BASELINE REPORT
2017

List of acronyms

CBSG   –   Capacity Building Service Group
DORP   –   Development Organsiation of the Rural Poor
ICE   –   Impact Centre of the Erasmus University
MH   –   Menstrual Health
MHM   –   Menstrual Hygiene Management
OPHI   –   Oxford Poverty & Human Development Institute
PPI   –   Progress out of Poverty Index®
RCT   –   Randomised Controlled Trial
SRHR   –   Sexual Reproductive Health Rights
WASH   –   Water, Sanitation and Hygiene
UNICEF –   United Nations Children's Fund
WHO   –   World Health Organisation

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Ritu Baseline findings

Knowledge

66% of girls did not know what menstrual periods were when they started

Common questions girls wanted to ask a about menstruation

- Why does menstruation happen?
- What steps should a girl follow during menstruation ?
- Why does pain happen during menstruation?

Attitudes

50% of girls felt it was impolite for a girl to disagree with her brother in public

76% of girls avoided physical exercise during menstruation

68% of girls also refrained from being near and boys

96% of girls avoided being in a sacred space or conducting religious activities

WASH facilities

75% reported that they do not change their pads or cloth at school

91% of girls said there was only one or two toilets they could use at school. The to ratio is on average **179:1**

Wellbeing

52% of girls are classed as having shame in relation to the emotion of self-consciousness.

Girls who have reached menarche missed an average of **3.4** days a month compared to only **2.96** for those who hadn't

Executive summary

The Ritu Programme is a joint initiative of Simavi, RedOrange, and TNO and is implemented in close collaboration with local partner organisations in Bangladesh. The overall impact envisioned by the programme is to improve the Menstrual Health of women and girls, which allows them to increase their social and economic participation and thereby both directly and indirectly improves their health and wellbeing. The programme combines Sexual Reproductive Health Rights and Water, Sanitation and Hygiene interventions in schools and communities for a holistic approach to improving menstrual hygiene.

The programme is designed and implemented following an Evidence Based Programing approach. As part of this approach, Simavi is working with the Impact Centre of the Erasmus University and Maastricht University to evaluate the programme. Using a Clustered Randomised Controlled Trial the effectiveness of the programme interventions will be measured. There are two treatment groups, one receiving basic school level interventions and the other a combination of these interventions plus community level education for parents. A control group forms the third cluster where no interventions will take place. The Randomised Control Trial will measure changes between the different treatment groups over time for the key impact areas. This report provides an overview of the findings from the baseline survey undertaken with 4046 girls from class 6 and 7 in 149 schools in Netrokona during January – February 2017.

There are no significant differences between baseline data for the key socio-demographic variables (age of menarche, and poverty level) across treatment and control groups. Therefore the groups provide us with good grounds to measure the impact of the Ritu programme interventions at midline and endline.

The baseline data show that girls lack knowledge on menstrual health with 66% of girls, who have reached menarche, not knowing what menstruation was when it started. The girls lack an understanding of the biological reasons for menstruation and have rarely discussed issues of menstrual health with anyone, beyond getting basic instructions on menstrual hygiene management from their mothers or sisters. Additionally whilst girls themselves were found to hold gender equitable beliefs about girls' rights they were also likely to limit their activities during menstruation with almost all girls refraining from religious worship and most avoiding men and boys. These findings confirm the relevance of having two different treatment groups as it will allow the Ritu programme to accurately assess the effectiveness of the school level interventions with or without the addition of community level strategies.

The data also show the current condition of toilets in the schools and at home. The Ritu programme regards a school toilet as being 'Menstrual Hygiene Management friendly' if it functional, single sex, and equipped with running water, soap, a bin and enough light. The majority of girls said there was no bin or soap in toilets. Moreover, 75% of girls who have reached menarche, did not change their sanitary products in the school toilets indicating the inadequacy of current facilities. The Ritu programme will stagger interventions to first improve conditions of in school toilets and then address knowledge, attitudes, and practices. The baseline findings confirm the validity of this logic as girls are not currently using school toilets and need adequate facilities before they can improve their menstrual hygiene practices.

1. **Background of the Project**

The Ritu Programme is a joint initiative of Simavi, RedOrange, and TNO and is implemented in close collaboration with local partner organisations in Bangladesh. The overall impact envisioned by the programme is to improve the Menstrual Health (MH) of women and girls, which allows them to increase their social and economic participation and thereby both directly and indirectly improves their health and wellbeing. Menstrual health is a multi-facetted issue and so are its solutions. In order to improve the MH for girls and women in Bangladesh, a multi-pronged approach has been proposed with the aim of raising and creating awareness on MH, improving access to MHM products and facilities, and providing a supportive environment for MH. The programme works towards achieving its impact through the following outcomes:

Outcome 1   –   Increased knowledge and improved attitudes and practice on menstrual hygiene of girls, boys, men and women

Outcome 2   –   Increased commitment towards MH by the government and civil society in Bangladesh

Outcome 3   -   Girls have access to better MHM facilities at schools and affordable and biodegradable sanitary napkins.

The Ritu programme is designed and implemented following an Evidence Based Programing approach. The selection of interventions is based on an analysis of existing evidence[1] and programme evaluations and a high quality needs assessment (Newbury, 2016). Simavi is working with the Impact Centre of the Erasmus University (ICE) and Maastricht University - in short, the research team - to evaluate the programme. Using a Clustered Randomised Controlled Trial (RCT) and progress monitoring, the impact of the programme on school attendance and performance, well-being during menstruation, gender equality, and sexual reproductive health rights (SRHR), outcomes for girls aged 11-13 is measured. The study aims to assess the effectiveness of
A) The basic programme
B) The basic programme combined with community level education for parents

The basic programme is school-based. Each school receives the following sequence of interventions:

1. Each school receives a day of school campaign to introduce the Ritu programme.
2. Via a budget tracking process, schools realise and manage MHM-friendly toilets.[2]
3. Per school 10 teachers and the headmaster are trained on a curriculum, which includes MH, SRHR and WASH elements. It is believed this is necessary to create an understanding and a supportive environment for girls but also for teachers to be able to effectively teach these topics. Designated teachers are trained specifically on teaching the curriculum to students in grade 6, 7, and 8. Focusing on understanding the context and gaining didactical skills to teach sensitive topics.

In addition to the basic programme, schools in the treatment B group also include parents[3] with the following interventions that are sequenced after the school interventions:

1. Parents receive educational sessions based on the curriculum with MH, SRHR and WASH elements. The focus is on substituting existing taboos with factual information to change social norms related to menstruation.
2. Take home kits containing visuals and information on MH are given to parents and other household members.
3. Health works are trained to provide correct information on MH.

There are 149 co-education schools participating in the Ritu programme. They are located in the Netrokona district of Bangladesh. Each school (i.e. each cluster) has been randomly assigned to treatment arm A, treatment arm B, or a control group. The control group will not receive any intervention. Data will be collected at three time points: baseline (winter 2017), midline (winter 2019, 3 years post-baseline)[4], endline (winter 2021, 5 years post-baseline). The RCT will measure changes between the different treatment groups over time for the key impact areas.[5]

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1. Existing evidence demonstrated the need for WASH facilities to be in place for girls to practice newly learned behaviour. We have therefore carefully sequenced our interventions, and the budget-tracking process, to realise improvements to school toilets, will start before the teacher training begins
2. This means toilets are easily accessible for girls, have clean water, soap, discreet waste disposal and sufficient space for girls to manage their menstruation.
3. Parents living in the same village as parents from group A or controls schools are excluded from this treatment to avoid spillovers.
4. The dates for the midterm and endline are susceptible to change
5. For more information about the RCT study please Simavi

1.1 Baseline Methodology

A detailed questionnaire, for girls, was developed by the research team to collect baseline values as part of the RCT. The sample for the baseline is as follows.
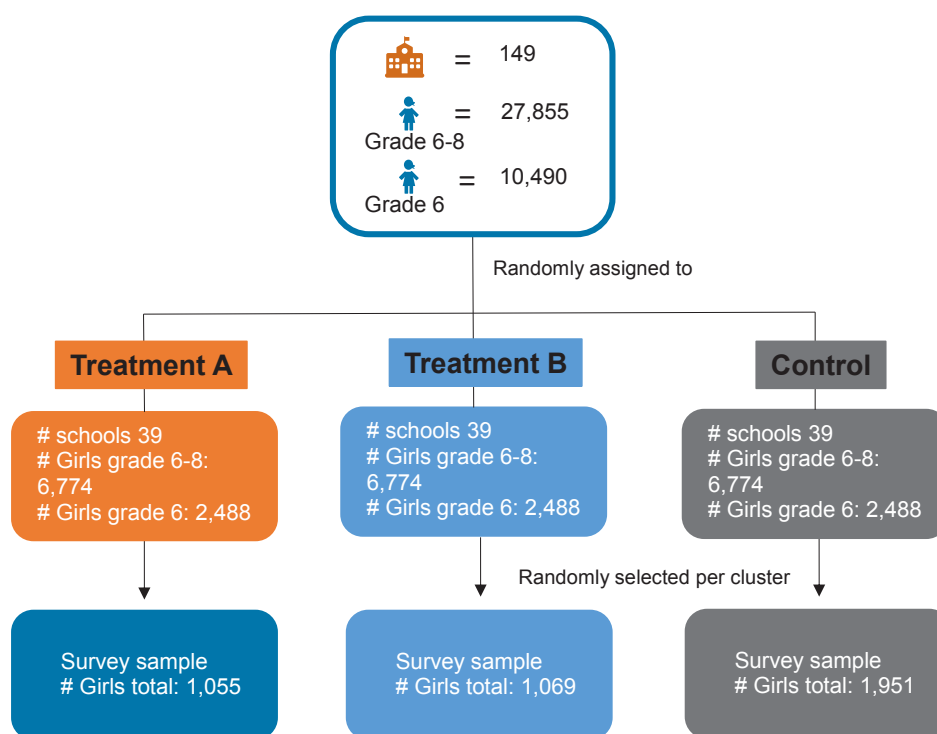
The questionnaire has been adapted as much as possible to the respondents by, making sure that phrasing was context appropriate, attention span was increased by using dolls, and reducing social desirable answers by using visual cards that girls could point at instead of saying their answer out loud. The baseline survey was conducted by CBSG[6] during January and February 2017. Six teams totalling 31 female enumerators randomly sampled 27 girls per school to complete the tab-based questionnaire. No major problems were reported during data collection.[7]

1.2 Baseline insights report

This report aims to provide a summary of the baseline findings. These findings give insight into the initial situation of the areas before any Ritu interventions have taken place. The research team is currently undertaking a detailed analysis of all the data and is conducting statistical testing on the different treatment groups. This report, therefore, does not focus on the three groups separately but instead provides an overview of key findings and general trends from the baseline data. The report is structured around findings under the programmes' relevant intended outcomes and impacts.

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6. For more information see http://cbsg-bd.org/
7. More detailed information can be found in the Data Collection Completion Report

1.3 Who are these girls?

First, it is important to understand what we know about the girls in the baseline survey by analysing general demographic and economic findings. In total, 4046 girls participated in the baseline survey from 149 schools in the Netrokona district, on average 27 girls from each school. In case not enough girls could be sampled from class 6, girls from class 7 were surveyed this happened in 165 cases. The following table shows a breakdown of the survey participants by treatment type.

	Control schools	Treatment A	Treatment B
Number of girls	1992)	1055	1069
Mean age	11.25	11.17	11.13
Mean PPI	40.74	39.33	42.29

There is a balanced distribution of mean age and mean level of poverty between the different groups showing that the randomisation process worked and groups are equal on these observable variables at baseline.

1.3.1 Poverty levels

The evaluation made use of the Progress out of Poverty Index® (PPI®), which is a poverty measurement tool. Using the answers to 10 questions about a household's characteristics and asset ownership a score is computed to ascertain the likelihood that the household is living below the poverty line, taking the poverty line of $1.25 a day. A score of 40-44 indicates a 40.8% likelihood to be below this line and thus to live in extreme poverty (and 80% likelihood to live under the $1.75 dollar a day line). This figure reflects PPI's report on Sylhet (the neighbouring province) where a 49% chance of falling below the $1.25 a day line was found (Schreiner 2013).

2. **Results per outcome**

2.1 Outcome 1: Increased knowledge and improved attitudes to and practices for menstrual hygiene among girls, boys, men, and women

This section of this report assesses the baseline data related to outcome 1 of the Ritu programme, specifically it presents information on the girls' current levels of knowledge on menstruation, their practices in relation to MH, attitudes towards menstruation and communication with others about these issues.

2.1.2 Knowledge

The Ritu programme is designed to address fundamental barriers to good MH one of these is limited knowledge. To increase knowledge the programme is a training curriculum was developed for teachers and will conduct awareness raising sessions with parents with the aim of ensuring that accurate information is provided to girls on MH. The baseline specifically, asked questions to measure current levels of knowledge on menstruation and MH. The findings show that overall girls lack information about menstruation. 66% of girls, who have reached menarche (n=1359), did not know what menstruation was when it began. Additionally, of the 2687 girls who had not yet started their menstruation, 57% said they did not know what menstruation was.

To assess the specific level of current knowledge about menstruation, the girls were asked a set of five questions. The answers have been combined to give an overall composite score (O-5) for knowledge on menstruation; a score of 5 signifies they were correct in answering all the questions. These questions were not asked to girls (n=1532) who said they had never heard of menstruation, these girls were thus given a score of O. In total the mean score was 1.9. Demonstrating a very low level of knowledge at baseline. However, just focusing on the girls who answered the questions the mean raises considerably with an average score of 3.O7. Although only 14% of these girls answered all five questions correctly.

% of girls who correctly responded to the statement

TEKST INFO ONVOLLEDIG

Started MP   Not started MP
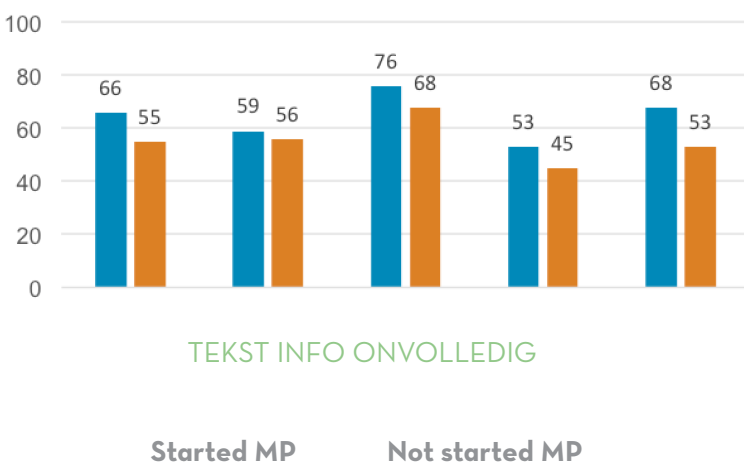
It is important to note that the girls who have already started their period had an advantage in getting the questions right because all but one of the answers could be deduced based on their own practical experience with menstruation. For example, in the first question, the girls were provided with two statements about the age of menarche the false one said that girls got their period as soon as they turned 13. As the average age of menarche was 11, for the sample, those girls who already started menstruation could more easily deduce the right answer. The findings back this hypothesis, as chart 1 shows the girls who already have started their menstruation were more likely to answer the questions right than those who hadn't.

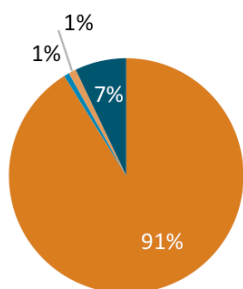The only question which specifically asked about knowledge that could not easily be observed from practical experience tested understanding of the connection between menstruation and pregnancy. This question received the largest amount of wrong answers with 47% of girls who have started their menstruation and 55% of girls who are yet to experience menstruation saying there was no connection between pregnancy and menstruation.
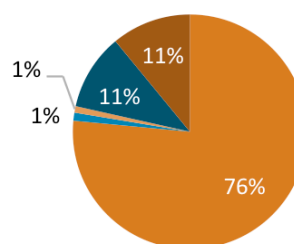
2.1.3 Practices

Poor access to information and WASH facilities impedes good MHM practices. The Ritu programme aims to improve MHM practices through first improving WASH facilities and then creating an enabling environment in the school and the community to support girls to practice good MHM. The survey asked specific questions about MH practices, to the 44% of the sample that had started menstruation to obtain baseline data on MHM practices.

As charts 2 and 3 show whilst cloth is the most dominant type of material used during menstruation there is slightly higher percentage of girls using sanitary pads at school than at home.

Type of sanitary product used at home

Type of sanitary product used atschool

- Cloth
- Toilet paper
- Only underwear
- Sanitary pad
- Not applicable

Home chart: 91%, 7%, 1%, 1%, 1%
School chart: 76%, 11%, 11%, 1%, 1%

Interestingly 11% answered 'not applicable' when asked which sanitary product they used at school, this may imply that they do not attend school when menstruating. In the future surveys, we will add a follow-up question to those girls who answer 'not applicable' to confirm this hypothesis.

88% of girls reported that during their last menstruation they washed the material they used to catch menstrual blood. Of those that didn't (and weren't using sanitary pads) the most common reason given for not washing the material was that they found it too disgusting. Those that did launder their cloths reported doing so frequently, 78% said they washed it at least twice a day. 85% said that they used soap when washing their cloths, which is a positive finding showing a level of knowledge about good sanitation practice. Despite this 54% of girls that washed their cloths dried them in their rooms, another private place or inside a hidden place such as a drawer. Although the majority of girls are practising good MHM in relation to frequent washing, studies have shown there is a higher risk of vaginal infections when clots are dried inside, as they often remain damp (Mathews 1995).

Finally, girls were asked about their confidence in handling menstruation both at home and at school. As the graph shows there is a vast difference between feelings of confidence at home and at school.

Confidence in handling menstruation

School: Not confident 55, Confident 2
Home: Not confident 45, Confident 98

- Not confident
- Confident
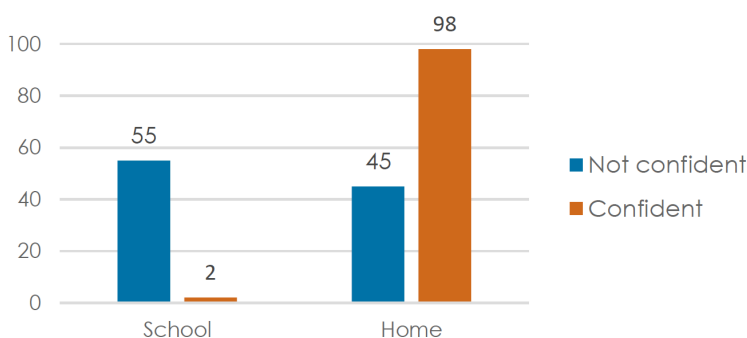
2.1.4 Communication

A lack of knowledge stems from a lack of information about menstruation, the Ritu programme's interventions aim to improve the information that girls receive through connected strategies targeted at various stakeholders. The baseline assesses current channels of communication which the girls use to obtain information on menstruation and MHM. The survey shows that 78% of girls do not feel comfortable talking about menstruation in general.
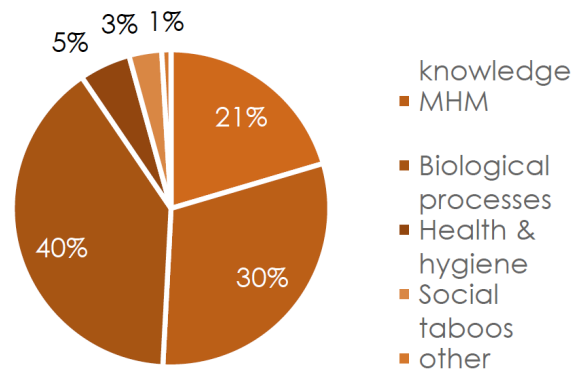
Mother's and sisters are the primary sources of information about menstruation for most girls, 55% of girls, who had heard of menstruation, first found out about it from their mother or sister. Despite this only 8% of girls had spoken about menstruation to their parent or elder member of the household more than once or twice and just 3% of girls to their siblings. 97% of girls, who had heard of menstruation, had never spoken to their teacher about it.

The baseline also gains insight into existing levels of knowledge and practices by asking girls what questions they would like to ask a nurse about menstruation. The results show interesting insights into their gaps in knowledge. The answers were analysed and then through an open coding process categorised into questions about the biological process of menstruation; Health and Hygiene related to menstruation; menstrual hygiene management; and social taboos surrounding MH. Questions asking what menstruation was were placed in the 'no
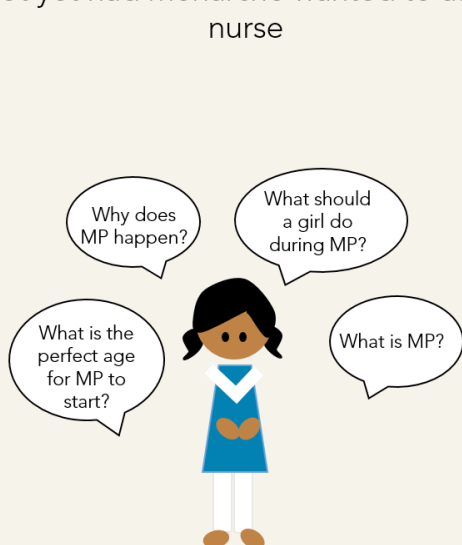
knowledge' category and any remaining questions were categorised as 'other'.

The 2687 girls who had not reached menarche were most likely to ask a question related to the biological process of menstruation, as chart 5 shows 34% of questions were classified into this category. The most common type of question in this category was 'Why does menstruation happen?' This question indicates a fundamental lack of knowledge as to the biological reason for menstruation. The next most common area was Menstrual Hygiene Management with 30% of questions falling into this category. The most frequent question was a version of "what should a girl do during menstruation?" highlighting the lack of awareness on MHM.

Questions girls who have not started menstruation want to ask a nurse, by category

- knowledge
- MHM
- Biological processes
- Health & hygiene
- Social taboos
- other

Most common questions girls who had not yet had menarche wanted to ask a nurse

Why does MP happen?

What should a girl do during MP?

What is the perfect age for MP to start?

What is MP?

Most common questions girls who had started their MP wanted to ask a nurse

Why does pain happen during MP?

What steps should I follow during my MP?

What materials are most useful to catch MP?

Why does MP happen?

Questions girls who have started menstruation want to ask a nurse, by category

- No knowledge
- MHM
- Biological processes
- Health & hygiene
- Social taboos
- other
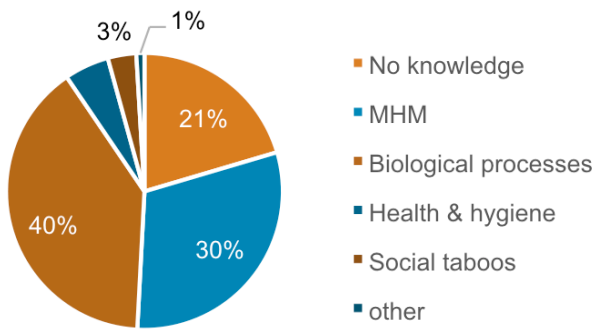
Moving to the girls that have experienced menarche the most common category was Health and Hygiene with 44% of questions relating to this area. The overwhelming majority of the questions girls wanted to ask in this category were related to pain and pain management. This is not surprising, pain was the most common symptom which girls reported experiencing during menstruation, with 72% suffering from this. The most common question in this category was 'why does pain happen during menstruation?' Again this reveals important insights into the girls' current levels of knowledge, as it shows a fundamental lack of understanding of the biological process of menstruation.

Overall the baseline data demonstrate that the girls have limited knowledge about menstruation. Those that have started menstruation have gained some knowledge, but mainly about the practicalities of MHM and not the biology of menstruation.

2.1.5 Attitudes

Negative attitudes towards menstruation create barriers to accessing knowledge and improving MHM practices. The Ritu programme's holistic approach tackles negative attitudes through creating an enabling environment to support girls' MH, engaging men, boys, women and government workers on topics on MH, SRHR and WASH.

Gender equitable norms

Gender discriminatory attitudes can place girls' needs behind those of men and boys so their voices are less likely to be heard and their health and education less likely to be valued. This can impact on good MH as it may minimise investment in sanitary products and MHM friendly WASH facilities. The questionnaire asked girls their views on eight statements related to gender equality attitudes. The girls were asked to rank their level of agreement with the statement from a scale of completely true (1) to not at all true (4).

Mean gender equitable attitude score (1-4)
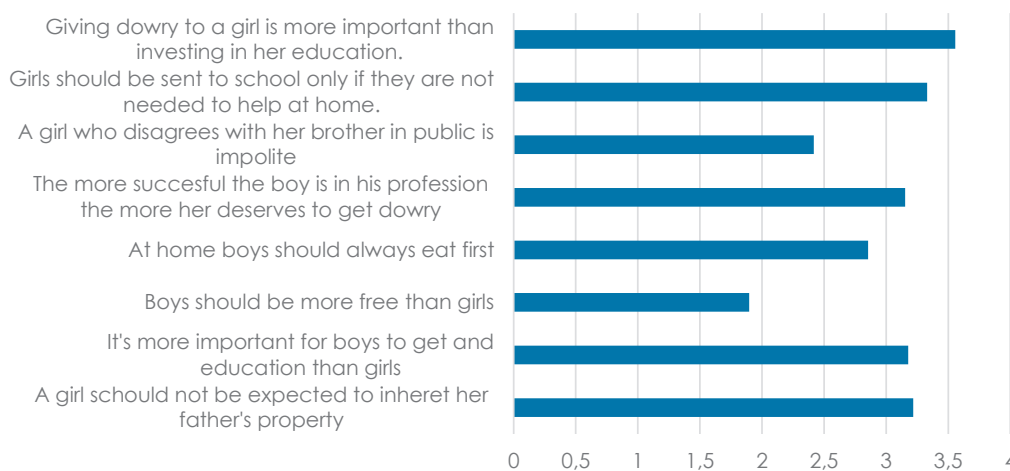
Graph 7 shows the mean score for each question and demonstrates that girls generally held positive views on gender equality. The only area where girls were in total disagreement, with each other, was regarding the statement about it being impolite for a girl to disagree with her brother in public, 50% of girls felt that the statement was fairly or completely true and the other 50% felt it was somewhat or not at all true.

Social taboos and norms surrounding menstruation

Social taboos can restrain girls' freedom during menstruation and impede the realisation of safe MH practice. The Ritu programme aims to address taboos surrounding menstruation through a mass communication programme, as well as capacity building on MH with parents, teachers and health workers. To understand how taboos affect girls behaviour during menstruation the baseline survey asked girls who had reached menarche to positively or negatively respond to questions about the activities they do and those that they avoid whilst experiencing their menstruation.

The most commonly avoided activity was related to religious worship; almost all (96%) of girls avoided being in a sacred space or conducting religious activities (including touching a religious book). This triangulates with findings from the needs assessment which found that mothers and fathers regarded this as the most important prohibition during menstruation (Newbury, 2016).

The next activity that girls were most likely to restrain from was physical exercise with 76% of girls saying this and 73% saying they refrained from playing with others. This abstention may occur because of the girls' own comfort as well as existing social taboos.

The third most common activity to abstain from was socialising with men and boys. 68% of girls also refrained from being near men and boys and 69% would not sit where a man or boy had been sitting.

Girls were also asked about food avoidance as strong attitudes emerged about diet taboos in the needs assessment (Newbury, 2016). The baseline data show that 59% of girls avoided white foods such as (banana, egg, milk) and 53% avoided sour foods such as (fruits, olive, tamarind). Given that most girls are living in poverty then avoiding high protein foods such as egg and milk is potentially damaging to their health and development.
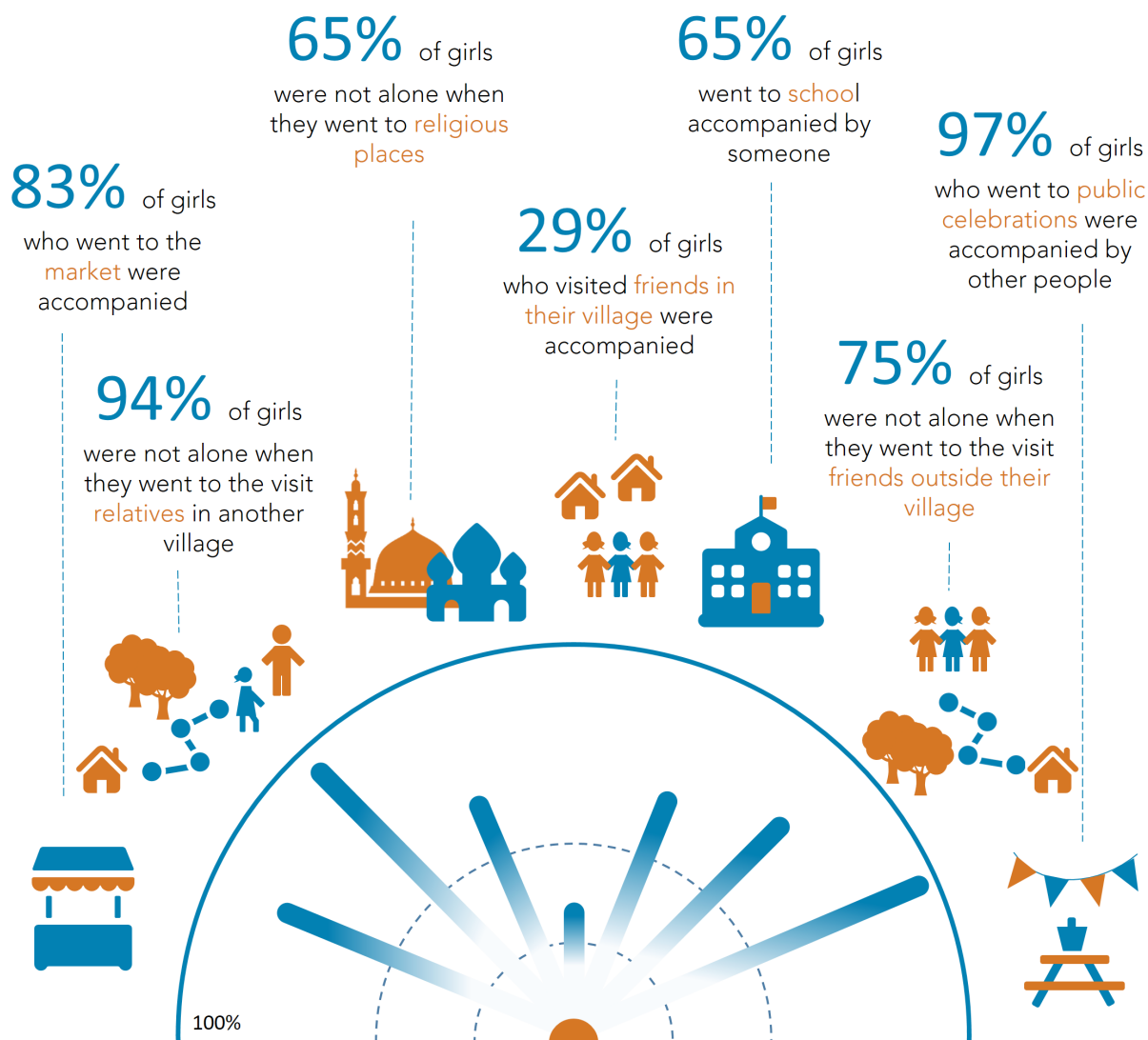
Mobility

The Ritu programme notes the importance of mobility as an indicator of a girls' wellbeing and level of empowerment, especially in relation to school attendance. The baseline, therefore, measures the current mobility of girls by asking them about potential places they have visited in the last month.

Only 35% girls went to school on their own with most (86%) travelling there with friends. Beyond the school girls were unlikely to have visited other places. For every other location, a majority of girls responded that they had not been there in the last month. Only 5% of girls had visited a friend in another village than their own. The following table shows the limited mobility of girls beyond school. Frequency was categorised and given a numerical value where never = 0, 1-5 times = 1 and >5 times =2, therefore, the highest mean is the most frequently visited place. Not one location, even reached a mean of 1.

	Market	Relatives outside the village	Friends inside the village	Friends outside the village	Public celebrations	Religious places
Mean	0.517	0.389	0.376	0.046	0.126	0.431

As graph 8 shows, in general, the girls reported not going anywhere alone, in fact, the only place that a majority of girls went alone was to visit a friend who lived in the same village as them. The lack of independence may explain the low frequency of which they visited locations, as they need to rely on other people to accompany them. Girls are accompanied everywhere by family members except to visit friends and go to school where they go together with friends. We will include a question about boy's mobility in the midline and endline to compare mobility.

65% of girls were not alone when they went to religious places

65% of girls went to school accompanied by someone

97% of girls who went to public celebrations were accompanied by other people

83% of girls who went to the market were accompanied

29% of girls who visited friends in their village were accompanied

94% of girls were not alone when they went to the visit relatives in another village

75% of girls were not alone when they went to the visit friends outside their village

100%

2.2 Outcome 3 Girls have access to better MH facilities

The Ritu programme's holistic approach recognises the importance of improving access to WASH facilities as the first step in improving knowledge, attitudes, and practices on MH. The initial programme interventions are targeted towards ensuring that toilets are MHM friendly, meaning they are functional, single sex and are equipped with running water, soap, a bin and enough light. The baseline questionnaire asked girls about the WASH facilities in both their home and schools.[8] This will allow us to track the girl's perceptions of improvements over the course of the programme in each treatment area.

2.2.1 WASH facilities in schools

52% of girls said that there were two toilets they could use at school and 39% said there was only one, overall the mean number of toilets was 1.69. One of the Ritu partners, DORP, conducted an assessment of the toilets in 168 of the schools that were mapped prior to the final selection of schools. The results of the mapping triangulate with the girls' observations; 64% of schools had two toilets that could be used by girls and 26% had one toilet, overall the mean number of toilets was 1.94. DORP calculated the student to toilet ratio, on average it was 179:1 which is far below the UNICEF/WHO guideline standard for student-to-toilet compartment ratio of 25 girls per toilet compartment.[9]

8. MHM friendliness score guidelines for toilets are being developed by one the programme partners, for ongoing monitoring of WASH facilities.
9. WASH in Schools Monitoring Package, Unicef, 2011

As the diagram shows overall the majority of girls report that toilets are not MHM friendly as they lack soap and bins. Despite this 89% of the girls reported feeling comfortable using the toilet at school. However, 32% of girls (who have started menstruation) said they did not use the toilet at school when they are on their period. Furthermore, 75% reported that they do not change their pads or cloth at school. Whilst it is possible that a pad may not leak during a school day, it is unlikely a cloth will be able to sufficiently absorb. It takes less than 30 minutes to go from home to school by foot for 82% of girls.Therefore, they may go home to change their cloths and return, although they will certainly miss some of the school day.

59% of girls said there was no soap in the toilets

26% of girls said there was no water inside the toilets

16% of girls said the toilets were not single sex

56% of girls said there was no bin in the toilets

2.2.2 WASH facilities at home

78% of the girls said that they had a private toilet at home. This answer reflects the situation represented in the official government statistics (Ministry of Local Government, Rural development and co-operatives 2016).

Despite the high levels of access to toilets, the girls reported an inferior level of MHM friendliness in their home toilets. As the diagram shows most girls reported that their toilets are lacking in water, soap and a bin for disposal. The majority of girls said there is no water inside the toilet and therefore it is not unsurprising that there is also no soap. The question may have caused confusion as it asked about the presence of soap in the toilet, not by the water source. In the future questionnaires, we want to include an additional question to ask about access to soap at the nearby water source.

64% of girls said there was no soap in the toilets

74% of girls said there was no water inside the toilets

87% of girls said there was no bin in the toilets

Baseline data related to Impact areas

The Ritu programme envisions that with improved knowledge, access to WASH facilities and support from key stakeholders, the girls will have improved health outcomes from better MHM; improved psychological and social wellbeing, greater levels of empowerment, better attendance in school, greater school performance and lower dropout rates. As well as assessing baseline levels related to the programme outcomes the baseline survey also measures the current situation in relation to the main areas of impact that the programme aims to achieve. The Ritu programme measures impact by the following indicators

- Increased school attendance
- Improved average school performance
- Reduced drop-out rate (due to reasons of marriage and pregnancy)
- Increased well-being of girls
- Reduced incidences of self-reported vaginal rashes
- Increased levels of empowerment/gender equality

This section of the report details the baseline situation in relation to these high level impact areas. The baseline specifically covered school attendance, wellbeing and self-reported vaginal rashes. Attendance records and data on average school performance and drop-out rates comes from the official attendance registers and does not form part of the baseline survey questions.

2.3.1 Attendance

All of the interventions of the Ritu programme are designed to create an enabling environment for MH which is hoped will reduce barriers that keep girls at home and thus lead to improved school attendance. The baseline data shows that 81% girls miss between 1 and 5 days of school in a typical month. The girls provided multiple reasons why they could miss school the most frequently mentioned ones were, household work, bad weather and caring for elderly or sick family members.

Missed school days per month
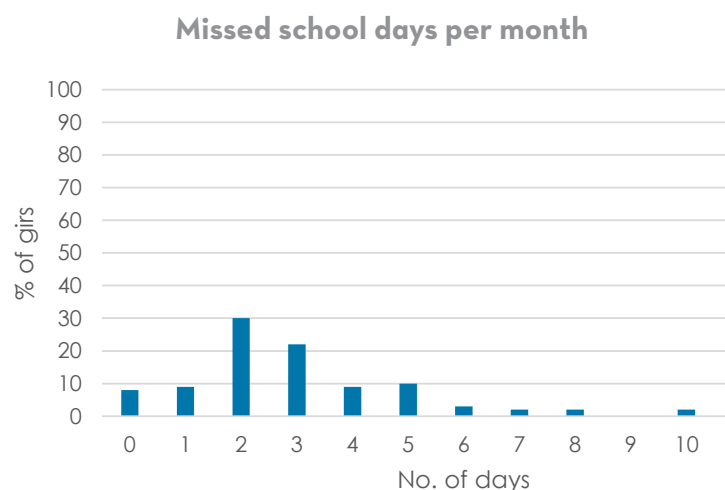
There is a statistically significant difference between the mean number of school days missed by girls that have already started their menstruation (n=3.4) and those that haven't (n=2.96) according to a two-sample test with equal variance conducted in Stata where p=0.00054. It is not possible to draw conclusions about causality because the test doesn't control for other factors which may cause this difference; however, this will be an important figure to track over the course of the programme, where hopefully this difference will reduce in the treatment areas. 42% of girls, who have reached menarche, reported that menstruation is one of the reasons they miss days of school. 36% missed school last time they menstruated and of this 53% said, as a result, they missed 2 to 3 days of school.

2.3.2 Rashes

Another indicator for the programme's overall impact on MH is the incidence of self-reported vaginal rashes, as these are a sign of poor MHM. The baseline found that only 11% of girls experiencing their menstruation reported to having had vaginal rashes. This figure is surprisingly low given the high level of girls drying menstrual cloths inside, as wet cloths have been found to cause vagina rashes (Sumpter and Torondel 2013). Whilst the figure for irritation was slightly higher at 21% it still is lower than expected given the lack of hygienic conditions in the toilets at home and school. 57% of girls did note that they have suffered from a foul odour in the past. It is possible that the answers suffer from bias as the girls were embarrassed at sharing such information. Another explanation for such low occurrence of rashes is due to a lack of knowledge about menstruation and MH, making the girls unable to identify that an irritation or rash was associated with poor MHM.

2.3.3 Wellbeing

The last impact area assessed in the baseline survey is psycho-social wellbeing and levels of empowerment. The needs assessment found that MH is shrouded in secrecy and shame where girls are restricted in their activities because of associations with uncleanliness (Newbury, 2016). Poor menstrual health is therefore considered in the Ritu programme a problem in terms of both physical and emotional wellbeing because the physical discomfort and health hazards get doubly burdened by stress, anxiety, and trauma that are caused by social taboos and restrictions.

The baseline uses indicators developed by Oxford Poverty & Human Development Institute (OPHI) in their work on measuring poverty to assess wellbeing and empowerment. For the baseline survey, a number of questions were selected from OPHI's suggested internationally comparable indicators survey modules (2008) in three core areas

1. **Empowerment/agency;**
2. **Shame and humiliation; and**
3. **Psychological wellbeing.**

Shame

Shame is an important measure of wellbeing being linked to stigma and a sense of worthlessness and powerlessness. The levels of Shame proneness scale measures how common feelings of shame are for the respondent and will be used to track changes in psychological wellbeing of the girls over the course of the programme. Girls were asked to rank how often they feel certain emotions associated with shame (embarrassment, self-consciousness, humiliation, stupid, helpless and laughable). The scale considers someone to be classified as having shame in an emotion if they ranked themselves as always, almost always or often feeling that way.

% of girls classified as having shame per emotion
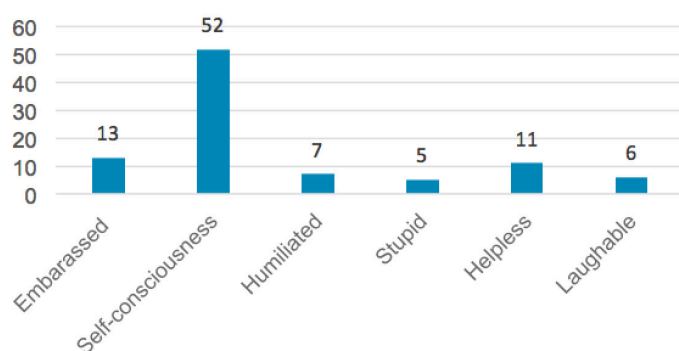
As chart 10 shows there is a stark difference between the emotions. 52% of girls are classed as having shame in relation to the emotion of self-consciousness. This emotion is particularly important for the Ritu programme and may be the most important emotion to track over time. However, only 13% reported feeling embarrassed almost always or often yet 45% of girls who had their period said they had felt embarrassed when drying their sanitary pads, suggesting a degree of recall bias.

The OPHI indicator scoring then classifies a person as feeling shame overall if they have shame in two or more of the six emotions. Only 20% of girls can be classified in this way.

External humiliation

External humiliation is similar to shame but it importantly involves interaction with someone or something else. It is specifically important to measure in the context of the Ritu programme because the interventions are specifically working with people who have the necessary proximity and standing to humiliate girls. In the OPHI Indicator external humiliation is measured by the following questions: to what extent do you feel that people treat you with respect? and to what extent do you feel that people treat you unfairly? If the answer to the first question is occasionally, rarely or never, or the answer to the latter question is almost always or often then the subject is classed as suffering external humiliation, 28% of the total sample can be categorised this way.

Empowerment and agency

Empowerment definitions vary but fundamental to the concept is the idea shifting types of power. Rowlands (1997) categorises power into four types, namely, power within, power to, power with and power over. This section analyses the extent to which girls[14] feel they have 'power within'. This type of power encompasses girls' awareness and consciousness of their situation and desire for change. It was chosen to assess the underlying assumption that greater access to MHM friendly WASH facilities and an enabling environment of positive communication about MH has an impact on the girls' overall levels of empowerment.

The first indicator used focuses on understanding self-acceptance and autonomy, which are important aspects of empowerment, by asking girls if there are things they want to change I their lives. 70% of the girls want to change things about their lives. When asked what they wanted to change, the

10. Note: As OPHI's scales are developed for adults the questions were slightly altered to make sure that that the girls would understand the question. When translating to the local language and context we cannot guarantee that any original phrasing was lost in translation.
11. http://www.ophi.org.uk/tag/empowerment/
12. http://www.ophi.org.uk/research/missing-dimensions/social-connectedness/without-shame/
13. http://www.ophi.org.uk/research/missing-dimensions/psychological-wellbeing/
13. This section specifically focuses on the 3910 girls interviewed from class 6

most common thing was related to their education, with desires to do better at school, have more support with their education and get good results.

Empowerment was also measured using a ladder tool, which assesses the girls' own perceptions of their empowerment and its relative position in regards to their peers. The girls were asked to rate themselves on a ladder with 10 steps. The first step, represented children who have no choices or freedom to express their opinions and needs, and on the highest step, the tenth step, stand children with the most ability to express their opinions and follow their dreams.

% of girls per ladder rung
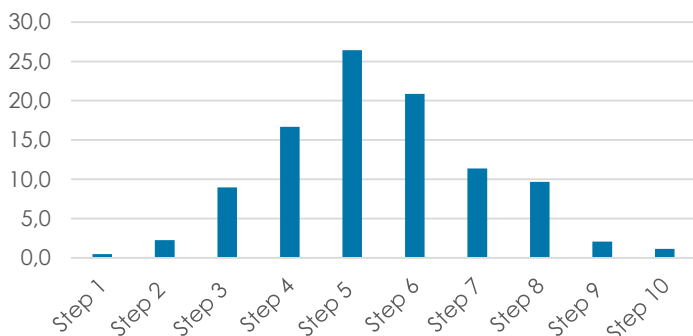
Overall as the chart shows the girls were most likely to rate themselves as having an average level of freedom the mean answer was 5.44. The OPHI ladder question categorises a person as having autonomy and control over their lives as individuals if they score themselves at step 6 or higher. Using this classification 45% of the girls can be said to have autonomy. This is a surprisingly high level for the baseline. Furthermore when asked what level they will be at in five years' time 70% of girls said they will be at level 9 or ten. The girls on average will be 16 at that point; in a context where early marriage, high school dropouts, and teenage pregnancy are common the belief that they will be fully free to make choices brings into question the validity of their self-assessment. Whilst this does not negate the validity of this question being used during the programme we would like to include qualitative measures into the midline to interrogate any reported changes in autonomy.

Psychological wellbeing

The baseline questions on psychological wellbeing measure the areas of autonomy and relatedness to understand how well the psychological needs of the girls are being met and what effect this has on their ability to exercise positive MHM practices and school attendance.

The girls were asked to rate how true, in their experience, they found seven statements to be. Good wellbeing is said to exist if the girls responded to at least four statements as fairly or completely true.[15] As chart 12 shows, the statement which received the most fairly or completely true responses was 'people in my life care about me' and the area where they were least likely to answer in this way was in freedom to decide how to lead their lives (30%).

% of girls responding fairly of completely true per statement

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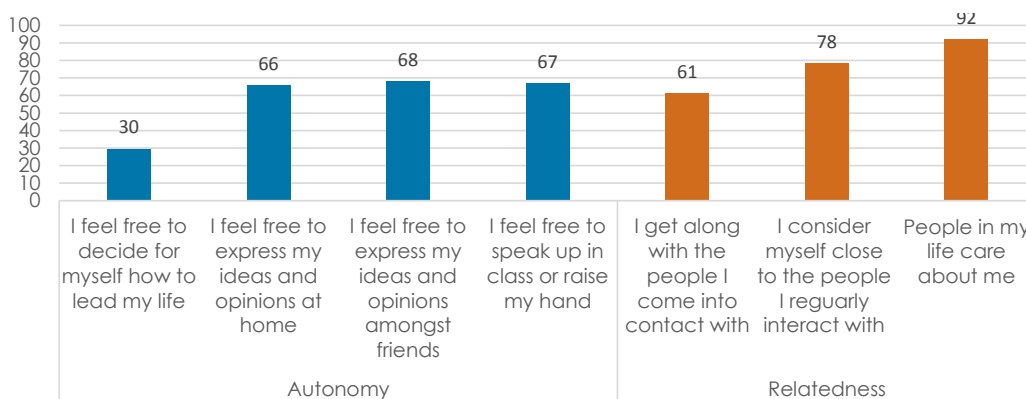
15. This calculation is adapted as the original indicator from OPHI had three areas with three questions in each.

Completely true in at least four of the statements. Again this is a relatively high percentage, which may suggest social desirability bias, but it does show the importance of using a RCT to measure impact as this will allow the Ritu programme to understand if there are significant shifts in the different treatment populations rather than just measure the change from baseline, which could be quite minimal as the starting position is high.

Conclusion

There are no significant differences between baseline data for the key socio-demographic variables (age of menarche, and poverty level) across treatment and control groups. Therefore the groups provide us with good grounds to measure the impact of the Ritu programme interventions at midline and endline. The baseline survey is the first step in the journey to understand, through rigorous evaluation, how best to improve the lives of girls, especially their school attendance and performance, via an integrated Menstrual Health program.

The baseline findings reaffirm the logic of Ritu's interventions as they show the need for a holistic approach to improving MH due to the correlation between social norms, restrictions, and poor MHM practices. The data reveal a culture of silence on menstruation with most girls having no knowledge about MH until menarche starts. Even after it has begun very few girls have had multiple conversations about their menstruation. Furthermore, the high number of girls that restrain from certain activities during their menstruation indicates the level of importance placed on adhering to social norms and taboos. Not only do these taboos appear to have a large impact on girls' freedom during their menstruation they may also impact their nutrition, health, and wellbeing.

The survey results present a picture of a fundamental lack of WASH facilities in schools, which potentially impacts girls' school attendance during menstruation and overall MH. This is corroborated by the fact that those girls who have started their menstruation miss a significantly higher number of days a month than those that haven't reached menarche. difference between the This finding reaffirms the decision for the programme to first address the toilet infrastructure and then tackle education on MH.

The baseline data also highlights the need to make a number of small additions to the questionnaire and complement the survey process with qualitative methodologies to fully understand changes in the specific pathways. The baseline data found generally high levels of empowerment, most girls did not regularly feel that they were treated without respect, they rated themselves as having a medium level of freedom and reported to being able to express their opinions and ideas at both at home and school. These findings are at odds with the wider environment that is revealed from the baseline survey and we will, therefore, include a number of qualitative measures in the midline and endline evaluations to ensure that we understand changes in the more subjective areas such as wellbeing and empowerment.

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