

## Practical Paper

# Improving students' knowledge of puberty and menstruation in rural Zimbabwe: an evaluation of Sesame Workshop's Girl Talk program

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### ABSTRACT

The Girl Talk initiative, a collaboration of Sesame Workshop, World Vision International and World Vision Zimbabwe, is an innovative project to address gaps in pubertal health and menstrual hygiene education among pre-adolescent and adolescent girls and boys in rural Zimbabwe. Girl Talk uses short animated videos, with accompanying print materials, that use stories about a Zimbabwean school girl, Didi, and her female and male friends growing up and helping each other deal with the challenges they face as they enter puberty. Girl Talk materials are all in the local language, Shona, and are designed to foster conversations among the students and teachers about the experiences of puberty and menstruation that are based on science. The Education Development Center (EDC) and the Zimbabwean firm, NGO Consultancy Africa, were contracted by Sesame Workshop to evaluate Girl Talk. Using a quasi-experimental control-group design with repeated measures to assess the impact of Girl Talk on participating students, the research found a significant impact on participating students' knowledge about puberty and menstruation compared with the control sample.

**Key words** | adolescent health, hygiene, menstruation, puberty, Zimbabwe

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### HIGHLIGHTS

- Girl Talk was very effective because it was specifically designed for the context of rural Zimbabwean schools.
- Girl Talk program had a significant impact on adolescents' knowledge of menstruation and menstrual hygiene.
- Girl Talk successfully provided girls with the practical knowledge about what happens to their bodies during puberty that they are often lacking.

### INTRODUCTION

The WASH UP! Girl Talk initiative, a collaboration of Sesame Workshop, World Vision International (WVI), and

World Vision Zimbabwe, is an innovative project to address gaps in pubertal health and menstrual hygiene education among pre-adolescent and adolescent girls and boys in Zimbabwe. Girl Talk is designed as an educational resource that is part of WASH UP!, a WASH (water, sanitation, and hygiene) initiative that upgrades those facilities in rural

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schools throughout the country. Funded by Dubai Cares, Girl Talk aims to increase students' knowledge about puberty, menstruation, and menstrual hygiene management (MHM). The Education Development Center (EDC) and the Zimbabwean firm, NGO Consultancy Africa, were contracted by Sesame Workshop to undertake an evaluation of Girl Talk.

Globally, few schools in low resource countries are designed to support girls' MHM needs, which is further compounded by a general lack of knowledge about menstruation and poor support available to girls (Sommer *et al.* 2016; Haver *et al.* 2018). The many challenges that girls face globally also hold true in Zimbabwe (Foulds *et al.* in press; Tamiru *et al.* 2015). Since menstruation is a taboo subject in Zimbabwe, girls report finding it difficult to find accurate information. A recent study on five African countries, including Zimbabwe, found that a majority of girls report never receiving school lessons on MHM (Tamiru *et al.* 2015).

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## WASH UP! GIRL TALK PROGRAM

Launching in May 2018, Girl Talk is an extension of the WASH UP! program focused on engaging students through school-based programs to promote behavioral changes in sanitation and hygiene. Girl Talk models healthy practices through short animated videos about Didi, a Zimbabwean school girl, and her friends as they deal with the challenges of puberty and celebrate growing up. Targeting children 10–14 years old, Girl Talk is an MHM intervention integrated into the normal day in rural Zimbabwean schools. Girl Talk provides an educational experience on puberty and MHM for children, with supporting messages for their teachers, caregivers, and community members. The Girl Talk learning model uses printed and digital material to foment conversations among the students and their teachers about what menstruation means for girls and women, their needs and how girls, boys, teachers, and caregivers can support those needs. The core of Sesame Workshop's educational goals are encouraging children's autonomy and voice in making decisions about their own lives, and Girl Talk has a specific focus on girls' empowerment.

The Girl Talk content was developed by Sesame Workshop through a 2-year participatory design process with input from the Zimbabwean government, WVI, and other experts and field testing (Foulds *et al.* in press). Girl Talk uses short animated videos, with accompanying print materials, that use stories about a school girl, Didi, and her female and male friends growing up and helping each other deal with the challenges they face as they enter puberty. The stories present key facts about puberty and menstruation and help the children learn about a girl's transition into womanhood while also reviewing MHM practices. Girl Talk uses these practical, age appropriate, storylines to connect the basic facts to the experiences that will happen to each girl. Furthermore, although Zimbabwean schools teach in English, Girl Talk materials are all in Shona and teachers are encouraged to teach the materials in Shona. The design research found that for this sensitive and personal topic, students' home-language was more effective (Foulds *et al.* in press). Girl Talk is comprised of printed and digital classroom educational materials and teacher training. Ten educational sessions are provided for use in afterschool clubs.

At each school, Girl Talk is an afterschool club offered once a week to about 60 students in Grades 4–7. Clubs run by teachers are a common part of school life in Zimbabwe and many students participate in these clubs, so the club format is already known to the students. The participants in Girl Talk include boys and girls, but participation is weighted two-to-one toward girls.

The Ministry of Health and Child Care runs a school-based extension program using a male teacher and a female teacher who are trained in various health topics to become 'health masters' providing support for students. WVI trained these health masters on Girl Talk before they launched the clubs. The health masters were not specifically selected by the Girl Talk programs.

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## METHODS

EDC conducted a quasi-experimental design from May to July 2019 using quasi-experimental control-group design with repeated measures to assess the impact of Girl Talk on participating students (Russ-Eft & Hoover 2005). The Nyanga District was not involved in the WASH program

until May 2019, so the treatment sample was selected from Nyanga because schools would have had no prior exposure to Girl Talk. Rushinga District provided the control schools because the program was not scheduled to start until the following year.

### Student assessment of knowledge about puberty and menstruation

EDC created an assessment for students' content knowledge about puberty and menstruation. EDC consulted a number of previous studies measuring women and girls' attitudes and knowledge about menstruation and menstrual hygiene (Marván *et al.* 2006; Aniebue *et al.* 2009; Sommer 2010; Upashe *et al.* 2015; Mumtaz *et al.* 2016; Phillips-Howard *et al.* 2016; Fehintola *et al.* 2017; Miiro *et al.* 2018). None of these assessments aligned completely with the content covered in Girl Talk, so pulling from these assessments we developed our own assessment more closely aligned with the program in Zimbabwe.

The pubertal knowledge assessment contains nine items assessing knowledge of puberty and menstruation. Students were asked if each item was true, false, or 'don't know'. A bilingual version of the assessment in English and Shona was administered to all students.

The items included in the assessment for all students are as follows:

1. During puberty, your body makes extra hormones (True)
2. Puberty happens to both boys and girls (True)
3. Menstruation is normal for girls and women (True)
4. The physical changes related to puberty usually happen between the ages of 10 and 16, but everyone is different (True)
5. Changes in the body during puberty happen because of hormones (True)
6. During puberty, your body begins to change as it gets ready for you to be an adult (True)
7. When a girl gets her first period, her body is ready to have children (True)
8. Menstrual blood comes from the stomach where food is digested (False)
9. Menstruation happens to both girls and boys during puberty (False)

Responses to each question were scored a 1 for the correct answer, and a 0 for either an incorrect answer or 'don't know'. Students were then given a score for the percent of correct answers. Kuder-Richardson 20 (KR20) (Feldt 2014) was calculated to check the internal consistency of the measure. The reliability coefficient on the pre-test is  $KR20 = 0.68$  and on the post-test  $KR20 = 0.69$ . These results are sufficient, indicating moderate stability on the internal consistency of the measure (Salvucci *et al.* 1997).

### Sampling

#### School sample

The sample included six treatment schools from Nyanga District and six control schools from Rushinga District. For the treatment schools, WVI identified ten schools each in three wards that would be implementing the WASH UP! Girl Talk program in 2019 and for each ward, the research team randomly selected two schools using an online random number generator. The control schools were picked by WVI from schools that were scheduled to start Girl Talk in 2020. The target ages fall in Grades 4–7 in the Zimbabwean school system which is the end of the primary level in Zimbabwe.

#### Student sample

We tested one-third of the students in the Girl Talk clubs, or 20 students per school. Students were randomly assigned a number between 1 and 3, one number was picked, and those students were included in the study. Since the clubs are about menstruation, the clubs are designed to have more girls than boys. The ratio of girls to boys was approximately 2:1 so this was reflected in the final sample of 20 children per school recruited for the study. At all schools, if any student did not want to participate in the questionnaire, they were excused and sampling was repeated to replace them.

The pubertal knowledge assessment was administered May 13–22 before program activities started in each school, and the post-test was given in 29 July to 1 August 2019 a week after the program activities ended. The test was administered by the research team; the teachers did not handle the assessments. A total of 240 students were

assessed at baseline and 234 were assessed on the post-test. Six students from three of the treatment schools were absent on the off-day post-assessment. The final sample contains 234 students, 114 from the treatment schools and 120 from the control schools. The treatment sample consists of 75 girls (66%) and 39 boys (34%) and the control sample includes 78 girls (65%) and 42 boys (35%).

## Human subjects research

World Vision and the research team obtained written consent from parents of the children participating in the research. Only students with parental consent are included in the research. Research design and protocols were reviewed by EDC's Internal Review Board (IRB).

## FINDINGS

### Student demographics

All students in both samples spoke Shona at home. The gender breakdown of the sample is 65% female and 35% male. The treatment and control samples are distributed across five grades, and most of the students are in Grades 5–7 (see Table 1) but the control sample skews older having a larger share of students in Grade 6 (42%) and Grade 7 (28%).

### Knowledge about menstruation and puberty

At baseline, the mean score on the pubertal knowledge assessment was 52 for the Girl Talk participants and 55 for the control students, suggesting that both groups lack a knowledge of menstruation and puberty (see Table 2).

**Table 1** | Percent of students by grade by condition

	Girl Talk		Control	
Grade 4	15	13%	4	3%
Grade 5	40	34%	33	28%
Grade 6	38	34%	49	41%
Grade 7	21	18%	34	28%
Total	114	100%	120	100%

**Table 2** | Average score on pubertal knowledge assessment (weighted average)

	Pre M (SD)	Post M (SD)
Girl Talk participants	52 (0.25)	73* (0.18)
Control students	55 (0.25)	54 (0.25)
Total	54 (0.25)	63 (0.24)

\* $p < 0.0001$ .

After participating in the Girl Talk program, the mean score for participating students, 73 points, is significantly higher than the control, 54 ( $p < 0.0001$ ).

Because all of the students in the sample are in school and might be learning about human development in their regular classes, we wanted to examine what role participation in the Girl Talk might play in student knowledge above in addition to their course work. To quantitatively investigate to what extent participating in the program might have supported improved performance, we analyzed the data using a two-factor Repeated Measures Analysis of Variance (RM-ANOVA) approach (Vonesh & Chinchilli 1996). There was a significant effect of participating in Girl Talk on the percent of items correct at the  $p < 0.0001$  level [ $F(1, 232) = 55.45, p = 0.0000$ ]. We calculated Cohen's  $d$  to explore the magnitude of effect, and the result ( $d = 0.978$ ) suggests a large effect.

## DISCUSSION

The Girl Talk program using short videos presenting the story of a school girl and her friends in rural Zimbabwe celebrating growing up, learning the facts about menstruation and MHM is very successful. The research finds that Girl Talk had a significant impact on students' knowledge about puberty and menstruation. Participants in the Girl Talk clubs show significant increases in their knowledge of puberty and menstruation compared with the control sample. Even assuming that students are potentially learning about health in their normal classes, the difference between the treatment and control groups suggests that the Girl Talk program is having a great influence on students' knowledge about puberty and menstruation.

The success of the program draws our attention to some of the unique components of the program. Salient features in the design of Girl Talk are that the materials use a story format to present the challenges and advances of puberty in the context of the student's lives, and the materials combine short videos and printed materials in a club format to foster conversation among students and teachers about the topics. Finally, the language of instruction for the program is Shona, the students' first language, and not English, although English is used in school.

## CONCLUSION

These findings suggest that MHM interventions can be very effective when they connect to the local contexts and use language and activities that present information in a format that is practical and relevant to adolescents. Girl Talk was a program specifically designed for Shona-speaking rural Zimbabwean students and their teachers. It was intended to use multimedia learning activities to foster conversations among the students and teachers about the experiences of puberty and menstruation based on science. Even with the difficult circumstances that confront rural schools in Zimbabwe, the evaluation results suggest that the Girl Talk program was very successful at improving and clarifying young people's knowledge about puberty and menstruation.

## DATA AVAILABILITY STATEMENT

Data cannot be made publicly available; readers should contact the corresponding author for details.

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