The relationship between menstrual attitudes and menstrual symptoms among Taiwanese women

Zxy-yann Jane Lu PhD RN
Associate Professor, National Yang-Ming University, Institute of Community Health Nursing, Taipei, Taiwan

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Correspondence:
Zxy-yann Jane Lu,
155, Li-Nong Street Sector 2,
Pai-Tou,
Taipei,
Taiwan 112.
E-mail: zylu@ym.edu.tw

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Aim of the study. This study explored characteristics of the menstrual cycle including duration, prevalence and severity of symptoms and examined the relationship of these characteristics with attitudes toward menstruation.

Background. Conceptualization of menstrual phenomena and attitudes toward menstruation may vary among cultures. While data about menstrual health among American women are widely available, there are little data concerning menstrual health in Taiwanese women.

Design/Methods. A total of 30 healthy women with a mean age of 24.4 years participated in the study and made daily records of symptoms over a 90-day period with the Woods Daily Health Diary (WDHD). They then retrospectively completed the Moos Menstrual Distress Questionnaire (MMDQ) and the Menstrual Attitudes Questionnaire (MAQ).

Results. The mean age of menarche of these women was 13 years, their mean cycle duration was 5.8 days and the cycle length was 31.1 days. The mean scores of five subscales for MAQ ranged from 2.19 to 3.28. Forty-six percent of the surveyed Taiwanese women agreed that the onset of menstruation can be predicted and anticipated, and 78% of these women agreed that menstruation was a natural event.

Conclusions. Menstrual attitudes in Taiwanese women are multidimensional, and that significant cross-cultural differences are present. Attitudes toward menstruation in Taiwanese women are related to their physical, cognitive, behavioural and psychological changes in the premenstrual and menstrual phases.

Keywords: menstrual attitudes, menstrual symptoms, menstrual distress, Taiwanese women, PMS

Introduction

Conceptualization of menstrual phenomena as symptoms to be treated has been the major predicament for the promotion of women’s well-being (Dan & Lewis 1992). Studies of the negative effects of the perimenstrual syndrome on women’s cognitive and physical performance have been criticized by feminist scholars for their potential to impede women’s progress towards equal opportunities in the workforce (Harlow 1986, Rome 1986, Martin 1987, Chrisler 1991).

A myriad of studies has emphasized the importance of examining the cultural context in menstrual experiences. This approach differs greatly from the medical perspective in which women are treated as a homogeneous group and cultural differences in bodily experiences are marginalized (Snowden & Christian 1983, Buckley & Gottlieb 1988, Reissman 1992, Scrambler & Scrambler 1993, Sveinsdotter 1993). Cultural attitudes and beliefs regarding menstruation have been shown to have a significant relationship to the reporting of menstrual symptoms (Siegel 1986, Fitzgerald...
Menstrual attitudes across cultures

The meaning of menstruation varies cross-culturally (Snowden & Christian 1983, Buckley & Gottlieb 1988). In some cultures, the symbolic polluting power of menstruation is considered the basis for negative feelings toward female bodies and the oppression of women, while other cultures emphasize the symbolic enhancement of life forces by menstrual blood in rituals (Ahern 1975, Buckley & Gottlieb 1988).

McMaster et al. (1997) reported that attitudes toward menstruation among Zimbabwean women might be characterized into four themes: emphasis on biological processes, being a normal part of a woman's life, link directly to pregnancy, and cleansing the system. Britton (1996) found that, in England, the notion of negativity surrounding menstruation was reflected by views of unclean menstrual blood as pollutant, by the maintenance of secrecy and seclusion surrounding menstruation, and by physical discomfort associated with menstruation. In contrast, positive views about menstruation included that it revitalizes the body, clears impurities and is indicative of childbearing potential. A study of linguistic strategies used by American adolescent girls for managing menstrual taboo revealed that menstruation is concealed both symbolically and materially, and that this concealment is embedded in its embarrassing nature (Kissling 1996).

Several cross-cultural studies of menstrual attitudes have been performed based on the widely used Menstrual Attitude Questionnaire (MAQ) (Brooks-Gunn & Ruble 1980). Icelandic nursing students (Sveinsdottir 1993), American Jewish women (Siegel 1986), and Indian women (Chaturvedi & Chandra 1991) all believed that menstruation was a natural and predictable event which affects behaviour. However, among these women, only the Icelandic nursing students denied that menstruation is bothersome, and only the Indian women disagreed that menstruation was debilitating.

There is little reported information about the menstrual beliefs of Chinese women. In Chinese culture, menstrual blood is associated with dirt, pollution and seduction (Furth 1986). It is also considered dangerous, as its presence is thought to be able to break off communication between humans and gods (Chu 1980). The cultural view of menstrual blood as being the body of a baby reveals its significant role in procreation (Lu 1991, Furth & Chen 1992).

Patterns of perimenstrual symptoms

Physical, psychological and behavioural changes may vary across the menstrual cycle phases and across cultures (Fitzgerald 1990, Rodin 1992, Richardson 1995). These changes have been conceptualized as representing a Premenstrual Syndrome (PMS) which has been a popular subject of scientific inquiry and involves two aspects: (1) timing: the onset and cessation of symptoms, (2) symptomology (Chang et al. 1995, Richardson 1995).

Inconsistent results in the prevalence rate of premenstrual symptoms result in a wide variety of treatment needs. The prevalence of premenstrual mood or somatic symptoms has been estimated to range 20–80% among American women (Logue & Moos 1986, Woods et al. 1992) and 40–90% in United Kingdom (UK) (Corney & Stanton 1991). A cross-cultural investigation conducted in 14 different cultural groups in 10 countries found a lower prevalence rate (23–34%) of premenstrual symptoms in nonwestern cultures such as Indonesia, while a higher prevalence rate (71–73%) was reported in the western countries of UK and Yugoslavia (World Health Organization [WHO] 1981). A previous study of Chinese women revealed that premenstrual psychoemotional changes were reported by 88% of the women, while physical symptoms were reported by 69% (Yu et al. 1996). This cultural variation in the prevalence of premenstrual symptoms may have been because of the differences in assessment methods, with prospective recording yielding a lower prevalence rate than retrospective recording (Woods et al. 1992, Yu et al. 1996, Sveinsdotter 1998).

The existence of over 200 symptoms, which have been reported to be associated with PMS, is reflective of the inconsistency of the descriptive symptom clusters which form the PMS typology (Mitchell et al. 1992). Moos (1991) investigated American women and identified seven clusters of symptoms including pain, water retention, autonomic reactions, negative affect, impaired concentration, behaviour change and arousal. A study of Taiwanese nurses and college students using Steiner’s diagnostic criteria found that perimenstrual symptoms included fatigue, dysphoria, tension, difficulty in concentration, and changes in appetite, coordination and sexual desire (Jou et al. 1993, Jou 1994). Ch’en (1983) reported that 48.1% of junior high school students
and 84.7% of junior college students experienced menstrual discomfort. Lin (1995) reported that psychoemotional problems were the most common premenstrual complaints, while physical discomforts were most frequent during the menstrual period. About 92% of Chinese women in Hong Kong experienced menstrual symptoms such as pain, fatigue, water retention and negative affect (Chang et al. 1995).

In previous studies, the definition of symptom severity patterns including the level of severity and timing of symptom occurrence tended to be imprecise if data were derived from only one menstrual cycle. In order to identify perimenstrual changes reliably, daily records of symptoms using prospective recording for at least two menstrual cycles are needed (Hamilton et al. 1984).

**Purposes of the study**

The objectives of this study were:

- To survey the prevalence and degree of severity of symptoms across the menstrual cycle among Taiwanese women
- To determine whether a bias exists between retrospective and prospective recording of menstrual symptoms in Taiwanese women
- To ascertain attitudes towards menstruation among Taiwanese women
- To determine the relationship between menstrual attitudes and menstrual symptoms among Taiwanese women

**Research methods**

**Research design**

A survey design which involved two-stage data collection was applied. Daily symptoms were assessed prospectively using the Woods Daily Health Diary and then assessed retrospectively using the Moos Menstrual Distress Questionnaire (MMDQ). The SPSS-PC statistical package was used to analyse data.

**Sample**

Because of the high concentrations of female populations and the appropriateness of their age groups, primary school and high school teachers in the Chung-Jen Borough in Taipei City as well as nursing college students from a Medical Center in Taipei City were sampled. Sample inclusion required that the women be healthy and from 18 to 35 years old (in order to preclude the perimenopausal women). Women were excluded if they were pregnant or had a previous diagnosis of any menstrual disorder. Informed consent was obtained and it was made clear that withdrawal from the study could take place at any time. The women in the sample were 20–35 years old with a mean age of 24.4 (±4.2), had 15.5 years of education (±1.00), and had 0–2 children with the mean of 0.2 (±0.6). While 86.7% were single, 13.3% were married.

**Instruments**

Demographic data on menstrual history were collected including age at menarche, duration of bleeding and non bleeding, and amount of blood flow ranging from mild to heavy. Other data obtained included age, body weight/height, amount of exercise, health history, consumption of alcohol and contraceptive use. The Menstrual Attitudes Questionnaire (MAQ) (Brooks-Gunn & Ruble 1980) consists of 33 items involving five factors: menstruation as a debilitating, bothersome and/or natural event, anticipation and prediction of the onset of menstruation, and denial of any effect of menstruation. Cronbach’s α coefficients have been reported to range from 0.95 to 0.97 for American Caucasian women (Brooks-Gunn & Ruble 1980).

The Woods’ Daily Health Diary (WDHD) identifies all symptoms experienced as distressing. The scale has a total of 67 items. The first 57 items assess various symptoms on a severity scale ranging from 0, not present, to 4, extreme; the remaining items focus on behaviours such as exercise and diet in relation to the symptoms experienced. The instrument has been used in various populations including Asian populations and acceptable reliability and validity data have been reported (Woods et al. 1982, Woods et al. 1992, Yu et al. 1996). In order to avoid a priori categories of menstrual symptoms, the Diary prospectively documents women’s experiences of symptoms without a specific focus on menstruation.

The MMDQ has been widely used for the study of PMS. It focuses on the seven factors of pain, water retention, autonomic reactions, negative affect, impaired concentration, behaviour change, and arousal, with Cronbach’s α ranging from 0.64 to 0.88 (Moos 1991). In the present study, Form C of the MMDQ was used, which consists of 47 symptoms with ratings on three cycle phases: 4 days before the most recent flow, the days of the most recent flow, and the remainder of the cycle. Item 48 records the changes of the recent cycle. Subjects retrospectively rate the severity level of 47 symptoms on a 5 point scale ranging from 0 for no experience to 4 for severe symptoms. Permission to use this questionnaire was granted by Western Psychological Services in California, United States of America (USA). The cross-cultural application of the instrument on Bahraini women in the Middle East region has shown acceptable validity and reliability (Al-Gasseer 1990).

The principle of symmetrical translation from the English versions, which emphasizes loyalty of meaning and colloquialness of the Chinese language, was applied (Werner & Campbell 1970). English versions of the three questionnaires were translated into Chinese and verified for their clarity by preliminary testing with 10 Chinese women whose comments were then used for further revision.

Procedure

Although studies with Caucasian women have found that menstrual symptom scores tend to be higher when retrospective data recording is used compared with prospective reporting (Woods et al. 1982), the existence of this effect in a Taiwanese population has not been reported. In this study, the data collection procedure was divided into two phases. The first phase involved daily prospective collection of women’s experiences of symptoms without direct focus on menstruation. The second phase focused on the collection of data obtained retrospectively by surveying menstrual attitudes and menstrual symptoms.

The principals of each school were contacted to elicit their support for the study. Participants were then asked to record symptoms experienced using the Daily Health Diary every day for 90 days and/or three consecutive menstrual cycles. The completed Diary was collected every 30 days in order not only to serve as a reminder but also to try to avoid women failing to record data.

In the second phase of the study, participants were contacted to set up appropriate times for distributing and collecting the MAQ and MMDQ.

Results

Participants reported having started menstruating at about 13 years (±1.3) (range 10–16 years) and had menstruated with a mean duration of 5.8 (±1.3) days (range 4–10 days) and a cycle length of 31.1 (±3.8) days (range 25–40 days). Sixty-nine percent of the women reported that their menstrual cycle was usually regular and predictable, while 10.3% reported that it was always regular and predictable, 17.2% reported neither regular nor predictable, and 3.4% reported irregular but predictable menstrual cycles.

The proportional mean scores of the five subscales of the MAQ were: debilitating, 3.28 (±0.45); bothersome, 2.86 (±0.27); anticipating, 2.75 (±0.52); affect, 2.63 (±0.44); and natural, 2.19 (±0.53). Forty-six percent of Taiwanese women agreed that the onset of menstruation could be predicted and anticipated, whereas 78% agreed that menstruation was a natural event. About 37–39% of women agreed that menstruation was a debilitating and bothersome event and 32% agreed that their periods resulted in negative affect, while 32–45% disagreed. (Table 1).

Data derived from the Woods’ Daily Health Diary for 90 days were divided into three cycle phases, premenstrual, menstrual and postmenstrual, based on the Society for Menstrual Cycle Research Guidelines (1986) as previously applied by Ainscough (1990) and Hardie (1997). The premenstrual phase was identified by backward counting 7 days from the first day of the period, the menstrual phase consisted of all days of bleeding, and the postmenstrual phase consisted of all remaining days. The mean value of each symptom for each menstrual phase is calculated by adding symptoms recorded by the WDHD. Fatigue was the most frequently reported symptom in both premenstrual and menstrual phases. During the premenstrual phase, women in this study reported experiencing extreme symptoms including weight gain (3.1%), increased appetite (1.8%), and increased sleeping (18%), while weight gain (3%), depression (2.3%), and fatigue (2.1%) were extremely severe during the menstrual phase.

One-way ANOVA indicated that the symptoms assessed across cycle phases by WDHD varied significantly. Mean values for abdominal pain, cramps, general aches and pains, and being alone were significantly higher during the menstrual phase than during the pre- and postmenstrual phases. Symptoms of hostility had significantly higher means during

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Strongly agree (%)</th>
<th>Agree (%)</th>
<th>Neither agree nor disagree (%)</th>
<th>Disagree (%)</th>
<th>Strongly disagree (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Menstruation as a debilitating event</td>
<td>2.0</td>
<td>35.0</td>
<td>17.8</td>
<td>41.1</td>
<td>4.2</td>
</tr>
<tr>
<td>Menstruation as a bothersome event</td>
<td>14.0</td>
<td>25.3</td>
<td>28.7</td>
<td>29.2</td>
<td>2.8</td>
</tr>
<tr>
<td>Menstruation as a natural event</td>
<td>12.0</td>
<td>66.0</td>
<td>13.3</td>
<td>8.7</td>
<td>0</td>
</tr>
<tr>
<td>Anticipation and prediction of the onset of menstruation</td>
<td>3.3</td>
<td>43.2</td>
<td>30.3</td>
<td>22.4</td>
<td>0.8</td>
</tr>
<tr>
<td>Denial of any effect of menstruation</td>
<td>2.4</td>
<td>30.0</td>
<td>31.0</td>
<td>36.7</td>
<td>0.5</td>
</tr>
</tbody>
</table>

Table 1 Frequencies of participants’ responses to MAQ
the premenstrual and menstrual phases than in the postmenstrual phase, whereas tender breasts had a significantly higher mean prevalence during the pre- and menstrual phases than in the postmenstrual phase (Table 3).

In the MMDQ results, more than 60% of the participants retrospectively recalled physical, psychological and behavioural changes such as fatigue, cramps, mood swings, and taking naps during the menstrual phase. Only painful or tender breasts and fatigue were reported by more than 60% of the participants during the premenstrual phase. Severe symptoms, which included loneliness, fatigue, and avoidance of social activity during the menstrual phase, were recalled by 3·3% of the participants (Table 4).

Product-moment correlation coefficients indicated that symptom scores on WDHD were significantly related to scores on MMDQ across the three menstrual cycles (Pearson’s $r = 0.48, 0.51, 0.48; P < 0.01$).

Beliefs in menstrual predictability were significantly correlated with cognitive, behavioural and psychological symptoms such as tension, distractibility, poor judgement, and poor work performance, etc. (Pearson’s $r = 0.42–0.65; P < 0.05$) during the premenstrual phase, as well as physical and cognitive symptoms such as cramps, backaches, difficulty in concentration, and mood changes (Pearson’s $r = 0.38–0.47; P < 0.05$) during the menstrual phase. Attitudes regarding menstruation as a debilitating event were significantly correlated with poor work performance and distractibility during the premenstrual and menstrual phases (Pearson’s $r = 0.89, 0.98; P < 0.05$). Beliefs in menstruation as a bothersome event were significantly correlated with psychological symptoms of anxiety and tension during the premenstrual phase (Pearson’s $r = 0.42, 0.44; P < 0.05$).

**Discussions**

Consistent with the findings by Brooks-Gunn and Ruble (1980) in Caucasian populations, menstrual attitudes of a multidimensional nature were also evident among Taiwanese women. However, several significant cross-cultural differences in menstrual attitudes between Taiwanese women and western women were evident. Mean score for attitudes toward menstruation as a natural event was 2.19 (±0.55) for Taiwanese women, 2.59 (±0.76) for Icelandic women (Sveinsdottir 1993) ($t = 4.65; P < 0.05$). Mean score for beliefs in the effect of menstruation on behaviours was 2.63 (±0.44) for Taiwanese women, 3.79 (±0.62) for Icelandic women ($t = 12.08; P < 0.001$) and 2.26 (±0.75) for American college women (Brooks-Gunn & Ruble 1980) ($t = 4.16;
Further qualitative research is suggested in order to ascertain the cultural meanings of menstrual experience as a natural but debilitating event among Taiwanese women. While 69% of Taiwanese women reported having regular and predictable menstrual cycle, only 46% believed that onset of menstruation could be predicted and anticipated. Qualitative research on the cultural significance of menstrual regularity among Taiwanese women is also necessary to explain this discrepancy.

There are only scant published data on the relationship between menstrual attitudes and menstrual symptoms. While this research indicated that beliefs in anticipation and prediction of the onset of menstruation were correlated with premenstrual and menstrual symptoms among Taiwanese women, only belief in the menstruation as debilitating event was correlated with affective, physical, behavioural and cognitive premenstrual symptoms among Indian women (Chaturvedi & Chandra 1991).

This study showed that Taiwanese women experienced few menstrual-related symptoms, and that they also experienced cyclic changes related to menstruation. In this study, fatigue was the most prevalent and severe symptom both during the premenstrual and menstrual phases in data obtained by both retrospective and prospective data recording, while tender breasts were listed as the most common symptom by retrospective recording during the premenstrual phase. Cramps or abdominal pain was the second most common symptom during the menstrual phase, assessed both retrospectively and prospectively. These results are consistent with the findings on Chinese women reported by Yu et al. (1996). Physical changes across the menstrual cycle were parallel in data collected by both retrospective and prospective recording among Taiwanese women. However, a discrepancy between retrospective and prospective recording of psycho-emotional experiences was noticeable. Thus, further research will be needed to clarify the relationship between perimenstrual symptoms and menstrual hormonal changes with physiological measures as symptoms collected by self-report questionnaires is one of the limitations of the study.

Jou (1994) reported a 82–95% prevalent rate of premenstrual symptoms such as irritability, tension, fatigue and dysphoria among Taiwanese college students using retrospective data compared with a 20–55% prevalence by prospective recording and 23–67% prevalence of these symptoms found in this study. Mean symptom scores during the postmenstrual phase in this study were lower as compared with the premenstrual and menstrual phases. Conversely, Jou (1994) reported more severe symptom scores during the postmenstrual phase as compared with premenstrual and menstrual phases. This difference may be derived from differences in methods of measurement of symptom severity. In contrast to previous research, lack of awareness on the part of the participants that the study was focused on perimenstrual symptoms may have eliminated the attributing effects. In addition, the use of daily recording of symptoms for at least two menstrual cycles to examine cycle phase differences in symptom severity and prevalence has been previously reported to be reliable (Woods et al. 1992).

The results of this study also revealed inconsistencies among data obtained by retrospective and prospective recording of menstrual symptoms. Menstrual complaints which were recorded retrospectively were of greater severity than those recorded prospectively, which is in agreement with the results obtained in research with American women by Woods et al. (1992). Thus, the use of prospective recording of symptoms provides a solution for the attributing effects generated in retrospective research of premenstrual syndrome.

In conclusion, this study revealed that menstrual attitudes in Taiwanese women are multidimensional, and that signi-
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significant cross-cultural differences are present. Prospective daily recording of perimenstrual changes for at least two consecutive cycles is essential for obtaining accurate data for premenstrual syndrome research. Beliefs in menstruation in Taiwanese women are related to their physical, cognitive, behavioural and psychological menstrual symptoms during the premenstrual and menstrual phases.

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References


