



The Sanitation & Hygiene Fund

Impact of Investment in Menstrual
Health and Hygiene (MHH) on
Socio-Economic Well-Being

Research Brief - Education Impact

December 2023





About the Sanitation and Hygiene Fund

The Sanitation and Hygiene Fund (SHF) is a UN fund dedicated to achieving universal access to sanitation, hygiene and menstrual health through market-based approaches. SHF works with Low- and Middle-Income Countries (LMICs) to build robust sanitation economies and menstrual hygiene marketplaces. For more information, please visit: www.shfund.org

About This Study

This study, commissioned by the SHF to identify promising examples from research and practice on potential socio-economic returns from investing in MHH, was conducted by Population Services International (PSI)-Europe. We thank the authors **Maria Carmen Punzi** (expert in the field of MHH) and **Dr. Lidwien Sol** (expert in cost-benefit analyses and MHH), both independent consultants. We also thank Odette Hekster of PSI-Europe and Dr. Claire Rothschild of PSI for their contributions.

Note on terminology: This report refers to women and girls' experience with menstruation, but recognises that not all those who menstruate identify as women or girls, and that not all women and girls menstruate. People who menstruate include those who have MHH needs: girls, women, transgender, non-binary and intersex persons.

Note on research: The ROIs presented in this study are based on available evidence, in this case three studies. Due to this limited available evidence, these findings aim to inform about specific cases and settings, not to generalise. The findings are a first step in the direction of developing general MHH ROIs. For further details, please see the section on limitations.

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Introduction

Education is a human right. It is at the core of economic development and a basis of gender equality. Unfortunately, there is still a significant gender gap in many countries when it comes to access to education.¹ Menstrual Health and Hygiene (MHH) plays a key role in this inequity: lack of adequate access to MHH products and to clean, safe, and functional water, sanitation and hygiene (WASH) infrastructure hinders girls' education journeys; harmful sociocultural norms, attitudes, and beliefs reinforce the exclusion of menstruating girls from educational settings or position menarche[^] as an expected end to education. When girls are not equipped with adequate information to understand what menstruation entails, they lack products to manage menstruation or lack access to WASH infrastructure to safely and hygienically change their menstrual product, they face major challenges to continue attending school. In West Africa, for example, recent data has shown that 15-23% of girls aged 15-24 miss school because of menstruation.² In school, MHH needs must be addressed holistically for girls to feel supported by peers and teachers, to be safe and equipped to manage menstruation while there and to follow and participate in their classes.



Local woman in Kamar-Kalun Village. Taw-Kyaung Village Tract, Myanmar, January, 2010. ©Population Services International

[^] Menarche is defined as the first menstrual period in a female adolescent. It typically occurs between the ages of 10 and 16, with the average age of onset being 12.4 years.

How Poor MHH Impacts Education

There are a number of significant barriers that girls face when it comes to starting, continuing and thriving through their educational journey. Such barriers are often minimised, but their compounded effect can mark girls' experiences in school by shame, insecurity and lack of concentration.

Lack Of Menstrual Products

Lack of access to adequate, quality, affordable and available menstrual products of choice (hereafter referred as 'access') is the first and most intuitive barrier to being able to attend school while bleeding. When girls do not have access to adequate products, they might avoid going to school altogether. Lack of adequate, quality menstrual products can cause worry about leaking and being mocked because of staining one's clothes. In the same way, when schools do not provide emergency menstrual products, girls are unable to deal with unexpected bleeding during school hours. To deal with the lack of (sufficient) menstrual products, girls might wear the same pad for too long, potentially causing infections, itching or discomfort, and limiting their own movements to avoid leaks or stains.

Lack Of Knowledge

Adequate knowledge about MHH includes (a) understanding of options to absorb or collect menstrual blood; (b) understanding of options to deal with wider symptoms related to menstruation; (c) understanding of the menstrual cycle beyond menstruation and how it interlinks with reproductive health more broadly; (d) understanding of menstruation as a normal occurrence.

Lack of such knowledge leads to uninformed management of menstruation (ignorance of product options and how to maintain personal hygiene); an inability to manage pain, adjust dietary requirements, ensure the body gets the right attention (rest when needed, continue exercising); uninformed decisions about reproductive health and family planning (the effects of hormonal contraceptives are hard to understand if one does not understand one's cycle); and uncomfortable situations in school. Several studies have shown that girls arrive at menarche unprepared, without having received adequate information about the physiology of menstruation and guidelines on how to deal with their changing body. Such lack of knowledge about MHH leads girls to feel anxious³, and puts them in a state of alertness while at school, instead of focusing on learning and interacting with their peers and teachers.

Lack Of Adequate WASH Infrastructure

Many schools around the world still lack adequate hygiene facilities for the pupils and the staff. Girls and students who menstruate are particularly affected by a lack of adequate school hygiene facilities, which include a place to change privately, lockable toilets, disposal bins and handwashing stations. Without such adequate hygiene facilities, it becomes impossible for students to change their menstrual products regularly enough and hygienically enough. This may lead to infections and general discomfort.

Lack Of Enabling Environment

Young people spend a significant amount of time out of their day attending school. Students who menstruate may experience embarrassment or shame related to menstruation, especially if they experience leaking, if their peers and teachers do not support them, or if they are singled out due to their menstruation. In some cultures, menstruation is stigmatised, and students who menstruate may be excluded from certain activities or face discrimination at school. It is essential to improve knowledge and discussion of puberty

³ Miiro, G., Rutakumwa, R., Nakiyingi-Miiro, J., Nakuya, K., Musoke, S., Namakula, J., Francis, S., Torondel, B., Gibson, L. J., Ross, D. A., & Weiss, H. A. (2018). Menstrual Health and school absenteeism among adolescent girls in Uganda (meniscus): A Feasibility Study. *BMC Women's Health*, 18(1).

and menstruation in schools, families and communities. The secrecy and taboo that characterises menstruation prevents girls from freely discussing menstruation and the symptoms they experience with their teachers, or even from asking permission to go to the toilet during classes.

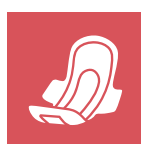
Lack Of Adequate Solutions For Pain And Other Recurring Symptoms

Menstrual pain and fatigue have been found to be among the leading causes of girls staying home from school.^{4,5} Menstruation can cause physical discomfort, such as cramps and headaches, that can make it difficult for students to concentrate and participate in class. Students who menstruate may experience irregular cycles or heavy bleeding, which can make it difficult to plan for school attendance or participation in extracurricular activities. While many MHH programmes have focused on girls in school, pain and symptoms are often not addressed enough.

Ensuring that girls are able to fulfil their fundamental human right to education will require investments in better understanding and addressing these barriers. In addition to the intrinsic value of education, increasing girls' educational attainment has an instrumental value. Investing in women and girls' education has been shown to have a ripple effect on not only their future economic participation and earnings, but also on the health and wellbeing of their children, families, communities and overall economic growth and prosperity.⁶

Barriers

Effects



Lack of Menstrual Products

- Girls avoid going to school altogether.
- Girls might wear the same pad for too long, potentially causing infections, itching, or discomfort, and limiting their own movements to avoid leaks or stains.



Lack of Knowledge

- Worries over bleeding changes caused by hormonal contraceptives may lead to challenges in choosing contraceptive options.
- Concerns about bleeding changes resulting from hormonal contraceptives often lead to discontinuation of contraceptive use.
- The lack of body literacy has a negative impact on women and girls' self-determination and agency, reducing their body ownership, literacy, and ability to negotiate safe sex.



Lack of Adequate Infrastructure

- The lack of access to adequate facilities prevents women and girls from washing and changing regularly, which leads to an increased risk of infection and menstrual-related health complications.
- Insufficient facilities can lead to feelings of shame, discomfort, and anxiety surrounding menstruation, as well as delay in changing menstrual products.



Lack of Enabling Environment

- The lack of open conversation about menstruation prevents women and girls from discussing their experiences, leading to delayed diagnoses and complications that could be avoided if treated on time.



Lack of Adequate Solutions For Pain and Other Recurring Symptoms

- Women and girls are unlikely to receive effective advice on how to handle symptoms and treat underlying conditions.
- Untreated and dismissed irregularities and (co)morbidities associated with the menstrual cycle, such as fibroids, endometriosis, or Polycystic Ovary Syndrome (PCOS), can affect fertility.

⁵ Hennegan, J., Shannon, A. K., Rubli, J., Schwab, K. J., & Melendez-Torres, G. J. (2019). Women's and girls' experiences of menstruation in low- and middle-income countries: A systematic review and qualitative metasynthesis. *PLoS Medicine*, 16(5).

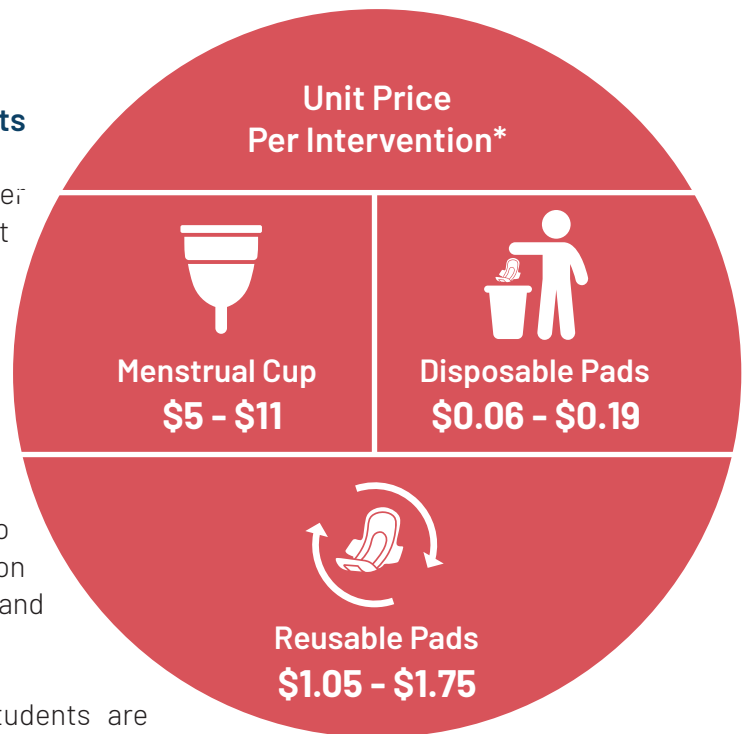
⁵ Shah, V., Nabwera, H., Sonko, B., Bajo, F., Faal, F., Saidykan, M., Jallow, Y., Keita, O., Schmidt, W.-P., & Torondel, B. (2022). Effects of menstrual health and hygiene on school absenteeism and drop-out among adolescent girls in rural Gambia. *International Journal of Environmental Research and Public Health*, 19(6), 3337.

⁶ Malala Fund. (2022). Safer, healthier, wealthier: How G20 investments in girls' education improve our world. Malala Fund. <https://malala.org/newsroom/safer-healthier-wealthier>, accessed on August 4th, 2023.

MHH Interventions and Costs To Maximise Impact On Education

Boosting Availability Of Affordable MHH Products

- Providing subsidised menstrual products to lower the cost of purchase or free products to the most vulnerable, such as disposable pads, reusable pads or menstrual cups⁷ is a common intervention.^{8,9}
- Distribution channels of menstrual products refer to the various pathways through which these products are brought from manufacturers to consumers. These channels play a crucial role in making menstrual products accessible to individuals who menstruate. Among the distribution channel options are community-level initiatives and schools.
- Choice plays an important role here, where students are provided with a number of options and given adequate information to choose which work(s) best for them.
- Distribution of products should come with guidelines and trainings on how to use, clean and store or dispose of the product.

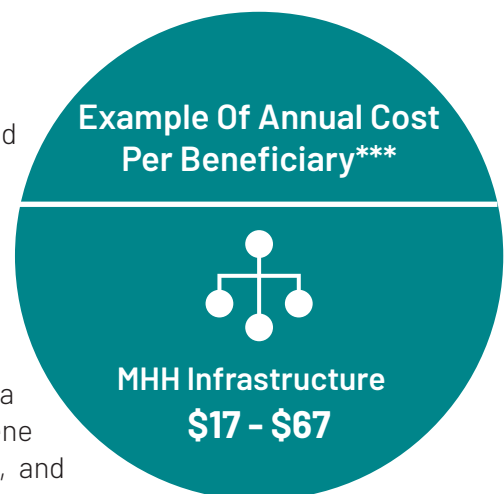


MHH-Friendly Sanitation Facilities At School

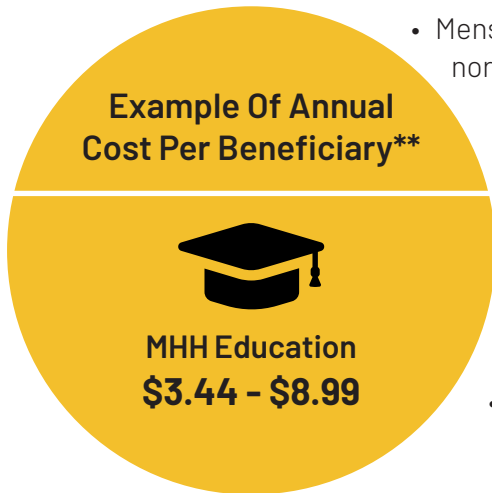
- Providing clean and private bathrooms with access to water and soap can help to ensure that students are comfortable and can attend school regularly during menstruation.

MHH Education (In School)

- Providing comprehensive menstrual health education to students and teachers can help to address myths and stigma surrounding menstruation, and promote menstrual hygiene practices. This can include workshops, classroom sessions, and informational materials that should be mainstreamed through national MHH curricula.



* The \$ symbol indicates USD throughout the brief. Price ranges are approximate and can vary significantly depending on the country, region, and specific circumstances. Prices for menstrual cups include the costs of replacement and are based on: implementation costs in low-income countries for USAID, PSI-Zimbabwe, and literature (Babagoli et al. (2022)(see citation 19), USAID learning brief (2022)(see citation 10,11). A systematic review of Van Eijk et al. (2019)(see citation 9) found a range of \$0.72-\$46 and median of \$23-\$30 per menstrual cup, however, this was based on 99 countries and 145 brands in mostly high-income countries, and therefore less relevant in low-income settings. Disposable pad prices are based on PSI Zimbabwe, Babagoli et al. (2022)(their actual costs and sensitivity range). Reusable pad prices are based on cost information from PSI-Zimbabwe and KMERPad Cameroun. Additional information, including calculation details, are available upon request by sending an email to info@shfund.org.

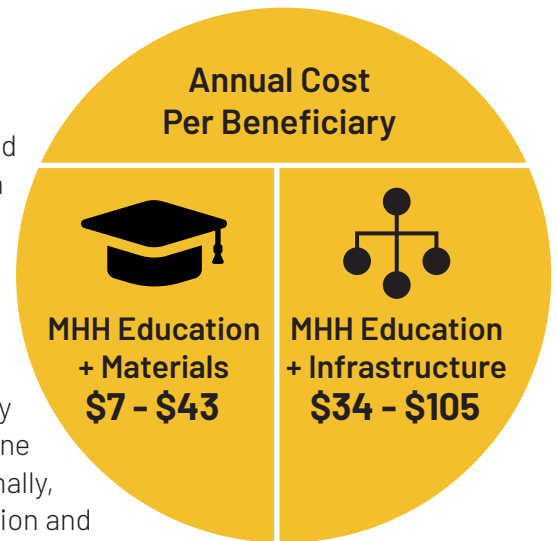


- Menstruation is still shrouded in stigma, resulting in harmful negative norms in many places around the world. Menstrual education is not only about increasing MHH knowledge but also about the inclusion of menstruating people. For MHH interventions to be truly transformative, all the influencers around them must receive correct and positive information about the female body and the physiology of menstruation. These include their male peers, parents, community leaders and other family members.

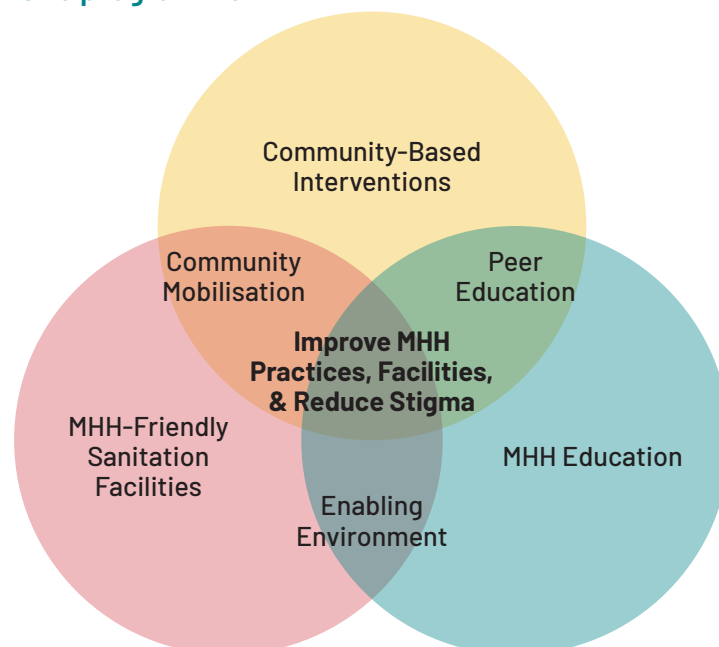
- Interventions can target local communities and organisations.

Holistic Interventions

- While these interventions are presented separately, studies and programmes have shown that they are most effective when combined. Access to menstrual products by itself, for example, is not enough to eradicate the taboo of menstruation. A multi-level approach enables the various interventions to reinforce each other and promote healthy behaviours and supportive norms. Examples of holistic programmes include community-based interventions such as peer education and community mobilisation, which have been shown to improve menstrual hygiene practices and reduce stigma surrounding menstruation.¹⁰ Additionally, a combination of MHH-friendly sanitation facilities, MHH education and the creation of an enabling environment was shown to significantly reduce the likelihood of dropping out of school before grade 8.¹¹



Presentation of a holistic programme



** Price indication is merely an example of how much such an intervention can cost (based on cost data from implementor Irise Group in Uganda, and literature (Babagoli et al. (2022) in Kenya (see citation 19). There is not enough available cost data to provide a rigorous range of expected costs in general.

*** Costs based on 4 interventions in Kenya and Bangladesh (Babagoli et al. (2022) (see citation 19), and Sol et al. (2021) (see citation 15)

Potential Education Outcomes From Investment In MHH



Outcome 1: Reduced Drop-Out Rates

One of the most transformative aspects of conducting a holistic MHH intervention is that it helps girls themselves, the influencers around them and the whole environment to understand that menarche is not a reason to stop coming to school. This can result in girls staying in school and pursuing their education and is likely to lead to increased future earnings and delayed age of first marriage and first childbirth.¹²



Outcome 2: Reduced Absenteeism From School

A number of different studies have proven that providing a combination of access to menstrual products, MHH-friendly sanitation facilities and/or MHH education can lead to a significant reduction in school absenteeism.^{13,14,15,16} The effects on reduced school absenteeism can compare to the effects on schooling of solely educational programmes (ie. reducing class sizes, improving didactical skills, etc.).¹⁷



Outcome 3: Increased Concentration And Participation

In addition to increasing attendance, evidence suggests MHH-focused interventions can improve girls' confidence, concentration and participation in school and academic performance. Specifically:

- MHH education, combined with in-school transformative norms interventions, showed an improvement in girls' confidence and ability to concentrate and participate in class during their period.¹⁸
- MHH intervention can lead to increases in academic performance as there is a clear correlation between increases in concentration and participation in class.¹⁹
- Girls who were provided menstrual products at school reported not having any more fear of being shamed or made fun of because of menstruation. This went hand-in-hand with not feeling impure or dirty while menstruating in school, which supported their active participation in school.²⁰
- Holistic MHH programmes have seen an increase in the proportion of girls achieving top grades in exams.²¹ Given that better performance is associated with a higher likelihood of wanting to continue schooling, this is a promising insight in terms of earnings potential for girls in the long-term. Studies have shown that girls who have access to menstrual products and MHH education are more likely to attend school regularly, which can improve their academic performance and increase their earning potential in the long-term.



Outcome 4: Improved Psychosocial Wellbeing

Having the tools and knowledge to manage your period does not naturally translate to changes in behaviour. Girls and women need to feel confident and supported to apply the tools, and—for example—come to school when on their period. Once girls have access to an enabling environment, quality products, correct education and supportive hygiene facilities, they do not have to spend their time worrying and can focus on participating in school and studying. This is supported by several studies:

- In a study of 1,359 schoolgirls in Bangladesh, the use of sanitary pads was positively associated with confidence in managing menstruation at home.²² Features of sanitation facilities such as cleanliness and the presence of a bin were also associated with increased confidence at home. At school, supportive policies, such as providing permission to use the toilet when needed, were associated with greater confidence. Talking to a friend about menstruation was positively associated with confidence at school.
- Holistic MHH interventions reduce school absenteeism for boys, too.²³ Several aspects of the school program affect boys; better toilet facilities for boys were built at school, they participated in all MHH classes where other topics such as boy puberty were also covered, and the creation of a more open and supportive school environment. This is an important implication, which shows that investing in MHH does not only support girls' development, school journey and future; but can be beneficial for boys and their needs too.
- Both sanitary pads and menstrual cups can improve physical, emotional, social and educational well-being over time, especially for girls with heavy periods.²⁴



Tigitsu and Alemu, a couple engaged in the A360, Smart Start program, pose for a photo with their motorcycle. Ethiopia, 2019. © Benjamin Schilling

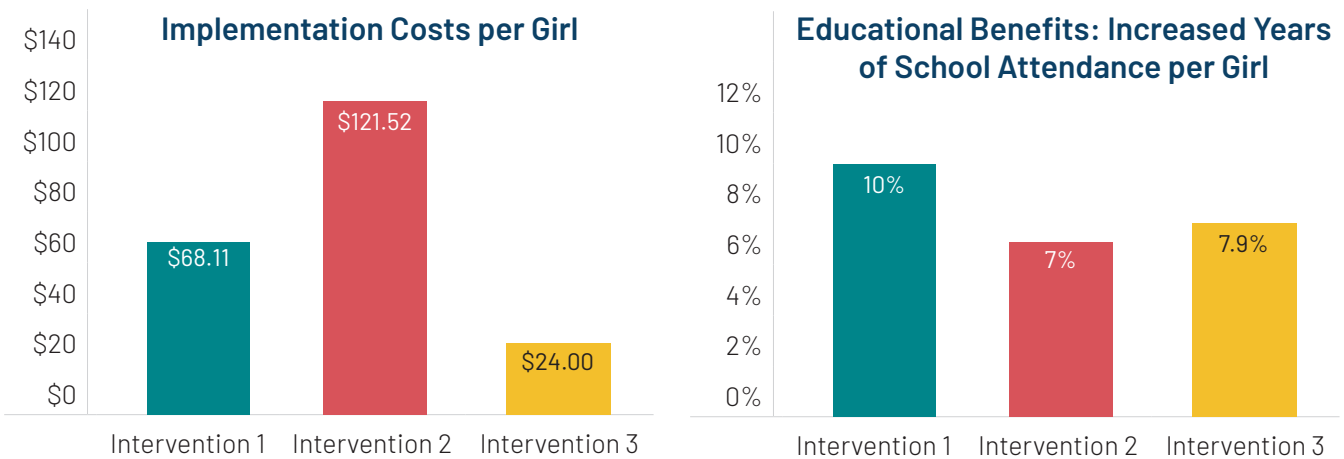
Potential Returns On Investment (ROI) In MHH On Education

The previous section has highlighted the significant impact of MHH interventions on various aspects of individuals' lives, including immediate improvements in psychosocial well-being and long-term benefits such as increased school attendance and future earnings. However, only four MHH interventions in the education sector have been thoroughly* studied in terms of their implementation costs and quantified educational benefits. The table below summarises the interventions and their respective components:

Intervention 1	Intervention 2	Intervention 3	Intervention 4
Bangladesh	Bangladesh	Kenya	Kenya
MHH educational component combined with improvements in sanitation infrastructure at schools**	MHH educational component combined with improvements in sanitation infrastructure at schools and in the communities***	MHH educational component combined with the provision of sanitary pads*	MHH educational component combined with the provision of menstrual cups*

While these interventions provide valuable insights, they are insufficient to generate generalised cost-benefit estimates. Nonetheless, they offer valuable information to consider when making investments in MHH for education.

Improvements in education can be assessed through various indicators, including drop-out rates, attendance rates, performance scores, and total years of education. However, the specific types of MHH interventions mentioned earlier are particularly suitable for measuring their impact on school attendance. Therefore, when calculating the educational cost-benefit and ROI of these interventions, we will primarily focus on increases in school attendance resulting from the implementation of MHH interventions.



+ Both studies were Randomised Controlled Trials of high academic rigour, peer-reviewed. Sol et al. (2021). Intervention (name = RITU) implemented by Simavi, DORP, BNPS, RedOrange. (see citation 15)

++ Sol et al. (2021). Intervention (name = RITU) implemented by Simavi, DORP, BNPS, RedOrange. (see citation 15)

+++ Babagoli et al (2022), the educational results of the menstrual cup program were insignificant. This was likely due to low statistical power, yet the results of this study should be interpreted with great caution. (see citation 19)

-+ Babagoli et al (2022)(see citation 19), the educational results of the menstrual cup program were insignificant. The provision of sanitary pads led to positive results, yet also not statistically significant at the 95% level. This was likely due to low statistical power, yet the results of this study should be interpreted with great caution.

- Babagoli et al (2022)(see citation 19), the educational results of the menstrual cup program were insignificant. The provision of sanitary pads led to positive results, yet also not statistically significant at the 95% level. This was likely due to low statistical power, yet the results of this study should be interpreted with great caution.

These two studies clearly show that all three MHH interventions can lead to increases in years of schooling. Interventions 1 and 2 (both in Bangladesh) respectively cost \$68 and \$122 per girl to implement, and resulted in 10% and 7% increase in school attendance per girl.^{-^} Intervention 3 (in Kenya) cost^x \$24 to implement per girl, and led to a likely increase of 7.9%.^x To accurately calculate the ROI, it is not enough to estimate increases in years of schooling. Rather, it is essential to quantify the monetized benefits resulting from increases in years of schooling. As mentioned earlier, the anticipated improvement in school attendance for girls is expected to positively impact various aspects of their lives, such as reducing the age at first marriage. When quantifying the additional years of education, the most commonly considered factor is the enhancement of future earnings^{xx} resulting from reduced school absenteeism.

-- One (out of the four) interventions did not show significant results on school attendance and is therefore omitted.

-^ For the ROI estimates, increased school attendance has been calculated in the equivalent of increased years of schooling, as per the literature. For example, if a girl's school attendance is 10% more per year, then she has gained +0.1 additional year of schooling.

-x This is the cost of the additional component of providing sanitary pads in a program which already had an MH education component. The costs of implementing solely a sanitary pad intervention, are thus likely to be higher.

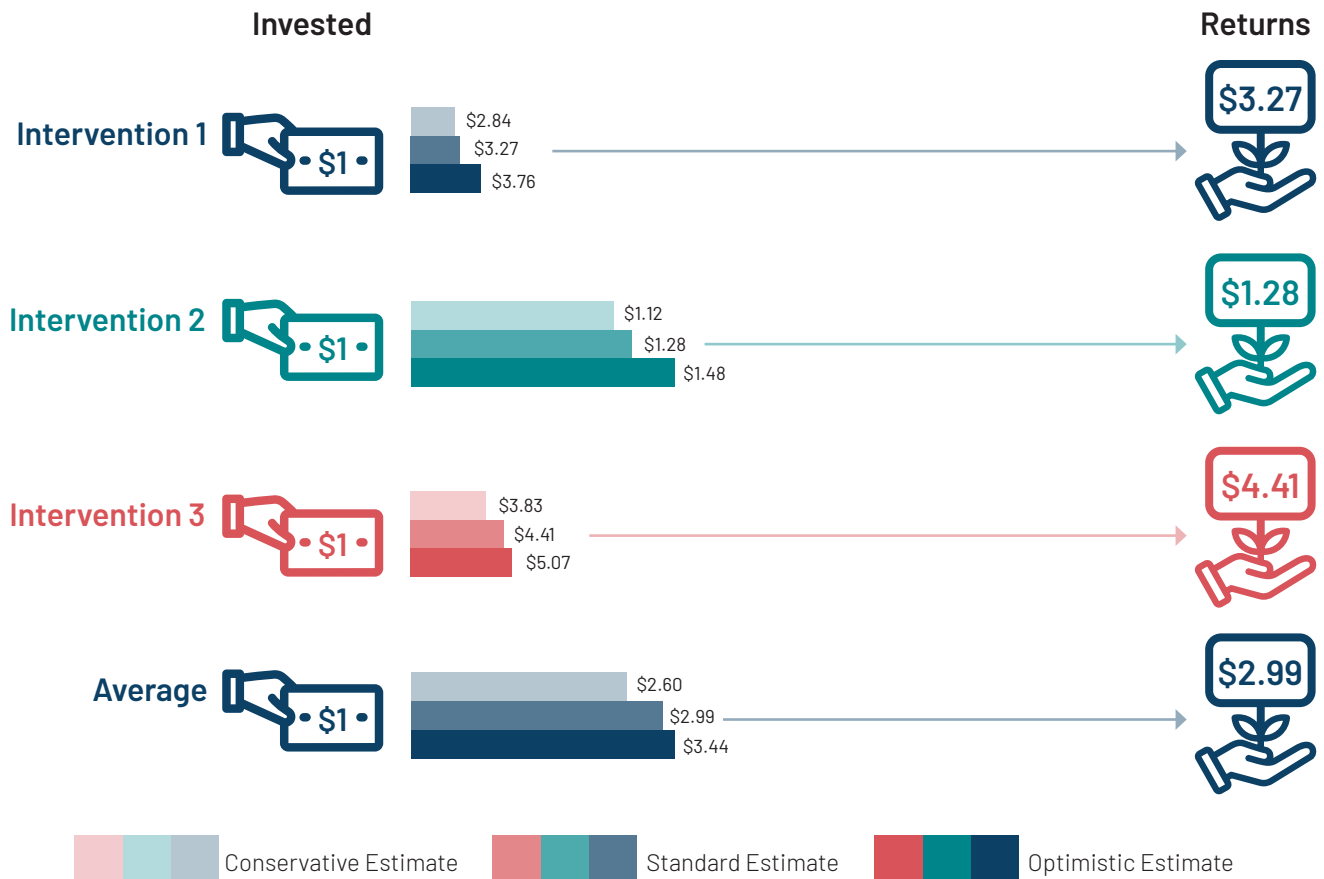
x This result was not significant at 95% confidence level (Babagoli et al. (2022)(see citation 19))

xx This method thus leads to an underestimation of the true effects, since it only accounts for increases in future earnings.



In our analysis, we follow the human capital approachⁱ to calculate the monetary value of increased years of schooling. We make the following assumptions^{ii,iii}: no wage growth over time, female wages estimated at 60% of Gross Domestic Product (GDP) per capita, a 7% return for each additional year of schooling, a working life span of 40 years, and a discount rate of 5% to calculate the Net Present Value.

Returns of Investing \$1 in MHH Interventions (Education Returns)



The graphs depict the monetary ROI when investing \$1 in MHH interventions to improve educational outcomes (stemming from increases in future earnings). The graph above illustrates the sensitivity analysis with conservative, standard, and optimistic estimations. On average, the three types of interventions show highly positive returns, ranging from \$2.60 (conservative estimation) to \$3.44 (optimistic estimation). In other words, economically speaking, investing in MHH interventions is highly worthwhile.

These estimations highlight the remarkable impact of MHH interventions on educational outcomes and make a compelling case for investing in such interventions. The results demonstrate that MHH interventions have effects on educational outcomes per dollar spent when compared to programmes solely focusing on enhancing education, such as conditional cash transfers, teacher didactical skills, or merit scholarships.^{iv}

ⁱ This method was also used in Babagoli et al. (2022)(see citation 19) and for the creation of this evidence brief, their method was applied to the evidence coming from Bangladesh to provide comparable evidence.

ⁱⁱ Following the methods used by Babagoli et al. (2022)(see citation 19)

ⁱⁱⁱ Additional information, including calculation details, are available upon request by sending an email to info@shfund.org.

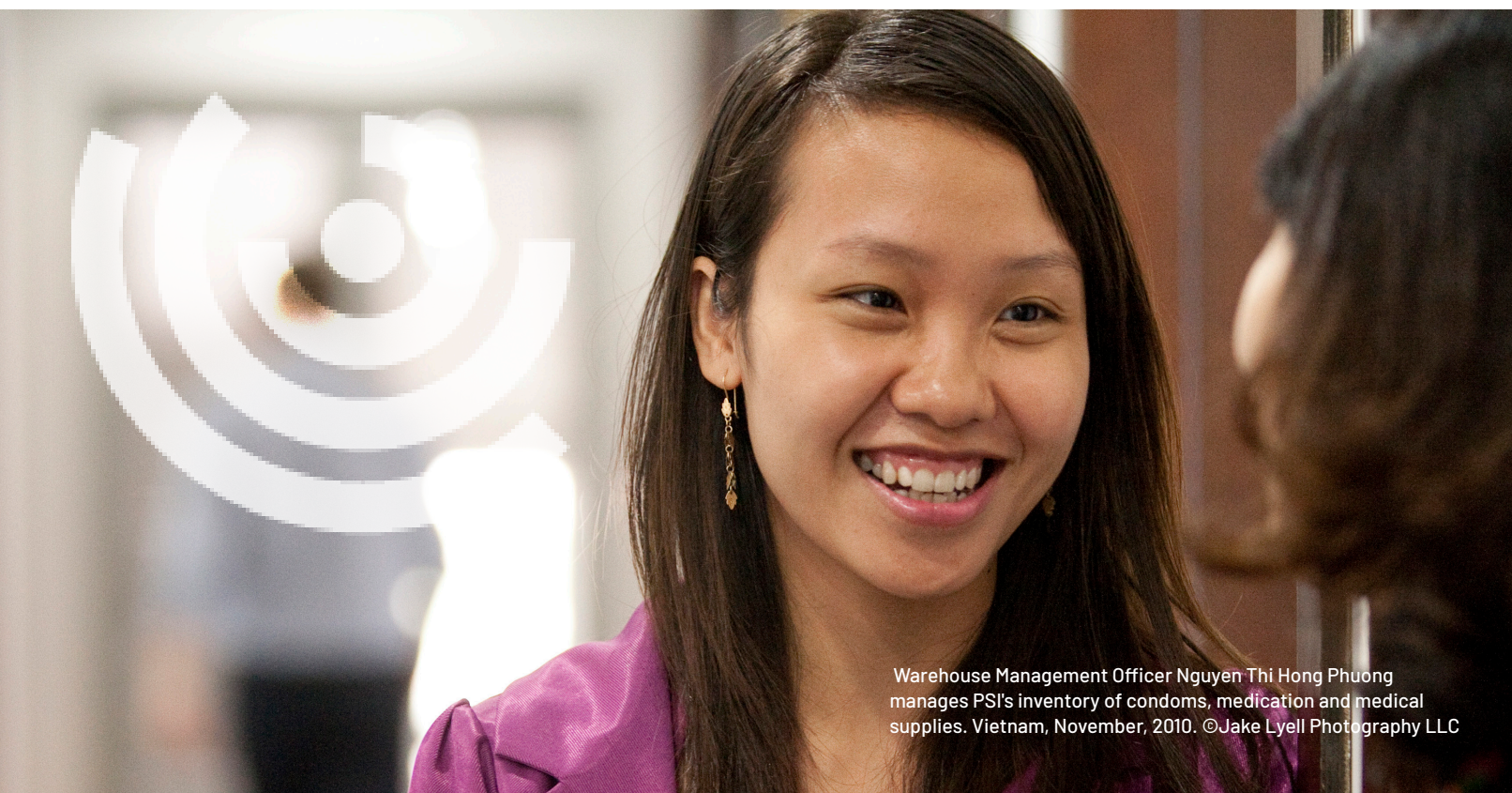
^{iv} Babagoli et al. (2022)(see citation 19), Sol et al (2021)(see citation 15)

Limitations and Future Research

The ROIs presented in this section are based on three studies. While the method applied to combine insights from these studies is rigorous, the findings cannot easily be generalised. The current state of the evidence base on the cost-effectiveness of MHH interventions is still limited for several reasons:

- The majority of studies do not report on any cost information;
- It is difficult to prove causality for the economic, educational and health benefits of MHH interventions, as well as quantify them, since they are often interdependent and at times overlap;
- There is no universal consensus on how to measure MHH benefits, therefore each study measures it differently, hindering generalisation and comparability;
- There is no universal definition of what a standard MHH intervention entails, therefore most studies research different types of MHH interventions and cannot easily be compared;
- Not every country is represented in the evidence base, as currently there is an overreliance on evidence coming from a handful of countries such as Nepal and Kenya, where the majority of MHH interventions have been implemented over the past decade;
- There is no consensus on what universal MHH coverage entails;
- Most MHH interventions are holistic interventions, limiting the evidence on the effects of one single component of MHH interventions, making it difficult to provide investment advice on single components.

In light of the listed limitations, there is great need for further cost-effective evidence of MHH interventions. To fill this gap, it is important that researchers and practitioners start reporting on the costs of the interventions they implement and/or study to contribute to existing evidence and to diversify the countries where such studies take place. Harmonising definitions and measurements of MHH interventions will help compare the effectiveness of such interventions and build the evidence base further.



Endnotes

- ¹ World Bank Gender Equality in Education Database (n.d.) <https://genderdata.worldbank.org/topics/education/>, accessed on August 4th, 2023.
- ² Hennegan, J., OlaOlorun, F. M., Oumarou, S., Alzouma, S., Guiella, G., Omoluabi, E., & Schwab, K. J. (2021). School and work absenteeism due to menstruation in three West African countries: Findings from PMA2020 surveys. *Sexual and Reproductive Health Matters*, 29(1), 409–424.
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- ⁵ Shah, V., Nabwera, H., Sonko, B., Bajo, F., Faal, F., Saïdykhan, M., Jallow, Y., Keita, O., Schmidt, W.-P., & Torondel, B. (2022). Effects of menstrual health and hygiene on school absenteeism and drop-out among adolescent girls in rural Gambia. *International Journal of Environmental Research and Public Health*, 19(6), 3337.
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- ⁷ van Eijk, A. M., Zulaika, G., Lenchner, M., Mason, L., Sivakami, M., Nyothach, E., Unger, H., Laserson, K., & Phillips-Howard, P. A. (2019). Menstrual cup use, leakage, acceptability, safety, and availability: a systematic review and meta-analysis. *The Lancet. Public health*, 4(8), e376–e39.
- ⁸ USAID. (2022). Menstrual Hygiene Management in The Workplace: Learnings From Kenya. <https://www.globalwaters.org/resources/assets/menstrual-hygiene-management-workplace-learnings-kenya>, accessed on August 4th, 2023.
- ⁹ USAID. (2022). Menstrual Hygiene Management in The Workplace: Learnings From Nepal. <https://www.globalwaters.org/resources/assets/menstrual-hygiene-management-workplace-learnings-nepal>, accessed on August 4th, 2023.
- ¹⁰ Sommer, M., Caruso, B. A., Sahin, M., Calderon, T., Cavill, S., Mahon, T., & Phillips-Howard, P. A. (2016). A Time for Global Action: Addressing Girls' menstrual hygiene management needs in schools. *PLoS Medicine*, 13(2).
- ¹¹ Sol, L., Nillesen, E. E., & Smeets, P. (2021). Breaking down menstrual barriers in Bangladesh; cluster RCT evidence on school attendance and psychosocial outcomes of adolescent girls. *SSRN Electronic Journal*.
- ¹² *ibid.*
- ¹³ *ibid.*
- ¹⁴ Phillips-Howard, P. A., Nyothach, E., Ter Kuile, F. O., Omoto, J., Wang, D., Zeh, C., Onyango, C., Mason, L., Alexander, K. T., Odhiambo, F. O., Eleveld, A., Mohammed, A., van Eijk, A. M., Edwards, R. T., Vulule, J., Faragher, B., & Laserson, K. F. (2016). Menstrual cups and sanitary pads to reduce school attrition, and sexually transmitted and reproductive tract infections: a cluster randomized controlled feasibility study in rural Western Kenya. *BMJ open*, 6(11), e013229.
- ¹⁵ Babagoli, M. A., Benschaul-Tolonen, A., Zulaika, G., Nyothach, E., Oduor, C., Obor, D., Mason, L., Kerubo, E., Ngere, I., Laserson, K. F., Tudor Edwards, R., & Phillips-Howard, P. A. (2022). Cost-Effectiveness and Cost-Benefit Analyses of Providing Menstrual Cups and Sanitary Pads to Schoolgirls in Rural Kenya. *Women's health reports*, 3(1), 773–784.
- ¹⁶ Sommer, M., Figueroa, C., Kwak, C., Jones, M., & Fyles, N. (2017). Attention to menstrual hygiene management in schools: An Analysis of Education Policy documents in low- and middle-income countries. *International Journal of Educational Development*, 57, 73–82.
- ¹⁷ Sol, L., Nillesen, E. E., & Smeets, P. (2021). Breaking Down Menstrual Barriers in Bangladesh; Cluster RCT Evidence on School Attendance and Psychosocial Outcomes of Adolescent Girls. *SSRN*.
- ¹⁸ Irise International (2022). Case for Support- Scaling Period Friendly Schools and Communities to enable adolescent girls to realize their full potential.
- ¹⁹ *ibid.*
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