A LARGE-SCALE COMMUNITY INTERVENTION TO CHANGE GENDER PERCEPTIONS IN RURAL ETHIOPIA

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Abstract

This paper reports on our participatory multi-faceted community-wide intervention to change gender perceptions and encourage support for girls' education to improve their school attendance and performance. The intervention involved community and education stakeholders in implementing a context-specific multi-faceted intervention to improve opportunities for girls in 123 primary schools in the rural Wolaita Zone, Ethiopia. We implemented a repeated-measures quasi-experimental design in a sample of 30 schools (15 project and 15 control schools) to evaluate the intervention's effectiveness. Over three years we assessed gender perceptions of a cohort of 750 Grade 6 girls, their parents and teachers in project and control schools. Additionally, participative group discussions were conducted with various stakeholders. In project schools we recorded significant changes (e.g., provision of sanitary pads, counselling, tutorial classes and community involvement). Teachers and parents reported improved gender attitudes and support for girls' education; while girls' self-esteem scores and educational aspirations increased. The findings showed change in community perceptions of the value of girls' education and some evidence of increased equality in gender perceptions. We concluded that these systemic changes marked the start of a long-term change process. This intervention showed the value of a participatory approach in a systemic community intervention.

Keywords: community gender perceptions, girls' education, gender-sensitive teaching, participative research, mixed methods, socio-ecological systems theory, developing countries

INTRODUCTION

Traditional gender norms prescribe that males occupy powerful and decision-making positions whereas women have supportive and nurturing roles (Cerrato & Cifre, 2018; Marcus & Harper, 2014). Gender stereotyping often limits the rights and opportunities of women in developing countries (Alemu & Asnake, 2007). After the World Bank's 1995 statement that investment in girls' education would affect the health and well-being of communities, girls' education and women's empowerment were prioritised in many countries (Heward & Bunwaree, 1999). Although gender norms changed in parts of the world, in many developing countries change seems to be a long-term effort with limited results (Sweeting et al., 2014). Our study, which represents a multi-faceted community intervention to promote girls' education through systemic changes in the education system and community gender perceptions, on the contrary, showed gratifying results.

Women in Ethiopia, especially in rural areas, are still exposed to traditional gender norms. Women have low status and little opportunity to direct their own lives and benefit from social, economic and political development (Alemu & Asnake, 2007; Eshete et al., 2016; Parkes et al., 2017; Tadesse et al., 2013). Various interventions to empower women focused on reproductive health and legal interventions challenging harmful traditional practices such as early marriage, female genital cutting, violence and abuse (Alemu & Asnake, 2007; Eshete et al., 2016). Despite progress in promoting education in Ethiopia over the past decades (World Bank, 2005), the gender gap persists, mainly due to lack of access to schools, poverty, child marriages, gender stereotyping and cultural practices. Many girls enrol in primary school but often drop out early. Since girls are stereotyped as home-makers and boys as producers and leaders, parents invest more in boys' education, and girls miss out on educational opportunities (Bezu, 2018). Girls also lack role models, since most rural Ethiopian women have little education, are seldom in wage-paying jobs and have limited socio-economic status (Bezu, 2018). In schools there are fewer female than male teachers (UNESCO, 2015) and even fewer occupy school leadership positions (Bezu, 2018).

To address the gaps in education for girls, the Girls' Education Challenge (GEC), funded by the United Kingdom's Department of International Development, was launched in 2012 to improve educational opportunities for the most marginalised girls. Programmes were funded in 19 countries, including Ethiopia (*https://girlseducationchallenge.org*). Our intervention to change the status quo of girls' education was implemented by Link Community Development (LCD) in 123 primary schools in the rural Wolaita Zone of the Southern Nations Nationalities and Peoples' Regional State (SNNPRS) in Ethiopia, involving approximately 62 000 girls.

1. GOAL OF PROJECT

The project aimed to change community gender perceptions to encourage girls to attend school, improve their school performance and eventually improve their chances in life. Various stakeholders from different community sectors were involved to raise awareness of limiting gender perceptions and capacity-building training to address these barriers and create a context to promote equal educational opportunities for boys and girls. Specific objectives of the project included 1) changing community gender perceptions, 2) increasing parental support for girls' education 3) promoting teachers' capacity to present gender-sensitive teaching and removing barriers to girls' education and 4) promoting girls' participation in school and self-esteem.

This paper reports on the change in gender perceptions and support for girls' education to improve their school attendance and academic performance. The results on girls' school attendance and academic performance will be presented elsewhere.

2. RESEARCH METHODS

A participatory action research approach (Reason & Bradbury, 2008) was followed in developing, implementing and evaluating the intervention. Community stakeholders, especially education officials, were involved in all aspects of the project, from planning and implementation to data collection. Outlined below are the context where the intervention was implemented, a baseline assessment to identify girls' barriers to education, the intervention developed to address these barriers and its evaluation.

3.1 Context

The project was implemented in 123 primary schools in the Wolaita Zone, SNNPR. The target area is rural, with high population density and subsistence farming as the prevalent means of livelihood. Most adults have low levels of education (UNESCO, 2015). HIV/AIDS infection and fertility rates are high— the average household has five to eight people. According to our data a large proportion of girls (93%) and boys (87%) (7 to 15 years old) were enrolled in school, but girls' school attendance was irregular and their school performance was significantly lower than that of the boys and national averages (FDRE-MOE, 2015). Several barriers to girls' education (identified below) limited girls' educational opportunities.

3.2 Baseline assessment

As part of the baseline assessment, a survey and participative group discussions were conducted with girls, their parents and teachers who were selected to be part of the project schools (sample descriptions in section 3.4.1 and 3.4.3) to identify barriers to girls' education. Themes were identified

from group discussion data (Braun & Clarke, 2006) and compared with survey data (see Section 3.7). The main barriers to girls' education were the following:

3.2.1 Traditional cultural beliefs: Traditional beliefs did not promote gender equality. Women were perceived as subdued and had to serve men: *"Girls are not allowed to speak. In my house I could not speak with my family. Girls serve boys with food but may not eat with them"* (Teachers' group). Girls were seen as part of household maintenance and families' survival functions. All girls did household chores (cooking, cleaning, fetching water, childcare, farming activities) for two to five hours per day, which interfered with school attendance and schoolwork. Additionally, they had to contribute to the livelihood of families by trading at the market place, leaving school to get jobs or having paid relationships with older men: *"Girls are profitable by selling crops and coffee and they leave school and run off to other places after this income source dwindles "* (Girls' group). Girls could therefore not focus on long-term goals such as education.

3.2.2 Lack of parental support for girls' education: 43% parents did not regard education as important for girls. They spent their limited resources on boys' education, which they regarded as a better investment: *"Parents do not have confidence in girls' ability to attain respectable positions in society. They want only male children to go to schools"* (Girls' group).

3.2.3 Lack of sanitary supplies during menstruation: 37% girls had difficulty in attending school when they menstruated because they lacked sanitary ware at home and at school: *"We often leave school when our clothes get soiled during menstrual cycles. Girls drop out of school for being seen with blood stains on their clothes and being mocked"* (Girls' group).

3.2.4 Safety: 47% girls were scared to get beaten by boys if they did not listen to them. They were harassed on their way to school and back: "*Boys insult, beat, bully and rape us and put us in constant fear"* (Girls' group).

3.2.5 Lack of role models for girls: Very few women had high levels of education and were role models: "*The insignificant number of well-educated and successful females, leaves girls feel that education is not important"* (Parents' group).

3.2.6 Girls' low self-esteem: Community attitudes towards girls negatively influenced their self-esteem, sense of worth, future aspirations, hope and options to improve their lives.

3.2.7 Teachers' attitudes: The ratio of female to male teachers was low. Teaching methods were not gender sensitive. Teachers regarded boys as clever and gave them more attention in class.

The barriers mentioned above contributed to girls' irregular school attendance and academic underperformance, to be addressed in the intervention.

3.3 Intervention

The socio-ecological systems theory (Bronfenbrenner, 1995), emphasising the interaction of various levels of community processes, was used to conceptualise the intervention. Various stakeholders were involved to bring about change in gender perceptions: primary-school girls, boys, parents, teachers, school directors, education officials, community leaders, and local and regional government. The intervention aimed to raise awareness of gender inequality in households and schools and how to change gender perceptions and policies in schools. The goal was to provide a supportive environment for girls with good quality teaching to encourage girls' academic achievement and improve their chances in life (https://girlseducationchallenge.org). We used a participative approach to empower stakeholders to develop context-specific strategies to enhance sustainable change. Education experts trained and empowered education officials who mobilised various stakeholders in the school community to implement the multi-faceted interventions described below.

3.3.1 Community mobilising meetings: Community meetings were held in the 123 school communities (each attended by at least 120 community members) to provide a platform for community engagement and mobilisation. 1) Parents were made aware of barriers to girls' education and the implications of gender inequality. They were encouraged to decrease household chores so that girls could go to school and study. 2) Additionally, parents contributed to the school's gender action plans, which were developed to improve education for girls (UNESCO, 2017). Parents' participation in planning increased their involvement with their children and the school.

3.3.2 Interventions in schools: 1) Education officials, school directors and teachers were motivated to address the barriers to girls' education. 2) School directors were empowered to implement the school gender action plans to create equal opportunities for girls and female teachers (e.g. leadership positions, sexual harassment policies). 3) All teachers received capacity-building training to implement gender-sensitive lesson plans, use participative teaching skills and to avoid gender stereotyping. 4) Gender action committees (GAC) involving female teachers were formed in each school to address girls' needs. They were trained to present the following interventions for girls and their mothers:

- Counselling and self-esteem development for girls (based on Social and Emotional Learning, CASEL, 2012)
- Parent training for mothers to support girls' education (attended by more than 8 000 mothers), and

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- Talks by local female role models to inspire girls (attended by 10 439 Grade 6-8 girls).

3.3.3 Interventions for girls: Schools provided 1) sanitary pads, a sanitary room and separate toilet facilities for boys and girls to enable girls to attend school during menstruation. (Washable sanitary pads were distributed to senior girls annually). 2) Girls participated in group counselling about reproductive health, harmful traditional practices like early marriage, sanitation, personal care and life skills. 3) Girls most at risk of dropping out of school or failing a grade received additional tutorial classes in core subjects and assistance with schoolwork.

3.4 Evaluation

Evaluation of the intervention was done by an external evaluation team. A **repeated-measures quasi-experimental design** was implemented to assess progress and evaluate effectiveness. Three assessments of the project and control group were conducted—at baseline (2014), midterm (2016) and at the end (2017)—each comprising quantitative and qualitative data obtained from various stakeholders in the form of a convergent parallel design (Creswell & Plano Clark, 2011).

3.4.1 Sampling strategy

The project was implemented in 123 primary schools, involving 62 000 girls. For logistical reasons, a sample of 15 project and 15 control schools was used for evaluation. The schools were selected in collaboration with education officials to represent participating schools in terms of school size (large/small), remoteness from town centre (central/distant) and school performance (high, middle and low performers). Control schools that closely matched the characteristics of project schools were chosen from an area where the project was not implemented.

Selection of girls: From these schools, a cohort of 750 Grade 6 girls was selected at baseline (375 each in project and control schools) and followed for a period of three years—from when the girls were in Grade 6 (at baseline), in Grade 7 (at midterm) and in Grade 8 (endline evaluation). Based on sample-size calculations with a 95% confidence level, a 5% margin of error and compensating for the cluster design (Van Breukelen & Candel, 2012), 25 girls per school were selected systematically from the enrolment register (every third or fourth girl on the register). This sampling process would be able to detect a 0.2 standard deviation with satisfactory statistical power (0.8). The demographic data of girls and their parents at baseline are given in table 1.

Selection of parents: One parent per girl in the cohort group (mother or father) (n=750) was interviewed at school to complete the parents' survey. Parents were mostly farmers and had low levels of education.

TABLE 1. Demographic data of cohort girls and their parents (*n* = 750)

	Project schools	Control schools
Girls' age	10–16 years (mean 13.4 years, *SD* 1.3)	10–17 years (mean 13.2 years, *SD* 1.3)
Girls' parents' age	61% in age group 31–40 years	57% in age group 31–40 years
Fathers' occupation	81% farmers; 2% skilled workers; 5% (semi) professional	89% farmers; 1% skilled workers; 2% (semi) professional
Fathers' level of education	33% no education; 47% primary school; 20% > primary	30% no education; 54% primary school; 16% > primary
Mothers' level of education	52% no education; 39% primary school; 9% > primary	49% no education; 45% primary school; 6% > primary

Selection of teachers: Ten teachers from each of the 15 project and control schools (n=300) completed the teachers' survey. Depending on the number of female teachers at a school, we tried to involve five males and five females from each school.

2.4.2 Quantitative data collection tools

Assessment of change in the school system: The **school gender audit** which is aligned to the national policy on girls' education, assesses the effectiveness of school structures to promote girls' education. It consists of structured questions about the implementation of gender policy, gender-sensitive curriculum design, teaching and learning, and support mechanisms for girls. Each aspect is rated on a 3-point scale (yes, partially, no) and substantiating documentation is asked. Questions on gender-sensitive curricula and teaching and learning strategies were combined into two scales with scale scores from 0 to 10 (Table 2).

Assessment of gender perceptions: We developed two gender perception scales and used them to survey all respondent groups to compare perceptions over time. The one assessed attitude towards girls' education and the other acceptance of traditional gender roles in the community. The latter scale contained items on *tolerance of women's subservience*, reflecting traditional gender roles as identified by Jewkes, Penn-Kekana and Levin (2002). Questions were answered on a 5-point Likert scale. Participants' responses were presented on a scale of 0-10. A low score reflected acceptance of traditional gender norms, whereas a high score indicated support for equality in gender relationships. All surveys were translated from English into Amharic (official language). Back translations were done by a different translator to ensure accuracy.

TABLE 2. Gender perception scales

School gender audit	Example	n	Number of items	Cronbach's alpha baseline	Cronbach's alpha endline[a]
Gender-sensitive curriculum	*Does the curriculum encourage participation of both girls and boys in all activities?/Does the curriculum consider the different life experiences of boys and girls?*	30	7	0.97	0.91
Gender-sensitive teaching and learning strategies	*Does the classroom setup encourage equal participation of girls and boys?/Does the school provide opportunities to girls to assume leadership roles?*	30	9	0.93	0.89
Scales for teachers					
Teachers' evaluation of their gender-sensitive classroom teaching	*I encourage boys and girls equally to participate in my class.*	299	7	0.77	0.79
Teachers' attitudes towards girls' education	*I think boys' education should get preference when money is scarce.*	299	8	0.62	0.84
Teachers' perception of community gender roles	*I think a woman's role is to do household jobs and raise children.* *I think men should have more rights to jobs than women.*	299	8	0.76	0.83
Scales for parents					
Parents' support for girls' education	*To what extent can you provide her time to do her schoolwork?*	750	4	0.72	0.81
Parents' attitudes towards girls' education	*I think education is more important for boys than for girls.*	750	8	0.75	0.81
Parents' perception of community gender roles	*I think a woman's role is to do household jobs and raise children.*	750	8	0.69	0.83
Scales for cohort girls					
Self-esteem (items based on social and emotional learning, CASEL, 2012)	*I feel happy with who I am.* *I am just as good as the boys in my class.*	750	8	0.70	0.77
Girls' evaluation of caregiver support	*Do your parents/caregivers encourage you to do well at school?*	750	5	0.83	0.87
Girls' evaluation of gender-sensitive teaching	*Boys get more attention from the teachers in class than girls.*	750	3	0.76	0.81
Girls' perception of attitudes towards girls' education	*People in my community think that girls are just as clever as boys are.*	750	8	0.64	0.84
Girls' perception of community gender roles	*People in my community think that men and women have equal status.*	750	8	0.57	0.86

[a] Increase in Cronbach alphas in post assessment may be related to more experience of the interviewers to explain the items and of the interviewees to answer questions.

The **girls' survey** contained questions about demographic characteristics, self-esteem, parental education support, teachers' gender-sensitive teaching, girls' perceptions of girls' education and their experience of community gender roles (Table 2).

The **parents' survey** included questions on the demography of the household, barriers to education, parental support for girls' education and parents' perceptions of girls' education and community gender roles (Table 2).

The teachers rated their own gender-sensitive teaching methods, their attitudes towards girls' education and their perceptions of community gender roles (Table 2).

3.4.3 Qualitative data collection

We obtained qualitative data on barriers to girls' education (in baseline assessment) and change in gender perceptions (in endline evaluation) from 29 participative group discussions. With the assistance of class teachers, girls and boys from grades 5 to 8 volunteered to participate in group discussions. There were seven groups of girls and boys each, with ten participants per group. Additionally, group discussions were conducted with female teachers (one group), parents of cohort girls (seven groups) and school management (seven groups). All participants signed informed consent forms and participated voluntarily. Two trained female teachers led each group discussion in their vernacular language (Amharic or Wolaitigna).

3.5 Data collection

Quantitative data were collected by 120 education officials who were trained and supervised by the external evaluation team. The training was conducted in English with Amharic interpreters. The training included how to build a relaxed relationship with the interviewees, what informed consent entailed and how to complete an answer sheet while doing an interview. Trainees practised administering surveys for the various respondent groups.

The gender audit was completed in an interview with school staff of the project and control schools. The surveys for girls and parents were completed by way of one-on-one interview during which the interviewer read the question and recorded the answer on an answer sheet. Teachers completed their surveys in a paper-and-pencil format.

Qualitative data were collected by female teachers to enable open discussion of sensitive topics. In a two-day workshop, eight female teachers received skills training in conducting participative group discussions. The teachers led group discussions with various stakeholders in schools. They worked in pairs to stimulate discussion, voice record the discussions and take field notes.

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3.6 Ethical protocol

Strict ethical principles were applied during data collection. Education authorities and schools approved the project and informed the parents/caregivers about the school's participation in the project and the evaluation process. All participants, including parents gave informed consent to participate voluntarily in the evaluation process, while girls and boys assented. Consent forms were age-appropriate and in the vernacular languages. The education officials as fieldworkers could have been perceived as figures of authority that could have influenced voluntary participation. Data were kept confidential by using unique identifying numbers. Data were reported in terms of group averages or stakeholder groups and not for specific individuals. Link Community Development's Child Protection Policy and Code of Conduct were emphasised during recruitment and training of data collectors. Safety protocols were in place during data collection at all evaluation points.

3.7 Data analysis

Data verification and quality assurance were done on various levels to ensure the accuracy and reliability of data collected. As part of data analysis, we calculated frequencies, scale scores and Cronbach's alpha for each scale (Table 2). Using two-sample t-tests (assuming equal variances), we compared scale scores of respondents in the project and control schools in the baseline, midline and endline assessments. To reduce the risk of Type 1 errors across multiple t-tests, we set more stringent alpha values using the Bonferonni adjustment (Pallant, 2016). Effect size was calculated to assess the magnitude of the differences using partial eta squared (Pallant, 2016). Cohen (1988) suggests that $d = 0.2$ be considered a small effect size, 0.5 medium effect size and > 0.8 large effect size, whereas Sawilowsky (2009) describes 1.20 as a very large effect size and 2.00 as a huge effect size.

Voice recordings of group discussions for each phase of data collection were transcribed and translated into English. A LCD staff member checked the accuracy of the translations. Using the Atlas ti software package common themes for each participant group were extracted in an iterative process using thematic analysis (Braun & Clarke, 2006). Quotes from each theme were used to illustrate findings from the quantitative data.

4. RESULTS

Changes in scale scores from the baseline to the endline assessment of the various stakeholders in project and control schools are given in Table 3 and Figures 1-4. The results are illustrated using some descriptive quantitative data and quotes from the qualitative data.

TABLE 3. Gender perceptions: Baseline and endline scores

	Baseline data		Endline data		t	p	Effect size
	Project group	Control group	Project group	Control group			
	X (SD)	X (SD)	X (SD)	X (SD)			
School gender audit (n = 15)							
Gender-sensitive curriculum	4.7 (2.2)	5.4 (2.7)	5.9 (2.4)	3.4 (1.7)	3.91	<.001	1.4
Gender-sensitive teaching and learning strategies	6.0 (1.9)	7.2 (1.8)	7.4 (1.5)	4.1 (1.1)	7.96	<.001	2.9
Scales of teachers' data (n = 150)							
Teachers' evaluation of their gender-sensitive classroom teaching	7.1 (1.6)	6.7 (1.6)	7.5 (1.0)	6.1 (1.3)	6.10	<.001	0.7
Teachers' attitudes towards girls' education	7.5 (1.5)	7.2 (1.4)	7.6 (1.4)	5.5 (1.6)	10.54	<.001	1.2
Teachers' perception of community gender roles	6.9 (1.7)	6.6 (1.5)	7.6 (1.4)	5.5 (1.7)	10.11	<.001	1.1
Scales of parents' data (n = 375)							
Parents' support for girls' education	5.6 (1.9)	5.6 (1.8)	6.0 (1.9)	4.1 (1.8)	13.46	<.001	0.9
Parents' attitudes towards girls' education	5.9 (1.5)	6.1 (1.5)	5.8 (1.6)	4.1 (1.3)	16.54	<.001	1.2
Parents' perception of community gender roles	5.5 (1.7)	5.4 (1.5)	5.3 (1.9)	3.6 (1.6)	12.03	<.001	0.9
Scales for cohort girls (n = 375)							
Self-esteem	6.2 (2.0)	5.3 (2.3)	7.8 (1.8)	5.0 (2.0)	12.42	<.001	0.9
Girls' evaluation of caregiver support	5.3 (2.9)	5.6 (2.6)	6.6 (2.3)	3.7 (2.0)	17.62	<.001	1.3
Girls' evaluation of gender-sensitive teaching	5.0 (2.2)	6.2 (2.5)	5.7 (2.2)	3.8 (2.2)	18.61	<.001	1.4
Girls' perception of attitudes towards girls' education	3.7 (1.6)	4.5 (1.4)	5.2 (1.9)	3.4 (1.5)	21.57	<.001	1.6
Girls' perception of community gender roles	3.4 (1.4)	3.8 (1.4)	5.0 (2.0)	3.4 (1.6)	16.90	<.001	1.2
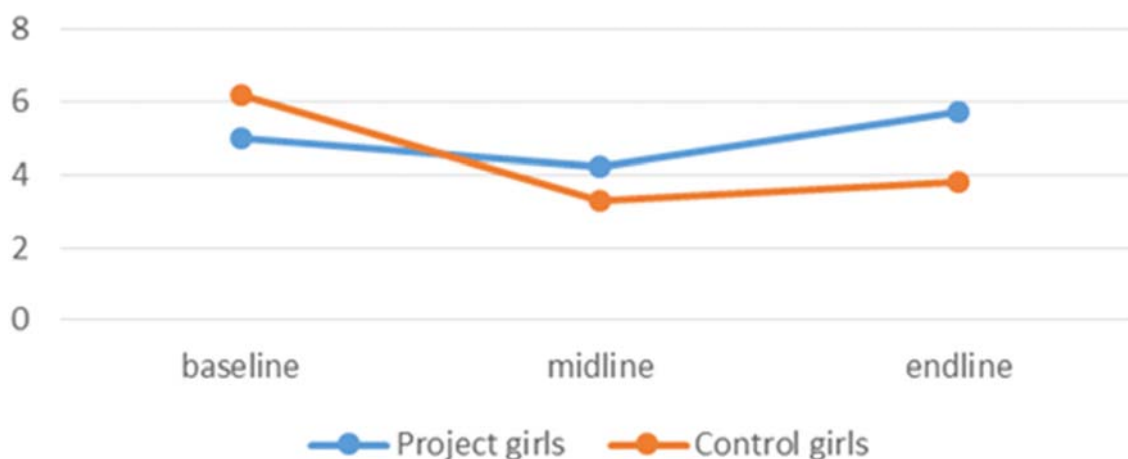
FIGURE 1. Girls' rating of teachers' gender-sensitive teaching
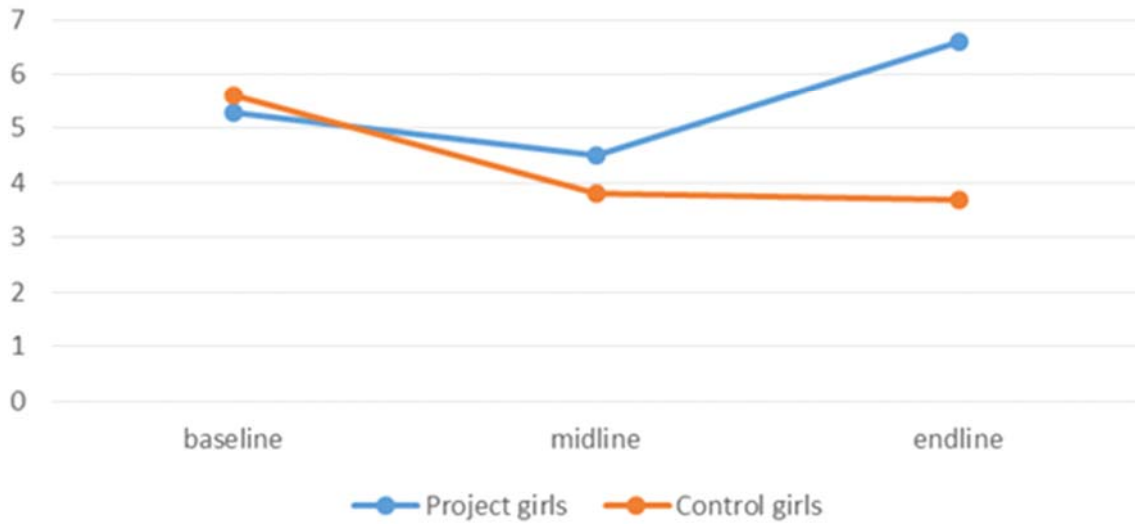
Girls' rating of parental support

FIGURE 2.

Girls' rating of parental support
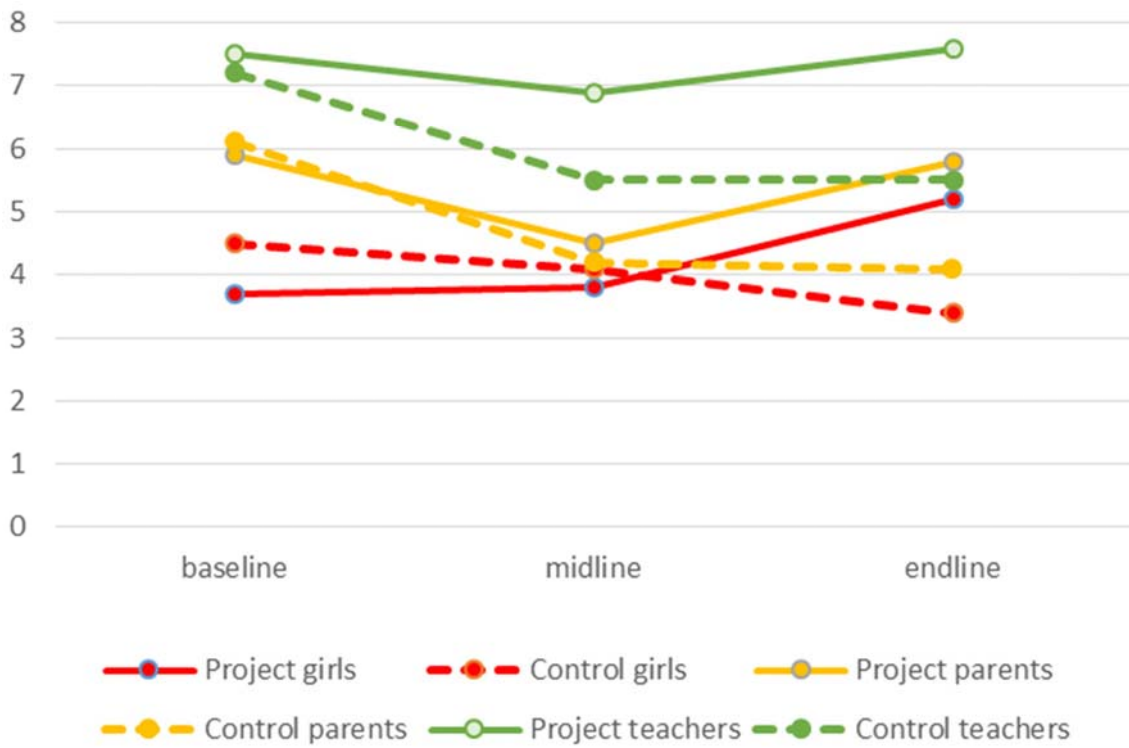
Attitudes towards girls' education

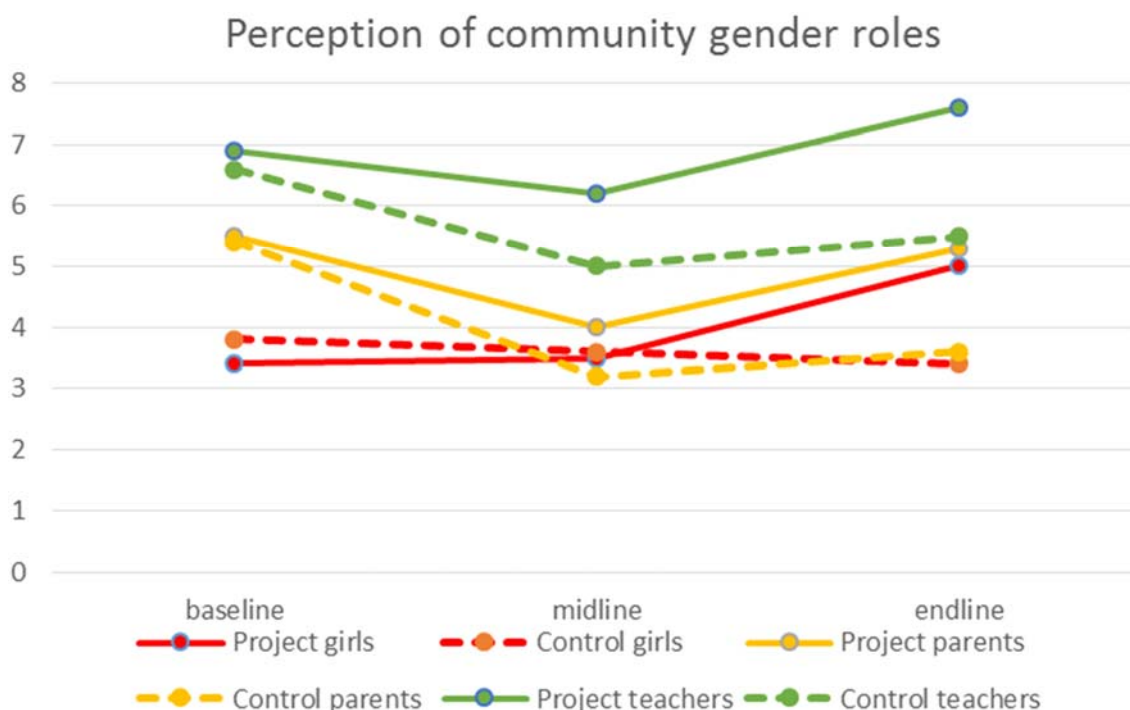**FIGURE 3**. Attitudes towards girls' education

FIGURE 4. Perception of community gender roles

4.1 Change in schools

Significant improvement (very large to huge effect size (Sawilowsky, 2009)) were reported in the implementation of a gender-sensitive curriculum and teaching strategies in project schools compared to control schools (Table 3). Gender action plans were implemented in all project schools - 38% were fully achieved and 57% partially achieved. Specific changes were the following:

• 80% project schools distributed sanitary pads to girls; 91% girls reported that they could now attend school even during menstruation (vs 24.5% of control group). As a result, the term used for menstruation in Wolitigna (local language) changed from meaning 'dirty' to 'monthly flower'. The following quotations show the value of sanitary support for girls:

Female students were ashamed to come to schools when they have menstrual periods. They missed school an average of 3 to 5 days a month. They could not do well in school. Sanitation materials made a big difference in keeping girls in school to focus on learning. It helped girls to receive the sanitation wear free, previously they had to earn money to buy it (Teachers' group).

We used to remain at home during menstruation. We were afraid of becoming a laughing stock if we are found with stains on our clothes. The provision of pads freed us from a feeling of

rejection and being teased by boys. I can go to school every day and can attend to my studies (Girls' group).

• Girls received counselling to encourage them to stay in school: 53% schools presented life skills training and 47% reproductive health information. Girls' clubs were established where senior girls advised their peers:

They organise discussion forums, give advice and seek solutions not to quit school. They teach us ways to overcome our problems with boys and our parents giving us burdensome household chores (Girls' group).

• Tutorial classes helped girls to keep up with schoolwork. Girls were encouraged to ask questions in class, which built their confidence to do schoolwork and participate in larger classes:

Girls' grades improved because of tutorial classes. They could ask what they did not understand and do additional work without boys criticising them. Now girls can compete with boys on the same level (Teachers' group).
We used to beg male students to help us with our studies. Now, we get special lessons three times a week where we learn freely and our teachers assist us in our studies (Girls' group).

• Schools made an effort to involve parents in decision making and motivated parents to send girls to school. Parents reported they participated more in school activities—68% attended meetings (compared to 43% in the control group), and 60% actively participated in school activities (27% in the control group). In the project group, 84% parents reported that they observed improvements in schools to promote girls' education (compared to 6% of control parents).

4.2 Change in teachers' attitudes and skills

In project schools, teachers' ability to implement gender-sensitive teaching and their perception of community gender roles increased significantly (with medium and large effect size respectively) from baseline to endline assessment compared to the control group (Table 3). For example, 98% teachers reported equally encouraging class participation among boys and girls; 93% teachers gave boys and girls leadership positions and 92% reported high expectations of girls in class. Teachers gained confidence through gender-sensitive training:

We have acquired tremendous knowledge on teaching methods, lesson plans and gender-sensitive teaching (Teachers' group).

A school director observed:

Previously there was no consideration of gender; now the lessons are planned so that girls can actively take part and forward their opinions in the class.

Girls' evaluation of teachers' teaching skills improved significantly (very large effect size) from baseline to endline assessment (with a drop during midline assessment) (Figure 1). Girls commented on teachers' gender-sensitive teaching methods:

Teachers used to let only boys participate in classes. Now, they closely follow up on our studies, advise us and assist us (Girls' group).

Teachers used to insult and degrade us which used to corrode our self-confidence. Now, they encourage us to ask questions and discuss in class. They treat us with dignity and use encouraging words (Girls' group).

4.3 Change in parents' support for girls' education

Parents (both mothers and fathers) reported more support for their girls' education after the intervention (p<0.001; large effect size; Table 3). Almost half of the parents (43%) reported decreasing household chores for girls and 67% thought that boys and girls should share household chores (compared to 18% of control parents) and 89% helped girls with schoolwork (22% in control group). The qualitative data showed that parents wanted their daughters to continue their studies:

I used to crave to see her married and have children; now, I desire her to continue her studies.

I discontinued my studies at an early age and went into marriage but I promise you I will not repeat the same mistake with my daughter (Parents' group).

Parents in the project group did not report changed attitudes towards girls' education and community gender roles after the intervention. It was interesting to see that the attitude of fathers (a small group) improved significantly, although the attitudes of mothers remained as in baseline. The control group's attitudes on the other hand, deteriorated over time (Table 3).

Girls experienced significant change in **parental support** (p<0.001; very large effect size; Table 3; Figure 2). Many girls reported that parents decreased household chores and asked boys to help with chores to provide girls with study time. They experienced encouragement from parents to attend school and tutorial classes:

They encourage me go to school on time and to attend tutorial classes. They lessened my share of household chores to allow me more time to study.

My parents provide such things as books, pencils and kerosene gas to let me get proper education, which they were denied.

They stopped hassling us with proposals of getting married at early ages without our consent and focused on advising and supporting us in our education.

4.4 Change experienced by girls

The self-esteem scores of girls in the project group improved significantly over time (p<0.001; large effect size; Table 3). Many girls learned to believe in their own abilities:

They encourage us to feel free to ask our teachers and obtain answers to our questions and advise us not to stop learning so that we could get higher status in our lives (Girls' group).

It helped me to be confident. It helped me to believe that I can be successful if I learn (Girls' group).

The successful female models they met helped them to improve their self-esteem. Now that they see their own value, they are more willing to study. They are aware they are equal to males and developed self-confidence (Teachers' group).

In the end line assessment, girls in project schools reported that they experienced more positive attitudes towards girls' education and more emphasis on equality in community gender roles from those around them (both p<0.001; very large effect; Table 3). Table 4 summarises the responses of girls and their parents. Over time more girls regarded their education as important and saw themselves as equal to boys. The most important changes in girls' experience of community gender roles related to their right to jobs, equal status, and men sharing household duties. For parents, the biggest change related to women's domestic role:

Our girls used to quit learning at lower grades and remained home bound. Now they pursue their studies further (Parents' group).

Parents and girls did not report change in perception related to violence against women after the intervention (Table 4). This matter should be addressed urgently.

TABLE 4. Change in girls' and parents' gender attitudes

	Girls' perceived gender attitudes %		Parents' personal gender attitudes %	
Attitude towards girls' education	Baseline	Endline	Baseline	Endline
Education is more important for boys than girls.	71	28	44	21
Boys' education should get preference when poor.	84	55	58	21
Girls learn less in school than boys.	77	39	49	36
Girls are just as clever as boys.	22	50	51	68
Perception of community gender roles				
A woman's role is in the house to raise children.	65	40	47	17
A man should have the final say in family matters.	84	59	79	56
A husband may beat or punish his wife.	54	43	56	44
Men should have more rights to jobs than women.	82	47	64	42
A man should share household duties.	22	56	71	70
Men and women should have equal status in the community.	21	54	73	86

4.5 Change in communities

The attitude towards girls' education scores and rating of community gender roles in the project group improved over time, while the control group became more negative (Figure 3 and 4). Changes in gender perceptions are evident in the following quotes:

> *Our lives have changed. We are participating and competing with boys in class. I have a strong belief that we can attain much higher goals in life through education* (Girls' group).

> *Previously, parents were not interested to send their daughters to school. People now believe in the power of educated females in improving the lives of her family* (Teachers' group).

> *There is a change of attitude within our community; we used to assign all household work to girls. Now there is a trend of sending girls to school* (Parents' group).

> *Previously, schools were for boys; there were only a few girls. This project raised awareness of girls' value. It brought a big change to society in a short time* (Teachers' group).

An educational official believed that the changes were sustainable:

> *Communities and schools are mobilised to make sure that the changes will be lasting. This program will continue because the community takes ownership.*

Not only girls benefitted from the project. It was observed that a number of female teachers were appointed in leadership positions and several mothers returned to school with their daughters

to improve their own level of education. Many women benefitted as "t*he project gave women a voice, while women in other areas are still quiet"* (Education official).

3. DISCUSSION

The intervention sensitised regional and local authorities, community leaders, the school community and families of the value of women in society, the negative implications of gender inequality and the importance of girls' education. We observed a puzzling pattern of attitudes becoming more negative for all stakeholders during midline assessment and then more positive for the project group towards endline assessment (figures 1–4). In the control group repeated measures and awareness that they do not receive any intervention could have resulted in more negative attitudes in the midline and endline evaluations. In the project group, various components of the intervention, involving various stakeholders, were developed and implemented gradually. By the time of the midline evaluation expectations have not yet been actualised. Thereafter, the implementation of the intervention intensified and eventually resulted in change in stakeholders' attitudes, skills and behaviour which prompted them "*to discard the old belief that women and pots belong in the kitchen*" (Teachers' group). Parents' attitude towards girls' education over time could have been related to the aging of the girls. From baseline to endline girls aged by three years and mothers expect of older girls to contribute more to household functioning and earn money. Additionally, most of the girls were further educated than their parents by the time of the endline evaluation – parents could have seen it as sufficient education. The gender attitudes of parents in the project group did not change significantly from baseline, but they were more positive towards girls' education than parents in the control group whose attitudes declined significantly.

We observed change in schools in terms of teachers' gender-sensitive teaching skills, their positive attitudes towards girls' education and their implementation of various aspects of the gender action plan. They provided counselling for girls to address some personal problems, tutorial classes and distributed facilities to manage menstruation (Kelland, 2016; Sommer et al., 2016). More contact with female teachers and role models could have contributed to girls' educational aspirations (Muralidharan & Sheth, 2016). These interventions could have contributed to more active class participation, girls taking on leadership positions, improved self-esteem scores and improved educational outcomes for some girls. Because the intervention focused mainly on the value of girls' education, most parents in the project schools actively supported their girls to attend and achieve in school. The project demonstrated that collaboration of various stakeholders enabled more girls to attend school and focus on their education.

We observed that parents' perceptions of gender roles in the community, which is a wider focus on gender equality than addressed in this intervention, remained the same throughout the study. Similarly, parents' perception of women's rights and violence against women did not change through this intervention, as was found in previous research (Eshete et al., 2016). This should be a focus in future interventions.

The success of this large-scale intervention to bring about some change in gender perceptions and specifically girls' education, hinged on a few intervention principles grounded in systems theory (Kloos et al., 2012; Nuttavuthisit et al., Schorr, 1997):

• The intervention addressed the specific barriers girls experienced as identified in the baseline assessment, such as lack of sanitary ware and the burden of household chores. They were motivated to address these barriers.

• Participatory action research, including community consultation meetings enabled participation in and ownership of the change process.

• The intervention was implemented with networks embedded in existing educational structures and culture of the community. Education officials were trained and empowered to implement all aspects of the intervention. Their new knowledge and skills contributed to sustainability of the intervention.

• External linkages (through the Girls' Education Challenge) provided financial resources to implement the intervention.

• The intervention focused on multiple community levels and various stakeholders for a three-year period. A long-term perspective contributed to sustainable results.

The intervention thus started a process of change, opening up education opportunities for girls and giving rise to reconsidering gender perceptions. This is a long-term change process that needs to continue. Changes in gender norms are part of wider societal change (as is currently seen in the political arena in Ethiopia (Bezu, 2018)) and require long-term deliberate actions (Harper et al., 2018). The project team developed a sustainability strategy to ensure long-term effects of the intervention. The project was embedded in the policy and structures of the education system, and education officials were empowered to continue implementing the intervention. Various community structures were involved to avoid superficial and short-term changes such as were observed after teachers' training in a similar project in Uganda (Chinen et al., 2017). The largest barrier in sustainable implementation of the intervention is obtaining sustainable funding to support future implementation. The results were communicated with the regional educational authorities to motivate them to implement similar interventions in all schools in the region and specifically in the

control schools of this study, who clearly need the intervention to change their negative attitudes towards girls' education. It is our view that gender-responsive pedagogy should be integrated into the formal professional training of teachers so that it becomes part of the education system. This will contribute to effective teaching and learning strategies in all schools even without additional financial resources.

5.1 Limitations of the evaluation

Language was a challenge in the evaluation as the education officials and the female teachers trained as fieldworkers were not all fluent in English. The evaluation team therefore used interpreters during the training, which was not without complications. All surveys were translated into Amharic (the official language) and the education officials had to explain the questions to the participants whose vernacular was Wolaitigna. During the training for baseline assessment we tried to sort out issues of translations. Group discussions were held in the vernacular of the participants. Discussions were voice-recorded and translated into English by an external translator. Although the evaluation team implemented a variety of measures to ensure valid data, some meaning could have been lost through various translations.

Education officials were trained as fieldworkers to collect data. This represented a strength and a limitation in the study. During training, the education officials were made aware of their dual roles as intervention implementers and data collectors and of ways in dealing with these roles. The limitation was that they were perceived as figures of authority who could intimidate vulnerable participants when addressing sensitive topics. Although this issue was addressed during training, it remained a concern.

The evaluation team had an "outsider" position in the project. We were not directly involved in project implementation and we trained fieldworkers to collect data. Being outsiders helped us to remain relatively objective, but we consulted with the local project team who were "insiders," to understand the results in the cultural context. The project team trained various stakeholders to implement the intervention and the teachers worked with learners. On each level there are some form of power relationships that could have influenced the reaction of participants.

The project was implemented in a specific area of the Wolaita zone. The aim of the project was to develop a model that is scalable in an Ethiopian context and replicable across contexts. It is believed that a similar systems-level intervention in another area could result in similar outcomes – although it would depend on the motivation, commitment and resources of education authorities in the region.

4. CONCLUSION

According to literature it seems that changing gender perceptions is a long-term effort that may have limited results (Sweeting et al., 2014). We implemented a complex large-scale multi-faceted community-based intervention involving various stakeholders over a three-year period to promote changing gender perceptions to enhance girls' education. Measured against the control groups' perceptions, the gender perceptions of participating girls, parents, teachers and the community at large changed significantly over time towards some acceptance of gender equality. The intervention initiated a change process, opening up educational opportunities for girls and giving rise to reconsidering gender roles in these communities. This is a long-term change process that needs to continue over years to become embedded in the society.

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