

The Cost of Menstrual Cycle in Young Nepali Women: A Cross-Sectional Study

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ABSTRACT

Introduction: Every woman must have safe access to clean water and menstrual products. They have to spend more or less money to buy menstrual products or to alleviate menstrual symptoms. Cost of a menstrual cycle is often associated with period poverty. We found a research gap on this issue. The objective of this study was to find the cost of menstrual cycle and their perceptions on menstrual cost among young Nepali women. **Methods:** We conducted a cross sectional study from 15 August 2019 to 15 February 2020. Total enumeration sampling technique was used to enroll 157 female medical students. Ethical clearance was obtained from institutional review committee of Birat Medical College Teaching Hospital. Open data kit (ODK) collect software was used for data collection. The collected data was extracted in Microsoft Excel 2016 and analyzed by SPSS version 23. **Results:** Majority (33.8%) had menarche at 13 years and 47.8% had regular menstrual cycle. Total average cost of items used in last menstrual period was NPR 480.41 (NPR 40-1850) and lifetime cost was NPR 219066.96. Sanitary pads/ tampons/ menstrual cups etc. should cost less money (85.4%) and tax currently put on it should be removed by government (91.1%) were the perceptions of the participants. **Conclusion:** Menstrual cycle added additional cost in women's life. Participants perceived that cost is high and it should be tax free. Nepal constitution already passed sanitation as basic fundamental right. So, the cost of sanitary items needs to be minimized by removing the government tax.

Keywords: Menstrual cycle; Menstrual hygiene products; Sanitation; Young nepali women

INTRODUCTION:

Menstruation is a natural process in females influenced by hormonal changes that occurs each month to prepare for a possible pregnancy. Regular menstrual periods from puberty to menopause reflect good function of the body.[1] Women's monthly period adds up extra costs because they have to buy sanitary pads, tampons, pain relievers and heating pads to soothe the aches. The cost may vary due to local price changes.[2] Period poverty refers to

having a lack of access to sanitary products due to financial constraints.[3] In period poverty, they are not able to afford sanitary wear during menstruation. Women have to deal with consequences like lack of confidence, poor participation, school/work absenteeism, depression and diseases resulting from poor hygiene.[4] On average, a woman has her period from three to seven days and the average woman menstruates from age 13 to 51 years. That means the average woman endures some 456 total periods over 38 years, or roughly 2,280 days which is about 6.25 years of her life.[5] A new survey by Plan International UK has found that 10% of girls have been unable to afford sanitary products. [6] Menstrual care is a human right and one that needs to be addressed by the government. There are more conversations on policies (tax free and/ or subsidy on sanitary products) to enhance access to sanitary products and gender fairness.[7] United

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Nation (UN) declared sustainable development goal 2016-2030 as a global agenda of which Nepal is a signatory which raised the issue of poverty, health, sanitation etc.[8] The constitution of Nepal also mandates that sanitation is the basic fundamental right of every citizen. Period poverty is also a growing concern for human rights. In our country, where people have to struggle to fulfill daily basic needs, buying sanitary pads for menstrual use is of less importance. Even the girls and women still lack basic sanitation hygiene during menstrual periods. We found a research gap on the issue of cost of the menstrual cycle from our Nepali context. Hence, we conducted this study with an objective to find the cost of the menstrual cycle and their perceptions on menstrual cost among young Nepali women.

METHODS:

A cross sectional study was conducted from 15 August 2019 to 15 February 2020 among the medical students of Birat Medical College Teaching Hospital. Total enumeration sampling was used to enroll 157 Nepali female medical students who were studying at different semester of Bachelor of Medicine and Bachelor of Surgery (MBBS) at Birat Medical College Teaching Hospital. Ethical clearance was obtained from the institutional review committee of Birat Medical College Teaching Hospital. Written informed consent was taken from each participant. The cost of the menstrual cycle was operationalised as the cost spent for sanitary pads, tampons, new underwear or bedsheets, painkillers, acne medication, heating pads and other items needed for the last menstrual period. The perceptions in different attributes of the cost of menstruation includes current cost of sanitary items and government taxation on those items. Pre-tested questionnaire was used. About 10% of total sample size was used for pre testing from higher secondary level health students of Naragram School, Tankisinuwari, Morang, Nepal. The content validity of the tool was established by reviewing related literature and seeking opinions with the experts on the subject and appropriate modifications were made. Open data kit (ODK) collect software was used to collect data by self-administered questionnaire. The completeness of the data was checked every day. The confidentiality and anonymity of data were maintained. The collected data was extracted in Microsoft Excel 2016 and analysed by Statistical Package for Social Sciences (SPSS) software version 23.

RESULTS:

The mean and standard deviation of study participants was 19.5 years and 1.5 years. One third (33.8%) had their menarche at 13 years of age with the mean (SD) of 12.99 (1.26) years. Regarding menarche of their mother, more than one third (35%) had menarche at 13 years of age with the mean (SD) of 13.52 (1.21) years. Almost half (47.8%) had their regular menstrual cycle (Table 1).

Table 1: Baseline characteristics of the study participants (N=157).

| Characteristics | Category | n (%) | |
|---|--|-----------|---------|
| Age at menarche of participants (Years) | 9 | 1 (0.6) | |
| | 10 | 1 (0.6) | |
| | 11 | 13 (8.3) | |
| | 12 | 41 (26.2) | |
| | 13 | 53 (33.8) | |
| | 14 | 27 (12.7) | |
| | 15 | 17 (10.8) | |
| | 16 | 4 (2.5) | |
| | Age at menarche of their mothers (Years) | 10 | 1 (0.6) |
| | | 11 | 2 (1.2) |
| 12 | | 27 (17.3) | |
| 13 | | 55 (35) | |
| 14 | | 39 (24.9) | |
| 15 | | 22 (14) | |
| Regularity of menstrual period | 16 | 11(7) | |
| | Regular | 75 (47.8) | |
| | Sometimes irregular | 64 (40.8) | |
| | Always irregular | 18 (11.4) | |

Different sanitary items are required during the menstrual period. We found use of sanitary pads (100%), tampons (0.6%), pain relief medicine (38.2%), panty liner (19.7%), new underwear (6.4%), chocolate/sweets/crisps (44.6%), silicone heat pack (26.1%), and extra bed sheets (4.5%). The cost of different items used in their last menstrual period varied. The total average cost of items used in the last menstrual period was NPR 480.41 which varied from minimum NPR 40 to maximum NPR 1850. The detailed breakdown of cost of different items are mentioned in table 2.

The total lifetime menstrual period cost was calculated considering a total of 456 menstrual

Table 2: Cost (NPR) of different items used in last menstrual period (N=157).

| Characteristics | n (%) | Mean | Median | Range | Standard Deviation |
|-------------------------|-----------|---------------|------------|----------------|--------------------|
| Sanitary pad | 157 (100) | 190.79 | 150 | 40-450 | 122.44 |
| Tampons | 1 (0.6) | 200 | 200 | NA | NA |
| Pain relief medicine | 60 (38.2) | 29.58 | 22 | 3-70 | 18.62 |
| Panty liner | 31 (19.7) | 108.07 | 100 | 50-300 | 57.25 |
| New underwear | 10 (6.4) | 235 | 200 | 85-500 | 126.72 |
| Chocolate/sweets/crisps | 70 (44.6) | 243.13 | 200 | 20-900 | 198.78 |
| Silicone heat pack | 41 (26.1) | 409.02 | 450 | 200-500 | 96.10 |
| Extra bed sheet | 7 (4.5) | 571.43 | 600 | 200-1000 | 275.16 |
| Total cost | | 480.41 | 350 | 40-1850 | 413.61 |

periods in lifetime.[5] It was found NPR 480.41 per menstrual cycle and NPR 2,19,066.96 for lifetime menstrual cycle cost.

Participants had different perceptions in different attributes of the cost of menstruation. About 85.4% thought the cost of sanitary pads/tampons/ menstrual cups etc. should cost less money than they do at present. About 91.1% thought the tax currently put on sanitary pads/tampons/ menstrual cups etc. should be removed by the government (Table 3).

Table 3: Participants' perception on cost of menstruation (N=157).

| Characteristics | Category | n (%) |
|---|----------|------------|
| Do you think sanitary pads/ tampons/ menstrual cups etc. should cost less money than they do at present? | Yes | 134 (85.4) |
| Do you think the tax currently put on sanitary pads/tampons/ menstrual cups etc. should be removed by the government? | Yes | 143 (91.1) |

DISCUSSION:

Menstrual health is an important component of healthcare system. There are several characteristics of menstrual health in different phases of life. The advocacy for menstrual health is increasing. The cost associated with menstrual health is another agenda of period poverty. We had accessed the cost of the menstrual cycle and its attributes among young medical students in Nepal. They represent young Nepali women of different ethnicity and geography.

We found the majority (33.8%) had their menarche at 13 years with the mean (SD) of 12.99 (1.26) years. In a study from Pokhara of western

Nepal, it was reported the age at menarche was 12.69 (0.95) years.[9] In a study from India, the mean age of menarche was 12.52 years.[10] It was reported to be 11.9 years in the USA.[11] There is a similar age of onset of menarche in both Nepali studies which is also similar with India. This might be due to similar socioeconomic characteristics with Nepal. The USA reported menarche at earlier ages than us. That might be due to the good nutritional status of the American adolescents. Good nutrition and modern dietary patterns are associated with early menarche.[12]

Regarding menarche of their mother, we found a mean (SD) of 13.52 (1.21) years. Previous study from Nepal reported mean (SD) of 14.80 (1.67) years.[9] In both studies age of menarche of study participants were less than of their mother. This might be due to improved nutrition status and modern dietary pattern of this generation.

Different sanitary items are required during menstrual period. We found use of sanitary pads (100%), tampons (0.6%), pain relief medicine (38.2%), panty liner (19.7%), new underwear (6.4%), chocolate/sweets/crisps (44.6%), silicone heat pack (26.1%), extra bed sheets (4.5%). Similar types of sanitary items were reported by other studies as well. [13,14,15]

The cost of different items used in their last menstrual period varied. We found total lifetime menstrual period cost was NPR 219066.96. A project calculated total lifetime menstrual period cost was NPR 87552.[16] It is less than our study because of calculation of only the sole cost of sanitary pads, without including the cost of pain relievers, heat pads, reproductive health check-ups and other visits to the doctor. The lifetime cost of menstrual period in

a study reported \$6360.[17] Different research from different places reported the average lifetime cost of having a period is about £4800, \$17000 and £18450. [5,18,19] The cost of not maintaining menstrual hygiene is also remarkable. This leads to infection, infertility and even cancer.[20] Many leading organisation are advocating for financial burden of menstrual cost.[21] Even for women who have good socio-economic status who do not experience period poverty, they experienced high sticker prices for high-quality feminine hygiene products.[21] The gross margin on feminine hygiene related products is as high as 70%.[21] Even the policymakers of developed countries are silent about period cost. [22] The high cost of sanitary items also restricts the young students to attend school and college due to financial constraints of not having sanitary pads.[22]

Participants had different perceptions in different attributes of the cost of menstruation. About 85.4% thought the cost of sanitary pads/tampons/menstrual cups etc. should cost less money than they do at present. About 91.1% thought the tax currently put on sanitary pads/tampons/menstrual cups etc. should be removed by the government. In a Canadian survey of 1,500 participants, 65% think governments should subsidize feminine hygiene products like tampons, pads, or menstrual cups.[23]

The issue of period poverty is not just a form of inequity, but also one of the few examples of years of suppression of issues and basic needs of women. In a country like ours, where menstruation remains a taboo, considering costs on menstrual products may not be suitable to all the girls and women of the country. This eventually will lead to reuse of damped, uncleaned clothes due to unaffordability of the increasing cost of sanitary pads. Further it may deteriorate the perineal hygiene and may cause pelvic diseases eventually increasing morbidities during menstrual periods. Unclean and unsafe use of menstrual pads and illness during menstruation thus plays a vicious cycle leading to increased cost directly and indirectly. In addition, this increasing cost has caused inequity in health service utilization, and in parts of girl's education also.

We had limitations in our study. We were not able to explore the indirect cost of academic loss, healthcare consultation cost. That might significantly increase the lifetime menstrual cost. We also failed to adjust the cost of the menstrual cycle during amenorrhea due to pregnancy in women's lives.

The answer related to cost may have subjective variations.

We recommend the extra cost due to the menstrual cycle in women's life need to be considered by concerned authorities. As sanitation is the basic human right as per constitution of Nepal, the sanitary pads need to be freely available or at minimum cost. The government tax used for sanitary pads needs to be removed. We also recommend large scale studies including multiethnicity from different geography.

CONCLUSIONS:

The menstrual cycle added additional cost in women's life. The participants perceived that the cost is high and it should be tax free. Nepal constitution already passed sanitation as the basic fundamental right. So, the cost of sanitary items needs to be minimised by removing the government tax.

Conflict of Interest: The authors declare that no competing interests exist.

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