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Predictors of Parenting and Infant Outcomes for Impoverished Adolescent Parents

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Abstract

Adolescent mothers and their children are at risk for a myriad of negative outcomes. This study examined risk and protective factors and their impact on a sample (N=172) of impoverished adolescent mothers. Multiple regression analyses revealed that depressed adolescent mothers report higher levels of parenting stress, and that their children are more at risk for maltreatment and are developmentally behind other babies. In addition, adolescent mothers with restricted social support have babies who are at higher risk for maltreatment. Finally, mothers who were older during pregnancy were more likely to stay in school. Implications for program development are discussed.

Keywords

Adolescent parents; risk and protective factors; maternal depression; social support

Although teen birth rates have fallen 37 percent in the past 20 years, the rate of teen births in the United States continues to be nine times higher than the rest of the developed world (Centers for Disease Control, 2011; Alford & Hauser, 2008; Devereaux, Weigel, Ballard-Reisch, Leigh, & Cahoon, 2009). Adolescent mothers are at an increased risk for a myriad of negative maternal and child outcomes, compared to their adolescent peers or adult mothers. Specifically, adolescent mothers are at risk of depression (Horwitz, Bruce, Hoff, Harley, & Jekel, 1996; Barnet, Joffe, Duggan, Wilson, & Repke, 1996), parenting stress (Emery, Paquette, & Bigras, 2008; Passino et al., 1993), increased likelihood of child maltreatment (Britner & Reppucci, 1997; Schellenbeck, Whitman, & Borkowski, 1992; Leventhal, 1981), lower educational attainment (National Campaign to Prevent Teen Pregnancy, 2002; Leadbeater, 1996), and reduced economic stability (Devereux et al., 2009; Hoffman, Foster & Furstenberg, 1993). Children of adolescent mothers have been found to be at risk of developmental delays and social-behavioral problems (Hoffman et al., 1993; Langfield & Pasley, 1997). Due to the high birth rate for adolescent mothers, these negative outcomes represent an important social and public health problem and more research is necessary to develop effective programs for and enhance outcomes of children and adolescent mothers.

Risk & Protective Factors

Understanding the risk and protective factors that can impact the negative outcomes for adolescent mothers and their children can provide appropriate targets of effective prevention and intervention programs for these young women and children (Lanzi, Bert, & Jacobs, 2009). What follows is a review of the literature on depression and social support as they relate to pregnant and parenting adolescent mothers.

Depression

Pregnant adolescents may be at a higher risk for depressive symptoms because these symptoms are prevalent among adolescents in general (15–20%), with females being two to three times more likely than male adolescents to report depression (Ramos-Marcuse et al., 2010). Research has demonstrated that pregnant adolescents display significantly higher prenatal and postpartum rates of depression than childless adolescent peers and adult mothers (Barnet et al., 1996; Lanzi, Bert, & Jacobs, 2009). For example, in one study, adolescent mothers had significantly higher prenatal mean depression scores compared to lower-resource adult mothers and higher-resource adult mothers (Lanzi et al., 2009). Using a national sample, Mollborn and Morningstar (2009) found that the rate of severe depression in teenage mothers was more than twice the rate of their childless peers. However, analyses also revealed adolescent mothers exhibited higher rates of depression prior to pregnancy, suggesting that the experience of adolescent childbearing does not appear to be the cause of the high rates of depression (Mollborn & Morningstar, 2009). Moreover, these high rates of depressive symptoms appear to continue well after delivery, suggesting that they may be stable and long-term, often continuing into adulthood (Beeghly, Weinberg, Olson, Kernan, Riley, & Tronick, 2002; Lewinsohn, Rohde, Seeley, Klein, & Gotlib, 2003; Mollborn & Morningstar, 2009).

Negative maternal and child outcomes associated with maternal depression have also been established for adolescent mothers. For example, maternal depression has been linked to several negative outcomes for the mother, including poor and unresponsive parenting practices, repeat pregnancies, and poor educational outcomes (Lanzie, Bert, & Jacobs, 2009; Mollborn & Morningstar, 2009). Understandably, mood disorders and adverse conditions that accompany depressive symptoms are likely to interfere with sensitive and responsive parenting and, consequently, are likely to negatively affect infant and children's behavioral regulation and development (Hamman, Shih, & Brennan, 2004). For adolescent mothers, depression has been linked to negative child outcomes as well, including developmental delays, underdeveloped coping skills, social maladjustment, poor physical health (Lanzi, Bert, & Jacobs, 2009; Smith, 2004), and disorganized mother-child attachment (Long, 2009).

The risks associated with maternal depression, particularly for adolescent mothers, suggest that the early identification of maternal depressive symptoms and subsequent use of effective prevention and intervention programs could have significant maternal and child health implications (Lanzi, Bert, & Jacobs, 2009). Furthermore, these risks highlight the need to identify protective factors that can reduce depressive symptoms and buffer the negative impact of those symptoms. Greater levels of social support are related to less

depressive symptoms in adolescent mothers (Barnet et al., 1996), suggesting that social support is one such protective factor for this vulnerable population.

Social support

Social support is important for all first-time mothers because it can promote maternal wellbeing and has been found to mediate maternal well being and behaviors, which can improve the mother-child relationship (Devereux et al., 2009; Lanzi, Bert, & Jacobs, 2009). Pregnant and parenting adolescents, in particular, need support to cope with stress, engage in quality interactions with their children, and take care of their child's needs (Letourneau, Stewart, & Barnfather, 2004) and the literature reveals that support from the adolescent mother's own mother and the father of her baby contribute to positive outcomes for these mothers and their babies (Bunting & McAuley, 2004). However, compared to non-pregnant adolescents, pregnant adolescents frequently receive less support from peers and their families and these low levels of support appear to be stable from prenatal to postpartum stages (Devereux et al., 2009). Because pregnant and parenting adolescents experience high rates of maternal depression as discussed above, the buffering potential of social support becomes even more crucial. Multiple studies have demonstrated the protective nature of social support for these young mothers (Sieger & Renk, 2007) and how the support can lead to improved attachment with their child (Letourneau, Stewart & Barnfather, 2004). For example, Emery, Paquette, and Bigras (2008) found that higher social support satisfaction and lower parental stress during pregnancy was related to an increased likelihood of secure attachment for adolescent mothers, while more social support was related to lower levels of parenting stress. It seems that social support may act as a protective factor by fostering appropriate parenting practices and increasing secure attachments.

Purpose of the Study

The potential risks associated with disproportionately high levels of depressive symptoms in adolescent mothers are alarming given that these symptoms have been found to be associated with negative outcomes for the mother and child. Additionally, studies have identified social support as a protective factor for pregnant and parenting adolescents, perhaps by acting as a buffer against maternal stress and depression (Long, 2009). This research highlights the need for additional studies that clarify the developmental significance of depression and social support in parenting behaviors among adolescent mothers (Lanzi, Bert, & Jacobs, 2009).

The present study attempts to elucidate the relationships between these important factors during pregnancy and important postpartum maternal and child outcomes for a sample of urban adolescent mothers. Specifically, a correlational design was used to examine the relationships between risk/protective factors (maternal depression and social support) in the 3rd trimester or soon after birth and outcomes (parenting stress, child abuse potential, school achievement, and the infant's development) at 6 months post-partum. The study addressed two primary hypotheses:

1. Higher levels of maternal depression in the 3rd trimester or soon after birth would be significantly related to higher levels of negative outcomes – specifically higher

parenting stress scores, higher child abuse potential scores, lower school achievement, and lower child developmental scores – at 6-months post-partum.

2. Higher levels of maternal social support in the 3rd trimester or soon after birth would be significantly related to lower levels of negative outcomes – specifically lower parenting stress scores, lower child abuse potential scores, higher school achievement, and higher developmental scores for the child – at 6-months post-partum.

The goal of the research was not to discover if pregnancy causes or leads to these risk factors or outcomes, but was focused on identifying whether risk and protective factors are related to maternal and child outcomes and, if so, how they are related in order to inform interventions for this population. Explicating how these risk and protective factors influence a myriad of maternal and child outcomes is essential in order to develop effective programs for these young women and children that will ultimately enhance outcomes.

Methods

The sample used in these analyses was drawn from a larger study evaluating the effectiveness of a parent aid program designed to: help young mothers improve their prenatal health and the outcomes of their pregnancy; improve the care provided to their infants in an effort to improve the children's health and development; and improve the young mothers own personal development, giving particular attention to the planning of future pregnancies, educational achievement, and participation in the work force. The results of the larger study will be published when data collection is complete. The larger study includes an intervention group of impoverished adolescent mothers receiving the parent aid intervention and a matched comparison group recruited from the Women, Infant and Children (WIC) office at a public health clinic. Because analyses of baseline results on all measures revealed no significant differences between the adolescent mothers in the intervention and comparison groups this study includes young mothers in the intervention and comparison groups and group membership is controlled for in all analyses.

Sample

The sample includes 172 pregnant or parenting adolescent females with a mean age of 16.72 (SD = 1.15; Range = 13–19). The majority of the young women are in 10th through 12th grade (84%) and rely on their parents for financial support (61%). The sample is overwhelming females of color: 54% of the adolescent females identified as Hispanic or Latina and 34% identified as Black or African American. Ninety percent of the young mothers do not work. Ninety-three percent of the participants are on WIC; while 80% receive Medicaid. Characteristics of the sample in terms of these and additional demographic information are displayed in Table 1.

Data Collection

Prior to data collection, the adolescent mother and her parent or legal guardian participated in a consent interview with trained research staff where the parent/guardian provided active consent for their daughter to participate in the study and the adolescent assented into the

study. All participants participated in a semi-structured interview in their last trimester of pregnancy or soon after their baby was born (baseline) and a follow-up interview when the baby was 6-months old. Participants received a \$30 gift card for participation in the baseline interview and a \$40 gift card for participation in the 6-month interview. The Human Investigation Committee at the Yale University School of Medicine provided oversight of this study with regard to human subject's protection.

Data was collected from the adolescent mothers by trained research staff during semi-structured interviews conducted in their homes or at school. To control for any literacy issues, all questions were read to the adolescent mother in her preferred language (English or Spanish) and participants were given cards with the response options listed to assist her in answering the questions. Demographic and descriptive information was obtained from the teen mother at baseline including information on maternal age, race/ethnicity, sources of financial support, and living situation. School status, including whether the teen mother was currently enrolled and attending school, was collected at each of the data collection points. Assessments of depression and social support were obtained during the baseline interview and assessments of parenting stress, risk for child abuse, and infant development were obtained at the 6-month interview.

Measures

The adolescent mother's level of depression at baseline was assessed using the *Reynolds's Adolescent Depression Survey* (RADS-2; Reynolds, 2002). The RADS is a 30 item brief self-report measure that assesses the severity of depressive symptoms in adolescents. The RADS-2 provides a total score as well as scores on four subscales: Dysphoric Mood, Anhedonia/Negative Mood, Negative Self Evaluation, and Somatic Complaints. The Total Scale on the RADS has strong internal consistency (.93) and internal consistency reliability on the four subscales ranges from .80 to .87 (Reynolds, 2002). High test-retest reliability have been found for the Depression Total Scales (.85) and test-retest reliability coefficients for the subscales are moderately high, ranging from .77 to .84 (Reynolds, 2002).

The adolescent mother reported on her Social Support at baseline by responding to the *Multidimensional Social of Perceived Social Support* (MSPSS; Zimet, Dahlem, Zimet, & Farley, 1988) a 12-item inventory that measures three sources of support: family, friends, and significant other. Test-retest reliability has been reported at .85 (2–3 months), and .85, .75, and, .72 on the family, friends, and significant others subscales respectively (Zimet, Dahlem, Zimet, & Farley (1988). Coefficient alphas have ranged from .77 to .92 for the overall scale and from .81 to .93 for the family subscale, .78 to .94 for the friends subscale, and from .79 to .98 for the significant other subscale (Zimet et al., 1988).

The *Parenting Stress Index Short Form* (PSI-SF; Abidin, 1990) is a widely used 36-item measure which examines stress associated with parenting. The PSI-SF consists of 3 subscales (parental distress, parent-child dysfunctional interaction and difficult child) and a total score. Test-retest reliability for the PSI-SF Total Score has been reported at .84 and the Total Score of the PSI-SF has correlated well with the full length version of the PSI, .82 (Abidin, 1990).

The *Brief Child Abuse Potential Inventory* (BCAP; Ondersma, Chaffin, Simpson, & LeBreton, 2005) is a 34-item questionnaire that attempts to identify individuals at-risk of engaging in child abuse and is a brief version of the widely used Child Abuse Potential Inventory (Milner, 1986). The BCAP has shown high internal consistency (.89). The BCAP and CAP have demonstrated similar patterns of external correlates, the BCAP correlates highly with the Abuse Risk Score on the full CAP ($r=.96$) and has been suggested as a time efficient screener for abuse and risk (Ondersma, Chaffin, Simpson, & LeBreton, 2005).

Finally, child development was assessed when the baby was 6-months old using the *Brigance Screens* (Glascoe, 2002). The Brigance screens for age-appropriate development in the areas of receptive and expressive language, gross and fine motor, socio-emotional development as well as self-help skills. Internal consistency, test-retest, and inter-rater reliability range from .98 to .99 on the infant and toddler version of the Brigance Screens (Glascoe, 2002). Overall developmental level quotient was used in the analysis for this study.

Data Analysis

In order to examine the two primary hypotheses, a multiple regression analysis was conducted with Maternal Depression total score (RADSD), Social Support total score (MSPSS), and mother's age at baseline as the predictor variables and Parenting Stress total score (PSI), Child Abuse Potential score (BCAP), child's Developmental Level quotient (Brigance), and mother's school status at 6 months post-partum as the criterion variables. Two additional regression analyses were then conducted allowing for a deeper exploration into subscale variations: 1) the first additional analysis examined the four subscales of the RADSD (i.e., maternal depression) as the predictors and the same four criterion variables (parenting stress total score, child abuse potential score, child's developmental level quotient, and mother's school status); 2) the second additional analysis included the original predictor variables (maternal depression, social support, and mother's age) and the three Parenting Stress Index subscales as the criterion variables. Analyses controlled for participation in the parent aid program. All regression analyses were calculated using the MPlus statistical package (Muthén & Muthén, 2007), which uses Full Information Maximum Likelihood (FIML) to manage missing data.

Results

The results of the study partially support Hypothesis 1. Maternal Depression total scores at baseline were significantly and positively related to Parenting Stress total scores and Child Abuse Potential scores at 6 months ($\beta = .31, p < .01$ and $\beta = .45, p < .001$). Maternal Depression total scores were also significantly and negatively related to Brigance quotient scores at 6 months ($\beta = -.27, p < .01$). Results of the regression analysis also demonstrated partial support for Hypothesis 2 as Social Support total scores at baseline were significantly and negatively related to Child Abuse Potential scores at 6 months ($\beta = -.19, p < .05$). Finally, mother's age at baseline was significantly and positively related to school achievement (school status) at 6 months ($\beta = .28, p < .01$). The regression coefficients for this regression analysis are presented in Table 2.

The second regression model for the maternal depression subscales revealed that Somatic subscale scores were significantly and positively related to parenting stress total scores ($\beta = .26, p < .05$), Dysthymic subscale scores were significantly and positively related to child abuse potential scores on the BCAP ($\beta = .29, p < .05$), and Ahedonia subscale scores were significantly and negatively related to mother's school achievement at 6 months ($\beta = -.22, p < .05$). The third regression model examining the Parenting Stress Index subscales revealed that maternal depression total scores at baseline were significantly and positively related to Parental Distress subscale scores ($\beta = .34, p < .001$) and Difficult Child subscale scores ($\beta = .29, p < .01$) at 6 months, but not Parent-Child Interaction scores. The regression coefficients for these two additional multiple regression analyses are presented in Table 3.

Discussion

Adolescent mothers face a myriad of challenges, and for those mothers who are depressed and/or have limited social support these challenges are even greater. The results of these analyses reveal that adolescent mothers who are depressed report higher levels of stress related to parenting their child and their children are more at risk for maltreatment and are developmentally behind other babies whose mothers are not depressed. Research has revealed that high rates of depressive symptoms appear to continue well after delivery, suggesting that they may be stable and long-term (Beeghly, Weinberg, Olson, Kernan, Riley, & Tronick, 2002; Lewinsohn, Rohde, Seeley, Klein, & Gotlib, 2003; Mollborn & Morningstar, 2009; Troutman & Cutrona, 1990); this knowledge coupled with the known risk factors for children whose mothers are depressed point to the need for intervention. The literature clearly indicates that having a depressed mother is a risk factor and places babies at risk for delays in reaching developmental milestones and for emotional and behavioral difficulties (Carter, et al., 2001). The additional subscale analysis yielded interesting findings suggesting that the mother's depression did not appear to impact her perception of attachment to her baby (the parent-child dysfunctional interaction subscale), but instead feelings of distress including her emotional stress related to parenting (the parental distress subscale) and her perception that her baby was difficult to parent (the difficult child subscale). These feelings of distress need to be a target of intervention with these young mothers.

The results of this study also reveal that lower social support is related to higher levels of child abuse potential. This finding confirms what has been found in the literature (Haskett, Johnson & Miller, 1994) and suggests the need for increased social involvement and emotional support, which may help to reduce the risk for abuse in these young families. Finally, the results reveal that the older the adolescent mothers are when they give birth to their babies, the more likely they are to stay in school when their babies are 6 months of age. This result is similar to those found by other researchers which indicate that for adolescent mothers, grade-level achieved before delivery is predictive of long-term educational outcomes (Horwitz, Klerman, Kuo & Jekel, 1991).

These findings highlight the need to assess adolescent mothers for depression and level of social support when services first begin and then reassess on a regular basis. Focusing attention on the emotional needs of young mothers in addition to working to increase their

knowledge of infant development and parenting is vital in insuring healthy outcomes for the adolescent mothers and their babies (Haskett, Johnson & Miller, 1994). Our results point to the need to also focus on social support when working with this population. Providing group interventions for pregnant or parenting teens has been shown to be effective (Harris & Franklin, 2003) and could facilitate access to support from peers. In addition, given that many adolescent mothers reside with their own mother, interventions targeted at enhancing this relationship (Chase-Lansdale, Brooks-Gunn & Zamsky, 1994; Leadbeater & Bishop, 1994) and the adolescents relationship with her baby's father (Bunting & McCauley, 2004) are key in increasing the young mother's level of support which in turn impacts her parenting capacity (Hess, Papas & Black, 2002; Bunting & McCauley, 2004) and reduces the potential for infant maltreatment (Haskett, Johnson & Miller, 1994).

Limitations

The current study looks at outcomes for adolescent mothers and their children when the baby is 6-months old. Future research should follow the mother-child dyad longer to see if maternal depression and social support during the last trimester and immediately after birth continue to impact parenting and infant outcomes over time. In addition, it will be important to assess maternal depression and social support over time in order to determine if any long-term impact is from the mother's pre- or immediate postnatal status or if the current depression or social support levels impact outcomes. This study is also limited in that it assesses symptoms of depression versus a clinical determination of depression and that the scale used to assess symptoms of depression includes some items such as those related to fatigue, sleep issues or changes in appetite which could be related to typical symptoms in third trimester pregnancy or early postpartum and may have resulted in elevated levels of symptoms of depression.

Implications

These findings have implications for program development and suggest that assessing for depression and social support in adolescent mothers is essential. In addition, the findings indicate the need to develop interventions that focus on the emotional well-being and enhancing social support for adolescent mothers along with providing parenting education. Interventions such as these could help these young families to have less parenting stress, lower potential for child maltreatment, and better developmental outcomes for the babies and academic outcomes for the adolescent mothers.

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Table 1

Demographic characteristics at baseline for the sample (N = 172).

	N	Percentage
<u>Mother's Grade (baseline)</u>		
8th	1	6
9 th	26	15
10 th	39	23
11 th	53	31
12 th	52	30
Graduated	1	0.6
<u>Mother's Race/Ethnicity</u>		
Hispanic/Latino	92	54
Black/African American	59	34
Multiracial	18	11
White/Caucasian	3	2
<u>Baseline Pregnancy Status</u>		
Pregnant	117	68
Parenting	55	32
<u>Main Source of Financial Support</u>		
Mother's parents	105	61.0
Mother's spouse/partner	29	16.9
Public Aid	12	7.0
Mother's job	6	3.5
Other maternal relatives	3	1.7
Other	17	9.9
<u>Living Situation</u>		
With mother, including stepmother	125	73
With other relatives	121	70
With father, including stepfather	55	32
With baby's father	38	22
With partner	36	21

Table 2

Results of the primary multiple regression analysis.

Outcome/Predictor	B	S.E.	β
Parenting Stress Total (R² = 0.15)			
<i>Mother's Age</i>	1.21	1.27	0.08
<i>Maternal Depression Total Score</i>	0.58	0.18	0.31**
<i>Social Support Total Score</i>	-0.19	0.16	-0.11
Child Abuse Potential Total (R² = 0.35)			
<i>Mother's Age</i>	0.12	0.07	0.14
<i>Maternal Depression Total Score</i>	0.05	0.01	0.45***
<i>Social Support Total Score</i>	-0.02	0.01	-0.19*
Child's Developmental Quotient (R² = 0.14)			
<i>Mother's Age</i>	2.84	1.56	0.16
<i>Maternal Depression Total Score</i>	-0.62	0.22	-0.27**
<i>Social Support Total Score</i>	0.21	0.19	0.11
Mother's School Status (R² = 0.09)			
<i>Mother's Age</i>	0.12	0.04	0.28**
<i>Maternal Depression Total Score</i>	-0.00	0.01	-0.04
<i>Social Support Total Score</i>	0.00	0.01	0.06

Note.

*
p < .05;**
p < .01;***
p < .001; °trend.

Table 3

Results of the two additional multiple regression analyses.

Outcome/Predictor	<i>B</i>	<i>S.E.</i>	β
Parenting Stress (PSI) Total ($R^2 = 0.19$)			
<i>Dysthymic Subscale Score</i>	0.24	0.24	0.15
<i>Ahedonia Subscale Score</i>	-0.15	0.24	-0.06
<i>Negativity Subscale Score</i>	-0.05	0.32	-0.02
<i>Somatic Subscale Score</i>	0.44	0.20	0.26*
Child Abuse Potential Total ($R^2 = 0.36$)			
<i>Dysthymic Subscale Score</i>	0.03	0.01	0.29*
<i>Ahedonia Subscale Score</i>	0.02	0.01	0.09
<i>Negativity Subscale Score</i>	0.00	0.02	0.01
<i>Somatic Subscale Score</i>	0.02	0.01	0.15
Child's Developmental Quotient ($R^2 = 0.18$)			
<i>Dysthymic Subscale Score</i>	-0.41	0.29	-0.21
<i>Ahedonia Subscale Score</i>	-0.49	0.29	-0.16
<i>Negativity Subscale Score</i>	0.44	0.38	0.15
<i>Somatic Subscale Score</i>	-0.38	0.25	-0.19
Mother's School Status ($R^2 = 0.14$)			
<i>Dysthymic Subscale Score</i>	-0.01	0.01	-0.16
<i>Ahedonia Subscale Score</i>	-0.02	0.01	-0.22*
<i>Negativity Subscale Score</i>	-0.00	0.01	-0.02
<i>Somatic Subscale Score</i>	0.01	0.01	0.21
PSI Parental Distress Subscale ($R^2 = 0.18$)			
<i>Mother's Age</i>	0.25	0.55	0.04
<i>Maternal Depression Total Score</i>	0.28	0.08	0.34***
<i>Social Support Total Score</i>	-0.10	0.07	-0.13
PSI Difficult Interaction Subscale ($R^2 = 0.07$)			
<i>Mother's Age</i>	0.12	0.46	0.02
<i>Maternal Depression Total Score</i>	0.10	0.06	0.15
<i>Social Support Total Score</i>	-0.09	0.06	-0.15
PSI Difficult Child Subscale ($R^2 = 0.11$)			
<i>Mother's Age</i>	0.83	0.48	0.15
<i>Maternal Depression Total Score</i>	0.20	0.07	0.29**
<i>Social Support Total Score</i>	-0.00	0.06	-0.00

Note.

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