Learning Through Play

An Evaluation of the Periodica Menstrual Health Education Intervention

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Executive Summary

Menstrual health is now seen as an important part of adolescent health, gender equality, and school participation. In India, even though more young people have improved access to menstrual hygiene products, many still face stigma, misunderstandings, and few chances to talk openly about menstruation. To help address these issues, the Social Policy Research Foundation (SPRF India) developed Project Periodica. This project uses a life-sized snakes-and-ladders game to get students talking, challenge myths, and encourage open conversations about menstruation for both girls and boys.

The first phase of the pilot ran from August to December 2025 in three government schools in Patna city, Bihar. Researchers used pre- and post-programme surveys with the same group of students to measure changes in their knowledge, attitudes, and practices regarding menstrual health. In total, 102 students took part in the evaluation.

The results showed that Project Periodica helped students learn more about menstrual health and encouraged more open and inclusive attitudes. Students became more willing to talk about menstruation, more accepting of boys participating in menstrual health education, and more knowledgeable about different menstrual hygiene products. Their knowledge about how to properly dispose of menstrual products stayed high throughout the programme.

The programme also helped reduce some common myths and stereotypes about menstruation. Many students no longer believed that menstruating girls and women are impure, and that menstruation means physical weakness, or that it signals readiness for marriage. There were also more positive attitudes about restrictions during menstruation and more support for girls going to school while on their periods. However, some beliefs, like dietary rules and certain religious or household restrictions, continued to be observed in some students.

Boys became more open to talking about menstruation, but they still had more misconceptions than girls in several areas. This highlights the need for programmes that include everyone and challenge stigma together, instead of treating menstruation as only a girls issue. The study also found that many girls still miss school during their periods, mainly due to physical discomfort rather than inadequate school facilities. This means that menstrual health programmes should go beyond just raising awareness or improving infrastructure.

Schools should have more supportive policies, and easy access to health services for young girls. These steps are important for reducing school absences related to menstruation. The results also suggest that participatory learning methods like Project Periodica can help students, especially boys learn more about menstrual health, make classrooms safer for discussion, and support fairer gender norms. The pilot also shows that when students learn through talking, working together, and playing, conversations about menstruation become more open, informed, and welcoming.

1. Introduction

> **“The question was left hanging in the air. No one responded immediately. Some students were gazing down, while others were glancing at the facilitators standing nearby. Menstruation was rarely spoken about like this in their school, not in classrooms, not outdoors, and certainly not through a game.”**

There is an amazing capacity that this one moment has in capturing a reality that extends far beyond a single classroom in Patna. Every month, nearly 1.8 billion people worldwide menstruate, yet along them there are millions who continue to do so without access to adequate information, supportive environments or the resources that are required or enable them to manage menstruation with dignity. Schools are the sites where many adolescents for the first time happen to encounter formal conversations about puberty and reproductive health, they therefore end up becoming the places where these challenges are particularly visible.

According to the WHO–UNICEF Global Report on Menstrual Health and Hygiene in Schools (2024) only 39 percent of schools globally provide menstrual health education, while also reporting that less than in one in three have facilities for the safe disposal of menstrual waste in girls’ washrooms. The report argues that effective menstrual health education depends not only on infrastructure but also in a large way on teachers who are equipped and willing to facilitate conversations and conjure up learning environments where menstruation can be discussed openly and without judgement.

In India, the consequences of the aforementioned gap are particularly steep. According to an estimate cited by UNESCO New Delhi, nearly 23 million girls leave school every year due to the lack of adequate menstrual hygiene management and the absence of supportive menstrual health education. While the estimate has become an important advocacy benchmark, it also opened an interesting avenue for conversation : there is a circular experience between Education and Menstruation.

It is within this context that the Social Policy Research Foundation (SPRF India) developed Periodica and later roped in the Pothi Patri Foundation to help with on-ground implementation in Patna, Bihar. Periodica responds to a challenge that conventional menstrual health programmes have otherwise often struggled to address. It has been seen that even in the face of expanding access to menstrual products, opportunities for adolescents to engage in open, informed and inclusive conversations about menstruation remain limited. Instead of relying on one-way awareness sessions, Periodica has reimagined menstrual health education to be a participatory learning experience that is centred around dialogue, collaboration, and play.

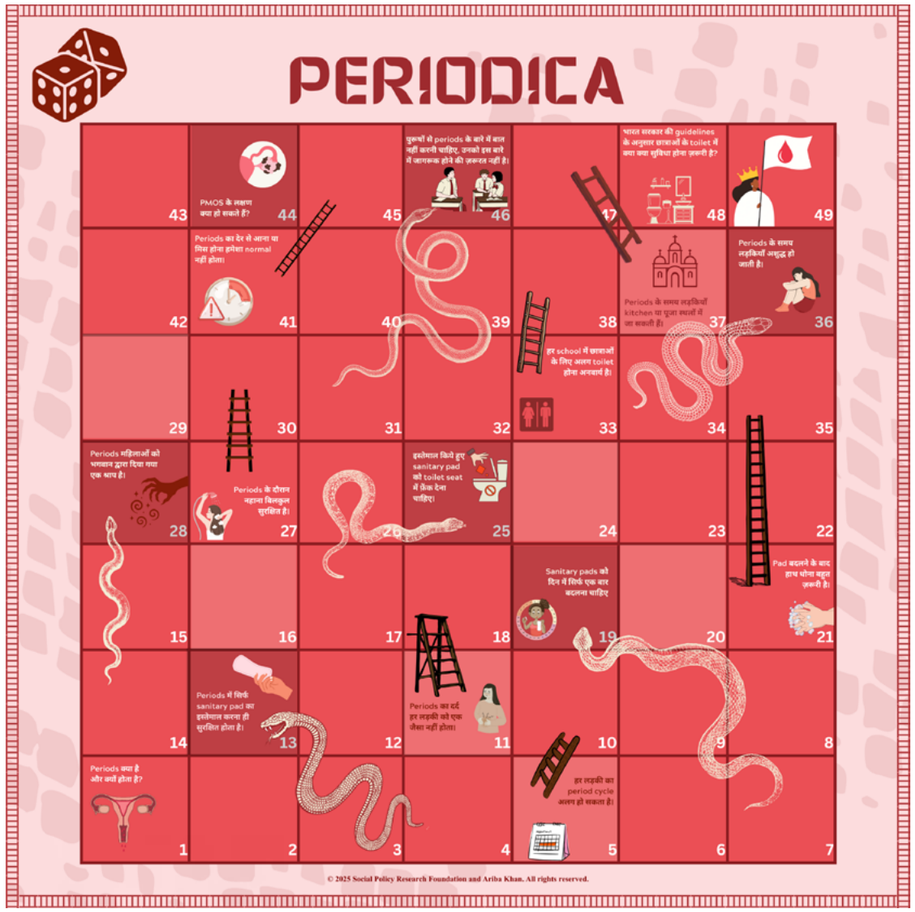


Image 1: Periodica game sheet

And all this done through a life-sized snakes-and-ladders game supported by facilitator-led discussions. Rather than beginning with a lecture, the sessions unfold through surveys, dialogue, and play, inviting students to reflect, respond, and engage at their own pace.

In the process, the programme creates a space where adolescents can question myths, exchange experiences, and engage with menstrual health in ways that feel less intimidating and more meaningful. The Phase I of the programme was implemented across schools between August and December 2025 utilizing a structured Monitoring, Evaluation and Learning (MEL) framework comprising baseline and endline assessments along with facilitator observations and other implementation reflections. Beyond measuring changes in knowledge, the pilot also sought to understand whether an interactive, school-based approach could strengthen menstrual health literacy, build confidence, and create healthy classroom environments where conversations around menstruation become both possible and normal.

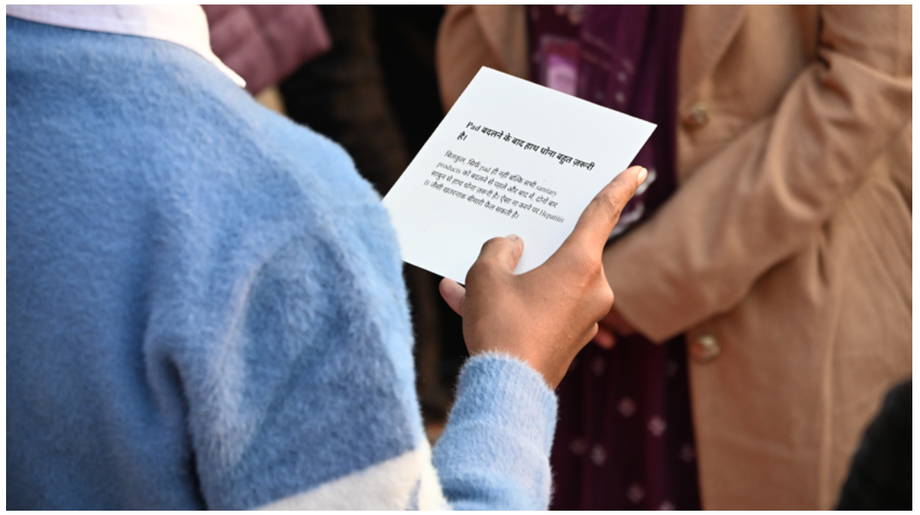


Image 2: A student reading aloud from a Periodica game card

This report presents the findings from that pilot. While documenting the opportunities, challenges and lessons that emerged during implementation, it also evaluates the outcomes of Periodica as a game-based educational intervention. It asks whether by changing how menstrual health is taught, one can also change how it is understood, discussed and experienced by adolescents. By doing so, this report seeks to contribute to the growing body of work on participatory approaches to menstrual health education and in turn offer insights for educators, practitioners, policymakers and institutions who are working to create learning environments that are friendly and inclusive.

Image 3: Students discussing the survey questions among themselves

2. Literature Review

Over the past one decade, menstrual health has moved from the margins of public health discourse to become an important policy priority in India.

Likewise, this shift has also been marked with substantial improvements in access to hygienic menstrual products. National Family Health Survey (NFHS-6, 2023-24) reports that 79.2% of women aged 15-24 years used hygienic methods of protection during menstruation. This marks an upward trajectory from the data recorded in NFHS-5 (2019-21); 77.6% and from the 57.6 % in NFHS-4 (2015-16) which in turn reflects the sustained improvement in product availability as well as government investment in menstrual health (International Institute for Population Sciences [IIPS] & ICF 2017,2021,2025).

Even though these improvements represent an important public health achievement, the national surveys also highlight an important limitation. The indicators which measure the use of hygienic menstrual products provide valuable information on accessibility but at the same time they fall short when one is to regard whether or not adolescents; both boys and girls understand menstruation and if they are comfortable discussing it. While increasing product use is essential, it does not necessarily translate into improved menstrual health literacy or reduced social stigma. With India actively increasing the accessibility to menstrual products, the policy conversation now must shift from ensuring availability to understanding how adolescents experience menstruation within their homes, schools and finally within their communities.

Contemporary studies have highlighted the importance of this shift. Analysing NFHS-5 data, Biswas et al. (2024) documented substantial inequalities in the 76.15% of the women that used menstrual health products across parameters like educational attainment, household wealth, media exposure and place of residence. In the same study, fewer rural young women reportedly used exclusive menstrual products (73.32%) than their urban counterparts (89.37%). The study highlighted that discussions with healthcare workers and access to information were associated with considerably higher levels of hygienic product use. Bihar and large parts of Uttar Pradesh were among the regions with comparatively levels of exclusive product use, supplementing the argument that improvements observed at the national level continue to mask significant geographical disparities elsewhere.

Menstrual health therefore, cannot be purely understood as an issue based only on product availability. It is rather better expressed through the border social and educational contexts within which adolescents learn about menstruation. Educational attainment in this case, repeatedly emerges as one of the strongest predictors of overall healthier menstrual practices while other avenues like media exposure, opportunities for discussions and access to reliable information are associated with better menstrual health outcomes. Studies like those of Nishisipa Panda et al. (2024) examining menstrual health practices across adolescents in India have identified knowledge, family communication and school based education as critical determinants of menstrual health behaviours.

Amongst the growing emphasis on education, schools as sites of menstrual health interventions have gained renewed attention. Schools in that sense, occupy a peculiar position because by virtue of their early reach to adolescents; they can be useful to plan interventions before these misconceptions become deeply embedded. Beyond merely providing factual information, schools in turn also shape peer interactions, social norms and therefore attitudes towards menstruation. Internationally however, reports suggest that schools frequently remain underprepared to fulfil this particular role, the WHO-UNICEF Global (2024) found that nearly 61% of schools worldwide don't provide menstrual health education while less than one-third had bins for menstrual waste disposal in girls' washrooms.

Even though infrastructure remains an important concern, the report argues that menstrual health education requires more than physical facilities. Teachers who are prepared to facilitate discussions, age-appropriate learning materials and school environments where menstruation can be discussed openly and without judgement are instrumental to the broader aims and aspirations. At the same time, most of the existing programmes have largely relied either on product distribution or one-time awareness programmes that prioritise information reception over active participation. While these initiatives do increase awareness, studies time and again have suggested that factual knowledge alone rarely challenges the stigma and discomfort associated with menstruation. Studies like those of Bandura (1977) and (Kolb,1984) involving social learning and experimental learning offer an alternate approach wherein emphasis is laid on active participation, discussion, collaboration and reflection as central to meaningful learning.

In the case of menstrual health, where more often than not; silence itself ends up working as a barrier, participatory approaches become central to the discussion as they create avenues and opportunities for adolescents to question misconceptions, build confidence and normalise conversations through shared learning experiences. Collectively, the body of knowledge suggests that strengthening menstrual health literacy requires educational interventions that move beyond information dissemination towards interactive models where dialogue and participation is encouraged towards building a supportive classroom environment.

3. Methodology

3.1 Study Design

The Periodica study was designed as a school based intervention to examine changes in knowledge, attitudes, and practices around menstruation among adolescent students in government schools. It followed a pre–post design: a structured baseline survey was administered before the intervention, and a comparable endline survey was conducted after a series of game based sessions on menstrual health. The focus was on tracking individual-level change for questions that were common across both rounds, rather than estimating population-level prevalence. The design was therefore centred on understanding how classroom activities shifted perceptions about menstruation, openness of discussion, and practical management of periods among the same group of students over time.

3.2 Methodological approach

The study primarily adopted a quantitative approach. Data collection relied on structured questionnaires at baseline and endline filled by the students themselves in the hard copies. The questions captured closed-ended responses on beliefs (for example, whether women are considered impure during periods, whether boys should talk about menstruation, and whether girls should attend school during menstruation), as well as self-reported practices related to absorbent use and disposal. These survey responses were then compiled in Excel and analysed using descriptive statistics and pivot tables to quantify change across rounds.

3.2.1 Sampling strategy and tools for data collection

The sampling strategy was purposive and school-based. The study covered grade 8th till 10th from three government schools in Patna city, Bihar. The target sample size was approximately 40 students per school, giving a total intended sample of around 120 students, with actual matched baseline–endline responses available for 102 students. Respondents were selected from the relevant classes in each school, and participation focused on students who were present during both the baseline and endline survey rounds and took part in the Project Periodica sessions. This matching was important for analysing individual-level change, since the core questions were asked twice to the same group of students.

Data collection tools consisted of structured paper or digital forms, which were later entered into Excel to create baseline and endline datasets. Initially, all responses from the field forms were transcribed into spreadsheet format. Once the raw data were entered, Python was used for cleaning and organising the dataset. This cleaning process involved identifying and separating extra entries in the baseline file that did not have corresponding endline responses, standardising variable names, and matching respondent names and codes across rounds to ensure that each baseline record was correctly paired with its endline record.

After cleaning and matching, the final datasets were analysed in Excel: pivot tables were created for each parameter to count the number of students who showed positive change, negative change, or no change between baseline and endline, as well as the number of cases with missing data. This approach allowed the team to systematically summarise shifts in attitudes and practices across multiple dimensions of public conversation, gender norms, school attendance, absorbent use, disposal methods, and expectations of facilities.

Image 4: Students playing the life-sized Periodica snakes-and-ladders

4. Results

The findings presented in this section examine the extent to which the Project Periodica intervention influenced students› understanding and perceptions of menstruation. Drawing on matched baseline and endline survey responses from 102 participants, the analysis explores changes in menstrual health literacy, gender norms, and attitudes towards menstruation. The section begins by describing the study sample before presenting findings related to school-based menstrual education, menstrual experiences, and changes observed across key indicators following the intervention.

4.1 Characteristics of the Study Sample

This section describes the demographic profile of the students who participated in the Project Periodica intervention and provides context for the findings that follow. Table 1 summarises the respondents' age, grade level, and gender distribution.

Table 1: Description of the Sample

Particulars	Obs	Mean	Std. Dev.	Min	Max
Age	102	14.69	1.01	13	17
Grade	102	8.76	0.69	8	10
Gender	102	1.28	0.45	1	2

A total of 102 respondents were included in the analysis. The mean value for gender was 1.28 (SD = 0.45), with values ranging from 1 to 2, where 1 = girls and 2 = boys. The respondents› age ranged from 13 to 17 years, with a mean age of 14.69 years (SD = 1.01), indicating that most participants were approximately 15 years old. Regarding grade level, participants were enrolled in Grades 8-10, with a mean grade level of 8.77 (SD = 0.69).

4.2 School Environment and Menstrual Health Education

Before examining the effects of the intervention, it is important to understand students' prior exposure to menstrual health education within their schools. Tables 2-4 present whether students encountered menstrual health content in their textbooks, and whether teachers discussed menstruation in the classroom, and the extent to which menstruation affected girls' school attendance.

Table 2: Menstrual Health Information in School Textbooks

Yes/No	Girls	Boys	Grand Total
No	15	12	27
Yes	56	14	70
Grand Total	71	26	97

Of the 97 students who responded, 70 said their school textbooks included information about menstruation, while 27 said they did not. By gender, 56 of 71 girls (78.9%) said their textbooks contained this information, compared with 14 of 26 boys (53.8%). Meanwhile, 15 girls and 12 boys said their textbooks did not include menstrual health information. These results show that while most students have menstrual health content in their school materials, some students in lower classes may not yet have been introduced to the topic.

Table 3: Teacher-Led Discussions on Menstruation

Yes/No	Girls	Boys	Grand Total
No	15	19	34
Yes	56	6	62
Grand Total	72	25	97

When students were asked if a teacher had ever talked about menstruation at school, 62 out of 97 said yes, while 34 said no. Among girls, 56 out of 72 (77.8%) said teachers had discussed menstruation, while only 6 out of 25 boys (24.0%) said the same. On the other hand, 19 boys and 15 girls responded that teachers had never talked about it. The results show a clear gender difference in classroom discussions about menstruation and is mainly directed at girls, while boys are often left out. This may lead to misunderstandings, stigma, and limited knowledge among boys. Including boys into the conversation can help normalise, de-stigmatize, encourage empathy, and create a more supportive school environment.

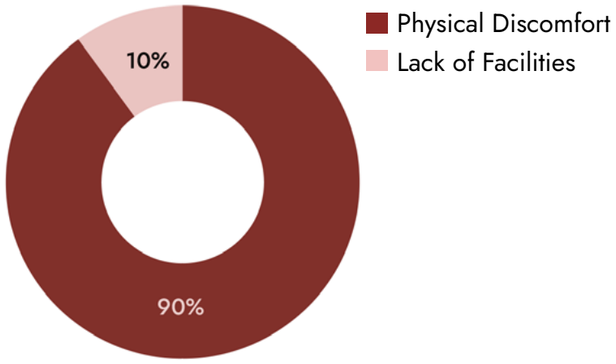
Table 4: School Absenteeism Due to Menstruation

Yes/No	Girls
No	7
Yes	59
Grand Total	66

Of the 66 Girls students who answered this question, 59 said they had missed school or classes because of menstruation, while 7 said they had not. On further inquiring about the reasons for missing school during menstruation, 57 girl students responded, out of which 51 (89.5%) said physical discomfort was the main reason, while only 6 (10.5%) cited poor school facilities as the main reason. The results show that pain, cramps, tiredness, and other physical symptoms are the main reasons for missing school, while problems with school facilities affect fewer students.

These findings suggest that improving menstrual hygiene facilities alone may not reduce absenteeism. Schools should also support pain management, provide health services and rest areas, and be more flexible for students with severe discomfort. Frequent absences can hurt learning and academic progress, highlighting the need for supportive school policies and menstrual health programs.

Graph 1: Reasons for Missing School During Menstruation



4.3 Changes in Menstrual Health Knowledge

This section examines changes in students' knowledge focusing on their understanding of appropriate menstrual hygiene products and their disposal. It compares baseline and endline responses of the participants.

Table 5. Participants' knowledge of appropriate menstrual product disposal methods at Baseline

Menstrual Product Disposal (Baseline)	Girls	Boys	Grand Total
Dustbin	60	9	**69**
Machine	1	0	**1**
Outside	2	0	**2**
Grand Total	**63**	**9**	**72**

At the start, participants already knew a lot about properly disposing of menstrual products. Out of 72 responses, 69 (95.8%) correctly said a dustbin was the right place to throw them away. Only a few mentioned disposal machines or throwing products outside. This indicates that safe disposal practices were already well understood before the activity. Both groups already had good awareness before the activity.

After the activity, 84 students responded, 12 more than at baseline. Of these, 82 (97.6%) identified a dustbin as the correct disposal method, showing a slight improvement from baseline. A small number of respondents mentioned washing menstrual products with water and soap, which may indicate confusion between cleaning reusable products and disposing of used items.

Table 6. Participants' knowledge of appropriate menstrual product disposal methods at endline

Menstrual Product Disposal (Endline)	Girls	Boys	Grand Total
Dustbin	66	16	**82**
Wash It With Water And Soap	2	0	**2**
Grand Total	**68**	**16**	**84**

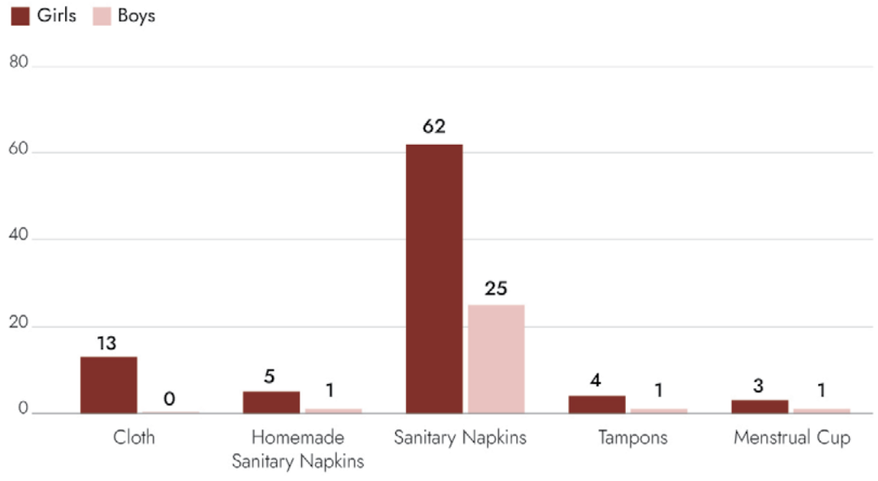
The gender distribution indicates that awareness improved among both girls and boys. The number of girls respondents who did not respond at baseline also reported using a dustbin for disposal in the endline assessment. The number of male respondents also increased from 9 to 16, suggesting that most were unaware of it before the intervention.

Table 7: Participants' knowledge of suitable menstrual hygiene products at baseline (Multiple Response Question)

Products used (Baseline)	Girls	Boys	Grand Total
Cloth	2	0	**2**
Homemade Sanitary Napkins	1	0	**1**
Sanitary Napkins	63	14	**77**
Tampons	1	0	**1**
Grand Total	**67**	**14**	**81**

Prior to the intervention, students' knowledge of menstrual hygiene products was largely confined to sanitary napkins. Of 81 responses, 77 (95.1%) identified sanitary napkins as suitable for menstrual management, while only a few recognized cloth, homemade sanitary napkins, or tampons. Girls respondents demonstrated slightly broader awareness than male respondents, although sanitary napkins remained the predominant response in both groups (63 girls and 14 boys).

Graph 2: Participants' knowledge of suitable menstrual hygiene products at endline (Multiple Response Question)



After the activity, students had a better understanding of the different menstrual hygiene products. Sanitary napkins were still the most common answer (87 responses), but more students also mentioned cloth (13), homemade napkins (6), tampons (5), and menstrual cups (4). Girls students recognized more types of products than male students, but boys' awareness also improved. This suggests the activity helped both girls and boys learn about more menstrual products.

4.4 Changes in Attitudes Towards Menstruation and Gender Norms

One of the primary objectives of the Periodica intervention was to challenge myths and social norms surrounding menstruation while encouraging more open and inclusive discussions. This section presents changes in students' attitudes towards menstruation, gender roles, menstrual restrictions, school attendance, and boys' participation in menstrual health education.

Table 8: Change in participants' attitudes towards openly discussing menstruation

Changes	Girls	Boys	Grand Total
Negative Change (Changed To No)	2	0	**2**
Positive Change (Changed To Yes)	5	8	**13**
Remained No (No Change)	2	11	**13**
Remained Yes (No Change)	62	7	**69**
Grand Total	**71**	**26**	**97**

Following the activity, participants showed strong support for openly discussing menstruation. Of the 97 respondents, 69 (71.1%) consistently agreed at both baseline and endline that periods should be discussed openly. In addition, 13 respondents (13.4%) shifted from disagreement at baseline to agreement at endline, showing a positive change in attitudes following the activity. Only 2 respondents (2.1%) moved in the opposite direction, while 13 (13.4%) consistently disagreed throughout the study period. Overall, the data suggest that the activity strengthened existing positive attitudes towards discussion and encouraged greater openness towards discussing menstruation, although a small proportion of participants continued to express discomfort with public discussions on the topic.

There were clear gender differences in how participants responded. Girls participants were more likely to always support open discussions, with 62 girls keeping positive attitudes compared to 7 boys. The activity seemed to have a bigger impact on boys, as 8 boys changed from disagreeing to agreeing, while 5 girls did the same. Still, 11 boys continued to disagree that menstruation should be discussed openly, compared to just 2 girls. This shows that stigma and discomfort around menstruation are still more common among boys, highlighting the need to keep engaging male adolescents.

Table 9: Change in participants' attitudes towards inclusive menstrual education

Changes	Girls	Boys	Grand Total
Negative Change (Changed To No)	6	4	**10**
Positive Change (Changed To Yes)	8	5	**13**
Remained No (No Change)	48	17	**65**
Remained Yes (No Change)	5	0	**5**
Grand Total	**67**	**26**	**93**

The results show strong support for inclusive menstrual education after the activity. Of 93 respondents, 65 (69.9%) always disagreed that only girls and women should talk about or learn about periods. 10 (10.8%) changed from agreeing to disagreeing, which is a positive shift. However, 13 (14.0%) changed from disagreeing to agreeing, and 5 (5.4%) always believed only girls and women should be involved. This suggests that while most participants saw menstruation as a topic for everyone, some traditional gender views still remain.

Table 10. Change in participants' beliefs that menstruating girls and women become impure

Change	Girls	Boys	Grand Total
Positive Change (Changed To False)	25	7	**32**
Negative Change (Changed To True)	8	4	**12**
Remained False (No Change)	23	3	**26**
Remained True (No Change)	15	9	**24**
Missing Data	2	6	**8**
Grand Total	**73**	**29**	**102**

Gender-wise analysis revealed that girl respondents demonstrated stronger and more consistent support for inclusive menstrual education, with 48 girls consistently rejecting the statement compared with 17 boys. Positive shifts were observed among both girls and boys, with 8 girls and 5 boys changing from agreement to disagreement. However, negative shifts were also observed in both groups (6 girls and 4 boys), indicating that while the activity promoted more inclusive attitudes overall, reinforcing boys' role in menstrual health education remains an important area for future interventions.

Image 5: A female student reading a game card as the discussion unfolds

The Periodica activity helped shift attitudes about a common menstrual myth. Out of 102 respondents, 32 people changed their beliefs and no longer believed that menstruating girls and women become impure, while 26 rejected this idea from the start and continued to do so. Still, 24 respondents kept this belief, and 12 others adopted it during the study. While the results show progress in reducing stigma, many participants still hold onto this belief, showing that cultural norms about menstruation are still strong. Looking at gender level differences, more girls changed their views than boys. 25 girls stopped believing the myth after the activity, compared to 7 boys. However, 9 boys still believed the myth of women being impure during menstruation.

Table 11. Change in participants' beliefs that periods show women are weaker than men

Changes	Girls	Boys	Grand Total
Positive Change (Changed To False)	10	1	**11**
Negative Change (Changed To True)	10	1	**11**
Remained False (No Change)	45	13	**58**
Remained True (No Change)	3	8	**11**
Missing Data	5	6	**11**
Grand Total	**73**	**29**	**102**

The findings indicate that most participants rejected the stereotype that menstruation signifies weakness. More than half of the respondents (56.9%) consistently disagreed with the statement at both baseline and endline, while 11 respondents (10.8%) shifted from agreement to disagreement following the activity. However, an equal number shifted towards agreement, and another 11 respondents (10.8%) consistently maintained the misconception. Girls respondents have considerably rejected this stereotype, with 45 girls consistently disagreeing compared with 13 boys. At the same time, 8 male respondents continued to believe that menstruation indicates weakness, compared with only 3 girls.

Table 12. Change in participants' attitudes towards restrictions during menstruation

Changes	Girls	Boys	Grand Total
Positive change (Changed to False)	14	12	**26**
Negative change (Changed to True)	15	4	**19**
Remained False (No Change)	28	6	**34**
Remained True (No Change)	11	1	**12**
Missing data	5	6	**11**
Grand Total	**73**	**29**	**102**

After the completion of the activity, students demonstrated encouraging shifts in attitudes towards traditional restrictions imposed on menstruating girls and women. Among the respondents, 26 (25.5%) changed from supporting restrictions on entering the kitchen, temple, or bathroom to rejecting them, while 34 (33.3%) consistently disagreed with these restrictions. However, 19 respondents (18.6%) shifted towards supporting such restrictions, and 12 (11.8%) continued to endorse them.

There were clear gender differences in how the stereotypes changed. Both girls (14) and boys (12) showed positive shifts, suggesting the activity helped both groups question traditional practices. However, more girls (15) than boys (4) began to support restrictive beliefs during the study, and most of those who consistently supported these restrictions were also girls (11 compared to 1 male). This suggests that menstrual restrictions are still reinforced in the environments where girls live.

Table 13. Change in participants' beliefs that the onset of menstruation means a girl is ready for marriage

Changes	Girls	Boys	Grand Total
Positive Change (Changed To False)	3	2	**5**
Negative Change (Changed To True)	1	5	**6**
Remained False (No Change)	62	9	**71**
Remained True (No Change)	3	5	**8**
Missing Data	4	8	**12**
Grand Total	**73**	**29**	**102**

The majority of participants rejected the misconception that the beginning of menstruation indicates readiness for marriage. Among the 102 respondents, 71 (69.6%) consistently disagreed with the statement, while 5 respondents (4.9%) changed from agreement to disagreement following the activity. However, 8 respondents (7.8%) consistently believed that menstruation indicates readiness for marriage, and 6 (5.9%) adopted this belief between baseline and endline.

Gender analysis highlights notable differences. Girls respondents were much more likely to consistently reject the statement, with 62 girls maintaining this view compared with 9 boys. However, 5 male respondents consistently believed that menstruation indicates readiness for marriage, compared with 3 girl respondents. In addition, more boys than girls shifted towards agreeing with the statement (5 boys versus 1 Girls), suggesting that misconceptions relating to puberty and marriage remained relatively stronger among boys.

Table 14. Change in participants' attitudes towards Girls attending school during menstruation

Changes	Girls	Boys	Grand Total
Positive Change (Changed To False)	16	7	**23**
Negative Change (Changed To True)	8	3	**11**
Remained False (No Change)	34	3	**37**
Remained True (No Change)	11	6	**17**
Missing Data	4	10	**14**
Grand Total	**73**	**29**	**102**

After the activity, students showed more support for girls staying in school during their periods. Out of 102 respondents, 23 (22.5%) changed their minds and no longer thought girls should miss school during menstruation, while 37 (36.3%) disagreed with this idea from the start and at the end. Still, 17 students (16.7%) continued to believe girls should not attend school during their periods, and 11 (10.8%) started to agree with this misconception.

Looking at gender differences, more girls than boys consistently disagreed with the idea that girls should not go to school during their periods (34 Girls compared to 3 boys). After the activity, 16 Girls and 7 boys disagreed with the statement. However, 6 boys and 11 girls still believed girls should not attend school during menstruation.

Table 15. Change in participants' beliefs regarding food restrictions during menstruation

Changes	Girls	Boys	Grand Total
Positive Change (Changed To False)	20	6	**26**
Negative Change (Changed To True)	8	3	**11**
Remained False (No Change)	12	2	**14**
Remained True (No Change)	24	9	**33**
Missing Data	9	9	**18**
Grand Total	**73**	**29**	**102**

After the activity, students expressed mixed views on dietary restrictions during menstruation. 26 students (25.5%) changed their minds and no longer believed certain foods should be avoided, while 14 (13.7%) always disagreed with this idea. However, many students still held restrictive beliefs: 33 (32.4%) consistently thought some foods should be avoided, and 11 (10.8%) started to believe this during the study.

Both Girls and boys continued to hold these beliefs. Of the students who always believed the misconception, 24 were girls, and 9 were boys. This suggests that restrictive food practices may still affect girls and shape community expectations. On a positive note, 20 Girls and 6 boys changed their views, suggesting that the activity prompted some students to question these beliefs.

Table 16. Change in participants' attitudes towards boys' involvement in menstrual education

Changes	Girls	Boys	Grand Total
Positive Change (Changed To True)	5	2	**7**
Negative Change (Changed To False)	4	2	**6**
Remained False (No Change)	1	1	**2**
Remained True (No Change)	57	13	**70**
Missing Data	6	11	**17**
Grand Total	**73**	**29**	**102**

After the activity, support for including boys in menstrual education stayed high. Out of 102 students, 70 (68.6%) always agreed that boys should talk about periods and learn about menstruation. 7 students (6.9%) changed their minds from disagreeing to agreeing, while 6 (5.9%) went from agreeing to disagreeing, and 2 (2.0%) always disagreed.

Both girls and boys showed strong support for male involvement. Of those who always agreed, 57 were Girls, and 13 were male, demonstrating support from both groups. 5 girls and 2 boys shifted to a more positive view, suggesting that the activity helped students see the value of including both genders in conversations. Overall, the results indicate that most participants believe menstruation is not just a Girls issue and that boys also play an important part in creating a supportive and informed environment.

4.5 Perceptions of Supportive Menstrual Health Environments

In addition to knowledge and attitudes, the study also explored students' perceptions of the support required for effective menstrual health management. This section examine participants' views on the importance of clean sanitation facilities and affordable menstrual hygiene products in schools and communities.

Table 17. Change in participants' attitudes towards clean toilets and private spaces for menstrual management

Changes	Girls	Boys	Grand Total
Positive change (Changed to True)	4	1	**5**
Negative change (Changed to False)	2	0	**2**
Remained False (No Change)	1	0	**1**
Remained True (No Change)	60	17	**77**
Missing data	6	11	**17**
Grand Total	**73**	**29**	**102**

Students showed strong and sustained support for improving menstrual hygiene facilities in schools. Of 102 students, 77 (75.5%) consistently agreed that clean toilets and private spaces are needed to manage menstruation. After the activity, 5 students (4.9%) changed their perception from disagreeing to agreeing. Only 2 (2.0%) went from agreeing to disagreeing, and 1 student always disagreed. These results show that many people recognise the importance of safe, private, and supportive spaces for menstrual hygiene.

By gender, both girls and boys strongly supported improved menstrual hygiene facilities. Of those who always agreed, 60 were Girls, and 17 were male, showing that support came from both groups. After the activity, 4 girls and 1 male changed to agree, while only 2 girls changed to disagree.

Table 18. Change in participants' attitudes towards affordable and accessible sanitary pads

Changes	Girls	Boys	Grand Total
Positive Change (Changed To True)	4	0	**4**
Negative Change (Changed To False)	4	1	**5**
Remained True (No Change)	60	14	**74**
Missing Data	5	14	**19**
Grand Total	**73**	**29**	**102**

The results show strong and steady support for better access to affordable menstrual products. Of 102 students, 74 (72.5%) consistently agreed that sanitary pads should be affordable and easy to access. After the activity, 4 students (3.9%) changed their perception from disagreeing to agreeing, while only 5 (4.9%) went from agreeing to disagreeing. This means support for accessible menstrual products stayed high during the study. Overall, the findings show that students widely recognise the importance of affordability and availability for good menstrual hygiene management.

Looking at gender, both girls and boys strongly supported access to affordable sanitary pads. Of those who always agreed, 60 were Girls, and 14 were male, indicating that both groups view menstrual product access as important. Even though there were fewer male respondents, the results show that boys also recognised the need for affordable, accessible menstrual products.

5. Discussion

The results from Project Periodica adds to the evidence that menstrual health education works best when it goes beyond just sharing information and includes participatory, discussion-based learning.

Many traditional programmes focus only on providing sanitary products or holding awareness sessions for a specific gender. Project Periodica created interactive, student-centred classroom discussions in which students could explore myths, share experiences, and examine gender norms.

One of the main findings of the project has been that students became more open towards talking about menstruation after the activity. This is important as silence and discomfort remain major barriers towards menstrual health. The progress among boys is especially important; at first, boys were more hesitant to talk about menstruation due to being unaware or partially aware of the topic. Many became more supportive after participating in the activity, which aligns with global research showing that including boys helps reduce stigma, build empathy, and make schools more supportive (Benshaul-Tolonen et al., 2020).

The programme also increased support for making menstrual education more inclusive. Many students from both genders no longer thought that only girls should talk about menstruation. This shows that deep-rooted gender norms can change through initiatives that centre on open discussion and challenge social norms.

Image 6: A male student reading aloud from a Periodica game card

Students also learned more about different menstrual hygiene products. They expanded their knowledge beyond sanitary napkins to include reusable cloth pads, homemade pads, tampons, and menstrual cups. This indicates that the programme helped students understand they have several options for managing menstruation, not just one. Their knowledge of proper disposal indicated that the students already knew the basics of menstrual waste disposal before the programme.

Balem Demtsu Betsu et al. (2024), review on menstrual hygiene interventions indicated positive effect on school attendance as well as on their menstrual knowledge and practice, and similar results were also seen after the implementation of Project Periodica. The project was largely successful in changing myths about menstruation and many students showed more positive beliefs about menstrual impurity, physical weakness, restrictions, school attendance, and early marriage.

The findings also show that using games can be a good way to teach sensitive health topics. Project Periodica gave students a space to talk, work together, and think about difficult issues, instead of just listening to lectures. This supports the idea that learning by doing helps students understand more deeply and change their behaviour more than traditional teaching methods.

6. Limitations

There are several limitations to keep in mind when looking at the results of this study.

1. The study used a before-and-after design without a control group. This means that changes observed between the start and end of the programme might not be solely due to Project Periodica, since other factors could have influenced students' knowledge and attitudes.
2. The study measured changes only immediately after the programme ended. This means we do not know if the improvements in knowledge and attitudes will last or lead to long-term changes in behaviour.
3. The evaluation primarily relied on self-reported responses from questionnaires. As menstruation is a sensitive topic, some students might have given answers they thought were expected.
4. The study took place in just three government schools in Patna City and included only 102 students. While the results offer useful insights, they should not be seen as representing all adolescents in Bihar or India.
5. Adding qualitative responses via interviews or group discussions could have helped explain why some beliefs changed and others did not.
6. Some survey questions were left unanswered, by both the genders especially during baseline. These missing answers reduced the number of responses for some questions and may have affected how the results were interpreted.

Despite these limitations, the study shows that participatory, game-based menstrual health education can work well in schools. The results provide a good starting point for bigger studies with more schools, different locations, and a mix of research methods to better understand how interactive learning can improve menstrual health and make schools more inclusive.

7. Conclusion

The findings from the first phase of Project Periodica are indicative of the fact that strengthening menstrual health literacy requires more than improving access to menstrual products or disseminating biological information.

The results from the pilot indicate that even though these remain important components of menstrual health, meaningful change in this regard is also dependent on the ability to create spaces where adolescents can ask questions, challenge misconceptions and engage in conversations that are otherwise absent from their everyday lives.

Project Periodica, through a participatory, game-based approach has sought to create such a space within schools and the findings indicate that this approach positively contributed to improvements across several key dimensions of menstrual health knowledge, attitudes, and classroom dialogue. In areas that centred around participation and inclusion, the intervention proved to be particularly effective. Students demonstrated not only greater openness towards discussing menstruation but also a broader awareness of menstrual hygiene products including stronger support towards involving boys in menstrual health education.

These shifts are important because they move the conversation beyond menstruation that is primarily understood as a private or exclusively as girls and women's concern, instead of positioning it as a subject of shared understanding within the larger classroom and peer groups. The findings also suggest that boys, despite lower levels of awareness and greater discomfort initially, responded positively when they were meaningfully included in the learning process. This reinforces the importance of designing menstrual health interventions that engage adolescents of all genders rather than treating menstruation as a topic relevant only to girls.

At the same time, the study also highlights the persistence of deeply embedded social norms. Although misconceptions relating to impurity, physical weakness and school attendance declined following the intervention, beliefs surrounding food restrictions and certain cultural practices have proved more resistant to change. This suggests that while participatory learning can effectively challenge misinformation and initiate conversations, beliefs that are deeply reinforced within families and communities are likely to take more time to see a change. Lasting change in this sense, therefore requires a sustained engagement that extends well beyond students to include teachers, caregivers and the broader school community.

While a substantial proportion of girls reported missing school during menstruation, physical discomfort emerged as a considerably more important reason than inadequate school facilities. This suggests that investments in infrastructure, although essential, cannot by themselves ensure uninterrupted school participation. Menstrual health interventions must also acknowledge pain management, access to adolescent-friendly health services, and supportive school policies as equally important components of menstrual well-being.

As a pilot conducted across three government schools in Patna, this study is necessarily limited in its scope and should not be interpreted as representative of all school settings. Nevertheless, even in this regard, the pilot has been able to provide encouraging evidence that participatory learning approaches can complement existing menstrual health initiatives by addressing dimensions of communication, confidence, and social norms that conventional awareness programmes often struggle to influence. Future implementation across more diverse educational settings, supported by longitudinal and mixed-method evaluations, will be important for assessing the sustainability of these outcomes and understanding how different institutional and social contexts shape programme effectiveness.

Ultimately, the contribution of Project Periodica lies not simply in improving what students know about menstruation, but in changing how they engage with it. The findings from this pilot suggest that when adolescents are provided with opportunities to learn through participation, discussion, and collective reflection, conversations that were once characterised by hesitation can gradually become more informed, inclusive, and confident.

As menstrual health increasingly comes to be recognised as both an educational and a public health priority, interventions such as Periodica demonstrate the value of embedding menstrual health education within everyday school life rather than treating it as a one-time awareness exercise.

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