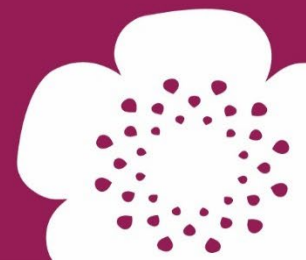


Endline Findings from EngenderHealth's TARUNYA Project in Bihar, India



Background

In 2014, India's Ministry of Health and Family Welfare launched an adolescent health program called the Rashtriya Kishor Swasthya Karyakram (RKSK), targeting adolescents aged 10 to 19. The RKSK represents a shift from facility-based, curative clinical service delivery to a more holistic approach that emphasizes community-based health promotion and preventive care. The community outreach program includes several components, including peer education (PE), adolescent health days, adolescent-friendly health clinics (AFHCs), and adolescent-friendly clubs. A rapid program review of RKSK¹ showed that while the program had succeeded in increasing funding for facility- and community-level activities, gaps related to quality and coverage remained. In particular, weak linkages among various ministries critical to advancing the program—including health and non-health departments—caused challenges in implementation and hindered sustainability.



Photo Credit: PC Robin Wyatt/EngenderHealth

Sample and Methodology

In August 2019 and October 2020, EngenderHealth, in collaboration with the government of Bihar, implemented baseline and endline cross-sectional surveys to measure sexual and reproductive health (SRH) knowledge, attitudes, and practices among adolescents to guide future interventions of EngenderHealth's TARUNYA project. Through these surveys, we sought to evaluate project achievements and identify recommendations for expanding the program. These studies involved interviewing adolescents aged 15 to 19 from PE and non-PE blocks at baseline (n=1,632) and at endline (n=1,717).

EngenderHealth developed the study protocol and obtained ethical approval from the Sigma Institutional Review Board. Our sample size estimates included a conservative baseline value of 50% and assumed a 10% difference between baseline and endline surveys across key indicators, at 80% power and a probability of <0.05 for a type I error. This resulted in a sample of 816 adolescent males and 816 adolescent females aged 15 to 19. We employed a multi-staged sampling approach to recruit adolescent respondents with probability proportional to size sampling, using a quota sample of adolescent males and females. Data collectors used a household roster to identify potential adolescent participants and randomly identified one adolescent participant per household. After obtaining parental and adolescent consent, the data collectors interviewed the adolescent in a private space using a pretested, paper-based questionnaire in Hindi. We adapted a globally validated questionnaire designed to discuss SRH issues with young people for this purpose.² The questionnaire contained 59 questions related to sociodemographic characteristics, relationship status, communication skills, information-seeking behaviors, SRH service uptake, and perceptions and attitudes regarding various SRH topics.

¹ Barua, A., Watson, K., Plesons, M., Chandra-Mouli, V., and Sharma, K. 2020. "Adolescent Health Programming in India: A Rapid Review." *Reproductive Health* 17, no. 1 (June): 87. doi: 10.1186/s12978-020-00929-4.

² Cleland, John. 2001. *Asking Young People about Sexual and Reproductive Behaviors: Illustrative Questionnaire for Interview-Surveys with Young People*. Geneva: World Health Organization.
<https://www.who.int/reproductivehealth/topics/adolescence/questionnaire/en/>. WHO | Asking young people about sexual and reproductive behaviours <https://www.who.int>.

Study Findings

Background Characteristics

Table 1 summarizes the sociodemographic characteristics of our sample group. More than 93% of study participants were able to read and write, and few differences were observed across survey rounds or between gender and age categories. The proportion of all participants currently attending school decreased dramatically over time. Among adolescent males, 71.7% were currently attending school at baseline compared to 20.7% at endline. We observed a similar pattern among adolescent females, with 51.4% at baseline compared to 5.8% at endline. Unlike what we observed at baseline, there was no notable decline in school attendance with age. Similar to findings from baseline, the proportion of adolescents who had participated in paid work in the past year notably increased with age at endline, particularly among male adolescents (10.5% among males aged 15 to 16, versus 22.4% among males aged 17 to 19). Very few participants—0.3% of adolescent males and 1.2% of adolescent females—were currently married at the time of the endline survey. At baseline, 43.4% of male participants owned a smart phone, which was similar at endline (48.5%). Across both survey rounds, fewer female adolescents owned a smart phone, yet ownership was higher at endline as compared to baseline (19.5% and 10.3%, respectively).

Table 1. Selected Demographic Characteristics, by Sex and Age

Characteristic	Male						Female					
	Baseline	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline
	15–16 years	15–16 years	17–19 years	17–19 years	All males (15–19)	All males (15–19)	15–16 years	15–16 years	17–19 years	17–19 years	All females (15–19)	All females (15–19)
	N=414	N=440	N=402	N=419	N=816	N=859	N=498	N=494	N=318	N=362	N=816	N=856
%	%	%	%	%	%	%	%	%	%	%	%	
Can read and write	99.0	98.9	98.5	96.7	98.8	97.8	93.8	95.4	95.0	93.6	94.20	94.6
Currently attends school*	84.6	88.9	58.3	75.4	71.7	82.3	59.2	82.6	39.1	67.3	51.40	76.3
Participated in paid work in the past 12 months	5.3	10.5	22.9	22.4	14.0	16.3	1.4	2.6	7.5	6.9	3.80	4.4
Currently married	0	0.0	3.2	0.7	1.6	0.3	2.0	0.4	4.7	2.2	3.10	1.2
Owns a smart phone	27.3	28.0	60.0	70.2	43.4	48.5	7.4	16.6	14.8	23.5	10.30	19.5

*Public schools were closed at the time of the endline while private coaching centers remained open

SRH Knowledge and Awareness

Table 2 demonstrates adolescents' knowledge and awareness of key SRH rights and practices. The survey included two separate questions regarding knowledge of the minimum legal age of marriage for females (which is 18) and knowledge of the minimum legal age of marriage for males (which is 21). At endline, most respondents were knowledgeable of the minimum legal age for females (84.2% of adolescent males and 87.9% of adolescent females) and this was slightly higher than what we observed at baseline (72.4% of adolescent males and 80.6% of adolescent females). Importantly, while fewer respondents were knowledgeable of the minimum legal age of marriage for males at baseline this increased considerably at endline (43.9% versus 56.2% of adolescent males and 53.2% and 71.3% of adolescent females, respectively).

At baseline, 28.3% of adolescent males and 37.6% of adolescent females knew where to obtain a contraceptive method; at endline, this increased to 74.5% of adolescent males and 69.9% of adolescent females. The most

commonly cited sources of contraceptives (as identified by respondents who knew where to obtain a contraceptive method) were government hospitals, private clinics, and pharmacies. With regard to knowledge of healthy birth spacing, we also observed increases over time. At baseline, 34.2% of adolescent males and 53.9% of adolescent females knew that the recommended interval before attempting a subsequent pregnancy after a live birth is at least 36 months and this increased to 53.9% and 79.3%, respectively at endline.

At endline, general awareness of HIV and AIDS continued to be higher among adolescent males (70.4%) as compared to adolescent females (44.4%), but these reflected increases from the baseline data (58.0% for adolescent males and 32.8% for adolescent females). Furthermore, while at baseline a much lower proportion of all adolescents knew common signs and symptoms of other sexually transmitted infections (STIs) (9.4% of males and 26.2% of females), this increased at endline (30.4% of males and 40.8% of females).

Table 2. SRH Knowledge and Awareness, by Sex and Age

	Male						Female					
	Baseline	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline
	15–16 years	15–16 years	17–19 years	17–19 years	All males (15–19)	All males (15–19)	15–16 years	15–16 years	17–19 years	17–19 years	All females (15–19)	All females (15–19)
	N=414	N=440	N=402	N=419	N=816	N=859	N=498	N=494	N=318	N=362	N=816	N=856
	%	%	%	%	%	%	%	%	%	%	%	%
Knows the minimum legal age of marriage for:												
<i>females</i>	71.3	83.6	73.6	84.7	72.4	84.2	82.5	87.9	77.7	87.8	80.6	87.9
<i>males</i>	43.0	53.4	44.8	59.2	43.9	56.2	55.4	73.1	49.7	68.8	53.2	71.3
Knows a source for obtaining contraceptives	16.7	65.5	40.3	84.0	28.3	74.5	35.7	66.4	40.6	74.6	37.6	69.9
Aware of HIV and AIDS	44.9	58.2	71.4	83.3	58.0	70.4	28.7	39.9	39.3	50.6	32.8	44.4
Knows signs and symptoms of STIs	5.1	23.0	14.0	38.4	9.4	30.5	25.9	40.5	26.7	41.2	26.2	40.8
Knows the recommended interval between a live birth and subsequent pregnancy is at least 6 months	30.2	45.2	34.6	53.9	32.4	49.5	49.2	78.7	61.3	80.1	53.9	79.3

SRH Beliefs and Perceptions

The survey asked each participant to answer “true,” “false,” or “do not know” to a series of statements related to SRH beliefs and perceptions. Table 3 shows the percentages of respondents who responded correctly to each statement, illustrating positive beliefs or attitudes.

For the statement “the loss of semen does not lead to physical weakness in males,” at baseline 9.4% of adolescent males and 17.3% of adolescent females answered correctly. At endline, 23.4% of adolescent males and 27.7% of adolescent females answered correctly. We also observed increases in the percentage of adolescent males that correctly responded to the statement “A woman can become pregnant the first time she has sex if she is not using any contraception,” from 45% at baseline to 65% at endline. We found similar increases among adolescent females (54.2% at baseline versus 77.1% at endline).

For the statement “after a woman has had sexual intercourse for the first time, she can continue to grow physically,” we observed a marginal increase in the percentage of adolescent females that answered this correctly, from 50.1% at baseline to 59.0% at endline. We observed that this knowledge was higher among slightly older female adolescents (63.3%) as compared to younger segments (55.9%). For the statement “there

are adverse effects of child marriage,” we observed a notably large increase in the percentage of adolescent females that answered this correctly, from 59.4% at baseline to 96.7% at endline. Yet, there were few changes over time among adolescent males.

Regarding beliefs about menstrual hygiene, a series of statements asked whether “during menstruation, females should be allowed to...attend school or play, enter the kitchen, or take a bath,” and correct responses by adolescent males increased over time and ranged between 29.2% and 37.4% at baseline as compared to 46.8% and 60.7% at endline. A slightly higher number of females answered correctly, and similar increases were observed between baseline and endline.

Table 3. SRH Beliefs and Perceptions, by Sex and Age

	Male						Female					
	Baseline	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline
	15–16 years	15–16 years	17–19 years	17–19 years	All males (15–19)	All males (15–19)	15–16 years	15–16 years	17–19 years	17–19 years	All females (15–19)	All females (15–19)
	N=414	N=440	N=402	N=419	N=816	N=859	N=498	N=494	N=318	N=362	N=816	N=856
%	%	%	%	%	%	%	%	%	%	%	%	
The loss of semen does not lead to physical weakness in males	10.1	21.8	8.7	25.5	9.4	23.6	17.5	26.7	17.0	29.0	17.3	27.7
Masturbation does not cause serious damage to health	10.6	12.5	12.7	14.3	11.6	13.4	27.7	21.1	30.2	21.0	28.7	21.0
A person with HIV can still look healthy	15.0	20.0	21.4	24.6	18.1	22.2	31.5	20.9	28.9	31.5	30.5	25.4
After a woman has had sexual intercourse for the first time, she can continue to grow physically	33.8	39.5	45.5	44.2	39.6	41.8	49.0	55.9	51.9	63.3	50.1	59.0
A woman can become pregnant the first time she has sex if she is not using any contraception	37.9	58.6	52.2	71.6	45.0	65.0	52.2	73.5	57.2	82.0	54.2	77.1
There are adverse effects of child marriage	75.6	78.2	85.6	82.6	80.5	80.3	57.8	98.0	61.9	95.0	59.4	96.7
During menstruation, females should be allowed to:												
<i>attend school or play</i>	26.1	43.9	32.3	49.9	29.2	46.8	39.2	77.7	45.0	80.1	41.4	78.7
<i>enter the kitchen</i>	34.5	52.5	38.6	66.1	36.5	59.1	39.6	84.4	47.2	83.1	42.5	83.9
<i>take a bath</i>	34.5	53.6	40.3	68.0	37.4	60.7	42.6	85.0	48.1	89.0	44.7	86.7
<i>enter a temple/religious place</i>	25.4	27.0	30.1	31.0	27.7	29.0	50.4	26.7	52.2	27.3	51.1	27.0

Discussing SRH Issues with Parents

Table 4 demonstrates adolescents' comfort levels related to discussing health issues with their parents. When asked if they felt comfortable talking to their mothers about personal health issues, nearly all male (87.9%) and female (97.9%) adolescents responded affirmatively at endline. A mere 7.3% of adolescent females responded that they were comfortable talking to their fathers about such issues at baseline; this increased to 47.7% at endline. With regards to comfort levels talking to mothers and fathers regarding SRH, adolescent males reported low comfort levels overall (18.9% for fathers and 19.3% for mothers), whereas 92.5% of adolescent females report feeling comfortable talking to their mothers about SRH (Table 5).

Table 4: Comfort Level in Discussing Health Topics with Parents, by Sex and Age

	Male						Female					
	Baseline	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline
	15–16 years	15–16 years	17–19 years	17–19 years	All males (15–19)	All males (15–19)	15–16 years	15–16 years	17–19 years	17–19 years	All females (15–19)	All females (15–19)
	N=414	N=440	N=402	N=419	N=816	N=859	N=498	N=494	N=318	N=362	N=816	N=856
	%	%	%	%	%	%	%	%	%	%	%	%
Comfortable talking to:												
<i>father</i>	62.9	82.1	66.9	75.2	64.8	78.8	7.4	47.2	7.3	47.7	7.3	47.4
<i>mother</i>	89.7	91.0	92.0	84.4	90.8	87.9	99.6	99.0	97.1	96.5	98.6	97.9

Table 5: Comfort Level in Talking to Parents about Sexual and Reproductive Health Topics at Endline, by Sex and Age

	Male			Female		
	15–16 years	17–19 years	All males (15–19)	15–16 years	17–19 years	All females (15–19)
	N=440	N=419	N=859	N=494	N=362	N=856
	%	%	%	%	%	%
Comfortable talking to:						
<i>father</i>	17.5	20.6	18.9	5.1	9.4	6.9
<i>mother</i>	20.8	17.6	19.3	93.9	90.7	92.5

*This question was not administered at baseline.

Preferred Sources of SRH Information

Table 6 demonstrates adolescents' preferred sources for SRH information in the PE areas only. Both adolescent males and females preferred to receive this from a family member (28.2% and 46.6%, respectively). Adolescent males and females ranked the remaining options differently. Most adolescent males preferred other sources not named (28.2%) as a secondary option, followed by a school teacher (14.3%), then friends (14.1%), then a peer educator (12.2%), and then finally an accredited social health activist (ASHA) (3.1%). Most adolescent females instead preferred other sources not named (23.2%) as a secondary option, followed by a peer educator (12.4%), then an ASHA (8.7%), then a teacher (6.8%), and then finally friends (2.3%).

Table 6: Preferred Source of Information on Adolescent Health in PE Areas, by Sex and Age

	Male						Female					
	Baseline	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline
	15–16 years	15–16 years	17–19 years	17–19 years	All males (15–19)	All males (15–19)	15–16 years	15–16 years	17–19 years	17–19 years	All females (15–19)	All females (15–19)
	N=291	N=224	N=117	N=202	N=408	N=426	N=325	N=216	N=83	N=217	N=408	N=433
	%	%	%	%	%	%	%	%	%	%	%	%
Family member	30.9	29.9	31.6	26.2	31.1	28.2	54.2	49.2	66.3	43.0	56.6	46.6
Friends	39.5	12.5	49.6	15.8	42.4	14.1	17.5	2.4	6.0	2.2	15.2	2.3
ASHA	2.7	3.6	0.9	2.5	2.2	3.1	10.5	7.3	14.5	10.6	11.3	8.7
School teacher	5.5	15.6	4.3	12.9	5.1	14.3	3.7	6.5	4.8	7.3	3.9	6.8
Peer educator	4.1	14.7	0.9	9.4	3.2	12.2	5.2	11.3	2.4	14.0	4.7	12.4
Other(s)	17.2	23.7	12.8	33.2	15.9	28.2	8.9	23.4	6.0	22.9	8.3	23.2

Exposure to Program Interventions

Table 7 demonstrates the percentage of adolescents that had ever heard of AFHCs or had visited an AFHC in the past year. Observing differences between baseline and endline, we see several increases. When asked if respondents knew about an AFHC, this increased from 7.7% to 26.5% among adolescent males and from 8.3% to 29.3% of adolescence females. Similarly, when asked if they had visited an AFHC in the past year, this increased from 0.7% to 7.3% among adolescent males and from 3.8% to 16.9% of adolescence females.

Table 7: Exposure to Program Interventions, by Sex and Age

	Male						Female					
	Baseline	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline
	15–16 years	15–16 years	17–19 years	17–19 years	All males (15–19)	All males (15–19)	15–16 years	15–16 years	17–19 years	17–19 years	All females (15–19)	All females (15–19)
	N=414	N=440	N=402	N=419	N=816	N=859	N=498	N=494	N=318	N=362	N=816	N=856
	%	%	%	%	%	%	%	%	%	%	%	%
Knows about AFHCs	7.0	29.3	8.5	23.6	7.7	26.5	7.6	28.7	9.4	30.1	8.3	29.3
Visited an AFHC in the past year	1.0	7.7	0.5	6.9	0.7	7.3	3.6	17.4	4.1	16.3	3.8	16.9

Exposure to PE in the Intervention Blocks

To enhance existing components of RKSK, the TARUNYA project strengthened the existing PE program by recruiting, training, and supporting adolescent males and females in nine blocks of Sitamarhi to become peer educators. We conducted additional analysis to observe findings within the PE blocks and compare these findings with data from non-PE-blocks. Our results are summarized as follows:

- > Awareness of the RKSK program increased three-fold among boys (21.6% at baseline, 67.4% at endline) and two-fold among girls (34.3% at baseline, 71.2% at endline). In non-PE blocks, awareness of the adolescent health program continued to remain low (<5%).
- > There was a significant increase in knowledge and awareness levels among adolescents in PE blocks from baseline to endline. For example, awareness of HIV and AIDS increased from 47.5% at baseline to 65.3% at endline in PE blocks. In addition, awareness of the signs and symptoms of STIs increased from 16.8% at baseline to 49.1% at endline in the PE blocks. Knowledge among adolescents in non-PE districts was either stagnant or increased modestly across these and similar topics over the same period.
- > At both baseline and endline, in both the PE and non-PE blocks, correct knowledge of SRH topics was typically higher among girls than boys, and was higher among older adolescents (aged 17 to 19) compared with middle adolescents (aged 15 to 16).
- > There was a seven-fold increase in the proportion of adolescents in PE blocks attending adolescent health days from 6.5% at baseline to 44.5% at endline.
- > Attendance at AFHCs increased dramatically among adolescents supported by PEs. While only 3.5% of adolescents who did not meet a PE in the past year visited an AFHC, 46.3% of adolescents who interacted with the PE sought services from their local AFHC.

Lessons Learned and Recommendations

Between baseline and endline, several observations are important to consider. First, school attendance among adolescent males and females decreased in large numbers. Among adolescent males, 71.7% were currently attending school at baseline compared to 20.7% at endline and among adolescent females, 51.4% attended school at baseline compared to 5.8% at endline. We believe these major decreases can be attributed to the effects of the COVID-19 pandemic, as schools in Bihar were closed when we conducted the endline survey. Nonetheless, COVID-19 is a setback for adolescent health and well-being overall, and specifically for adolescent females who are less likely to return to school. Future initiatives in this area must engage communities and families in campaigns that enable and support adolescents to return to school safely and continue their education.



Photo Credit: PC Robin Wyatt/EngenderHealth

Second, we observed substantial increases in perceptions of the adverse effects of child marriage among adolescent females, with 59.4% at baseline agreeing that adverse effects result from child marriage as compared to 96.7% at endline. We believe this major increase may be attributed to multiple factors. Addressing child, early, and forced marriage (CEFM) in Bihar has been a priority for several stakeholders, including the United Nations Children’s Fund (UNICEF), the Government of India, and other implementing partners. During the time between baseline and endline, the project conducted several activities, including online quizzes and competitions to raise awareness about the negative effects of CEFM, and facilitated adolescent club and community meetings that discussed CEFM. Concurrently, the Chief Minister’s campaign against child marriage garnered a lot of attention, UNICEF conducted a large communications campaign across the implementation area on similar topics, and other nongovernmental organizations (NGOs), like Save the Children, continued to work to end CEFM.

Third, a mere 7.3% of adolescent females responded that they were comfortable talking to their fathers about personal health issues at baseline and this increased to 47.7% at endline. This is especially interesting given that no specific activities or interventions were conducted with fathers of adolescent females between baseline and endline. We believe that one possible effect of the COVID-19 pandemic is that fathers spent more time at home and that discussing health topics became more normal and expected within families given the widespread COVID-19 prevention campaigns. Altogether, we generated many lessons learned and recommendations for scaling up future programming, both within Bihar and to other states in India (see Table 8).

Table 8. Lessons Learned and Recommendations

Lesson Learned	Recommendations
<p>Community-based activities, such as PE and adolescent health days, contributed to increases in awareness of the RKSK program and in the utilization of AFHCs and RKSK services.</p> <p>Mothers of adolescents ages 15 to 16 and 17 to 19 for both males and females were seen as trusted information sources for discussing personal health and SRH-specific topics; and, family members were the preferred source of information on SRH topics.</p>	<p>Ensure that adolescent health initiatives include community-based activities and adequately resource such activities, as they are equally as important as health systems strengthening interventions.</p> <p>Interventions that target and increase parents’ comfort level, knowledge of, and willingness to talk about health and specifically SRH are important to reaching all adolescents and should not be overlooked in programming. Additionally, working with mothers of adolescent females in SRH programs could be particularly important given that they are by far the most preferred sources of information.</p>

Large increases from baseline to endline in awareness of where to access contraceptives among all adolescent aged 15 to 19 indicate that program activities contributed to the diffusion of information among adolescents in communities.

While knowledge about SRH generally increased across adolescent age groups 15 to 16 and 17 to 19, and across the sexes, between baseline and endline, knowledge of STIs remains relatively low, especially among adolescent females.

While fewer female adolescents owned a smart phone, ownership rates among adolescent males and females increased significantly (4.9% for males and 9.2% for females), presenting an opportunity for increased digital approaches to reach these groups.

Continue to work with adolescents and key influencers in their lives to increase access to information about their health and specifically their SRH rights.

Integrate a larger focus on improving knowledge of STIs, including HIV and AIDs among all adolescents, especially adolescent females.

Integrate digital approaches to reach adolescent males and females with access to smartphones, but also recognize that these approaches will only reach a sub-set of adolescents and must be coupled with alternative outreach mechanisms.

The results from this endline evaluation point to the promising potential of employing a three-pronged approach to addressing adolescent health and well-being in Bihar—working with existing communities and structures, public health facilities and providers, and creating convergence points across development sectors to leverage resources and coordinate complementary services. Recently, the government announced a new school health ambassador program, providing another important convergence point for collaboration and maximizing investments in adolescent health, education, and well-being. Over the coming years, EngenderHealth will continue to support local NGOs and the Government of Bihar in scaling up this implementation model to additional districts in Bihar and transitioning roles and responsibilities to local NGOs and the government to reach those adolescents that are hardest to reach.



Photo Credit: PC Robin Wyatt/EngenderHealth

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