Menstruation as a Vital Sign in Mumbai

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Statement of Purpose

Menstruation in India is highly stigmatized and is often perceived as a disease.[1] However, there is growing interest in the de-stigmatization of menstruation in India. The framing of menstruation as a vital sign[2]—that is a clinical marker to be considered when assessing health— may be an additional lever to aid in the de-stigmatization process. The purpose of this proposal is to do engage with Mumbai-based stakeholders to understand if "menstruation as a vital sign" should be a public health agenda to pursue across multiple levels.

Background and Rationale

In collaboration with the Columbia Global Centers | Mumbai, I have identified gaps in menstrual health knowledge in the populational health, educational, and medical sectors in India. At the populational level, the established demographic averages for adolescent menstrual cycle characteristics are outdated and based on data from North American cohorts born in the1960s;[3] even less has been established within the Indian context. Only a handful of cross-sectional studies have assessed average age at menarche (the first menstrual period) in Indian girls and they suggest menarche is occurring earlier in India following secular trends.[4–6]

Within the educational sector, 71% of Indian girls have no knowledge of menstruation before their first period.[7–9] School health programs and community-based initiatives primarily focus on the practical aspects of menstrual hygiene, with limited attention to the broader understanding of menstruation as an integral aspect of health across the lifecourse.[10,11]The lifecourse approach to menstrual health is important because the hormones that drive the cyclic nature of menstruation are shaped by factors that occur early in life, particularly during childhood and adolescents. There is international variation in the age at menarche and the hormones underlying healthy menstrual cycles.[12] This variation should be considered normal rather than pathological in terms of fertility.[13] However, high levels of menstrual cycle hormones are also associated with increased risk of chronic disease including breast cancer,[14,15] cardiovascular disease[16] and polycystic ovary syndrome.[17] Despite this robust evidence, within the medical sector, biomedical guidelines have yet to incorporate menstruation as a vital sign into pediatric and gynecological practice as means to track women's health across the lifecourse.

Health seeking behavior is also poor during adolescence due to a lack of scientific knowledge about menstruation. 75% of girls experience menstrual problems during adolescence that may affect their health during adulthood.[2] Yet, only one-third of adolescents seek treatment for their menstrual problems.[18,19] Providing education to adolescents is not enough. It is also important to sensitize clinicians, particularly pediatricians, on addressing adolescents' menstrual health needs in a safe, positive and friendly environment to improve health outcomes.

Aim 1: Characterize menstrual cycle characteristics (cycle length, period length, flow, symptoms) in mothers and daughters (n=20 dyads) and compare between two settings, informal settlements and private schools, through menstrual diaries and apps

Aim 2: Characterize salivary estrogen and progesterone over the menstrual cycle in mothers and daughters (n=20 dyads) and compare between two settings, informal settlements and private schools

Aim 3: Discuss menstrual health knowledge and needs through focus groups and key informant interviews with children, educators, and pediatricians.

Methods

Recruitment: We will recruit 20 mother/daughter dyads through MYNA an NGO and through X school

We will engage and pay citizen scientists to help conduct the work.

Participants will be compensated for each part of the study: x for questionnaire, x for menstrual diary, x for app use, x for a month of saliva samples

Questionnaire: At the first study visit, study staff will administer a questionnaire including pubertal development scale, menstrual cycle characteristics, diet and age.

Anthropometrics: Study staff will measure height and weight.

Menstrual Diary: Participants will track their menstrual cycles for 1 month using a paper calendar, tracking days of bleeding and other symptoms such as cramping, cravings, mood.

Menstrual Apps: Participants will also track their cycles using the MYNA app.

Saliva collection (freezers?): At the initial study visit, we will collect 2ml of saliva using the passive drool method. We will provide a month's worth of collection supplies for the participants to take home. We will ask the participants to provide a daily saliva sample (2ml) and either keep the samples in their freezer or use a preservative. At the second study visit, study staff will collect the samples and corresponding menstrual tracking data. We will also collect a final 2ml sample at the second study visit. Saliva will be measured in a lab in Delhi using Salimetrics kits

Focus Groups: Two focus groups with 6-8 children each one in informal settlements and one in the school

Key informant interviews: 2 with pediatricians and 4 educators in schools and NGOs

Budget

Research Assistants: INR?

Participant Incentives: 40 x INR?

Collection Supplies: $3820

Hormone Analysis: TBD

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