

# Menstrual Cups: the evidence on uptake, acceptability and long term impacts

## Introduction

Approximately 1.8 billion individuals menstruate every month and yet, it is estimated that only 1% globally use menstrual cups.<sup>1</sup> However, there is now robust evidence showing the health, educational, environmental, wellbeing, female empowerment and bodily autonomy benefits of menstrual cups. With just 1% of the carbon footprint of any other menstrual product, the environmental credentials of menstrual cups are now well established.<sup>2</sup> The Lancet published a significant meta-analysis of research on menstrual cups in 2019 (Philips-Howards et al.), and the key findings of this are:

- Four studies reported leakage was similar or lower for menstrual cups than for single-use pads or tampons. Women and girls often cite the fear of leaking and smelling as why they do not participate in activities during their period.
- In all qualitative studies, the adoption of the menstrual cup required a familiarisation phase over several menstrual cycles; and peer support improved uptake.
- In 13 studies, at least 73% of participants wished to continue using their menstrual cups at study completion.
- Using the menstrual cup showed no adverse effects on vaginal flora, and in some cases improved it.

## Uptake

Multiple studies have found acceptability rates of at least 80%, with many reaching mid-90%. The Menstrual Cup Coalition's direct intervention in Kakamega, Western Kenya had an 82% uptake rate in 2023. Uptake rates increase over time, primarily because of initial nervousness and the need to become familiar with menstrual cups. This evidence shows the clear need for good training and follow-ups.

As part of a cluster-randomised pilot study by van Eijk et al. (2018) 192 school girls in Kenya, between 14 to 16 years were given menstrual cups.<sup>3</sup> Girls were provided with menstrual cups in addition to training and guidance on use, puberty education, and menstrual health. The majority of girls kept their cups in good condition, with only 12 cups (6.3%) lost (dropped in toilet, lost or destroyed). Verbally reported cup use increased from 84% in the first 3 months (n = 143) to 96% after 9 months (n = 74). Colour change of the cup, an 'uptake' indicator of use, was detected in 70.8% of 192 participants, within a median of 5 months (range 1–14 months). Uptake was significantly higher among girls who experienced menarche (the start of menstruation) within the past year. Similarly, in another study in Kenya from 2019, 39% of 195 participants used their cups

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<sup>1</sup> Mouhanna JN, Simms-Cendan J, Pastor-Carvajal S. The Menstrual Cup: Menstrual Hygiene With Less Environmental Impact. *JAMA*. 2023 Apr 4;329(13):1114-1115. doi: 10.1001/jama.2023.1172. PMID: 36930170.

<sup>2</sup> Sarah Fourcassier, Mélanie Douziech, Paula Pérez-López, Londa Schiebinger, Menstrual products: A comparable Life Cycle Assessment, *Cleaner Environmental Systems*, Volume 7, 2022, 100096, ISSN 2666-7894, <https://doi.org/10.1016/j.cesys.2022.100096>; The Carbon Impact of Menstrual Products (2019), Zero Waste Scotland, <https://www.zerowastescotland.org.uk/research-evidence/carbon-impacts-menstrual-products#:~:text=The%20production%20phase%20is%20a,7%20kgCO2e%20over%20a%20year.>; Vilabrille Paz, C., Ciroth, A., Mitra, A., Birnbach, M. and Wunsch, N. (2020) Comparative Life cycle assessment of menstrual products. GreenDelta GmbH, commissioned by einhorn products GmbH

<sup>3</sup> van Eijk et al. *Reproductive Health* (2018), Use of menstrual cups among school girls: longitudinal observations nested in a randomised controlled feasibility study in rural western Kenya, <https://doi.org/10.1186/s12978-018-0582-8>

in the first month, rising to 80% by month 12.<sup>4</sup> The school girls from this study who had initial challenges with insertion and removal reported a marked reduction in such challenges over time, as is illustrated by the increased uptake rate.

A larger, randomised control trial (RCT) in Kisumu, Kenya on the impact of menstrual cups versus cash transfers on school attendance and health outcomes, found that menstrual cup use increased throughout follow-up, with more than 80% of the 2000 recipients reporting use by the end of the study.<sup>5</sup>

## Acceptability

As mentioned above, multiple studies have found acceptability and uptake rates of at least 80% and menstrual cups are now been used in over 99 countries.<sup>6</sup> Such rates have been seen across East Africa as well as elsewhere, including in majority-Muslim communities. For example, a 2021 acceptability study of menstrual cups in Iran found that '98.6% recommended this product to other women'.<sup>7</sup> Another programme have been successfully working to break down menstrual taboos and introduce menstrual cups in Pakistan.<sup>8</sup> Such findings highlight and reinforce one another. They make it clear that the acceptability of cups is not tied to religion or cultural norm, but instead to the appropriate sensitisation, community consultation and repeated engagement with cup recipients.

Acceptability hinges on regular and impactful follow up sessions, which help ensure familiarisation with insertion and removal. For example, a menstrual cup acceptability study among students in KwaZulu-Natal, South Africa, found that half of participants reported that inserting the menstrual cup on first use was very easy or quite easy. Of those who did not find it easy, 80% reported that two to three insertions were required to achieve comfort. A maximum of five insertions was mentioned to achieve comfort.<sup>9</sup> These findings are reflective of other studies in highlighting that a key aspect of acceptability are the follow up sessions and creation of non-judgemental peer spaces to discuss initial experiences of using cups, and the chance to go and try again before reporting back.

## Long term benefits of Menstrual Cups:

### Health

There is growing evidence of a strong association between better menstrual health practices and a reduction in reproductive tract infections (RTIs).<sup>10</sup> Majeed et al. have stated 'infections of the reproductive system and their repercussions can be avoided with better awareness and safe menstruation practices'.<sup>11</sup> Menstrual health programming should be included as part of a holistic health approach, and menstrual cups are a simple and effective method for reducing RTIs.

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<sup>4</sup> Mason L et al., International Journal of Reproduction, Contraception, Obstetrics and Gynecology (2019), Comparing use and acceptability of menstrual cups and sanitary pads by schoolgirls in rural Western Kenya, [hiip://dx.doi.org/10.18203/2320-1770.ijrcog20193506](https://dx.doi.org/10.18203/2320-1770.ijrcog20193506)

<sup>5</sup> Zulaika, G. et al., Menstrual cups and cash transfer to reduce sexual and reproductive harm and school dropout in adolescent schoolgirls: a cluster-randomised controlled trial in western Kenya, Manuscript in Draft and soon to be published in Plus Med

<sup>6</sup> van Eijk AM, Zulaika G, Lenchner M, Mason L, Sivakami M, Nyothach E, Unger H, Laserson K, Phillips-Howard PA. Menstrual cup use, leakage, acceptability, safety, and availability: a systematic review and meta-analysis. *Lancet Public Health*. 2019 Aug;4(8):e376-e393. doi: 10.1016/S2468-2667(19)30111-2. Epub 2019 Jul 16. PMID: 31324419; PMCID: PMC6669309.

<sup>7</sup> Gharacheh M, Ranjbar F, Hajinasab N, Haghani S. Acceptability and safety of the menstrual cups among Iranian women: a cross-sectional study. *BMC Womens Health*. 2021 Mar 13;21(1):105. doi: 10.1186/s12905-021-01259-8. PMID: 33714263; PMCID: PMC7955610.

<sup>8</sup> Cups to Break Taboos, <https://www.bbc.co.uk/news/av/world-43573748>

<sup>9</sup> Mags Beksinska, Phumla Nkosi, Bongiwu Zulu & Jennifer Smit (2020): Acceptability of the menstrual cup among students in further education institutions in KwaZulu-Natal, South Africa, *The European Journal of Contraception & Reproductive Health Care*, DOI: 10.1080/13625187.2020.1815005

<sup>10</sup> Torondel B, Sinha S, Mohanty JR, et al. Association between unhygienic menstrual management practices and prevalence of lower reproductive tract infections. *BMC Infect Dis*. 2018; 18(1):473.

<sup>11</sup> Majeed J, Sharma P, Ajmera P, Dalal K. Menstrual hygiene practices and associated factors among Indian adolescent girls: a meta-analysis. *Reprod Health*. 2022 Jun 23;19(1):148. doi: 10.1186/s12978-022-01453-3. PMID: 35739585; PMCID: PMC9229495.

A feasibility study in Kenya among primary schoolgirls (Phillips-Howard et al) noticed that menstrual cups, but not single-use pads, protect the natural flora of the vagina and thus reduce harmful bacterial vaginosis (BV). BV is a precursor to poor maternal outcomes, increased risk of HIV and sexually-transmitted infections (STIs), and infertility.<sup>12</sup> The study also found that girls using cups had less need to seek money through transactional sex with males to buy pads. In 2023 a cluster-randomised controlled trial in 96 Kenyan secondary schools by Mehta et al with 2000 menstrual cups confirmed the Phillips-Howard feasibility study. Mehta assessed the impact of menstrual cups on Bacterial Vaginosis (BV) and STIs, and suggested that with adequate training and familiarisation, the menstrual cup can actively reduce BV, STIs and their corresponding complications in LMICs.<sup>13</sup>

### School attendance

In the recent trial in Kisumu with 2000 menstrual cups, researchers noted a significant reduction in school absenteeism and dropout among girls followed to trial end who reported using the cup.<sup>14</sup> This was mirrored in Mason's 2022 study which found lower absenteeism reported by the cup-only group.<sup>15</sup> A qualitative feasibility study in Nepal also found that 'not missing a single class in school due to problems related to menstrual hygiene management was described as a major benefit' of using the cup.<sup>16</sup>

### Sexual and Reproductive Health and Rights (SRHR), including unplanned teenage pregnancies

Recent research from Kenya has particularly demonstrated some of the risky sexual behaviours of young girls, and often a corresponding lack of bodily awareness. 2/3 of girls in rural Kenya rely on having a sexual partners to buy them single-use pads with transactional sex for menstrual products increasingly common and normalised.<sup>17</sup> This clear link between menstrual health, or the lack of it, and increased risky sexual behaviours has also been reflected also in Phillips-Howard's latest study, in which researchers observed a significant reduction in STIs and teenage pregnancy amongst control groups who had received menstrual cups.<sup>18</sup> This may be because receiving a menstrual cup and the corresponding training improves individuals' understanding of SRHR, and hence, reduces pregnancies and risky behaviours. It may also be that having a menstrual cup means that girls no longer exchange sex for pads, which is increasingly common amongst girls under the age of 15.<sup>19</sup>

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<sup>12</sup> Phillips-Howard PA, Nyothach E, ter Kuile FO, Omoto J, Wang D, Zeh C, Onyango C, Mason L, Alexander K, Odhiambo FO, Eleveld A, Mohammed A, Tudor-Edwards R, van Eijk AM, Vulule J, Faragher B, Laserson KF. Menstrual cups and sanitary pads to reduce school attrition, and sexually transmitted and reproductive tract infections: A cluster randomised controlled feasibility study in rural western Kenya, *BMJ Open*; 6(11):e013229. doi:10.1136/bmjopen-2016-013229, 2016.

<sup>13</sup> Mehta et al. (2023) The effect of menstrual cups on the vaginal microbiome, Bacterial vaginosis, and sexually transmitted infections: results of a nested analysis within a cluster randomized controlled trial, to be published soon.

<sup>14</sup> Zulaika, G. 'Menstrual cup and cash transfers to prevent sexual and reproductive health harms in adolescent secondary schoolgirls in western Kenya' *Doctoral Thesis, Liverpool School of Tropical Medicine, October 2022.*

<sup>15</sup> Mason L, Zulaika G, van Eijk AM, Fwaya E, Obor D, Phillips-Howard P, et al. (2022) 'You don't have to sleep with a man to get how to survive': Girl's perceptions of an intervention study aimed at improving sexual and reproductive health and schooling outcomes. *PLOS Glob Public Health* 2(10): e0000987.

<sup>16</sup> Pokhrel D, Bhattarai S, Emgård M, von Schickfus M, Forsberg BC, Biermann O. Acceptability and feasibility of using vaginal menstrual cups among schoolgirls in rural Nepal: a qualitative pilot study. *Reprod Health*. 2021 Jan 25;18(1):20. doi: 10.1186/s12978-020-01036-0. PMID: 33487171; PMCID: PMC7831234.

<sup>17</sup> <https://amref.org/position-statements/amref-health-africa-statement-on-addressing-period-poverty-and-stigma-in-kenya/>

<sup>18</sup> Zulaika, G. 'Menstrual cup and cash transfers to prevent sexual and reproductive health harms in adolescent secondary schoolgirls in western Kenya' *Doctoral Thesis, Liverpool School of Tropical Medicine, October 2022*

<sup>19</sup> Phillips-Howard PA, Otieno G, Burmen B, Otieno F, Odongo F, Odour C, Nyothach E, Amek N, Zielinski-Gutierrez E, Odhiambo F, Zeh C, Kwaro D, Mills LA, Laserson KF. Menstrual Needs and Associations with Sexual and Reproductive Risks in Rural Kenyan Females: A Cross-Sectional Behavioral Survey Linked with HIV Prevalence. *J Womens Health (Larchmt)*. 2015 Oct;24(10):801-11. doi: 10.1089/jwh.2014.5031. Epub 2015 Aug 21. PMID: 26296186; PMCID: PMC4624246.

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