

Gender Differences at Puberty

Edited by

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13 When coming of age means coming undone: links between puberty and psychosocial adjustment among European American and African American girls

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What does “coming undone” look like among European American and African American girls?

Societal concerns for boys and girls during their teenage years tend to be compartmentalized into a stereotyped dichotomy, where our concerns for boys typically center around problems such as delinquency, gang involvement, school disengagement, and substance abuse, and our concerns for girls are typically more inclined toward the internalizing spectrum, such as depression, eating disorders, or low self-esteem. To use recent examples in the psychological literature, adolescent boys may become lost in rage and disconnection and end up imprisoned, literally (Garbarino, 1999), while girls are at risk of being figuratively imprisoned by the social surrounds that leave them with low self-esteem, diminished sense of agency, depressed, and despondent (Pipher, 1994).

Similarly, the pitfalls most frequently encountered by adolescent girls have been described and investigated within a dichotomy of race/ethnicity and class. In the world of European American middle- and upper-class girls, concerns continue to center around the development of internalizing spectrum mental health difficulties: eating disorders, depression, low self-esteem, and disturbed body image. In contrast, African American (or ethnic minority or impoverished) adolescent girls are viewed to be most at risk for the development of more externalizing manifestations of adolescent problems, such as delinquency, school disengagement, early or risky sexual behavior, or teen pregnancy.

As is the case for most stereotypes, there is some foundation for this dichotomy when current estimates of mental disorder and social behavior are considered. For example, the prevalence of the eating disorders anorexia and bulimia nervosa in the US population are substantially greater in European American than in African American women (American Psychiatric Association, 1994), and the rates of teen

shared experience with others and the feeling of difference from peers (Neugarten, 1969, 1979). Although popularized by the book *Are You There God, It's Me, Margaret* (Blume, 1971), about a girl who longs for her period and bigger breasts, the distress of late development has been less born out by empirical investigations of pubertal maturation among middle-class European American girls.

The assessment of puberty and pubertal timing

Previous investigations of maturational timing during early adolescence have used a number of different indicators to assess adolescents' development as on or off-time. Frequently, studies have used a salient biological marker, such as age at menarche for girls and age of peak-height velocity for boys. Researchers have typically regarded the earliest 20 percent within the distribution for that sample as the "early" developers, and designated the latest 20 percent as the "late" developers (see Graber, Petersen, and Brooks-Gunn 1996 for review). Alternatively, the Pubertal Development Scale (PDS, Petersen, *et al.*, 1988), which aggregates several measures of pubertal status (e.g., growth spurt, acne, and acquisition of secondary sex characteristics) for boys and girls separately, has been widely used over the past decade.

One of the questions included in the PDS has also received particular attention because it affords the opportunity to index a more psychologically textured aspect of pubertal timing. Adolescents are asked to assess their own pubertal timing relative to peers of the same sex and age (Graber, *et al.*, 1997; Silbereisen, *et al.*, 1989; Simmons and Blyth, 1987; Wilen and Petersen, 1980). This question has been of particular interest, given early adolescents' heightened self-consciousness and the significant psychological challenge of adapting to and making sense of the physical changes of puberty. Therefore, developmental researchers anticipate that perceiving oneself to be experiencing these changes in temporal isolation from one's peer group would be particularly associated with difficulties in psychological adjustment. Indeed, a number of studies using this question as a means to assess pubertal timing have demonstrated greater psychological and social difficulties among those who perceive themselves to be either early or "off-time" in their development (Graber, *et al.*, 1997; Silbereisen, *et al.*, 1989; Wilen and Petersen, 1980).

Because reporting on one's perception of developmental timing leaves open more room for interpretation on the part of the respondent than does direct inquiry regarding the onset of menstruation, there is also greater potential for individual concerns to influence a girl's assessment of her own timing. For example, studies have demonstrated that girls'

pregnancy are higher among African Americans than among European Americans (Zabin and Hayward, 1993), although reports also indicate that rates are decreasing more rapidly among African Americans (Alan Guttmacher Institute, 1994). Although ethnic group membership is often used as the comparative index, the majority of studies have either not included individuals from varying ethnic/racial groups in the same study, or have confounded race with socioeconomic conditions (i.e., African Americans are overrepresented in the lower socioeconomic groups) (Hamburg and Takanishi, 1996; Jenkins, 1983). We have had limited opportunity to view development in comparable socioeconomic conditions across racial or ethnic groups. As such, "problems" have often been narrowly defined and studied in isolation (Jessor and Jessor, 1977), thereby decreasing our understanding of more generalized patterns or recognition of distinct and contextually specific expression of possibly similar underlying disturbance (i.e., overeating and undereating might both be a response to feeling not in control of other aspects of one's life). This dichotomy has begun to be challenged by researchers (see Leadbeater and Way, 1996) dedicated to unpacking the stereotypes and to examining the processes underlying adolescent girls' adaptation and development within different social contexts.

Pubertal timing reviewed: developmentally ready or not

As in the other chapters of this volume, we turn to pubertal development as one important aspect of early adolescent development that may play a role in the subsequent trajectories of youth's lives. We, like many others, focus on the issue of the timing of pubertal changes as particularly relevant to girls' adaptation. Two contrasting hypotheses, the stage-termination (also called developmental-readiness) hypothesis and the social deviance hypothesis have been offered to explain vulnerabilities that can arise as a function of maturing significantly earlier or "off-time" relative to one's peers. According to the stage-termination hypothesis, early maturation does not allow for consolidation of the developmental tasks of the preadolescent latency period, thus precipitating problems for these adolescents as they grapple with the pubertal or social changes of early adolescence with fewer cognitive and emotional skills than their later developing peers. That is, they are not "developmentally ready" for the changes, and therefore, the stage-termination hypothesis predicts difficulties only for early maturers (Kierdan and Koff, 1993).

In contrast, according to the social deviance hypothesis, distress is associated with passage through salient developmental transitions either significantly earlier or later than peers, due to the perceived lack of

affective response to menarche is related to how prepared the girl felt for the event (Ruble and Brooks-Gunn, 1982). Thus, a girl might perceive herself to be an early maturer not only because it reflects her status relative to her peers, but because it, in part, reflects her lack of developmental readiness for maturation. Although little empirical research to date sheds light on girls' feelings about developing later than their peers (see Martin, 1996 for exception), it could be that feeling oneself to be a "late" maturer could reflect a desire to grow up more quickly, to be taken seriously, or to be treated as an adult or a woman, or a curiosity about bodily changes and peer attention afforded to some peers. Thus, perceived late maturers could also be indicating greater dissatisfaction with the pace of their maturation for reasons other than actual maturational timing. These ideas regarding possible intrapsychic influences on girls' perceptions of their pubertal timing are relatively unexamined by academic psychology to date. However, they are offered here as potential "antecedents" of girls' perceptions of timing in order to illuminate one of the central goals of this study. That is, to better understand the ways in which the biological events of puberty are made meaningful to and interpreted by the adolescent, and, in turn, become associated with mental health or social problems.

Context as one lens through which meaning is made and seeds of distress may be sown

As noted in the preface to this volume, as well as in the previous section of this chapter, puberty may be linked with adjustment problems through several different pathways or interactions among physiologic, psychological, and social changes. In this chapter we focus on links between puberty and adjustment with an emphasis on ethnic context. This interest stems from two related goals: to better understand developmental experiences of African American girls, and to test the generalizability of work on the timing of pubertal development that has been conducted primarily within European American samples of girls. Several authors have noted the importance of particular demands or expectations within different contexts (e.g., family, school, and peers) in shaping girls' experience of "coming of age." Environmental expectations for, and responses to, development serve as important sources of information for adolescents experiencing these changes (Brooks-Gunn and Warren, 1985; Caspi, Lynam, Moffitt, and Silva, 1993; Simmons and Blyth, 1987). Hence, social contexts will vary in the extent to which they either contribute to girls' vulnerability to "coming undone" (i.e., developing psychological or social difficulties) or resilience as they physically mature.

Several previous studies have demonstrated the importance of context on the links between the timing of development and the emergence of psychopathology. For example, Brooks-Gunn and colleagues' studies of ballet dancers suggested that seeing oneself as "early" is a subjective experience dependent on one's surroundings and goals. In these studies, serious ballet students who were "on-time" by population-based standards felt "early" compared to their fellow-ballerinas; were more likely to respond to their own pubertal development with attempts to slow or reverse its effects. Consequently, they were more likely to restrict their diet or engage in excessive exercise, precisely because the physical changes associated with female pubertal development are in direct opposition to the physical ideals prevalent in their primary "culture" – that of competitive ballet schools (Brooks-Gunn, *et al.*, 1989; Brooks-Gunn and Warren, 1985).

Alternately, as suggested by the "developmental readiness" hypothesis, difficulties with the timing of pubertal development can also result from psychological immaturity. For example, Rierdan and Koff (1993) found that European American girls who were both less mature in terms of their ego development and more physically mature than their peers reported higher levels of depressive symptoms than girls for whom cognitive and physical development were more evenly paced. These examples illustrate that a girl's developmental readiness is influenced by both her own rate of maturation across different areas of development and the expectations of or responses to her physical development by the people in her social and cultural environment.

Ethnic context of development

Conducting research with African American adolescents is important for several reasons. First, African American adolescents have been grossly neglected in mainstream developmental research. Second, African Americans differ from European Americans in ways that are theoretically important.

For example, on average African American girls have been shown to reach menarche seven months earlier than European Americans (mean age = 12.16 years in African Americans, and 12.88 in European Americans) (Herman-Giddens, *et al.*, 1997; Striegel-Moore, *et al.*, 2001; see Obeidallah, *et al.*, 2000 for data that do not support this conclusion). If early maturation is in and of itself a problematic event, as suggested by stage-termination theory, early-maturing African American girls should be the most likely to manifest evidence of this "crisis" (Neugarten, 1979), because they tend to be the "earliest" as compared to other girls across

American men and women (Parker, *et al.*, 1995; Rucker and Cash, 1992; Thompson, Sargent, and Kemper, 1996). These findings suggest that African American girls would be less distressed and more welcoming of the physical changes and weight gain associated with puberty than are European American girls. Some initial support for this idea has been provided by Hayward and colleagues (1999), who found that pubertal status was related to girls' depressive symptoms among Caucasian, but not African American or Hispanic girls (Hayward, *et al.*, 1999). In contrast, a recent study by Striegel-Moore and colleagues (2001) reports that both African American and European American early-maturing girls expressed more dissatisfaction with their bodies and more dieting behaviors than did later maturers, suggesting that African American girls are not wholly immune from distress generated by the weight gain of puberty.

Maryland study of adolescent development in context

In the next part of this chapter we summarize findings from an ongoing study of adolescent development being conducted by Jacques Eccles and her colleagues. By so doing, we hope to expand our understanding of the social contexts in which girls' pubertal development corresponds with their experience of mental health or social problems.

In keeping with the ideas outlined above, we expected to find that ethnic group membership would be associated with different experiences of maturation, and thus would be linked with different patterns of association between the timing of maturation and girls' adjustment. As reviewed above, the existing literature on African American girls as compared to European American girls suggests two competing hypotheses. First, if lack of "developmental readiness" due to less time spent in latency-stage development is the primary reason for early maturers' distress, then early-maturing African American girls should evidence more distress than European American girls because they experience puberty earlier. In contrast, to the degree that environmental/ethnic response and preparation of girls is important to girls' adjustment, African American girls should be less likely than European American girls to experience distress as early developers. Indeed, late developing African American girls may be expected to feel greater distress if development is connected with more positive attention and is viewed as more desirable by girls and those around them. In particular, given the difference between these two ethnic groups regarding body size, we expect to find that African American girls would be less likely to develop eating disturbance or body image concerns as a function of their pubertal timing.

racial/ethnic groups, and perhaps therefore also the least developmentally ready for the events of maturation, having spent the least time consolidating childhood skills and capacities. Consequently, comparing the association of early maturation with psychosocial development in these two ethnic groups provides an important test of the stage-termination hypothesis.

Similarly, it is likely that African American and European American girls differ in both their preparation for puberty and the responses of important others to their pubertal development. For example, Scott and colleagues (1999a, 1999b) examined African American girls' expectations and responses to menarche, and compared their reports to studies conducted on European American samples (e.g., Ruble and Brooks-Gunn, 1982). Findings across ethnic groups indicate that girls report "surprise" as the most common response to menarche, and similar ratios of positive and negative emotional responses (Scott, *et al.*, 1989a, 1989b). In addition, these studies also suggest important differences between racial/ethnic groups. First, African American girls reported more positive responses from their mothers than did European American girls. Second, results suggest an ethnic group difference in the kinds of responses likely to accompany the changes of puberty. African American girls were more likely to offer reassurance than were European American girls in response to a projective task, in which the girls were asked what they would tell a younger sister about menarche. In addition, because sexuality is implicit in pubertal development, the changes of puberty are more likely to be met with indirect or conflictual communications if the social environment has conflicted values and ideas about sex. European American families may be more likely than African American families to hold and transmit conflicted values about sexuality. This is consistent with findings from studies of European American girls who report teasing instead of congratulations and feelings of shame and embarrassment as well as pride and excitement about their experience of pubertal changes (Brooks-Gunn, *et al.*, 1994; Grief and Uiman, 1982; Ruble and Brooks-Gunn, 1982).

Finally, the differentiated body preferences within African American and European American cultures may serve to affect girls' responses to their developing bodies. For European American girls, puberty conforms both changes toward societally valued body shape (e.g., breasts), but also away from the "slim-ideal" that defines contemporary white feminine standards of beauty. In contrast, African American men and women have more flexible ideas about beauty, and they prefer larger female body size and more marked secondary sex characteristics than do European

In addition, we are interested in understanding how both reports of pubertal timing (e.g., menarche) and more psychologically mediated impressions of pubertal development (e.g., perception of pubertal timing relative to one's peers) relate to girls' psychosocial adjustment in both ethnic groups. Girls' reports of pubertal development should differ for these two measures depending on their ethnic group membership. African American girls should report menarche at a younger average age than European American girls. In contrast, since perception of pubertal timing is more subjective and based (at least in part) on girls' sense of their own maturation relative to their peers, there may be no ethnic differences in this report. This would be true if each ethnic group is primarily using peers of their own ethnicity as their basis of comparison.

Background of the study

In order to investigate these questions, we used data collected as part of the third wave of the Maryland Adolescent Development in Context (MADIC) study, an ongoing longitudinal investigation of adolescent development across multiple contexts (Eccles and Sameroff, PIs). The MADIC study includes questionnaire and interview data gathered from adolescents, as well as their primary and secondary care-givers. For this report, we examined data gathered from adolescent girls and their primary care-givers in the summer following the girls' eighth grade year in school (age 13–14 years).

One of the particularly compelling aspects of this set of data is its inclusion of large samples of both African American and European American families of fairly comparable socioeconomic status. In 1993, for example, mean annual income was \$43,700 for African American families and \$50,200 for European American families. Although the majority of girls in both ethnic groups lived with both biological parents, more African American girls lived in single-parent families than did European American girls. The sample includes roughly two-thirds African American ($n=270$) and one-third European American ($n=177$) girls and their primary care-givers, who were typically (90%) mothers.

Measures

Girls were asked about their pubertal development and timing using the Pubertal Development Scale (PDS; Petersen, *et al.*, 1988). In order to contrast a rather more pure "biological" marker with a more subjective index of puberty, we separated two different indicators of pubertal development rather than using the composite scale. The timing of girls' first

Table 13.1. *Menarcheal timing distribution*

Timing group	African American		European American	
	N (266)	Percentage	N (172)	Percentage
Early (20%)	56	22.3	32	19.2
On time (60%)	135	53.8	96	57.5
Late (20%)	60	23.9	39	22.7

period was assessed by asking the girls the grade and season in which it had occurred. Self-reported menarcheal age is a valid indicator of the timing of pubertal maturation (Brooks-Gunn, *et al.*, 1987; Morris and Udry, 1980). A small number of girls (8 African Americans and 18 European Americans) had not yet experienced their first period at the time of the eighth grade assessment. As predicted, African American girls reported experiencing menarche about six months earlier than did European Americans. On average, African American girls experienced menarche in the spring of the sixth grade; European American girls reached menarche in the late fall of the seventh grade. The percentage of girls reaching menarche in each grade is presented in figure 13.1.

Given this ethnic difference in timing, girls were divided into timing categories within ethnic groups: we created "early," "on-time," and "late" maturing groups using a 20–60–20 split. That is, the earliest 20 percent of girls within each race were specified as belonging to the "early" group, the latest 20 percent of girls within each race formed the "late" group, and the middle 60 percent were specified as "on-time." Using this classification, African American girls were "early" if menarche occurred before the spring of their fifth grade, and "late" if they reached menarche after the spring of their seventh grade. For European Americans, "early" maturers experienced menarche prior to the beginning of their sixth grade, and were considered "late" if they reached menarche after the winter of their eighth grade. The resultant groupings are detailed in table 13.1.

Perception of timing was assessed using one five-point question asking each girl if she felt that she was developing earlier, about the same, or later than most girls her age. Girls who selected a "one" on this scale indicated that their physical development was occurring "a lot before most girls," while those who selected a "five" on this item assessed their physical development as occurring "a lot later than most girls" their age. Girls' perceptions of their pubertal timing demonstrated mild to moderate relations with their ratings of other aspects of pubertal maturation, such as skin changes and menarche, with the highest relation between perception of timing and breast development ($r = .45$). Overall, 28 percent

of girls reported either "much earlier" or "earlier" development, 44 percent reported development "about the same" as others, and 28 percent reporting "later" or "much later" development for both European American and African American girls. A greater percentage of African American girls endorsed the "very early" category, which mirrors the pattern for their reports of their timing of menarche (that is, more African American girls were indeed "very early" in their experience of menarche). There was not, however, an overall difference in girls' perceived timing between European American and African American girls.

Adolescent adjustment

In order to assess girls' adjustment, we focused our assessment on two broad and related areas of functioning: mental health and sense of self. The appendix below includes greater detail about the scales in each of these areas.

To assess mental health, adolescent girls reported on four different kinds of symptoms: (1) depressive symptoms (CDI; Kovacs, 1992); (2) eating disturbance (EDI-2; Garner, Olmstead, and Polivy, 1983); (3) experience of strong feelings of anger (Achenbach and Edelbrock, 1983); and (4) involvement in problem behaviors (Jessor and Jessor, 1977). In addition, their mothers reported on girls' mental health, including both internalizing and externalizing symptoms (CBCL; Achenbach and Edelbrock, 1983). These areas were selected in order to gain information about the kinds of symptoms or difficulties typically assessed for both European American and African American adolescent girls.

To assess girls' sense of self we used measures tapping the following areas: (1) global self-esteem, (2) popularity, (3) attractiveness, and (4) satisfaction with body weight. Each of these areas was selected due to its relevance to the period of early adolescence generally, but also because concerns about adequacy in these areas is thought to underlie some of the more serious mental health or social difficulties experienced during adolescence. That is, girls who feel inadequate with regard to these issues of "self" may be at heightened risk for the development of more serious psychological problems or for making poor or risky social choices (Fredrickson and Roberts, 1997).

Finally, we included assessments made by both girls and mothers regarding their estimations of the likelihood of future negative sexual events for the girl. Girls and mothers were asked to assess the chances that the adolescent would experience a range of outcomes, including becoming pregnant, being sexually assaulted or raped, getting AIDS or other sexually transmitted diseases, or having sex "too young." Separate scales

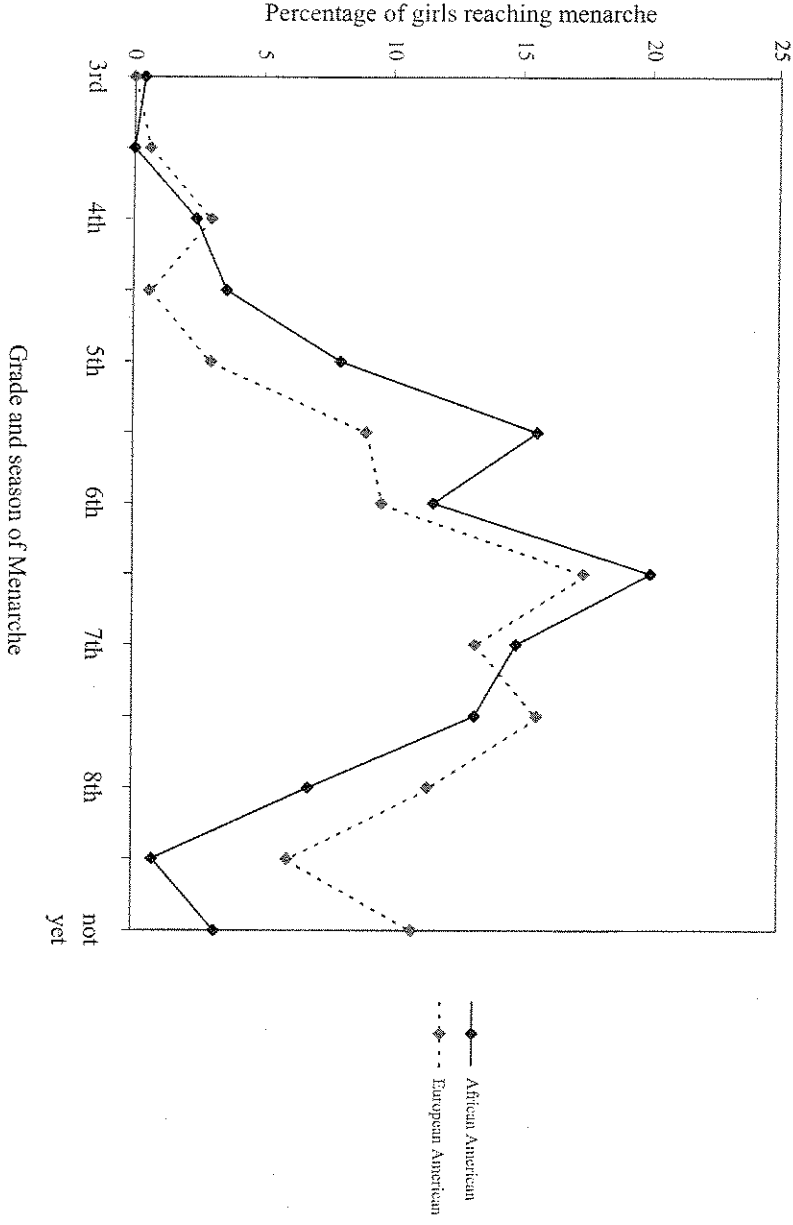


Figure 13.1 Timing of menarche for African American and European American girls

were computed for girls and their mothers. We included these questions in order to include sexually linked occurrences in our investigation, given concerns about adolescent girls' sexuality and to examine whether girls and mothers in these ethnic groups believe that girls are at increased risk of sexual victimization of one kind or another due to early pubertal development.

Findings and discussion

We examined the data in three steps. First, we compared African American and European American girls on their overall adjustment in eighth grade. Next, we considered whether their adjustment was related to their pubertal timing (timing of menarche), and whether there were differences in these relations for African American girls as compared to European American girls. We then asked this question using girls' perception of their pubertal timing in order to compare results with those obtained using timing of menarche as the critical index.

How psychologically "undone" do these adolescent girls appear to be? As one would anticipate from a community sample, girls did not evidence particularly high rates of psychological distress. Very few of the girls indicated levels of distress consistent with a clinical diagnosis of depression or eating disorder. However, the subclinical variation in their levels of distress is still noteworthy. When we looked at African American and European American girls separately, we found that European American girls reported higher levels of eating disturbance and less anger than African American girls. Girls' depression and involvement in problem behaviors did not differ between ethnic groups, nor did their mothers' reports of internalizing or externalizing symptoms. When we looked at girls' sense of self, we found that African American girls reported significantly higher levels of self-esteem across each of the areas assessed. That is, African American girls reported themselves to have higher self-esteem, to be more popular, better-looking, and more satisfied with their weight than did European American girls. Finally, girls and mothers reported only mild concern about future sexually related events, and there were no differences in these estimations between the two ethnic groups.

In sum, we found mixed evidence for differences in the expression of disturbance among girls from these two groups. African American girls' consistently higher endorsement of positive sense of self suggests that African American girls do not tend to be as vulnerable to the concerns so often typified in the literature on European American girls. The source of

African American girls' ability to maintain a more positive sense of self on our measures of self is particularly interesting, given that these girls are presumably managing experiences linked to discrimination or minority status in addition to the transitions of adolescence that could erode self-esteem (Simmons, Black, and Zhou, 1991). As suggested by the work of Dubois and colleagues (1996), African American girls' positive esteem in the areas of appearance and body image may be crucial to their overall maintenance of global esteem during early adolescence. In addition, African American girls (and boys) likely rely on more internally based sources of esteem and affirmation, and develop a "thicker skin" against discriminatory remarks from an early age, which may then translate into greater "protection" from the often cruel remarks, looks, or behaviors of peers during adolescence (Wong, Eccles, and Sameroff, 2000).

Given that African American girls report more anger than European American girls, it may be the case that African American girls have more tacit permission or ability to express a broader range of emotions, which may in turn serve to protect them against the development of more serious internalizing symptoms or disorders (e.g., depression and eating disorders). This idea is particularly compelling when noting that, on average, African American girls reported experiencing anger somewhere between "once in a while" and "sometimes," which is unlikely to constitute a clinically concerning level of anger.

In summary, the girls and mothers in this study are not reporting high levels of distress. In addition, African American girls showed some potentially "protective" features in their more positive sense of self, as well as a greater willingness to report feelings of anger as well as sadness.

Timing of menarche

We next assessed whether girls' adjustment was related to the timing of menarche. Table 13.2 shows the results of analyses comparing the levels of each adjustment indicator as a function of when the girls experienced menarche for African Americans and European Americans separately. As can be seen in table 13.2, there are more significant effects among European American girls, particularly in the area of mental health. Indeed, European American girls who experienced menarche in the earliest 20 percent of their peers reported greater levels of depressive affect, eating disturbance, and anger, as well as more negative expectations about their "sexual futures" than did girls in the later maturing groups. In addition, European American mothers concurred with these assessments, as they reported greater internalizing and externalizing symptoms in the early

Table 13.2. Relations between timing of menarche and adjustment

Adjustment	Group differences	
	European Americans	African Americans
Mental health: girls' report	Early > on time, late	None
Depressive symptoms	Early > on time, late	None
Eating disturbance	Early > on time, late	None
Anger	Early > on time, late	None
Problem behaviors	None	None
Mental health: mothers' report	Early > on time, late	None
Internalizing symptoms	Early > on time, late	None
Externalizing symptoms	Early > on time, late	None
Sense of self	None	On time < late
Self-esteem	On time > late	On time > late
Popularity	None	None
Attractiveness	None	None
Satisfaction with weight	Early < on time, late	Early < on time, late
Chances of negative events	Girls' reports	Mothers' reports
	Early > late	None

maturing group. Among African American girls, in contrast, there were no significant effects of menarchal timing on either their own, or their mothers' assessments of mental health or expectations for future sexual concerns. To illustrate the pattern of these differences, we have graphed some of the effects in figures 13.2 and 13.3.

When girls' sense of self is considered, the findings are more consistent across the two ethnic groups: girls who were "on-time" reported themselves to be more popular than girls who were "late" across ethnic groups, and girls who were "early" reported a desire to lose more weight than their later maturing peers. Unexpectedly, later maturing African American girls reported significantly greater self-esteem than their on-time African American peers.

The overall pattern of results from this set of analyses offers support for the stage-termination hypothesis among European American girls only, casting doubt on the idea that "early" puberty is troublesome because it disrupts the necessary consolidation of childhood skills and capacities. In keeping with previous studies (i.e., Hayward, *et al.*, 1997; Simmons and Blyth, 1987; Stattin and Magnusson, 1990), we find support for the idea that earlier maturation is a risk for mental health distress among European American or European girls. However, the different pattern of findings among African American girls leads us to speculate about

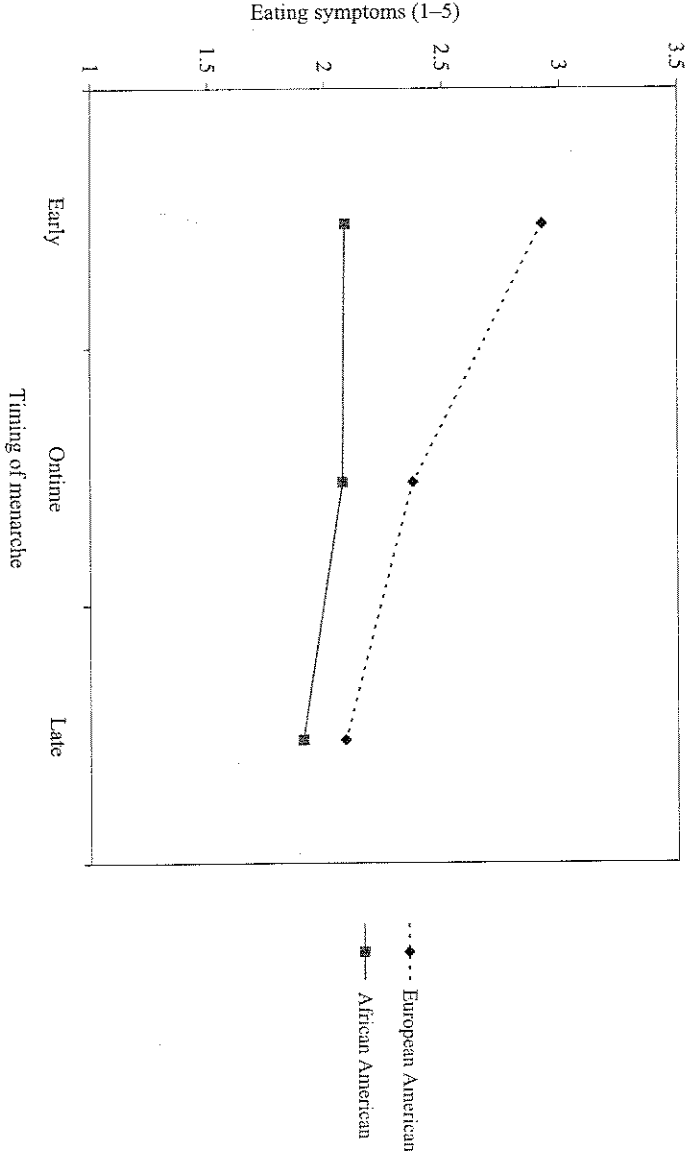


Figure 13.2. Girls' eating symptoms: interaction of menarche and ethnic group

the reasons for the differences. An examination of both communications from her social world and girls' own developmental functioning would provide a more comprehensive model for predicting which girls will experience adjustment difficulties as a function of maturational timing, and can help account for the distress of European American early menarcheal girls as well as the lack of distress among early menarcheal African American girls (Holmbeck, 1996; Graber and Brooks-Gunn, 1996). That is, "developmental readiness" may in fact aptly describe the difference between these two groups of girls. It may not be the case that early-maturing African American girls are more "done" with the tasks of childhood, necessarily, but rather that they perceive there to be more to look forward to, and less to beware of, regarding pubertal development regardless of its timing. They feel more "ready" for these changes than do European American girls, on the whole, and therefore do not experience or anticipate the dysregulation of emotions or behaviors that are more common among European American girls. Interestingly, like other researchers using quantitative data, we did not find evidence that later development is particularly hazardous to girls' mental health, at least as assessed in the eighth grade on the measures we used. Across ethnic group, girls did report feeling less popular if they were less developed, paralleling findings from qualitative data (Martin, 1996), quantitative data (Simmons and Blyth, 1987), and popular literature (Blume, 1971).

Perception of timing

When we asked the same questions using girls' perception of maturational timing as the basis on which to make distinctions between "early," "on-time," and "late" maturation, we found a very different pattern of results. These results are summarized in table 13.3. Generally, girls reported feeling most psychologically healthy (that is, less depressed or inclined toward disturbed eating patterns or angry) when they felt themselves to be "on-time" in their physical development. Girls who perceived themselves to be either earlier or later than their peers were reporting more mental health distress. Similarly, girls' mothers reported more symptoms when their daughter's reported feeling either "earlier" or "later" in their development. Moreover, these patterns of results were basically the same for African American and European American girls. In general, the pattern of results here is more consistent with the "social deviance" hypothesis, in that girls who reported feeling more off-time (regardless of whether they felt early or late) reported more psychological distress.

Interestingly, those European American girls who reported their maturation to be "much earlier than other girls" were typically the most

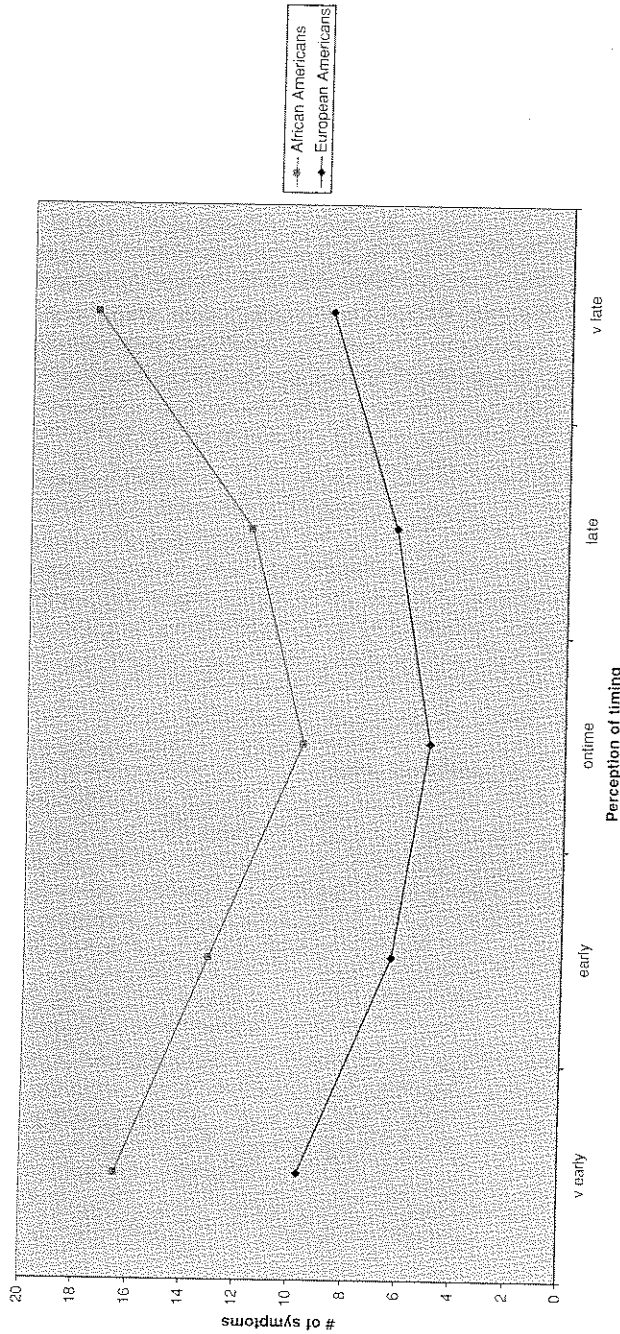


Figure 13.3 Girls' self-esteem: interaction of menarche and ethnic group

lose the most weight, while girls who felt "latest" were more satisfied with their weight, and those who saw themselves as "on-time" were in the middle. This pattern closely mirrors the girls' actual weight; the girls who developed early also tended to have a higher body mass, as would be expected. In addition, this pattern held for European American girls' expectations regarding the future - "early" girls reported greater likelihood that they would be involved in a negative sexually related event in their future than did girls who perceived their development as "on-time" or "late." Finally, among European American girls, feeling "on-time" was associated with higher self-esteem than was reported by girls who felt either "early" or "late." Interestingly, girls' reports of their involvement in problem behavior did not differ as a function of their perceived timing.

Perceiving oneself to be an earlier maturing girl appears to be associated with an interesting pattern of both benefits (i.e., popularity) and liabilities (i.e., body dissatisfaction) to one's psychological and social development. Perceived late development is associated with liabilities in terms of mental health distress, as well as viewing oneself as less attractive or popular. In contrast, perceived lateness is linked to greater body satisfaction. In comparison to both perceived earliness and lateness, feeling "on-time" is uniformly beneficial. Girls who perceive themselves to be "on-time" report fewer symptoms of mental health distress, and a sense of "average" popularity and attractiveness. For both European American and African American girls who perceive themselves as "early," it appears that popularity and attractiveness are "benefits" of their maturation. As Startin and Magnusson (1990) found, this pattern could lead these girls to focus on relationships with older boys, leading them to forgo investments in developing other aspects of themselves, such as other talents, for example, sports or academics (Eccles, *et al.*, in press; Pipher, 1994). According to these results, African American girls are potentially also at risk for the development of this "shell-self" where beauty or peer status is privileged over what is "inside" with respect to their perceived timing of development. Clearly, we would need to know more about how important or salient these elements are to girls, as well as other contributions to their overall sense of self, in order to know whether this indeed translates into a risk for early-developing girls.

As expected, girls' perception of pubertal timing appears to be quite subjective. Although African American girls experienced menarche substantially earlier than did European American girls, they were not substantially more likely than European American girls to see themselves as early maturers. European American and African American girls were

Table 13.3. Relations between perception of timing and adjustment

Adjustment	Group differences	
	European Americans	African Americans
<i>Mental health: girls' report</i>	Early, late > on time	Early, late > on time
Depressive symptoms	Early, late > on time, late	Early, late > on time
Eating disturbance	Early > on time, late	Early, late > on time
Anger	Early > on time > late	None
Problem behaviors	None	None
<i>Mental health: mothers' report</i>	None	None
Internalizing symptoms	Early, late > on time	Early, late > on time
Externalizing symptoms	Early, late > on time	Early, late > on time
<i>Sense of self</i>	Early, late < on time	None
Self-esteem	Early > on time > late	None
Popularity	Early > on time > late	None
Attractiveness	Early > on time > late	Early > on time > late
Satisfaction with weight	Early < on time < late	Early < on time < late
<i>Chances of negative events</i>	None	None
Girls' reports	Early > on time > late	None
Mothers' reports	None	None

distressed, indicating that early development may indeed be uniquely distressing among this ethnic group. In contrast, African American girls who felt that their development was "much later than others" were more often the most symptomatic. These findings provide some support for the differential meaning of early versus late maturation as a function of ethnic group membership. For some African American girls, feeling "late" does correspond to somewhat greater mental health distress, perhaps due to the desire to join the ranks of the physically more mature, in much the same way that later developing boys have been noted to want to catch up to their earlier peers because of the perceived typical benefits of development (Crockett and Petersen, 1987).

When girls' sense of self was considered, a different pattern of results was apparent; girls who perceived themselves to be early developers felt more popular and attractive than did "on-time" girls, who reported feeling more popular and attractive than did "late" girls. That is, we find a gradual decrement in girls' reports of popularity and attractiveness, whereby feeling "early" coincides with a heightened sense of being popular and attractive, while feeling "late" co-occurs with feeling less popular and attractive. The opposite pattern was true for girls' satisfaction with their weight; girls who felt "earliest" also thought that they needed to

equally likely to report themselves to be "off-time" in their development, and were basing this estimation on their actual developmental timing (i.e., menarche, breast development) to a roughly comparable degree. In addition, this rating was only moderately related to the more objective indicators of pubertal timing. These results suggest that there are other significant influences on girls' perceptions of their pubertal timing that were not accounted for in this study, which lead girls to see themselves as either "in sync" or "socially deviant" with regard to pubertal development. In turn, this sense of being "socially deviant" is linked to mental health distress in both of these ethnic groups. Thus, results using perceived timing suggest some internal sense of "developmental readiness" over and above the effects of actual development that is somewhat independent of ethnic context. Although ethnicity moderated the association of pubertal development and psychological/social adjustment when menarcheal timing is examined, this is much less the case when girls' perception of timing is used as the marker of maturation. Continuing to develop an understanding of the influences on perceived timing is a worthy goal, as both African American and European American girls who are inclined to view themselves as "off-time" report similar adjustment difficulties.

Final thoughts

Clearly, although we assume that processes of socialization at work on the family, peer, and neighborhood levels are important elements of "ethnic group context," it is quite difficult to measure the attitudes, ideas, or behaviors of those people who truly make up the "context" of these girls' development on a moment-to-moment basis. Although we have not yet included family processes in our study of these issues, the findings reported here suggest many hypotheses regarding the ethnic differences associated with the impact of menarcheal timing. Because the girls in this study live in the same communities and attend the same schools, we can assume they were exposed to similar sex education in the classroom, and therefore we can interpret the findings as a more likely product of familial and peer influences rather than they are of differences in formal educational attention to preparation for the events of puberty. For example, African American families may better prepare girls for menarche, be more unconditionally welcoming of the event, celebrate it as an important milestone, and imbue it with less shame and stigma (Martin, 1996) than is typical in European American families. Perhaps African American girls are afforded more positive and sustained close relations during

pubertal development, which serves to assist them in successful adaptation to these bodily changes and their corresponding social definition (Michael, 1997). Thus, in line with previous studies demonstrating the importance of context (e.g., Brooks-Gunn, *et al.*, 1989; see also chapter 14) on the interpretation of, and behavioral adaptation to, pubertal development, it appears that we need to enhance our understanding of developmental processes by paying close attention to the locales in which they take place.

In pulling together a "wish list" of things to include as these studies progress, we believe that future research would do well to include assessments of more positive aspects of maturation and social behavior, particularly regarding dating and sexual activities (see Paikoff, 1995 and also chapter 5). For example, only negative events related to sexual behavior (e.g., having sex "too early," experiencing rape) were assessed here. Although these are important aspects of social development or experiences, they bias findings toward identifying problematic rather than positive aspects of development. Particularly given societal views of adolescence as a problem-filled phase of life, it would be useful to investigate and describe adaptive functioning as well as maladaptive functioning.

If our goal is to minimize the distress and tendency to "come undone" sometimes experienced during early adolescence, our results suggest that helping youth of both sexes and all ethnic groups to feel "developmentally ready" for the changes of puberty would be useful. The mental health and social pitfalls of adolescence are not inevitable, and are informed, at least in part, by social expectations and pressures that make the kinds of mental health problems experienced by adolescents limited to those that have relevance in their salient communities. Preventive intervention should address cultural expectations regarding what kids will do with their developing bodies. There is also a cultural need for "developmental readiness" – society needs to be ready for children to develop, and to assist in their adaptation, particularly as the average age of pubertal development stretches downward. Although pubertal development, like the shift to middle school, can feel like a very discontinuous set of experiences, these also happen within the context of an individual's overall life and circumstances.

Coming of age does not need to imply "coming undone." The inclusion of youth from a range of circumstances, ethnicities, and settings in studies of adolescent development is critical to allow us to further circumscribe and refine our understanding of the links between "early" or "off-time" development and the various risks to successful adaptation during the adolescent years.

Item	Scale	Internal consistency	Number of items	Examples of items	Internal consistency (alpha)
Wanting to hurt people or property because angry	3	1-5		Anger	.87
Lying to parents, substance use, criminal behavior	9	0-1		Problem behaviors	.82
Withdrawn, anxious, depressed, aggressive, oppositional, cruel	2 scales	0-49		Externalizing symptoms	NA
"How often are you... pretty sure about yourself?"	3	1-5		Self-esteem	.73
"How popular are you?"	1	1-7		Popularity	NA
"How good looking are you?"	2	1-7		Attractiveness	.85
"How do you feel about your weight" (lose weight vs gain)	1	1-5		Satisfaction with weight	NA
What are the chances that you will start having sex too young?	4	1-6		Girls' reports	.59

Chances of negative events

Mental health: mothers' report (CBCL)

Appendix

MENARCHE

Have you had your first period yet? (1) = yes (2) = no (if yes) Please circle the grade in which your period first occurred

3rd grade 4th grade 5th grade 6th grade 7th grade 8th grade

Now please circle the time of year it first occurred.

fall (1) winter (2) spring (3) summer after that grade (4)

PERCEPTION OF TIMING

Compared to OTHER GIRLS YOUR AGE, would you say you are physically developing:

A lot before most girls
A little before most girls
About the same time as most girls
A little later than most girls
A lot later than most girls

Adolescent Adjustment Measures

(1) girls
(2) girls
(3) as most girls
(4) girls
(5) girls

Mental health: girls' report

Item	Scale	Internal consistency	Number of items	Examples of items	Internal consistency (alpha)
Depressive symptoms	1-44		27	Mood, vegetative	.88
Eating disturbance (EDI)	1-6		9	hopeless-anhedonia, symptoms, dieting, worries, weight gain	.89

Mothers' reports	1-6	4	Same as above ("your child")	.77
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Notes

CBCL = Child Behavior Checklist

CDI = Children's Depression Inventory

EDI = Eating Disorders Inventory ("drive for thinness" and "bulimia" subscales used)

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