

Pregnant African American Teenagers' Expectations of Their Infants' Temperament: Individual and Social Network Influences

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Factors associated with pregnant teenagers' expectations of their infants' temperament were examined. A total of 126 pregnant African American teenagers were included in the study, all of whom were expecting their first baby. The teenagers' expectations for their infants' temperament was assessed using Mebert and Kalinowski's (1986) modified version of the Infant Characteristics Questionnaire (ICQ). Pregnant teenagers who were anxious and/or depressed tended to expect their infants to have more difficult temperaments. In addition, those teenagers who were more satisfied with current support resources and perceived their maternal relationships as more warm and accepting tended to have more positive expectations of their infants' temperament. Finally, expectant teens who held more accurate beliefs and knowledge about infant development and milestones had more positive expectations of their infants. Implications of these findings for future research and intervention are discussed.

Even before their infants are born, many parents develop clear expectations of what they will be like (Mebert, 1991). It is important to consider these expectations because they appear to be related to parents' postpartum appraisals of their infants' temperament. Indeed, strong correlations have been found between parents' expectations of their infants during pregnancy and their postpartum ratings of infant temperament (Diener, Goldstein, & Mangelsdorf, 1994; Mebert, 1989;

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Mebert & Kalinowski, 1986; Zeanah & Anders, 1987; Zeanah, Keener, & Anders, 1986). Expectations of infant temperament are also considered important because they appear to be associated with infants' actual temperament and the parent–infant relationship (Bates, 1987; Bates & Bayles, 1984; Mebert, 1991). Zeanah, Keener, Anders, & Vieira-Baker (1987) provided evidence that parents' expectancies may actually influence later infant behavior. Mothers who rated their unborn infants as unpredictable had babies who were rated by observers as unresponsive. Expectancies may also bias parents' observations and behaviors so that information consistent with the expectancy are more likely to be attended to, processed, and responded to (Darley & Fazio, 1980). Thus, a parent who expects to have an active child may later interact with the child in ways that effectively elicit and reinforce higher levels of activity (Stern & Hildebrandt, 1986). Finally, expectations can be thought of as a component of the parents' belief system, and various studies have confirmed that parental beliefs can affect child rearing and socialization (Sigel, 1985).

Given their apparent effects, it is interesting to consider factors that may influence expectancies. Diener et al. (1994), for example, found that parents' *prepartum mood* was related to their expectations for infant temperament. Similarly, Mebert (1991) reported that parents who were more anxious or depressed during the pregnancy had more negative expectations and postpartum perceptions of their children's temperament. Principal component analysis and subsequent correlation and regression analyses indicated that parents' psychological characteristics were distinct from their expectations, suggesting that expectations reflect more than simply projected psychological characteristics. Mebert cited several trends in her data to infer that psychological functioning influences prepartum expectations and, in turn, parents' ratings of their infants' temperament.

In addition to psychological characteristics, other factors may also influence the ways in which parents anticipate their infants. For example, a mother's expectations of her baby may be related to how much she actually knows about infant development. If she is familiar with infant characteristics and developmental milestones, then she may feel more confident in her ability to predict her infant's behaviors and have more optimistic expectancies about the infant's adaptability. Although the influence of knowledge on expectancies has never been specifically examined, past studies of parental differences provide indirect evidence for this link. Mothers tend to have more differentiated infant expectancies than fathers (Mebert, 1991) and report feeling better able to predict how adaptable and predictable their babies will be (Diener et al., 1994). This difference is thought to stem, at least in part, from the fact that women generally have more experience with and knowledge of infants (de Lissovoy, 1973; Diener et al., 1994).

It is also possible that the quality of parents' social relationships may influence their expectancies. To the extent that parents are satisfied in their relation-

ships, they may view future relationships in a more positive light. Alternately, if parents feel rejected in important relationships or dissatisfied with their social networks, they may have more negative expectancies for their children (J.D. Osofsky & Culp 1986). An expectant parent's relationship with his or her mother and father may have particularly salient effects. Such relationships may serve as general models of parent-child relationships (Bretherton, 1985).

The goal of this study was to further examine factors associated with parental expectations of infant temperament. Specifically, based on previous research, we predicted that pregnant women with (a) fewer symptoms of anxiety and depression, (b) more knowledge of infant development, and (c) more satisfying and accepting social relationships would have more positive expectations of their infants' temperament.

These issues were addressed within the context of a study of low-income, pregnant, African American teenagers. Although research to date has tended to focus on adult, middle-class women, there is a need to better understand the expectations of teenage mothers. In contrast to infants of adult mothers', infants of teenage mothers are noted to receive less verbal stimulation (Field, 1979; H.J. Osofsky & J.D. Osofsky, 1970) and to experience developmental delays (Broman, 1979; Field, Widmayer, Stringer, & Ignatoff, 1980). Some of these delays have been attributed to young mothers having relatively limited knowledge of norms for infant development and unrealistic expectations regarding developmental milestones (Epstein, 1980; Parke & Tinsley, 1987). Given the apparent influence of expectations on later behaviors, a negative, unrealistic expectation can be considered an additional risk factor which, along with other negative influences facing young, African American women, may contribute to poorer infant outcomes.

METHOD

Setting

Participants were recruited from an alternative school for pregnant students, located in a large, Midwestern metropolitan center and serving a low-income, minority community. An attempt was made to interview every student who was enrolled in the school during the 1992-1993 academic year. A female African American research associate met with the students and their parent or parents during an intake interview and explained the procedures of the study. The participants and their parents were told that participation was voluntary, that information was confidential, and that they would receive \$10 for their involvement. Nearly all (97%) of the students who were contacted agreed to participate in the study and the informed consent of the participants and their parents was obtained. The data reported on this study were gathered through an individual interview conducted by the African American researcher at the school. The interviews lasted approximately 2 hr.

Participants

Participants were 126 pregnant, African American teenagers between the ages of 11 and 19 years old ($M = 15.6$, $SD = 1.5$). All were expecting their first baby; the mean month of pregnancy was 6.2 months ($SD = 1.75$). None were married and the majority of the teenagers were receiving welfare benefits.

MEASURES

Temperament Expectations

The teenagers' prenatal expectations for their infants' temperament were assessed using Mebert and Kalinowski's (1986) modified version of the Infant Characteristics Questionnaire (ICQ; Bates, Freeland, & Lounsbury, 1979). This 27-item questionnaire provides scores on four subscales: fussy/difficult, unadaptable, dull, and unpredictable. Items on the four subscales are rated on a 7-point scale with higher scores reflecting more negative expectations for infants' behavior. Scores on these four scales were computed by adding the responses for the relevant items. Mebert and Kalinowski (1986) reported alpha coefficients for the scales ranging from .78 to .87 ($M = .82$) and test-retest reliabilities ranging from .67 to .82 ($M = .73$) over a 5-month interval from early to late pregnancy. In addition to these four subscales, a composite score reflecting participants' overall expectations for their infants' temperament as positive or negative was also used. This overall "difficulty" score was obtained by totaling all items comprising the four ICQ scales. The Cronbach's alpha coefficient for the composite score was .63. The obtained means and standard deviations on this and all measures used in the study appear on Table 1.

TABLE 1
Means and Standard Deviations of the Study Variables

Variable	<i>M</i>	<i>SD</i>
ICQ—fussy	3.48	.99
ICQ—unadaptable	4.15	1.22
ICQ—dull	2.75	1.07
ICQ—unpredictable	3.46	1.29
ICQ—composite	3.51	.71
Depression	2.01	.77
Anxiety	1.69	.73
Warmth—mother	3.50	.69
Rejection—mother	1.69	.65
Warmth—father	3.25	.91
Rejection—father	1.59	.49
Satisfaction with support	3.81	.52
Knowledge of development	77.84	19.79
Life stress	5.88	4.79

Note. *N* for warmth and rejection by father = 86; for all other variables *N* = 125–126.

Psychological Characteristics

The Symptom Checklist-90-R (Derogatis, 1983) was used to assess the participants' levels of depression and anxiety. Respondents were asked to rate the frequency with which they experienced a series of psychological symptoms using a 5-point scale. Higher scores on both scales reflect greater symptomatology. Good reliability levels have been reported for both the depression and the anxiety scales ($\alpha = .90$ and $.85$ and test-retest coefficients = $.82$ and $.80$, respectively; Derogatis, 1983). In our sample, the alpha coefficient for the depression scale (13 items) was $.87$. The alpha coefficient for the anxiety scale (10 items) was $.88$.

Perception of Parental Relationships

Participants' perceptions of their own parents' acceptance and rejection were assessed using the Parental Acceptance-Rejection Questionnaire (Rohner, Saavedra, & Granum, 1980). This 42-item self-report measure provides scores on four scales: perceived parental warmth, hostility, neglect/indifference, and undifferentiated rejection. Good reliability levels have been reported for these scales ($\alpha = .95, .93, .88, .86$, respectively; Rohner et al., 1980). For purposes of this study, all three negative subscales were grouped into a single rejection scale. The two resulting scales (parental warmth and rejection) were used to describe the adolescents' current relationship with each of their parents separately. Eighty-six of the 126 teenagers had contact with their fathers at the time of the study; therefore, perceptions of warmth and rejection by fathers were available for only this subset of participants. In our sample, the alpha coefficients for warmth and rejection were $.91$ and $.85$ for perceptions of maternal relationships and $.96$ and $.63$ for perceptions of relationships with fathers.

Social Support Resources

The Social Support Network Questionnaire, a modification and extension of the Arizona Social Support Interview Schedule (Barrera, 1981; Rhodes, Ebert, Meyers, & Davis, 1995), was used to assess the amount of perceived social support and the teens' satisfaction with the support that they received. Amount of support was computed as the total number of persons who were perceived as available to provide support. Satisfaction with support was rated on a 5-point scale ranging from 1 (*bad*) to 5 (*very good*). Adequate test-retest reliability has been reported on these two measures (2-week test-retest $r = .76, p < .01$ for amount of support and $r = .54, p < .05$ for satisfaction with support; Rhodes et al., 1994).

Knowledge of Child Development

Participants' knowledge of infant characteristics and developmental milestones was assessed using a modified version of Egeland and Brunquell's (1979) knowledge of infant development scale (Paikoff, 1987). Mothers were asked to estimate the age at which most children master a variety of physical and social

milestones (e.g., "At what age do you think that most children are able to recognize their mother by sight?"). Responses were coded in terms of the degree to which they differed from age norms. The overall score on this 22-item scale was obtained by totaling the responses to all items and reversing the obtained totals so that higher scores reflect greater knowledge. Good reliability levels have been reported for this measure ($\alpha = .84$; Paikoff, 1987). In our sample, the alpha coefficient was .80.

Life Stress

Life stress was assessed using the Life Events Survey (Sarason, Johnson, & Siegel, 1978). This 57-item measure assesses the occurrence and valence of major stressors and life events occurring in the past year. Each event is rated on a 5-point scale ranging from 1 (*extremely negative*) to 5 (*extremely positive*). Adequate test-retest reliability has been reported for this measure (Pearson $r = .63$ and $.64$ for two normative samples; Sarason et al., 1978). A total life-stress score was calculated by totaling the weighted scores for all the events experiences as negative. Teenagers experienced an average of 7.3 stressors in the past year ($SD = 2.9$, range = 2 to 17).

Demographic Variables

Demographic information was gathered through a set of fixed-format questions. These included age, month of pregnancy, marital status, and reliance on welfare.

RESULTS

Expectations Scores and Demographic Variables

Associations between demographic variables and expectations for infant temperament were explored using Pearson correlations coefficients. No significant correlations were found between the participants' expectations and their age, month of pregnancy, marital status, welfare dependence, life stress, and amount of social support available.

Expectations Scores and Maternal Variables

Correlational analyses were then performed to examine the extent to which the teenagers' expectations of their infants' temperament were related to the principal variables in the study. One-tailed tests were conducted because we had specific hypotheses for the direction of the associations. Sixty percent of the correlations performed reached statistical significance. This indicates that, overall, the maternal variables were related to the adolescents' expectations for their infants' temperament (see Table 2). With the exception of the ICQ dull scale, expectations were related to teens' levels of depression and anxiety. As anticipated, the expectations of teens who reported higher levels of anxiety and depression were more negative than those whose anxiety and depression levels were lower. Teens'

TABLE 2
One-tailed Correlations Between Expectation Scores and Maternal Variables

	Fussy	Unadaptable	Dull	Unpredictable	Composite
Depression	.25***	.17**	.00	.18**	.27***
Anxiety	.12	.19**	.01	.24***	.23***
Satisfaction with support	-.13	-.11	-.20**	-.06	-.19**
Warmth—mother	-.28***	-.09	-.19**	-.12	-.28***
Rejection—mother	.35***	.24***	.22***	.14	.39***
Warmth—father	-.24**	.04	.05	-.21**	-.16
Rejection—father	.33***	.09	.04	.12	.25***
Knowledge of development	-.23***	-.23***	-.21**	-.17**	.34***

Note. *N* for warmth and rejection by father = 86; for all other variables *N* = 125–126.

* $p < .10$. ** $p < .05$. *** $p < .01$. **** $p < .001$.

satisfaction with the social support they received was also related to their expectations for their infants' temperament. Those who reported greater support satisfaction expected their infants to be less fussy and to laugh and smile more (dull scale). Their overall expectations (composite score) were also more positive. In addition to overall support satisfaction, teens who perceived their relationships with their own parents, particularly their mothers, as warmer and less rejecting expected their infants to have an "easier" temperament. Knowledge of child development was also related to maternal expectations; with more knowledgeable teenagers having more positive expectations.

Derivation of Predictor Variables

In order to arrive at a more parsimonious set of predictor scores, the variables (maternal depression, anxiety, satisfaction with support, and relationship with mothers) were subjected to a principal components analysis with varimax rotation. The analysis yielded two orthogonal components accounting for 74% of the variance on the five affect and relationship variables (see Table 3). The first component consisted of the depression and anxiety scales; it accounted for 45.5% of the variance and was named *negative affect*. The three perception of relationships variables formed the second component. It accounted for 28.9% of the variance and was named *relationships*. In subsequent analyses, the factor scores for these two orthogonal components were used as predictor variables together with mothers' knowledge of child development that was not correlated with any of the affect or relationships variables. Thus, the three final predictor variables were not intercorrelated. Teens' perceptions of their relationships with their fathers were not included in this or further analyses because as described earlier, only a portion of the sample had scores available on these scales.

TABLE 3
Principal Component Analysis With Varimax Rotation of the Affect
and Relationships Variable

Scale	Component	
	Negative Affect	Relationships
Anxiety	.94	
Depression	.94	
Warmth—mother		.86
Rejection—mother		-.78
Satisfaction with support		.69

Note. Eigenvalues and percent of variance accounted for by each of the components are 2.3 (45.5%) and 1.4 (28.9%), respectively.

Maternal Expectations and Subject Variables

Canonical correlation and multiple-regression analyses were then employed to examine the extent to which the teenagers' affective states, perception of relationships, and their knowledge of child development were associated with their expectations for their infants' temperament. First, a canonical correlation was conducted between the four expectations scores and the set of predictor variables (negative affect, relationships, and knowledge of infant development) in order to assess, in a global manner, the extent to which these two sets of variables were related to each other. The first canonical correlation was significant, canonical $r = .52$, $\chi^2(12, N = 124) = 44.6$, $p < .001$, indicating that there was a reliable relation between maternal expectations and the set of predictor variables (see Table 4). Examination of the canonical loadings indicated that teens who expected their infants to be less fussy ($r = .74$), more adaptable ($r = .56$), more expressive ($r = .56$), and more predictable ($r = .43$) reported lower levels of depression and anxiety ($r = .31$), experienced their current social relationships as more satisfying ($r = -.69$), and had greater knowledge of child development ($r = -.55$).

A regression analysis was then conducted to examine in more detail the associations between the set of predictor variables and the composite variable reflecting overall level of temperamental difficulty expected by mothers (see Table 5). All three predictor variables were significantly associated; together they explained 24% of the variance in the composite score. These findings are consistent with the canonical correlation results. They indicate that more depressed and anxious pregnant teenagers, who perceive their social relationships to be less satisfying, and who have less knowledge of child development, have more negative expectations for their infants.

TABLE 4
Canonical Correlation Results

	First Canonical Variate	
	Correlation	Coefficient
Criterion Variables		
Fussy	.74	.65
Unadaptable	.56	.28
Dull	.56	.55
Unpredictable	.43	.13
Predictor Variables		
Negative affect	.36	.31
Relationships	-.76	-.69
Knowledge of development	-.67	-.55

Note. Canonical correlation = .52.

DISCUSSION

This study was designed to investigate factors associated with pregnant, African American teenagers' expectations of their infants' temperament. Results indicated that the young women's affective state, social relationships, and knowledge of infant development were distinct and that each of these variables contributed significantly to the prediction of maternal expectations of their infants' temperament. Importantly, our results replicate findings from previous investigations of White, middle-class, adult women's expectations for their infants' temperament. Thus, they provide evidence of generalizability across racial and cultural backgrounds as well as across different maternal ages.

Pregnant teenagers who were anxious and/or depressed tended to expect their infants to have more difficult temperaments. This finding is consistent with previous research (Diener et al., 1994; Mebert, 1991) and suggests that maternal emotional functioning may begin to influence the parenting process even before the infant is born. In addition, expectant teens' satisfaction with their social support networks accounted for variance in expectations over and above the

TABLE 5
Regression Predicting Overall Expectation Score From Maternal Variables

	Positive Affect	Relationships	Knowledge of Development	R ²
Over all expectation	.22*	-.30**	-.27**	.24**

Note. Values reported are standardized regression coefficients; *df* = 3,120.
p* < .01. *p* < .001.

variance accounted for by psychological functioning. Those young women who were more satisfied with current support resources and who perceived their maternal relationships as more warm and accepting tended to have more positive expectations of their infants' temperament. The quality of a teen's extant relationships may serve as a basis for making appraisals of future relationships.

As hypothesized, strong associations were found between the teens' knowledge of infant development and their expectations of their infants. Those young women who held more accurate information about infant development and milestones had more positive expectations of their infants. It appears that realistic information that increases the accuracy of pregnant teenagers' knowledge and beliefs may have the effect of improving expectations of their infants' temperament. This, in turn, may influence the ways in which the adolescent actually perceives and interacts with her child.

Of course, prospective studies that included postnatal data would permit more definitive conclusions regarding the associations among these variables. It is possible, for example, that heightened symptomatology is the cause (rather than the consequence) of support deficits. Similarly, in the context of this study, it could be reasonably argued that, by virtue of their negative response sets, certain youth were simply more inclined to provide negative appraisals of their support, psychological functioning, and infants' temperament. It is important to note, however, that no group differences emerged in levels of life stress, relationship problems, or available support. Thus, it is unlikely that these results were due merely to shared method variance or to certain participants being inclined to provide positive appraisals of their support, psychological well being, and expectations. Nonetheless, future research would be strengthened through the inclusion of longitudinal data and objective assessment techniques such as observation of infant temperament.

Along these lines, future studies should also include assessments of adolescent fathers and the ways in which their expectations influence later perceptions and behavior. Finally, future efforts should be directed toward examining additional variables that might be associated with parental expectations of their infants.

Implications for Intervention

In addition to serving as an impetus for future research, these findings have implications for refining interventions that serve pregnant teenagers. It appears that it may be particularly useful to provide teens with accurate information regarding infant development. Indeed, several studies have found that mothers who participated in educational programs increased their knowledge of child development and demonstrated more positive contact with their infants and children (Affleck, McGrade, Allen & McQueeny, 1985; Chamberlain, 1979; Dickie & Carnahan, 1980; Skinner, 1985). Although most of these interventions have been implemented postnatally, our data suggest that it may be appropriate to initiate them while the mother is still pregnant.

In addition to group-based interventions, information concerning norms for infant development could be imparted through educational materials, which could be disseminated to pregnant teens through schools, public assistance offices, and health care settings. Of course, such efforts would necessitate the development of materials that are sensitive to cultural norms and accessible to teenage audiences. Similarly, public health nurses, case workers, or volunteer mentors could be enlisted to provide accurate, individualized information to pregnant teenagers. Efforts such as the Prenatal/Early Infancy Project (Olds, 1988), in which nurses visited the homes of pregnant and parenting teenagers, provided prenatal education, and worked to improve the young women's understanding of infant temperament, should be replicated and expanded. Finally, parents, older siblings, and extended network members should be encouraged to pass on information and provide a context for the teens to discuss and assess their expectations.

Programs that mobilize and incorporate members of the teenagers' support networks would have the added benefit of enriching their available social resources. Given the apparent role of satisfying social relationships in reducing pregnant teenagers' levels of distress (Barrera, 1981) and in positively influencing their prenatal expectations, such efforts would appear particularly promising.

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