lot)	665 (73.81)	339 (74.83)	326 (72.77)	0.481	704 (71.69)	356 (72.06)	348 (71.31)	0.793
Feels close to caregiver (a lot)	583 (64.71)	296 (65.34)	287 (64.06)	0.688	586 (59.67)	295 (59.72)	291 (59.63)	0.978
Caregiver Awareness (knows friends, school grades, and where adolescent is) (reported somewhat true/very true on all three items)	337 (37.4)	166 (36.64)	171 (38.17)	0.636	584 (59.47)	285 (57.69)	299 (61.27)	0.253
Caregiver fully employed	652 (72.36)	314 (69.32)	338 (75.45)	**0.040**				
Caregiver Expectations								
School								
None of the above - quit school earlier	1 (0.11)	0 (0)	1 (0.23)					
Primary or secondary school	147 (16.44)	75 (16.67)	72 (16.22)					
Vocational or high school	25 (2.8)	17 (3.78)	8 (1.8)	0.204^				
Graduate degree (university, licensure, or doctorate)	721 (80.65)	358 (79.56)	363 (81.76)					
Marriage								
After primary or secondary school	115 (16.45)	46 (13.69)	69 (19.01)					
After I graduate high school	527 (75.39)	258 (76.79)	269 (74.1)	0.047				
When I decide I want to marry	47 (6.72)	29 (8.63)	18 (4.96)					
They don't expect me to marry	10 (1.43)	3 (0.89)	7 (1.93)					

Out-of-school Adolescents	Baseline Overall (N=342)	Boy (N=172)	Girls (N=170)	p-value	Wave 2 Overall (N=261)	Boy (N=131)	Girls (N=130)	p-value
Household composition								
Both parents (married or cohabiting, includes parents and stepparents)	127 (37.46)	59 (34.3)	68 (40.72)	0.069				
Grandparents only (no parents)	56 (16.52)	29 (16.86)	27 (16.17)					
Other (no parents or grandparents)	18 (5.31)	5 (2.91)	13 (7.78)					
One parent only	138 (40.71)	79 (45.93)	59 (35.33)					
Mother only	123 (89.13)	72 (91.14)	51 (86.44)	0.38				
Father only	15 (10.87)	7 (8.86)	8 (13.56)					
Siblings								
No siblings	2 (0.58)	1 (0.58)	1 (0.59)					
1-2 siblings	44 (12.87)	28 (16.28)	16 (9.41)	0.233^				
3-5 siblings	168 (49.12)	83 (48.26)	85 (50)					
6 or more siblings	128 (37.43)	60 (34.88)	68 (40)					
Gender of Siblings								

No siblings (W2 only)					5 (1.92)	2 (1.53)	3 (2.31)	
Sisters only	31 (9.12)	17 (9.94)	14 (8.28)		22 (8.43)	11 (8.4)	11 (8.46)	0.863
Brothers only	24 (7.06)	15 (8.77)	9 (5.33)	0.377	21 (8.05)	9 (6.87)	12 (9.23)	
Both brothers & sisters	285 (83.82)	139 (81.29)	146 (86.39)		213 (81.61)	109 (83.21)	104 (80)	
Caregiver connectedness								
Believes caregiver cares about wha adolescent thinks (a lot)	213 (62.28)	111 (64.53)	102 (60)	0.387	152 (58.46)	77 (59.23)	75 (57.69)	0.801
Feels close to caregiver (a lot)	193 (56.43)	99 (57.56)	94 (55.29)	0.673	138 (53.08)	72 (55.38)	66 (50.77)	0.456
Caregiver Awareness (knows friends anc where adolescent is) (reported somewha true/true on both items)	225 (65.79)	97 (56.4)	128 (75.29)	**<0.001**	181 (69.62)	85 (65.38)	96 (73.85)	0.138
Caregiver fully employed	144 (42.11)	76 (44.19)	68 (40)	0.433				
Caregiver Expectations								
School								
None of the above - quit school earlier	2 (0.6)	0 (0)	2 (1.19)					
Primary or secondary school	91 (27.25)	41 (24.7)	50 (29.76)					
Vocational or high school	29 (8.68)	15 (9.04)	14 (8.33)	0.409^				
Graduate degree (university, licensure, o doctorate)	212 (63.47)	110 (66.27)	102 (60.71)					
Marriage								
After primary or secondary school	64 (26.02)	31 (24.41)	33 (27.73)					
After I graduate high school	152 (61.79)	79 (62.2)	73 (61.34)	0.743^				
When I decide I want to marry	25 (10.16)	15 (11.81)	10 (8.4)					
They don't expect me to marry	5 (2.03)	2 (1.57)	3 (2.52)					

^ = Fisher's exact test

PEERS

Same sex social networks were dominant in Wave 2, with 66% of IS girls and 64% of OOS girls reporting no male friends and 58% of IS boys and 61% of OOS boys reporting no female friends. However, there were significant changes in size and composition of peer networks between waves 1 and 2 for some adolescents, with IS boys reporting smaller male peer networks and more OOS girls reporting any male friendships in Wave 2 (23% in baseline versus 36% in Wave 2). In all cases, except for IS girls, adolescents seemed to spend less time with friends in Wave 2 compared to baseline.

Figure 7 | *Distribution of Opposite-Sex Friends*

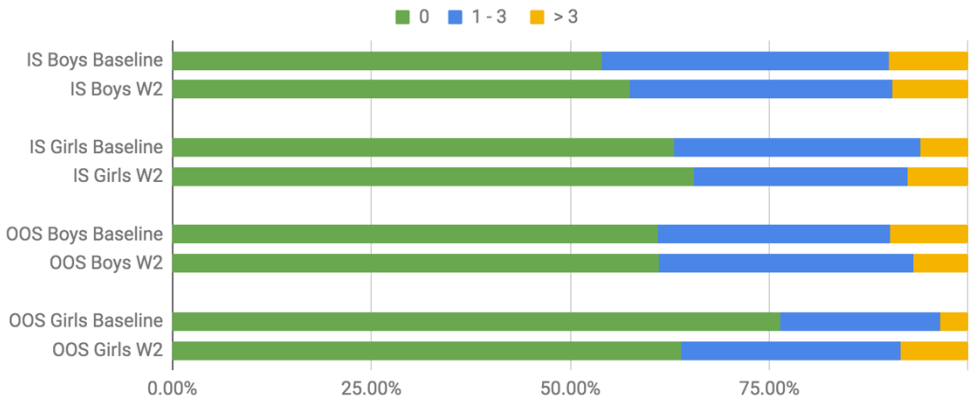


Figure 8a *| Perceptions of Peer Behaviors for Sex*

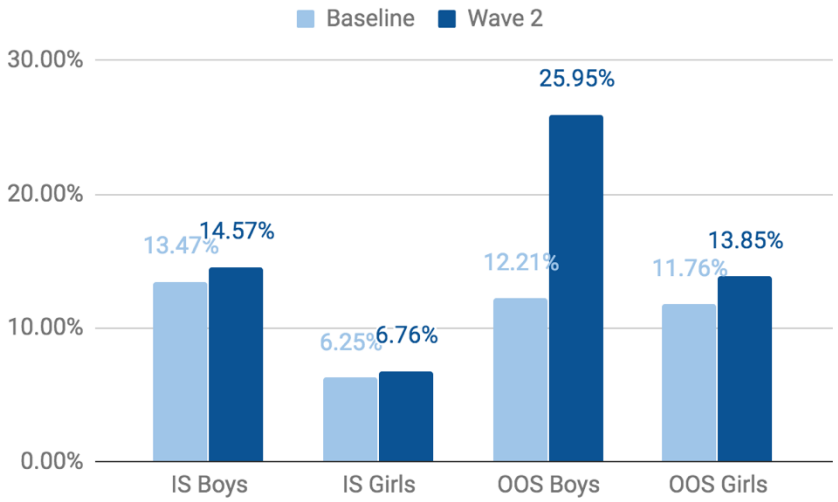


Figure 8b*| Perceptions of Peer Behaviors for Smoking*

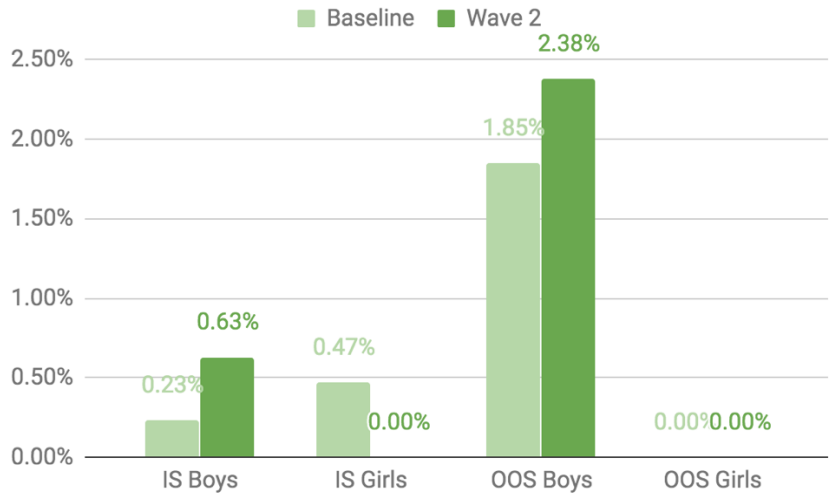
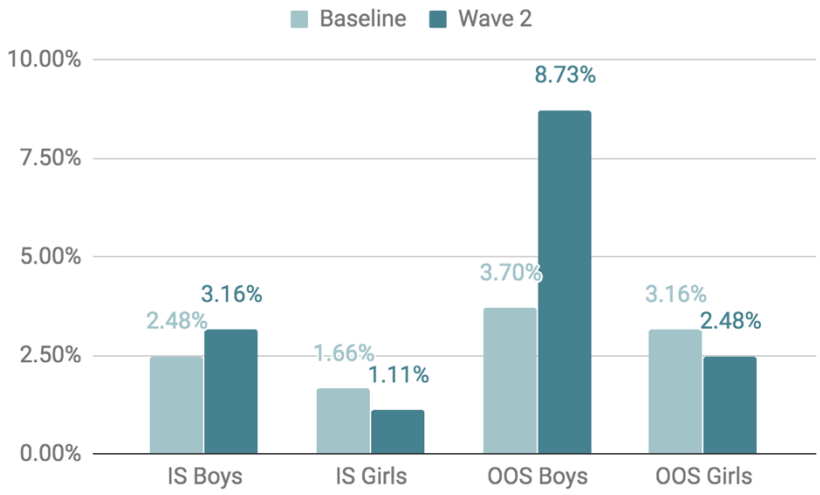


***Figure 8c**| Perceptions of Peer Behaviors for Alcohol*



PEER ATTITUDES AND BEHAVIORS

Adolescents' perceptions of peer attitudes towards romantic relationships demonstrated that most respondents believed ***their*** peers did not consider engagement in sexual activity or romantic relationships to be very important. Specifically, only about one in ten adolescents believed their friends thought it was important to have a boyfriend or girlfriend. When explored more closely, respondent perceived importance of having sex (what they think their friends believe about having sex) ranged from 2% among IS girls to 11% among OOS boys. One in four of OOS boys indicated that they had close friends who had had sex versus 15% of IS boys, 7% of IS girls and 14% of OOS girls. Between Waves 1 and 2 we found moderate increases in peer endorsement of the importance of sexual relationships for OOS boys and of the importance of romantic relations for OOS adolescents in general; for example, a 14%-point increase was noted among OOS boys' reports of peer engagement in sexual behaviors in Wave 2 compared to baseline.

Few IS adolescents (2%) believed peers used alcohol use, while this perceived behavior was more prevalent among the friends of OOS boys (9%). Meanwhile perceived use of peer alcohol consumption remained stable for girls.

In Wave 2, a majority of adolescents believed that their peers thought that attending school regularly was important, ranging from 56% among OOS boys to 84% among IS girls. This marked a significant increase for OOS girls (+18%), IS girls (+12%) and IS boys (+10%), but a reduction for OOS boys (-5%) between Waves 1 and 2. Peer school dropout remained mostly stable (decreasing from 13% to 9% among OOS adolescents, and remained unchanged among IS adolescents between waves)

Figure 9a | *Perceptions of peer attitudes ("Almost all or all my friends think it is important to...") by sex and school status*

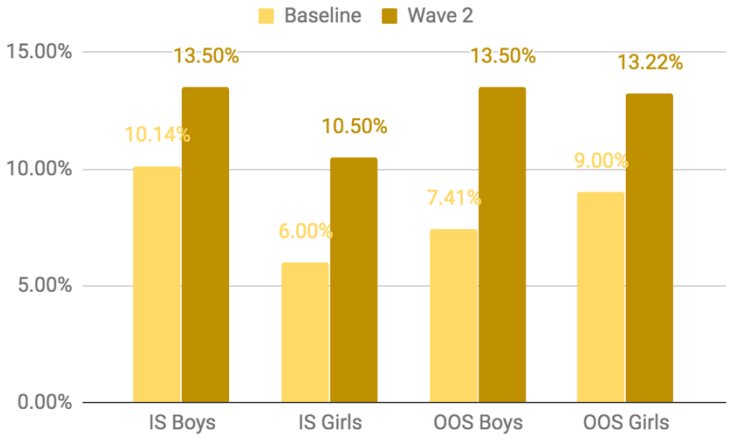


Figure 9b | *Have sex*

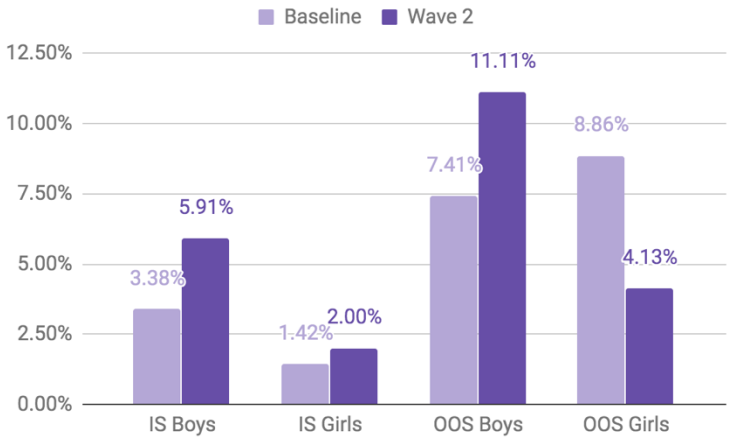


Figure 9c | *Attend school regularly*

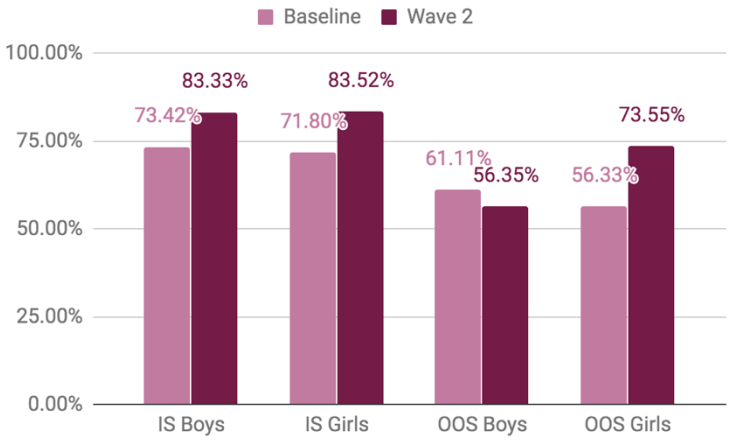


Table 3 - Peers

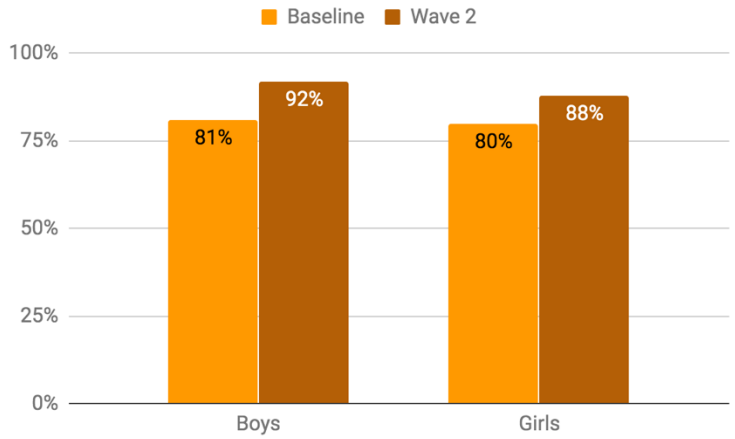
In-school Adolescents	Baseline Overall (N=901)	Boy (N=453)	Girls (N=448)	p-value	Wave 2 Overall (N=982)	Boy (N=494)	Girls (N=488)	p-value
Number of male friends								
0	292 (32.44)	11 (2.43)	281 (62.86)		341 (34.76)	21 (4.26)	320 (65.57)	
1 - 3	407 (45.22)	270 (59.6)	137 (30.65)		461 (46.99)	330 (66.94)	131 (26.84)	**<0.001**
> 3	201 (22.33)	172 (37.97)	29 (6.49)	**<0.001**	179 (18.25)	142 (28.8)	37 (7.58)	
Number of female friends								
0	277 (30.74)	244 (53.86)	33 (7.37)		327 (33.37)	283 (57.52)	44 (9.02)	
1 - 3	440 (48.83)	164 (36.2)	276 (61.61)		478 (48.78)	162 (32.93)	316 (64.75)	**<0.001**
> 3	184 (20.42)	45 (9.93)	139 (31.03)	**<0.001**	175 (17.86)	47 (9.55)	128 (26.23)	
Average time spent with friends weekly								
Never	17 (1.96)	3 (0.68)	14 (3.32)		30 (3.25)	7 (1.48)	23 (5.12)	
1 – 2 times/week	210 (24.25)	74 (16.67)	136 (32.23)		285 (30.88)	115 (24.26)	170 (37.86)	**<0.001**
3 – 4 times/week	199 (22.98)	100 (22.52)	99 (23.46)		186 (20.15)	124 (26.16)	62 (13.81)	
Nearly every day	440 (50.81)	267 (60.14)	173 (41)	**<0.001**	422 (45.72)	228 (48.1)	194 (43.21)	
All or almost of your close friends think that it is important to...								
Study hard	548 (63.28)	286 (64.41)	262 (62.09)	0.477				
Be popular with people your age	364 (42.03)	213 (47.97)	151 (35.78)	**<0.001**				
Have a boyfriend or girlfriend	70 (8.08)	45 (10.14)	25 (5.92)	**0.023**	111 (12.03)	64 (13.5)	47 (10.47)	0.157
Have sexual intercourse	21 (2.42)	15 (3.38)	6 (1.42)	0.061	37 (4.01)	28 (5.91)	9 (2)	**0.003**
Attend school regularly	629 (72.63)	326 (73.42)	303 (71.8)	0.592	770 (83.42)	395 (83.33)	375 (83.52)	0.940
Perceived peer behaviors (Most or all of friends)								
Close friends have had sex	89 (9.88)	61 (13.47)	28 (6.25)	**<0.001**	105 (10.69)	72 (14.57)	33 (6.76)	**<0.001**
Close friends have smoked	3 (0.35)	1 (0.23)	2 (0.47)	0.615^	3 (0.33)	3 (0.63)	0 (0)	0.250^
Close friends have drunk alcohol	18 (2.08)	11 (2.48)	7 (1.66)	0.399	20 (2.17)	15 (3.16)	5 (1.11)	**0.032**
Close friends permanently dropped out of school	24 (2.77)	16 (3.6)	8 (1.9)	0.126	20 (2.17)	12 (2.53)	8 (1.78)	0.434

Out-of-school Adolescents	Baseline Overall (N=342)	Boy (N=172)	Girls (N=170)	p-value	Wave 2 Overall (N=261)	Boy (N=131)	Girls (N=130)	p-value
Number of male friends								
0	139 (40.88)	10 (5.85)	129 (76.33)		88 (33.72)	5 (3.82)	83 (63.85)	
1 - 3	136 (40)	102 (59.65)	34 (20.12)	**<0.001**	119 (45.59)	83 (63.36)	36 (27.69)	**<0.001**
> 3	65 (19.12)	59 (34.5)	6 (3.55)		54 (20.69)	43 (32.82)	11 (8.46)	
Number of female friends								
0	119 (34.9)	105 (61.05)	14 (8.28)		89 (34.1)	80 (61.07)	9 (6.92)	
1 - 3	156 (45.75)	50 (29.07)	106 (62.72)	**<0.001**	130 (49.81)	42 (32.06)	88 (67.69)	**<0.001**
> 3	66 (19.35)	17 (9.88)	49 (28.99)		42 (16.09)	9 (6.87)	33 (25.38)	
Average time spent with friends weekly								
Never	5 (1.56)	2 (1.23)	3 (1.9)		0 (0)	0	0	
1 – 2 times/week	56 (17.5)	23 (14.2)	33 (20.89)	**0.002^**	70 (28.34)	27 (21.43)	43 (35.54)	**0.034^**
3 – 4 times/week	55 (17.19)	18 (11.11)	37 (23.42)		53 (21.46)	27 (21.43)	26 (21.49)	
Nearly every day	204 (63.75)	119 (73.46)	85 (53.8)		124 (50.2)	72 (57.14)	52 (42.98)	
All or almost of your close friends think that it is important to...								
Study hard	170 (53.12)	91 (56.17)	79 (50)	0.269^				
Be popular with people your age	105 (32.81)	64 (39.51)	41 (25.95)	**0.010**				
Have a boyfriend or girlfriend	26 (8.12)	12 (7.41)	14 (8.86)	0.634	33 (13.36)	17 (13.49)	16 (13.22)	0.950
Have sexual intercourse	7 (2.19)	5 (3.09)	2 (1.27)	0.448^	19 (7.69)	14 (11.11)	5 (4.13)	**0.040**
Attend school regularly	188 (58.75)	99 (61.11)	89 (56.33)	0.385	160 (64.78)	71 (56.35)	89 (73.55)	**0.005**
Perceived Peer Behaviors (Most or all of friends)								
Close friends have had sex	41 (11.99)	21 (12.21)	20 (11.76)	0.899	52 (19.92)	34 (25.95)	18 (13.85)	0.014
Close friends have smoked	3 (0.94)	3 (1.85)	0 (0)	0.248^	3 (1.21)	3 (2.38)	0 (0)	0.247^
Close friends have drunk alcohol	11 (3.44)	6 (3.70)	5 (3.16)	0.791	14 (5.67)	11 (8.73)	3 (2.48)	**0.034**
Close friends permanently dropped out of school	42 (13.12)	18 (11.11)	24 (15.19)	0.280	21 (8.5)	12 (9.52)	9 (7.44)	0.557

SCHOOL

A significantly higher proportion of IS adolescents were at age appropriate grade level in Wave 2 compared to baseline (+15%s). As a result, only 15% of boys and 13% of girls in Wave 2 were below age appropriate grade level. Educational aspirations among IS adolescents also increased with 92% of boys and 88% of girls hoping to complete a university degree in Wave 2 compared with 81% of boys and 80% of girls in baseline.

***Figure 10** | University level educational expectations among IS adolescents*



In Wave 2, one in ten IS adolescents reported missing 6 or more days of school in the last month, compared to the baseline, representing a 6 percentage point change.

Table 4 - School Context

In-school adolescents	Baseline				Wave 2			
	Overall (N=901)	Boy (N=453)	Girls (N=448)	p-value	Overall (N=982)	Boy (N=494)	Girls (N=488)	p-value
School Grade								
Primary								
4th primary or less	157 (17.43)	79 (17.44)	78 (17.41)		33 (3.36)	18 (3.64)	15 (3.07)	
5th primary	163 (18.09)	75 (16.56)	88 (19.64)		78 (7.94)	36 (7.29)	42 (8.61)	
6th primary	241 (26.75)	134 (29.58)	107 (23.88)		168 (17.11)	88 (17.81)	80 (16.39)	
Secondary				0.414				0.701
1st secondary	146 (16.2)	74 (16.34)	72 (16.07)		189 (19.25)	91 (18.42)	98 (20.08)	
2nd secondary	129 (14.32)	62 (13.69)	67 (14.96)		216 (22)	113 (22.87)	103 (21.11)	
3rd -4th secondary	65 (7.21)	29 (6.4)	36 (8.04)		264 (26.88)	135 (27.33)	129 (26.43)	
5th-6th secondary					34 (3.46)	13 (2.63)	21 (4.3)	
Age-for-grade Educational Attainment								
Below grade level	257 (28.52)	133 (29.36)	124 (27.68)	0.576	140 (14.26)	75 (15.18)	65 (13.32)	0.404
At or above grade level	644 (71.48)	320 (70.64)	324 (72.32)		842 (85.74)	419 (84.82)	423 (86.68)	
Dropped out of school in the last year					57 (5.8)	34 (6.88)	23 (4.71)	0.146
School type								
Public	374 (42.26)	177 (39.69)	197 (44.87)					
Private	338 (38.19)	155 (34.75)	183 (41.69)	<0.001^				
Religious	172 (19.44)	113 (25.34)	59 (13.44)					
Vocational or Other	1 (0.11)	1 (0.22)	0 (0)					
School Resource Index								
Low	434 (48.44)	222 (49.33)	212 (47.53)					
Medium	195 (21.76)	100 (22.22)	95 (21.3)	0.672				
High	267 (29.8)	128 (28.44)	139 (31.17)					
Attends Co-ed School	901 (100)	453 (100)	448 (100)	N/A				

Avg number of school days missed in the last month								
0	331 (37.44)	145 (32.58)	186 (42.37)		374 (38.32)	166 (33.88)	208 (42.8)	
1-2 days	221 (25)	126 (28.31)	95 (21.64)	**0.005**	328 (33.61)	172 (35.1)	156 (32.1)	**0.026**
3-5 days	192 (21.72)	93 (20.9)	99 (22.55)		159 (16.29)	91 (18.57)	68 (13.99)	
6 or more days	140 (15.84)	81 (18.2)	59 (13.44)		115 (11.78)	61 (12.45)	54 (11.11)	
I expect to complete...								
Primary or secondary school	146 (16.22)	71 (15.71)	75 (16.74)		65 (6.62)	32 (6.48)	33 (6.76)	
Vocational or high school	24 (2.67)	12 (2.65)	12 (2.68)		35 (3.56)	8 (1.62)	27 (5.53)	
Graduate degree (university, licensure, or doctorate)	725 (80.56)	366 (80.97)	359 (80.13)	0.979^	880 (89.61)	452 (91.5)	428 (87.7)	**0.003^**
None of the above - quit school earlie	3 (0.33)	2 (0.44)	1 (0.22)		0	0	0	
Other	2 (0.22)	1 (0.22)	1 (0.22)		2 (0.2)	2 (0.4)	0 (0)	
	Baseline				Wave 2			
Out-of-school adolescents	Overall (N=342)	Boy (N=172)	Girls (N=170)	p-value	Overall (N=261)	Boy (N=131)	Girls (N=130)	p-value
Ever in school	321 (93.86)	164 (95.35)	157 (92.35)	0.249				
Highest grade attained								
4th primary or lower	178 (55.45)	93 (56.71)	85 (54.14)					
5th primary	61 (19)	30 (18.29)	31 (19.75)					
6th primary	38 (11.84)	23 (14.02)	15 (9.55)	0.235^				
1st secondary	26 (8.1)	10 (6.1)	16 (10.19)					
2nd secondary	13 (4.05)	4 (2.44)	9 (5.73)					
3rd or 4th secondary	5 (1.56)	4 (2.44)	1 (0.64)					
Time since dropping out								
Less than a year	43 (14.01)	28 (17.83)	15 (10)					
1-3 years	211 (68.73)	103 (65.61)	108 (72)	0.142				
3 years or more	53 (17.26)	26 (16.56)	27 (18)					
Most common reasons for leaving school:								
Lack of school fees/uniform/materials	298 (87.13)	152 (88.37)	146 (85.88)	0.492	21 (53.85)	6 (37.5)	15 (65.22)	0.088
Got pregnant	0 (0)	0 (0)	0 (0)	N/A	0	0	0	N/A
Got married	0 (0)	0 (0)	0 (0)	N/A	0	0	0	N/A
Sickness	11 (3.22)	5 (2.91)	6 (3.53)	0.744	4 (10.26)	2 (12.5)	2 (8.7)	1.000^
Need to earn money	1 (0.29)	1 (0.58)	0 (0)	1.000^	4 (10.26)	1 (6.25)	3 (13.04)	0.631^
Failed school	3 (0.88)	1 (0.58)	2 (1.18)	0.622^	0	0	0	N/A
Not interested	112 (32.75)	61 (35.47)	51 (30)	0.282	1 (2.56)	0 (0)	1 (4.35)	1.000^
Went back to school during the last year					13 (4.98)	5 (3.82)	8 (6.15)	0.386

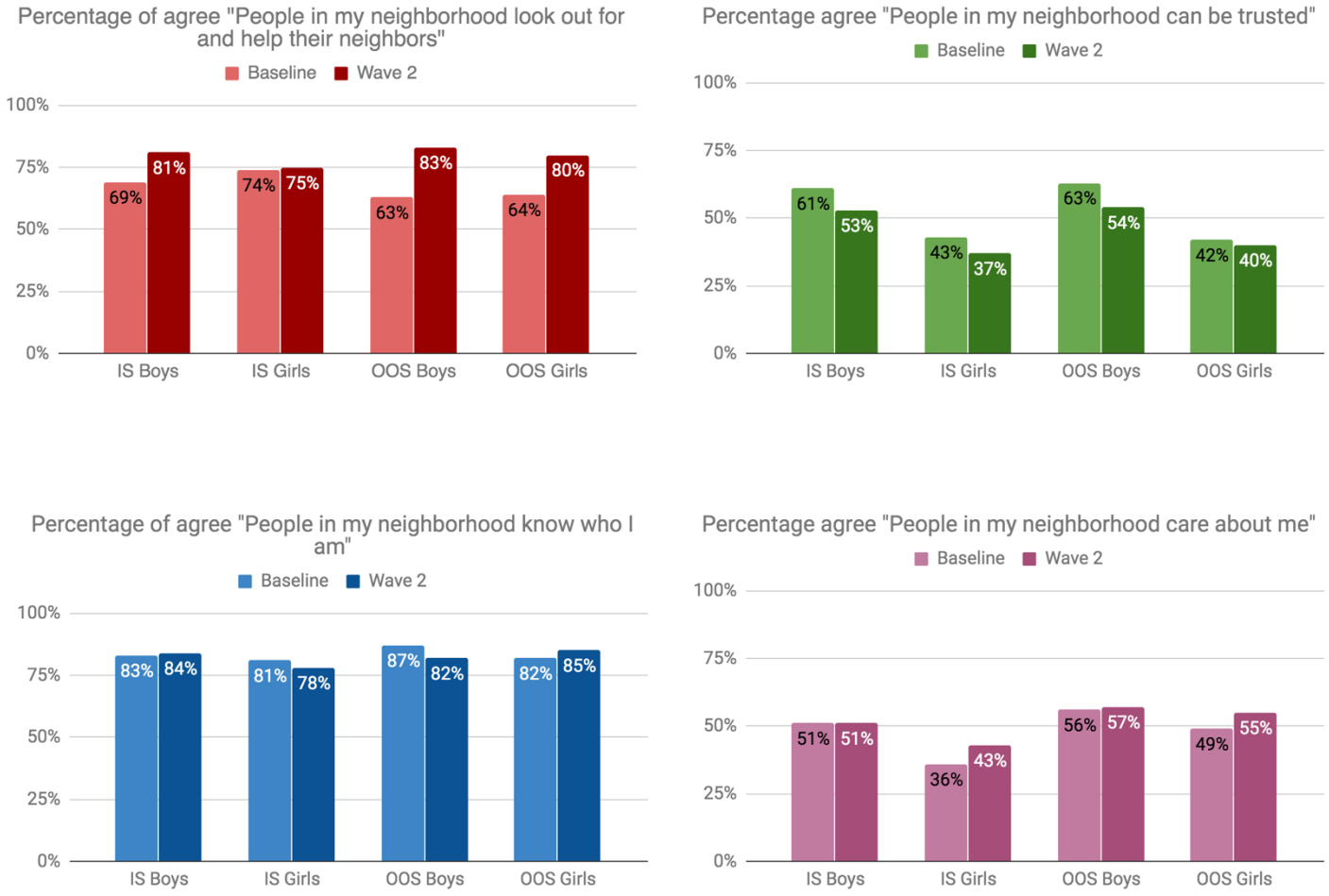
NEIGHBORHOOD

Adolescents' perceptions of their neighborhood were captured through a series of questions exploring neighborhood social cohesion, danger in the neighborhood and neighborhood social control. Neighborhood social cohesion related to perceptions of mutual trust and solidarity between people living in the same locality and was assessed with four questions about trust, familiarity, care and solidarity in the neighborhood. Perceptions of neighborhood safety related to young people's feelings about being threatened or unsafe at school, on their way to school or in their neighborhood. Neighborhood social control related to young people's expectations for adults to intervene for the common good of their communities.

At Wave 2, perceptions of neighborhood cohesion indicated generally high solidarity between neighbors (78% of IS and 82% of OOS adolescents perceived that people looked after each other), and high levels of connectedness (81% of IS and 84% of OOS adolescents indicated people knew who they were) but low levels of trust and care (only 45% of IS and 47% of OOS adolescents reported people could be trusted and 47% of IS and 56% of OOS participants indicated that people cared about them in the neighborhood). As in baseline, boys were more trusting of their community members than girls (53% versus 37% among IS adolescents and 54% versus 40% among OOS adolescents) and more likely to believe people in their neighborhood cared about them (51% versus 43% for IS participants and 57% versus 55% for OOS participants). Little change was noted since baseline, with a slight increase in overall positive neighborhood perceptions, driven by an improvement in perceptions of neighborhood solidarity (+2% change for both IS and OOS adolescents). We also note an increase in girls' belief that people cared about them (+7% among IS girls and +6% among OOS girls) and in

OOS girls' belief people in the neighborhood knew who they were (+6%). However, boys and girls were both less likely to believe people could be trusted in the neighborhood (-7% for IS and -5% for OOS), and IS girls and OOS girls were less likely to think people in the neighborhood cared about them (-7%).

Figure 11 | *Change in Neighborhood Social Cohesion by School Status and Sex*



Nine out of ten IS and eight in ten OOS adolescents generally believed adults in the neighborhood would act for the greater good of the community by intervening in case of fighting or disruption in their neighborhood; and this remained constant over time. Between approximately 1-in-7 (IS) and 1-in-5 (OOS) adolescents reported feeling threatened in the neighborhood or on their way to school representing an improvement for most all groups except IS girls since baseline. The decline was most pronounced among boys (-9% among IS boys and -8% among OOS boys), but was also noted among OOS girls (-3%s). Feelings of neighborhood insecurity slightly increased among IS girls in Wave 2 (+3%s). As a result, the sex divide in feelings of insecurity noted at baseline for IS adolescents disappeared in Wave 2 and was minimal among OOS adolescents.

To better understand safety issues for young people in their neighborhoods, additional questions related to neighborhood safety were introduced in Wave 2, As shown in Table 5, adolescents at Wave 2 were more likely to report that there were safe places for boys to socialize in their neighborhood than there were for girls. More than three-quarters of IS adolescents and 82% of OOS adolescents indicated that crime was a problem in their neighborhood while about three-quarters of both IS and OOS adolescents agreed traffic accidents were a concern for people their age.

Table 5 - Neighborhood

	Baseline				Wave 2			
In-school Adolescents	Overall (N=901)	Boy (N=453)	Girls (N=448)	p-value	Overall (N=982)	Boy (N=494)	Girls (N=488)	p-value
Neighborhood Social Cohesion: % who agree								
"People in my neighborhood look out for and help their neighbors"	646 (71.7)	314 (69.32)	332 (74.11)	0.110	767 (78.11)	399 (80.77)	368 (75.41)	**0.042**
"People in my neighborhood can be trusted"	468 (51.94)	275 (60.71)	193 (43.08)	**<0.001**	443 (45.11)	263 (53.24)	180 (36.89)	**<0.001**
"People in my neighborhood know who I am"	742 (82.35)	378 (83.44)	364 (81.25)	0.388	796 (81.06)	415 (84.01)	381 (78.07)	**0.018**
"People in my neighborhood care about me"	393 (43.62)	231 (50.99)	162 (36.16)	**<0.001**	460 (46.84)	251 (50.81)	209 (42.83)	**0.012**
Positive neighborhood perception	229 (25.42)	141 (31.13)	88 (19.64)	**<0.001**	267 (27.19)	159 (32.19)	108 (22.13)	**<0.001**
Neighborhood Danger								
Felt threatened in school or neighborhood	163 (18.09)	102 (22.52)	61 (13.62)	**0.001**	152 (15.48)	70 (14.17)	82 (16.8)	0.254
Felt unsafe or threatened in school because of...								
Adults or Teachers	15 (34.09)	11 (44)	4 (21.05)	0.112	23 (37.1)	16 (38.1)	7 (35)	0.814
Classmates or other students	54 (87.1)	29 (80.56)	25 (96.15)	0.071	38 (61.29)	25 (59.52)	13 (65)	0.679
Other (e.g. animals, car accidents)	12 (26.67)	8 (30.77)	4 (21.05)	0.467	10 (16.13)	8 (19.05)	2 (10)	0.365
Felt unsafe or threatened in neighborhood because of...								
Adults	151 (79.89)	90 (76.92)	61 (84.72)	0.194	151 (73.3)	78 (74.29)	73 (72.28)	0.745
Boys or girls your age	60 (35.09)	43 (38.39)	17 (28.81)	0.212	59 (28.64)	31 (29.52)	28 (27.72)	0.775
Other (e.g. animals, car accidents)	59 (38.56)	37 (38.54)	22 (38.60)	0.995	29 (14.08)	20 (19.05)	9 (8.91)	0.037
Someone to turn to when feeling unsafe	188 (77.69)	113 (77.4)	75 (78.12)	0.894	165 (67.35)	82 (67.77)	83 (66.94)	0.889
Feels unsafe now	70 (28.93)	38 (26.03)	32 (33.33)	0.220	76 (31.02)	34 (28.1)	42 (33.87)	0.329
Perceived Social Control: % agree								
"Adult in your neighborhood would intervene if children or teenagers were Damaging property"	814 (90.34)	417 (92.05)	397 (88.62)	0.081	889 (90.53)	458 (92.71)	431 (88.32)	0.019
"Adult in your neighborhood would intervene if children or adult were Spraying paint on walls (graffiti)"	813 (90.23)	410 (90.51)	403 (89.96)	0.780	898 (91.45)	457 (92.51)	441 (90.37)	0.230
"Adult in your neighborhood would intervene if children or adult were Bullying or threatening"	827 (91.79)	416 (91.83)	411 (91.74)	0.960	882 (89.82)	449 (90.89)	433 (88.73)	0.263
"Adult in your neighborhood would intervene if children or adult were Fighting with another person"	839 (93.12)	423 (93.38)	416 (92.86)	0.758	907 (92.36)	459 (92.91)	448 (91.8)	0.512
Summary Score (Mean +/- SD)	3.69 + 0.59	3.72 + 0.57	3.66 + 0.60	0.128	3.70 + 0.59	3.73 + 0.56	3.67 + 0.62	0.131
Ordinal Alpha	0.92				0.93			
Perceived Neighborhood Safety: % agree								
"There are places that are safe for boys your age to spend time together or do activities together					534 (54.38)	272 (55.06)	262 (53.69)	0.666
"There are places that are safe for girls your age to spend time together or do activities together"					317 (32.28)	165 (33.4)	152 (31.15)	0.450

"Crime and violence are a problem"					754 (76.78)	392 (79.35)	362 (74.18)	0.055
"Traffic accidents are a problem for people your age"					720 (73.32)	371 (75.1)	349 (71.52)	0.204
	Baseline				Wave 2			
Out of School Adolescents	Overall (N=342)	Boy (N=172)	Girls (N=170)	p-value	Overall (N=261)	Boy (N=131)	Girls (N=130)	p-value
Neighborhood Social Cohesion: % agree								
"People in my neighborhood look out for and help their neighbors"	218 (63.74)	109 (63.37)	109 (64.12)	0.886	213 (81.61)	109 (83.21)	104 (80)	0.504
"People in my neighborhood can be trusted"	179 (52.34)	108 (62.79)	71 (41.76)	**<0.001**	123 (47.13)	71 (54.2)	52 (40)	**0.022**
"People in my neighborhood know who I am"	289 (84.5)	150 (87.21)	139 (81.76)	0.164	218 (83.52)	108 (82.44)	110 (84.62)	0.636
"People in my neighborhood care about me"	181 (52.92)	97 (56.4)	84 (49.41)	0.196	146 (55.94)	75 (57.25)	71 (54.62)	0.668
Positive neighborhood perception	91 (26.61)	53 (30.81)	38 (22.35)	0.077	76 (29.12)	45 (34.35)	31 (23.85)	0.062
Neighborhood Danger								
Felt threatened in school or neighborhood	86 (25.15)	50 (29.07)	36 (21.18)	0.093	52 (19.92)	28 (21.37)	24 (18.46)	0.556
Felt unsafe or threatened in school because of...								
Adults or Teachers	2 (50)	1 (50)	1 (50)	1.000^	0	0	0	N/A
Classmates or other students	2 (50)	0	2 (66.67)	1.000^	0	0	0	N/A
Other (e.g. animals, car accidents)	1 (33.33)	1 (100)	0	0.333^	0	0	0	N/A
Felt unsafe or threatened in neighborhood because of...								
Adults	81 (77.14)	46 (76.67)	35 (77.78)	0.893	58 (71.6)	33 (67.35)	25 (78.12)	0.293
Boys or girls your age	26 (28.57)	10 (20.00)	16 (39.02)	**0.046**	29 (35.8)	20 (40.82)	9 (28.12)	0.244
Other (e.g. animals, car accidents)	50 (50.51)	26 (45.61)	24 (57.14)	0.257	22 (27.16)	13 (26.53)	9 (28.12)	0.875
Someone to turn to when feeling unsafe	86 (71.67)	46 (71.88)	40 (71.43)	0.957	60 (74.07)	40 (81.63)	20 (62.5)	0.055
Feels unsafe now	38 (31.67)	20 (31.25)	18 (32.14)	0.916	23 (28.4)	11 (22.45)	12 (37.5)	0.142
Perceived Social Control: % agree								
"Adult in your neighborhood would intervene if children or teenagers were Damaging property"	307 (89.77)	153 (88.95)	154 (90.59)	0.618	239 (91.57)	121 (92.37)	118 (90.77)	0.642
"Adult in your neighborhood would intervene if children or adult were Spraying paint on walls (graffiti)"	311 (90.94)	155 (90.12)	156 (91.76)	0.595	247 (94.64)	122 (93.13)	125 (96.15)	0.278
"Adult in your neighborhood would intervene if children or adult were Bullying or threatening"	312 (91.23)	160 (93.02)	152 (89.41)	0.238	240 (91.95)	115 (87.79)	125 (96.15)	**0.013**
"Adult in your neighborhood would intervene if children or adult were Fighting with another person"	319 (93.27)	161 (93.6)	158 (92.94)	0.806	245 (93.87)	123 (93.89)	122 (93.85)	0.987
Summary Score (Mean +/- SD)	3.65 + 0.56	3.66 + 0.57	3.65 + 0.55	0.902	3.71 + 0.52	3.71 + 0.55	3.72 + 0.52	0.898
Ordinal Alpha	0.87				0.88			
Perceived Neighborhood Safety: % agree								
“There are places that are safe for boys your age to spend time together or do activities together					156 (59.77)	87 (66.41)	69 (53.08)	**0.028**
"There are places that are safe for girls your age to spend time together or do activities together"					96 (36.78)	53 (40.46)	43 (33.08)	0.216
"Crime and violence are a problem"					215 (82.38)	108 (82.44)	107 (82.31)	0.977
"Traffic accidents are a problem for people your age"					202 (77.39)	104 (79.39)	98 (75.38)	0.439

VIGNETTES-BASED MEASURE OF GENDER EQUALITY

The GEAS developed vignettes to assess gender differences in communication style and adolescents' perceptions regarding puberty and pregnancy.

Vignettes were designed to investigate how adolescents would perceive relationships and adolescent experiences differently if the protagonist was a boy or a girl and how they assessed their own attitudes or behaviors relative to what they perceived as being typical in their peer groups and with other social influencers.

- The first vignette assessed communication style in the context of romantic relationships between boys and girls, including direct, indirect and non-communicative (avoidance) strategies, coded 2, 1, or 0 respectively to form a communication score.
- The second vignette explored reactions to gender atypical behaviors distinguishing between exclusion, partial inclusion and complete inclusion coded 0, 1, or 2 respectively.
- Puberty vignettes evaluated young adolescents' responses to puberty onset with taking perspectives of hypothetical protagonist and peers.
- Pregnancy vignettes assessed adolescents' responses to pregnancy in both respondents' and protagonists' views.

Adolescents generally adopted an indirect style of communication to approach romantic interests, with girls more likely to engage in indirect/avoidance style (e.g. waiting for someone else to initiate a conversation) than boys. Specifically, 75% of respondents thought that boys would directly approach a girl to indicate his romantic interest but only 56% to 63% of girls would do the same (based on male and female responses, respectively). When asked about their personal behaviors in this type of situation, 70% of boys indicated they would directly communicate with a girl they liked versus 48% of girls who would do the same with a boy they liked.

Similar sex differences in typical behaviors were captured in the assessment of young people's' reaction to atypical gender behaviors with 71% and 78% of IS adolescents, indicating that atypical boys would be rejected by girls if asking to join an all-girls group (based on female and male responses, respectively). Likewise, 62% and 76% of atypical girls who would be rejected if asking to join an all-boys group (based on IS female and male responses, respectively). Such rejection of non-conforming gender preferences were even more pronounced among OOS adolescents.

Adolescents were also asked to describe typical reactions to an adolescent girl becoming pregnant in their communities, as well as their own response to a hypothetical situation. Most adolescents, boys and girls alike, would accept the pregnancy, with 42% of girls reporting a teenage girl who becomes pregnant would be happy to have a baby with her boyfriend while 48% of boys indicated a boy whose girlfriend became pregnant would be happy to have a baby with her. However, when asked how the respondent would personally react to the situation, the percentage of accepting boys increased to 55%, suggesting potential social desirability bias when assessing personal attitudes and behaviors. Social desirability bias was also made clear by the difference in decisions to terminate pregnancies that were systematically higher when considering typical cases (25% for girls and 29% for boys) than when considering personal decisions (16% of girls and 20% of boys).

Figure 12 | *IS Boys Perceived Peer and Personal Reaction to Pregnancy*

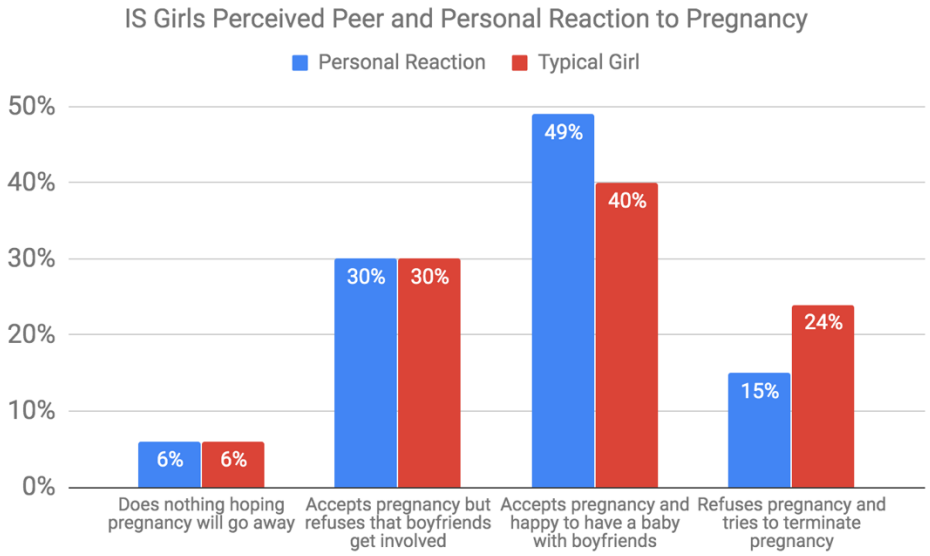
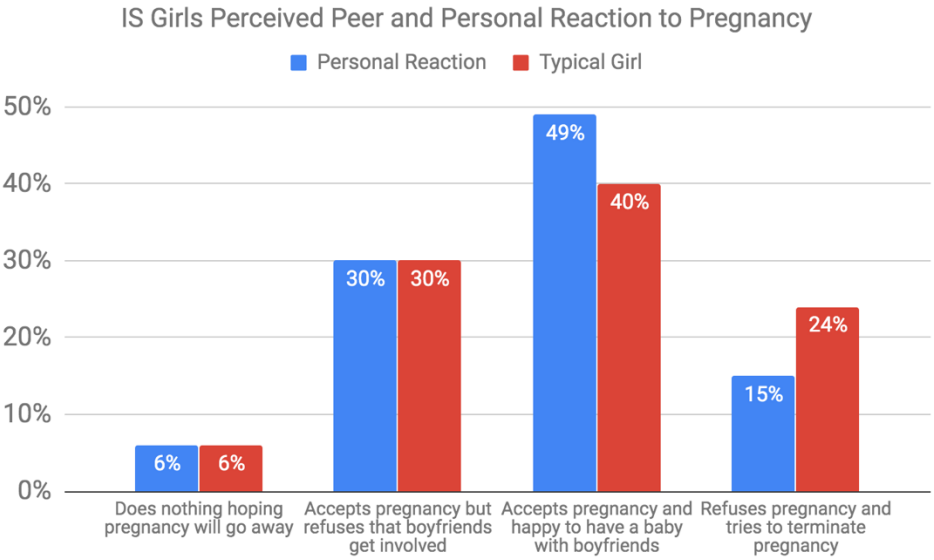


Figure 13 | *IS Girls Perceived Peer and Personal Reaction to Pregnancy*



OOS girls were more likely than IS girls to indicate that they would be happy to have a baby with their boyfriend (51% OOS versus 40% IS). OOS boys were more likely than IS boys to indicate the pregnancy would be terminated (37% OOS boys versus 28% IS boys). As observed with IS adolescents, there was evidence of social desirability bias with a lower percentage of respondents indicating they would consider pregnancy termination as compared to typical adolescents faced with this situation.

Figure 14 | *OOS Boys Perceived Peer and Personal Reaction to Pregnancy*

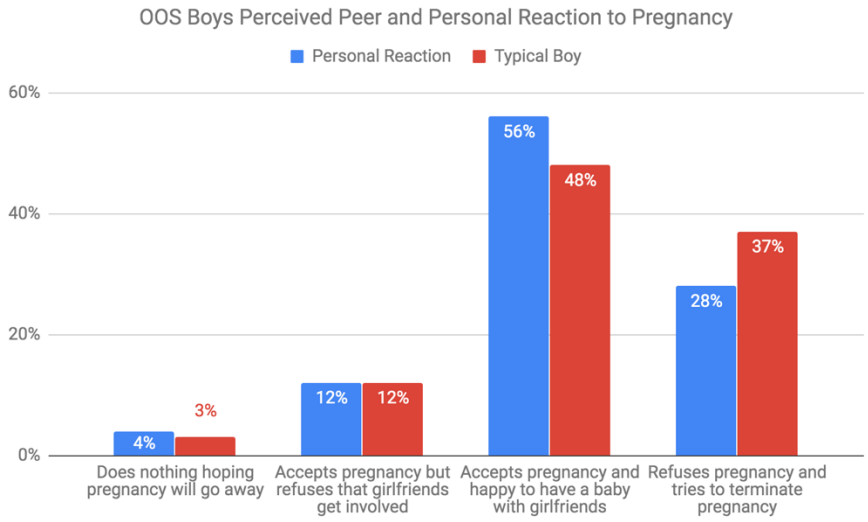
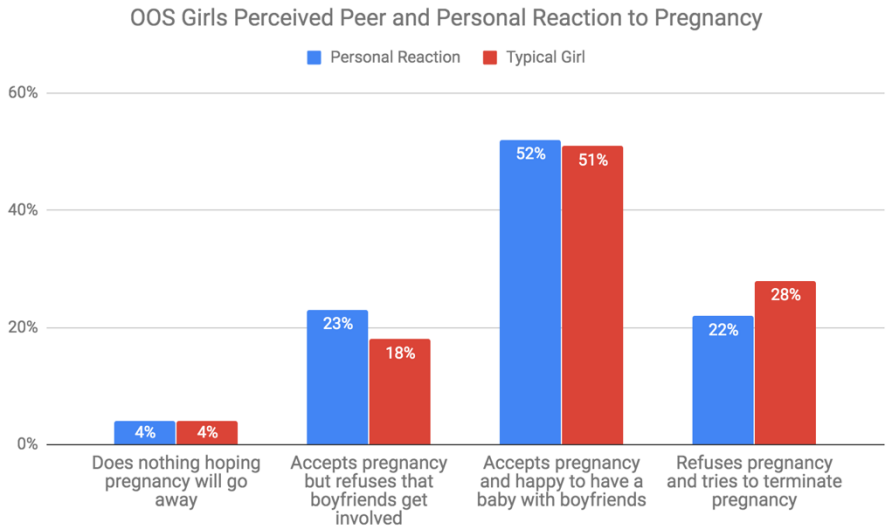


Figure 15 | *OOS Girls Perceived Peer and Personal Reaction to Pregnancy*



GENDER NORMS

The GEAS aims to investigate young people's perceptions of normative gender traits, roles and relationships in early adolescents and how these perceptions evolve over time and influence a number of adolescent health outcomes. The exploration of gender-stereotypical traits reflects attributes of masculinities and femininities, contrasting male toughness and female vulnerability, while gender stereotypical roles portray sex-specific responsibilities and power imbalance in decision making in the household. In addition, two cross-cultural measures of gender norms about relationships were developed, assessing normative views about boy-girl

romantic engagement (a scale that assessed whether adolescents considered romantic relationships between boys and girls in adolescence normal) and the existence of a "sexual double standard" with respect to the social consequences of engaging in romantic relations, wherein boys are socially rewarded for romantic and sexual activity while girls are penalized. The distribution of responses to each of the questions populated the 2 scales are presented in **Appendix D**.

Gender-Stereotypical Traits

Stereotypical traits of toughness versus vulnerability were widespread with more than 8 out of 10 adolescents endorsing a number of gender unequal representations. "Boys should be able to show their feelings without fear of being teased" received the lowest level of endorsement yet still two-thirds of female respondents indicated the affirmative, (65% among IS and 67% among OOS girls). These gender stereotypes remained remarkably stable between waves 1 and 2 among IS adolescents, with a few exceptions including a slight decrease (-4%) in the belief that "Girls should avoid raising their voice to be ladylike". Endorsement of stereotypical traits increased among OOS girls between waves 1 and 2. Changes were inconsistent and more modest among boys (Table 6).

Gender-Stereotypical Roles

Perceptions of unequal gender division of roles and power in the household were prominent with more than 8 out of 10 adolescents endorsing male authority as the normative model. While overall the division of power clearly favored males, among IS adolescents, a majority (63%) supported equal responsibilities in household chores. Over half (63%) believed "Men should be the ones who bring money home for the family, not women". While perceptions of the gender divide in household authority remained stable over time, substantial shifts in perceptions of male responsibilities, towards greater household chore sharing (+ 4%s for IS adolescents and -6% for OOS adolescents) and less responsibilities as sole breadwinners (-6%s for IS adolescents). The latter did not change among OOS adolescents between two waves.

Table 6 - Additional Gender Norms Concept

	Baseline				Wave 2			
In-school Adolescents	Overall (N=901)	Boy (N=453)	Girls (N=448)	p-value	Overall (N=982)	Boy (N=494)	Girls (N=488)	p-value
Stereotypical gender traits: toughness versus vulnerability (%agree)								
Boys should always defend themselves even if it means fighting.	772 (85.68)	386 (85.21)	386 (86.16)	0.684	830 (84.52)	420 (85.02)	410 (84.02)	0.664
It's important for boys to show they are tough even if they are nervous inside.	777 (86.24)	383 (84.55)	394 (87.95)	0.139	845 (86.05)	430 (87.04)	415 (85.04)	0.365
Boys who behave like girls are considered weak.	779 (86.46)	394 (86.98)	385 (85.94)	0.649	827 (84.22)	420 (85.02)	407 (83.4)	0.487
Boys should be able to show their feelings without fear of being teased.	586 (65.04)	276 (60.93)	310 (69.2)	**0.009**	591 (60.18)	275 (55.67)	316 (64.75)	**0.004**
Girls are expected to be humble.	872 (96.78)	440 (97.13)	432 (96.43)	0.551	962 (97.96)	484 (97.98)	478 (97.95)	0.978
Girls should avoid raising their voice to be lady like.	704 (78.14)	333 (73.51)	371 (82.81)	**0.001**	731 (74.44)	370 (74.9)	361 (73.98)	0.740
Girls need their parents' protection more than boys.	787 (87.35)	385 (84.99)	402 (89.73)	**0.032**	844 (85.95)	397 (80.36)	447 (91.6)	**<0.001**
Stereotypical gender roles (%agree)								
A woman's role is taking care of her home and family.	809 (89.79)	401 (88.52)	408 (91.07)	0.206	896 (91.24)	447 (90.49)	449 (92.01)	0.399
A man should have the final word about decisions in the home.	816 (90.57)	411 (90.73)	405 (90.4)	0.867	922 (93.89)	469 (94.94)	453 (92.83)	0.167
Boys and girls should be equally responsible for household chores.	545 (60.49)	282 (62.25)	263 (58.71)	0.276	632 (64.36)	313 (63.36)	319 (65.37)	0.511
A woman should obey her husband in all matters.	851 (94.45)	433 (95.58)	418 (93.3)	0.135	930 (94.7)	474 (95.95)	456 (93.44)	0.079
Men should be the ones who bring money home for the family, not women.	617 (68.48)	327 (72.19)	290 (64.73)	**0.016**	615 (62.63)	306 (61.94)	309 (63.32)	0.656
Sanctions for challenging gender roles								
It is okay to tease a girl who acts like a boy.	566 (62.82)	304 (67.11)	262 (58.48)	**0.007**	616 (62.73)	314 (63.56)	302 (61.89)	0.587

It is okay to tease a boy who acts like a girl.	630 (69.92)	335 (73.95)	295 (65.85)	**0.008**	685 (69.76)	350 (70.85)	335 (68.65)	0.452
	Baseline				Wave 2			
Out-of-school Adolescents	Overall	Boy	Girls	p-value	Overall (N=261)	Boy (N=131)	Girls (N=130)	p-value
Stereotypical gender traits: toughness versus vulnerability (%agree)								
Boys should always defend themselves even if it means fighting.	284 (83.04)	141 (81.98)	143 (84.12)	0.598	223 (85.44)	111 (84.73)	112 (86.15)	0.745
It's important for boys to show they are tough even if they are nervous inside.	292 (85.38)	153 (88.95)	139 (81.76)	0.06	222 (85.06)	108 (82.44)	114 (87.69)	0.234
Boys who behave like girls are considered weak.	294 (85.96)	151 (87.79)	143 (84.12)	0.328	219 (83.91)	109 (83.21)	110 (84.62)	0.757
Boys should be able to show their feelings without fear of being teased.	230 (67.25)	118 (68.6)	112 (65.88)	0.592	165 (63.22)	78 (59.54)	87 (66.92)	0.216
Girls are expected to be humble.	334 (97.66)	168 (97.67)	166 (97.65)	1.000^	254 (97.32)	125 (95.42)	129 (99.23)	0.057
Girls should avoid raising their voice to be lady like.	278 (81.29)	132 (76.74)	146 (85.88)	**0.030**	200 (76.63)	102 (77.86)	98 (75.38)	0.636
Girls need their parents' protection more than boys.	282 (82.46)	135 (78.49)	147 (86.47)	0.052	224 (85.82)	102 (77.86)	122 (93.85)	**<0.001**
Stereotypical gender roles (%agree)								
A woman's role is taking care of her home and family.	308 (90.06)	150 (87.21)	158 (92.94)	0.077	243 (93.1)	122 (93.13)	121 (93.08)	0.987
A man should have the final word about decisions in the home.	311 (90.94)	160 (93.02)	151 (88.82)	0.176	250 (95.79)	128 (97.71)	122 (93.85)	0.120
Boys and girls should be equally responsible for household chores.	226 (66.08)	119 (69.19)	107 (62.94)	0.223	156 (59.77)	83 (63.36)	73 (56.15)	0.235
A woman should obey her husband in all matters.	322 (94.15)	166 (96.51)	156 (91.76)	0.061	245 (93.87)	124 (94.66)	121 (93.08)	0.595
Men should be the ones who bring money home for the family, not women.	247 (72.22)	129 (75)	118 (69.41)	0.249	188 (72.03)	91 (69.47)	97 (74.62)	0.354
Sanctions for challenging gender roles								
It is okay to tease a girl who acts like a boy.	224 (65.5)	107 (62.21)	117 (68.82)	0.198	176 (67.43)	89 (67.94)	87 (66.92)	0.861
It is okay to tease a boy who acts like a girl.	237 (69.3)	120 (69.77)	117 (68.82)	0.850	190 (72.8)	96 (73.28)	94 (72.31)	0.860

^ = Fisher's exact test

Gender Norms about Relationships

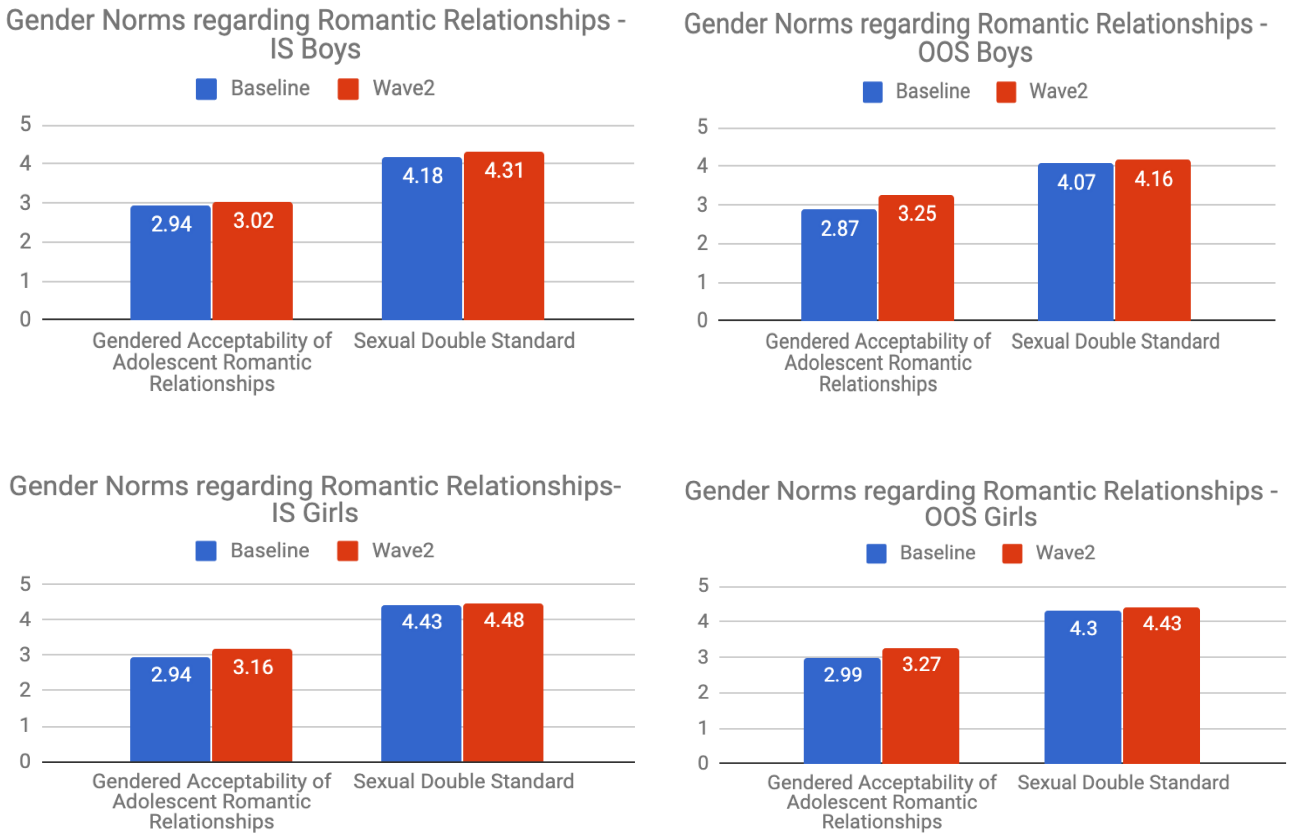
With a mean score of 3.02 and 3.25 for IS and OOS boys and of 3.16 for and 3.27 for IS and OOS girls (on a scale from 1 to 5), results suggest nuanced perceptions about romantic involvement during adolescence, bending toward acceptance for all study adolescents. The acceptability of romantic relations grew substantially, especially among OOS adolescents between the two survey waves (+0.33 points). However, different expectations by sex were seen regarding romantic engagement with more than 8 out of 10 adolescents perceiving romantic relations to be harmful for girls, while boys engaged in such relations to gain social status. Acceptance of a sexual double standard increased noticeably between baseline and Wave 2, especially among girls (+0.05 among IS girls and +0.13 among out-of-school girls).

Table 7 - Gender Norms

	Baseline				Wave 2			
In-school Adolescents	Overall	Boy	Girls	p-value	Overall	Boy	Girls	p-value
Adolescent Relationship Expectation								
Mean Score (Mean +/- SD) (1-5, 5 indicating strongest endorsement of heteronormative relationships)	2.94 +1.08 (N=901)	2.94 + 1.14 (N=453)	2.94 + 1.01 (N=448)	0.952	3.09 +/- 1.09 (N=982)	3.02 +/- 1.09 (N=494)	3.16 +/- 1.09 (N=488)	0.059
Ordinal Alpha		0.75				0.77		
Sexual Double Standard								
Mean Score (Mean +/- SD) (1-5, 5 indicating strongest endorsement of sexual double standard)	4.31 + 0.86 (N=901)	4.18 + 0.91 (N=453)	4.43 + 0.80 (N=448)	**<0.001**	4.31 +/- 0.90 (N=982)	4.13 +/- 0.97 (N=494)	4.48 +/- 0.78 (N=488)	**<0.001**
Ordinal Alpha		0.82			0.85			
	Baseline				Wave 2			
Out-of-school Adolescents	Overall	Boy	Girls	p-value	Overall	Boy	Girls	p-value
Adolescent Relationship Expectation								

Mean Score (Mean +/- SD) (1-5, 5 indicating strongest endorsement of heteronormative relationships)	2.93 + 1.16 (N=342)	2.87 + 1.18 (N=172)	2.99 + 1.14 (N=170)	0.334	3.26 +/- 1.11 (N=261)	3.25 +/- 1.12 (N=131)	3.27 +/- 1.11 (N=130)	0.867
Ordinal Alpha		0.79				0.75		
Sexual Double Standard								
Mean Score (Mean +/- SD) (1-5, 5 indicating strongest endorsement of sexual double standard)	4.18 + 0.93 (N=342)	4.07 + 0.99 (N=172)	4.30 + 0.86 (N=170)	**0.020**	4.30 +/- 0.93 (N=261)	4.16 +/- 0.93 (N=131)	4.43 +/- 0.91 (N=130)	**0.018**
Ordinal Alpha		0.83				0.86		
Note: * indicates Wilcoxon ranksum Test								

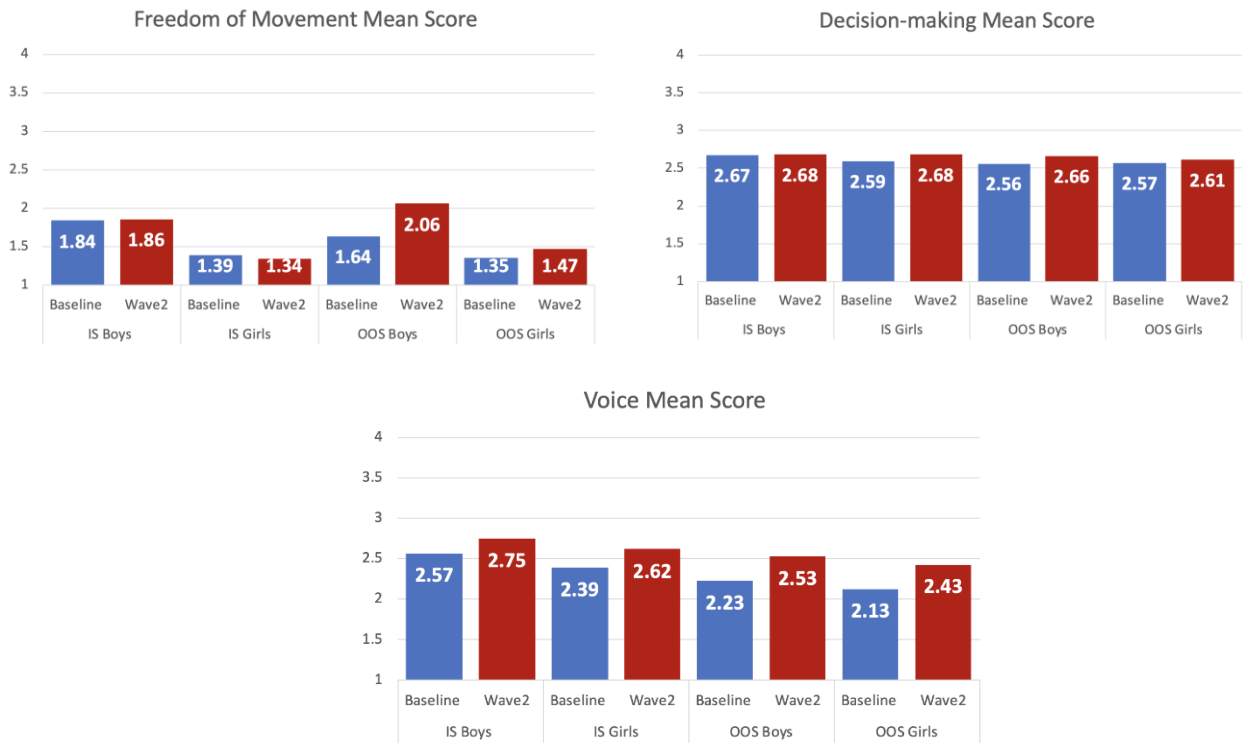
Figure 16 | *IS and OOS Adolescent Gender Norms regarding Romantic Relationships*



EMPOWERMENT

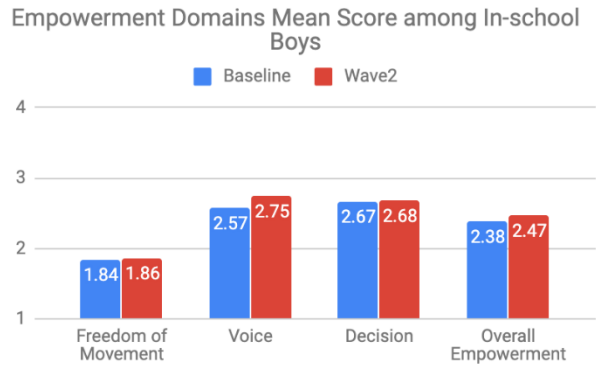
The GEAS explores three dimensions of empowerment in early adolescence related to freedom of movement, voice, and decision making. Freedom of movement captures the extent to which adolescents are free to go to certain places alone (e.g. after-school activities, party, meeting with friends with opposite sex, and community center/movies). Voice represents the extent to which adolescents believe their opinions are heard by their parents, teachers, or adults in the community. Decision represents the extent to which adolescents can make daily life decisions on their own, such as friendships, clothing, what to do with their free time, foods to eat when outside home etc. The questions used to develop each construct are presented in **Appendix E**. Each sub dimension score ranges from 1 to 4, with higher scores reflecting greater empowerment. The overall empowerment indicator was an aggregate score ranging from 1 to 4 reflecting all three sub dimensions of freedom of movement, voice, and decision ranging from 1 to 4.

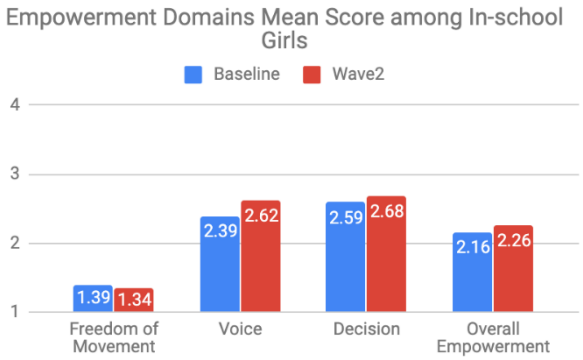
Figure 17 | *IS and OOS Mean Scores for Freedom of Movement, Decision-making and Voice*

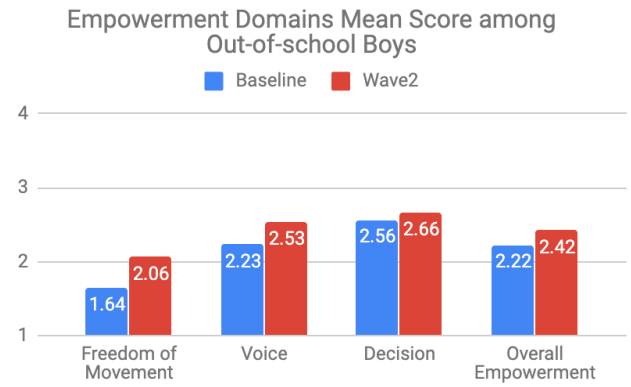


Adolescents showed differing degrees of agency according to their freedom of movement, their ability to be heard (voice) and their ability to make decisions in their daily life (decision-making). Over time, boys and girls alike reported greater ability to be heard (+0.21 point in mean score for IS and +0.30 for OOS adolescents). OOS adolescents and IS girls also reported greater ability to make decisions on their own (increase ranging from +0.09 points in mean score among IS girls to +0.04 among OOS girls). Freedom of movement changed little among IS adolescents but increased significantly among OOS adolescents, especially for boys (+0.42). In Wave 2, IS adolescents had similar voice and decision making power (mean scores of 2.69 and 2.68), while among OOS adolescents power in decision making was greater than voice (mean score of 2.64 versus 2.48). Freedom of movement for all adolescents, IS and OOS alike remained limited (mean scores of 1.60 for IS adolescents and 1.77 for out of-school adolescents). IS boys scored higher on freedom of movement and voice than IS girls while OOS boys scored higher on mobility than OOS girls.

Figure 18 | *In-school and out-of-school Adolescent Empowerment*







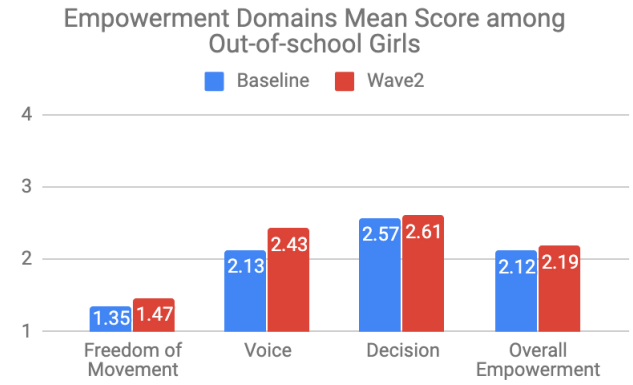


Table 8 - Empowerment

In-school Adolescents	Baseline Overall	Baseline Boy	Baseline Girls	Baseline p-value	Wave 2 Overall	Wave 2 Boy	Wave 2 Girls	Wave 2 p-value
Mobility								
Mean Score (Mean +/- SD)	1.62 + 0.68 (n=901)	1.84 + 0.73 (n=453)	1.39 + 0.54 (n=448)	**<0.001**	1.60 +/- 0.72 (N=982)	1.86 +/- 0.78 (N=494)	1.34 +/- 0.54 (N=488)	**<0.001**
Ordinal Alpha		0.82				0.85		
Voice								
Mean Score (Mean +/- SD)	2.48 + 0.65 (n=901)	2.57 + 0.65 (n=453)	2.39 + 0.64 (n=448)	**<0.001**	2.69 +/- 0.71 (N=981)	2.75 +/- 0.73 (N=494)	2.62 +/- 0.68 (N=487)	**0.003**
Ordinal Alpha		0.78				0.81		
Decision								
Mean Score (Mean +/- SD)	2.63 + 0.80 (n=901)	2.67 + 0.74 (n=453)	2.59 + 0.86 (n=448)	0.151	2.68 +/- 0.69 (N=982)	2.68 +/- 0.66 (N=494)	2.68 +/- 0.72 (N=488)	0.985
Ordinal Alpha		0.73				0.68		
Overall Empowerment								
Mean Score (Mean +/- SD)	2.27 + 0.51 (n=901)	2.38 + 0.50 (n=453)	2.16 + 0.49 (n=448)	**<0.001**	2.37 +/- 0.51 (N=981)	2.47 +/- 0.53 (N=494)	2.26 +/- 0.47 (N=487)	**<0.001**
Out-of-school Adolescents	**Baseline Overall**	**Baseline Boy**	**Baseline Girls**	**Baseline p-value**	**Wave 2 Overall**	**Wave 2 Boy**	**Wave 2 Girls**	**Wave 2 p-value**
Mobility								
Mean Score (Mean +/- SD)	1.49 + 0.71 (n=342)	1.64 + 0.82 (n=172)	1.35 + 0.56 (n=170)	**<0.001**	1.77 +/- 0.81 (N=261)	2.06 +/- 0.86 (N=131)	1.47 +/- 0.62 (N=130)	**<0.001**
Ordinal Alpha		0.76				0.87		
Voice								
Mean Score (Mean +/- SD)	2.18 + 0.68	2.23 + 0.72	2.13 + 0.63	0.169	2.48 +/- 0.75	2.53 +/- 0.80	2.43 +/- 0.70	0.308

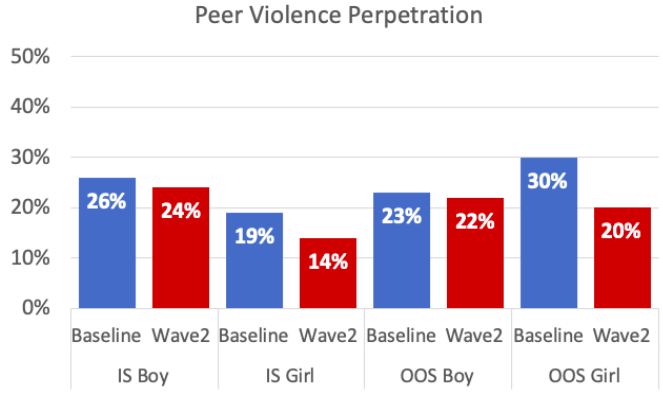
	(n=342)	(n=172)	(n=170)		(N=261)	(N=131)	(N=130)	
Ordinal Alpha		0.74				0.81		
Decision								
Mean Score (Mean +/- SD)	2.57 + 0.82 (n=342)	2.56 + 0.83 (n=172)	2.57 + 0.81 (n=170)	0.772	2.64 +/- 0.78 (N=261)	2.66 +/- 0.77 (N=131)	2.61 +/- 0.78 (N=130)	0.612
Ordinal Alpha		0.74				0.73		
Overall Empowerment								
Mean Score (Mean +/- SD)	2.17 + 0.53 (n=342)	2.22 + 0.58 (n=172)	2.12 + 0.46 (n=170)	0.080	2.30 +/- 0.56 (N=261)	2.42 +/- 0.59 (N=131)	2.19 +/- 0.50 (N=130)	<0.001

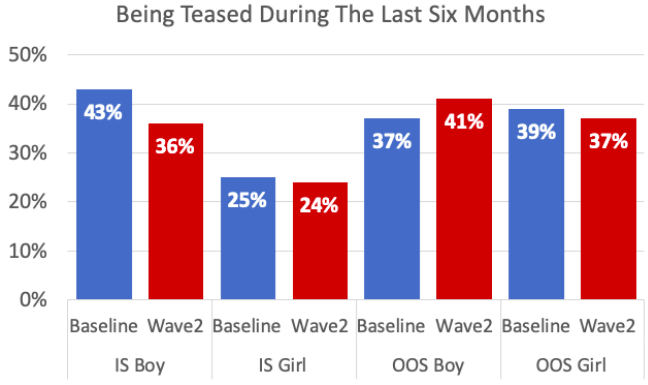
BULLYING & VIOLENCE

The GEAS explores experiences of bullying and physical interpersonal violence in the past 6 months. Specifically, we evaluated the incidence of psychological bullying and physical violence victimization in the last 6 months, as well as the perpetration of violence in the last 6 months.

Teasing and physical bullying in the last 6 months were common experiences among IS and OOS adolescents alike, with 36 and 41% of boys respectively reporting being teased compared with 24 and 37% of girls. More than one in five boys reported violence perpetration and a similar share reported victimization involving peers in the last 6 months while these experiences were shared by 14 and 20% of in and out of school girls. Teasing, perpetration and victimization of physical violence were all more commonly reported by boys than girls among OOS adolescents. OOS adolescents were more likely to have been teased in the last 6 months compared to IS adolescents (39% vs. 30%), but they shared the same experiences of physical violence victimization and perpetration. Over time, experiences of bullying and physical violence changed little among IS adolescents and OOS boys but violence victimization and perpetration dropped substantially among OOS girls (-7% in victimization, -10% in perpetration). As a result, the gender gap widened between OOS boys and girls, while the difference between IS and OOS girls observed in baseline disappeared.

Figure 19 | *In school and Out of School Adolescent Reported Teasing and Bullying Experiences*





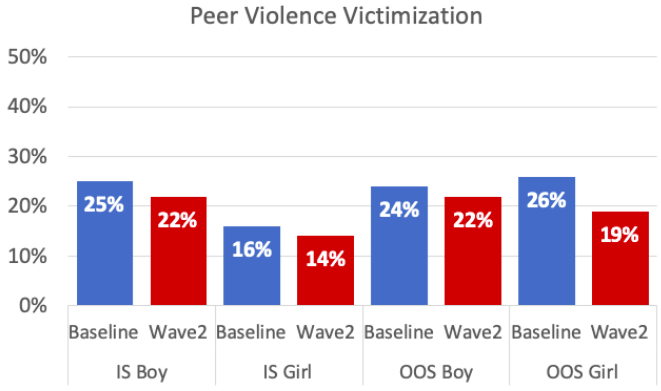


Table 9 - Bullying and Interpersonal Violence

In-school Adolescents	Baseline				Wave 2			
	Overall (N=901)	Boy (N=453)	Girls (N=448)	p-value	Overall (N=982)	Boy (N=494)	Girls (N=488)	p-value
Teasing								
Teased during the last six months	306 (33.96)	193 (42.6)	113 (25.22)	**<0.001**	297 (30.24)	178 (36.03)	119 (24.39)	**<0.001**
Bullying								
Experience of physical violence victimization by peers	186 (20.64)	113 (24.94)	73 (16.29)	**0.001**	177 (18.02)	108 (21.86)	69 (14.14)	**0.002**
Engaged in physical violence perpetration with peers	207 (22.97)	120 (26.49)	87 (19.42)	**0.012**	187 (19.04)	120 (24.29)	67 (13.73)	**<0.001**
Bystander intervention								
Tried to intervene peer bullying	149 (16.54)	76 (16.78)	73 (16.29)	0.845	396 (40.33)	213 (43.12)	183 (37.5)	0.073
Self-Defense								
Ever carry a weapon for protection	4 (1.65)	4 (2.74)	0 (0)	0.154^	22 (8.98)	8 (6.61)	14 (11.29)	0.200

Out-of-school Adolescents	Baseline				Wave 2			
	Overall (N=342)	Boy (N=172)	Girls (N=170)	p-value	Overall (N=261)	Boy (N=131)	Girls (N=130)	p-value
Teasing								
Teased during the last six months	129 (37.72)	63 (36.63)	66 (38.82)	0.675	102 (39.08)	54 (41.22)	48 (36.92)	0.477
Bullying								
Experience of physical violence victimization by peers	86 (25.15)	42 (24.42)	44 (25.88)	0.755	54 (20.69)	29 (22.14)	25 (19.23)	0.562
Engaged in physical violence perpetration with peers	90 (26.32)	39 (22.67)	51 (30)	0.124	55 (21.07)	29 (22.14)	26 (20)	0.672
Bystander intervention								
Tried to intervene peer bullying	55 (16.08)	27 (15.7)	28 (16.47)	0.846	111 (42.53)	54 (41.22)	57 (43.85)	0.668
Self-Defense								
Ever carry a weapon for protection	3 (2.5)	3 (4.69)	0 (0)	0.247^	4 (4.94)	4 (8.16)	0 (0)	0.149^

Note: ^ indicates Fisher's Exact Test.

OVERALL HEALTH AND BODY COMFORT

Adolescents were asked questions about their perceptions of their general health, their comfort with their own body, and their stages of pubertal development. Pubertal onset was measured by asking boys and girls if they had started puberty and by asking girls about breast development and menstruation, and boys about voice change and facial hair development. A total of seven questions assessed young people's level of comfort with their own bodies at baseline and five questions were asked at Wave 2. These questions were summarized in a single indicator assessing the percentage of adolescents that felt satisfied with their body image.

A vast majority of adolescents considered themselves to be in good health, ranging from 75% among OOS girls to 90% among IS boys. IS adolescents were more likely to report being in good health than OOS adolescents (89% versus 80%) and OOS boys were more likely to report being in good health than OOS girls (86% versus 75%). Perceptions of general health changed little over time for most adolescents, but increased among OOS boys (+6%s).

Eight out of ten adolescents had experienced pubertal onset, with more rapid transitions for girls than boys (89% of both IS and OOS girls had experienced pubertal onset versus 78% of IS and 77% of OOS boys). Pubertal maturation increased significantly between waves 1 and 2, from a 15% increase in pubertal onset among IS girls to a 35% rise among OOS boys in the course of the year. As a result, the gap in pubertal maturation between IS and OOS adolescents noted in baseline disappeared in Wave 2.

One third of IS adolescents expressed consistent positive attitudes about their body image with 42% of IS adolescents and 50% of OOS adolescents wishing their bodies were different and 30% of IS adolescents and 39% of OOS adolescents worried their bodies were not developing normally. IS boys were more likely to express concerns about their bodies than IS girls (49% versus 35% wished their bodies were different). Overall body appreciation changed little between baseline and Wave 2. Concurrently, concerns about the body grew stronger over time, with a 9% rise in aspirations to have a different body appearance between waves 1 and 2 in both the IS and OOS groups.

Figure 20a | *In-school and out-of-school puberty onset*

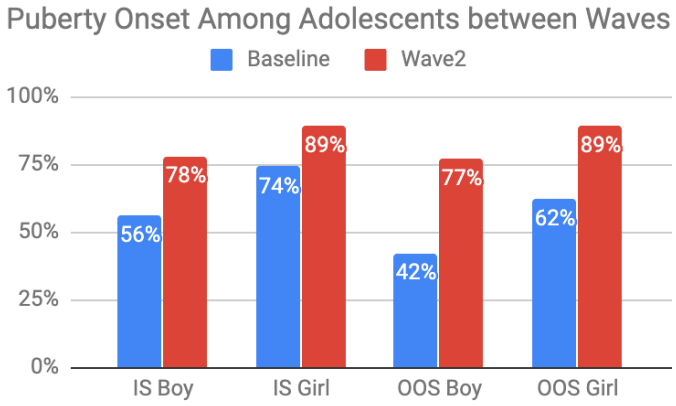


Figure 20b | *In-school and out-of-school self-perception of health*

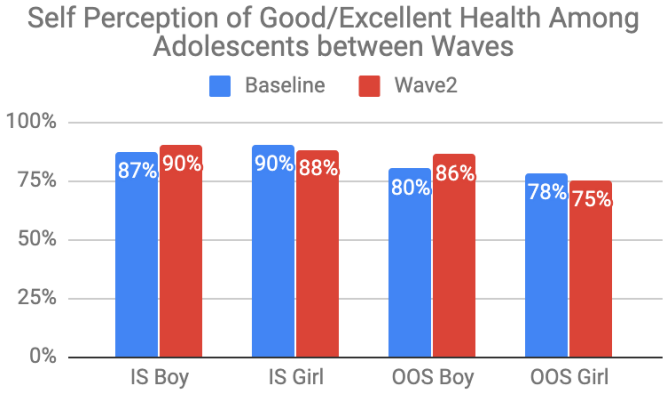


Figure 20c *| In-school and out-of-school pubertal comfort*

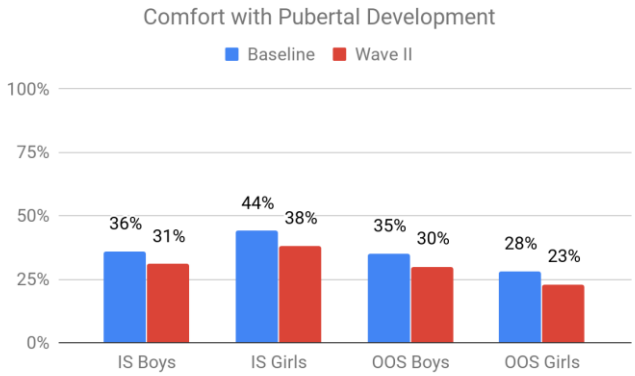


Figure 21 *| In-school and out-of-school Adolescent Body Comfort and Satisfaction*

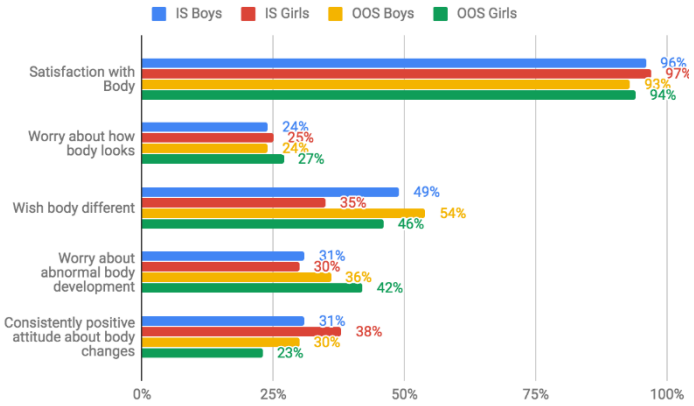


Table 10 - Overall Health | Body Comfort | Puberty

In-school Adolescents	Baseline Overall (N=901)	Baseline Boy (N=453)	Baseline Girls (N=448)	Baseline p-value	Wave 2 Overall (N=982)	Wave 2 Boy (N=494)	Wave 2 Girls (N=488)	Wave 2 p-value
Overall perception of own health (good or excellent)	801 (88.90)	396 (87.42)	405 (90.4)	0.154	876 (89.21)	447 (90.49)	429 (87.91)	0.193
Body Comfort (% agree)								
"I am satisfied with my body"	852 (94.56)	429 (94.7)	423 (94.42)	0.852	943 (96.03)	472 (95.55)	471 (96.52)	0.437
"I like the way I look"	843 (93.56)	423 (93.38)	420 (93.75)	0.820	918 (93.48)	460 (93.12)	458 (93.85)	0.641
"I like looking at my body"	821 (91.12)	416 (91.83)	405 (90.4)	0.450				
"I feel like I am beautiful/handsome"	838 (93.01)	419 (92.49)	419 (93.53)	0.544				
"I worry about the way that my body looks"	191 (21.2)	111 (24.5)	80 (17.86)	**0.015**	238 (24.24)	117 (23.68)	121 (24.8)	0.685
"I often wish my body was different"	293 (32.52)	170 (37.53)	123 (27.46)	**0.001**	413 (42.06)	241 (48.79)	172 (35.25)	**<0.001**
"I am worried that my body is not developing normally"	249 (27.64)	156 (34.44)	93 (20.76)	**<0.001**	299 (30.45)	155 (31.38)	144 (29.51)	0.525
Overall body comfort (positive on all above items)	356 (39.51)	161 (35.54)	195 (43.53)	**0.014**	335 (34.11)	152 (30.77)	183 (37.5)	**0.026**
Puberty Onset (% agree)								
Pre-Pubertal	309 (34.92)	193 (43.96)	116 (26.01)	**<0.001**	161 (16.6)	109 (22.47)	52 (10.72)	**<0.001**
Pubertal	576 (65.08)	246 (56.04)	330 (73.99)		809 (83.4)	376 (77.53)	433 (89.28)	

Out-of-school Adolescents	Baseline Overall (N=342)	Baseline Boy (N=172)	Baseline Girls (N=170)	Baseline p-value	Wave 2 Overall (N=261)	Wave 2 Boy (N=131)	Wave 2 Girls (N=130)	Wave 2 p-value
Overall perception of own health (good or excellent)	269 (78.65)	137 (79.65)	132 (77.65)	0.651	209 (80.08)	112 (85.5)	97 (74.62)	**0.028**
Body Comfort (% agree)								
"I am satisfied with my body"	321 (93.86)	163 (94.77)	158 (92.94)	0.482	244 (93.49)	122 (93.13)	122 (93.85)	0.815
"I like the way I look"	306 (89.47)	153 (88.95)	153 (90)	0.753	242 (92.72)	119 (90.84)	123 (94.62)	0.240

"I like looking at my body"	311 (90.94)	159 (92.44)	152 (89.41)	0.329				
"I feel like I am beautiful/handsome"	316 (92.4)	164 (95.35)	152 (89.41)	**0.038**				
"I worry about the way that my body looks"	80 (23.39)	34 (19.77)	46 (27.06)	0.111	67 (25.67)	32 (24.43)	35 (26.92)	0.644
"I often wish my body was different"	143 (41.81)	77 (44.77)	66 (38.82)	0.265	131 (50.19)	71 (54.2)	60 (46.15)	0.194
"I am worried that my body is not developing normally"	107 (31.29)	51 (29.65)	56 (32.94)	0.512	101 (38.7)	47 (35.88)	54 (41.54)	0.348
Overall body comfort (positive on all above items)	109 (31.87)	61 (35.47)	48 (28.24)	0.151	69 (26.44)	39 (29.77)	30 (23.08)	0.220
Puberty Onset								
Pre-Pubertal	163 (48.22)	98 (58.33)	65 (38.24)	**<0.001**	44 (16.92)	30 (23.08)	14 (10.77)	**0.008**
Pubertal	175 (51.78)	70 (41.67)	105 (61.76)		216 (83.08)	100 (76.92)	116 (89.23)	

MENSTRUATION

In addition to body comfort, the GEAS included questions about girls' experience with menstruation and menstrual hygiene. Four dimensions were explored: knowledge, feelings about menstruation, experience (e.g. age at first menstruation, menstrual management), and self-care during menstrual cycles.

In Wave 2, 32% of girls had ever had a period, up just 3%s since baseline for IS girls but increasing by 11% for OOS girls. Therefore, the gap between IS and OOS adolescents reduced over time. Less than half of girls (39% IS and 27% of OOS) understood periods could come at irregular times, up 5%s since baseline, while just up to half (50% of IS and 38% of OOS) knew where to find information about menstruation, an increase since baseline (+8%s for IS +5%s for OOS). Only 5-8% of girls were aware of the physical signs of ovulation. While a vast majority of IS girls indicated periods were not a major concern for them, a majority also felt it was important to keep it secret and 38% of IS girls and 51% of OOS girls felt shame over their bodies when they had their periods. Feelings of shame however, dropped significantly since baseline, especially among OOS girls (-27%s among OOS girls versus -6%s among IS girls). A vast majority of girls had talked to someone about self-managing their periods.

Nine in ten girls had used sanitary products and 19% of IS girls had missed school the last time they had their periods, up 5%s since baseline. Most adolescents tracked their menstrual periods (69% IS and 64% of OOS) and knew when to expect their next period (68% of IS and 52% of OOS). These menstrual monitoring behaviors increased substantially since baseline, representing a 3% to 15% increase between waves.

***Figure 22** | IS and OOS Girls Experience with Menstruation*

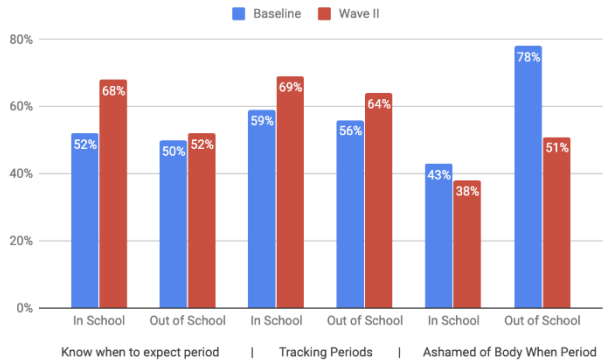


Table 11 - Menstruation (Girls Only)

In-School	Baseline Girl (N=448)	Wave2 (N=488)
Knowledge		
%correct response to question "It is normal for a girl to have periods that don't come at the same time each month"	151 (33.71)	188 (38.52)
I know where to go if I needed to get information about menstrual periods	192 (42.86)	242 (49.59)
% Correctly identify clear vaginal secretions between periods as sign of ovulation	13 (2.9)	37 (7.58)
Experience		
Ever had a period	130 (29.02)	118 (32.33)
Age of initial menstruation		
10 or younger	2 (1.54)	2 (1.72)
11 – 12	64 (49.23)	40 (34.48)
13 – 14	64 (49.23)	74 (63.79)
Ever talked about menstrual hygiene management	117 (90)	100 (85.47)
Feelings about menstruation		
Ashamed of body when period	56 (43.08)	90 (37.5)
Period tells I am woman	125 (96.15)	
Important to keep period secret	111 (85.38)	199 (82.92)
Proud of period	118 (90.77)	
Period not a big deal	113 (86.92)	204 (85)
Self-Care for Menstrual Cycles		
Track menstrual cycle	77 (59.23)	166 (69.17)
Know when to expect period	68 (52.31)	162 (67.5)
Used sanitary products during last period	126 (96.92)	220 (91.67)
Missed school due to last period	19 (14.62)	46 (19.17)
Note: ^ indicates Fisher's Exact Test.		

Out-of-School	Baseline Girl (N=170)	Wave2 (N=130)
Knowledge		
%correct response to question "It is normal for a girl to have periods that don't come at the same time each month"	44 (25.88)	35 (26.92)
I know where to go if I needed to get information about menstrual periods	56 (32.94)	49 (37.69)
% Correctly identify clear vaginal secretions between periods as sign of ovulation	3 (1.76)	7 (5.38)
Experience		
Ever had a period	32 (18.82)	29 (29.59)
Age of initial menstruation		
10 or younger	0 (0)	0 (0)
11 – 12	14 (43.75)	9 (32.14)
13 – 14	18 (56.25)	19 (67.86)
Ever talked about menstrual hygiene management	28 (87.5)	21 (72.41)
Feelings about menstruation		
Ashamed of body when period	25 (78.12)	31 (50.82)
Period tells I am woman	31 (96.88)	
Important to keep period secret	28 (87.5)	52 (85.25)
Proud of period	28 (87.5)	
Period not a big deal	29 (90.62)	49 (80.33)
Self-Care for Menstrual Cycles		
Track menstrual cycle	18 (56.25)	39 (63.93)
Know when to expect period	16 (50)	32 (52.46)
Used sanitary products during last period	32 (100)	50 (81.97)
Missed school due to last period	8 (26.67)	46 (19.17)
Note: ^ indicates Fisher's Exact Test.		

MENTAL HEALTH & SUBSTANCE ABUSE

The GEAS included indicators of depressive symptoms and lifetime substance use (alcohol, tobacco and other drugs). A score of depressive symptoms ranging from 1 to 5 summarizes responses to 6 questions including "In general, seeing self as a happy person", "worrying for no good reason", "blaming self when things go wrong", "being too unhappy to sleep at night", "feeling sad", and "thinking of harming self". In addition, Wave 2 includes the validated Patient Health Questionnaire (PHQ9) measure of depressive symptoms and the Generalized Anxiety Disorder-7 (GAD-7) scale. We report on validated PHQ 9 and GAD 7 measures for Wave 2 results and also report on the GEAS depressive symptoms score to investigate trends in the report of depressive symptoms over time.

Less than 20% of IS adolescents reported having experienced any of the negative depressive symptom and a minority (5%) indicated that they had considered harming themselves because they were very unhappy. However, a majority of adolescents (80%) indicated that they usually blamed themselves when things went wrong. Girls scored higher on the depressive symptom scale than boys (IS boys versus girls: mean score: 2.10 vs. 2.00; OOS: 2.04 vs. 2.24). Depressive symptoms increased between waves 1 and 2 for all adolescents.

According to the PHQ9 measure of depressive symptoms, only one quarter of OOS and about one third of IS adolescents indicated no symptoms. Comparable proportions of boys and girls reported having any kind of symptom among both IS (60% vs. 65%) and OOS adolescents (75%). The mean of summed depression score was higher for OOS adolescents than IS adolescents (4.76 vs. 3.44) (range of 0 to 30). Among OOS adolescents, the mean of summed score of depression was higher for girls than boys (5.68 vs. 3.85). No difference was noted for IS boys and girls (3.31 vs. 3.57).

Few adolescents reported anxiety symptoms with generally low scores on the GAD-7 scale (maximum score of 3), ranging from 0.28 among IS girls to 0.51 among OOS girls. OOS adolescents had higher scores of anxiety than IS adolescents (0.39 versus 0.30) while no significant differences were noted by gender.

Alcohol consumption remained rare in Wave 2 ranging from 4% among IS girls to 14% among OOS boys, with boys reporting more consumption than girls and OOS boys reporting more consumption than IS boys. Cigarette consumption was also more prevalent among boys than girls although very rare, ranging from 0% of IS girls to 4% of OOS boys, while use of illegal drugs was marginal (less than 1% of adolescents).

Figure 23 | *IS and OOS Adolescents Depressive Symptoms*

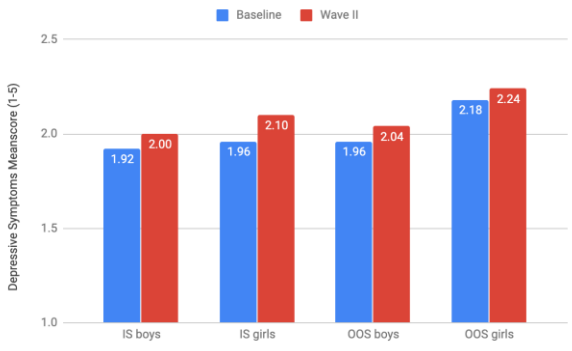


Figure 24 | *IS and OOS Adolescents' Substance Use*

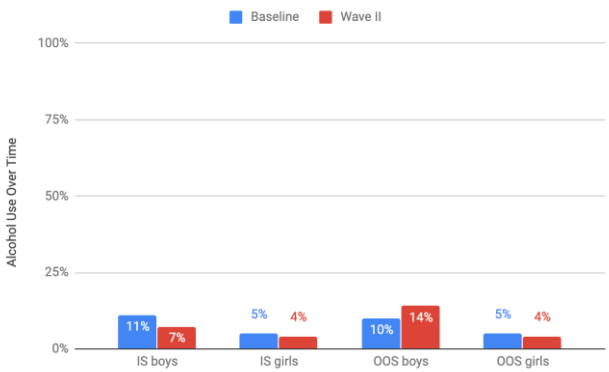


Table 12 - Mental Health

In-school Adolescents	Baseline				Wave 2			
	Overall (N=901)	Boy (N=453)	Girl (N=448)	p-value	Overall (N=982)	Boy (N=494)	Girl (N=488)	p-value
Depressive Symptoms (% agree)								
"In general, I see myself as a happy person"	872 (96.78)	435 (96.03)	437 (97.54)	0.197	957 (97.45)	482 (97.57)	475 (97.34)	0.815
"I blame myself when things go wrong"	626 (69.63)	344 (76.11)	282 (63.09)	**<0.001**	763 (77.7)	401 (81.17)	362 (74.18)	**0.008**
"I worry for no good reason"	109 (12.17)	63 (14.03)	46 (10.29)	0.087	155 (15.78)	71 (14.37)	84 (17.21)	0.222
"I am so unhappy I can't sleep at night"	123 (13.73)	68 (15.04)	55 (12.39)	0.248	155 (15.78)	79 (15.99)	76 (15.57)	0.857
"I feel sad"	151 (16.82)	72 (15.96)	79 (17.67)	0.494	178 (18.13)	90 (18.22)	88 (18.03)	0.940
"I am so unhappy I think of harming myself"	28 (3.11)	16 (3.53)	12 (2.68)	0.464	46 (4.68)	18 (3.64)	28 (5.74)	0.120
Mean Score (1-5, 5 indicating strongest affirmation for symptoms) (Mean +/- SD)	1.94 + 0.68 (n=901)	1.92 + 0.66 (n=453)	1.96 + 0.70 (n=448)	0.424	2.05 +/- 0.77 (N=982)	2.00 +/- 0.72 (N=494)	2.10 +/- 0.81 (N=488)	**0.044**
GAD-7 Anxiety Scale								
Mean Score (0-3, 3 indicating strongest affirmation for symptoms) (Mean +/- SD)					0.29 +/- 0.45 (N=982)	0.30 +/- 0.48 (N=494)	0.28 +/- 0.42 (N=488)	0.658*
PHQ-9 Depression Scale								
Summed Score (0-3, higher score indicating stronger symptom endorsement) (Mean +/- SD)					3.44 +/- 4.22 (N=982)	3.31 +/- 4.29 (N=494)	3.57 +/- 4.15 (N=488)	0.331
Substance Use								
Cigarettes	40 (4.44)	23 (5.08)	17 (3.79)	0.35	6 (0.61)	5 (1.01)	1 (0.2)	0.217^
Alcohol	73 (8.1)	49 (10.82)	24 (5.36)	**0.003**	56 (5.7)	37 (7.49)	19 (3.89)	**0.015**
Marijuana	0 (0)	0 (0)	0 (0)	N/A	2 (0.2)	2 (0.4)	0 (0)	0.500^
Other Drugs	2 (0.22)	1 (0.22)	1 (0.22)	1.000^	1 (0.1)	1 (0.2)	0 (0)	1.000^

Out-of-school Adolescents	Baseline				Wave 2			
	Overall (N=342)	Boy (N=172)	Girl (N=170)	p-value	Overall (N=261)	Boy (N=131)	Girl (N=130)	p-value
Depressive Symptoms (% agree)								
"In general, I see myself as a happy person"	316 (92.4)	159 (92.44)	157 (92.35)	0.975	256 (98.08)	128 (97.71)	128 (98.46)	0.658
"I blame myself when things go wrong"	235 (68.91)	119 (69.59)	116 (68.24)	0.787	210 (80.46)	109 (83.21)	101 (77.69)	0.261
"I worry for no good reason"	52 (15.25)	27 (15.79)	25 (14.71)	0.781	64 (24.52)	27 (20.61)	37 (28.46)	0.140
"I am so unhappy I can't sleep at night"	62 (18.18)	21 (12.28)	41 (24.12)	**0.005**	50 (19.16)	16 (12.21)	34 (26.15)	**0.004**
"I feel sad"	95 (27.78)	36 (20.93)	59 (34.71)	**0.004**	64 (24.52)	29 (22.14)	35 (26.92)	0.369
"I am so unhappy I think of harming myself"	23 (6.76)	12 (6.98)	11 (6.55)	0.875	10 (3.83)	1 (0.76)	9 (6.92)	**0.010**
Mean Score (1-5, 5 indicating strongest affirmation for symptoms) (Mean +/- SD)	2.07 + 0.78 (n=342)	1.96 + 0.75 (n=172)	2.18 + 0.80 (n=170)	**0.008**	2.14 +/- 0.74 (N=261)	2.04 +/- 0.66 (N=131)	2.24 +/- 0.81 (N=130)	**0.026**
GAD-7 Anxiety Scale								
Mean Score (0-3, 3 indicating strongest affirmation for symptoms) (Mean +/- SD)					0.45 +/- 0.57 (N=261)	0.39 +/- 0.53 (N=131)	0.51 +/- 0.60 (N=130)	0.087
PHQ-9 Depression Scale								
Summed Score (0-3, higher score indicating stronger symptom endorsement) (Mean +/- SD)					4.76 +/- 4.91 (N=261)	3.85 +/- 3.71 (N=131)	5.68 +/- 5.75 (N=131)	**0.003**
Substance Use								
Cigarettes	18 (5.26)	11 (6.4)	7 (4.12)	0.346	7 (2.68)	5 (3.82)	2 (1.54)	0.447^
Alcohol	26 (7.6)	18 (10.47)	8 (4.71)	**0.045**	23 (8.81)	18 (13.74)	5 (3.85)	**0.005**
Marijuana	2 (0.58)	1 (0.58)	1 (0.59)	1.000^	3 (1.15)	2 (1.53)	1 (0.77)	1.000^
Other Drugs	2 (0.58)	2 (1.16)	0 (0)	0.499^	0 (0)	0 (0)	0 (0)	N/A

Note: ^ indicates Fisher's Exact Test. * indicates Wilcoxon rank-sum test.

SEXUAL HEALTH KNOWLEDGE

Knowledge of pregnancy prevention was initially assessed through 9 questions asking about reproductive capacity and family planning. We present the percentage of adolescents who provide correct answers to each item as well as a summary score ranging from 0 to 9 assessing the number of correct answers. We also explored young people's knowledge about HIV through 4 questions and provide a summary score ranging from 0 to 4. Adolescents were finally asked about their knowledge of SRH services and stigma surrounding use of these services. In addition, a series of questions on family planning awareness drawn from referent population based studies, such as DHS and PMA2020, were included in Wave 2 for adolescents 15 years or older, in order to compare GEAS indicators with Kinshasa PMA2020 population based estimations.

In Wave 2, adolescents' knowledge about pregnancy and HIV prevention was generally low, with overall scores reflecting close to 5 out of 9 correct responses for pregnancy prevention and a little over 2 out of 4 correct answers for HIV prevention. Boys scored higher than girls on knowledge about pregnancy prevention (4.96 and 4.90 for IS and OOS boys versus 4.60 and 4.68 for IS and OOS girls) and on knowledge about HIV prevention (2.27 or 2.37 for IS and OOS boys versus 2.10 and 2.15 for IS and OOS girls). All adolescents were better aware of the risk of HIV transmission than the risk of pregnancy at first sex (65 to 71% versus 49 to 55%). More than one out of ten adolescents had misperceptions of pregnancy risk through kissing, just over half believed pregnancy could occur at first sex, and a quarter or less thought boys could be fertile every day of the month. 66 to 74% of adolescents were aware of pregnancy prevention using injectable but only 44% to 48% of girls and 60 to 62% of boys thought condoms could prevent pregnancy and fewer boys (47 to 51%) knew that taking a birth control pill every day could prevent pregnancy. 60% (OOS) to 62% (IS) of adolescents thought they could prevent pregnancy by using traditional herbs.

Adolescents had little knowledge of SRH services. 45 to 47% of boys and 23% to 29% of girls knew where to get a condom, 50 to 53% of girls knew where to get contraception. Stigma was prevalent with boys (IS: 60%, OOS: 53%) and 50% girls (IS and OOS) indicating they would feel embarrassed to get a condom and 43% of IS and OOS girls separately indicating they would be embarrassed to seek contraceptive services at a health facility.

Knowledge improved substantially since baseline with respect to HIV, family planning and puberty, especially among OOS adolescents. Knowledge of condoms' role in protecting against HIV increased by 13%s among IS adolescent and 16%s among OOS adolescents. Male fertility awareness also improved substantially from 10%s to 30%s with respect to knowledge about male fertile days among IS adolescents and OOS adolescents. Knowledge about different forms of contraception also increased substantially between waves. Adolescents' knowledge about pills being used to prevent pregnancy increased 14%s among IS and 20% among OOS adolescents. Likewise, knowledge about injectables increased by 5% to 11% among IS and OOS adolescents. Adolescents were also more likely to recognize that condoms could prevent pregnancy in Wave 2 compared to baseline (15% increase among IS adolescents and 21% increase among OOS adolescents)

Figure 25 | *IS and OOS Adolescents' Knowledge about Pregnancy and HIV*

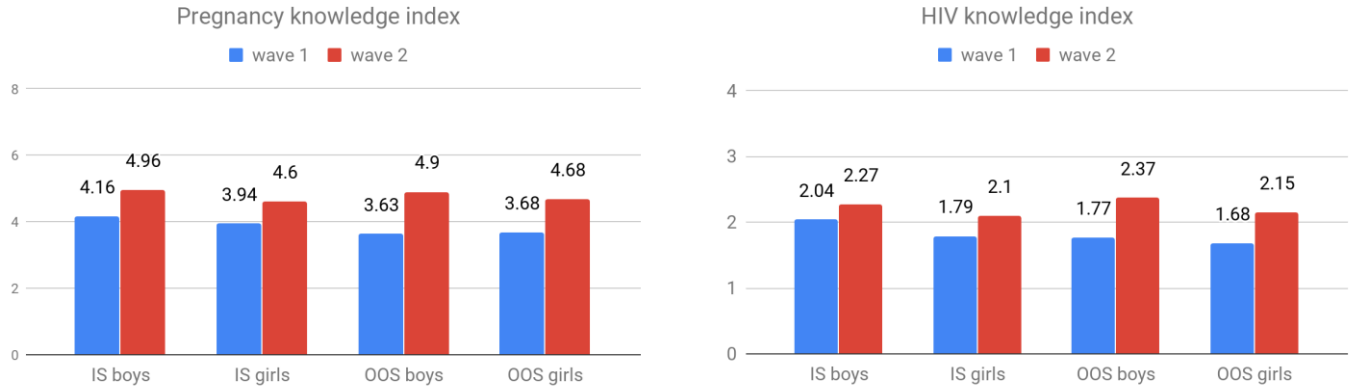


Figure 26 | *IS and OOS Knowledge about Pregnancy – individual item correct responses*

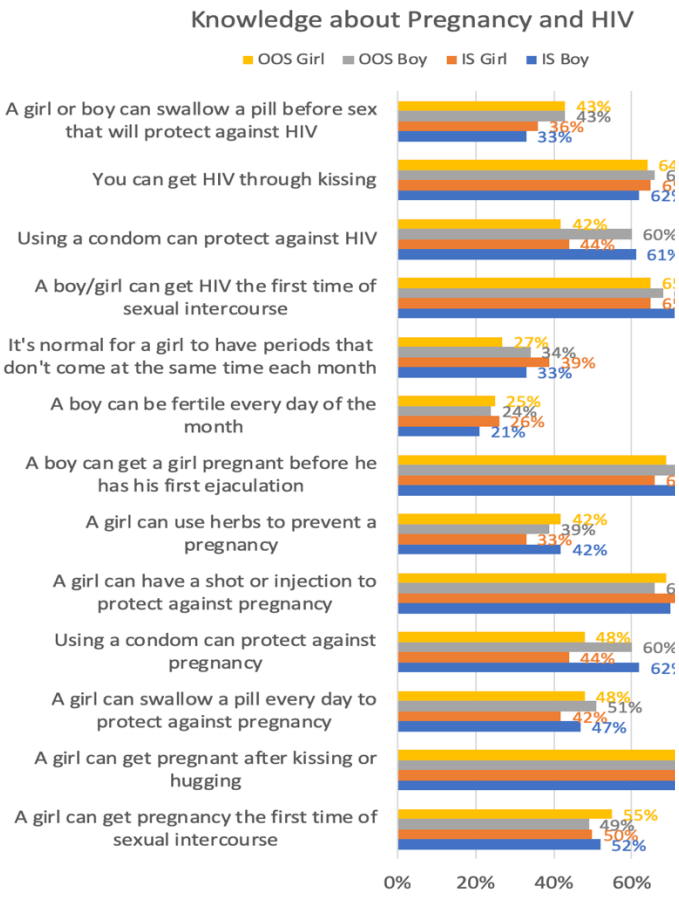


Figure 27 | *Changes in IS and OOS Knowledge about Pregnancy Over Time – individual item correct responses*

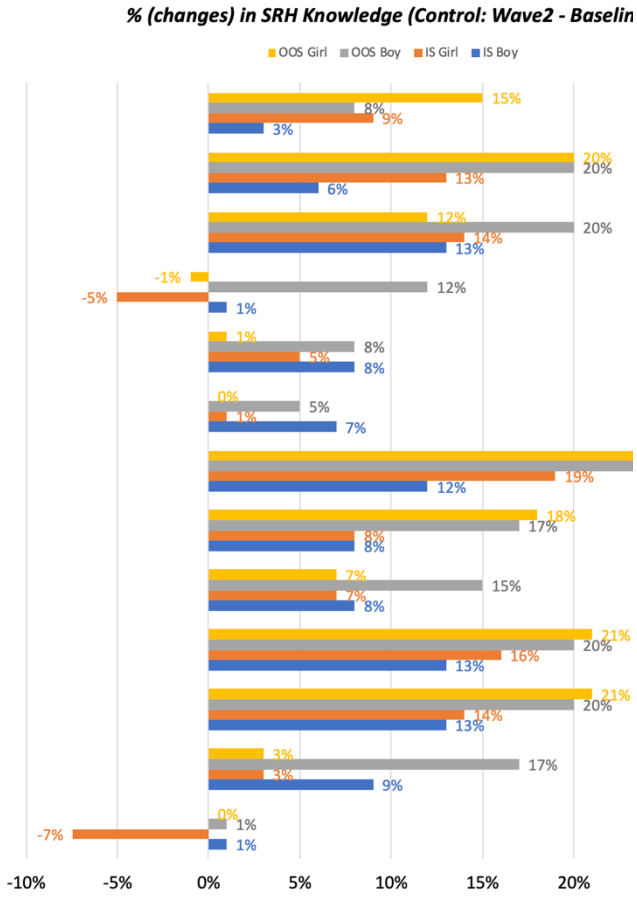


Figure 28 | *IS and OOS knowledge of condom access*

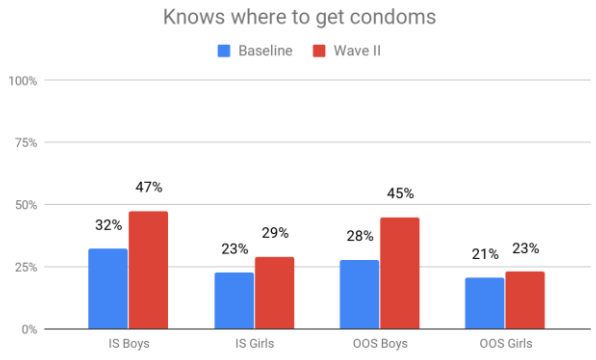


Figure 29 | *IS and OOS knowledge of contraceptive access*

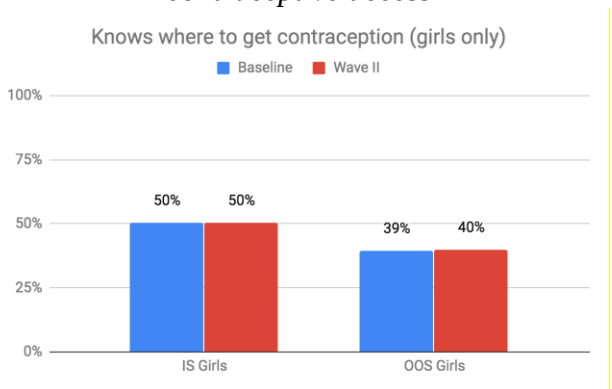
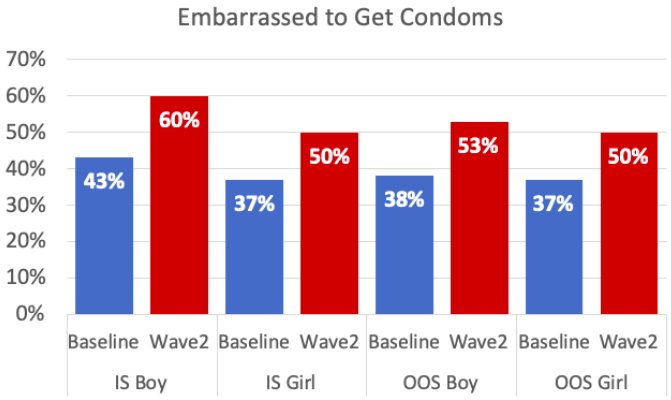


Figure 30 | *IS and OOS embarrassment about accessing condoms*



Further investigation among 15-16-year-old adolescents in Wave 2 provides more insights on family planning awareness, allowing comparison with population based estimates tracked in Kinshasa since 2014.

Figure 31 | *IS and OOS Contraceptive Awareness*

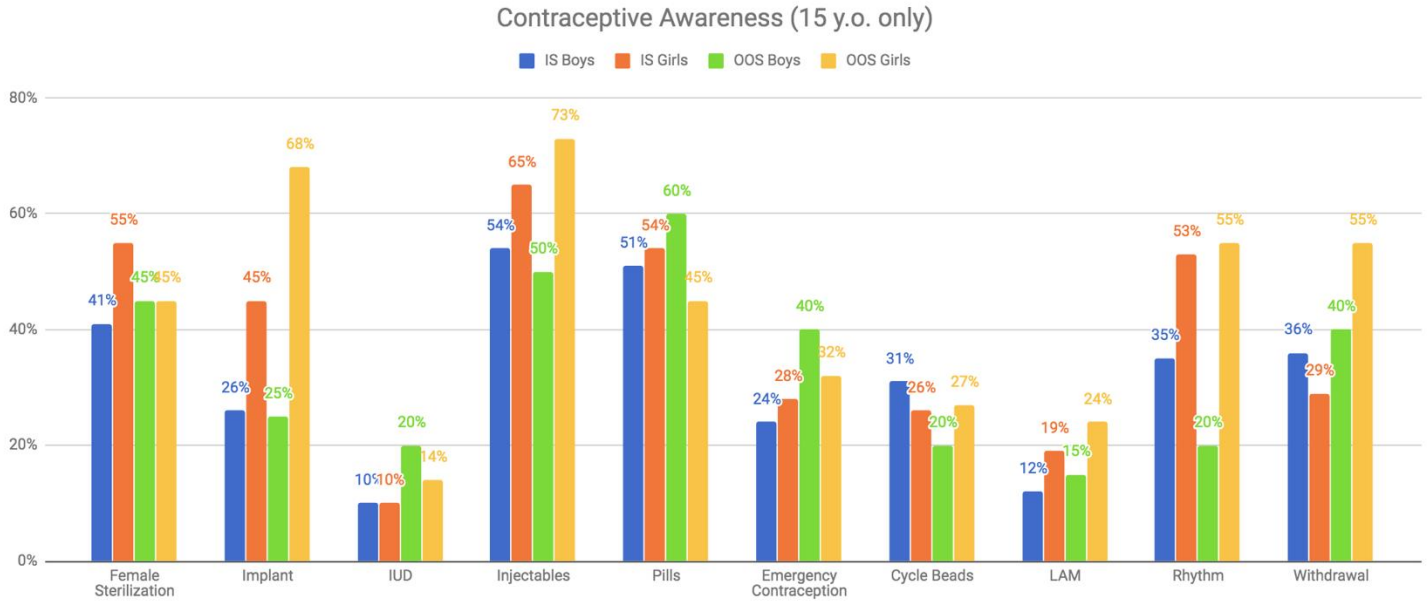


Table 13 - Sexual Health Knowledge

In-school Adolescents	Baseline				Wave 2			
	Overall (N=901)	Boy (N=454)	Girls (N=448)	p-value	Overall (N=982)	Boy (N=494)	Girls (N=488)	p-value
Knowledge (% correct response to...)								
A girl can get pregnant the first time of sexual intercourse	489 (54.27)	233 (51.43)	256 (57.14)	0.086	502 (51.12)	259 (52.43)	243 (49.8)	0.409
A girl can get pregnant after kissing or hugging	731 (81.13)	357 (78.81)	374 (83.48)	0.073	857 (87.27)	435 (88.06)	422 (86.48)	0.457
A girl can swallow a pill every day to protect against pregnancy	278 (30.85)	156 (34.44)	122 (27.23)	0.019	437 (44.5)	234 (47.37)	203 (41.6)	0.069
%correct response to "Using a condom can protect against pregnancy"	348 (38.62)	221 (48.79)	127 (28.35)	**<0.001**	523 (53.26)	307 (62.15)	216 (44.26)	**<0.001**
%correct response to "A girl can have a shot or injection to protect against pregnancy"	582 (64.59)	281 (62.03)	301 (67.19)	0.106	707 (72)	345 (69.84)	362 (74.18)	0.130
% correct response to "A girl can use herbs to prevent a pregnancy"	263 (29.19)	151 (33.33)	112 (25)	**0.006**	369 (37.58)	206 (41.7)	163 (33.4)	**0.007**
% correct response to "A boy can get a girl pregnant before he has his first ejaculation"	518 (57.49)	306 (67.55)	212 (47.32)	**<0.001**	719 (73.22)	395 (79.96)	324 (66.39)	**<0.001**
%correct response to: "A boy can be fertile every day of the month"	175 (19.42)	66 (14.57)	109 (24.33)	**<0.001**	231 (23.52)	105 (21.26)	126 (25.82)	0.092
%correct response to: "It's normal for a girl to have periods that don't come at the same time each month"	264 (29.3)	113 (24.94)	151 (33.71)	**0.004**	351 (35.74)	163 (33)	188 (38.52)	0.071
Knowledge about Pregnancy (Mean +/- SD) (No. correct <9 Qs in-total>)	4.05 + 1.90 (n=901)	4.16 + 1.91 (n=453)	3.94 + 1.88 (n=448)	0.08	4.78 +/- 2.00 (N=982)	4.96 +/- 1.93 (N=494)	4.60 +/- 2.04 (N=488)	**0.006**
A boy/girl can get HIV the first time of sexual intercourse	631 (70.03)	317 (69.98)	314 (70.09)	0.971	668 (68.02)	351 (71.05)	317 (64.96)	**0.041**
Using a condom can protect against HIV	351 (38.96)	217 (47.9)	134 (29.91)	**<0.001**	513 (52.24)	299 (60.53)	214 (43.85)	**<0.001**
You can get HIV through kissing	484 (53.72)	253 (55.85)	231 (51.56)	0.197	623 (63.44)	306 (61.94)	317 (64.96)	0.327
A girl or boy can swallow a pill before sex that will protect against HIV	258 (28.63)	137 (30.24)	121 (27.01)	0.283	341 (34.73)	165 (33.4)	176 (36.07)	0.381
Knowledge about HIV (Mean +/- SD) (No. correct <4 Qs in-total>)	1.91 + 1.10 (n=901)	2.04 + 1.12 (n=453)	1.79 + 1.06 (n=448)	**<0.001**	2.18 +/- 1.10 (N=982)	2.27 +/- 1.08 (N=494)	2.10 +/- 1.12 (N=488)	**0.015**
I know where to go to get…								
…condoms	248 (27.52)	146 (32.23)	102 (22.77)	**0.001**	376 (38.29)	234 (47.37)	142 (29.1)	**<0.001**
…contraception (girls only)	222 (50.45)	N/A	222 (50.45)	N/A	246 (50.41)	N/A	246 (50.41)	N/A
…STI treatment	475 (52.72)	236 (52.1)	239 (53.35)	0.707	625 (63.65)	320 (64.78)	305 (62.5)	0.458
I feel embarrassed or shy to...								
...go to a clinic or center for contraception (birth control)	194 (56.7)	N/A	194 (56.7)	N/A	208 (42.62)	N/A	208 (42.62)	N/A
...get a condom if I needed it	359 (39.84)	194 (42.83)	165 (36.83)	**0.066**	540 (54.99)	297 (60.12)	243 (49.8)	**0.001**

Out-of-school Adolescents	Baseline				Wave 2			
	Overall (N=342)	Boy (N=172)	Girls (N=170)	p-value	Overall (N=261)	Boy (N=131)	Girls (N=130)	p-value

Knowledge (% correct response to...)								
A girl can get pregnancy the first time of sexual intercourse	176 (51.46)	83 (48.26)	93 (54.71)	0.233	135 (51.72)	64 (48.85)	71 (54.62)	0.352
A girl can get pregnant after kissing or hugging	256 (74.85)	118 (68.6)	138 (81.18)	**0.007**	222 (85.06)	112 (85.5)	110 (84.62)	0.842
A girl can swallow a pill every day to protect against pregnancy	101 (29.53)	54 (31.4)	47 (27.65)	0.447	130 (49.81)	67 (51.15)	63 (48.46)	0.665
%correct response to "Using a condom can protect against pregnancy"	114 (33.33)	68 (39.53)	46 (27.06)	0.014	141 (54.02)	78 (59.54)	63 (48.46)	0.073
%correct response to "A girl can have a shot or injection to protect against pregnancy"	193 (56.43)	88 (51.16)	105 (61.76)	0.048	177 (67.82)	87 (66.41)	90 (69.23)	0.626
% correct response to "A girl can use herbs to prevent a pregnancy"	77 (22.51)	37 (21.51)	40 (23.53)	0.655	105 (40.23)	51 (38.93)	54 (41.54)	0.668
% correct response to "A boy can get a girl pregnant before he has his first ejaculation"	168 (49.12)	98 (56.98)	70 (41.18)	**0.003**	197 (75.48)	107 (81.68)	90 (69.23)	**0.019**
%correct response to: "A boy can be fertile every day of the month"	75 (21.93)	32 (18.6)	43 (25.29)	0.135	64 (24.52)	31 (23.66)	33 (25.38)	0.747
%correct response to: "It's normal for a girl to have periods that don't come at the same time each month"	90 (26.32)	46 (26.74)	44 (25.88)	0.856	80 (30.65)	45 (34.35)	35 (26.92)	0.193
Knowledge about Pregnancy (Mean +/- SD) (No. correct <9 Qs in-total>)	3.65 + 1.98 (n=342)	3.63 + 2.13 (n=172)	3.68 + 1.82 (n=170)	0.8	4.79 +/- 2.01 (N=261)	4.90 +/- 2.09 (N=131)	4.68 +/- 1.93 (N=130)	0.386
A boy/girl can get HIV the first time of sexual intercourse	208 (60.82)	96 (55.81)	112 (65.88)	0.057	174 (66.67)	89 (67.94)	85 (65.38)	0.662
Using a condom can protect against HIV	120 (35.09)	69 (40.12)	51 (30)	0.050	134 (51.34)	79 (60.31)	55 (42.31)	**0.004**
You can get HIV through kissing	155 (45.32)	79 (45.93)	76 (44.71)	0.820	170 (65.13)	86 (65.65)	84 (64.62)	0.861
A girl or boy can swallow a pill before sex that will protect against HIV	107 (31.29)	60 (34.88)	47 (27.65)	0.149	112 (42.91)	56 (42.75)	56 (43.08)	0.957
Knowledge about HIV (Mean +/- SD) (No. correct <4 Qs in-total>)	1.73 + 1.21 (n=342)	1.77 + 1.26 (n=172)	1.68 + 1.16 (n=170)	0.517	2.26 +/- 1.15 (N=261)	2.37 +/- 1.16 (N=131)	2.15 +/- 1.14 (N=130)	0.137
I know where to go to get…								
…condoms	83 (24.27)	48 (27.91)	35 (20.59)	0.114	89 (34.1)	59 (45.04)	30 (23.08)	**<0.001**
…contraception (girls only)	67 (39.41)	N/A	67 (39.41)	N/A	52 (40)	N/A	52 (40)	N/A
…STI treatment	154 (45.03)	71 (41.28)	83 (48.82)	0.161	142 (54.41)	73 (55.73)	69 (53.08)	0.668
I feel embarrassed or shy to...								
...go to a clinic or center for contraception (birth control)	64 (37.65)	N/A	64 (37.65)	N/A	57 (43.85)	N/A	57 (43.85)	N/A
...get a condom if I needed it	128 (37.43)	65 (37.79)	63 (37.06)	0.889	135 (51.72)	70 (53.44)	65 (50)	0.579

RELATIONSHIPS

This section focuses on adolescents' experience with romantic relationships, as well their peers' experiences. Among adolescents who had ever engaged in a romantic relationship, the survey assessed the quality of the relationship and experience of intimate partner violence with the last partner. Two sets of items were designed to quantify quality of relationship, including power imbalance and intimacy. The power imbalance scale encompassed 5 questions exploring partner influence on decisions of behavior of respondents while the intimacy scale encompasses questions about feelings and trust between partners. Mean scores for both scales ranged from 1 to 5. A higher score on the power imbalance scale suggests greater power of the partner in the relationship. A higher score on the intimacy scale suggests more intimacy in relationships. Please refer to **Appendix F** for the distribution of items constituting each scale.

In Wave 2, 17% of adolescents reported having been in any relationship, with greater romantic involvement among IS boys than IS girls (21% versus 14%). Romantic experiences increased significantly between waves 1 and 2, ranging from 7% point increase among IS boys to 9% increase among OOS girls.

For those who had ever been in a romantic relationship, power imbalance and high levels of intimacy were commonly reported. OOS adolescents were more likely to report intimacy than IS peers (4.14 versus 3.90), while no differences were noted between boys and girls. Power imbalance was common but similarly experienced across groups, ranging from 4.46 among OOS girls to4.11 among IS boys.

Figure 32 | *IS and OOS Adolescent Engagement in Romantic Relationships*

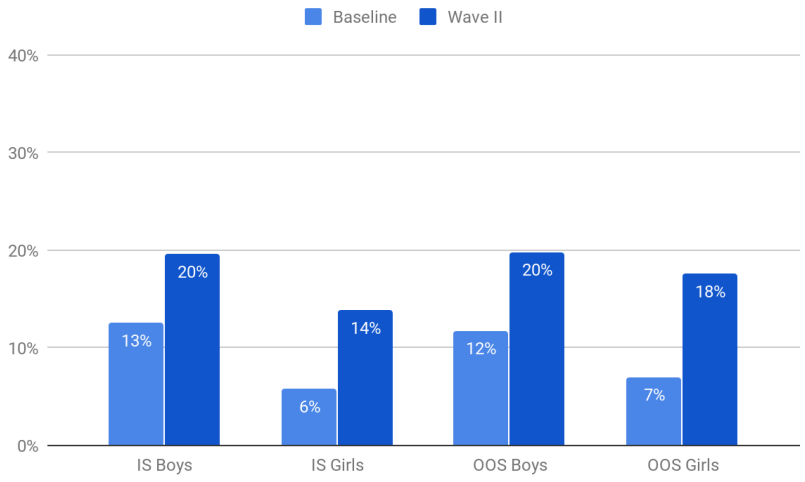
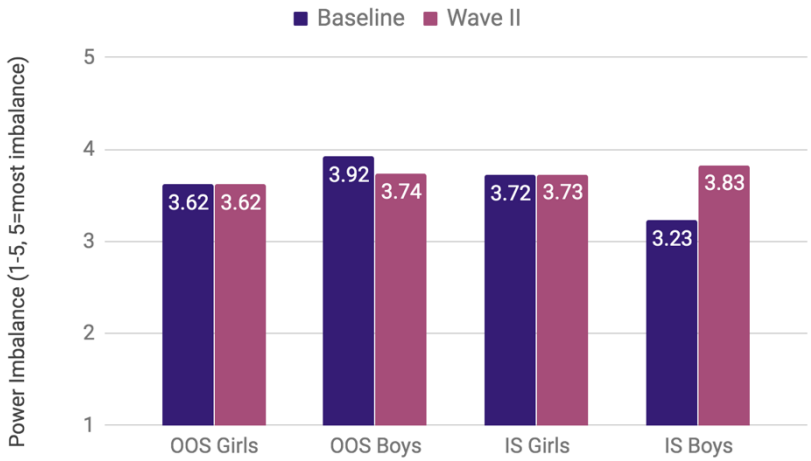


Figure 33 | *IS and OOS Adolescents Power Imbalance and Intimacy*



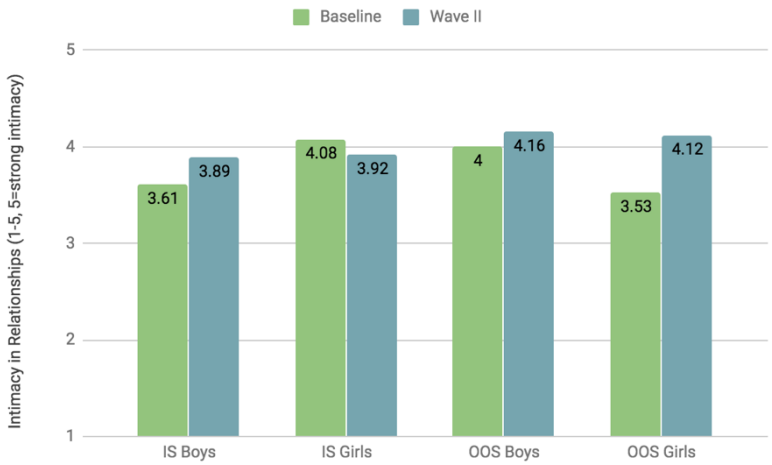


Table 14 - Relationships

In-School Adolescents	Baseline Overall (N=902)	Baseline Boy (N=454)	Baseline Girls (N=448)	Baseline p-value	Wave 2 Overall (N=982)	Wave 2 Boy (N=494)	Wave 2 Girls (N=488)	Wave 2 p-value
Romantic Relationships								
Never had a romantic relationship	817 (90.78)	396 (87.42)	421 (94.18)		641 (83.14)	324 (80.4)	317 (86.14)	
Past romantic relationship (none currently)	31 (3.44)	26 (5.74)	5 (1.12)		50 (6.49)	34 (8.44)	16 (4.35)	
Current boyfriend/girlfriend	51 (5.67)	30 (6.62)	21 (4.7)	**<0.001^**	79 (10.25)	44 (10.92)	35 (9.51)	**0.047^**
Engaged or married	1 (0.11)	1 (0.22)	0 (0)		1 (0.13)	1 (0.25)	0 (0)	
Power Imbalance in Relationships (1-5, 5 indicating strong imbalance in power) (Mean score +/- SD)	3.38 + 1.07 (n=83)	3.23 + 1.07 (n=57)	3.72 + 1.03 (n=26)	0.051	3.79 +/- 0.91 (N=105)	3.83 +/- 0.85 (N=59)	3.73 +/- 1.00 (N=46)	0.587
Intimacy in Relationships (1-5, 5 indicating strong feeling of intimacy/satisfaction) (Mean score +/- SD)	4.05 +/- 0.90 (n=83)	3.86 +/- 0.12 (n=57)	4.36 +/- 0.17 (n=26)	**0.007**	4.17 +/- 0.78 (N=105)	4.11 +/- 0.75 (N=59)	4.25 +/- 0.80 (N=46)	0.375
Intimate Partner Violence (baseline: ever; wave2: in the past 12 months)								
IPV victimization	24 (28.57)	13 (22.81)	11 (40.74)	0.089	18 (22.5)	13 (28.89)	5 (14.29)	0.121
IPV perpetration	20 (23.81)	15 (26.32)	5 (18.52)	0.433	21 (26.25)	17 (37.78)	4 (11.43)	**0.008**

Out-of-school Adolescents	Baseline Overall (N=342)	Baseline Boy (N=172)	Baseline Girls (N=170)	Baseline p-value	Wave 2 Overall (N=261)	Wave 2 Boy (N=131)	Wave 2 Girls (N=130)	Wave 2 p-value
Romantic Relationships								
Never had a romantic relationship	307 (90.56)	150 (88.24)	157 (92.9)		152 (81.28)	77 (80.21)	75 (82.42)	
Past romantic relationship (none currently)	13 (3.83)	9 (5.29)	4 (2.37)		14 (7.49)	7 (7.29)	7 (7.69)	
Current boyfriend/girlfriend	19 (5.6)	11 (6.47)	8 (4.73)	0.279	21 (11.23)	12 (12.5)	9 (9.89)	0.852
Engaged or married	0 (0)	0 (0)	0 (0)		0 (0)	0 (0)	0 (0)	
Power Imbalance in Relationships (1-5, 5 indicating strong imbalance in power) (Mean score +/- SD)	3.81 + 0.98 (n=32)	3.92 + 0.97 (n=20)	3.62 + 1.00 (n=12)	0.404	3.68 +/- 0.54 (N=29)	3.74 +/- 0.53 (N=16)	3.62 +/- 0.56 (N=13)	0.551
Intimacy in Relationships (1-5, 5 indicating strong feeling of intimacy/satisfaction) (Mean score +/- SD)	4.02 +/- 0.92 (n=32)	4.21 +/- 0.19 (n=20)	3.79 +/- 0.28 (n=12)	0.071	4.35 +/- 0.67 (N=29)	4.26 +/- 0.74 (N=16)	4.46 +/- 0.58 (N=13)	0.431
Intimate Partner Violence (baseline: ever; wave2: in the past 12 months)								
IPV victimization	12 (34.29)	8 (36.36)	4 (30.77)	1.000^	8 (38.1)	3 (25)	5 (55.56)	0.203^
IPV perpetration	12 (34.29)	9 (40.91)	3 (23.08)	0.463^	5 (23.81)	3 (25)	2 (22.22)	1.000^

Note: ^ indicates Fisher's Exact Test.

SEXUAL BEHAVIOR

Adolescents were asked about their beliefs regarding sexual behaviors for boys and girls their age and about their own coital and non-coital experiences. Four questions (displayed in the sexual behavior table) related to attitudes about appropriate circumstances under which boys and girls could engage in sexual activity and their responsibility for preventing pregnancy. Adolescents were also asked about their lifetime experience of coital and non-coital sexual activities, including kissing, touching and sexual intercourse.

A little over half of adolescents (ranging from 52 to 57%) believed that it was the girl or woman's responsibility to prevent pregnancy, and 63 to 79% agreed that "women who carried condoms are easy". IS boys were more likely than OOS boys and either IS or OOS girls to associate condom with female promiscuity. At the same time 48 to 62% of adolescents believed that "men are always ready for sex", while 14 to 31% considered men should have as many partners as they can/OOS boys were more likely to endorse norms about masculine sexual prowess than IS boys and girls.

Over time, fewer adolescents subscribed to the idea that pregnancy prevention was women's sole responsibility (-18% among IS and -9% among OOS), but a growing proportion of adolescents endorsed male sexual stereotypes (+7% and +12% increase in endorsement of the perception that men are always ready for sex among IS and OOS adolescents respectively). A substantial increase in stigma related to girls carrying condoms was also noted between waves 1 and 2, with the exception of OOS boys (%11% among IS and +18% among OOS girls)

Similar to baseline, a minority (ranging from 2% of IS girls to 12% of OOS boys) adolescents reported any engagement in sexual activity in Wave 2, such as sexual touching or intercourse. OOS adolescents were more likely to report sexual practices, especially boys (11% of OOS boys reported sexual touching versus 5% of IS boys). OOS boys and girls alike were more likely to have had sexual intercourse compared to IS adolescents (6% versus 2%). Very few adolescents who reported having had sexual intercourse (n=46).

Figure 34 | *IS and OOS Adolescent Sexual Norms*

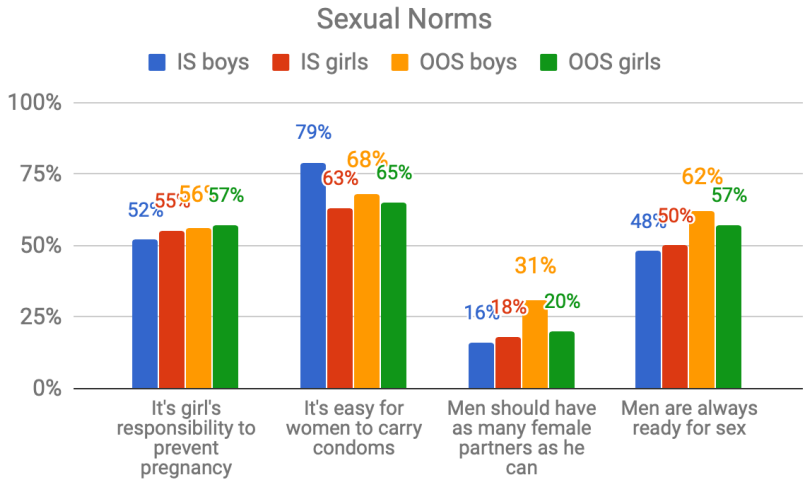


Figure 35 | *IS and OOS Adolescent Sexual Experiences*

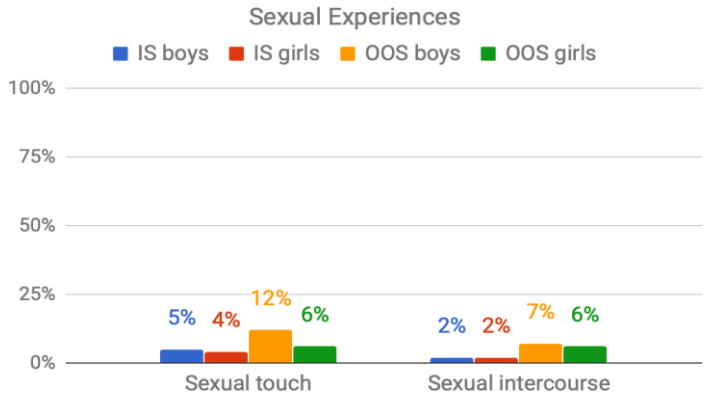


Table 15 - Sexual Health

In-school Adolescents	Baseline Overall (N=902)	Baseline Boy (N=454)	Baseline Girls (N=448)	Baseline p-value	Wave 2 Overall (N=982)	Wave 2 Boy (N=494)	Wave 2 Girls (N=488)	Wave 2 p-value
Sexual Norms (% agree with...)								
It's the girl's responsibility to prevent pregnancy	642 (71.25)	309 (68.21)	333 (74.33)	**0.042**	525 (53.46)	257 (52.02)	268 (54.92)	0.363
Women who carry condoms on them are easy	537 (59.6)	309 (68.21)	228 (50.89)	**<0.001**	695 (70.77)	389 (78.74)	306 (62.7)	**<0.001**
A real man should have as many female partners as he can	156 (17.31)	96 (21.19)	60 (13.39)	**0.002**	166 (16.9)	77 (15.59)	89 (18.24)	0.268
Men are always ready for sex	373 (41.4)	188 (41.5)	185 (41.29)	0.950	479 (48.78)	235 (47.57)	244 (50)	0.446
Sexual History								
Ever sexual touch	30 (5.44)	18 (6.45)	12 (4.41)	0.291	34 (4.46)	19 (4.95)	15 (3.97)	0.513
Ever sexual intercourse	15 (2.72)	11 (3.94)	4 (1.47)	0.073	16 (2.1)	9 (2.34)	7 (1.85)	0.636
Contraceptive use at first sex	2 (13.33)	2 (18.18)	0 (0)	1.000^	9 (56.25)	4 (44.44)	5 (71.43)	0.358^

Out-of-school Adolescents	Baseline Overall (N=342)	Baseline Boy (N=172)	Baseline Girls (N=170)	Baseline p-value	Wave 2 Overall (N=261)	Wave 2 Boy (N=131)	Wave 2 Girls (N=130)	Wave 2 p-value
Sexual Norms (% agree with...)								
It's the girl's responsibility to prevent pregnancy	222 (64.91)	110 (63.95)	112 (65.88)	0.709	147 (56.32)	73 (55.73)	74 (56.92)	0.845
Women who carry condoms on them are easy	195 (57.02)	116 (67.44)	79 (46.47)	**<0.001**	173 (66.28)	89 (67.94)	84 (64.62)	0.570
A real man should have as many female partners as he can	65 (19.01)	38 (22.09)	27 (15.88)	0.143	66 (25.29)	40 (30.53)	26 (20)	0.050
Men are always ready for sex	162 (47.37)	82 (47.67)	80 (47.06)	0.909	155 (59.39)	81 (61.83)	74 (56.92)	0.419
Sexual History								
Ever sexual touch	10 (5.03)	5 (5)	5 (5.05)	0.987	18 (8.61)	12 (11.54)	6 (5.71)	0.133
Ever sexual intercourse	6 (3.02)	4 (4.04)	2 (2)	0.445^	13 (6.19)	7 (6.73)	6 (5.66)	0.748
Contraceptive use at first sex	1 (16.67)	1 (25)	0 (0)	1.000^	4 (30.77)	2 (28.57)	2 (33.33)	1.000^

Note: ^ indicates Fisher's Exact Test.

SECTION 2: GEAS WAVE 2 IMPACT EVALUATION RESULTS (CONTROL VERSUS INTERVENTION)

This chapter describes baseline differences between intervention and control, which reflect selectivity into GUG! intervention as adolescents opted to participate. We then discuss differences between the two groups at follow-up while accounting for baseline differences. This "difference in difference" approach specifically focuses on how the two groups have evolved over the course of one-year follow-up and how these changes compare between the two groups. We present results based on intention to treat analysis (comparison of intervention and control regardless of GUG! exposure) as well as results based on per protocol analysis (comparison exposed intervention to non-exposed controls), given the significant proportion of adolescents in the control group exposed to GUG! and the significant proportion of adolescents in the intervention who had little exposure to GUG!

GROWING UP GREAT EXPOSURE

The GUG! Intervention was designed to engage VYAs in weekly club sessions over the course of the nine months of the school year (for IS VYAs). OOS VYAs joined club sessions for an additional two months. Overall, after accounting for regular holiday breaks and exam periods, VYA school clubs met for approximately 26 weekly sessions while community-based clubs (for OOS VYAs) met for an average of 28 weekly sessions. There was no standard format for weekly meetings. Club facilitators could use any materials from the VYA toolkit that they desired, in any order or frequency, though they were encouraged to use all materials in full at least once by the end of the intervention period. The VYA toolkit included three materials for group use – storybooks (one each for boys and girls), activity cards and the interactive game. Puberty books for girls and boys were distributed to each participating VYA as take-home materials, though they could also be used as references or to inspire discussion during weekly sessions.

Eighty percent of adolescents in the intervention group reported participating in at least one of the three activities (VYA club, classroom session, or community session) in the past year. 60% reported attending a VYA club meeting and 31% a classroom session. In addition, 8% of VYAs reported attending a community session targeting parents, caregivers and other adults, though these activities were not intended for VYAs. Of the 80% who reported attending any activity, nearly all (97%) reported that the events were conducted as part of GUG! Almost all participants in the intervention group (99%) had seen the GUG! puberty book.

In a comparison of adolescents in the intervention group who reported exposure to GUG! activities with those who did not, adolescents who reported exposure to the intervention were slightly older than those who did not (11.89 vs. 11.67 years old, $p=0.014$). A higher share of girls (81%) compared to boys (71%) were exposed ($p<0.001$). Exposed adolescents were more likely to be literate (76% vs. 69%, $p=0.019$), and at appropriate grade level for their age (71% vs. 64%, $p=0.016$) than those in the intervention group who were not exposed. No differences in family characteristics (wealth or parental structure) were observed in either the IS or OOS groups.

VYA club meetings: Of those who attended a VYA club meeting, 30% had helped to lead one. Over two-thirds (71%) had attended a VYA club meeting where a health provider led the meeting, and a similar proportion had participated in a clinic visit as part of the VYA club. Nearly half of adolescents had only attended a few VYA club sessions (1-5) of a possible total of approximately 20 sessions, and one-third had attended a VYA club in the past 3 months. The most common materials adolescents in the intervention group reported using in the VYA club session were the puberty books (61% and 66% for the girl and boy versions, respectively). Among both IS and OOS adolescents, girls were more likely than boys to have attended a VYA

club meeting in the past year (70% vs. 52% for OOS girls and boys, respectively, p<0.001, and 67% vs. 53% of IS girls and boys, respectively, p<0.001). Girls were far more likely to report the girls' versions of materials used and boys the boys' versions of materials used during the sessions.

***Classroom sessions**:* Teachers were trained to use the GUG! materials in conjunction with the Family Life Education curriculum or other relevant classes (like science or health). No overall number or frequency of these sessions was suggested by the intervention and the Family Life Education is not yet fully integrated into the core curriculum in Kinshasa schools, so classroom sessions varied significantly by school. Of the 31% of adolescents in the intervention group who attended a classroom session in the past year, about half had attended five or fewer. The puberty books were the materials most commonly reported as used during the classroom session, followed by the game, activity cards, and storybooks. As with VYA sessions, girls were far more likely to report the girls' versions of materials were used and the boys more likely to report that the boys' versions were employed.

***Community session with adults**:* Community sessions targeted adults in the community, especially local or religious leaders. They were not designed for VYA participation, but as they were open to all, some VYAs attended*:*8% of adolescents in the intervention group had attended a community session with adults. Nearly half had only attended a few (44.55%) and just over half had attended a community session within the past 3 months (54.95%). Fewer than half (45%) of adolescents in the intervention group reported their parents or caregivers had attended a community session (this was more common among girls than boys in both IS and OOS groups), and of those 59% had discussed the community session videos with their parents or caregivers.

***Topics discussed by VYAs during GUG! Activities**:* Ninety-five percent of adolescents reported discussing puberty. The next most commonly discussed topics during GUG! activities were menstruation (78.91%, more common among girls than boys in both IS and OOS groups), girls' and boys' roles, and girl's education. Seventeen percent of the intervention group had ever asked questions to a health provider, with no differences observed by sex. About a fifth of the intervention group had ever participated in other activities or community groups on similar topics.

***Intervention Exposure in the Control Group**:* There was significant contamination in the control group. One-third of the control group reported participating in any of the three types of activities, and 20% of the control group reported participating in any of the three as part of GUG!

COMPARISON BETWEEN INTERVENTION AND CONTROL AT BASELINE AND FOLLOW-UP

LIFE HISTORY AND LIFE CIRCUMSTANCES

Baseline differences

Adolescent's characteristics and life circumstances at baseline differed between the intervention and control groups, particularly with respect to family structure and economic circumstances. Among IS adolescents, age did not differ significantly between intervention and control groups (mean ages of 11.80 versus 12.03, p=.504), while OOS adolescents were older in the intervention than control (mean ages of 11.94 among intervention versus 11.88 among control, p<0.001). Tribal affiliation and migration history differed, with greater Kwilu-Kwango representation and a lower proportion of Bakongo representation in the IS and OOS intervention groups. The parents of adolescents in the intervention groups were more likely to have been born outside of Kinshasa.

While family structure at baseline was similar among intervention and controls, both for IS and OOS samples, wealth differences were apparent at baseline with IS adolescents in the intervention arm overall wealthier than IS controls, while the reverse was true among OOS adolescents.

Adverse Childhood Experiences

Few significant differences emerged between intervention and control groups regarding child adverse experiences, teasing, and bullying or violence perpetration. IS girls in the intervention group were more likely to be teased than controls. Boys in the intervention group (both IS and OOS) were more likely to have experienced physical bullying and in addition OOS boys in the intervention group were more likely to perpetrate violence than controls.

EDUCATION

Baseline differences

In baseline, educational attainment was similar among IS adolescents in the intervention versus control groups, although literacy was higher among IS girls in the intervention group compared to the control group. Conversely, a greater proportion of OOS boys in the intervention group had never been to school relative to controls, and OOS boys and girls alike in the intervention group were more likely to have left school for lack of school fees relative to controls.

Change over time

These gaps in educational trajectories between intervention and control persisted in Wave 2. In Wave 2, similar proportions of OOS adolescents in the intervention and control arms indicated they were able to read a simple sentence (52% vs. 56% for boys). Ability to read a simple sentence was higher for intervention group OOS girls (42%) than in the control group 34%. Similarly, no differences were observed for IS boys (87% in

both the control and intervention groups), but IS girls from intervention group (85%) had higher literacy than their counterparts from control arm (79%).

Age-for-grade educational attainment was similar between study groups among IS adolescents at Wave 2. At Wave 2, four fifths of girls indicated their aspirations of completing college or doctorate level education (intervention: 89% vs. control: 88%). During the past year, the proportion of IS girls from the control group aspiring for college or graduate level education increased by 8% compared to baseline. The change over time in the intervention arm was 4%.

SOCIAL RELATIONSHIPS

Baseline differences

A number of differences were reported at baseline between intervention and control with regards to relationships with caregiver and peers.

With caregiver

While both groups described similar family structures at baseline, baseline affirmation of caregiver connectedness were lower among IS boys in the intervention group relative to the controls and caregiver monitoring was lower for IS girls in the intervention group relative to the controls. These baseline group differences were not apparent among OOS adolescents; however, OOS boys in the intervention group reported lower caregiver expectations for their education than the controls.

With peers

At baseline, adolescents in the intervention group reported similar peer structures as controls, but boys in the intervention group were less likely to spend time with friends than in the control group for both IS and OOS adolescents. The same was not true for girls.

At baseline, more adolescents in the IS intervention group compared with IS control group believed most or all their friends thought it was important to study hard. Finally, more IS girls in the intervention group believed their friends had had sexual intercourse relative to IS control group girls.

Change over time

Little change in closeness to parents was observed over time in either intervention or control groups. Caregiver monitoring increased across all groups, with no differences between intervention and control among either IS or OOS groups.

Few changes in peer structure (e.g. number of male or female friends) were observed at Wave 2. Nearly half of both IS and OOS adolescents reported having 1-3 friends with no differences seen between intervention and control groups. However, girls were more likely to be friends with girls than with boys. For example, two thirds of IS (intervention vs. control: 59% vs. 66%) and OOS girls (intervention vs. control: 66% vs. 64%) indicated not having male friends.

Similarly, a greater proportion of adolescent boys reported having no female friends. Specifically, over half of IS boys (intervention vs. control: 55% vs. 58%) and two thirds of OOS boys (intervention vs. control: 66% vs. 61%) reported they had no female friends. Approximately half of adolescents reported spending time with peers daily (IS vs. OOS: 45% vs. 51%), and time spending with peers was comparable between intervention

and control arms among IS and OOS population. OOS boys (intervention vs. control: 55% vs. 57%) more commonly spent time with friends on a daily basis than their IS peers (intervention vs. control: 51% vs. 48%). The same trend was also observed for girls (OOS intervention vs. control: 48% vs. 43%; IS intervention vs. control: 38% vs. 43%).

Consistent with baseline, two thirds to three quarters of adolescents believed that their friends considered regular school attendance to be important (IS vs. OOS: 79% vs. 66%). A greater proportion of OOS adolescents from the intervention group were more likely to believe that their friends thought so than those in control arm (71% vs. 61%). No such difference was seen among IS intervention population against controls. Compared to controls, OOS boys from the intervention arm were more likely to believe that school attendance was highly valued by their peers (69% vs. 54%).

PERCEPTIONS OF GENDER NORMS

Baseline differences

At baseline, there were generally no systematic differences in perceptions of gender norms between intervention and control groups, with the exception of IS boys in the intervention group who were less likely to think that boy/girl relationships were normative compared to controls. In addition, IS girls in the intervention group were more likely to believe men were always ready for sex than their peers in control group.

Change over time

A number of specific gender attitudes addressed in the Growing Up Great! (GUG!) intervention shifted in the year following the intervention, with a substantial increase in normative injunctions of gender equality in household chores responsibilities among adolescents participating in the intervention group relative to the controls. Specifically, gender equal normative perceptions rose 17% percentage points and 22% percentage points among IS and OOS adolescents respectively, while no change was observed in the control groups. The odds of normative change in the intervention relative to the control group were twice as high among IS adolescents, and more than three times higher among OOS adolescents, relative to the control groups, after adjusting for baseline normative perceptions in both groups. Among OOS adolescents, the effect of the intervention was much more pronounced among girls (8.08 [3.79-17.25]) than among boys (2.33 [1.29-4.19]), ultimately resulting in a 33% increase in gender equitable division of household chores sharing among OOS girls versus 14% among OOS boys participating in the intervention. However, the intervention did not decrease normative endorsement of gender discrimination against atypical boys or girls (normal to tease a boy who acts like a girl or a girl who acts like a boy). In fact, among IS adolescents, discriminatory views increased slightly in the intervention relative to the controls. Associations tended to be opposite for OOS adolescents although none were significant.

The Growing Up Great! intervention was associated with a shift towards gender-equal endorsement of household chores compared to the controls.

Table 16 - Perceptions of gender norms: In school

	N	Wave1	Wave 2	Change over time (Wave2-Wave1)	Effect of intervention on change in attitudes relative to control group	p value
Sexual Double Standard ITT						
Control	901	4.31 (0.86)	4.33 (0.84)	0.02 +1.07	Mean difference in score 0.02 (-0.07, 0.12)	0.613
Intervention	914	4.34 (0.85)	4.38 (0.81)	0.05 + 1.02		
Stereotypical traits (meanscore) ITT						

control	901	4.51 (0.61)	4.41 (0.64)	-0.09 + 0.81	Mean difference in score 0.07 (-0.01, 0.14)	0.102
intervention	914	4.43 (0.72)	4.40 (0.68)	-0.03 + 0.89		
Stereotypical roles (meanscore) ITT						
control	901	4.48 (0.72)	4.42 (0.67)	-0.05 + 0.9	Mean difference in score -0.06 (-0.15, 0.03)	0.171
intervention	914	4.39 (0.780)	4.28 (0.77)	-0.12 + 1.02		
Gender equality in household chores ITT						
control	901	61.81%	63.05%	1.24%	**OR=1.92 (1.46, 2.52)**	**<0.001**
intervention	914	61.01%	77.40%	16.39%		
Gender atypical discrimination against boys (% who approve) ITT						
control	901	69.89%	68.14%	-1.75%	**OR=1.35 (1.05, 1.75)**	**0.019**
intervention	914	60.81%	65.72%	4.91%		
Gender atypical discrimination against girls (% who approve) ITT						
Control	901	63.41%	61.50%	-1.91%	**OR=1.28 (1.00, 1.64)**	**0.047**
Intervention	914	56.07%	60.59%	4.52%		

Table 17 - Perceptions of gender norms: Out of school

	N	Wave1	Wave 2	Change over time (Wave2-Wave1)	Effect of intervention on change in attitudes relative to control group	P value
SDS ITT						
Control	342	4.18 (0.93)	4.36 (0.86)	0.18 + 1.16	Mean score difference 0.08 (-0.09, 0.25)	0.377
Intervention	362	4.14 (0.95)	4.40 (0.81)	0.26 + 1.12		
Stereotypical traits (meanscore) ITT						
control	342	4.45 (0.63)	4.45 (0.64)	0.01 + 0.84	Mean score difference 0.06 (-0.06, 0.19)	0.336
intervention	362	4.43 (0.68)	4.48 (0.65)	0.06 +0.88		
Stereotypical roles (meanscore) ITT						
control	342	4.49 (0.66)	4.57 (0.67)	0.07 + 0.93	Mean score difference 0.01 (-0.13,	0.901
intervention	361	4.40 (0.78)	4.48 (0.67)	0.08 + 0.99		
Gender equality in household chores ITT						
control	342	65.79%	63.87%	-1.92%	**OR=3.57 (2.27, 5.60)**	**<0.001**
intervention	362	60.99%	82.83%	21.85%		
Gender atypical discrimination against boys (% who approve) ITT						
control	342	68.16%	75.43%	7.28%	OR= 0.88 (0.56, 1.38)	0.573
intervention	362	68.39%	71.39%	3.00%		
Gender atypical discrimination against girls (% who approve) ITT						
Control	342	64.74%	69.36%	4.63%	OR=0.89 (0.58, 1.36)	0.597
Intervention	362	64.57%	63.49%	-1.09%		

sex by study group interaction					OR 2.64 (1.13, 6.17)	**0.025**
Boys	379					
Control	172	62.30%	70.29%	7.98%	OR 0.58 (0.32, 1.02)	0.060
Intervention	207	65.61%	60.19%	-5.42%		
Girls	325					
Control	170	67.20%	68.42%	2.23%	OR 1.52 (0.81, 2.84)	0.192
Gender atypical discrimination against girls (% who approve) per protocol						
Control	267	62.36%	68.27%	5.90%	OR=0.77 (0.47, 1.24)	0.278
Intervention	254	63.95%	63.18%	-0.80%		

AGENCY

Baseline differences

At baseline, differences in agency outcomes were noted between intervention and controls. Specifically, IS girls in the intervention group scored substantially higher on their ability to voice their opinion compared to the control group. These differences were not observed for either IS or OOS boys, or for OOS girls.

Change over time

Over time, we found an increase in agency among OOS adolescents in the intervention group relative to the OOS controls, although the same was not observed among IS adolescents. Greater increase in voice was noted among young OOS adolescents (<12 years) in the intervention group relative to the controls (0.37 (0.15, 0.59).

Over time, we observed an increase in agency among OOS adolescents in the intervention relative to controls.

Table 18 - Voice (mean score)

	N	Wave1	Wave 2	Change over time (Wave2-Wave1)	Effect of intervention on change in attitudes relative to control group	P value
In school						
Control	900	2.48 (0.65)	2.71 (0.70)	0.23 (0.83)	Mean score difference -0.03 (-0.11, 0.05)	0.464
Intervention	914	2.58 (0.66)	2.77 (0.65)	0.20 (0.84)		
Out of school						
Control	342	2.18 (0.68)	2.47 (0.74)	0.29 + 0.93	Means score difference 0.13 (-0.01, 0.27)	0.066
Intervention	361	2.21 (0.70)	2.63 (0.76)	0.42 + 0.92		
Age X study group interaction	703				-0.41 (-0.68, -0.13)	**0.004**
<12	291					
Control	142	2.16 +/- 0.69	2.31 +/- 0.76	0.15 +/- 0.98	0.37 (0.15, 0.59)	**0.001**
Intervention	149	2.03 +/- 0.73	2.55 +/- 0.77	0.52 +/- 0.93		
>=12	412					

Control	200	2.20 +/- 0.68	2.58 +/- 0.71	0.38 +/- 0.89	-0.04 (-0.21, 0.14)	0.661
Intervention	212	2.34 +/- 0.65	2.68 +/- 0.75	0.34 +/- 0.91		

ATTITUDES AND EXPERIENCES RELATED TO PUBERTAL DEVELOPMENT AND BODY COMFORT

Baseline differences

At baseline, there were no significant differences in body pride, menstrual knowledge and hygiene indicators between intervention and controls with the exception of OOS girls in the intervention being less likely to feel shame over their periods than OOS controls.

Change over time

Perceptions of female pride (already high at baseline) changed little over time, with no trend differences between intervention and controls groups. Feeling shame of body during menstrual periods among girls decreased slightly in both the intervention and control groups, with no differences seen by study group.

Among VYAs ages 10-11, adolescents who participated in GUG! gain greater satisfaction with their bodies over time than those in the control group.

Likewise, the decline in young people's comfort with pubertal was no different in the intervention and control arms. Meanwhile, confirming prior literature, body comfort generally declined in the total sample. In general, changes in body satisfaction were similar among intervention and controls, although young OOS adolescents (<12 years) in the intervention group seemed to gain greater satisfaction over time than their peers in the control group.

Table 19 - Body image and comfort with pubertal development: In school

	N	Wave1	Wave 2	Change over time (Wave2-Wave1)	Effect of intervention on change in attitudes relative to control group	P value
Body pride ITT						
Control	901	92.12%	93.03%	0.91%	OR= 1.28 (0.79, 2.09)	0.313
Intervention	914	91.61%	94.10%	2.50%		
% Ashamed of body when period ITT						
Control	130	42.25%	34.96%	-7.29%	OR= 0.93 (0.48, 1.18)	0.839
Intervention	125	43.36%	28.51%	-14.84%		
Comfort with pubertal development ITT						
Control	451	98.01%	82.62%	-15.39%	OR= 1.16 (0.40, 3.36)	0.782
Intervention	906	98.25%	84.41%	-13.84%		
Tracking menstrual cycle ITT						
Control	129	58.45%	69.53%	11.08%	OR= 0.93 (0.46, 1.89)	0.838
Intervention	123	66.43%	74.32%	7.89%		
Body satisfaction index ITT						
control	901	4.16 + 0.82	4.05 + 0.86	-0.10 + 1.16	Mean score difference	0.513
intervention	914	4.12 + 0.79	4.05 + 0.81	-0.07 + 1.06	0.03 (-0.07, 0.14)	

Table 20 - Body image and comfort with pubertal development: Out of school							
	N		Wave1	Wave 2	Change over time (Wave2-Wave1)	Effect of intervention on change in attitudes relative to control group	P value
Body pride ITT							
Control	342		86.32%	92.20%	5.88%	OR= 1.17 (0.56, 2.41)	0.680
Intervention	362		87.89%	93.46%	5.57%		
% Ashamed of body when period ITT							
Control		32	80.00%	49.30%	-30.70%	OR= 3.30 (0.84, 12.87)	0.086
Intervention		35	58.70%	32.93%	-25.77%		
Comfort with pubertal development ITT							
Control	138		96.39%	87.22%	-9.17%	OR= 0.51 (0.04, 6.46)	0.600
Intervention	198		99.55%	80.30%	-19.25%		
Tracking menstrual cycle ITT							
Control		31	57.14%	64.18%	7.04%	OR= 1.48 (0.40, 5.49)	0.557
Intervention		34	58.70%	70.00%	11.30%		
Body satisfaction index ITT							
control		342	4.00 + 0.88	3.91 + 0.85	-0.09 + 1.16	Mean score difference	0.417
intervention		362	3.89 + 0.88	3.87 + 0.91	-0.02 + 1.12	0.07 (-0.10, 0.24)	
sex X study group interaction						0.34 (0.004, 0.675)	**0.048**
Boys		379					
Control		172	4.04 +/- 0.91	3.91 +/- 0.88	-0.14 +/- 1.20	-0.07 (-0.30, 0.16)	0.561
Intervention		207	3.93 +/- 0.91	3.72 +/- 0.86	-0.20 +/- 1.10		
Girls		325					
Control		170	3.96 +/- 0.85	3.92 +/- 0.82	-0.04 +/- 1.11	0.27 (0.03, 0.51)	**0.028**
Intervention		155	3.84 +/- 0.84	4.07 +/- 0.94	0.23 +/- 1.10		

TEASING AND VIOLENCE

Baseline differences

Few differences were noted between intervention and control groups regarding teasing or violence perpetration at baseline. IS girls in the intervention group were more likely to be teased than controls. OOS boys in the intervention group were more likely to perpetrate physical violence (slapping or kicking) towards their peers than controls.

Change over time

Over time these experiences were less common in both intervention and control groups. Teasing dropped more among the intervention group than the controls among OOS adolescents and violence perpetration decreased significantly more among OOS boys in the intervention group relative to the controls (-15% versus -2.6%s; OR 0.48 (0.27, 0.84), p=0.01)

Table 21 - Teasing and physical violence experienced with peers : In school						
	N	Wave1	Wave 2	Change over time (Wave2-Wave1)	Effect of intervention on change in attitudes relative to control group	P value
Teasing ITT						
Control	901	34.20%	27.32%	-6.88%	OR 1.10 (0.85, 1.43)	0.455

Intervention	914	38.01%	32.48%	-5.53%		
Physical violence perpetration ITT						
Control	901	31.61%	24.23%	-7.38%	OR=0.86 (0.66, 1.13)	0.285
Intervention	914	34.55%	24.78%	-9.77%		

Table 22 - Teasing and physical violence experienced with peers: Out of school

	N	Wave1	Wave 2	Change over time (Wave2-Wave1)	Effect of intervention on change in attitudes relative to control group	P value
Teasing ITT						
Control	342	36.58%	33.68%	-2.89%	OR 0.62 (0.42, 0.91)	**0.014**
Intervention	362	45.07%	27.80%	-17.26%		
Physical violence perpetration ITT						
Control	342	34.74%	28.68%	-6.05%	OR= 0.84 (0.55, 1.26)	0.394
Intervention	362	36.32%	24.22%	-12.11%		
sex X study group interaction					OR 2.91 (1.26, 6.71)	**0.012**
Boys	379					
Control	172	28.80%	32.98%	4.19%	OR 0.50 (0.28, 0.88)	**0.016**
Intervention	207	39.92%	25.30%	-14.62%		
Girls	325					
Control	170	40.74%	24.34	-16.40%	OR 1.45 (0.78, 2.69)	0.234
Intervention	155	31.61%	22.80%	-8.81%		

SEXUAL HEALTH COMMUNICATION

Changes over time

Communication about SRH topics, including body changes, pregnancy, contraception or sexual relationships increased substantially over time among all adolescents with a greater increase among OOS adolescents receiving the intervention relative to OOS controls. Specifically, communication about sexual relationships increased more among OOS girls in the intervention group relative to the control (OR=4.32 (1.69-11.05), while no differences by study arm were observed among OOS boys or IS adolescents. In addition, younger OOS adolescents (<12 years) in the intervention group were more likely to have discussed contraception than the controls (OR=13.30 (2.61-68.2); while no differences were noted among older OOS adolescents. IS boys in the intervention group were in fact less likely to have discussed contraception than in the control group (OR=0.55 (0.34-0.90)). Finally, discussions about sexual relationships were more commonly reported by OOS girls in the intervention group compared to control (OR 4.44 (1.74, 11.33). Meanwhile, younger OOS adolescents (<12 years old) in the intervention group were more likely to discuss contraception than in the controls (OR=13.31 (2.60, 68.09).

Table 23 - SRH communication: In school

	N	Wave1	Wave 2	Change over time (Wave2-Wave1)	Effect of intervention on change in attitudes relative to control group	P value
Body changes ITT						
Control	901	37.29%	48.65%	11.37%	OR= 0.94 (0.74, 1.18)	0.583
Intervention	914	43.93%	54.10%	10.17%		
Sexual relations ITT						
Control	901	8.77%	16.45%	7.68%	OR= 0.83 (0.58, 1.20)	0.323
Intervention	914	11.55%	18.46%	6.91%		

Pregnancy ITT						
Control	901	9.67%	18.54%	8.87%	OR= 0.72 (0.52, 1.01)	0.061
Intervention	914	14.91%	21.03%	6.12%		
Contraception ITT						
Control	901	9.07%	16.75%	7.68%	OR= 0.82 (0.58, 1.16)	0.269
Intervention	914	13.43%	20.34%	6.91%		

Table 24 - SRH communication: Out of school

	N	Wave1	Wave 2	Change over time (Wave2 - Wave1)	Effect of intervention on change in attitudes relative to control group	P value
Body changes ITT						
Control	342	28.42%	41.32%	12.89%	OR=0.93 (0.64, 1.36)	0.713
Intervention	362	36.77%	44.62%	7.85%		
Sexual relationships ITT						
Control	342	9.21%	12.37%	3.16%	**OR= 2.09 (1.15, 3.79)**	**0.015**
Intervention	362	10.54%	21.75%	11.21%		
sex X study group interaction					OR = 3.75 (1.12, 12.57)	**0.032**
Boys	379					
Control	172	9.42%	16.75%	7.33%	OR 1.19 (0.54, 2.58)	0.668
Intervention	207	11.07%	18.58%	7.51%		
Girls	325					
Control	170	8.99%	7.94%	-1.06%	OR 4.44 (1.74, 11.33)	**0.002**
Intervention	155	9.84%	25.91%	16.06%		
Pregnancy ITT						
Control	342	10.00%	13.68%	3.68%	OR=1.53 (0.87, 2.70)	0.139
Intervention	362	13.23%	20.85%	7.62%		
Contraception ITT						
Control	342	6.05%	11.84%	5.79%	OR= 2.04 (1.05, 3.95)	0.035
Intervention	362	7.40%	22.87%	15.47%		
age X study group interaction	704				OR 0.10 (0.02, 0.58)	0.011
<12	291					
Control	142	3.75%	3.75%	0	OR 13.31 (2.60, 68.09)	0.002
Intervention	149	1.70%	18.75%	17.05%		
>=12	413					
Control	200	7.73%	17.73%	10.00%	OR 1.27 (0.59, 2.72)	0.546
Intervention	213	11.11%	25.56%	14.44%		

SEXUAL ATTITUDES

Few differences related to contraceptive attitudes and misperceptions were noted between intervention and control groups in Wave 2, although adolescents in the intervention group were more likely to recognize the benefits of contraception that allow "a young couple to have sex without worrying about pregnancy". Meanwhile, misperceptions about contraception were less common among the intervention than the control groups, including perceptions that contraception causes infertility and illness. Compared to adolescents in the intervention group, those in the control group were more likely to agree that women who use contraception are seen as promiscuous.

At Wave 2, more adolescents in the intervention group recognized the benefits of contraception in adolescent romantic relationships and helping young people prepare for motherhood. OOS adolescents who participated in GUG! were less likely than controls to believe contraception threatens health and fertility.

Table 25 - Embarrassed to get Contraception ITT						
In School						
	N	Wave1	Wave 2	Change over time (Wave2-Wave1)	Effect of intervention on change in attitudes relative to control group	P value
Control	448	21.64%	19.34%	-2.29%	OR 0.88 (0.61, 1.26)	0.476
Intervention	474	22.70%	18.76%	-3.95%		
Out-of-school						
Control	170	18.42%	18.68%	2.63%	OR 0.96 (0.50, 1.84)	0.903
Intervention	155	17.71%	15.70%	-2.02%		

Table 26 - Contraceptive Attitudes						
	IS (N=1,815)			OOS (N=704)		
	Control (n=901)	Intervention (n=914)	p	Control (n=342)	Intervention (n=362)	p
Contraception (birth control) is only for married women.						
Disagree	459 (57.40)	492 (60.07)	.277	166 (58.45)	200 (60.24)	.652
Agree	334 (42.60)	327 (39.93)		118 (41.55)	132 (39.76)	
Boys						
Disagree	223 (56.46)	227 (58.06)	.650	89 (61.38)	100 (52.63)	.110
Agree	172 (43.54)	164 (41.94)		56 (38.62)	90 (47.37)	
Girls						
Disagree	227 (58.35)	265 (61.92)	0.299	**77 (55.40)**	**100 (70.42)**	**.009**
Agree	162 (41.65)	163 (38.08)		**62 (44.60)**	**42 (29.58)**	
With contraception, a young couple can have sex without worrying about pregnancy						
Disagree	342 (46.15)	316 (40.25)	**0.020**	**116 (43.61)**	**113 (35.09)**	0.035
Agree	399 (53.85)	469 (59.75)		**150 (56.39)**	**209 (64.91)**	
Boys						
Disagree	179 (48.86)	147 (36.68)	**0.023**	63 (45.65)	70 (37.43)	
Agree	203 (53.14)	233 (61.3)		75 (54.35)	117 (62.57)	0.136
Girls						
Disagree	163 (45.40)	169 (41.73)	.306	53 (41.41)	43 (31.85)	0.108
Agree	196 (54.60)	236 (58.27)		75 (58.59)	92 (68.15)	
Adolescents or young women who use contraception are seen as promiscuous						
Disagree	268 (35.54)	275 (34.03)	0.531	**88 (31.10)**	**139 (42.51)**	**0.004**
Agree	486 (64.46)	533 (65.24)		**195 (68.90)**	**188 (57.49)**	
Boys						
Disagree	131 (34.56)	120 (31.83)	0.425	**37 (25.69)**	**78 (41.94)**	**0.002**
Agree	248 (65.44)	257 (68.17)		**74.31 (107)**	**108 (58.06)**	
Girls						
Disagree	137 (36.53)	155 (35.96)	0.867	51 (36.69)	61 (43.26)	o.262
Agree	238 (63.47)	276 (64.04)		63.31 (88)	80 (56.74)	
If women use contraception they risk becoming infertile						
Disagree	252 (33.96)	306 (38.35)	.074	77 (29.17)	137 (41.77)	<0.001
Agree	490 (66.04)	492 (61.65)		187 (70.83)	191 (58.23)	
Boys						
Disagree	120 (32.35)	164 (43.39)	**0.002**	**35 (25.36)**	**85 (45.45)**	**<0.001**
Agree	251 (67.65)	214 (56.61)		**103 (74.64)**	**102 (54.55)**	
Girls						
Disagree	132 (35.58)	142 (33.81)	0.602	42 (33.33)	52 (36.88)	0.545
Agree	239 (64.42)	278 (66.19)		84 (66.67)	89 (63.12)	
Contraception can make women very ill						
Disagree	309 (42.86)	351 (44.54)	0.510	95 (34.93)	138 (44.37)	0.020
Agree	412 (57.14)	436 (55.46)		177 (65.07)	173 (44.63)	
Boys						
Disagree	151 (41.48)	166 (44.27)	0.445	**39 (27.86)**	**85 (46.45)**	.001
Agree	213 (58.52)	209 (55.73)		**101 (72.140**	**98 (53.55)**	

Girls						
Disagree	158 (44.26)	185 (44.79)	0.881	56 (42.42)	53 (41.41)	
Agree	199 (55.740	228 (55.21)		76 (57.58)	75 (58.59)	.868
Women who use contraception are better prepared to be mothers because they can decide when to have children						
Disagree	173 (22.76)	164 (20.45)	0.266	59 (21.07)	69 (20.85)	0.946
Agree	587 (77.24)	638 (79.55)		221 (78.93)	262 (79.15)	
Boys						
Disagree	108 (28.12)	92 (24.53)	0.261	34 (23.61)	51 (26.70)	.520
Agree	276 (71.88)	283 (75.47)		110 (76.39)	140 (73.30)	
Girls						
Disagree	65 (17.29)	72 (16.86)	0.873	25 (18.38)	18 (12.86)	**0.206**
Agree	311 (82.71)	355 (83.14)		1111 (81.62)	122 (87.14)	
Women or girls should not use contraception before having children						
Disagree	291 (38.19)	328 (40.39)	0.371	90 (33.21)	121 (36.78)	0.362
Agree	471 (61.81)	484 (59.61)		181 (66.79)	208 (63.22)	
Note: Control versus intervention comparison excludes responses “don’t know” and "refuse to answer" .						

SEXUAL HEALTH KNOWLEDGE

Baseline differences

There were few differences between intervention and control at baseline. IS boys in the intervention group were less likely to know about pregnancy prevention methods than controls, although overall pregnancy prevention scores were similar. IS girls in control group were more likely to feel embarrassed to get a condom if needed (36% versus 30%). OOS boys had a higher pregnancy prevention summary score than controls although they showed no difference in response to each individual item except for the fact that more boys from intervention groups than controls (33% versus 21%) believed kissing or hugging could get a girl pregnant. In addition, a greater proportion of OOS girls in the intervention arm knew about pregnancy prevention using injectable contraception than their peers in the controls (73% versus 62%).

OOS adolescents in the intervention group in particular benefitted from increased SRH knowledge across time.

Change over time

While knowledge about SRH service access remained low in Wave 2, there was a significant improvement in the intervention relative to the control group. While knowledge of pregnancy and HIV prevention gains were seen among all adolescents, the gains were greater among OOS than IS adolescents receiving the intervention. Knowledge about where to get condoms improved among OOS adolescent girls (OR=3.85 [1.97-7.5]) and among IS girls (OR=1.55 [1.05-2.27]). In addition, knowledge about where to get contraception increased significantly among all girls in the intervention group, more so among OOS girls (OR=2.91 [1.62-5.21] than among IS girls (1.45 [1.03-2.06]). The gender knowledge gap about condom access was reduced among OOS adolescents participating in the intervention but remained large among IS adolescents.

The intervention was more influential on improvements in knowledge about pregnancy and HIV prevention among OOS than IS adolescents.

Table 27 - SRH knowledge: In school

	N		Wave1	Wave 2	Change over time (Wave2-Wave1)	Effect of intervention on change in attitudes relative to control group	P value
Pregnancy knowledge index ITT							

Control	901		4.28 + 2.06	5.16 + 2.16	0.88 + 2.69	**Mean score difference 0.36 (0.12, 0.61)**	**0.003**
Intervention	914		4.12 + 2.01	5.37 + 2.16	1.25 + 2.58		
HIV knowledge index ITT							
Control		901	1.91 + 1.10	2.19 + 1.10	0.27 + 1.44	**Mean score difference 0.16 (0.03, 0.29)**	**0.017**
Intervention		914	1.85 + 1.07	2.28 + 1.06	0.43 + 1.35		
Knows where to go to get contraception (girls only) ITT							
Control	448		48.43%	45.67%	-2.76%	**OR= 1.46 (1.03, 2.06)**	**0.033**
Intervention	474		44.61%	51.23%	6.62%		
Knows where to go to get condoms ITT							
Control	901		27.12%	35.29%	8.18%	OR=1.14 (0.89, 1.45)	0.294
Intervention	914		26.16%	36.82%	10.66%		
sex X study group interaction						OR 1.73 (1.05, 2.86)	0.031
Boys		893					
Control		453	32.32%	44.65%	12.32%	OR 0.90 (0.65, 1.24)	0.506
Intervention		440	34.71%	44.21%	9.50%		
Girls		922					
Control		448	22.05%	26.18%	4.13%	OR 1.55 (1.06, 2.27)	0.023
Intervention		474	18.34%	30.06%	11.72%		
Knows where to go to get condoms Per protocol							
Control		639	25.39%	35.05%	9.66%	OR=1.32 (1.00, 1.76)	0.053
Intervention		720	26.87%	43.49%	16.62%		

Table 28 - SRH knowledge : Out of school

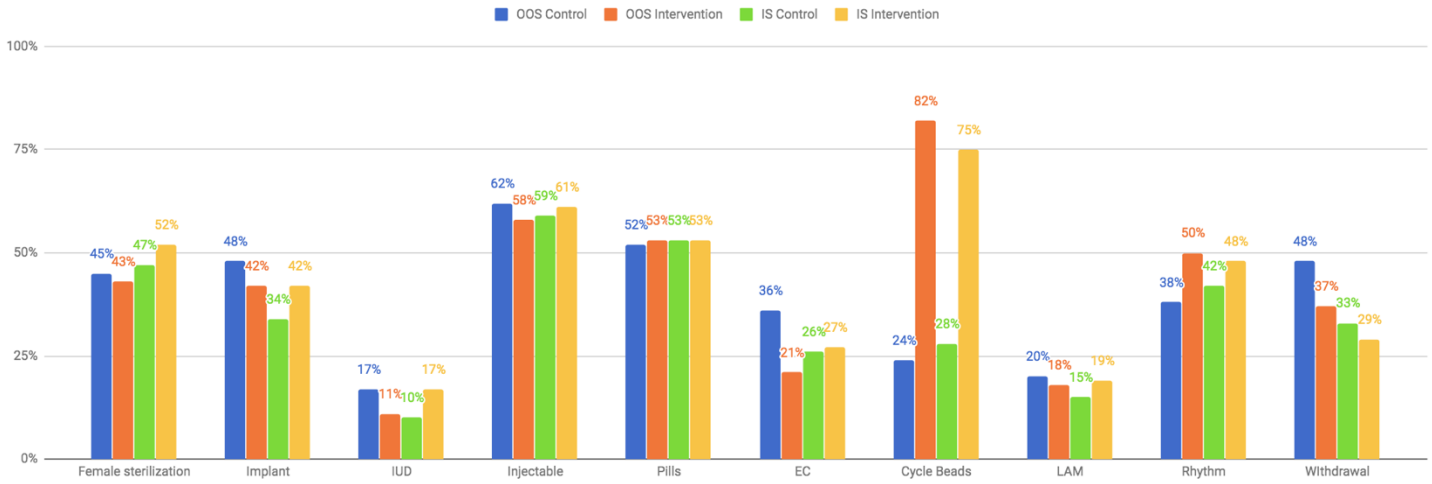
	N		Wave1	Wave 2	Change over time (Wave2-Wave1)	Effect of intervention on change in attitudes relative to control group	P value
Pregnancy knowledge index ITT							
Control	342		3.88 + 2.13	5.09 + 2.18	1.21 + 2.68	Mean score difference 0.37 (-0.03, 0.77)	0.070
Intervention	362		4.20 + 2.14	5.79 + 1.95	1.59 + 2.76		
HIV knowledge index ITT							
Control		342	1.73 + 1.21	2.23 + 1.15	0.51 + 1.51	Mean score difference 0.21 (-0.02, 0.43)	0.068
Intervention		362	1.80 + 1.19	2.52 + 0.95	0.72 + 1.49		
HIV knowledge index per protocol							
Control	267		1.73 + 1.21	2.19 + 1.15	0.46 + 1.50	**Mean score difference 0.28 (0.03, 0.54)**	**0.031**
Intervention	254		1.82 + 1.19	2.56 + 0.89	0.74 + 1.48		
Knows where to go to get contraception (girls only) ITT							
Control	170		38.10%	35.45%	-2.65%	**OR= 2.96 (1.66, 5.29)**	**<0.001**
Intervention	155		40.41%	53.37%	12.95%		
Knows where to go to get condoms ITT							
Control	342		23.95%	29.73%	5.79%	**OR= 2.03 (1.37, 3.01)**	**<0.001**
Intervention	362		22.87%	40.36%	17.49%		

sex X study group interaction						**OR 2.86 (1.26, 6.49)**	**0.012**

CONTRACEPTIVE AWARENESS IN WAVE 2

IS adolescents who participated in the intervention were more likely to be aware of female sterilization (50.91% versus 40.00%), CycleBeads (72.73% vs. 27.50%) and IUD (18.18% vs. 7.50%), while awareness of other methods was comparable between the two groups. Among OOS adolescents, the only difference between intervention and control groups related to knowledge about CycleBeads (77.48% vs. 27.27%). It should be noted that greater recognition of CycleBeads is likely due to the fact that they were distributed to GUG! intervention participants as a tool for menstrual cycle tracking and preparedness. They were not introduced or discussed as a contraceptive method during GUG! sessions. Comparisons of contraceptive awareness between intervention and control after disaggregation by sex revealed greater knowledge of CycleBeads among intervention group participants in all four subgroups by study group and sex, with no other significant differences observed.

Figure 36 | *Contraceptive Awareness*



The percentage of adolescents who ever experienced a romantic relationship increased significantly between Waves 1 and 2, with no difference between intervention and control among IS adolescents, but on average less increase among older OOS adolescents (12 or older) in the intervention group (OR=0.56 [0.32, 1.00], p=0.05).

Table 29 - Romantic relationships: In school

	N		Wave1	Wave 2	Change over time (Wave2-Wave1)	Effect of intervention on change in attitudes relative to control group	P value
Ever had a romantic relationship ITT							
Control		755	5.58%	19.08%	13.50%	OR 0.96 (0.69, 1.35)	0.836
Intervention		763	5.13%	16.86%	11.73%		
Power imbalance in last relation ITT							
Control	28		3.59 + 1.09	3.89 + 0.87	0.30 + 1.23	Difference in mean score	
Intervention	29		3.50 + 0.82	3.91 + 0.82	0.42 + 1.10	0.12 (-0.50, 0.74)	0.702

Table 30 - Romantic relations: Out of school							
	N		Wave1	Wave 2	Change over time (Wave2-Wave1)	Effect of intervention on change in attitudes relative to control group	P value
Ever had a romantic relationship ITT							
Control	261		5.00%	21.51%	16.51%	OR 0.89 (0.53, 1.53)	0.689
Intervention	305		5.61%	20.97%	15.36%		
age (<12, >=12) X study group interaction	566					OR 0.21 (0.05, 0.85)	0.028
Power imbalance in last relation ITT							
Control	11		4.02 + 0.89	3.56 + 0.57	-0.45 + 0.88	Difference in mean score 0.59 (-0.37, 1.55)	0.213
Intervention	13		3.94 + 0.82	4.08 + 0.72	0.14 + 1.32		

LIMITATIONS

This Wave 2 report focuses on descriptive analysis of the changes in adolescents' social context over time, as well as trends in knowledge, attitudes and behaviors related to gender, physical, mental, and sexual health. We also report non-adjusted effects of the GUG! intervention on a number of gender and SRH indicators but do not present a more in-depth analysis of study objectives, including the association between gender norms and health and the effect of the GUG! intervention on these associations, which will be investigated in subsequent analyses that draw upon more advanced conceptual and analytic techniques within cross-cultural comparisons.

While loss to follow up was generally low, it reached 18% among OOS adolescents in the intervention group which may potentially bias the evaluation results if young people who were lost to follow up may have responded differently to GUG! activities than those surveyed at wave 2. Results suggest greater impact of GUG! among OOS versus IS participants relative to their respective controls, potentially contributing to reduced social inequities between IS and OOS adolescents observed at baseline. These findings should be interpreted with caution given the greater loss to follow up in the OOS intervention group.

Social desirability bias may drive respondents to underreport sensitive behaviors or familiarity with stigmatized topics. For instance, a number of risky behaviors were more commonly attributed to friends than self. The use of vignettes and exploration of peer behaviors help to address some of these concerns, but do not correct for bias of self-reported answers.

For the depressive symptoms measure, items have not been clinically validated and therefore cannot be used as a diagnostic tool to assess depression. Future activities will validate the depressive symptoms screener using the validated PHQ-9 measure. Finally, low levels of sexual and romantic relationship history limited findings about sexual history, behavior and contraceptive use among this sample.

SUMMARY OF RESULTS

THE LIVES OF YOUNG ADOLESCENTS IN KINSHASA AND HOW GUG! INFLUENCES YOUNG PEOPLE'S LIVES

SOCIAL INEQUALITIES

Education status is a marker of social and economic inequalities. OOS adolescents face familial, social and economic disadvantages when compared to their counterparts enrolled in school. These inequalities are also manifested in greater exposure to adverse childhood events at baseline that persist over time, with more experiences of stressful family events between in the follow up period, including household instability or familial illness. These disparities translated to a number of unfavorable physical and mental health outcomes for OOS adolescents, including poorer self-perceived health, delayed pubertal development, and higher depressive symptom scores.

By adapting the intervention for OOS adolescents, GUG! demonstrated the potential to address many of the observed social inequities between OOS and IS adolescents at baseline. OOS adolescents who received the intervention seemed to improve more than IS adolescents, helping to reduce the social gap in terms of SRH knowledge and agency (voice and decision making), especially among younger adolescents.

GENDER INEQUALITIES

Gender inequalities are widespread in early adolescence and manifest in differential expectations, behaviors and outcomes for boys and girls. A majority of adolescents endorse differential gender expectations about romantic relationships, roles in the household, social traits and division of power, including support for male authority and female subservience. In addition, these expectations translate into divergent behaviors and outcomes for boys and girls, as they pertain to peer violence, mental health and engagement in romantic relationships.

While GUG! was influential in shifting adolescents' perceptions towards gender-equal distribution of household labor, broader perceptions of gender norms about romantic relationships, gendered characteristics, discrimination against gender atypical peers, and gendered roles in the household remained largely entrenched over time.

PUBERTAL TRANSITIONS

GUG! findings reflect how pubertal transitions are complex, generating conflicting feelings among young people, which can become more or less prevalent over time depending on the issue. Many adolescents face these transitions without having communicated with anyone about these changes, contributing to knowledge gaps and feelings of discomfort. While most adolescents express a sense of pride in pubertal development as well as a positive body image, they also express concerns about their appearance and the ways their body is changing. Girls also report conflicting feelings about menstruation; such as simultaneous pride and shame.

SEXUAL HEALTH KNOWLEDGE

Adolescents are ill-equipped for healthy sexual transitions into adulthood, as they lack SRH knowledge and face social stigma accessing reproductive health services. While indicators of sexual health preparedness improved over time, with increased SRH communication that translated to improved SRH knowledge, misperceptions and stigma remained prevalent. Specifically, adolescents lacked a physiological understanding of pregnancy and HIV acquisition; and were unaware of prevention modalities for both pregnancy and HIV. In addition, many held negative attitudes about contraceptive use among young people who perceived high stigma surrounding adolescent sexuality.

GUG! successfully increased some components of SRH knowledge through improved SRH communication, especially among young and OOS adolescents, contributing to greater SRH preparedness of young adolescents.

IMPLICATIONS

The results of the longitudinal GEAS and evaluation of GUG! in Kinshasa after one round of intervention have several programmatic implications.

In light of the lack of SRH preparedness among young adolescents, greater investment should be made in interventions to improve SRH trajectories including integration of sexual and reproductive health information within the school curriculum. Such efforts are needed to alleviate misperceptions and stigma about family planning that are staunch barriers to access to SRH services when young people become sexually active.

Based on lessons from GUG! more impactful adolescent programing necessitates several features:

An early start: While all age groups were responsive, younger adolescents (under 12 years) are more responsive to GUG! activities than older adolescents, arguing the importance of reaching younger adolescents. With an early start, younger adolescents are more likely to put their acquired skills into practice by engaging in SRH discussions, ultimately resulting in greater gains in SRH knowledge.

An ecological approach: Working with parents and community members in addition to VYAs to build support will help to address the cultural barriers related to adolescent sexual and reproductive health (ASRH). Parents should be informed about and engaged in sexuality education activities, as they are ill equipped to discuss matters of pubertal transitions and SRH with their young adolescent children. An ecological approach is likely best positioned to address entrenched unequal gender norms that are practiced and transmitted from generation to generation.

An expansion of interventions to include out of school adolescents will reach the young people who may benefit most from these programs. The adaptation of these programs to the most vulnerable adolescents is an effective strategy to reduce social inequalities related to access to school that have profound implications across the life course.

APPENDICES

Appendix A. Loss to Follow Up

Loss to Follow Up Rates by Sample Characteristics		Overall (n=2832)		Out of School (n=820)		In School (n=2,012)	
School Status		307 (11%)		112 (14%)		195 (10%)	0.022
Study Group	Control	132 (10%)	0.036	34 (9%)	<0.001	98 (9%)	.882
	Intervention	175 (12%)		78 (18%)		97 (10%)	
Sex	Boy	138 (10%)	.063	57 (13%)	.546	81 (8%)	.040
	Girl	169 (12%)		55 (14%)		114 (11%)	
Household Composition	Two parents	158 (10%)	.039	41 (14%)	.060	117 (9%)	0.186
	One parent	92 (12%)		37 (11%)		37 (11%)	
	Grandparents	31 (11%)		18 (14%)		13 (9%)	
	Other	26 (17%)		16 (24%)		10 (12%)	
Wealth Quintile	Bottom 20%	72 (12%)	0.079	49 (15%)	0.124	23 (9%)	0.748
	20-40%	72 (12%)		36 (15%)		36 (10%)	
	40-60%	46 (9%)		10 (7%)		36 (10%)	
	60-80%	61 (11%)		9 (12%)		52 (11%)	
	Top 20%	46 (8%)		2 (9%)		44 (8%)	

Appendix B. Data Quality

A data quality check analysis was conducted to determine the percentage of missing or incoherent information and ultimately determine the number of cases or variables to be dropped or recoded. The methodology of data quality checks is detailed below, followed by the results of the analysis of data quality for baseline data.

Missingness

To calculate the percentage of missingness for each observation, we examined all the questions with designed skip patterns throughout the whole survey and generated an indicator variable for each question that was embedded with skip patterns. Next, taking into account missed questions due to skip patterns, we summarized the total number of missed questions by sections of questions and by the whole survey separately. Last, per each section of questions and throughout the whole survey, we calculated percentage of missingness for each respondent based on the actual number of questions each study participant was supposed to answer. To evaluate the potential existence of system errors for survey platform (SurveyCTO), we checked missingness prior to recording refuse-to-answer and/or don't know as missing responses. Once skip patterns were checked, we evaluated overall missingness after recoding refuse-to-answer and/or don't know (when non-informative) as missing information. All the data quality checking procedures were developed using StataCorp LLC, TX (Version 14.2).

% of Missing per Observation	In-School			
	baseline		Wave 2	
	Control (n=904)	Intervention (n=916)	Control (n=981)	Intervention (n=1,051)
< 5%	99.12 (896)	99.24 (909)	98.48 (970)	98.29 (1,036)
5% - 10%	0.77 (7)	0.76 (7)	1.42 (14)	1.42 (15)
10% - 15%	0.11 (1)	0 (0)	0.10 (1)	0.28 (3)
> 15%	0 (0)	0 (0)	0 (0)	0 (0)
	Out-of-School			

	Control (n=346)	Intervention (n=367)	Control (n=346)	Intervention (n=367)
< 5%	98.55 (341)	97.28 (357)	98.11 (260)	98.25 (225)
5% - 10%	1.16 (4)	2.72 (10)	1.51 (4)	1.75 (4)
10% - 15%	0 (0)	0 (0)	0.38 (1)	0 (0)
> 15%	0.29 (1)	0 (0)	0 (0)	0 (0)

Distress questions

At the end of the survey, regardless of mode of data collection, the interviewer completed a few questions assessing the quality of interview or attitude of adolescent suggesting possibly poor response quality to data collection. Specifically, the following questions were asked to evaluate the domains of data quality: how did you find the respondent's cooperation, how accurate/true did you find the respondent's answers, how did you find the respondent's cooperation and attentiveness during the interview, and how did you find the respondent's understanding of the questions discussed.

Inclusion & Exclusion Criteria

Adolescents were included in the final dataset if they were 10 to 14 years old at the time of the interview, had given assent to participate in the study, and their parents had consented to their child's participation in the study. Participants were excluded from the final sample based on two criteria. The first was the percentage of non-meaningful response across survey (excluding gender norms and vignettes sections). Based on the distribution of the percentage of missing responses of Kinshasa baseline data we decided a cutoff as 15% (i.e. 15% or more of survey data for that case were comprised of "Don't know" or "Refuse" responses), which captured the top 1 percentile of cases with the most missing responses. The second exclusion criteria was any two out of four consistent assessment by the interviewer for poor response quality (i.e. poor perceived: cooperation, response accuracy, comprehension, or concentration), of which one has to evaluate response accuracy or understanding of the asked questions. In summary, any cases fulfilling the first or second criteria were flagged for removals from downstream analysis.

Brief Description of Flagged Cases

After applying exclusion criteria for each round, 10 observations were flagged as poor response quality from baseline and 5 observations were flagged as poor response quality from Wave 2. In total, 14 cases were excluded due to poor data quality, one case was flagged across both waves. Of these flagged cases, 79% were boys and 21% were girls. At baseline, half of the ten observations were 10 years of age, one fifths aged 11 and 12 respectively, and one case was 13 years old. Sixty percent of the cases flagged at each wave were OOS. The flagged cases were evenly distributed by study group at baseline, and 60% of the flagged Wave 2 cases were in the control group.

Cases Meeting Exclusion Criteria (n=2,533)		Wave 2 >15% Missing Overall or Poor Interviewer Rating	
baseline >15% Missing Overall or Poor Interviewer Rating		Yes	No
	Yes	1 (20.0%)	9 (0.4%)
	No	4 (80.0%)	2,519 (99.6%)

Data quality Results

Overall data quality after exclusion was satisfactory, with participants missing on average (refuse to answer or don't know responses) 0.98% of survey responses at baseline and 0.67% at Wave 2. Missingness was slightly

higher for boys than for girls. Missingness also varied by data mode, with higher missingness among those who used CASI without audio and among those whose surveys were interviewer administered at Wave 2.

Operational Survey Data	baseline % (n)	Wave 2 % (n)
Missingness [mean + SD (range)]	0.98% + 1.16% (0% - 11.63%)	0.67% + 1.18% (0%-13.00%)
Boys	1.10% + 1.28% (0% - 11.63%)	0.59% + 1.21% (0% - 13.00%)
Girls	0.86 % + 1.01% (0% - 7.69%)	0.76% + 1.15% (0% - 12.69%)
Distress Questions	% (n)	
Feel somewhat or very upset or worried after survey	0.88% (22)	0.64% (16)
Interviewer Perceived Respondent's…		
Cooperation as bad or very bad	0.52% (13)	0.04% (1)
Answers not very accurate or true	0.44% (11)	0.72% (18)
Understanding of questions bad or very bad	0.32% (8)	0% (0)
Concentration and attentiveness bad	0.44% (11)	0.20% (5)
Number of breaks taken during interview [mean + SD (range)]	1.32 + 0.81 (0-7)	1.11 + 0.78 (0-4)

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