Developmental Changes in Menstrual Attitudes

Margaret L. Stubbs, Jill Rierdan, Elissa Koff, Ph.D.

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While there is a large body of folklore about menarche and menstruation (Delaney, Lupton, & Toth, 1977; Weideger, 1975), there is only a small research base of information about the psychological meaning of menstruation in the lives of girls and women. Since group differences in menstrual attitudes have been studied only infrequently, it is still unclear whether there are reliable group differences in attitudes toward menstruation among girls and women who vary, for example, in age, menstrual status, socioeconomic status and/or religion. This investigation seeks to clarify whether group differences associated with two developmental variables -- age and menarcheal status -- are related to differences in the attitudes toward menstruation held by early adolescent girls. The design of this investigation was informed by results from available empirical studies of adolescent and adult women's menstrual beliefs.

In general, available data suggest that individuals subscribe to specific beliefs about menstruation. Whether young or old, female or male, for most people there exists an association between menstruation and unpleasant physical symptoms, and/or emotional malaise, and/or generally debilitated performance. For instance, Clarke and Ruble (1978) found that early adolescent girls and boys shared negative expectations about menstruation. Among adults, women and men attributed negative but not positive moods to menstruation (Koeske & Koeske, 1975), women reported more negative moods premenstrually and during menstruation (Golub, 1976), and perceived their performance of certain tasks to be negatively influenced by menstruation (Golub, 1976; Sommer, 1972).

Studies of attitudes toward menarche and early menstrual experiences differ somewhat from the findings above regarding attitudes toward menstruation more broadly defined. In the menarche literature there seems to be some consensus that girls report not simply negative but mixed reactions to early menstrual experience (Brooks-Gunn & Ruble, 1980a; Henton, 1961; Koff, Rierdan, & Jacobson, 1981; Petersen, 1983; Whisnant & Zegans, 1975). Girls who offered positive responses typically mentioned being excited about menstruation because it was a sign of growing up, while those who offered negative responses mentioned being scared, annoyed, upset, embarrassed or, worse, physically debilitated or incapacitated. Frequently, girls reported both positive and negative feelings and expectations (e.g., Woods, Dery, & Most, 1982).

Information about group differences, specifically between premenarcheal and postmenarcheal girls, in attitudes toward menarche and menstruation is inconsistent in the literature. Some studies have found group differences, with premenarcheal girls more positive about the "growing up" aspect of menstruation and postmenarcheal girls more negative, reporting reactions like feeling sick, disgusted or "grossed out," as well as expectations that menstruation will have a negative effect on moods and on performance of school tasks (Clarke & Ruble, 1978; Koff et al., 1981; Whisnant & Zegans, 1975).
Other research indicates no differences in the attitudes of pre- and postmenarcheal girls. Brooks-Gunn and Ruble (1980b) have reported no effect of menarcheal status on girls' ratings of menstruation as a natural event, a predictable event, a bothersome event, or a debilitating event, or on girls' tendency to deny the effects of menstruation. Clarke and Ruble (1978) reported no difference between pre- and postmenarcheal girls regarding the association of a set of negative symptoms with menstruation, though they did find group differences with respect to expectations of the negative impact of menstruation on school performance, as noted above.

Some of the confusion in the literature regarding menarcheal group differences in menstrual attitudes can be attributed to the fact that researchers have used a variety of instruments to assess menstrual attitudes, including some of questionable validity. Until recently, researchers have relied on the Moos (1968) Menstrual Distress Questionnaire (MDQ) to examine menstrual attitudes (cf., Parlee, 1973, 1974). When the MDQ is used in attitude studies, subjects are asked to indicate how many symptoms they believe are experienced during particular phases of the menstrual cycle. These beliefs are taken to reflect cultural attitudes about menstruation: the more negative symptoms expected, the more negative an attitude subjects are thought to have toward menstruation. Since the MDQ was designed to detect the prevalence of menstrual symptoms rather than to assess attitudes, the validity of this instrument as an attitude measure is clearly in question.

Additionally, the way subjects have been directed to respond to the MDQ, and the way items have been written in other instruments designed specifically to measure menstrual attitudes, has led to confusion in interpretation of results. At some times, girls are asked to indicate their own personal beliefs and/or symptom experience (e.g., Menke, 1983; Whisnant & Zegans, 1975); at other times, girls are asked to indicate their judgments about the beliefs and/or symptom experience of most girls and/or women (e.g., Clarke & Ruble, 1978). When responses to these four types of questions (beliefs and symptoms of self and others) are combined or intermingled (e.g., Brooks-Gunn & Ruble, 1980b), the meaning of "menstrual attitudes" becomes increasingly unclear.

In addition to limitations in instruments used in research on menstrual attitudes, a broader methodological problem may have led to inconsistent findings in assessing group differences in attitudes toward menstruation. This problem consists of the naturally occurring confound of menstrual status and age. In an early adolescent sample, premenarcheal girls are likely to be younger than postmenarcheal girls, even within the same grade. While some studies of attitude differences between pre- and postmenarcheal girls have matched groups for age, or have tested for age differences (e.g., Brooks-Gunn & Ruble, 1982; Koff et al., 1981; Koff, Rierdan, & Silverstone, 1978), in other studies (e.g., Clarke & Ruble, 1978; Morse & Doan, 1987; Whisnant, Brett, & Zegans, 1975), the possible impact of age on results concerning differences between menarcheal status groups is not reported. Determining the particular effects of age and menstrual status on attitudes is especially important, given a theoretical perspective (e.g., Ross, 1977; Ruble & Brooks-Gunn, 1979) that attitudes are acquired not simply from personal biological
experience, but as a matter of socialization, which would be expected to vary with age.

This study differs from past explorations because it addresses the two classes of methodological limitations reviewed above as the question of developmental differences in menstrual attitudes is investigated. First, in order to make our research findings comparable to those of other studies, an instrument used in previous research, the Brooks-Gunn and Ruble (1980b; 1982) Menstrual Attitudes Questionnaire, Adolescent Form (MAQ-A), is used. It was decided that the benefit from use of this instrument in terms of building a common base of research findings outweighed limitations noted above. In adopting this instrument for our research, we sought to make a methodological contribution by evaluating the reliability of the factor structure that has been assumed (e.g., by Brooks-Gunn & Ruble, 1980b; Clarke & Ruble, 1978; Menke, 1983) to underlie adolescent girls' responses to the MAQ-A.

We have addressed the second problem, that of the natural confound between age and menstrual status, by developing an analytic strategy that allowed us first, to assess and control for the variance in menstrual attitudes due to age, and then to test for the effects of menarcheal status. Such a strategy offers a unique approach to realizing the goal of this investigation - an assessment of early adolescent girls' attitudes toward menstruation which discriminates the individual impact of two developmental variables, age and menstrual status, and their interaction.

Method

Subjects

A group of 587 girls in grades 6 through 9, all white and attending public schools in three middle-class suburbs of Boston, participated in a large-scale study of early adolescent girls' development. From this group of 587, 544 girls (288 premenarcheal and 256 postmenarcheal) provided complete data on the measures of concern in this report. As anticipated, premenarcheal (M = 12.54 yr.) and postmenarcheal (M = 13.88 yr.) girls differed significantly in age, t(539) = -16.18, p < .001.

Prior to the study, care was taken to provide subjects with information regarding the nature of the research project, to offer assurances of the confidentiality of the results, and to obtain consent. Sixty-two percent of the total population of girls in grades 6 through 9 in the three towns sampled participated in the study.

Measures and Procedures

In the fall of a school year, each girl filled out a packet of questionnaires which included measures of biological, personality, and social development. Two female experimenters administered the questionnaires to small groups of girls within the school setting. Testing required two class periods on two different days. Measures used to test the major hypotheses of this study were:
1. Menstrual Attitude Questionnaire, Adolescent Form (MAQ-A). This instrument\(^1\) is comprised of 22 items which derive from a number of studies of menstrual attitudes (Brooks-Gunn & Ruble, 1980b; 1982; Brooks-Gunn, Ruble & Clarke, 1977). Sixteen items derive from Brooks-Gunn et al.'s (1977) Menstrual Attitudes Questionnaire (MAQ), developed originally with data from college-aged subjects, and shortened for use with adolescents (Brooks-Gunn & Ruble, 1980b). Six items derive from Brooks-Gunn and Ruble's (1982) Adolescent Menstrual Feeling Scale (AMFS). In keeping with their conceptualization of menstrual-related attitudes as multifaceted, not unidimensional, Brooks-Gunn and Ruble intended the 22-item MAQ-A to reflect seven aspects of menstruation: as a psychologically and physically debilitating event, as a natural event, as a bothersome event, as an event whose onset can be predicted and anticipated, as an event that does not or should not affect one's behavior (denial), as an embarrassing event, and as an event which can be talked about. Girls responded to each of the 22 MAQ-A items on a 6-point scale (1 = disagree a lot; 6 = agree a lot), in keeping with the format of the original AMFS.

2. Girls Growing Up. In this scale, which has been used in previous research (Koff et al., 1978; Rierdan & Koff, 1980), girls are asked a series of questions concerning activities associated with maturing, one of which is "getting your period for the first time." Girls indicate menarcheal status and, if postmenarcheal, indicate the grade in which they reached menarche.

Additional measures used were:

1. Beck Depression Inventory - Short Form (BDI-S), an instrument assessing level of depression in terms of the degree to which 13 symptoms are endorsed by the subject (Beck & Beck, 1972). Higher scores indicate more endorsement of depressive symptoms.

2. Body Cathexis Scale (modified form), a 17-item scale used in previous research (e.g., Koff et al., 1978; Rierdan, Koff, & Stubbs, 1987) which is derived from the 46-item scale developed by Secord and Jourard (1953). Lower scores indicate greater body satisfaction.


4. Bialer (1961) Locus of Control Questionnaire, a 23-item scale on which higher scores indicate a more internal locus of control.

5. Children's Manifest Anxiety Scale (Castenada, McCandless, & Palermo, 1956), a 42-item scale, wherein a higher score indicates more anxiety.

Results

Factor Structure

To determine if the seven factors previously identified by Brooks-Gunn and Ruble (1980b, 1982) appeared internally consistent in this sample of early adolescent girls, Cronbach's alpha coefficients were calculated for each factor.\(^2\) Using .60 as indicative of an acceptable level of reliability, scale
homogeneity was not found: (embarrassment = .61; talk about = .56; anticipation = .49; natural = .33; debilitating = .21; bothersome = .17; denial = .05). The use of these factors, therefore, would not provide an appropriate basis in this study for assessing developmental changes in menstrual attitudes.

The poor reliabilities found for the seven Brooks-Gunn and Ruble (1980b, 1982) factors prompted a reconsideration, first, of the method recommended by them for the scoring of individual items, and, second, of the delineation of the particular factors characteristic of early, as opposed to late, adolescent girls' menstrual attitudes. Anticipating the emergence of a particular factor structure, Brooks-Gunn and Ruble (1980b) designed the scoring so that the presence of a particular factor was indicated by higher scores while the absence was signaled by lower scores. High scores did not necessarily represent positive aspects of menstruation, nor did low scores necessarily represent negative aspects. For example, according to Brooks-Gunn and Ruble, a high score for item 17 (I can tell my period is coming because of breast soreness, backache, cramps, or other physical signs) indicates Anticipation of Onset, (Factor IV), but clearly represents a negative experience of menstruation. In contrast, a high score for item 16 (Menstruation is a sign of womanhood) indicates Menstruation as a Natural Event (Factor III) and also clearly represents a positive stance.

Given the absence in our sample of the specific structure predicted by Brooks-Gunn and Ruble for the MAQ-A, we designed an alternative scoring system whereby high scores for individual items consistently reflected positive aspects of menstruation and low scores consistently reflected negative aspects. To accomplish this revision of the Brooks-Gunn and Ruble scoring system, 5 items (17, 18, 20, 21, 22) were re coded (positive and negative poles were reversed) while the scoring of 17 items remained the same.

After revising the system for scoring individual items, an exploratory principal components analysis (no rotation) was conducted to determine the underlying structure of the MAQ-A data in this sample of early adolescents. While multiple components emerged with eigen values over 1.00, the skree test indicated that a two-component model would be sufficient to describe the data. The eigen value for the first component was 3.35 and the amount of variance it accounted for was 15%. The eigen value for the second component was 2.57 and the amount of variance it accounted for was 12%. Cronbach's alpha coefficients were calculated for each component and scale homogeneity was acceptable: $\alpha = .69$ for the first component and $\alpha = .62$ for the second.

Table 1 presents the items associated with the two components; only items with loadings of .50 or higher (Comrey, 1973) are shown so as to facilitate interpretation of the results. Inspection of the items loading on the first component suggests that it reflects an Affirmation of menstruation. Items

Insert Table 1 about here

with loadings of .50 or higher (Comrey, 1973) are shown so as to facilitate interpretation of the results. Inspection of the items loading on the first component suggests that it reflects an Affirmation of menstruation. Items
loading on the second component seem to reflect Worry about or dislike for menstruation.

We next sought to establish the concurrent validity of these components. In a series of multiple regression analyses in which age, menstrual status, and the interaction of age and menstrual status were controlled, we investigated the relationship between the menstrual attitudes of Affirmation and Worry and specific dimensions of mood and personality assumed to relate to these dimensions. Results from these analyses revealed two consistent patterns. First, greater Affirmation of menstruation was found to be related to less depressive symptomatology, $F(4,531) = 6.3124, p < .0001, R^2 = .04$; greater body satisfaction, $F(4,540) = 6.6192, p < .0000, R^2 = .05$; higher self-esteem, $F(4,536) = 5.5975, p < .0002, R^2 = .04$; and a more internal locus of control, $F(4,542) = 7.4057, p < .0000, R^2 = .05$. Second, more Worry was found to be related to greater depressive symptomatology, $F(4,531) = 2.4726, p < .0436, R^2 = .02$; lower body satisfaction, $F(4,540) = 7.5207, p < .0000, R^2 = .05$; lower self-esteem, $F(4,536) = 7.3745, p < .0000, R^2 = .05$; and a more external locus of control, $F(4,542) = 3.2139, p < .0127, R^2 = .02$. Additionally, more Worry was found to be related to greater anxiety, $F(4,530) = 20.4046, p < .0000, R^2 = .13$. These results provide convincing evidence of the concurrent validity of the two components of menstrual attitudes identified in our analyses.

To justify use of these components in assessing developmental changes in menstrual attitudes, it is also important to determine if these components demonstrate internal consistency at multiple points in time, a methodological step often omitted in scale construction. To determine if Affirmation and Worry were reliable components, responses to the MAQ-A on a second test occasion, six months after the first, were submitted to a principal components analysis parallel to the initial one. Cronbach's coefficient alphas for the Affirmation and Worry components were .68 and .63, respectively. Thus, Affirmation and Worry appear to be reliable components of menstrual attitudes among early adolescent girls.3

Having established the reliability and validity of the two components, we next calculated each subject's mean Affirmation and Worry score. These scores were derived by calculating for each subject her mean score across all items comprising the component. Mean scores could range from 1 to 6 and were used to test for developmental differences in menstrual attitudes.

Developmental Differences in Menstrual Attitudes

A series of regression analyses were undertaken to assess the impact of age, menarche, and menarcheal timing on menstrual attitudes. Two distinct aspects of chronological age were distinguished. The first aspect is termed "social age." The social age of each subject is represented by the mean age of girls within her grade and is nearly synonymous with grade since the correlation between age and grade in this sample as a whole is .94. The social age of girls in the four grades is 11.56 yr. (grade 6), 12.52 yr. (grade 7), 13.52 yr. (grade 8), and 14.53 yr. (grade 9). The second aspect of age is "deviation age." The deviation age of each girl refers to the relationship between her chronological age and her social age. A girl may be
a few months older or younger than grade-mates, or right at the mean age for her grade. A sixth grader who is 11.20 years, for example, would have a deviation age of -.36, given the mean age for grade 6 (her social age) of 11.56 years; a girl of 11.70 years in the same grade would have a deviation age of +.14. A final aspect of age included in analyses is the interaction of social age and deviation age. This was included to determine being older or younger than one's peers has different psychological significance at different social ages.

In an initial series of multiple regression analyses, social age, deviation age, the interaction of social age and deviation age, and menstrual status served as predictors and girls' scores on either the Affirmation or the Worry component served as the outcome variable. In keeping with the goal of assessing age effects before assessing the impact of menarche, predictors were entered into the regression equation in the order specified above. The regression equation for the Affirmation component was not significant, $F(4,539) = 2.00, p = \text{ns}$, indicating that girls' Affirmation of menstruation does not vary as a function of age or menstrual status. In contrast, the regression equation for the Worry component was significant: $F(4,539) = 3.71, p .005, R^2 = .03$. The regression coefficients for social age (-.1212), and for the interaction of social age and deviation age (.2007) were significant ($p \leq .05$). Menstrual status was not a significant predictor of Worry when age was controlled, however.

A subsequent series of multiple regression analyses was undertaken to determine if the interaction between social age and menstrual status, which indicates timing of menarche, predicted menstrual attitudes in the absence of simple menstrual status effects. In these analyses, social age, deviation age, the interaction of social age and deviation age (for Worry only), menstrual status, the interaction of social age and menstrual status, and the interaction of deviation age and menstrual status served as predictors, and mean scores on the Affirmation and Worry components served as the outcome variables. Again, the regression equation for the Affirmation component was not significant, $F(5,538) = 1.84, p = \text{ns}$. The equation for the Worry factor was significant, $F(6,537) = 3.70, p < .001, R^2 = .04$. Significant ($p \leq .05$) regression coefficients were found for social age (-.2104), deviation age (-.3563) and for the interaction of social age and menstrual status (.2534).

In the absence of significant regression coefficients for the interactions of social age and deviation age, and of deviation age and menstrual status, a four variable equation was tested in a final analytic step, with social age, deviation age, menstrual status, and the interaction of social age and menstrual status as predictors, and scores on the Worry component as the outcome variable. This equation was found to be sufficient to describe the Worry data, $F(4,539) = 4.53, p < .001, R^2 = .03$. Significant regression coefficients ($p \leq .008$) were found for social age (-.2051) and for the interaction of social age and menstrual status (.2428).

The results suggest that while none of the developmental variables predict girls' Affirmation, the interaction of social age and menstrual status, which indexes the timing of menarche, is an important predictor of girls' Worry. This interaction, presented in Table 2, indicates that postmenarcheal girls
espouse virtually the same level of Worry for menstruation at all four social ages. Premenarcheal girls, on the other hand, become more Worried with increasing age, so that their level of Worry, initially less than that of their early maturing peers in grade 6, approximates that of their more mature peers by grade 8.

Discussion

In this study we have explored the menstrual attitudes of early adolescent girls, with particular interest directed at differences associated with age and menarcheal status. Data from the study help to clarify what girls' menstrual attitudes are and how their attitudes vary with change in developmental status.

With regard to what girls think about menstruation, our analyses suggest that for early adolescent girls, attitudes toward menstruation are essentially two-dimensional. Girls share, to a greater or lesser degree, a set of beliefs about menstruation as something normal and acceptable (Affirmation); at the same time, girls express to varying degrees, worries about and dislike for menstruation (Worry). Since the correlation between these two attitudes is .04, they can be seen as nearly orthogonal. This paper makes an important methodological contribution, thus, in defining two menstrual attitudes for early adolescent girls which appear to be reliable and valid.

What early adolescent girls in this sample thought about menstruation is consistent with reports that girls this age have mixed attitudes about menstruation (e.g., Koff et al., 1981; Whisnant & Zegans, 1975). The Affirmation component, containing items reflective of messages directed to girls about menstruation as a healthy sign of womanhood, clearly presents a cluster of positive aspects of menstrual experience; items comprising the Worry component focus attention on more troublesome aspects of menstruation.

These results with early adolescents contrast with reports that older adolescent girls (i.e., college students) and adult women espouse menstrual attitudes that are multifaceted (Brooks-Gunn & Ruble, 1980b; Brooks-Gunn et al., 1977). There are two reasons, methodological and theoretical, for why the components of our younger adolescents' menstrual attitudes differed from those reported for older subjects. First, since the majority of items on the MAQ-A emerged from data collected from late adolescent girls and women, and were intended to represent aspects of menstrual attitudes held by females of those ages (Brooks-Gunn & Ruble, 1980b; Brooks-Gunn et al., 1977), the MAQ-A may be more sensitive and germane to the experience of late rather than early adolescent girls. Perhaps a different set of attitude items, derived from a sample of early adolescents or from a sample of females spanning a broad age range from early adolescence to adulthood, would capture responses reflecting...
a more differentiated set of attitudes about menstruation on the part of early adolescents as well as adult women.

Second, and more likely, it may be that early adolescent girls are simply not mature enough cognitively to hold a highly differentiated view of menstruation. Girls' dichotomous conceptualization of menstruation, including an Affirmation of and Worry about menstruation, seems appropriate for girls in a transition between concrete and formal operational thought (Inhelder & Piaget, 1958). It seems probable that a more differentiated set of attitudes evolves as girls develop cognitively and also experience menstruation recurrently over time. That is, it seems likely that there will be an increase in the complexity of girls' menstrual attitudes as they continue to develop biologically, cognitively, and socially into late adolescence and adulthood.

The developmental pattern emerging for the two components of menstrual attitudes held by the early adolescent girls studied here begins to clarify the role of biological and cognitive/social experience in the development of menstrual attitudes. In characterizing how menstrual attitudes vary with change in developmental status, it can be said that no significant developmental trends were found for the Affirmation component, and that a significant association of menstrual timing, i.e., age in interaction with menstrual status, was found for the Worry component. The analytic procedure employed, which unconfounded age and menarcheal status, permitted assessment of the significance of these two dimensions of development independently and in interaction, and allows us to conclude, first, that menarcheal status per se is not significantly associated with differences in menstrual attitudes among girls within the age range of 11 - 15 years, and, second, that age is important as it interacts with menarcheal status to constitute a menstrual timing variable rather than as it functions alone as a developmental marker. It is clear how earlier investigations which did not discriminate age and menarcheal status variables might yield divergent findings depending on the degree of confound in different samples, especially as the interaction of these two variables is not typically examined in most investigations.

The absence of developmental change in Affirmation suggests that sociocultural factors may influence this menstrual attitude when girls are quite young, and that this menstrual attitude is then relatively impervious to further experience associated with biological, cognitive and/or social development, at least through mid-adolescence. It is not, we suggest, that developmental changes in the Affirmation component of menstrual attitudes are absent entirely, but that such changes occur before the sixth grade when most girls first become acquainted with menstruation through formal and/or informal education. The finding of stability in this sample of sixth to ninth graders is in keeping with other reports of stability of menstrual attitudes in this age group (e.g., Clarke & Ruble, 1978; Paige, 1971; Parlee, 1974; Ruble & Brooks-Gunn, 1979; 1987).

In contrast, Worry about menstruation does seem to be affected by experience, both biological and social/cognitive. Results suggest that girls' Worry about menstruation increases either as a result of actual experience with menstruation (in postmenarcheal girls) or as a result of acquiring more
information about the experiences and worries of menstruating peers (in older premenarcheal girls). Early maturers, i.e., postmenarcheal sixth graders, appear to be the least advantaged girls, since they are worried early about menstruation, and since, as was indicated in the tests of concurrent validity, negative aspects of mood and personality are associated with more Worry. It will be important to assess, in longitudinal studies, the long-term impact of early maturing on menstrual attitudes and other dimensions of personality associated with Worry about menstruation.

In clarifying the importance of age and menstrual status for menstrual attitudes, it becomes evident that the developmental variables, though significant predictors of Worry, nevertheless have small predictive power. Future studies are needed to assess the importance of other variables, such as family functioning, religion, culture, and educational experiences, which independently and in interaction with developmental variables -- may improve prediction of early adolescent girls' menstrual attitudes.

An improved menstrual education, for example, could have a significant impact on girls' attitudes toward menstruation, particularly if coordinated appropriately with girls' biological, cognitive, and social status. Suggestions regarding specific improvements in menstrual education can be derived from the data reported here. First, identification of two distinct menstrual attitudes for early adolescent girls -- Affirmation and Worry -- suggests a direction for educators, be they parents, health professionals, or teachers, who are seeking to focus their efforts. Informed about the nature of girls' menstrual attitudes, educators can restructure menstrual education curricula so that it addresses girls' specific concerns.

Further, since scores for both Affirmation and Worry in this study indicate that girls are moderate in their opinions (mean Affirmation score: 3.88, mean Worry score: 4.23, on a 6 point scale), there is reason to assume that an improved menstrual education program might facilitate increased Affirmation and decreased Worry for early adolescent girls. This would seem an especially worthy goal in light of the associations between greater Affirmation and more positive moods and personality functioning on the one hand, and more Worry and less positive moods and personality functioning, on the other hand.

Additionally, because the data reveal changes in menstrual attitudes (Worry) associated with menarcheal timing, educators should reject the notion that all young girls share similar attitudes about menstruation, which are then stable throughout early adolescence. Indeed, as these data show, Worry about menstruation is greater for early maturing girls relative to their agemates, and is greater for older than younger premenarcheal girls. This information should encourage educators to treat menstrual education as a continuing need and reconsider the current practice which consists of parents and/or educators offering some formal education, usually in the form of a single presentation, to girls who are in the fifth or sixth grade. Such a brief, formal educational program scheduled for the end of fifth or the beginning of sixth grade will miss the mark for early maturers, some of whom may have begun to menstruate as early as third grade. As well, the concerns of the older premenarcheal girl cannot adequately be addressed by education.
that occurs for her at a younger age, since concerns associated with the late timing of menarche will not emerge until some future date. A comprehensive and long-term menstrual education program which begins early should be able to address the concerns of girls in the months after they first experience menstruation, when Worry about menstruation increases, particularly for younger girls; to address the emerging worries of premenarcheal girls as they get older; and to facilitate for all girls increased Affirmation of menstruation, which seems to be established as an attitude by the beginning of sixth grade.
### Table 1
Menstrual Questionnaire, Adolescent Form (MAQ-A): Two Principal Components, Salient Items and Loadings

<table>
<thead>
<tr>
<th>Loadings</th>
<th>Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>.67</td>
<td>Menstruation is something to be happy about.</td>
</tr>
<tr>
<td>.67</td>
<td>Menstruation gives women a way to keep in touch with their bodies.</td>
</tr>
<tr>
<td>.55</td>
<td>I don't mind talking about menstruation with my mother.</td>
</tr>
<tr>
<td>.54</td>
<td>Menstruation is a sign of womanhood.</td>
</tr>
<tr>
<td>.53</td>
<td>I don't mind talking about menstruation with a good friend.</td>
</tr>
<tr>
<td>.51</td>
<td>Menstruating every month is a sign of a woman's general health.</td>
</tr>
<tr>
<td></td>
<td><strong>2. Worry About Menstruation</strong></td>
</tr>
<tr>
<td>63</td>
<td>I hope it will be possible to get a menstrual period over within a few minutes.</td>
</tr>
<tr>
<td>.61</td>
<td>When I have my menstrual period, I am worried that I'll have an accident.</td>
</tr>
<tr>
<td>.59</td>
<td>When I have my menstrual period, I am worried that someone will know.</td>
</tr>
<tr>
<td>.55</td>
<td>I am more easily upset during my menstrual period than at other times of the month.</td>
</tr>
<tr>
<td>.52</td>
<td>I envy boys because they don't have menstruation.</td>
</tr>
</tbody>
</table>

### Table 2
Mean Worry Scores$^a$ of Pre- and Postmenarcheal Girls at Four Social Ages

<table>
<thead>
<tr>
<th>Social Age (Grade)</th>
<th>Premenarcheal Girls</th>
<th>Postmenarcheal Girls</th>
</tr>
</thead>
<tbody>
<tr>
<td>11.56 yr. (Grade 6)</td>
<td>3.94</td>
<td>4.38</td>
</tr>
<tr>
<td>12.52 yr. (Grade 7)</td>
<td>4.15</td>
<td>4.34</td>
</tr>
<tr>
<td>13.52 yr. (Grade 8)</td>
<td>4.36</td>
<td>4.21</td>
</tr>
<tr>
<td>14.53 yr. (Grade 9)</td>
<td>4.56</td>
<td>4.27</td>
</tr>
</tbody>
</table>

$^a$Scores range from 1 to 6, where 1 = less worry and 6 = more worry.
Footnotes

1 The authors thank Jeanne Brooks-Gunn for providing them with a copy of this instrument, information regarding its construction, and findings relative to its factor structure.

2 It was inappropriate to perform confirmatory factor analysis because the 7 factors thought by Brooks-Gunn and Ruble (1980b, 1982) to characterize the MAQ-A were derived from two different menstrual attitudes measures, not from a factor analysis of the MAQ-A itself.

3 It was not appropriate to assess test-retest reliability in this sample, since 6 months elapsed between the first and second data collections, during which time a significant percentage of girls were expected to change menstrual status, and therefore, menstrual attitudes.

4 The correlation between "social age" and menstrual status ($r = .54$), and an inspection of the residuals, rules out collinearity and permits inclusion of both variables in the regression equation.
References


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