Conceptual Analysis of Menstrual Disorders in Young Women

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   Department of Nursing, Japan

ABSTRACT

To define the concept of menstrual disorders in young women.

Articles were searched from PubMed (2010-2020) using the keywords “Young Women,” “Dysmenorrhea” and “Premenstrual Syndrome.” Eight articles were extracted from 32 articles. Regarding articles in Japan, Japan Medical Abstracts Society website and CiNii Articles were searched, using the keywords “Young Women” and “menstrual disorders.” 23 articles were extracted from 165 articles. A total of 31 articles (23 articles in Japan, 8 articles from overseas) were targeted.

Six attributes: Actual condition of menstrual disorders, risk of menstrual disorder, endometriosis and treatment, use of analgesics, use of oral contraceptives (hereinafter OC), and Quality of Life (hereinafter QOL) in menstrual period. Five preconditions: Young women and motivation, women’s lifestyle and change in life habits, menstrual mechanism and normal values, classification and symptoms / treatment of menstrual disorder, view of menstruation and menstrual education. Four consequences: Awareness of menstruation, education surrounding menstruation, research on menstruation, and issues related menstruation were extracted.

This concept was defined as “in actual conditions of menstrual disorders, there is great variation, such as dysmenorrhea, PMS, and irregular menstruation, and accordingly, related risks have been observed, and the existence of endometriosis is also partially indicated. Analgesics and OC are not appropriately utilized, and QOL of young women during menstrual period decreases.”

< Key-words >
Young women, menstrual disorders, conceptual analysis

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I. Introduction

Regarding the study background, when a self-care scale for young women with menstrual pain was prepared, it was indicated that young women with strong menstrual pain do not properly care for themselves, their symptoms are not improved by self-care. Consequently, they need to visit a gynecologist\(^1\).

A survey by the Japan Association for The Advancement of Working Women (2004) pointed out that 27.1% of women 25 years old and younger visit a gynecologist for irregular menstruation. However, in contrast, 55.9% did nothing. Regarding degree of menstrual pain, 43.1% of women 25 years or younger responded “very bad,” and “bad”. However of these, only 13.6% visit a gynecologist, and 28.8% did nothing.\(^2\)

Similarly, the rate of consultation among women 25 years or younger was less than 30%, even though they had irregular menstruation and approx. 10% had strong menstrual pain. Menstrual disorders were often overlooked. According to Mochizuki, the most frequent main complaint by young women visiting a gynecologist is menstrual disorder.\(^3\)

Furthermore, most surveys on menstrual disorder in young women are small-scale studies. Approximately 80% of girls with menstruation-related disorders were reported to experience difficulty in their physical exercises and study but did not consult with anyone. Consequently, an accurate portrayal of the actual condition of menstruation in pubescent girls is still not understood.\(^4\)

Currently, no studies have been carried out which define the concept of menstrual disorders in young women. Identifying the conceptual structure of menstrual disorders in young women would be meaningful for health-care professionals and deepen their understanding, as well as be the foundation for future research. Consequently, the purpose of this study is to define the conceptional structure of menstrual disorders in young women by conceptual analysis.

II. Operational definition of terms

Young women: women in their late teens to early 20s who have experienced ovulatory cycles for several years after their first menstruation and are more susceptible to functional dysmenorrhea.
III. Research method

1. Selection of Articles

Articles from overseas were searched from PubMed (2010-2020) using the keywords “Young Women,” “Dysmenorrhea” and “Premenstrual Syndrome,” and conference minutes and review papers were excluded, and then original papers between 2010 and December 2020 were searched. The search was then narrowed down to articles published in academic magazines and with an abstract, resulting in a total of 32 articles extracted. From these 32 articles, studies regarding diseases and therapeutic agents, and studies with a theme other than exercise and menstruation were excluded, and 8 articles which could be obtained in full-text were extracted.

For articles in Japan, Japan Medical Abstracts Society website and CiNii Articles were searched using the keywords “Young Women” and “menstrual disorders.” 165 original papers published between 2010 and December 2020 were extracted. After conference minutes and review paper were excluded, 78 articles were extracted.

From these 78 articles obtained by the search, studies on a specific diseases and coldness, and studies targeting only athletes, were excluded, an article regarding the latest research on menstruation by the author was added, and a total of 23 articles were extracted. 8 articles from overseas and 23 articles in Japan, for a total of 31 articles, were targeted for analysis (refer to Fig. 1).

<Figure 1> Article extraction method and number of articles

<table>
<thead>
<tr>
<th>Articles in Japan</th>
<th>Articles from Overseas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Japan Medical Abstracts Society Website version, CiNii Articles</td>
<td>PubMed (2010-2020)</td>
</tr>
<tr>
<td>(2010-2020)</td>
<td>Young women and Dysmenorrhea and</td>
</tr>
<tr>
<td>Young women and menstrual disorders n=165</td>
<td>Premenstrual Syndrome</td>
</tr>
<tr>
<td>Conference minutes / abstracts were excluded n=78</td>
<td>Conference minutes / abstracts were excluded n=32</td>
</tr>
<tr>
<td>Conditions of exclusion: The subjects are athletes, specificity to cold and diseases</td>
<td>Conditions of exclusion: Articles with a theme other than menstrual, such as disease, therapeutic agents, and exercise.</td>
</tr>
<tr>
<td>Addition: one</td>
<td>Article which could be obtained in full text:</td>
</tr>
<tr>
<td>Final articles in Japan n=23</td>
<td>Final articles in overseas n=8</td>
</tr>
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</table>

N=31

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2. Data analysis method

In this study, the conceptual analysis method of Rodgers (2000) was used to determine the conceptual analysis of menstrual disorders in young women. Since the philosophical foundation of this analysis has been refined and developed by changes over time, Rodger’s conceptual analysis was considered appropriate as the lifestyle of women with menstrual disorder has greatly changed over these past 30 years, and the environment surrounding young women is predicted to change with each generation.

The targeted articles were read intensively, attributes which comprise the concept, preconditions which show the background of menstrual disorders in young women and contents that correspond to the consequences as a result of the concept, were encoded and extracted. After that, the articles were divided into attributes, preconditions, and consequences, and the codes are classified into sub-categories, then the common items of the sub-categories were categorized, and correlation between categories were shown in a conceptual diagram (refer to Fig.2).

To ensure reliability and validity of the analysis, two professors of maternity nursing education supervised the analysis.

3. Ethical consideration

For the articles used in this study, quoted articles and the original sources were clearly described so as to avoid any copyright infringement.

IV. Results

The constructed concept of menstrual disorders in young women is shown in Fig. 2. Hereinafter, categories are shown as { }, sub-categories as [ ], and codes as “ ”. Here, the extracted categories are explained.

![Diagram of Conceptual Construct of Menstrual Disorders in Young Women](image)

*<Figure 2> Concept construct of menstrual disorders in young women*
1. Attributes (Refer to Table 1)

As attributes of menstrual disorders in young women, six categories were extracted.

1) {Actual condition of menstrual disorders}

“Recognized symptoms of menstrual disorders increased 80% in Japan and abroad,”5,6) “Symptoms of menstrual disorders affected daily life / academic activities,”7) [Actual condition of symptoms during menstruation] increased, especially, [rate of dysmenorrhea and causes] exceeded 80%, with “excessive production of prostaglandin” determined to be the cause8). [Actual condition of irregular menstruation] was also approx. 25%, and “50% of women who have irregular menstruation had polycystic ovary syndrome (hereinafter referred to as PCOS).”9)

In [Actual condition of menstruation concomitant symptoms / perimenstrual symptoms], “98.4% had symptoms.”5) In [Actual condition of menstrual pain], “lower abdominal pain (91%), lumbar backache (52.8%)” were observed. Regarding the [Actual condition of PMS], “In Europe, persons with premenstrual symptoms exceed 90%.” Also in Japan, “Patients with PMS and PMDD could potentially be 180,000 persons.” From this, the [Actual condition of menstrual disorders] affects most young women.

2) {Risks of menstrual disorders}

Among the [Risks of PCOS / irregular menstruation], “Ovulation disorder is the cause of 25-30% cases of infertility”12) and among [Risks of dysmenorrhea], the “risk of endometriosis is 2.6 times higher”13) and among [Risks of PMS], “persons with a family history of such risks are 4.19 times more likely to experience PMS.”14)

Furthermore, among the [Risks of hypermenorrhea], the “Risk of anemia” can be mentioned,7,15) and regarding [Risks of abnormal age of menarche], “the risk of abnormal bleeding is 6.92 times higher.” From this, the {Risks of menstrual disorders} are very large.

3) {Endometriosis and treatment}

[Early endometriosis] can easily be “diagnosed as functional dysmenorrhea since internal examination and image diagnosis are not possible.”4,13) [Causes of endometriosis] are “related to hormones and periodic menstruation,”16) and one of the [Signs of endometriosis] is “dysmenorrhea, which has spread among young women.”16) Furthermore, since “Late diagnosis of endometriosis” is listed among [Diagnosis and treatment of endometriosis]10), early detection of {Endometriosis and treatment] are difficult and delay in treatment is common.

4) {Use of analgesics}

Regarding the [Period of use of analgesics], it is “use is recommended in the early phase.”9) However, “persons who are averse to their use is 65%”9) due to [anxieties regarding use]. Consequently, [education of analgesics] is needed. Furthermore, regarding
the [rate of use of analgesics], “25-60% of young women use over-the-counter drugs.”\(^9\) As a result, the “analgesic effect” is “insufficient in 40% of cases.”\(^9\)

Regarding [Therapeutic agents], “administration of NSAIDs”\(^4\) is standard.

5) **Use of OC**

[Characteristics of OC users] include a “higher average age and a higher level of physical activity”.\(^7\)

Regarding [Efficacy of OC], “reduction in the amount of menstruation bleeding in RCT was clearly evident in 43% cases when administered to women with hypermenorrhea.”\(^8\)

However, the [Rate of use of OC] was found to have “a low distribution rate in Japan.”\(^10\)

6) **QOL during menstrual period**

“Q-LES-Q-SF”\(^10\) is [a scale which can appropriately measure menstrual cycle QOL]. However, [satisfaction during menstrual period] was resulted in “satisfaction in the perimenstrual period in women 25 years and younger,”\(^10\) and “rate of participation in the labor force for women 20-24 years old with functional dysmenorrhea is 69.1%, a decrease in not only QOL, but also QOW is observed,”\(^1,7,10\) [Menstrual disorder adversely affects QOL], and [QOL during menstrual period] decreases.
**<Table 1> Attributes of menstrual disorders in young women**

<table>
<thead>
<tr>
<th>Categories</th>
<th>Subcategories</th>
<th>Main code</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Actual condition of menstrual disorders</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dysmenorrhea</td>
<td>7.7-57.8% were absent due to dysmenorrhea, 21.5% had reduced social activities, and back pain, headache, heavy bleeding were observed in half of the subjects.</td>
<td>4 Adachi</td>
</tr>
<tr>
<td>Premenstrual and menstrual symptoms affected daily life / academic activities.</td>
<td>4 Adachi</td>
<td></td>
</tr>
<tr>
<td>Menstrual symptoms included lower abdominal pain (75%), bloating (75%), irritability (75%), increased appetite (54%), and acne (82%). Prevalence of lower abdominal pain was lower for East Asians than for Caucasians and South Asians.</td>
<td>17 Alia, Jarosz &amp; Ahmed</td>
<td></td>
</tr>
<tr>
<td>Dysemorrhagia is the most common menstrual symptom with a prevalence of 85%</td>
<td>6 Emanuel, Samuel, Yaya, Xin &amp; Xiqing</td>
<td></td>
</tr>
<tr>
<td>Dysmenorrhea is observed in 28% of 22-27 year olds and decreases to 21% for 31-36 year olds.</td>
<td>14 Muluken, Mamo &amp; Desalegn</td>
<td></td>
</tr>
<tr>
<td>Dysemorrhagia is a hereditary factor. Persons with a family history of dysmenorrhea are 4 times more likely to develop dysmenorrhea.</td>
<td>13 Momoeda</td>
<td></td>
</tr>
<tr>
<td>Prevalence of dysmenorrhea in Australian teens was 93%, 80% in Egyptian teens. A universal method to evaluate dysmenorrhea is lacking.</td>
<td>8 Emanuel, Samuel, Yaya, Xin &amp; Xiqing</td>
<td></td>
</tr>
<tr>
<td>Excessive prostaglandin production is a cause of dysmenorrhea pain.</td>
<td>14 Muluken, Mamo &amp; Desalegn</td>
<td></td>
</tr>
<tr>
<td>Prevalence of dysmenorrhea in Ethiopia is 85.1%, due to family history and circumcision (female genital mutilation).</td>
<td>14 Muluken, Mamo &amp; Desalegn</td>
<td></td>
</tr>
<tr>
<td>Risks of menstrual disorders</td>
<td>25.0% of students with irregular menstruation have rare menstruation, rare menstruation is a symptom of PCOS. 50% of women with irregular menstruation have PCOS.</td>
<td>9 Hirata</td>
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<td>Risks of menorrhagia</td>
<td>Strong menstrual concomitant symptoms include decreased concentration, increased absenteeism, school absenteeism 25.3-51%, limited activity 60.4-65%, among those with menstrual symptoms 58.4%. Those with irregular sleeping and resting habits, no exercise habit, smoking, drinking, etc.</td>
<td>6 Emanuel, Samuel, Yaya, Xin &amp; Xiqing</td>
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<td>Menstrual pain symptoms include lower abdominal pain, back pain, nausea, diarrhea, etc.</td>
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<td>Actual condition of menstrual pain</td>
<td>88.2% have menstrual cramps, but do not address them. 32.8% have menstrual cramps that interfere with daily life.</td>
<td>5 Kaimura &amp; Ueda</td>
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<td>Subjects with constant menstrual pain all the time (56.9%), occasional pain (43.1%), extreme pain (14.6%), moderate pain (56.1%). Mild pain (71.4%), 80% of those with menstrual pain experience difficulty in daily life, lower abdominal pain (91%), lumbar backache (52.8%).</td>
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<td>Other non-medical faculty showed a 2.5 to 3 times higher risk of menstrual pain. Women in their late teens to early 20s have strong menstrual pain.</td>
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<td>Actual condition of PMS</td>
<td>68.2% have menstrual cramps, but do not address them. 32.8% have menstrual cramps that interfere with daily life.</td>
<td>5 Kaimura &amp; Ueda</td>
</tr>
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<td>Subjects who experience premenstrual symptoms exceeded 50% in Europe. 77.3% of women have psychological impairment before and during menstruation, 30% PMS, 8% PMDD.</td>
<td>10 Mark, Theodoor, Moniek, Didi &amp; Annesiak</td>
<td></td>
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<tr>
<td>There are potentially 160,000 patients with PMS and PMDD, 1-4%, with PMDD in Japan, 5-20% with moderate to severe PMS.</td>
<td>10 Mark, Theodoor, Moniek, Didi &amp; Annesiak</td>
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<td>Psychobehavioral symptoms of premenstrual symptoms were irritability (54.1%), fatigue (28.3%), anxiety/tension (23.9%), depression (28.3%), headache (19.0%), and joint and muscle pain (17.3%).</td>
<td>14 Muluken, Mem &amp; Desalegn</td>
<td></td>
</tr>
<tr>
<td>The prevalence of PMS increases with dysmenorrhea, and school absenteeism and decreased work productivity were observed in patients with moderate to severe PMS.</td>
<td>16 Faridah, Sainvah &amp; Mogam</td>
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<td>More than 60% of subjects experience premenstrual irregular symptoms. Premenstrual irregular symptoms have a negative impact on interpersonal problems, and many college students have premenstrual symptoms.</td>
<td>16 Faridah, Sainvah &amp; Mogam</td>
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<td>Physical symptoms included breast tenderness (52.3%), abdominal distension (33.9%), acne (26.0%), headache (19.0%), and joint and muscle pain (17.3%).</td>
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<td>PCOS is a risk of endometrial hyperplasia and endometrial cancer due to long-term estrogen exposure due to anovulation.</td>
<td>3 Moniezi</td>
<td></td>
</tr>
<tr>
<td>Not only for amenorrhea treatment, but regular cancer screening, risk factors for future hypertension, hyperlipidemia, and diabetes.</td>
<td>3 Moniezi</td>
<td></td>
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<td>Factors such as age, age at menarche, drinking, lack of exercise, lack of socializing, and BMI increase the risk of developing menstrual irregularities.</td>
<td>6 Emanuel, Samuel, Yaya, Xin &amp; Xiqing</td>
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<tr>
<td>Menstrual disorders are a risk for developing osteoporosis, uterine cancer, etc. Ovulation disorders are the cause of infertility in 25-30% cases. About 70% of menstrual disorders are caused by abnormalities of the central hypothalamic-pituitary system.</td>
<td>12 Iwasa, Matsuzaki &amp; Irahara</td>
<td></td>
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<tr>
<td>Irregular menstruation is associated with a 28% increase in the risk of coronary heart disease and a higher risk of type 2 diabetes.</td>
<td>10 Ahmed, Atiea &amp; Nadia</td>
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<td>30% of 22-27 year olds and decreases to 41% for 34-39 year olds.</td>
<td>27 Brown, W. Dobson, A. Bryson &amp; L. Byles J</td>
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<td>Risks of dysfunctional bleeding</td>
<td>28% have menstrual cramps, but do not address them. 32.8% have menstrual cramps that interfere with daily life.</td>
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<td>Patients with functional dysmenorrhea have a 2.6 times higher risk of developing endometriosis in the future.</td>
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<td>Risks of PMS and dysmenorrhea</td>
<td>4.19 times more likely to experience PMDD, and those with irregular menstruation are 4.19 times more likely to experience PMS.</td>
<td>14 Muluken, Mem &amp; Desalegn</td>
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<td>Blood loss due to menstruation affects QOL, heavy bleeding is a risk for anemia.</td>
<td>7 Karout, Hawai &amp; Altuwaijri</td>
<td></td>
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<tr>
<td>Abnormal age at menarche 4.76 times that of the normal age of menarche, risk of rare menstruation is 3.17 times, and risk of abnormal bleeding is 8.82 times. Prevalence is high when age at menarche is less than 11 years or more than 14 years.</td>
<td>7 Karout, Hawai &amp; Altuwaijri</td>
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</tbody>
</table>
### Use of analgesics

| Use of analgesics | Rate of use of analgesics | Efficacy of analgesics | Information on analgesics | Side effect of the use of analgesics | Attributes of users of OC | Use of OC | Scales which can appropriately measure menstrual cycle
<table>
<thead>
<tr>
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<td>Use of analgesics during the early stage of menstrual pain is recommended. 40.7% use analgesics at early stage, 31.3% use it when pain appears.</td>
<td>Use of analgesics a few days a month for menstrual pain is not a problem. 25-60% of young women use analgesics, and many use over-the-counter drugs.</td>
<td>Efficacy of analgesics lacking in 40% of cases, over-the-counter analgesics less effective than prescribed analgesics. Analgesic effect: markedly effective 60.3%, relief but still painful 37.2%, only slight relief 2.6%, insufficient effect 39.7%.</td>
<td>Information on analgesics was 75.8% from family, teachers, and friends, 10.3% from doctors and pharmacists, 5.0% from outer box description, and 5.1% from package insert.</td>
<td>25.5% of patients do not know the side effects of the analgesics, 68.1% have side effects but do not know details, 6.9% understand the side effects and details.</td>
<td>The average age of OC users is higher, and physical activity is higher in OC users than in non-users.</td>
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<td>Use of analgesics a few days a month for menstrual pain is not a problem. 25-60% of young women use analgesics, and many use over-the-counter drugs.</td>
<td>Efficacy of analgesics lacking in 40% of cases, over-the-counter analgesics less effective than prescribed analgesics. Analgesic effect: markedly effective 60.3%, relief but still painful 37.2%, only slight relief 2.6%, insufficient effect 39.7%.</td>
<td>Information on analgesics was 75.8% from family, teachers, and friends, 10.3% from doctors and pharmacists, 5.0% from outer box description, and 5.1% from package insert.</td>
<td>25.5% of patients do not know the side effects of the analgesics, 68.1% have side effects but do not know details, 6.9% understand the side effects and details.</td>
<td>The average age of OC users is higher, and physical activity is higher in OC users than in non-users.</td>
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2. Preconditions (Refer to Table 2)

Regarding preconditions influenced by the subjects, {Young women and motivation}, {women's lifestyle and change in life habits}, could be extracted, those influenced by menstruation itself, five preconditions, namely {menstrual mechanism and normal values}, {classification and symptoms / treatment of menstrual disorders}, and {view of menstruation and education of menstruation} were extracted.

1) {Young women and motivation}

[Definition of young women] is “women in their late teens to early 20s who experience extreme menstrual pain”\(^5\) and do carry out self-care without “[motivation] of goals”\(^20\).

2) {Women's lifestyle and changes in life habits}

[Change of women’s lifestyle] is large. Late marriage and births later in life -omission- tended to increase the frequency of menstruation, and as a result, “increased dysmenorrhea”\(^1\). The [effect on reproductive function] occurred due to [changes in life habits] and [the effect of missing breakfast].

However, there is a strong [desire to lose weight], and [meals and life rhythm are important], so there is a need for [intervention of life habits].

3) {Menstrual mechanism and normal values}

[Definition of menstruation], [normal values of menstruation], [menstrual feedback mechanism], and [normal value of first menstruation] are almost the same in Japan and abroad.

4) {Classification and symptoms / Treatment of menstrual disorders}

Menstrual disorders are varied and classified as [Abnormality in the first menstruation period], [definition of menstrual disorder], [causes and classification of amenorrhea], [disorders in menstrual cycle], [abnormal bleeding], [definition of dysmenorrhea], [tendency of dysmenorrhea], [functional dysmenorrhea and organic dysmenorrhea, definition], [symptoms of PMS], [causes and treatment of PMS], and [tendency of PMS].

5) {View of menstruation and education on menstruation}

Since “younger women have a more negative view of menstruation,”\(^21\) they have “strong menstruation concomitant symptoms.”\(^5,22\) Although “The Netherlands is an open society, the taboo of menstruation has not broken.”\(^10\) The [menstruation taboo] exists. In Japan, [Dissatisfaction regarding menstrual education and lack of knowledge] is observed, [Coping behavior during menstrual period] is not effective.
Sub-categories

Definition of young women

- "Women in their late teens to early 20’s who experience extreme menstrual pain" [5] and carry out self-care without motivation of goals [20].

Change in women's lifestyle

- Marriage and childbirth later in life, over 30 years old at time of first childbirth, declining birthrate. Frequency of menstruation 10 times that of before World War II.
- Frequency of menstruation has increased, and more women experience dysmenorrhea.

Increased stress

- Stress among women aged 12 and older was 40.4% in 1995 and 52.2% in 2007. Stress is higher among younger women.

Change in life habits

- In terms of sleeping habits, most women go to bed after 2:00 a.m., and the percentage of women who miss breakfast was 12.8%.
- After school enrollment, increase from 6.0% to 24.7% after 3 months, exercise habit is low at 10.8%, smoking habit is high at 28.6%.

Effect of missed breakfast

- Missing breakfast negatively affects menstrual cycle disorders, reproductive function, and affects daily QOL [25].

Effect on reproductive function

- Abnormalities in reproductive function caused by irregular dietary habits occur and interfere with the period of motherhood.

Intervention in the habits

- Comprehensive interventions to effectively regulate behavior and life habits, and promotion factors are needed. [5]

Diet and the desire to be thin

- As the ideal for a young woman to weigh less than the standard weight, the number of underweight women 20-29 years old has increased, doubling from 30 years ago.

Meals and life rhythm are important

- Consistency in meals and life rhythm can minimize the negative affect reproductive function while dieting. [22]

Definition of menstruation

- Menstruation is periodic bleeding from the endometrium which occurs approximately once a month and stops spontaneously within a limited number of days.

Menstruation and normal values

- A normal range is a cycle of 25-38 days, with a ±6 day variation, lasting 3-7 days and 20-140 ml of menstrual bleeding.

Menstrual feedback mechanism

- Menstruation is exfoliative bleeding of the endometrium caused by the disappearance of sex steroid hormones secreted by the ovaries. [26]

Normal values of the first menstruation

- Mean age of menstruation is 12.3±1.5 years, range is 11-18 years.
Abnormal timing of menarche: Menarche onset at less than 10 years of age (premature menarche), menarche onset at 15 years of age or older (delayed menarche), no menstruation until 18 years of age.

Definition of menstruation disorder: Secondary amenorrhea: suspension of menstruation for more than 3 months.

Causes and classification of Amenorrhea: Causes of secondary amenorrhea: reduced eating (43.8%), overeating (6.5%), stress (10.7%). There are two types of secondary amenorrhea: first-degree amenorrhea and second-degree amenorrhea.


Dysmenorrhea: a pathologic symptom accompanying the menstrual period. Frequent menstruation: menstrual cycle of 24 days or less. Rare menstruation: menstrual cycle of 39 days or more. Irregular cycle: menstruation that does not match the normal cycle of 25-33 days, cycle variation: continues within 30 days.

Coping behavior during menstruation: Increased menstrual cycle disorder, past experience of eating: no menstrual cycle disorder but strong menstrual pain.

Dysmenorrhea: a pathologic symptom accompanying the menstrual period. Common coping behaviors during menstruation include "lie down and rest" and "endure." Menarche onset at 25 years old, 7 years older than menarche, cyclic cycle and functional dysmenorrhea from 19 years old.

Menstruation cyclic disorder: Dysmenorrhea, under 25 years old 43.1%, 10 years old 40.9%.

Menstrual concomitant symptoms in more than 70% to 90% of cases, strong menstrual pain in late teens and early 20s, 86.4% with menstrual pain. Interference with daily life 30%, school absenteeism 10%, interference in daily life 32.6% but not addressed.

Approximately 1/4 had dysmenorrhea, psychological complaints, significant fatigue, and decreased activity in one out of three persons.

Menstrual disorders: Dysmenorrhea is observed in 20-24 year olds and decreases thereafter. 21-25 day menstrual cycle decreases dysmenorrhea.

Functional dysmenorrhea and Organic dysmenorrhea: Functional dysmenorrhea is painful during menstruation without organic disease, starts several hours before bleeding, and lasts 48-72 hours. Organic dysmenorrhea affects fertility and requires treatment.

Definition of dysmenorrhea: Dysmenorrhea, under 25 years old 43.1%, 10 years old 40.9%.

Menstrual concomitant symptoms in more than 70% to 90% of cases, strong menstrual pain in late teens and early 20s, 86.4% with menstrual pain. Interference with daily life 30%, school absenteeism 10%, interference in daily life 32.6% but not addressed.

Approximately 1/4 had dysmenorrhea, psychological complaints, significant fatigue, and decreased activity in one out of three persons.

Menstrual disorders: Dysmenorrhea is observed in 20-24 year olds and decreases thereafter. 21-25 day menstrual cycle decreases dysmenorrhea.

Functional dysmenorrhea: Menstrual pain is of ovulatory origin and is due to uterine contractions. Pain is not due to organic disease and is caused by increased uterine tone.

Dysmenorrhea: Menstrual pain is of ovulatory origin and is due to uterine contractions. Pain is not due to organic disease and is caused by increased uterine tone.

Premenstrual syndrome: Physical and mental symptoms begin 3-10 days before the onset of menstruation and decrease with the onset of menstruation. Physical symptoms include breast tenderness, breast pain, and pelvic pain.

Premenstrual syndrome includes physical and psychological symptoms that occur in the late luteal phase and decrease a few days after the onset of menstruation.

PMS Symptoms: PMDD is often associated with aggressive behavior, blurrier interpersonal relationships.

Physical symptoms include swelling, headache, fatigue, psychological symptoms including anxiety, depression, etc. More than 80% of women experience these symptoms regularly.

Causes and treatment of PMS: PMS is caused by a decrease in progestosterone, which leads to a decrease in serotonin secretion, depression, and fatigue. Symptoms such as irritability occur. Treatment methods are hormonal therapy, herbal therapy, psychotropic drugs, symptomatic treatment, and LEP preparations.

Trends in PMS: Symptoms disappear with the onset of menstruation in 97.8% of cases of PMS. When symptoms appear, daily life is affected.

More than one-third of women suffer from PMS, with prevalence peak at the age of 35.

Negative view of menstruation: A negative view of menstruation is the "blood" that comes from the womb, and the younger the person is, the more negative the view of menstruation is.

A negative reaction during menstruation influences the formation of a negative view of menstruation. People with a negative view of menstruation have more concomitant symptoms with menstruation.

Menstruation taboo: The Netherlands is an open society, but lacks openness to menstrual complaints and menstrual taboos have not been broken.

Dissemination regarding menstrual education: Menstruation education is provided, but 33.3% are dissatisfied with the education because it is insufficient. 24% of junior high and high school students have some knowledge of the menstruation mechanism, a lack of knowledge regarding menstruation is indicated.

Coping behavior during menstruation: Regarding frequently used medications such as analgesics, have students read the package inserts in class and recognize specific side effects.

Common coping behaviors during menstruation include "lie down and rest" and "endure."
3. Consequences (Refer to Table 3)

Regarding consequences, four categories, namely {Awareness of menstruation}, {education surrounding menstruation}, {research on menstruation}, {issues related to menstruation} were extracted.

1) {Awareness of menstruation}

Regarding [Acceptance of menstruation], “modification of awareness of menstruation” and “comprehensively understanding physical, mental, and social factors,” and “education of knowledge regarding perimenstrual symptoms, and enlightenment / PR activities” are needed.

Furthermore regarding [Awareness of premenstrual symptoms], “rather than negatively accepting it, assisting a person to understand the importance of acceptance” is valuable.

2) {Education surrounding menstruation}

In [Actual condition of visiting a gynecologist], “85.9% of women in their 20s experience PMS, but awareness of disease and visits to a gynecologist are low.” The rate of visiting a gynecologist is not high. Regarding [Support during the menstrual period], since there is little “information support,” it does not lead to “continued knowledge and self-care.” One [Meaning of health education regarding menstruation] is that “early detection of disorders such as a menstrual disorder is beneficial”.

3) {Studies on menstruation}

Regarding [Studies on menstruation are behind], “conditions surrounding menstruation have not changed, even though more than 10 years have passed since indications were defined by the Ministry of Health, Labour and Welfare.” However, “improvement in menstruation concomitant symptoms due to self-care has been observed according to some studies.”

Since [Development of a scale for menstruation is poor], “research on a scale development is needed” due to “few new development is needed” due to “few new developments in Menstrual Distress Questionnaire (MDQ) and PMS memory”.

4) {Issues related menstruation}

Regarding [Compensation for the lack of knowledge on menstruation and response] “an appropriate response is not taken due to the lack of knowledge on menstruation and too few places where health consultations are provided.” Regarding [Consultation leading to a visit to the gynecologist], among persons who receive a consultation for menstruation in Japan, “80% are mothers,” “influenced by the advices of their family.” Regarding [Improvement of the negative influence on society], since “menstruation issues influence family, society, and the national economy,” improvement is needed.
Menstruation issues influence family, society, and the national economy.

Lack of knowledge on menstruation

Menstrual pain is a health issue which is caused by insufficient treatment due to women's lack of knowledge and society's lack of understanding. Due to the lack of knowledge on menstruation and the fact that there are not enough places where health consultations are provided.

Consultations which lead to a medical examination

90% of consultations for menstruation are by mothers and are influenced by the advice of their family. 11.4% were referred to a gynecologist, 5.8% had endometriosis, adenomyosis, fibroids, and PCOS. Menstrual problems consulted doctors, pharmacists, mothers, sisters, friends.

Table 3: Consequences of menstrual disorders in young women

<table>
<thead>
<tr>
<th>Categories</th>
<th>Sub-categories</th>
<th>Main code</th>
<th>Documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Awareness of menstruation</td>
<td>Accept menstruation</td>
<td></td>
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<tr>
<td></td>
<td>Medical treatment and counseling at a medical institution can promote change in perception of menstruation and positive coping choices can be more easily made.</td>
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<tr>
<td></td>
<td>It is possible not only to accept menstruation, but also think positively about it. Menstruation is a familiar problem and affects QOL. Support through education of knowledge regarding perimenstrual symptoms, and enlightenment / PR activities</td>
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<td></td>
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<tr>
<td></td>
<td>Awareness of premenstrual symptoms</td>
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<td></td>
<td>For premenstrual symptoms, there is a difference in resilience and seeking support in the perception of menstruation regarding mental and physical complaints. There is also a difference in knowledge and how to deal with it. Through counseling, students with premenstrual symptoms can learn how not to view menstruation negatively, but realize the importance of accepting it, their original worries can be alleviated.</td>
<td></td>
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</tr>
<tr>
<td>Practice of gynecology examination and diagnosis</td>
<td>Care when interviewing and examining teenage patients is important. If the pelvic examination is traumatic, they may refuse to see the doctor and reject medical treatment. Checking for sexual intercourse and pregnancy, and half of all visits to gynecologists by young women are for menstrual disorder. 95.9% of women in their 20s experience PMS, but awareness of the disease is low and they have not visited a gynecologist because the symptoms go away after menstruation, they are not aware of the disease and do not seek medical attention. Screening women with strong premenstrual symptoms can encourage them to seek medical attention and prevent secondary problems.</td>
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<tr>
<td>Support during menstrual period</td>
<td>Young women receive emotional support, but are not given practical support regarding symptom relief and daily living.</td>
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<tr>
<td></td>
<td>Health education on menstrual disorders that targets female students and their parents, including education on reproductive health, in the school curriculum is considered beneficial for early detection of disorders such as menstrual disorder. The use of PMS memory and education on menstruation concomitant symptoms is important for maintaining and improving health.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Study of menstruation is behind</td>
<td>Studies have clarified that menstruation concomitant symptoms have a major physical and mental affect, but improvement of such symptoms is observed by self-care. Studies of perimenstrual symptoms which focus on the QOL of young women are behind.</td>
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<td></td>
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<tr>
<td>Development of menstrual scale are few</td>
<td>MDQ and PMS memory are tools to measure menstruation concomitant symptoms, but they have been modified and used independently, with little new development. Perception of perimenstrual symptoms is subjective, and symptom assessment requires objectification and quantification. Consequently, research for the development of a scale is needed.</td>
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V. Discussion

1. Attributes of menstrual disorders in young women

The concept of menstrual disorders in young women was defined as “in actual conditions of menstrual disorders, there is great variation, such as dysmenorrhea, PMS, irregular menstruation, and accordingly, related risks have been observed, and the existence of endometriosis is also partially indicated. Analgesics and OC are not appropriately utilized, and QOL of young women during menstrual period decreases.”

2. Background of menstrual disorders in young women

1) Young women’s lifestyle and change in life habits

One precondition, [Women’s lifestyle and changes in life habits], is significant as background. Over the past 30 years, women’s lifestyles in Japan have greatly changed. As popularization of higher education, advances in society, trends in decreased birthrate due marrying and having children later in life, have continued, the average age for a women's first birth was over 30 years. Total fertility rate in 2020 was 1.34, and continues to fall. Consequently, after World War 2, the frequency of menstruation has significantly increased, and more women experience dysmenorrhea.1)

Furthermore, life habits of young women have also greatly changed. “the number of women 20-29 years with a low body weight has increased, twice that of 30 years ago” as represented by the [desire to lose weight].5,25) Dieting causes the menstrual cycle to become irregular, and the weight loss eventually leads to amenorrhea. For persons who have dieted in the past, even if amenorrhea is treated and the menstrual cycle returns to normal, strong menstrual pain often remains.26)

Sleeping habits have also changed due to the spread of the Internet, and the number of persons who go to sleep after 2 am has increased. The proportion of women in their 20s who miss breakfast is 28.6%. Exercise habits are few, and the number of women who partake in luxury items such as smoking and alcohol, have increased, as the number of working women has increased.22) Since “diet restrictions which are disassociated with diurnal rhythms have a synergistic negative effect on reproductive functions”25), menstrual disorders can easily occur in the daily lives of young women in the modern generation.

2) Negative view of menstruation and lack of education on menstruation

“A negative the view of menstruation as ‘troublesome’ is strong, and the younger the person is, the more negative the view of menstruation is.”21) “A negative reaction to the person’s first menstruation affects the formation of a negative view of menstruation.”5,22)

In Japan, menstruation education is provided for all elementary school students, but “33.3% are dissatisfied with the education because it is insufficient.”5) Since “24% of junior high and high school students have some knowledge of the menstruation mechanism, a
lack of knowledge regarding menstruation is indicated,” and consideration of the contents of the menstruation education is needed.

3. Issues in menstruation education and research surrounding young women

In Japan, “80% of consultations for menstruation are by mothers,” “influenced by the advice of their family.” Overseas however, “43.7% consult with a physician.”

Regarding [Actual condition of visiting a gynecologist] in Japan, “85.9% of women in their 20s experience PMS, but awareness of the disease is low and they have not visited a gynecologist because the symptoms go away after menstruation.” The rate of young women visiting a gynecologist is low. Although “they experience menstrual pain – an appropriate response is not taken due to few places where health consultations are provided.” Consequently, an environment where “consultations which lead to the action of visiting a gynecologist,” are needed.

Regarding [Support during menstrual period], since “information support which connects to practical self-care, such as symptom alleviation and ideas in daily life are few,” “health education on menstrual disorders that targets female students and their parents, including education on reproductive health, in the school curriculum is considered beneficial for early detection of disorders such as menstrual disorder.” Similarly, [improvement in the negative effect to society] by a compensatory response to the lack of knowledge on menstruation.

While [research on menstruation is behind] is currently observed, “studies have clarified that menstruation concomitant symptoms have a major physical and mental effect, but improvement of such symptoms is observed by self-care.” Consequently, consideration of menstruation education to help young women perform self-care is needed.

[Development of a scale for menstruation is poor] is observed, and MDQ and PMS memory, etc. are scales developed in 1900s. Study on the development of a new scale for menstruation which considers the background of modern young women is important in the future.

VI. Conclusion

The concept of menstrual disorders in young women was defined as “in actual conditions of menstrual disorders. There is great variation, such as dysmenorrhea, PMS, irregular menstruation, and accordingly, related risks have been observed, and the existence of endometriosis is also partially indicated. Analgesics and OC are not appropriately utilized, and QOL of young women during menstrual period decreases.” Consideration of the background of modern young women who easily experience menstrual disorders, and promotion of better menstruation education are important.
VII. Limitations and future asks of this study

One limitation of this study is that analysis on the use of terms is based on a limited number of articles. The possibility of bias in article extraction can be mentioned. Moreover, menstrual disorders in young women are individualized, therefore individual factors which can influence the process of developing a menstrual disorder are thought to exist. In the future, the refinement of the concept is needed, and verification in practice with young women are needed.

This study adds to and revises the contents presented at the 62nd Academic Conference of the Japan Society of Maternal Health.

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