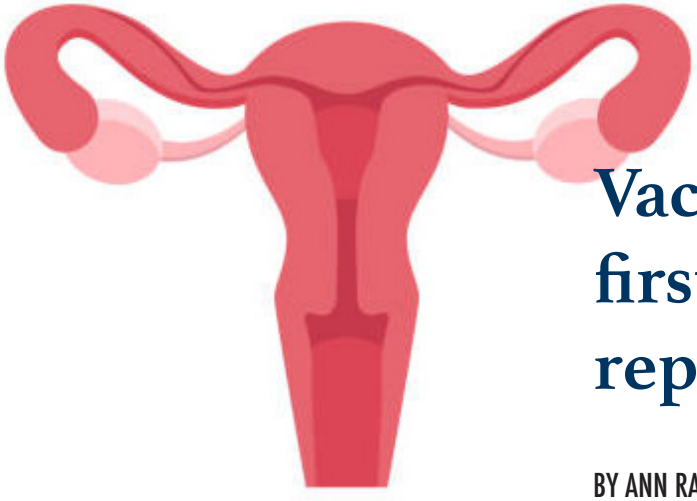

# Vaccines are not the only first-line defense against reproductive tract infections

BY ANN RAM

Menstruation is a naturally occurring physiological process in which menstrual practices and sexual health education are impacted by cultural and socio-economic factors. In rural areas of developing nations, people of reproductive age are not prepared or aware of menstrual hygiene management (MHM) and the importance of maintaining reproductive health which becomes known as a global issue called period poverty. Menstrual hygiene management entails the use of clean material to collect blood with the facilities to change in privacy, wash and dispose of used menstrual hygiene materials (Budathoki, 2018). Impediments to proper MHM stems from cultural influence and economic status, which includes misconceptions and personal preferences. In addition, menstruation and the concept of reproductive health are shrouded in shame and societal taboos (Kaur, 2018). For example, over decades and in various nations, menstruation and its misconceptions have ranged from mystical, toxic, and impure (Wood, 2020). Certain cultural norms require secrecy and deter women from working, cooking, participating in intercourse, bathing, and eating specific foods during menstruation which stem from the perceptions that menstrual blood is contaminating and unclean (Drakshayani, 1994). These beliefs and restrictions enforced by society are the forefront barriers for good menstrual hygiene practices. The education of both men and women about reproductive health and hygiene is crucial but not implemented in certain rural areas which promotes fear, embarrassment and false beliefs about menstruation and sexual health. Young girls that are unprepared and anxious about their menarche are likely to develop negative attitudes about menstruation and their overall reproductive health (Budathoki, 2018). Due to these misconceptions, girls in particular countries of south and southeast Asia and Africa, stay away from flowing water during menstruation, do not use toilets in fear of staining it, and skip school (Kaur, 2018). The materials used as menstrual blood absorbents in low-income countries range from commercial pads and tampons, paper towels, bamboo to reusable pads repurposed from cloth which can be sanitary or unsanitary depending on the wash and drying facilities available (Kaur, 2018). However, reusable cloths and towels are more commonly reported to be used due to socioeconomic factors and the costliness of commercial menstrual hygiene products which women often have to sacrifice menstrual hygiene over other necessities of life such as food (Nabwera, 2021, Kaur, 2018). Whether it be a low- or high-income country, young people affected by period poverty often display absenteeism of 1 or more days of school during their menstrual cycle which can begin to negatively impact their education and in some parts of the world students would miss approximately a fifth of their school year or drop out (Miiro, 2018, Davis 2018).

When menstruators cannot access hygienic absorbents, proper wash and disposal facilities and a holistic education about their reproductive health, it poses risks of reproductive tract infections (RTIs) and other serious long-term health issues. The burden of RTIs is a major pub-

lic health concern around the world and is rampant among low-income settings (Cousins, 2020, Sumpter 2013). Poor MHM breeds endogenous infections such as bacterial vaginosis or vulvovaginal candidiasis (Sumpter, 2013). These infections are most likely introduced to the reproductive tract through poor menstrual hygiene products and lack of clean washing amenities (Cousins, 2020). In a low-income urban area of India, RTIs were significantly associated with the use of cloth rather than sanitary menstrual absorbents where 76.7% used cloth during menses in a study with 802 women (Bhilwar, 2015). These easily treated endogenous infections can become problematic as they are associated with increased risk of human immunodeficiency virus (HIV) and human papillomavirus (HPV). Another prevalent issue in developing nations, is HPV and associated development of cervical cancer. Cervical cancer and precancerous cervical lesions can arise from certain oncogenic HPV strains (Burd, 2003) and is the fourth most common cancer afflicting women in the world with more than 86% of deaths occurring in low- and middle- income countries (Arbyn, 2020, Dey, 2016). Rampant rates of HPV have been related to poor menstrual hygiene and lack of reproductive health education (Dey, 2016). Many studies and initiatives are focused on the first-line response to control HPV and vaccination, however secondary factors related to cervical cancer development, such as menstrual and reproductive hygiene, are studied less (Dey, 2016). The consequence of poor MHM propagates the advancement and persistence of RTIs and is associated with aiding the development of cervical cancer (Dey, 2016, Franceshi, 2003, Abulizi, 2017, Cousins, 2020). Another secondary factor that increases the incidence of HPV and associated cervical cancer is the lack of awareness and sexual health education in certain countries (Hindin, 2015). Commonly in wealthier countries, HPV vaccines, such as Gardasil, were instilled in large-scale use in public healthcare systems and national vaccination programs, usually through schools to adolescents (Koulouva, 2008, Graham, 2011). However, this was not easily translated in low- and middle-income countries, as vaccines are not available through mass vaccinations programmes (Agosti, 2007, Graham, 2011). The main barrier to equitable distribution of HPV immunization is cost since these countries have limited health budgets that is already strained to cover multiple public health priorities (Brisson, 2020). Recently, certain low- and middle- income countries, such as Bangladesh, Uganda, and Sri Lanka have invested in HPV vaccinations; however, traction of immunization is low which is an effect of poor public awareness of HPV and lack of enforcement of reproductive health education for men and women (Banik, 2020, Kadian, 2020, Nabirye, 2020, de Silva, 2019). Research indicates that the poor vaccine intake, particularly of women in rural areas, is related to lack of sexual health education in terms of cervical cancer, hygiene, and Pap testing (de Silva, 2019, Banik, 2020, Nabirye, 2020).

Photo credit Flo

**Feminine hygiene is important to avoid reproductive tract infections**

Studies conducted in Ethiopia and India indicate that regular changing of menstrual blood absorbents was protective against the risk and development of RTIs (Ademas, 2020, Pandit, 2017). Also, it has been reported that women who use disposable pads were less likely to develop RTIs than women who use reusable pads (Das, 2015). Findings of these studies amplify the need for accessible sanitary products for menstruators as it directly affects their health and is a preventative action for possible infections and disease. Furthermore, in terms of RTIs such as, HPV, in rural areas only 5.3% of women had been vaccinated against HPV, however the willingless to be immunized was high (76.6%) among those who have not received the vaccine (Banik, 2020). Research has found that the core reasons for the reluctance of women to receive

the HPV vaccine fall to the cost of the vaccine (40.1%), particularly in countries with no universal health care or national vaccination programmes, and the lack of knowledge towards reproductive health (40.1%) (Banik, 2020). This emphasizes the need for educational intervention and awareness programmes on menstrual hygiene and cervical cancer, while supplemented by the implementation of national policies for mass HPV vaccinations that provide accessibility for vulnerable populations.

Currently, initiatives by government bodies have made great impact in diminishing poor MHM and promoting sexual health awareness. Recently, New Zealand announced that menstrual products would be free in schools, while India is pushing to cap the price of sanitary products. Little leeway has been done for low- and middle-income countries, however, global non-profit initiatives, such as UNICEF and Days for Girls, have made strides in these countries to fight period poverty and provide empowerment and reproductive health education to people in need. In Canada, the "tampon tax" was eliminated, however education and health is regulated provincially, so there is less cohesion with government to address MHM. In 2019, British Columbia made period products free in all schools and currently some Ontario school boards have begun to implement this as well. However, to fully eradicate the inaccessibility of MHM in rural and vulnerable communities of Canada enactment of financially accessible or free menstrual products need to stretch nationally or provincially. Moreover, countries tackling HPV and cervical cancer continue to strive to apply immunization programmes interwoven with targeted educational interventions to improve awareness. Governments have begun cervical cancer and HPV awareness training of nurses, social workers, teachers in rural schools, and female representatives to further help educate their community about HPV, cervical cancer risks and hygiene as a primary preventative measure when nation-wide immunization is unavailable or inaccessible to all socioeconomic backgrounds (Nabirye, 2020, Kadian, 2020). Overall, period poverty and the lack of sexual health education is not just a health issue but a human rights issue. The global imperative by the World Health Organization (WHO) is to fulfill empowerment to people of reproductive age, specifically those in vulnerable situations, by reducing the taboos and stigma about menstruation by providing accessibility for proper MHM practices and promoting sexual health education.

***"In 2020, Scotland became the first country to make menstrual products free and designated public places must also make these products freely available, as outlined in "The Period Products (Free Provision) Bill"."***

During the COVID-19 pandemic, the hard-won gains against HPV has begun to recede. Amongst COVID-19, HPV and other infectious diseases still continue to be fought and yet to have a uniform and effective implementation of the vaccines that are already created to eradicate these other silent killers (Abel, 2020). Despite having HPV vaccines validated and mass produced, nearly 341,831 people die from cervical cancer in 2020 (Cancer Today, 2020). This poses the question as to why vaccinations rates are low and implementation fragile in high- and low-income countries despite decades of research (Abel, 2020). This is further aggravated by the COVID-19 pandemic where HPV vaccine orders and deliveries have dropped by >70% in March 2020 and remained decreased by 25%-50% in June of that year (Gillkey, 2020). The pandemic's timing causes missed opportunities for mass delivery of HPV immunizations that usually take place during spring and summer months for adolescents (Moss, 2016, Gillkey, 2020). The COVID-19 pandemic is likely to have longer term consequences for HPV vaccination since there will be a reduction of face-to-face interactions that will limit the chances for providers, either through clinics or schools, to educate, discuss and deliver the vaccines (Gillkey, 2020). To overcome both the challenges of the pre- and present COVID-19 era, there must be evidence-based interventions executed. HPV vaccination promotion and awareness should be applied whenever providers have opportunities to make recommendations to parents of adolescents (Gillkey, 2020), for

example doctor check-ups and informational leaflets given through schools. Providing information was crucial during the pandemic to promote awareness and decrease fear, which can be translated seamlessly to preventing reproductive tract infections by decreasing taboos and anxiety associated to sexual health. Also, similar to the COVID-19 vaccine rollout, HPV immunization can get back on track by clinics providing reminders that communicate COVID-19 precautions and assure parents that vaccines are freely available or covered under programs for countries without universal health care. Also, COVID-19 immunization initiatives have shown a creative aspect for mass vaccinations which can be applied to HPV vaccination protocols to prevent the regression of HPV immunization rates. This can be implemented using "drive-through" appointments through patients' existing communities or family clinics and by offering HPV vaccine alongside seasonal influenza vaccinations (Gillkey, 2020). Learning from the pandemic and the COVID-19 vaccine rollout programmes, there must be a prioritized effort to bring long-term protection against diseases like HPV and associated cervical cancer as essential services. As the COVID-19 vaccines are tested and delivered its imperative to acknowledge that there are vaccines for HPV that is yet to be used to its full potential despite the 15 years of rigorous research displaying its safety and efficacy (Abel, 2020). From the momentum garnered from the collective bout against COVID-19, a similar framework can be used to improve reproductive of health by applying reproductive health education and vaccinations in tandem to eradicate reproductive infectious diseases.

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