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Longitudinal Trajectories of Parenting Stress Among Ethnic Minority Adolescent Mothers

Cindy Y. Huang[1], **Yvonne Humenay Roberts**[2], **Jessica Costeines**[3], and **Joy S. Kaufman**[3]

[1]Teachers College Columbia University, Department of Counseling and Clinical Psychology, 525 W. 120th Street Box 102, New York, NY, 10027

[2]Casey Family Programs, Seattle, WA

[3]Yale University School of Medicine, Department of Psychiatry, Division of Prevention and Community Research, New Haven, Connecticut 06511

Abstract

Objectives.—Parenting stress has been linked with negative outcomes for parents and their infants (e.g., parental depression, negative parenting behaviors, poor attachment). Racial/ethnic minority adolescent mothers have increased risk for experiencing parenting stress compared to their White counterparts. Little is known about the changes in parenting stress over time for this population.

Methods.—Growth mixture modeling (GMM) was conducted to determine the growth trajectory classes of 185 African American and Latina/Hispanic adolescent mothers over 2 years. Risk and protective factors (e.g., maternal depression, social support, self-esteem) were examined to determine their influence on parenting stress trajectories.

Results.—Three distinct trajectories of parenting stress were found: low stable stress (40.90%), decreasing stress (35.78%), and high stable stress (23.28%). Lower maternal depression (*OR* = 2.35), higher self-esteem (*OR* = 1.29), lower perceived social support from family (*OR* = 0.53) and higher perceived support from friends (*OR* = 1.65) predicted placement into the low stable parenting stress group over the high stable parenting stress group. Adolescents living with family (*OR* = 2.74) and Latina race/ethnicity (*OR* = 2.78) also served as predictors of placement into the low stable parenting stress group. Higher self-esteem (*OR* = 1.66) predicted placement into the decreasing parenting stress group over the high stable parenting stress group.

Corresponding Author Correspondence concerning this article should be addressed to C.Y. Huang, Teachers College Columbia University, Department of Counseling and Clinical Psychology, 525 W. 120th Street Box 102, New York, NY 10027. Phone: (212) 678-8118; cindy.huang@tc.columbia.edu.

Author Contributions

CYH: Designed the concept of the current study using secondary data analyses, conducted the data analyses, and wrote the paper

YHR: Collaborated with writing the paper

JC: Assisted with data collection, data entry, and data management of the study

JSK: Designed and oversaw the implementation of the original study from which the current study's data was pulled, collaborated in the writing of the paper

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Ethics Statement: All procedures performed in studies involving human participants were in accordance with the ethical standards of the Yale University School of Medicine and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed Consent Statement: Informed consent was obtained from all individual participants included in the study.

Conclusions.—These findings highlight the importance of perceived peer support by adolescent mothers, regardless of their support family support (e.g., living at home and receiving child care). Considering developmental factors such as peer relationships may be important when working with adolescent mothers.

Keywords

Parenting stress; ethnic minority youth; adolescent parenting; teen mothers; social support

Parenting stress, defined as the stress experienced by a parent in the parenting role, has been associated with poor maternal mental health and child outcome (Cappa, Begle, Conger, Dumas, & Conger, 2011; K. Crnic & Low, 2002; Deater-Deckard, Scarr, McCartney, & Eisenberg, 1994). Parents with higher parenting stress exhibit more negative parenting behaviors (Deater-Deckard et al., 1994), have higher levels of depression (Koeske & Koeske, 1990; Leigh & Milgrom, 2008), and low self-efficacy (Jackson & Huang, 2000). High levels of parenting stress has also been linked with poor mother-child attachment (Jarvis & Creasey, 1991; Robson, 1997), resulting in poor outcomes for children including separation anxiety (Deater-Deckard et al., 1994), attention problems (DuPaul, McGoey, Eckert, & VanBrakle, 2001), depression (Anastopoulos, Guevremont, Shelton, & DuPaul, 1992), and internalizing and externalizing problems in children (Tharneret al., 2012).

Adolescent mothers are at increased risk for experiencing parenting stress compared to adult mothers (Emery, Paquette, & Bigras, 2008), especially given the additional social and economic burden they may experience (Goodman & Brand, 2011; Leadbeater, 1999; Spencer, Kalill, Larson, Spieker, & Gilchrist, 2002). Research shows that approximately 30 percent of adolescent mothers reported clinical levels of stress (Larson, 2004) and continue to experience higher parenting stress two years after the birth of their child (Spencer et al., 2002). Adolescent mothers are also at increased risk for repeat pregnancy (Klerman, 2004), school dropout (Leadbeater, 1999), financial stress (Knitzer & Perry, 2009), and depression (Barnet, Joffe, Duggan, Wilson, & Repke, 1996).

Recent studies have shown that rates of teenage pregnancy are higher for African American and Latina adolescents compared to White adolescents within the U.S. (Berry, Shillington, Peak, & Hohman, 2000; East, Khoo, & Reyes, 2006; Jahromi, Umana-Taylor, Updegraff, & Lara, 2012). This is concerning, since research suggests that ethnic minority adolescent parents may experience even more adversities than their White parenting peers (Milan et al., 2004), and are at increased risk for parenting stress (Emery et al., 2008). They are also at higher risk for mental health difficulties such as depression (Barnet et al., 1996; Birkeland, Thompson, & Phares, 2005; Goodman & Brand, 2011), and are more likely to drop out of school (Leadbeater, 1999) compared to White adolescent mothers.

Several reasons have been proposed to explain these differential outcomes for ethnic minority adolescents. Intergenerational effects of teenage pregnancy are well-established – adolescents are more likely to become pregnant if their mothers were also parenting as a teen (Coley & Chase-Lansdale, 1998; Hardy, Astone, Brooks-Gunn, Shapiro, & Miller, 1998). Given the historically higher rates of teenage pregnancy for ethnic minority adolescents (East et al., 2006; Jahromi et al., 2012), these intergenerational effects may be

more pronounced. Moreover, culturally-relevant factors may play a role in the disparities in teenage pregnancy rates and outcomes for adolescent mothers of color. Several studies suggest that higher rates of teenage pregnancy are found in Hispanic/Latino households that emphasize family or have favorable attitudes toward pregnancy (Rocca, Doherty, Padian, Hubbard, & Minnis, 2010; Rocca, Hubbard, Johnson-Hanks, Padian, & Minnis, 2010). These favorable attitudes are connected to higher levels of pregnancy intentions in Latina adolescents compared to non-Latina White and African American adolescents (Rocca, Doherty, et al., 2010). Despite this research, more information is needed to fully understand how parenting stress, and the factors associated with this stress, may be experienced by ethnic minority adolescent mothers.

While the literature on parenting stress for adolescent mothers is continuing to grow, the research focusing on how parenting stress may differ over time for this population is limited. Specifically, little is known about how parenting stress may function for ethnic minority adolescent mothers or how parenting stress changes for these mothers as they continue to grow in maturity and parenting experience. In fact, longitudinal studies on this topic for any population are limited. To date, one study has examined the longitudinal change of parenting stress in a sample of low-income young mothers with preschool age children. The study identified three classes of parenting stress trajectories in their sample, with the majority of mothers decreasing in parenting stress levels over a 22-month period (Chang & Fine, 2007). While important, this study focused on young mothers with children in the age range of 14 to 36 months old; and little is known about the stress experienced by adolescent mothers whose children are under the age of two.

Studies have identified several risk factors that place adolescent mothers at risk for elevated parenting stress. Research on maternal depression has shown that adolescent mothers are more likely to experience maternal depression than adult mothers or non-parenting adolescents (Barnet et al., 1996; Lanzi, Bert, & Jacobs, 2009; Mollborn & Morningstar, 2009; Venkatesh, Zlotnick, Triche, Ware, & Phipps, 2014; Wilhelm, 2006). High levels of maternal depression has repeatedly been shown to negatively impact child well-being, (Field et al., 1996; Tronick & Gianino, 2006). Children whose mothers have depression have difficulties with self-regulation (Tronick & Gianino, 2006), developmental outcomes (Field et al., 1996; Huang, Costeines, Ayala, & Kaufman, 2013), and school and mental health outcomes later in life (Beardslee, Wright, Gladstone, & Forbes, 2007; Sanson, Oberklaid, Pedlow, & Prior, 2006). In addition, the relationship between maternal depression and parenting stress have been well-documented in the literature (Goodman & Brand, 2011; Thomason et al., 2014). Compared to mothers without a history of depression, mothers experienced depression reported higher parenting stress levels one year postpartum (Cornish et al., 2006). Among adolescent mothers, research suggests that postpartum depression may be more prevalent than existing cutoff scores of screening tools need be indicating (Venkatesh et al., 2014). Given the risk for increased parenting stress in adolescent mothers, it is crucial to examine how risk factors such as maternal depression may relate to, or predict, parenting stress trajectories over time.

The literature also provides several factors that serve as protective influences against negative outcomes for parents and children. Parent's level of global self-esteem (i.e., self-

esteem not tied to being a parent) has been found to be associated with parents' perceptions of their children's temperament (Bugental, Blue, & Cruzeosa, 1989; Chang et al., 2004), which has implications for parenting stress levels as parent perceptions of difficult child temperament has been linked with maternal stress (Bayly & Gartstein, 2013). While limited, research on this population has shown that adolescent mothers with higher levels of global self-esteem had lower levels parenting stress at later time points (Chang et al., 2004). Additionally, some dimensions of self-esteem have been linked with teenage pregnancy, where adolescents with positive school orientations and higher education attainment goals were less likely to become pregnant (Woodward, Fergusson,& Horwood, 2001), suggesting that adolescents who are parenting may already be at risk for lower self-esteem Less is known, however, about parenting self-esteem in adolescents and how it may impact their stress levels.

Social support is a protective factor that has been studied extensively in adolescents (Bunting & McAuley, 2004; Colletta, 1983; Huang et al., 2013; Logsdon, Birkimer, Ratterman, Cahill, & Cahill, 2002) and has been shown to be protective against negative outcomes for them and their children. Adolescent mothers with higher levels of social support have better mental health outcomes than those with less support (Bunting & McAuley, 2004; Huang et al., 2013) and had lower levels of stress (K. Crnic & Low, 2002). However, there is evidence to suggest that adolescent mothers may still have less social support compared to adult mothers. For instance, adolescent mothers have fewer friends in their social networks (K. A. Crnic, Greenberg, Robinson, & Ragozin, 1984), and are less likely to have partner support compared to adult mothers (Garcia Coll, Hoffman, Houten, & Oh, 1987; Roye & Balk, 1996). In a recent study, adolescents were found to have significantly lower social support compared to their adult counterparts (Kim, Rotondi, Connolly, & Tamim, 2017). Difficult relationships with family members, especially with their mothers, are also associated with increased distress in adolescent mothers (Edwards et al., 2012; Letourneau, Stewart, & Barnfather, 2004). Yet, little is known how social support may influence the parenting stress trajectories of adolescent mothers.

The present study attempts to address gaps in the literature by examining the trajectories of parenting stress and the risk and protective factors associated with these trajectories in a sample of African American and Latina adolescent mothers with infants. Specifically, the study seeks to expand the literature on parenting stress in adolescent parents by examining how parenting stress functions and changes over time, this study examined the longitudinal trajectories of parenting stress in a sample of African American and Hispanic/Latina adolescent mothers. In addition, risk and protective factors were explored as predictors of parenting stress trajectories to provide information on how they may influence these trajectories. It is hypothesized that multiple trajectories of parenting stress over four time points will emerge for this population of adolescent mothers. Also, it is hypothesized that maternal demographic factors (i.e., race/ethnicity, living arrangement, intervention group), risk factors (i.e., maternal age, maternal depression) and protective factors (i.e., perceived social support from friends and family, self-esteem) will help distinguish adolescents among the different trajectories.

Method

Participants

Participants included 185 African American or Latina/Hispanic adolescent mothers in an urban area in the Northeast (see Table 1 for demographic information). Analyses of data on all study variables revealed no significant differences between the adolescent mothers in the intervention and comparison groups; thus, the present study included participants in both groups in all analyses.

Procedure

This study utilized secondary data from a larger study evaluating the effectiveness of a prevention program designed to increase parenting capacity, increase maternal strengths, and prevent future pregnancies for first-time adolescent mothers. The larger study included an intervention group of low-income adolescent mothers (n = 124) and a matched comparison group (n = 103) based on age, race/ethnicity, school status, and geographic area. The intervention group was recruited through their schools, and the comparison group was recruited from the Women, Infant and Children (WIC) office at a public health clinic. All participants were under the age of 18 years and enrolled at a public school at the time of recruitment in order to be eligible for participation. Adolescent mothers and their parent or legal guardian provided consent/assent to participate in data collection. Semi-structured interviews were conducted when the infants were six months (Wave 1), one year old (Wave 2), 18 months old (Wave 3), and 24 months old (Wave 4). All interviews were completed in participants'homes or schools. Participants received a $40 gift card for participation in each interview. The Human Investigation Committee at the Yale University School of Medicine provided oversight of this study with regard to human subject's protection.

Measures

Demographics.—Participants completed a demographic survey which included questions about their age, race/ethnicity, education level, sources of financial support, marital status, and current living arrangement (e.g., with parents, partner). The Intervention group status (i.e., intervention versus comparison group) was included to determine whether this factor influenced trajectories of parenting stress over a 2-year period for these adolescent mothers. Participants also provided their date of birth on the survey, which was used to calculate maternal age. More information on the percentages and categories of the demographic variables can be seen in Table 1. In the analyses, race/ethnicity and living arrangement were recoded, with African American adolescents and those living with their family serving as the reference groups for these variables.

Parenting stress.—The Parenting Stress Index Short Form (PSI-SF; Abidin, 1990) is a 36-item normed measure used to determine the level of stress associated with parenting. Participants reported their level of agreement on a Likert scale of one to five, with higher scores indicating more stress; scores from Wave 1 through Wave 4 were used in this study. The PSI-SF yields a total parenting stress score as well as 3 subscale scores (parental distress, parent-child dysfunctional interaction and difficult child). 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). In this sample, this measure was reliable at all waves (αs = .91, .91, .93, and .92, respectively).

Maternal depression.—Maternal depression was assessed at using the Reynolds's Adolescent Depression Survey (RADS-2; Reynolds, 2002). The RADS-2 is a 30 item brief self-report measure that assesses the severity of depressive symptoms in adolescents. Participants reported their level of agreement on a scale of 1-4, with higher scores indicating more depression; only data from Wave 1 was utilized for this study. 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 score was utilized in this study. The RADS Total Scale has strong internal consistency (.93) and the 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). This measure was reliable (α = .89) in this sample.

Self-esteem.—Self-esteem was measuring using the Rosenberg's Self-Esteem Scale (RSES; Rosenberg, 1989), a measure of global self-esteem that assesses for feelings of self-acceptance, self-respect, and positive self-evaluation. This measure has 10 items, rated on a 5-point Likert scale ranging from 1-5 measure, with higher scores indicating higher self-esteem Wave 1 data was included in the analyses. Previous studies have found this measure to have high alpha reliabilities ranging from .72 to .88 (Gray-Little, Williams, & Hancock, 1997). In this sample, this measure was reliable (α = .87).

Perceived social support.—Participants reported on their perceived levels of social support using the Multidimensional Scale of Perceived Social Support (MSPSS; Zimet, Dahlem, Zimet, & Farley, 1988), a 12-item measure that assesses three sources of support: family, friends, and significant other. Adolescents indicated their level of agreement on a scale of one to seven, with higher scores indicating more support. In this study, the Wave 1 scores on the family and friends subscales were included in the analyses; the Significant Other subscale was excluded due to low reports of having a significant other. Test-retest reliability has been reported at .85 (2-3 months), and .85 and.75, on the family and friends 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 and . 78 to .94 for the friends subscale (Zimet et al., 1988). In this sample, the family subscale (α = .89) and friends subscale (α = .93) were reliable.

Data Analysis

Descriptive statistics.—Descriptive statistics for all variables were examined, including mean, standard deviation, and frequency distributions, to assess the tenability of assumptions required for the proposed statistical analyses. Correlations between independent variables were evaluated with a bivariate correlation matrix and found to be moderate, providing evidence that multicolinearity was not a problem. Extreme skew and kurtosis values were examined. The majority of study variables were found to be within the recommended limits of ±3.0 to 3.0 for skew values, and −10.0 to +10.0 for kurtosis values (Kline, 2010).

Growth mixture modeling.—Growth mixture modeling (GMM) were used to identify growth trajectories (classes)of parenting stress. This method was chosen because it 1) tests for individual growth trajectories, and 2) determined the influence of covariates on the growth trajectories simultaneously (Jung & Wickrama, 2008). As such, GMM is more informative than conventional growth modeling, which typically assumes that growth trajectories of all individuals fall along a single slope (Jung & Wickrama, 2008). GMM allows for growth trajectories to vary, which provides information about different trajectory classes of growth in a specific sample (Jung & Wickrama, 2008; Wang & Bodner, 2007).

In this study, we used GMM to determine individual differences in initial status and change rates of parenting stress, which were identified as latent classes of parenting stress levels (Wang & Bodner, 2007). Mplus 5.21 (Muthén & Muthén, 2010) was used in all analyses. Risk and protective factors were included in the models to examine how they influenced class trajectories for adolescent mothers; these findings are reported as odds ratios. That is, the information we obtained through Mplus provided the probability of an adolescent belonging to one of the class trajectories based on the influence of the risk or protective factor. Data was determined to be completely missing-at-random; thus, we utilized multiple imputation techniques using NORM (Graham, 2009).

One- to four-class latent growth mixture models were estimated and compared to each other using conventional fit indices to assess model fit. Model fit information was obtained from the Bayesian information criterion (BIC), sample-size adjusted Bayesian information criterion (SSABIC), Akaike information criterion (AIC) indices, and the entropy value, which is reported as the posterior reliability of the class solution (Wang & Bodner, 2007). The Vuong-Lo-Mendell-Rubin likelihood ratio test (VLMR LRT) was unavailable due to the handling of missing data using multiple imputation techniques (Muthén & Muthén, 2010) and was therefore excluded from model fit assessment. Thus, the totality of the aforementioned indices, as well as interpretability and theoretical rational of a given of class solution, guided the final model selection, and the model with lower values for criterion indices and higher entropy value was selected as the best solution (Wang & Bodner, 2007).

Results

Trajectories of Parenting Stress

The results indicated a three-class model was the optimal representation of the data across four waves. As shown in Table 2, the AIC, BIC, and SSABIC values decreased as the number of classes increased through the third class. Furthermore, all models demonstrated adequate entropy values. Though the entropy value remained the same, the AIC, BIC, and SSABIC values increased in the four-class model; thus, the combination of the model fit indices along with the interpretability of the classes suggested the three-class model was the best fit of the data.

As shown in Figure 1, the three-class solution identified three distinct trajectories of parenting stress levels over a 2-year period. The largest proportion of the adolescent mothers (40.90%) fell into a category of low initial parenting stress levels ($M = 59.79$) that were maintained from baseline through Wave 4 (slope = 0.20, $p < .01$). This group was labeled

low *stable parenting stress*. The next percentage of adolescent mothers fell into the *decreasing parenting stress* group (35.78%), which was characterized by a pattern of higher initial parenting stress levels ($M = 72.29$) that decreased over time (slope = −1.21, $p < .01$). The smallest group was represented by 23.28% of adolescent mothers who fell into the *high stable parenting stress* group, represented by high initial levels of parenting stress ($M = 76.29$) that remained stable and high over two years (slope = 0.04, $p < .01$).

Predictors of Latent Trajectory Classes

Risk and protective factors were examined as predictors of the latent classes. Specifically, maternal depression, perceived social support from family, perceived social support from friends, and self-esteem were examined to determine their influences on the likelihood of an adolescent mother belonging to a particular trajectory class. The high stable parenting stress group (e.g., those who experience chronic high levels of parenting stress over the 2-year period) acting as the comparison group for the other two classes. Adolescent characteristics (i.e., age, race/ethnicity, living arrangement, intervention group status) were also included as predictors of trajectories. Results suggested that the effects of these predictors varied across groups (see Table 3). Table 3 presents the odds ratios; a positive odds ratio (over 1) indicates a positive relationship, and a negative odds ratio (below 1) indicates a negative relationship.

The likelihood of being in the low stable stress group (compared to the high stable stress group) was significantly higher if adolescent mothers had lower depression, higher self-esteem, higher reports of perceived social support from friends, and lower perceived social support from family. In addition, adolescent mothers were more likely to be in the low stable group if they were Latina and living at home with family. Only one predictor, self-esteem, was associated with predicting placement into the decreasing stress class trajectory compared to the high stable stress trajectory; adolescent mothers with higher self-esteem were more likely to experience a decrease in their parenting stress levels over two years than adolescent mothers who remained high on their stress over this time.

Discussion

The current study examined the longitudinal trajectories of parenting stress in a sample of African American and Hispanic/Latina adolescent mothers. Further, risk and protective factors were explored as predictors of parenting stress trajectories to provide information on change and stability of parenting stress over time. The present study broadens our understanding of parenting stress in two specific ways: 1) by identifying three distinct parenting stress trajectory classes for ethnic minority adolescent mothers parenting infants, and 2) examining maternal, child, and contextual predictors that discriminate among these parenting stress trajectory classes.

Parenting Stress Trajectory Classes

In line with our first hypothesis, three distinct trajectories of parenting stress were found: a low, stable stress group (40.90% of the sample), a decreasing stress group (35.78% of the sample), and a high, stable stress group (23.28% of the sample). These findings are consistent with Chang and Fine's (2007) study examining parenting stress trajectories in

young mothers with preschool-age children, which also found three trajectories of parenting stress over time, with two of the trajectories indicating a chronically high stress group and a decreasing stress group. However, our findings identified a group of low stable stress mothers, which was not found in their study. This group, which included the largest percentage of our sample, indicates that African American and Latina adolescent mothers in this community were demonstrating low levels of parenting stress from the periods when their infants are 6 months to 2 years of age. Since the majority of the adolescents in this sample were living with their parents/guardians, they may have received parenting support and/or child care that resulted in lower levels of parenting stress over time. Of additional interest is the finding that the second largest group was represented by adolescents who decreased in parenting stress over two years. These mothers may be adjusting well to parenting demands and growing in maturity and parenting experiences after an initial period of stress. Research has also shown that new parents may experience more stress as they adjust to their parenting roles (Williford, Calkins, & Keane, 2007). The adolescent mothers in this decreasing parenting stress group may be exhibiting a developmentally appropriate response as they transition into their roles as parents. In addition, the majority of these youth were living with their parents/guardians, and likely receiving support in parenting their infants. It is possible that the adolescents learned parenting skills through their parents/guardians, which in turn decreased stress associated with parenting their young children. Finally, existing literature suggests that older adolescents are more prepared for the challenges in parenting compared to younger adolescent parents (Yurgelun-Todd, 2007). Adolescent mothers are maturing along with their infants, and this maturity may also help to explain the decrease of parenting stress experienced over time.

Differentiating Among Parenting Stress Classes

The present findings, consistent with literature, indicate that parental characteristics are powerful predictors of parenting stress (Crnic & Low, 2002). These results suggest that maternal characteristics (i.e., race/ethnicity, maternal depression, self-esteem and perceived social support) and maternal resources (i.e., living with family) are important predictors of the extent to which adolescent mothers experience stress in the parenting role over time.

Results suggest that adolescents with fewer risk factors (e.g., lower depression) and more protective factors (e.g., higher self-esteem, living with family members) were more likely to have consistently low levels of parenting stress from the time when their children are infants through toddlerhood. These findings further highlight the critical role that risk and protective factors play in the experience of distress for adolescent mothers. Adolescents who reported more support from their friends were more likely to be in the low stable stress trajectory class, providing additional evidence that social support is protective (Logsdon et al., 2002). However, a surprising finding was that lower levels of perceived social support from family were associated with being in the low stable stress trajectory class. This finding also contradicts the fact that adolescents with low stable stress were more likely to live with their family. It is plausible that while adolescents may be receiving assistance with childrearing and parenting from family members, they may not report receiving perceived emotional support from family members. Instead, they may be turning to their friends for emotional support, which is developmental normative of adolescents in general (Bokhorst, Sumter, &

Westenberg, 2010). In fact, existing research suggests that adolescent mothers may experience high levels of emotional conflict with their parents. Specifically, adolescent mothers who reported low maternal support and high conflict were more likely to experience stress (Bogat, Caldwell, Guzman, Galasso, & Davidson, 1998). It is also plausible that adolescents are responding to this measure of perceived social support specifically regarding their experiences of emotional support rather than the practical support (e.g., child care, parenting).

Racial/ethnic differences were also found in the trajectory classes. Latina adolescent mothers were more likely to report low parenting stress levels over time compared to their African American peers. Existing studies have shown that Latina adolescents may have more favorable view of becoming pregnant due to their perception of gaining respect in their communities (Unger, Molina, & Teran, 2000). While studies have found similar positive attitudes in pregnancy among African American adolescents (Jaccard, Dodge, & Dittus, 2003), Latina adolescents still report a higher desire to become pregnant compared to African American adolescents (Heavey, Moysich, Hyland, Druschel, & Sill, 2008). Given this research, it is possible that some Latino adolescent mothers may have desired their pregnancies felt more prepared for some of the demands and expectations of parenting, thereby lowering their experiences of parenting stress across time.

When comparing the decreasing stress group to high stable parenting stress group, it was found that only adolescent self-esteem was associated with belonging to a specific class trajectory. Adolescents with high self-esteem were more likely to decrease in parenting stress levels over time compared to those who remained high in stress. This finding is consistent with previous research that has found self-esteem to be highly associated with positive long-term outcomes for adolescents (Orth, Robins, & Widaman, 2012), even in the context of adolescent parenting. Specifically, this finding highlights how a higher level of self-esteem can act as a protective factor against later distress. In short, high self-esteem played a role in differentiating adolescent mothers who start out with high levels of parenting stress but are able to adapt to these challenges and those who start out high but remain high in parenting stress.

The results of this study have implications for adolescent mothers and their children. There are a myriad of potential risk and protective factors that differentiate the level of parenting stress reported by adolescent mothers over time. For instance, self-esteem appears to be a critical component in the ability to cope with the stressors of parenthood during adolescence. Therefore, it is important to help support the development of a positive self-esteem for adolescents who are parenting or preparing to become a parent. In addition, the presence of support factors such as living arrangement and perceived support from friends and family are associated with trajectories of parenting stress for adolescents of color who are parenting; therefore, it is critical to assess for the resources (individual, social and practical) that adolescents have available to cope with the stress of parenting in order to provide the appropriate supports and services they may need to prevent negative trajectories of parenting stress in the future. Finally, given the research that suggest adolescent mothers of color are more likely have higher levels of parenting stress due to factors such as discrimination experiences and barriers and limited access to services and supports (Harmon & Perry,

2011), policymakers and service providers should advocate for the support of social service initiatives aimed at reducing the barriers of high-quality parenting in ethnic minority adolescents. For instance, parenting programs that use best practices but are also culturally responsive (Parra-Cardona et al., 2009), developmentally appropriate, and accessible to parents who may face logistical challenges (e.g., transportation, child care), are essential.

Limitations and Future Research

There are several limitations to this study, and the results should be interpreted in the context of these limitations. First, the study relies on self-report data with the adolescent mothers providing data across a number of constructs regarding risk and protective factors related to parenting. While their reporting across measures was consistent, providing a good measure of reliability, the study would have been strengthened if these results could have been substantiated through information collected from multiple informants (e.g., pediatrician, guardian, teacher). Second, the data was collected from adolescent mothers with their guardians in the home. Thus, even if not physically present during the interview, the presence of the guardians may have influenced participants' responses. Third, although meaningful parenting stress classes in ethnic minority adolescent mothers were identified, the study sample was limited in size. Further replication of findings, especially with large samples from racial/ethnic minority populations would serve to enhance the current findings. Fourth, the majority of the adolescents did not report having a significant others; therefore, perceived social support from significant others was not examined in this study. Future studies need to examine adolescent mothers who are living with, or have relationships with, a significant other to determine how these relationships may promote or hinder parenting stress as an adolescent. Lastly, this study only captured the perceptions of social support adolescent mothers received from their families, and other forms of support (e.g., financial, child care) were not explicitly measured. Understanding to whom the adolescents are reporting as their "family" is also important to determine. Future studies may be benefit from assessing other forms of support, and the different people providing support, in order to determine how perceived social support relates to different types of tangible support (e.g., financial assistance) and support providers (e.g., parent, spouse/partner, extended family members). It would also be important to examine parenting stress trajectories of adult mothers from similar backgrounds to determine if social support and other predictors similarly or differentially impact parenting stress for these mothers.

Despite these limitations, the results of this study provide important information on the longitudinal trajectories of parenting stress in ethnic minority adolescent mothers. Further, it begins to explore risk and protective factors as predictors of parenting stress trajectories to provide information on change and stability of parenting stress over time. Additional research that tracks adolescent mothers over time to explore growth and trajectories is also needed. Continued research that examines the predictors of different parenting stress trajectory patterns can inform models of parenting stress and provide information that could be sued to strengthen interventions for pregnant and parenting adolescents of color, ultimately decreasing the disparities in teenage pregnancy rates for this population.

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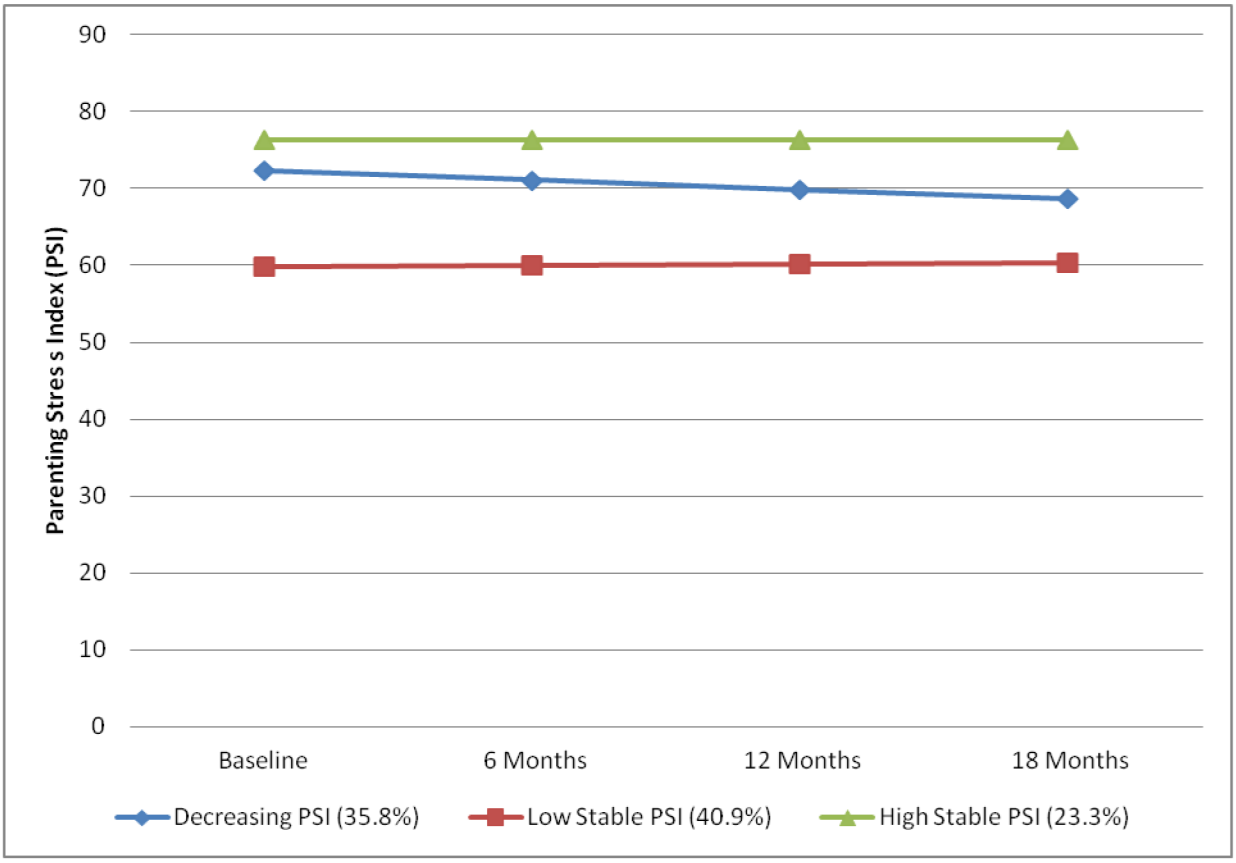

Figure 1.
Trajectories of parenting stress growth for ethnic minority adolescent mothers over four time points.

Table 1

Demographic Information of Ethnic Minority Adolescent Mothers (N = 185)

Characteristics	*n*	%
Age (M = 16.72, SD = 1.14)		
Race/Ethnicity		
African/Black American	72	38.92
Hispanic/Latina	113	61.08
Education Level		
8th Grade or Below	29	15.68
Some High School	150	81.08
High School Graduate	5	2.70
Some College	1	0.54
Primary Financial Support		
Parents	81	44.30
Partner	37	20.20
Public Aid	25	13.70
Job/Employment	23	12.60
Other	17	9.30
Living Arrangement		
Family (e.g., parents, grandparents, relatives)	180	97.30
Spouse/Partner	2	0.01
Friends	6	0.03
Foster Care/Group Home	5	0.03
Marital Status		
Single	184	99.5
Married	1	0.5

Table 2

Fit Indices for One to Five Growth Mixture Models for Parenting Stress

	Growth Mixture Model			
Fit indices	1 Class	2 Class	3 Class	4 Class
AIC	5836.14	5830.44	5823.25	5859.43
BIC	5987.50	5946.37	5903.76	6046.21
SSABIC	5838.64	5832.35	5824.58	5862.51
Entropy	----	1.00	1.00	1.00

Note. AIC = Akaike information criterion; BIC = Bayesian information criterion; SSABIC = sample-size adjusted Bayesian information criterion.

Table 3

Odds Ratios and Confidence Internals for Predictors of Class Trajectories

Variable	Low Stable vs. High Stable *OR* *[95% CI]*	Decreasing vs. High Stable *OR* *[95% CI]*
Demographic Characteristics		
Maternal Age	2.22	3.09
	[2.48, 2.09]	[3.79, 2.39]
Race/Ethnicity[1]	2 78***	2.86
	[2.82, 2.73]	[4.55, 1.69]
Intervention Group Status	1.60	2.82
	[1.63, 1.57]	[4.11, 1.53]
Living Arrangement[2]	2.74**	2.16
	[3.82, 1.66]	[3.46, 0.86]
Risk Factors		
Maternal Depression	2.35***	1.78
	[2.44, 2.36]	[2.21, 1.35]
Protective Factors		
Perceived Social Support – Family	0.53***	1.07
	[0.62, 0.41]	[1.35, 0.07]
Perceived Social Support – Friends	1.65***	3.73
	[1.67, 1.63]	[4.32, 3.14]
Self-Esteem	1.29***	1.66***
	[1.31, 1.27]	[1.72, 0.62]

Note.

[1]Reference group=African American;

[2]Reference group=Living with family;

*** $p < .05$,

** $p < .01$,

*** $p < .001$.