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Patterns of African American parents' educational involvement: Associations with adolescents' academic performance and motivational beliefs

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Abstract

The current study used survey data from 786 African American mother-adolescent ($M = 12.29$ years; 48% female) dyads to examine profiles of 7th-grade parental educational involvement and their associations with adolescents' 11th-grade academic performance, academic self-concept, and educational aspirations. Using latent profile analyses, four patterns emerged: (a) Low Involvers; (b) Helpers, Low Providers; (c) Providers, Low Helpers; and (d) More Involved Helpers & Providers. The More Involved Helpers & Providers had adolescents with higher grades than the Helpers, Low Providers and the Low Involvers. The Providers, Low Helpers also had adolescents with higher educational aspirations than other profiles except for the More Involved Helpers & Providers. Findings suggest multiple pathways through which African American parents can enhance adolescents' academic outcomes.

Keywords

African American families; parental involvement; adolescence; academic performance; motivation

In recent decades, researchers and educational stakeholders alike have focused on the importance of parental educational involvement in promoting youths' academic achievement, motivation, and aspirations (Eccles & Wigfield, 2020; Epstein, 1995; Furstenberg et al., 1999; Hill et al., 2018; Horsford & Holmes-Sutton, 2012; Simpkins et al., 2015). Part of this work includes deeply considering the heterogeneity of experiences of historically marginalized populations like African American families (Garcia-Coll et al., 1996). Within African American families, parents not only perceive academic success as a gateway toward children's economic mobility in adulthood, but also as a resource that can provide youth resiliency against racialized experiences in schools and within a predominantly White society (McAdoo, 1981; Tatum, 2004). As a result, African American parents are involved in adolescents' education in diverse ways like providing encouragement

and material resources (Corley et al., 2020; Furstenberg et al., 1999; Hill & Tyson, 2009; Hill & Wang, 2015).

However, little is known about how African American parents use involvement behaviors in combinations. This gap exists despite existing frameworks like the family academic socialization model of the situated expectancy-value theory positing that multiple parental behaviors work in holistic, integrated ways to shape adolescent outcomes (Eccles, 1993; Simpkins et al., 2015). Moreover, our understanding of African American parents' educational involvement must consider the changes in parent-child relationships during distinct developmental periods like early adolescence. According to stage-environment fit theory, parents must be responsive to the developmental demands of adolescence by affording opportunities for youths to satisfy their growing needs for autonomy and competence (Eccles et al., 1993). Parents' influence on their children's academic wellbeing are likely different in adolescence than childhood, as adolescents desire more of a balance between parental control and youth self-determination than younger children (Eccles et al., 1993; Hill & Tyson, 2009). Hence, the current study examined diverse patterns of African American parental educational involvement and the extent to which they predict adolescents' academic performance, academic self-concepts, and educational aspirations. Addressing these issues may lead to a more concrete understanding of the diverse sets of involvement behaviors that promote African American adolescents' academic development.

Dimensions of Parental Educational Involvement

The family academic socialization model of the situated expectancy-value theory posits that parents engage in diverse types of support to promote adolescents' achievement-related motivational beliefs and performance (Eccles, 1993; Simpkins et al., 2015). The parental educational involvement literature has defined parents' academic support as effort to work with their children to foster positive educational outcomes and has focused on distinct types of behaviors (Eccles, 1993; Epstein, 1995; Hill et al., 2004). First, *school-based involvement* includes parents' interactions with schools, such as volunteering at and attending school-related events and communicating with teachers (Hill & Tyson, 2009). These parent-school interactions give parents opportunities to keep abreast of educational expectations and policies affecting adolescents. Second, *home-based involvement* includes parents' behaviors to reinforce children's learning in school and to socialize their children toward higher academic achievement at home (Epstein, 1995; Furstenberg, 1999; Hill & Tyson, 2009). These behaviors include helping with homework and engaging in educational activities with adolescents, as well as providing educational materials and experiences (Eccles, 1993; Epstein, 1995; Furstenberg et al., 1999; Tulagan & Eccles, 2021). Finally, parents' educational involvement also includes *academic socialization*, which involve parents' discussions with youth about educational expectations and values, as well as plans for adolescents' future educational goals (Hill & Tyson, 2009; Taylor et al., 2004; Tulagan & Eccles, 2021). Overall, family academic socialization theorists and parental educational involvement scholars posit that these involvement behaviors promote adolescents' academic wellbeing (Simpkins et al., 2015; Hill & Tyson, 2009; Jeynes, 2016).

According to the family academic socialization model, multiple educational involvement behaviors work conjointly to shape adolescents' academic outcomes (see Simpkins et al., 2015). However, most research on parental educational involvement has examined the individual or unique associations of diverse types of involvement with academic achievement, pointing to a need for a more holistic view of examining parents' educational involvement. Still, prior studies find that different involvement behaviors are differentially tied to adolescents' academic outcomes.

School-based involvement is positively associated with adolescents' grades, cognitive and social competence, and college attainment (Benner et al., 2016; James et al., 2019; Wang et al., 2014). Studies also find that school involvement mediates the contributions of lower violence exposure, higher feeling of neighborhood safety, and higher trust in schools on African American adolescents' academic achievement (Patton et al., 2012; Ross et al., 2018). Moreover, meta-analytic studies on diverse and exclusively African American families have found positive associations between school-based involvement and adolescents' grade point averages (GPA) in secondary schools (Hill & Tyson, 2009; Jeynes, 2016; Wilder, 2014).

Parents' overall home-based involvement positively predicts adolescents' grades (Furstenberg et al., 1999; Hayes, 2012; James et al., 2019; Wang & Sheik-Khalil, 2014). However, studies have also found that distinct types of home-based involvement have varying associations with youths' academic achievement. Parents' provisions of educational materials and cognitive stimulation positively predicts African American and other adolescents' academic achievement in middle school (Davis-Kean, 2005; Froiland et al., 2012; Hardaway et al., 2020; Hill & Tyson, 2009; Tang & Davis-Kean, 2015). In line with stage-environment fit theory, the positive role of parents' material provision is likely because this behavior allows adolescents to learn from essential educational resources without direct intervention from parents, providing youth the autonomy to develop competence on their own (Eccles et al., 1993).

Similarly, parents' academic socialization is a consistent predictor of African American adolescents' academic achievement (Hill & Tyson, 2009; Suizzo et al., 2016; Wang & Eccles, 2012; Wang & Sheik-Khalil, 2014; Wang et al., 2014). Scholars posit that academic socialization is a distinct involvement behavior in that it allows parents to scaffold adolescents' growing autonomy and decision-making skills in their education (Hill & Tyson, 2009). According to a stage-environment fit theory, adolescents' educational contexts must respond to adolescents' increasing sense of self-determination (e.g., autonomy, competence, relatedness) by optimally modulating their support and involvement in developmentally appropriate ways (Eccles et al., 1993). Hence, in line with this theory, the positive relations between academic socialization and adolescents' academic wellbeing may be due to its potential responsiveness to adolescents' growing needs for academic autonomy (Eccles et al., 1993).

In contrast, some studies find that other parental home-based behaviors like homework help and direct instruction are related to lower academic achievement among middle schoolers (Froiland et al., 2012; Hill & Tyson, 2009; Patall et al., 2008). There are several reasons

for these negative associations. First, parents' homework help behaviors may often be spurred by adolescents' lower academic achievement and parents' desire to directly help their children improve in their studies. Second, given the more rigorous coursework of middle school, parents may lack the knowledge and skills to effectively help adolescents with their formal schoolwork in middle school (Hill & Tyson, 2009). As a result, parents' homework help may not be as effective in supporting adolescents in their schoolwork than in the younger years. Overall, studies examining specific dimensions of parental educational involvement provide understanding of individual and additive contributions of one behavior at a time. Nevertheless, this approach provides little understanding of the ways in which multiple involvement behaviors operate in integrative ways to predict adolescents' academic functioning.

Holistic Conceptualization of Family Educational Involvement

Scholars on the family academic socialization model of the situated expectancy-value theory have pointed to the need to examine a "holistic perspective on parenting that takes into account the variety of ways in which parents can interact with and influence their children" (Simpkins et al., 2015, p. 14). Most studies that take this holistic view examine multiple involvement indicators as an overall composite scale. Meta-analyses, for example, find positive associations between overall parental educational involvement and adolescents' academic motivation and achievement within African American and diverse samples (Barger et al., 2019; Fan & Chen, 1999; Jeynes, 2016; Wilder, 2016). Individual studies also find that higher overall parental educational involvement predict higher school bonding, higher school self-esteem, and lower school problems, which are in turn related to higher academic achievement (e.g., Dotterer & Wehrspann, 2015). Other research finds that positive relations between adolescents' academic achievement and overall parental involvement depend on other factors, such as when adolescents report higher teacher support and school belonging (Gutman & Midgley, 2000).

However, prior studies also find that these positive associations may not apply to specific populations. Numerous studies find nonsignificant associations between overall parental involvement and adolescents' academic motivational beliefs and achievement within lower-income and African American families (Ardelt & Eccles, 2001; Crosnoe et al., 2002; Hardaway et al., 2020; Hong et al., 2020). Furthermore, one study found that a composite measure of parental involvement predicted educational wellbeing positively among African American girls but negatively among African American boys (Trask-Tate & Cunningham, 2010).

A probable reason for these inconsistent findings is that prior work often uses overall parental educational involvement scales with the implicit assumption that uniform scores across a set of involvement strategies linearly predict to variations in adolescent outcomes. That is, insights from these studies suggest that parents need to engage in many different involvement behaviors at high levels to positively shape their children's academic development, which can be infeasible and impractical for parents to implement at home. This is also troubling, given that some strategies like homework help are negatively associated with African American youth's academic wellbeing (e.g., Barger et al., 2019; Hill

& Tyson, 2009). Hence, this approach may not only obscure complexities in the relations between parental involvement and academic outcomes but also lead to recommendations that are infeasible and counter-productive.

Nevertheless, there are alternative ways to examine the relations between parental involvement and adolescents' academic outcomes holistically beyond additive, composite scaling approaches. For example, Day and Dotterer (2018) examined the interactive effects of parental involvement dimensions on adolescents' academic grades and later educational attainment. They found conjoint effects on adolescents' grades and educational attainment across academic socialization, school-based involvement (e.g., school volunteering; PTA participation), and home-based involvement (e.g., checking homework, curfew rules during school nights; e.g., Day & Dotterer, 2018). Though this moderation approach aligns with a holistic view of family academic socialization and improves upon a main-effects approach to parents' educational involvement, examining interactions across several involvement indicators (e.g., four-, or five-way interactions) may often be difficult to interpret in meaningful ways (Sterba & Bauer, 2010).

Another approach that holds promise in examining the holistic view of family academic socialization in meaningful ways is a pattern-centered approach, which identifies distinct combinations of parental involvement (Bergman et al., 2003). This approach has important utilities for the purpose of the current study. First, aligned with family academic socialization models, pattern-centered approaches provide concrete insights into the diverse ways in which parents naturally engage in multiple educational involvement behaviors in combination beyond conceptualizations of parental involvement as an overall scale (Day & Dotterer, 2018; Simpkins et al., 2015). Second, pattern-centered approaches can shed light into which patterns of parental involvement are similarly predictive of academic outcomes, potentially uncovering multiple pathways to shape adolescents' academic outcomes. For example, one study examined patterns of African American parenting using a mix of parenting styles, cognitive stimulation, and racial ethnic/socialization. Results suggested that a low child-centered, but average racial/ethnic socialization profile is as similarly related to lower academic engagement as an overall low socialization profile (Smalls, 2010). Furthermore, a person-centered approach can further illuminate the specific ways in which certain types of involvement like material provision are positively associated with academic wellbeing whereas others like homework are often negatively associated. For instance, it remains an empirical question whether adolescents' academic outcomes are similar when parents integrate homework help with providing educational materials versus when parents engage in homework help without these materials. In sum, there are still less research that examine patterns across a diverse set of parental educational involvement behaviors among African American families and their relations to adolescents' academic outcomes. Hence, the current study used a pattern-centered analyses to extend knowledge on African American parental educational involvement.

The Current Study

Guided by the family academic socialization model, the current study examined what diverse patterns of parental educational involvement existed in 7th grade within African

American families and the extent to which these patterns predicted adolescents' academic performance (i.e., grades), academic self-concept, educational aspirations in 11th grade. First, we expected that involvement patterns high only on one or few behaviors (e.g., focused on home-based involvement) might exist alongside involvement patterns with uniform frequencies (e.g., high or low scores across all involvement behaviors). Second, we predicted that patterns showing high levels of parental educational involvement at 7th grade relate to more positive academic outcomes in 11th grade. Moreover, we also hypothesized that adolescents would have higher academic outcomes in patterns with a specific focus on material provision and/or academic socialization. According to prior studies and stage-environment fit theory, these behaviors are developmentally responsive to adolescents' needs, affording parents to optimally balance adolescents' burgeoning need for autonomy over their academic development and parents' control over their children's lives (Eccles et al., 1993; Hill & Tyson, 2009). Finally, we predicted that lower overall levels of involvement or a sole focus on homework help would be associated with lower academic outcomes, as these patterns of involvement may be less optimal to promote youths' academic development (Barger et al., 2019; Hill & Tyson, 2009; Simpkins et al., 2015).

Method

Participants

The current study used multi-wave, multi-reporter data collected from the Maryland Adolescent Development in Context Study (MADICS), a longitudinal project that followed adolescents and their families from 1991 to 2014 (Cook et al., 2002). In total, the study included 1,482 families with students attending 23 public schools in Prince George's County, Maryland. Participants were selected using a stratified, purposive sampling procedure designed to achieve a sample of families with a wide range of socio-demographic characteristics (see Cook et al., 2002 for sampling details). As a result, the sample ranged from poor and working-class families living in urban neighborhoods to upper middle-class families living in affluent, suburban communities.

The current study used data from families at adolescents' 7th-grade and 11th-grade years, as these were the only waves that included the focal variables. Of the 1,482 families, 879 (59%) identified as African American. Approximately 90% ($n = 786$) of the parental figures in the study were mothers with 10% ($n = 93$) identifying as fathers, grandparents, or other relatives. In the current study, we examined parental involvement processes reported exclusively by mother-adolescent dyads, given the imbalanced representation of parental figures in the data and prior studies finding differential relations between parental socialization and adolescent academic outcomes across father and mother reports (e.g., McHale et al., 2006; Simpkins et al., 2015).

In the analytic sample, adolescents were 12.29 years old ($SD = .56$) on average and about 48% identified as girls in 7th grade. Moreover, 38% of households had annual incomes between \$25,000 to \$49,999 and another 42% had annual incomes between \$50,000 to \$75,000. Roughly 32% of households also had at least one parent who attained a four-year college degree, and about 465 (59%) of the families were from two-parent households. The

mothers in the analytic sample were more likely to be in two-parent households than the caregivers in the attrition sample, $\chi^2(1) = 8.13, p < .01$, Cramér's $V = .10$.

Procedures

Data collection took place via in-home interviews in 7th and 11th grades. Using school records, the MADICS research team initially contacted families by telephone in each wave and identified one parental figure and one target adolescent. In each wave, parents and adolescents were interviewed face-to-face and filled out a self-administered questionnaire. Each interview lasted approximately one hour, and each survey lasted about thirty minutes. Parents and adolescents each received \$20 via mail in both waves of participation.

Measures

Mother-Reported Parent Educational Involvement—We used four indicators of African American parents' educational involvement behaviors in 7th grade adapted from the Philadelphia Family Management Study (Furstenberg et al., 1999; Table S1 of the Appendix lists survey items). Three of the indicators have been used and validated in prior studies to examine educational involvement behaviors within MADICS (Bhargava & Witherspoon, 2015; Wang et al., 2014). First, mothers reported on five items on how often parents engaged in *school volunteering* in their children's classroom, parent-teacher associations, open houses, and events and programs. Items included: “*How many times did you (or your spouse/partner) help the teacher in the classroom, or help somewhere else in the school?*” and “*How many times did you go to an ‘open house’ or school programs?*” (1 = *Zero*, 6 = *Five or more*; $\alpha = .76$). We created a composite variable of school volunteering by averaging the scores of these items.

Second, *homework help* was a four-item scale that probed parents' homework-related involvement. As parents were not asked these items, we used adolescents' responses to two questions each for their primary and secondary caregivers: “*How often does your [caregiver] help with schoolwork?*” and “*How often does your [caregiver] check your homework?*” (1 = *Almost never*, 6 = *Almost every day*; $\alpha = .76$). We calculated the average scores from these items to create a composite variable of homework help.

Third, mothers reported their educational *material provisions* via Yes or No questions probing the number of educational materials that were available at home. Items included dictionaries, encyclopedia, skills books designed to help children acquire skills, fiction books, educational magazines, newspapers, and a computer. As these items were binary, we created a count variable from the number of times mothers responded Yes to each item (1 = *None*, 6 = *Five or more*; Kuder Richardson 20 = .60).

Finally, mothers reported four items probing parent-adolescent *academic socialization*. Items included how often mothers and/or their spouse/partner “*discussed (child's) experiences at school with him/her (e. g., asking child what he/she did at school)?*” and “*talk about (child's) plans for the future.*” (1 = *Almost never*, 6 = *Almost every day*; $\alpha = .82$). We created a composite variable of academic socialization by averaging the scores of these items.

Adolescents' Academic Performance—At the end of 7th grade, MADICS researchers collected adolescents' 5th-grade California Achievement Test scores and 7th-grade academic grades across five subjects (i.e., math, English, science, social studies, and health; 1 = F, 5 = A) using school record data. At 11th grade, adolescents reported their academic grades across the same five subjects. We created two academic performance variables by averaging adolescents' academic grades separately at 7th and at 11th grades (Diemer et al., 2016; Wong et al., 2004).

Adolescents' Academic Self-Concept—Adolescents' *academic self-concept* was a four-item scale adapted from the Michigan Study of Adolescent Life Transitions, probing adolescents' perceived competence in math and other school subjects (Eccles, 1993). Items included: “*How good are you in math?*” (1 = *Not at all good*, 7 = *Very good*) and “*Compared to other kids, how well do you do in other school subjects?*” (1 = *Much worse*, 7 = *Much better*). A composite scale of the items showed high reliability in 7th ($\alpha = .77$) and 11th grades ($\alpha = .76$) and excellent psychometric quality in past studies (Diemer et al., 2016; Gutman et al., 2017; Wong et al., 2004).

Adolescents' Educational Aspirations—We measured adolescents' educational aspirations via one item adapted from the National Educational Longitudinal Study of 1988 (NELS:88) to measure adolescents' hopes for their future education: “If you could do exactly what you wanted, how far would you like to go in school?” (1 = [current] *grade or less*, 8 = *J.D., Ph.D., or M.D.*; Gutman et al., 2017).

Family Background Characteristics—Guided by the family academic socialization model (Eccles, 1993; Simpkins et al., 2015), we added child- and family-level background characteristics as demographic predictors in our analyses. Adolescents reported whether they identified as female or male. Mothers reported the highest level of education of either primary caregiver in their households. Values ranged from 1–12 for grade school years; thereafter, values were based on the normative years of degree completion (e.g., 16 = BA/BS, 21 = Ph.D./MD/JD). Mothers also reported their families' annual incomes with values presented in increments of \$5,000 (e.g., \$40,000-\$44,999; 1 – 16), as well as the highest prestige of the parents' occupations in their households (0 = dishwasher, counter attendant; 99 = medical doctors; Nam & Powers, 1983). We created a composite indicator of family socioeconomic status (SES) using the average standardized scores of parental education, family income, and occupational status. Mothers also reported whether they were in a one-parent (i.e., married, separated, divorced) or two-parent (cohabitating with a partner, remarried, or married) household. Finally, mothers reported whether they perceived their adolescent child as possessing talents in academics, which was then dichotomized (1 = *reported*, 0 = *not reported*). We used this report as a measure of parental beliefs about children's academic ability, which is theorized in the family academic socialization model to be associated with parents' behaviors and adolescent outcomes (Eccles, 1993; Simpkins et al., 2015).

Missing Data Analysis

In Wave 1, the overall percentage of item-level missing values in our main study variables (i.e., educational involvement constructs and 7th-grade baseline of outcomes) was low (range from 0% to 21%). However, in Wave 4, the overall percentage of missing values in our 11th grade outcome variables was higher, ranging from 33% to 41%. There were also low percentages of missingness in 5th grade achievement test scores (26%) and mothers' academic talent beliefs (4%). To evaluate patterns of missingness, we conducted Little's test for missing completely at random (MCAR) in Stata 14.0 (Li, 2013; StataCorp, 2015) on these variables with 200 iterations in the expectation maximization estimation. Little's MCAR test was statistically significant, $\chi^2 [572] = 699.47, p < .001$, suggesting that the variables were not MCAR. We then conducted Little's covariate-dependent missingness (CDM) follow-up test, accounting for demographic covariates (i.e., adolescent gender, family SES, family structure). This test yielded nonsignificant results, $\chi^2 [2288] = 1385.26, p = 1.000$, indicating that variables exhibited CDM, a special form of missingness at random (MAR; Li, 2013). To account for missing data, we used full information maximum likelihood estimations with covariates in our analyses (Enders, 2010).

Analytic Plan

Guided by Nylund-Gibson and colleagues (2019), we conducted latent profile analyses (LPA) using the manual three-step maximum likelihood (ML) method in Mplus 8.3 (Muthén & Muthén, 1998–2017; Vermunt, 2010). This LPA approach was beneficial for several reasons. First, it allowed us to identify naturally occurring profiles based solely on the parental educational involvement items and to ensure latent profile selection is not influenced by covariates or auxiliary variables added for later inferential analyses (Nylund-Gibson et al., 2019). Second, the manual ML three-step LPA also allowed us to utilize latent profile probabilities as fixed parameters to account for measurement error in profile assignments, ensuring that profiles remain unchanged in subsequent analyses including covariates and distal outcomes (Nylund-Gibson et al., 2019). In each analytic step, we clustered the data within the 23 schools students attended using the CLUSTER subcommand on Mplus 8.3 (Muthén & Muthén, 1998–2017).

In the first enumeration step, we estimated one to eight latent profile solutions to determine the best fitting solution using established indices for model fit. These included the information criteria, including the Akaike Information Criterion (AIC), Bayesian Information Criterion (BIC), adjusted BIC (aBIC), Consistent Akaike Information Criterion (CAIC), and Approximate Weight of Evidence (AWE; Nylund-Gibson et al., 2019). We examined decreases in these information criteria and considered “elbow points” indicating diminishing drops or increases in these estimates for each additional latent profile solution. We also examined statistically significant likelihood ratio tests comparing k models versus $k-1$ models (e.g., Vuong-Lo-Mendell Rubin [VLMR]). Within each profile solution, we also examined the extent to which latent profiles are distinct from one another (entropy $> .80$) and have sufficient representation relative to the sample (proportions $> .05$; Masyn, 2013; Nylund-Gibson et al., 2019). Finally, we also examined the theoretical meaningfulness of the latent profiles yielded across the profile solutions based on theories of family academic

socialization and the literature on parental involvement (e.g., Eccles, 1993, 2015; Hill & Tyson, 2009).

In the second step, we manually assigned individuals to latent profiles based on their specified classification probabilities for the most likely latent profile membership (Asparouhov & Muthén, 2014; Nylund-Gibson et al., 2019). As an added step, we conducted multinomial logistic regressions to validate the chosen profile solutions, examining the extent to which background characteristics (i.e., 5th grade achievement scores, mothers' academic talent beliefs about adolescents, adolescent gender, family SES, and family structure) predicted latent profile membership. We conducted three multinomial logistic regressions, alternating the reference profiles in each model to comprehensively compare latent profile memberships.

Finally, in the last step, we estimated a final analytic model that examined relations between the latent profiles and distal outcomes (i.e., academic performance, academic self-concept, and educational aspirations in 11th grade). In this model, we added the distal outcomes to the LPA with its means and variances allowed to vary across profiles. We included family background characteristics (i.e., 5th grade achievement scores, mothers' academic talent belief, adolescent gender, family SES, and family structure) as additional predictors of the outcomes. We also included the 7th grade measures of each distal outcome as predictors of their 11th-grade counterparts. Finally, we conducted omnibus Wald tests of mean differences and compared the adjusted means of the distal outcome across profiles (Nylund-Gibson et al., 2019).

Results

Preliminary Analyses

We present descriptive and correlational statistics for the analytic sample in Table 1. On average, African American parents engaged in school volunteering at low frequencies ($M = 2.48$, $SD = 1.11$; range = 1–6) and in academic socialization at moderate frequencies ($M = 3.61$, $SD = 1.16$; range = 1–6). In contrast, parents engaged in homework help ($M = 4.38$, $SD = 1.56$; range = 1–6) and material provisions ($M = 4.48$, $SD = 1.35$; range = 1–6) at moderately high frequencies. Moreover, adolescents had moderate academic performance (7th grade: $M = 3.45$, $SD = .87$; 11th grade: $M = 3.82$, $SD = .70$; range = 1–5), as well as academic self-concepts (7th grade: $M = 5.31$, $SD = 1.10$; 11th grade: $M = 5.00$, $SD = 1.05$; range = 1–7) at both grades. Adolescents also had moderately high educational aspirations in both grades (7th grade: $M = 6.68$, $SD = 1.58$; 11th grade: $M = 6.74$; $SD = 1.47$; range = 1–8), falling between a bachelor's degree and a master's degree. The correlations between the four parental educational involvement behaviors were significant and positive (r^2 s = .11 to .37, p 's = .005–<.001), except for the correlation between homework help and material provision ($r = .02$, $p = .518$). Moreover, school volunteering was positively correlated with adolescents' 11th-grade academic performance ($r = .10$, $p = .044$) and educational aspirations ($r = .18$, $p < .001$). Parents' material provision was also positively correlated with adolescents' 11th-grade educational aspirations ($r = .16$, $p < .001$). Finally, none of the 11th-grade outcomes were correlated with homework help or academic socialization.

Profiles of African American Parents' Educational Involvement

Table 2 presents the results from the enumeration step of the LPA. There were sizeable drops in the AIC, CAIC, BIC, and saBIC across one- to four-profile solutions, but these drops diminished and sometimes increased at five or more profile solutions (see Figure S1 of the Appendix). Additionally, the two- to four-profile solution's entropy levels (.82-.85) were sufficiently high, and the proportions of the sample were well within optimal levels. These results suggested the two-, three-, and four-profile solutions as candidate solutions. Additionally, the likelihood ratio tests (i.e., VLMR and LMR) were significant across two- to four-profile solutions but became nonsignificant starting at the five-profile solution. These results indicated that model fit improved at increasing number of profiles up until the four-profile solution. Additionally, five or more profiles significantly improve the LPA model. Finally, we found that theoretically meaningful profiles emerged both at the three- and four-profile solutions (i.e., Helper, Low Provider; and Low Involver, respectively). These profiles aligned with our predictions of potential patterns and served as interesting contrasts to the initial two profiles (i.e., More Involved Helper and Provider; and Provider, Low Helper). Hence, leveraging statistical and theoretical considerations, we found that the four-profile solution yielded the most parsimonious and meaningful set of profiles.

Latent Profile Descriptions—We used the standardized mean scores of the four latent profiles in Figure 1 to interpret the profiles based on where the scores fell relative to the overall means of the parent educational involvement constructs. We also compared the unstandardized raw means of the involvement indicators across the four profiles to contextualize the patterns in their original scales (Table 3; see Figure S2 for unstandardized results). First, aligned with expectations, we found two profiles showing relatively uniform patterns of educational involvement. For example, most parents made up a More Involved Helper & Provider profile (58%, $n = 453$). The More Involved Helpers & Providers were marked by above average standardized scores in all involvement indicators. Parents in this profile also showed high raw scores in homework help and material provision but only moderate scores in school volunteering and academic socialization. Further, we also found a Low Involver profile ($n = 61$, 8%), with a minority of parents engaging below the average and consistently low raw scores across all of the educational involvement indicators.

Second, we also found two profiles that aligned with predictions about patterns with a focus on specific types of involvement. Around 13% of families ($n = 104$) fit into a Helper, Low Provider profile, who had above average levels of homework help and substantially below average levels of material provision. The Helpers, Low Providers also had high raw scores in homework help but low-to-moderate scores in the other indicators. Last, a Provider, Low Helper profile included 21% of parents ($n = 168$) who had above average levels of material provisions but substantially below average levels of homework help. The Providers, Low Helpers also had high raw scores of material provision but low-to-moderate scores in the other indicators.

Table 4 presents results from analyses examining associations between family background characteristics and latent profile membership. First, the Helpers, Low Providers were less likely to have daughters than sons compared to the More Involved Helpers & Providers

profile (Logit = $-.72$, $SE = .30$, $p = .017$, $OR = .49$) and the Providers, Low Helpers (Logit = -1.02 , $SE = .34$, $p = .003$, $OR = .36$). Second, the Low Involveds were less likely to come from high-SES families than the More Involved Helpers & Providers (Logit = -1.28 , $SE = .35$, $p < .001$, $OR = .28$) and the Providers, Low Helpers (Logit = -1.27 , $SE = .34$, $p < .001$, $OR = .28$). The Helpers, Low Providers were also less likely to come from high-SES families than the More Involved Helpers & Providers (Logit = -1.29 , $SE = .30$, $p < .001$, $OR = .27$) and the Providers, Low Helpers (Logit = -1.29 , $SE = .31$, $p < .001$, $OR = .28$). Third, the Providers, Low Helpers profile tended to have children with higher 5th grade achievement scores than the More Involved Helpers & Providers (Logit = $.40$, $SE = .12$, $p < .001$, $OR = 1.49$). Finally, the Helpers, Low Providers were less likely to report their children to be academically talented compared to the Providers, Low Helpers (Logit = $-.90$, $SE = .43$, $p = .035$, $OR = .41$). We found no significant differences between the Low Involveds and the Helpers, Low Providers.

Parental Educational Involvement Profiles and Adolescents' Academic Outcomes

Per our second research aim, we examined the extent to which patterns of African American parents' educational involvement in 7th grade predicted adolescents' academic performance, academic self-concept, and educational aspirations in 11th grade. Table 5 presents the mean comparisons of adolescents' 11th-grade academic outcomes across the four latent profiles, adjusted for background characteristics (i.e., 5th grade achievement scores, mothers' academic talent beliefs, adolescent gender, family SES, and family structure) and the 7th-grade measures of each outcome variable.

First, we found significant differences in academic performance across profiles (Wald test [3] = 8.08, $p = .045$; Table 5). As predicted, adolescents of the More Involved Helpers & Providers reported the highest academic performance ($M = 3.79$, $SE = .06$), which significantly differed from those of the Low Involveds ($M = 3.56$, $SE = .10$; $M\ diff. = .24$, $SE = .10$, $p = .015$) and the Helpers, Low Providers ($M = 3.44$, $SE = .16$; $M\ diff. = .35$, $SE = .17$, $p = .040$; Table 5). Adolescents of the Providers, Low Helpers reported the second highest academic performance ($M = 3.65$, $SE = .12$), though they did not differ from the other profiles. Adolescents of the Low Involveds and the Helpers, Low Providers also did not differ in academic performance.

Second, contrary to predictions, differences in academic self-concepts across profiles were only marginally significant (Wald test [3] = 7.08, $p = .069$; Table 5). Nevertheless, mean comparisons found that adolescents of the Low Involveds had significantly lower academic self-concepts ($M = 3.60$, $SE = .34$) compared to those of the More Involved Helpers & Providers ($M = 4.08$, $SE = .32$; $M\ diff. = -.48$, $SE = .20$, $p = .014$), the Providers, Low Helpers ($M = 4.06$, $SE = .32$; $M\ diff. = -.46$, $SE = .21$, $p = .026$), and the Helpers, Low Providers ($M = 4.08$, $SE = .33$; $M\ diff. = -.48$, $SE = .20$, $p = .017$; Table 5). Further, adolescents in the latter three profiles did not significantly differ in terms of academic self-concepts.

Finally, we found significant differences in educational aspirations across profiles (Wald test [3] = 17.78, $p < .001$; Table 5). In line with predictions, adolescents of the Providers, Low Helpers ($M = 5.70$, $SE = .48$) and the More Involved Helpers & Providers ($M = 5.43$, SE

= .48) had the highest educational aspirations, which did not significantly differ from each other (Table 5). Also as expected, adolescents of the Providers, Low Helpers had higher educational aspirations than those of the Helpers, Low Providers ($M = 4.52$, $SE = .54$; $M\ diff. = 1.18$, $SE = .31$, $p < .001$) and the Low Involver ($M = 4.64$, $SE = .41$; $M\ diff. = 1.06$, $SE = .50$, $p < .036$). Finally, partially aligned with our predictions, adolescents of the More Involved Helpers & Providers had higher educational expectations than those of the Helpers, Low Providers ($M\ diff. = .91$, $SE = .29$, $p = .002$) but not those of the Low Involver.

Discussion

Guided by the situated expectancy-valued theory's family academic socialization model and the stage-environment fit theory, the current study examined patterns of African American parental educational involvement in 7th grade. We also tested the extent to which these patterns predicted adolescents' academic performance, academic self-concept, and educational aspirations in 11th grade. Aligned with our predictions, we uncovered theoretically meaningful patterns indicating relatively uniform frequencies of educational involvement (e.g., Low Providers), as well as patterns indicating high engagement in one or a few involvement behaviors (e.g., Helpers, Low Providers). Also, in line with predictions, we found multiple patterns (e.g., More Involved Helpers & Providers; Providers, Low Helpers) that were related to positive academic outcomes like academic performance and educational aspirations.

Patterns of African American Parents' Educational Involvement

One key contribution of the current study is the emergence of four distinct, theoretically meaningful patterns of educational involvement as reported by African American mothers. According to a family academic socialization model, multiple parental education involvement behaviors operate in holistic, integrated ways (Eccles, 1993, Simpkins et al., 2015). However, scant quantitative studies have examined the ways in which African American parents use diverse educational involvement behaviors in different combinations (e.g., Day & Dotterer, 2018; Smalls, 2010). Moreover, prior empirical work examining parents' overall support largely use variable-centered compositing techniques that can obscure nuances in how parents engage in multiple involvement behaviors together (e.g., Dotterer & Wehrspann, 2015; Hardaway et al., 2010; Hong et al., 2020). In the current study, the emergence of the Low Involver profile provided credence to inherent assumptions in variable-centered approaches, namely that parents engage in involvement behaviors in uniform ways (i.e., low or high scores across all indicators).

However, the emergence of involvement profiles with non-uniform patterns of involvement (i.e., Helpers, Low Providers; Providers, Low Helpers) challenged such an assumption. Moreover, although the More Involved Helper & Provider profile had above average standardized scores across all involvement indicator, their raw scores indicated a clear focus on homework help and material provision above school involvement and academic socialization (i.e., educational conversations). Given that these more nuanced, complex patterns made up the vast majority (92%) of the sample, variable-centered approaches that operationalize parental involvement as an overall scale may mischaracterize the ways in

which African American parents engage in these behaviors in integrated ways. Specifically, parents in these profiles would be composited together, obscuring the non-uniform patterns that naturally occur within families. Using a pattern-centered approach, the current study uncovered the ways in which African American parents engaged in multiple educational involvement behaviors together, highlighting the diverse, integrated nature of parental educational involvement as described by the family academic socialization model (Eccles, 1993, Simpkins et al., 2015).

One notable finding was that the pattern variations primarily revolved around material provision and homework help but not school volunteering and academic socialization. This patterning may be due to factors specific to each involvement behavior. First, although school volunteering was correlated with many of the study variables, African American parents engaged in this behavior at low frequencies and showed minor variation. These findings indicated that school volunteering may not be as salient during adolescence as early or middle childhood. Given the larger, departmentalized nature of middle schools (Hill & Tyson, 2009), it may be that African American parents found few opportunities to engage in school volunteering compared to when their children were in elementary school. Second, African American parents engaged in academic socialization in moderate frequencies, but it was not correlated with any background variables. Given that academic socialization may require little use of parents' cognitive and material resources (Hill & Tyson, 2009), parents of all backgrounds may have engaged in academic socialization at similar frequencies. For these reasons, the variation in profile membership were primarily driven by homework help and material provision.

According to the family academic socialization model, socio-contextual factors (e.g., family SES, parents' academic talent beliefs) and individual characteristics (e.g., past achievement, adolescent gender) inform parents' socialization processes and adolescents' academic outcomes (Eccles, 1993). As such, African American parents' educational involvement patterns reflected differences in background characteristics in expected ways. For example, high-SES parents exhibited a focus on material provision, highlighting their leveraging of economic advantages to promote cognitive stimulation and shape academic achievement at home (e.g., Furstenberg et al., 1999; Lareau, 2011; Smetana et al., 2002). Parents who focused primarily on material provision were also more likely to have adolescents with higher 5th-grade achievement and to believe their children as academically talented. Following stage-environment fit theory, these parents may have viewed more indirect strategies like material provisions as developmentally appropriate to their children's needs, affording adolescents the opportunities to exercise their growing academic autonomy and competence (Eccles, 1993).

Finally, African American boys tended to have parents who primarily engaged in homework help but not material provision, whereas African American girls tended to have parents who primarily engaged in material provisions and not homework help or a combination of both material provision and homework help. Prior studies, including those that use the MADICS data, have found that African American girls are typically more academically achieving than African American boys (e.g., Davis-Kean, 2005). Hence, it may be that girls' higher academic achievement compared to boys led to a higher sense of competence

and autonomy over their academic activities, to which African-American parents were responsive. Aligned with stage-environment fit theory, African American parents of boys may have responded to their children's needs for more direct help with schoolwork above other strategies, whereas parents of girls may have recognized their children's need for more autonomy-supporting strategies like material provision. Overall, these differences suggest that African American parents are engaged in optimally responding to their adolescents' prior academic achievement and developmental needs.

Involvement Patterns Promoting African American Adolescents' Academic Outcomes

The current study has implications for promising parental educational involvement combinations that promote African American adolescents' academic outcomes. First, our findings suggest the potential benefits of African American parents' frequent engagement in material provision, which aligns with previous findings that it positively predicts adolescents' academic wellbeing (e.g., Davis-Kean, 2005; Froiland et al., 2012; Hardaway et al., 2019). For the More Involved Helpers & Providers, material provision may have afforded parents better educational tools to directly guide adolescents in their schoolwork, thereby leading to higher academic outcomes. Likewise, for the Providers, Low Helpers, parents' primary focus on provision of educational materials may have allowed their adolescents—who tended to be academically achieving—to learn from more high-quality educational tools without direct parental intervention. According to stage-environment fit theory, these patterns may therefore foster a sense of autonomy and competence and leading to more positive academic outcomes (Eccles et al., 1993). However, as provision of educational materials can put a financial burden on families from lower SES backgrounds, it is especially important for parental involvement interventions and initiatives to focus on providing African American families with easier access to high-quality educational materials and resources at home.

Second, the current results also suggest specific conditions under which African American parents' homework help may be associated with adolescents' academic outcomes. Specifically, African American adolescents whose parents focused primarily on homework help had lower grades and educational aspirations compared to those whose parents focused both on material provision and homework help. Extant studies find that homework help and similar behaviors like direct instruction are negatively associated with academic achievement among middle schoolers (Hill & Tyson, 2009; Froiland et al., 2012; Patall et al., 2008). However, prior studies typically examine the unique or individual contribution of homework help, obscuring its potential conjoint effects with other involvement behaviors. In line with a family academic socialization model, our study indicated that African American parents can more effectively help adolescents with their schoolwork when integrated with provisions of educational materials. This combination may be especially beneficial as quality educational materials may serve as tools to augment parents' direct help on adolescents' schoolwork. Given the more rigorous curricula in middle school (Hill & Tyson, 2009), parents' homework help may not be as effective of a strategy if they do not have quality educational tools and materials at home.

Finally, the current study provided insights into the advantages of using pattern -centered approaches to uncover practical combinations of African American parental educational. Prior studies focused on overall parental involvement typically use compositing techniques (i.e., average scores or latent variables) across multiple behaviors (Fan & Chen, 1999; Jeynes, 2016; Wilder, 2016). However, interpretations of the positive associations to adolescents' academic outcomes in these studies often come with the suggestion for parents to engage in all parental educational involvement under investigation at high frequencies for adolescents to benefit academically. This implication is concerning, as it may not be practical and feasible for many families to engage in high levels of many involvement behaviors. Moreover, following stage-environment fit theory, parents' high engagement in diverse types of involvement behaviors may risk adolescents perceiving their parents as overly involved in their lives, especially when they have increasing developmental needs for autonomy during adolescence (Eccles et al., 1993).

Hence, in the current study, we provided clarity to this issue by testing how specific combinations of parental involvement behavior are related to adolescents' academic outcomes. Multiple patterns, such as the More Involved Helpers & Providers and the Providers, Low Helpers, were positively related to adolescents' academic outcomes compared to the Low Involvers and the Helper, Low Providers. Importantly, these promising patterns did not necessitate parents to engage in all involvement behaviors at high frequencies, providing more practical directions as to which involvement behaviors African American parents can use to help adolescents academically. Hence, these findings provided concrete, practical insights into the combinations of parental educational involvement that may promote African American adolescents' positive academic development, which may inform the design of interventions focused on enhancing African American parental educational involvement during adolescence.

Limitations and Future Directions

The current study contributes to current understanding of African American parents' educational involvement patterns and the role of stage-environment fit in family academic socialization processes. However, it is not without its limitations. First, study findings may only generalize to populations of families similar to the study's sample of African American families from a single geographic location in the United States. Second, given that around 90% of the original parent sample were mothers, the current study restricted its sample to reports from this parent type to minimize variation due to differing parent reporters. However, some parent items used in the study included behaviors from both parents. We included these items because of their relevance to overall parental involvement processes under investigation and their relatively high statistical reliability across parent items. Still, future studies can further reduce bias in measurement and clarify the nature of each parent's educational involvement by narrowing down the subject of parent items to one parent type at a given time. Third, several items we used for academic socialization were framed more indirectly to youths' achievement-related experiences. Though all academic socialization items were highly reliable and are conceptually aligned with Hill and Tyson's (2009) concept, more academic-specific items would benefit future research.

Fourth, the current study cannot make causal claims for the processes examined given the use of observational data. Still, the study benefitted from examining longitudinal associations with covariates to account for explanatory demographic factors and the continuity of adolescents' earlier academic beliefs and achievement. Relatedly, school-related factors such as the availability of school resources and teacher quality may also account for adolescents' academic outcomes. Hence, future research should examine the integrative effects of family and school factors (Eccles et al., 1993). Fifth, although MADICS is one of the largest, most comprehensive longitudinal datasets that include parental educational involvement and academic motivation and achievement measures, the current study used data collected in the 1990s. Though questions as to whether our findings may apply to African American families in current times may arise, recent studies using more contemporary data continue to find that the involvement behaviors under investigation are salient today and find similar associations to youth's academic outcomes (e.g., Day & Dotterer, 2018; Hardaway et al., 2020; Hill et al., 2018; Hong et al., 2020; Suizzo et al., 2016). Still, it is important for the advancement and robustness of developmental research for future studies to examine whether the patterns uncovered and their relations to adolescents' academic outcome replicate with newer longitudinal data.

Finally, the current study provides one snapshot of parents' educational involvement at one period in adolescence (i.e., 7th grade). Past studies find that parents' educational involvement changes across adolescence (e.g., Bhargava & Witherspoon, 2015; Wang et al., 2014). As such, the patterns of parental educational involvement and their relations with adolescents' academic outcomes may also change in time. Thus, future work should examine the extent to which parental educational involvement patterns change using analytic techniques such as latent transition analysis. The extent to which *changes* in the patterns of African American parents' involvement matter for adolescent outcomes is particularly relevant in examining the developmental responsiveness of parental educational involvement.

Conclusion

Guided by the family academic socialization model and stage-environment fit theory, the current study extended knowledge of the diversity in African American parents' educational involvement in adolescence and the extent to which they predict adolescents' academic performance, academic self-concept, educational. Using a pattern-centered approach, we delineated the specific ways African American parents integrate multiple parental involvement, highlighting how they may conjointly shape adolescents' academic development. In sum, the current study underscored the potential academic benefits of the combinations of material provisions and homework help for African American adolescents' academic outcomes.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Data Availability

The data are archived at the Henry A. Murray Research Archive at Harvard University: <https://murray.harvard.edu/dataverse>

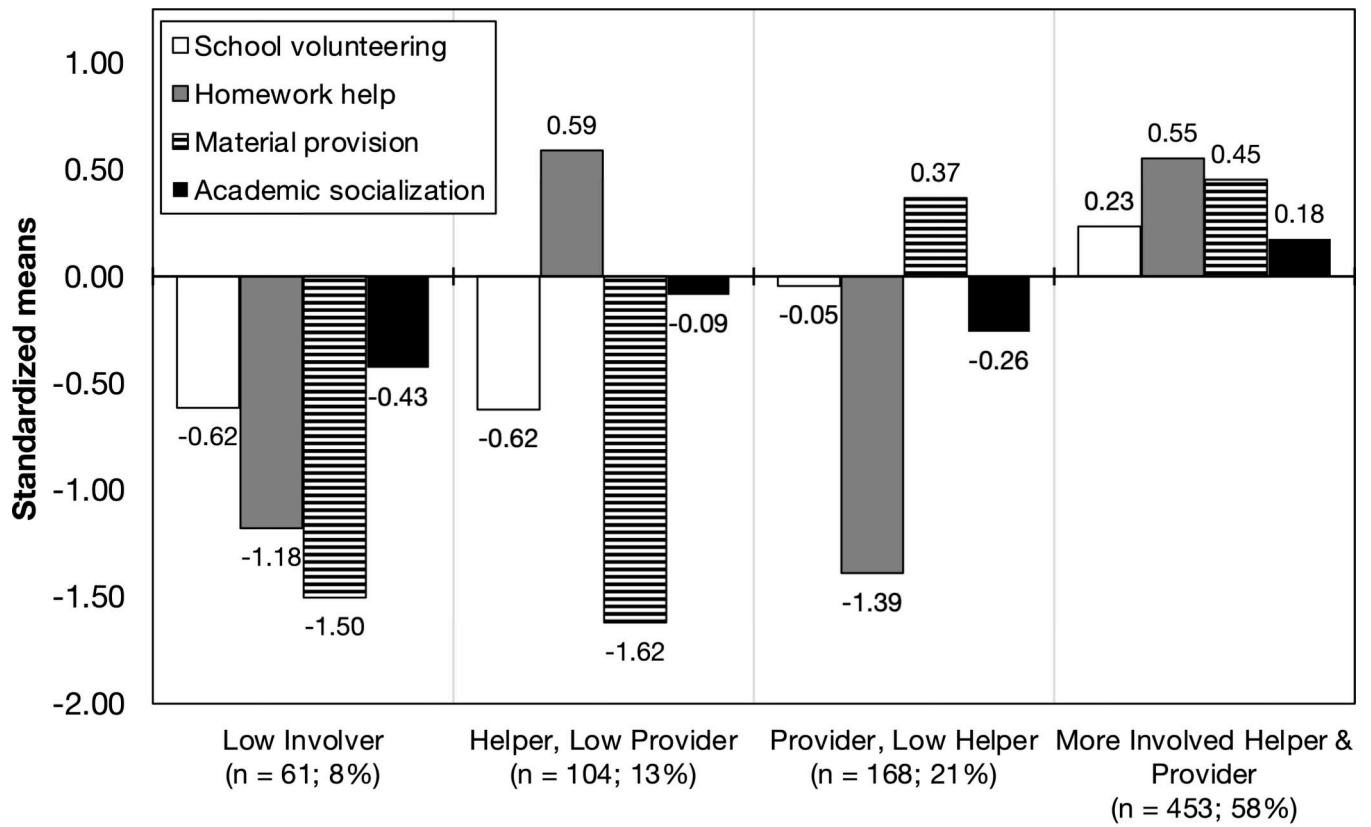
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Educational involvement profiles

FIGURE 1.
Latent profiles of African American parental educational involvement

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Table 1
 Summary of Descriptive Statistics and Pearson Correlation Coefficients of Study Variables

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1) School volunteering	—														
2) Homework help	.11 ^b	—													
3) Material provision	.37 ^a	.02	—												
4) Academic socialization	.15 ^a	.16 ^a	.13 ^a	—											
5) 11th-grade academic grades	.10 ^c	-.08	.08	.02	—										
6) 11th-grade academic self-concepts	.08	-.05	.00	.03	.40 ^a	—									
7) 11th-grade educational aspirations	.18 ^a	-.06	.16 ^a	.01	.35 ^a	.21 ^a	—								
8) 7th-grade academic grades	.25 ^a	-.13 ^a	.18 ^a	.03	.46 ^a	.23 ^a	.31 ^a	—							
9) 7th-grade academic self-concepts	.12 ^b	.03	.03	.02	.20 ^a	.30 ^a	.21 ^a	.41 ^a	—						
10) 7th-grade educational aspirations	.07	-.04	.07	.06	.20 ^a	.26 ^a	.37 ^a	.21 ^a	.24 ^a	—					
11) 5th-grade achievement test score	.17 ^a	-.18 ^a	.19 ^a	.01	.30 ^a	.28 ^a	.31 ^a	.48 ^a	.25 ^a	.22 ^a	—				
12) Family SES (std.)	.27 ^a	-.01	.40 ^a	.04	.15 ^a	.03	.23 ^a	.32 ^a	.12 ^a	.14 ^a	.35 ^a	—			
13) Mothers' academic talent beliefs	.10 ^c	-.04	.10 ^b	.03	.09	.13 ^b	.09	.15 ^a	.12 ^b	.15 ^a	.21 ^a	.07 ^c	—		
14) Adolescent is a girl	.10 ^b	-.10 ^b	.08 ^c	.02	.26 ^a	.02	.20 ^a	.31 ^a	-.01	.11 ^b	.15 ^a	.00	.13 ^a	—	
15) Two-parent households	.22 ^a	.00	.27 ^a	.03	.08	-.03	.07	.23 ^a	.07	.08 ^c	.17 ^a	.45 ^a	.02	.09 ^b	—
M / %	2.48	4.38	4.48	3.61	3.82	5.00	6.74	3.45	5.31	6.68	479.88	-.01	35%	48%	59%
SD	1.11	1.56	1.35	1.16	.70	1.05	1.47	.87	1.10	1.58	47.05	.84			
Min	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.50	1.00	360.00	-4.03	0.00	0.00	0.00
Max	6.00	6.00	6.00	6.00	5.00	7.00	8.00	5.00	7.00	8.00	645.00	2.47	1.00	1.00	1.00

Note. Family SES is a composite using the standardized items of parents' highest educational attainment, family annual income, and parents' occupational status.

^a $p < .05$.

^b $p < .01$.

^c $p < .001$.

Table 2 Results from Enumeration Step of Latent Profile Analysis Using the Manual Three-Step Maximum Likelihood Approach

# profiles	AIC	CAIC	BIC	saBIC	AWE	VLMR <i>p</i> -value	LMR <i>p</i> -value	Entropy	Proportions
One	9930.07	9975.40	9967.40	9942.00	10044.74	–	–	1.00	1.00
Two	9686.10	9759.77	9746.77	9705.49	9872.44	<.001	<.001	.85	.29, .71
Three	9567.72	9669.72	9651.72	9594.56	9825.73	.01	.01	.82	.15, .26, .59
Four*	9490.67	9621.01	9598.01	9524.98	9820.35	.02	.02	.84	.08, .13, .21, .58
Five	9430.56	9589.24	9561.24	9472.32	9831.91	.15	.16	.81	.05, .08, .13, .20, .54
Six	9385.89	9572.90	9539.90	9435.11	9858.91	.27	.28	.81	.03, .05, .08, .13, .19, .53
Seven	9351.68	9567.02	9529.02	9408.35	9896.36	.46	.46	.81	.03, .06, .06, .09, .13, .16, .46
Eight	9322.94	9566.62	9523.62	9387.07	9939.30	.19	.20	.77	.03, .04, .06, .08, .14, .16, .19, .30

Note.

* chosen profile solution. We chose a four-profile solution over the two- or three-profile solution based on a confluence of factors: decreased information criteria, significant likelihood ratio tests, and the theoretical meaningfulness of the profile added at the four-profile solution (i.e., Low Involveds). Moreover, we found increases in information criteria increases, nonsignificant likelihood ratio tests, and lower entropy levels across five- to eight-profile solutions, indicating profile solutions higher than four profiles are non-optimal. AIC = Akaike information criterion, CAIC = consistent AIC, BIC = Bayesian information criterion, saBIC = sample size-adjusted BIC, AWE = Approximate Weight of Estimation. VLMR = Vuong-Lo-Mendell-Rubin likelihood ratio test, LMR = Lo-Mendell-Rubin adjusted likelihood ratio test.

Table 3
 Mean Comparisons of Latent Profiles across Parental Educational Involvement Indicators

Profiles	School volunteering		Homework help		Material provision		Academic socialization	
	M	SE	M	SE	M	SE	M	SE
Low Involver (<i>n</i> = 61; 8%)	1.80 ^c	.12	2.55 ^b	.10	2.46 ^b	.12	3.11 ^c	.14
Helper, Low Provider (<i>n</i> = 104; 13%)	1.79 ^c	.08	5.29 ^a	.07	2.30 ^b	.07	3.51 ^b	.12
Provider, Low Helper (<i>n</i> = 168; 21%)	2.43 ^b	.08	2.22 ^c	.06	4.97 ^a	.06	3.31 ^{bc}	.08
More Involved Helper & Provider (<i>n</i> = 104; 13%)	2.74 ^a	.08	5.24 ^a	.04	5.09 ^a	.04	3.81 ^a	.05
Wald test (<i>df</i> = 3)	101.19 ^{***}		3812.95 ^{***}		2428.85 ^{***}		58.41 ^{***}	

Note. Unstandardized means (range: 1–6) of parental involvement indicators shown for each latent profile. Within each column of parental involvement indicator, means NOT sharing the same alphabetical superscript are statistically significant from each other at *p* < .05.
 ****p* < .001.

Table 4

Associations between Demographic Characteristics and Latent Profile Membership

Profile comparison	Predictor	Logit	SE	OR	OR 95% CI
Model 1: Reference = More Involved Helper & Provider					
Low Involver	5 th -grade achievement	.23	.24	1.26	[.80; 2.00]
	Mothers' talent beliefs	-.77	.42	.46	[.21; 1.04]
	Adolescent is a girl	-.30	.40	.74	[.34; 1.63]
	Family SES	-1.28***	.35	.28	[.14; .56]
	Two-parent household	-.61	.49	.55	[.21; 1.43]
Helper, Low Provider	5 th -grade achievement	.27	.20	1.31	[.89; 1.93]
	Mothers' talent beliefs	-.73	.44	.48	[.21; 1.13]
	Adolescent is a girl	-.72*	.30	.49	[.27; .88]
	Family SES	-1.29***	.30	.27	[.15; .49]
	Two-parent household	.00	.37	1.00	[.49; 2.05]
Provider, Low Helper	5 th -grade achievement	.40***	.12	1.49	[1.17; 1.89]
	Mothers' talent beliefs	.17	.26	1.19	[.72; 1.96]
	Adolescent is a girl	.30	.24	1.36	[.85; 2.15]
	Family SES	-.01	.15	.99	[.74; 1.34]
	Two-parent household	.09	.30	1.09	[.61; 1.96]
Model 2: Reference = Provider, Low Helper					
Low Involver	5 th -grade achievement	-.16	.24	.85	[.54; 1.35]
	Mothers' talent beliefs	-.94	.51	.39	[.14; 1.05]
	Adolescent is a girl	-.60	.42	.55	[.24; 1.25]
	Family SES	-1.27***	.34	.28	[.14; .55]
	Two-parent household	-.69	.62	.50	[.15; 1.70]
Helper, Low Provider	5 th -grade achievement	-.12	.22	.88	[.58; 1.35]
	Mothers' talent beliefs	-.90*	.43	.41	[.18; .94]
	Adolescent is a girl	-1.02**	.34	.36	[.19; .70]
	Family SES	-1.29***	.31	.28	[.15; .51]
	Two-parent household	-.09	.48	.92	[.36; 2.34]
Model 3: Reference = Helper, Low Provider					
Low Involver	5 th -grade achievement	-.04	.20	.96	[.66; 1.41]
	Mothers' talent beliefs	-.04	.58	.96	[.31; 2.99]
	Adolescent is a girl	.42	.40	1.52	[.70; 3.31]
	Family SES	.02	.53	1.02	[.36; 2.89]
	Two-parent household	-.60	.59	.55	[.17; 1.74]

Note. Results shown for three multinomial logistic regression models. Repetitive comparisons (e.g., models with Lower Overall profile) not shown for parsimony. SES = socioeconomic status. OR = Odds ratio.

* $p < .05$.

**
 $p < .01.$

 $p < .001.$

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Table 5

Mean Comparisons of African American Adolescents' 11th-grade Academic Outcomes across Latent Profiles of 7th-Grade Parental Educational Involvement

Profiles	<u>Academic performance</u>		<u>Academic self-concepts</u>		<u>Educational aspirations</u>	
	M	SE	M	SE	M	SE
Low Involver	3.56 ^b	.10	4.62 ^b	.19	6.07 ^{bc}	.47
Helper, Low Provider	3.44 ^b	.16	5.11 ^a	.12	5.95 ^c	.22
Provider, Low Helper	3.65 ^{ab}	.12	5.08 ^a	.10	7.13 ^a	.17
More Involved Helper & Provider	3.79 ^a	.06	5.11 ^a	.10	6.86 ^{ab}	.13
Wald test (<i>df</i> = 3)	8.08 [*]		7.08 [‡]		17.78 ^{***}	

Note. Means are adjusted after accounting for adolescents' 5th-grade academic achievement scores, gender, and 7th-grade measures of each distal outcome, as well as mothers' academic talent beliefs, family SES, family structure. Within columns of each 11th-grade distal outcomes, means not sharing the same alphabetical superscript are statistically significant from each other at $p < .05$.

[‡] $p < .10$.

^{*} $p < .05$.

^{**} $p < .01$.

^{***} $p < .001$.