|  |  |  |
| --- | --- | --- |
| **Supplementary Table 1. Most important criteria in choosing feminine care product types (n=8591)** | | |
| Variables | n | (%) |
| Disposable menstrual pad (n=7704) |  |  |
| Comfort | 2414 | (31.3) |
| Absorption | 2301 | (29.9) |
| Natural ingredients or organic products | 1707 | (22.2) |
| Price | 618 | (8.0) |
| Brand awareness | 362 | (4.7) |
| Others | 302 | (3.9) |
| Cloth menstrual pad (n=387) |  |  |
| Comfort | 91 | (23.5) |
| Absorption | 45 | (11.6) |
| Natural ingredients or organic products | 199 | (51.4) |
| Price | 6 | (1.6) |
| Brand awareness | 28 | (7.2) |
| Others | 18 | (4.7) |
| Tampon (n=364) |  |  |
| Comfort | 151 | (41.5) |
| Absorption | 79 | (21.7) |
| Natural ingredients or organic products | 66 | (18.1) |
| Price | 24 | (6.6) |
| Brand awareness | 29 | (8.0) |
| Others | 15 | (4.1) |
| Menstrual cup (n=136) |  |  |
| User reviews on social media | 32 | (23.5) |
| Size that fits the body | 69 | (50.7) |
| Manufacturing country and company | 20 | (14.7) |
| Price | 5 | (3.7) |
| Others | 10 | (7.4) |

|  |  |  |
| --- | --- | --- |
| **Supplementary Table 2. User behavior of feminine care products by work type (n=7555)** | | |
| Variables | n | (%) |
| Use a different type of feminine care product when working | 480 | (5.5) |
| Disposable menstrual pad | 263 | (54.8) |
| Cloth menstrual pad | 9 | (1.9) |
| Tampon | 190 | (39.6) |
| Menstrual cup | 18 | (3.8) |
| Main reason for the switch |  |  |
| More comfortable in active condition | 248 | (51.7) |
| Able to use it longer | 104 | (21.7) |
| To prevent skin troubles | 37 | (7.7) |
| To avoid any indications of menstrual periods | 37 | (7.7) |
| Others | 54 | (11.3) |
| Experienced a longer interval between feminine care product changes because of busy work schedule | 6895 | (91.3) |

Data expressed as number (percentage)

**Supplementary Data. Questionnaires on Module 7**

1. How long is your average menstrual cycle?

○ Less than 21 days

○ 21-25 days

○ 26-31 days

○ 32-39 days

○ 40-50 days

○ More than 50 days or too irregular to track

○ I have amenorrhea

○ I am taking hormonal contraceptives

○ I experienced childbirth less than 6 months ago or I am breastfeeding

2. Is your menstrual cycle regular?

○ Very regular (varies by 3 days)

○ Regular (varies by 5-7 days)

○ Usually irregular

○ Always irregular

○ I have amenorrhea

○ I am taking hormonal contraceptives

○ I experienced childbirth less than 6 months ago or I am breastfeeding

3. Do you keep a record of your menstrual cycle?

○ Yes

○ No

▶ If your response is Yes, questions 3-1 and 4 will appear.

▶ If your response is “No”, questions 3-2 and 4 will appear.

3-1 (If you answered “Yes” to question 3) Where do you usually record your menstrual cycle?

○ Calendar

○ Diary

○ Smartphone app

○ Others

3-2 (If you answered “No” to question 3) What is the main reason you don’t maintain a record of your menstrual cycle?

○ It’s cumbersome

○ My cycle is irregular

○ I forget

○ I don’t feel the need

○ There is no particular reason

4. Have you tried to adjust your menstrual cycle with medications for travel, work, or other reasons in the past year?

○ Yes

○ No

▶ If your response is Yes, questions 4-1 and 5 will appear.

▶ If your response is “No”, question 5 will appear.

4-1. (If you answered “Yes” to question 4) How many times have you tried to adjust your menstrual cycle in the past year?

○ Once or twice

○ 3-4 times

○ 5-6 times

○ 7 or more times

5. Do you get menstrual cramps?

○ Yes

○ No

▶ If your response is Yes, questions 5-1 to 5-3 will appear.

▶ If your response is “No”, questions 6 to 7 will appear.

5-1. (If you answered “Yes” to question 5) How painful are your menstrual cramps?

1 (No pain at all) ---2---3---4---5---6---7---8---9---10 (Extreme pain)

5-2. (If you answered “Yes” to question 5) To what extent do your menstrual cramps interfere with daily activities or work?  
1 (No trouble at all) --- 2—3 --- 4 --- 5 --- 6 --- 7 --- 8 --- 9 --- 10 (Very troublesome)

5-3 (If you answered “Yes” to question 5) Do you take painkillers to relieve menstrual cramps?

○ Yes

○ No

▶ If your response is Yes, questions 5-4, 5-5 ,6, and 7 will appear.

▶ If your response is “No”, questions 6 and 7 will appear.

5-4 (If you answered “Yes” to question 5-3) Which painkillers do you usually take?

○ Acetaminophen (Tylenol, Geworin, Penzal Q, etc.)

○ Ibuprofen (Advil, EZN6, GnalN-Q, Penzal Lady, Carol-F, etc.)

○ Naproxen (Taxen, EZN6 Strong, etc.)

○ Dexibuprofen (EZN6 Pro, etc.)

5-5 (If you answered “Yes” to question 5-3) How many painkillers do you take during your menstrual period?

○ 1-2

○ 3-4

○ 5-6

○ 7 or more

6. Please check the most uncomfortable physical symptoms associated with menstruation (you may check up to 3).

○ Irregular menstrual cycle

○ Menstrual cramps

○ Heavy menstrual flow

○ Intermenstrual bleeding

○ Many blood clots

○ Vulvar pain

○ Vulvar itching

○ Vulvar rash and burning

○ Others

7. What type of menstrual product do you use most?

○ Disposable menstrual pad

○ Cotton pads

○ Tampon

○ Menstrual cup

○ Others (menstrual panty, etc.)

If you checked “Disposable menstrual pad”, questions 7-1 to 7-4 and 8 to 13 will appear.

If you checked “Cotton pads”, questions 7-5 to 7-9 and 8 to 13 will appear.

If you checked “Tampon”, questions 7-10 to 7-13 and 8 to 13 will appear.

If you checked “Menstrual cup”, questions 7-14 to 7-20 and 8 to 13 will appear.

If you checked “Others”, questions 8 to 13 will appear.

7-1. (If you checked “Disposable menstrual pad” for question 7) What is the average interval between menstrual pad changes on days of heavy flow?

○ 1 hour

○ 2-3 hours

○ 4-5 hours

○ Over 6 hours

7-2. (If you checked “Disposable menstrual pad” for question 7) What is the average interval between menstrual pad changes on days of light flow?

○ 1 hour

○ 2-3 hours

○ 4-5 hours

○ Over 6 hours

7-3. (If you checked “Disposable menstrual pad” for question 7) Check the two reasons you use Disposable menstrual pad.

○ Convenient to change

○ Hygienic

○ Good absorption

○ Feels comfortable

○ Eco-friendly

○ Easy disposal

○ There is no particular reason

7-4. (If you checked “Disposable menstrual pad” for question 7) Please check the most important factor to consider when choosing Disposable menstrual pad.

○ Fit

○ Absorbency

○ Natural or organic products

○ Price

○ Brand awareness

○ Others

7-5. (If you checked “Cotton pads” for question 7) What is the average interval between menstrual pad changes on days of heavy flow?

○ 1 hour

○ 2-3 hours

○ 4-5 hours

○ Over 6 hours

7-6. (If you checked “Cotton pads” for question 7) What is the average interval between menstrual pad changes on days of light flow?

○ 1 hour

○ 2-3 hours

○ 4-5 hours

○ Over 6 hours

7-7. (If you checked “Cotton pads” for question 7) Check the two reasons you use cotton pads.

○ Convenient to change

○ Hygienic

○ Good absorption

○ Comfortable fit

○ Eco-friendly

○ Easy disposal

○ For health reasons (skin problems, menstrual cramps, etc.)

○ There is no particular reason

7-8. (If you checked “Cotton pads” for question 7) Check the most important factor to consider when choosing cotton pads.

○ Fit

○ Absorbency

○ Natural or organic products

○ Price

○ Brand awareness

○ Others

7-9. (If you checked “Cotton pads” for question 7) How do you wash your cotton pads?

○ Boil wash for at least 10 minutes after each use.

○ Wash during menstruation and boil wash all at once after the period.

○ Just washing; no boil wash

○ Others

7-10. (If you checked “Tampon” for question 7) What is the average interval between tampon changes on days of heavy flow?

○ 1 hour

○ 2-3 hours

○ 4-5 hours

○ Over 6 hours

7-11. (If you checked “Tampon” for question 7) What is the average interval between tampon changes on days of light flow?

○ 1 hour

○ 2-3 hours

○ 4-5 hours

○ Over 6 hours

7-12. (If you checked “Tampon” for question 7) Check the two reasons you use cotton Tampon.

○ Convenient to change

○ Hygienic

○ Good absorption

○ Comfortable fit

○ Eco-friendly

○ Freedom of movement (no leaks)

○ Easy disposal

○ For health reasons (skin problems, menstrual cramps, etc.)

○ There is no particular reason

7-13. (If you checked “Tampon” for question 7) Check the most important factor to consider when choosing Tampon.

○ Fit

○ Absorbency

○ Natural or organic products

○ Price

○ Brand awareness

○ Others

7-14. (If you checked “Menstrual cup” for question 7) What is the average interval between menstrual cup changes on days of heavy flow?

○ 2-3 hours

○ 4-5 hours

○ 6-7 hours

○ 8-9 hours

○ Over 10 hours

7-15. (If you checked “Menstrual cup” for question 7) What is the average interval between menstrual cup changes on days of light flow?

○ 2-3 hours

○ 4-5 hours

○ 6-7 hours

○ 8-9 hours

○ Over 10 hours

7-16. (If you checked “Menstrual cup” for question 7) How did you choose the size of the menstrual cup?  
○ It was selected by referring to opinions (including the internet, etc.).  
○ Based on the length from the vaginal entrance to the cervix.

7-17. (If you checked “Menstrual cup” for question 7) Where did you learn to use Menstrual cup from?

○ Product instructions

○ Reputable websites (Ministry of Food and Drug Safety, etc.)

○ Blogs or social media

○ Friends and family who use them

7-18. (If you checked “Menstrual cup” for question 7) How do you clean your Menstrual cup?

○ Wash my hands before and after use, and wash menstrual cup only with water before and after use.

○ Wash my hands, sterilize the menstrual cup in boiling water for about 5 minutes before and after use, and wash it with water and dry it after use.

○ Wash my hands before and after use, and wash the menstrual cup with water and detergent before and after use.

○ Wash the menstrual cup with water before and after use, and sterilize it using a microwave or alcohol.

7-19. (If you checked “Menstrual cup” for question 7) Check the two reasons you use Menstrual cup.

○ Convenient to change

○ Hygienic

○ Good absorption

○ Comfortable fit

○ Eco-friendly

○ Easy disposal

○ For health reasons (skin problems, menstrual cramps, etc.)

○ There is no particular reason

7-20. (If you checked “Menstrual cup” for question 7) Check the most important factor to consider when choosing Menstrual cup.

○ Reviews on social media

○ Right cup size for your body

○ Country of production and manufacturer

○ Price

○ Others

8. Do you think Disposable menstrual pad are safe to use?○ Certainly

○ Yes

○ Not quite safe enough

○ No

○ Certainly not

9. Do you think cotton pads are safe to use?

○ Certainly

○ Yes

○ Not quite safe enough

○ No

○ Certainly not

10. Do you think Tampon are safe to use?

○ Certainly

○ Yes

○ Not quite safe enough

○ No

○ Certainly not

11. Do you think Menstrual cup are safe to use?

○ Certainly

○ Yes

○ Not quite safe enough

○ No

○ Certainly not

12. If you use Tampon or Menstrual cup without changing them for a long period of time, toxic shock syndrome, caused by Staphylococcus aureus, may occur. It’s a rare but fatal condition, so you need to be careful. Do you know what toxic shock syndrome is?

○ Yes

○ No

13. Have you changed the type of menstrual product you use in the aftermath of the recent disposable menstrual pad controversy?

○ Yes

○ No

▶ If your response is Yes, questions 13-1 and 14 will appear.

▶ If your response is “No”, question 14 will appear.

13-1. Which type have you changed to?

○ Cotton pad

○ Tampon

○ Menstrual cup

※ This is a question related to work.

14. Do you use a different type of menstrual product when working?

○ Yes

○ No

○ N/A (On leave/resigned)

▶ If your response is Yes, questions 14-1 to 14-3 and 15 to 16 will appear.▶ If your response is “No”, questions 15 to 16 will appear.

▶ If your response is On leave/resigned, the questionnaire on menstruation and menstrual products will end, and the page on symptoms of menstruation will appear.

14-1. (If you answered “Yes” to question 14) Which type do you change to when you are at work?

○ Disposable menstrual pad

○ Cotton pad

○ Tampon

○ Menstrual cup

14-2. (If you answered “Yes” to question 14) What is the main reason you change the type of menstrual product?

○ For longer use

○ For freedom of movement

○ To prevent skin irritation

○ To help keep your menstruation private

○ Others

14-3. (If you answered “Yes” to question 14) For which work shift do you usually make the change?

○ Daytime shift

○ Evening shift○ Night shift

15. Have you ever had a long interval between menstrual product changes because you were busy at work?

○ Yes

○ No

16. Have you ever experienced discomfort from menstrual cramps at work?

○ Yes

○ No