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Prenatal Readiness for Fatherhood, Paternal Engagement, and Child Social-Emotional Competence

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Abstract

The current study utilized a person-centered approach to identify profiles of prenatal readiness for parenthood among a sample of 126 unmarried, Black American fathers living in the southeastern United States. Further, prenatal readiness for fatherhood profiles were examined as predictors of distal outcomes of both paternal engagement in early infancy and socioemotional competence in toddlerhood. Expectant fathers reported prenatally on a series of intrapersonal, relational, and contextual variables indicative of their preparation for fatherhood. Fathers also reported on their paternal engagement in early infancy when children were 3–6 months of age. Mothers reported on children's socioemotional competence when they were approximately 12–18 months old. A latent profile analyses revealed three distinct readiness for fatherhood profiles defined as High Readiness, Mixed Readiness, and Low Readiness based on expectant Black American fathers' prenatal parenting self-efficacy, desire for children, beliefs about the paternal role, inter-parental relationship quality, caregiving sensitivity in the family of origin, and economic distress. Results indicated that children of fathers in the High Readiness profile showed more optimal socioemotional competence compared to children whose fathers were in the Low and Mixed Readiness profiles. Indirect effects from profile membership to socio-emotional competence via paternal engagement were not supported, but fathers in the Low Readiness profile did engage in less caregiving with their children relative to fathers in other profiles. Although mediating mechanisms remain unclear, findings suggest heterogeneity in unmarried Black American fathers' patterns of readiness for parenting in the prenatal period, with implications for children's early socioemotional development.

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Keywords

Expectant fathers; Black fathers; prenatal; paternal engagement; social-emotional development

Extant research has documented multiple psychological and socio-contextual factors that contribute to fathers' readiness for parenthood in early childhood. These include the desire for parenthood, high-quality couple relationships, financial stability, and fathering cognitions that reflect commitment to the parenting role (e.g., Cabrera et al., 2008; May, 1982). Fathers possessing these characteristics tend to be better prepared for fatherhood and develop more realistic parenting expectations (e.g., Feldman et al., 1983). This preparedness is associated with positive developmental outcomes in early childhood via multiple dimensions of positive parenting and sustained parental engagement (e.g., Lang et al., 2014; Sarkadi et al., 2008). However, the factors contributing to expectant fathers' readiness for parenting *prenatally*—and the long-term consequences of prenatal parental readiness for children's socio-emotional growth—have rarely been considered.

This gap is particularly pronounced among unmarried, Black American fathers, who often navigate the transition to parenthood in early emerging adulthood, a period often characterized by limited financial resources and competing role demands for many young men (e.g., vocational engagement, education, peer interactions). Despite facing numerous contextual stressors, most unmarried, Black fathers are strongly invested in their paternal role and highly engaged with their young children, with paternal engagement playing a pivotal role in children's cognitive, physiological, and socio-emotional development (e.g., Coley, 2001; Cooper et al., 2021; Jones & Mosher, 2013; McAdoo & McAdoo, 2002). Given that preparations for parenting begin before the birth of a child, and that readiness for parenthood is critical for early parent-child relationships (Dayton et al., 2016), this study aims to elucidate expectant fathers' preparation for the parenting role and the longitudinal impact of prenatal readiness for fatherhood on postnatal paternal engagement and socio-emotional development in toddlers. Specifically, the current study sought to i) identify prenatal readiness for fatherhood profiles among unmarried, expectant Black American fathers ii) assess the impact of readiness for fatherhood profiles on their paternal engagement and their children's socio-emotional competence, and iii) examine the indirect role of paternal engagement in the link between prenatal readiness for fatherhood and child socio-emotional competence.

Proposed Components of Prenatal Readiness for Fatherhood

Readiness for fatherhood refers to a father's perceived preparedness to take on the parenting role, encompassing psychological commitment, relational capacity, and access to emotional, social, and financial resources to support their child. Conceptual frameworks of fathering emphasize the need to consider paternal influences across multiple domains—including psychological functioning (e.g., cognitive, emotional), relational dynamics (e.g., interparental collaboration), and broader socioecological contexts (e.g., SES)—as well as across developmental timepoints (e.g., early and contemporaneous life experiences) (Cabrera et al., 2014; Palkovitz & Hull, 2018). Although individual studies have examined

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specific correlates of early paternal caregiving, few have holistically assessed how these factors converge to shape fathers' preparedness for parenting and their engagement in early caregiving. Theoretical models and recent calls for person-centered approaches to studying fathers (e.g., Cooper et al., 2015; McBride et al., 2023) suggest that readiness for fatherhood is likely shaped by constellations of contextual, relational, and individual characteristics. However, empirical efforts to identify typologies of prenatal paternal readiness remain scarce.

Emerging evidence indicates that preparation for fatherhood can begin prenatally (Cardenas et al., 2022; Dayton et al., 2016), including among unmarried, Black fathers navigating socioeconomic disadvantage (Fagan et al., 2023; Thomas et al., 2024). Fathers may feel more prepared when they are psychologically invested in the paternal role, possess clear beliefs about high-quality father–child relationships, and feel equipped to contribute meaningfully to their children's development across emotional, physical, and financial domains (Gage & Kirk, 2002; Mihelic & Morawska, 2018). Although readiness for parenthood is often seen as foundational for sustained paternal involvement (Cabrera et al., 2008; Fagan et al., 2023), the extent to which prenatal readiness for fatherhood predicts both later paternal engagement and child well-being has yet to be established. The present study addresses this gap by conceptualizing prenatal readiness for fatherhood across six domains: (i) parenting self-efficacy, (ii) desire for parenthood, (iii) early caregiving experiences in the family of origin, (iv) non-traditional beliefs about the paternal role, (v) interparental relationship quality, and (vi) economic distress. Each domain—and its relevance for unmarried, low SES, and/or Black fathers—is discussed in the sections that follow.

Parenting Self-Efficacy.

Fathers with higher parenting self-efficacy exhibit increased engagement in various aspects of childrearing activities, resulting in positive child outcomes (Donithen & Schoppe-Sullivan, 2022; Trahan, 2018). However, expectant fathers can encounter challenges in building confidence in parenting tasks, given numerous competing demands that occur during the transition to parenthood (e.g., Pinto et al., 2016). Unmarried, Black fathers living in poverty are particularly at risk for lower parenting self-efficacy, which may come from a relative lack of socioemotional and financial support (Jackson & Preston, 2019; McLoyd, 1990), and/or an increased likelihood of experiencing various forms of interparental conflict (Shannon et al., 2009) in this population. Nonetheless, despite the importance of parenting self-efficacy among unmarried, low SES, and Black men, research to date has not examined whether variability in parenting self-efficacy in the prenatal period is related to paternal engagement or subsequent child well-being.

Desire for Parenting.

For many men, the *desire to become a father* is an important life goal, essential to their identity, and a determinant of personal fulfillment (Sayler et al., 2022). Men who engage in intentional family planning are more likely to contemplate parenting responsibilities and prepare for parenthood even before the announcement of a pregnancy (e.g., Fagan et al., 2023; Fentz et al., 2025; Kranz et al., 2018). Within an ethnically and racially diverse

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sample of fathers, those with intended pregnancies demonstrated significantly higher levels of social and cognitive play with their children compared to fathers reporting unintended pregnancies (Combs et al., 2021). Conversely, experiencing an unintentional pregnancy, particularly in the presence of other contextual difficulties, is associated with a higher likelihood of decreased paternal engagement and negative father-child interactions (Finer & Zolna, 2011). Black American families, especially unmarried parents, are more likely to experience unintended pregnancies, potentially hindering positive father-child engagement (Finer & Zolna, 2011). Nonetheless, the extent to which desire for parenthood impacts Black American men's prenatal preparations, postnatal paternal engagement, and longer-term child outcomes remain relatively untested.

Family of Origin Caregiving Experiences.

Men whose own fathers were involved in their lives tend to develop positive schemas of fatherhood, drawing on models of fathering that encourage the intergenerational transmission of positive fathering (e.g., Belsky et al., 2005; Brown et al., 2018). Although there is considerable variability in paternal engagement within this population, Black American fathers in low-resource communities face a disproportionate likelihood of growing up in homes without a consistent father presence (Annie E. Casey Foundation, 2014; Barton et al., 2015). As such, fathers of young children are likely to draw on their experiences (or lack thereof) with their own fathers. For example, low socioeconomic status (SES) Black American fathers whose fathers did not reside with them are less likely to live with their children after becoming parents (Furstenberg & Weiss, 2000). Further, they report that their fathers "being there" for them was an important influence on their own parenting motivations and behaviors toward their children (Shears et al., 2006). Among unmarried, Black fathers, Brown and colleagues (2018) found that retrospective reports of the quality of the relationship between young fathers and their fathers in the family of origin were related to higher levels of paternal involvement with their own children. Based on this evidence, early caregiving experiences with one's own father may be a key component of readiness for fatherhood before the birth of a child.

Beliefs about the Paternal Role.

How men enact their parenting roles is often embedded within broader beliefs about how one defines the paternal role (Pleck, 2010). Supporting data suggest that embracing stereotypically nontraditional parenting values (e.g., gender equality in caregiving) is linked to increased paternal engagement and more adaptive fathering (Petts et al., 2018; Shafer et al., 2019). For example, Schoppe-Sullivan and colleagues (2013) found that fathers with nontraditional beliefs about their parenting roles were more engaged in teaching and caring for their children. For young Black American men, establishing a coherent sense of what it means to be a man is a particularly important developmental task during late adolescence and early emerging adulthood, coinciding with the transition to parenthood for many (e.g., Roberts-Douglass & Curtis-Boles, 2013). For example, Black men's "respect-based" masculine ideology—valuing agency, resourcefulness, financial independence, stable romantic relationships, and providing for a family—is theoretically linked to adopting nontraditional beliefs about the fathering role and greater involvement in (and preparation for) their paternal role (Cho & Kogan, 2017; Curtis et al., 2021). Therefore, Black American

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men's adoption of nontraditional gender roles (e.g., prioritizing interpersonal relationships, and the provision of warmth/care for children), as well as beliefs in fathers' positive influence on development, may contribute to their prenatal readiness for fatherhood.

Interparental Relationship Quality.

The quality of interparental relationships before a child's birth significantly impacts fathers' preparation for and engagement in fatherhood (e.g., Cowan & Cowan, 2012; van Egeren 2003). Research consistently shows a stronger association between interparental relationship quality and fathers' parenting behavior compared to mothers' parenting (e.g., Doherty et al., 1998). This association may extend to the prenatal period, such that expectant fathers who report higher levels of relationship satisfaction with their partner during pregnancy are more likely to engage in positive parenting behaviors, including playing with their child and providing emotional support (Kershaw et al., 2014). Moreover, some studies suggest that the link between positive interparental relationship functioning and paternal engagement is even stronger among non-residential than residential fathers (e.g., Fagan & Palkovitz, 2011). Further, Black American men are especially likely to emphasize the importance of having a loving relationship with their partner when planning for fatherhood (Kaufman, 1997). Among unmarried Black fathers, prenatal interparental relationship quality has also been linked to father involvement in the first several years (Gee et al., 2007). Thus, this study also examined the potential contribution of prenatal interparental relationship quality to unmarried, Black fathers' prenatal readiness for fatherhood.

Economic Distress.

Men experiencing less economic distress may feel more prepared for fatherhood, given increased confidence in their ability to provide for a child (Christiansen & Palkovitz, 2001). Conversely, financial difficulties adversely impact harmonious family functioning, general well-being, and positive parenting practices (Hofferth, 2003). Many unmarried, Black American men experience financial hardship, poverty, and economic-related stress, which can have cascading effects on families and disrupt early paternal engagement (e.g., McLoyd, 1990). When financial resources are limited, new fathers often confront psychosocial stressors associated with the challenges of making ends meet, as well as time limitations (i.e., working multiple jobs and/or non-traditional hours) that can restrict consistent engagement with young children (Nelson, 2004; Tamis-LeMonda & McFadden, 2010). Providing for their children is often a crucial aspect of identity for many young, Black fathers (e.g., Randles, 2020). Thus, the experience of financial distress may be particularly likely to affect expectant fathers' motivation, willingness, and availability to engage with young children.

Paternal Engagement and Infant Socio-Emotional Competence

The extent to which readiness for fatherhood affects post-birth fathering and/or child well-being remains an empirical question. One plausible hypothesis is that prenatal readiness for fatherhood may promote socio-emotional well-being in the early years via increased paternal engagement in infancy. Paternal engagement takes many different forms, including fathers' participation in caregiving, child-centered play activities, and expressions of positive affect

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toward children (e.g., Pleck & Masciadrelli, 2004). Paternal engagement is consistently associated with beneficial child outcomes in social, emotional, and cognitive domains (see Rodrigues et al., 2021; Sarkadi et al., 2008 for reviews). Growing evidence suggests that many forms of paternal engagement make meaningful contributions to children's development, above and beyond the contributions of maternal parenting (e.g., Gerhardt et al., 2020).

Further, the benefits of paternal engagement begin in *infancy*, with positive engagement during the first several years linked especially to adaptive socio-emotional functioning (see Diniz et al., 2021 for a review). For example, paternal engagement is uniquely related to fewer behavioral problems and emotional difficulties in young children (Cooke et al., 2022; Jia et al., 2012; Keizer et al., 2014). Moreover, higher levels of early paternal engagement are associated with enhanced social competence and cognitive skills in the preschool years (Lang et al., 2014; McWayne et al., 2013; Rollè et al., 2019; Sethna et al., 2017). Taken as a whole, extant research strongly supports the unique and complementary contributions of positive paternal engagement in early childhood for children's healthy socio-emotional development (e.g., Bakermans-Kranenburg et al., 2019; Cabrera et al., 2018).

The benefits of paternal engagement extend to unmarried fathers, and the strength of association between engagement and positive socioemotional child outcomes is similar among non-residential vs. residential fathers (Adamsons & Johnson, 2013). Further, the positive effects of paternal engagement on socio-emotional functioning are comparably robust among Black fathers in the United States (Ellerbe et al., 2018). In contrast, declines in paternal engagement among unmarried, Black fathers throughout infancy are associated with poorer socioemotional functioning in later childhood (Fagan & Cabrera, 2023).

Contextual stressors faced by unmarried, Black fathers – including disproportionate rates of generational poverty, racial discrimination, and living in low-resource communities — can create obstacles to paternal engagement and high-quality interactions with young children and serve as risk factors for healthy socio-emotional development in infancy (Anderson et al., 2025; Brown et al., 2018; McHale et al., 2006). Despite these myriad challenges, the majority of these men are highly invested and highly engaged in their parenting roles, with positive impacts on child well-being (e.g., Jones & Mosher, 2013). As such, it is imperative to document the constellation of prenatal factors most conducive to fostering paternal engagement in infancy and socio-emotional well-being within this under-represented population of families. The present study addresses this need by considering multiple, simultaneous aspects of unmarried Black American fathers' prenatal readiness for fatherhood, and the extent to which readiness for fatherhood predicts both paternal engagement and early socio-emotional development in children.

Current Study

Prenatal readiness for fatherhood is a multifaceted concept that is likely comprised of numerous intrapersonal, relational, and contextual factors. Although aspects of parental readiness have been considered in isolation across individual studies, the combined effects of multiple prenatal variables on paternal engagement or child well-being has not been

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examined. As research in the domain of fatherhood has expanded in recent years, so too has the need to understand typologies of fathering that characterize fathers across multiple variables. Recent calls in the fatherhood literature have explicitly called for person-centered approaches, delineating profiles of fathers and their contributions to child well-being (e.g., Cooper et al., 2015; Modecki et al., 2015; Yoon, 2025). Consistent with these calls, the present study aims to identify a conceptually meaningful set of prenatal readiness for fatherhood profiles among expectant, unmarried Black fathers.

Although profile-oriented approaches are inherently exploratory, it was hypothesized that distinct typologies of paternal readiness may emerge that explain variance in paternal engagement during the early post-partum period and socio-emotional competence in toddlerhood. In particular, we examined the impact of readiness for fatherhood profile membership on socio-emotional child outcomes both directly and indirectly via early paternal engagement. Specifically, the current study 1) identified prenatal readiness for fatherhood profiles among unmarried, expectant Black fathers, 2) examined whether distinct profiles of prenatal readiness for fatherhood were linked to paternal engagement in infancy at 3–6 months, and children's socioemotional competence at 12–18 months of age, and 3) tested whether the association between prenatal readiness for fatherhood profile membership and socioemotional competence was mediated by parental engagement in the first year of life.

Method

Participants

Data came from the Parents and Children Together Project (PACT) at the University of Georgia, a longitudinal study investigating contextual factors affecting unmarried, Black fathers residing in predominantly rural counties of Georgia. Eligibility criteria included self-identification as African American or Black, male gender, expecting a baby, being unmarried at baseline, and residence in nonurban counties of the sampling region. One hundred twenty-six expectant fathers who participated in the baseline data collection during the third trimester of pregnancy were included in the current study.

At baseline, the mean age of expectant fathers was 28 years old (SD = 6.85); and most of them (69%) were employed full-time (35 or more hours of work in a week), 9% being employed part-time (less than 35 hours a week) or working in a temporary job, 5% were self-employed, 17% were not employed, and one participant reporting other (i.e., disabled). The median income of participants at baseline was $1400 per month and the mean was $1690 per month ($SD$ = $1000). Twelve percent of fathers reported attending high school but did not earn a diploma, 57.4% had a high school education or equivalent (i.e., General Education Development [GED]), 10.6% had a vocational or technical school certification or an associate degree, 13.1% reported attending some college but did not earn a diploma, 5.7% had a bachelors' degree, and 1.6% had a graduate degree. The majority of expectant fathers (82%) reported being romantically involved with expectant mothers at the baseline on a steady basis and spending every night (77.9%) or a few nights per week (9%) in the same home as expectant mothers.

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Procedure

Three waves of data were collected: prenatal (Wave 1; second or third trimester of pregnancy, $N = 126$), early infancy (Wave 2; child age 3–6 months; $M_{age} = 4.78$ months, $SD = 2.30$, $N = 184$), and toddlerhood (Wave 3; child age 12–18 months; $M_{age} = 16.38$ months, $SD = 3.27$, $N = 112$). Of the original 126 participants in Wave 1, 101 fathers (80.2%) were retained in Wave 2. An additional 83 new father-infant dyads were recruited in Wave 2, resulting in a total sample of 184 participants for that wave. By Wave 3, 112 fathers (60.9%) remained in the study; these participants had either been recruited in Wave 1 ($N = 74$) or entered the study at Wave 2 ($N = 38$). During the study period, four families experienced infant loss, and one mother died due to community violence. In the latter case, the participating father withdrew from the study due to bereavement. African American field research staff assisted expectant fathers in completing computer-assisted surveys about parenting behaviors, family history, and close relationships at baseline. Due to the global COVID-19 pandemic, data collection transitioned from in-person to an online platform after one-third of the baseline data were obtained. At the second and third waves, data collection was completed almost entirely online (Time 2 = 98%, Time 3 = 99%). During online data collection, the research staff assisted participants via phone call. Fathers received a $100 check at each visit and children received toys at Waves 2 and 3 for their participation. All study protocols were approved by the university institutional review board.

Measures

Readiness for Parenting: To assess factors contributing to expectant fathers' readiness for parenting, we utilized multiple indicators reported on prenatal surveys at Wave 1. This included fathers' pre-birth parenting self-efficacy, desire for children, early caregiving experience in the family of origin, non-traditional beliefs about fathers' role, relationship quality with the expectant mother, and economic distress to assess their readiness for parenthood profiles.

Parenting Self-Efficacy. Pre-birth parenting attitudes and beliefs were assessed using the 7-item Anticipated Parenting Efficacy Scale, which was adapted from the Parenting Sense of Competence Scale (Leerkes & Crockenberg, 2002; Teti & Gelfald, 1991). Expectant fathers reported on how effective they thought they would be at parenting tasks after their baby was born. Each item was rated on a Likert-scale ranging from 1 (not good at all) to 4 (very good). Example items included "when your baby is upset, fussy or crying, how good do you feel you will be at soothing your baby?" and "how good do you feel you will be at getting your baby to sleep?". The Cronbach's alpha coefficient was .91.

Desire for Parenting. Fathers' desire for parenting was measured prenatally using three items from the Pleasure in Parenting scale (Brown & Cox, 2020), which was adapted from the Parent Development Interview (Slade et al., 2004). Expectant fathers responded on their desire to have a child on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree), including example items "Becoming a parent will be one of the best things that ever happened to me", with higher scores indicating stronger desire to have a child. The Cronbach's alpha coefficient was .73.

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Family of Origin Caregiving Experiences. Expectant fathers retrospectively reported on their early caregiving experiences with their biological fathers using a 4-item measure developed and validated for the African American Men's Project, a longitudinal study of African American and Black men residing in rural and resource-poor counties of the southern United States (see Brown et al., 2018). Participants responded on a 4-point Likert-type scale ranging from 1=never to 4=often, with higher scores indicating more positive paternal caregiving in the family or origin. Scale items included "Growing up I could depend on my birth father to always be there when I needed him" and "Growing up I knew that my birth father cared about me." The Cronbach's alpha coefficient was .85.

Beliefs about the Role of the Father. Expectant fathers' non-traditional beliefs about the parenting role were assessed using the 14-item adapted version of the Role of the Father Questionnaire (Palkovitz, 1984). Sample items, which were rated on a Likert-scale ranging from 1 (strongly disagree) to 5 (strongly disagree), included "A father should be as heavily involved in the care of a baby as the mother is" and "Fathers play a central role in a child's development", with higher scores representing more non-traditional beliefs and attitudes about the paternal role. The Cronbach's alpha coefficient was .81.

Inter-Parental Relationship Quality. Fathers' current relationship with the expectant mother was assessed with the 5-item Relationship Quality Scale adapted from the Fragile Families and Child Well-Being Study (Carlson et al., 2004). Each item was rated on a Likert-type scale ranging from 1 (never) to 3 (often), with higher scores reflecting more positive inter-parental relationships. Example items include, "how often is your child's mother/father fair and willing to compromise?" and "how often does your child's mother/father listen to you when you need someone to talk to?". The Cronbach's alpha coefficient was .90.

Economic Distress. Fathers' economic distress was assessed using the 11-item Economic Distress Inventory (Dunst & Leet, 1987). Fathers responded on their economic well-being on a 4-point Likert scale ranging from 1 (strongly disagree) to 4 (strongly agree), including items such as "I have enough money to pay my bills each month." Items were reverse-scored, such that higher scores indicated greater financial distress. The Cronbach's alpha coefficient was .91.

Paternal Engagement: Paternal engagement was measured at Wave 2 using the Fatherhood Research and Practice Network Father Engagement Scale (Dyer et al., 2015), a scale that originally included eleven items. One additional item was added to capture fathers' virtual engagement using online technologies ("How often have you used video chat or FaceTime to see your child when you are not with them?"). Fathers responded about the frequency of caregiving activities in early infancy on a 5-point Likert scale ranging from 0 (never) to 5 (every day or almost every day). Items included affection (e.g., "How often have you told him/her you loved him/her?"), daily caregiving tasks ("How often have you fed or given a bottle to him/her?"), and play or cognitive stimulation activities ("How often have you told stories to him/her?"). The Cronbach's alpha coefficient was .90.

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Children's Socio-Emotional Competence: Children's socio-emotional competence was assessed at Wave 3 using the socio-emotional competence subscale of the Brief Infant-Toddler Social and Emotional Assessment (Briggs-Gowan et al., 2013). Mothers responded to 11 items on a 3-point Likert scale ranging from 1 (e.g., not true/rarely) to 3 (e.g., very true/often). Sample items included "Plays well with other children" and "Is affectionate with loved ones". Higher scores represent higher levels of competence in children. The Cronbach's alpha coefficient was .86.

Analysis Plan

Bivariate associations among all study variables were first examined. Next, latent profile analyses were conducted to identify the optimal number of classes of readiness for parenthood using all pre-birth factors in Mplus Version 8.3 (Muthén & Muthén, 1998–2023). Models with different numbers of profiles were compared based on entropy values and model fit indices including Akaike's Information Criteria (AIC), Bayesian Information Criteria (BIC), sample size adjusted Bayesian Information Criteria (ssBIC), Classification Likelihood Criterion (CLC), Normalized Entropy Criterion (NEC), and Integrated Completed Likelihood (ICL). Lower values of AIC, BIC, ssBIC, CLC, NEC, and ICL indicate a better fit for a model (Lo et al., 2010). For the BLRT, a significant *p*-value indicates that an estimated model with *k* number of profiles shows a better fit compared to a model with a smaller number (k-1) of profiles. Higher entropy values, ranging between 0 to 1, indicate better precision of profiles. The final number of profile solutions was determined based on theoretical frameworks, given fit indices, and parsimony (Nylund et al., 2007).

After the determination of the best profile solution, we performed a series of structural equation models to test the effect of profile group membership on distal outcomes of paternal engagement and socioemotional competence, as well as the indirect effects of readiness for parenthood profile membership to socioemotional child adjustment via paternal engagement. In addition, we tested key demographic characteristics (i.e., father age, educational attainment, and whether the pregnancy was planned) across profiles using the DU3STEP approach in Mplus. To test indirect effects, bias-corrected bootstrapping procedures were utilized to examine the mediating role of paternal engagement in the link between readiness for parenting and social-emotional child adjustment. Bootstrapping has advantages as an estimation procedure for indirect effects when the data has modest sample sizes (MacKinnon et al., 2004). Indirect effects are considered significant if 95% confidence intervals do not include zero.

Results

Descriptive statistics and bivariate correlations among study variables are presented in Table 1. Among the prenatal readiness for fatherhood factors, paternal self-efficacy was significantly correlated with all other readiness factors in the expected direction. Inter-parental relationship quality was positively and significantly correlated with desire for parenting, and positively and marginally correlated with positive paternal caregiving in the family of origin. Men's non-traditional beliefs about the paternal role were positively and significantly correlated with desire for parenting. Among paternal engagement sub-

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dimensions—i.e., affection, caregiving, and play—both caregiving and play showed a significant positive correlation with inter-parental relationship quality. Caregiving was also marginally positively correlated with desire for parenting. Unexpectedly, significant positive correlations with economic distress were found for all paternal engagement sub-dimensions. Two of the six readiness factors, parenting self-efficacy and non-traditional beliefs about the paternal role, had significant positive correlations with children's socioemotional competence. Counter to expectations, none of the paternal engagement sub-dimensions were significantly related to socioemotional competence. Neither age nor fathers' level of education were correlated with any of the study variables, so multivariate analyses proceeded without demographic controls.

Latent Profile Analyses

A series of latent profile analyses were conducted, including two- to five-profile solutions, to identify constellations of unmarried, Black fathers' prenatal readiness for parenting based on parental self-efficacy, inter-parental relationship quality, experience of caregiving sensitivity in the family of origin, desire to be a parent, beliefs about the paternal role, and economic distress. Several criteria were considered in determining the best-fitting model. As illustrated in Table 2, relative to the two-profile solution the 3-profile solution showed higher entropy and substantially reduced AIC and BIC values, indicating improved fit. Although fit improved with subsequent classes (i.e., 4- and 5-classes), these solutions yielded profiles that contained very few participants (i.e., < 10% of the sample) and were not conceptually meaningful. Moreover, the significant p-value for the Bootstrapped Likelihood Ratio Test (BLRT) also showed that the 3-profile solution was statistically better than the 2-profile solution, the 4-class solution was statistically better than the 3-profile solution, and the 5-profile solution was statistically better than the 4-profile solution. However, based on conceptual clarity, parsimony, and the overall fit indices, the 3-profile solution was selected because it fit the data well and provided adequate group sizes for interpretability (see Jung & Wickrama, 2008).

Based on the characteristics of each readiness-for-fathering profile, presented in Figure 1, the three profiles were defined as High Readiness (n= 69, 55%), Low Readiness (n= 29, 23%), and Mixed Readiness (n= 27, 22%). Fathers in the High Readiness profile scored relatively high on each of the readiness factors, but low on economic distress. Conversely, fathers in the Low Readiness profile scored low on all readiness factors but relatively higher on economic distress. Fathers in the Mixed Readiness profile displayed relatively high scores on desire for fatherhood, experience of caregiving sensitivity in the family of origin, and non-traditional beliefs about the paternal role. In contrast, these fathers were in the moderate range of parenting self-efficacy and relatively low on both interparental relationship quality and economic distress.

Pairwise comparisons showed that all three groups differed significantly on parental self-efficacy, with the Mixed Readiness group falling between the Low and High Readiness groups on this and several other indicators. The Mixed Readiness group also differed significantly from at least one of the other groups on interparental relationship quality, caregiving sensitivity, desire for fatherhood, and economic distress, further highlighting that

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this group reflects a unique combination of strengths and vulnerabilities. Regarding the fathers' demographic characteristics, results indicated significant differences in education and planned pregnancy rates, but not age. Specifically, fathers in the Mixed Readiness group had significantly lower education levels than those in the other two groups and were more likely to report a planned pregnancy. Full comparisons of profiles (on both profile indicators and socio-demographic characteristics) are presented in Table 3.

Latent Profile Analyses and Distal Outcomes

Next, the automated Bolck-Croon-Hagenaars (BCH) three-step procedure was utilized to estimate the mean paternal engagement sub-dimension values and socioemotional competence across the three readiness-for-fatherhood profiles. Results showed significant between-group differences in child socioemotional competence as a function of readiness profile membership, $\chi^2 = 7.02$, $p = .03$. Specifically, children whose fathers were in the High Readiness group ($M = 25.86$; $SE = 0.68$) scored significantly higher on socioemotional competence than did children of fathers in the Mixed Readiness group ($M = 21.74$, $SE = 1.68$), $\chi^2(1) = 5.11$, $p = .02$. Children of fathers in the High Readiness group also scored marginally higher on socioemotional competence compared to those whose fathers were in the Low Readiness group ($M = 23.615$, $SE = 1.05$), $\chi^2(1) = 3.23$, $p = .07$.

When considering sub-dimensions of paternal engagement as distal outcomes, results indicated a marginally significant overall between-group difference only for paternal caregiving engagement, $\chi^2 = 4.90$, $p = .09$. Specifically, fathers in the Mixed Readiness group ($M = 13.47$, $SE = .43$) showed significantly higher caregiving engagement than did fathers in the Low Readiness group ($M = 11.66$, $SE = .68$), $\chi^2(1) = 4.88$, $p = .03$). Fathers in the High Readiness group also scored higher than fathers in the Low Readiness group ($M = 12.87$, $SE = .37$), but this difference was not statistically significant, $\chi^2(1) = 2.41$, $p = .12$.

The analytical plan called for manual implementation of the BCH procedure to test direct associations among all study variables, as well as the mediating role of paternal caregiving engagement in the link between prenatal readiness-for-fatherhood profiles and child socioemotional competence (see Asparouhov & Muthén, 2014). However, due to non-significant direct paths between profile membership and paternal engagement (the proposed mediator) an estimation of indirect effects was not conducted.

Discussion

By adopting a person-centered approach, the current study identified profiles that characterize prenatal readiness for fatherhood among unmarried, Black American men, an understudied population of expectant parents. Findings speak to the heterogeneity in expectant Black American fathers' readiness for parenting based on their prenatal parenting self-efficacy, desire to be a father, interparental relationship quality, caregiving experiences in the family of origin, beliefs about the paternal role, and economic distress. Although hypothesized mediational pathways were not supported, results did indicate significant direct effects of prenatal profile membership on children's socioemotional competence in toddlerhood, as well as some differences in fathers' caregiving engagement in early infancy as a function of readiness for fatherhood profiles.

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Prenatal Readiness for Fatherhood Profiles

Latent profile analyses identified a conceptually meaningful set of three prenatal readiness configurations. Just over half of the fathers in this sample were classified as being in the High Readiness group. These men scored high on all personal and socio-contextual readiness factors, indicating strong psychological readiness for parenting (i.e., desire to be a father, parenting self-efficacy), beliefs in the importance of the paternal role, contextual circumstances (i.e., better economic well-being), and relationships (i.e., high-quality inter-parental relationships, sensitive fathers in the family of origin) that seemingly support a healthy transition to parenting a new child. Notably, and in contrast to societal representations and some widely-held stereotypes of unmarried, Black American fathers (e.g., Cooper et al. 2021), the majority of fathers fell into this High Readiness group. Although contextual barriers can pose a challenge to unmarried, Black men's engagement with their infants both before and after the birth of a child, these findings support the notion that many of these men report feeling prepared and highly motivated for parenthood during the prenatal period (e.g., Fagan et al., 2023).

In contrast to High Readiness fathers, fathers in the Low Readiness group—approximately a quarter of the sample—displayed low levels of prenatal parental self-efficacy, desire for parenting, and non-traditional beliefs about fathering roles. They also exhibited lower inter-parental relationship quality and less sensitive caregiving experiences with their own fathers, whereas their economic distress levels were high. The third readiness profile that emerged—Mixed Readiness fathers, slightly less than a quarter of the sample—showed some similarities to High Readiness fathers with respect to the desire to have a child, valuing the fathering role, and sensitive caregiving experiences with their fathers in the family of origin. However, like fathers in the Low Readiness profile, these men also reported experiencing high economic distress and low inter-parental relationship quality, coupled with moderate levels of parenting self-efficacy. This constellation could highlight the overarching effect of socio-contextual determinants of parenting (i.e., financial wellbeing and interparental relationship quality) on psychological preparedness (particularly parenting confidence and self-efficacy) among Black American fathers, which has been documented in previous research involving Black American families (e.g., Skinner et al., 2021).

Despite the scarcity of research on Black men's parenting and the exploratory nature of the current study, overall profile clustering was consistent with the premise that expectant men's readiness for fathering may differ based on their parenting cognitions, desires, beliefs in the importance of the father's role, the quality of their close relationships, and contextual determinants (Cooper et al., 2015; Junttila & Vauras, 2014; McBride et al., 2023). Results from the current study provide some limited support for the view that the determinants of prenatal readiness for parenting are highly connected to one another and may emerge concurrently during pregnancy.

Socio-Emotional Competence Across Prenatal Readiness for Fatherhood Profiles

Hypothesized direct effects from prenatal readiness to children's outcomes were supported, such that differences in toddlers' socio-emotional competence varied across the range of prenatal readiness for fatherhood typologies. Specifically, toddlers of High Readiness fathers

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showed greater socioemotional competence approximately two years later in comparison to toddlers whose fathers were in the Mixed or Low Readiness profiles. This finding is consistent with previous research on the link between typologies of parenting beliefs and children's overall social competence (Junttila & Vauras, 2014; Modecki et al., 2015). Junttila and Vauras (2014), for example, found that children of fathers in a latent profile group characterized by high parenting self-efficacy exhibited more prosocial and less antisocial behaviors compared to those in lower self-efficacy profiles. Similarly, previous research has shown a positive impact of fathers' experience of supportive interparental and familial relationships, especially when coupled with financial security, on their children's social-emotional well-being among Black families (McBride et al., 2023). Our findings build upon this work and extend it to the prenatal period by documenting associations between constellations of both psychological and contextual factors prior to the birth of a child and downstream socio-emotional adjustment in early childhood. Collectively, results speak to the "long reach" of fathers during the prenatal period for health and well-being in the postnatal period (e.g., Cabrera et al., 2008; Fagan et al., 2023).

Paternal Engagement Across Prenatal Readiness for Fatherhood Profiles

Another goal of the current study was to examine different patterns of paternal engagement sub-dimensions—affection, caregiving, and play—across the typologies of expectant Black fathers' readiness for parenting. In general, most hypothesized associations between prenatal readiness profiles and paternal engagement in early infancy were not supported. In particular, neither the affection nor play sub-dimensions of engagement significantly differed across groups. Considering that the majority of parents take high pleasure in fathering and report displaying affection toward children (Rohner & Veneziano, 2001), it is plausible that paternal affection may not exhibit substantial variability across readiness profiles. Likewise, considering that the current study focuses on paternal engagement in the first several months, play interactions within father-infant dyads were likely somewhat limited, with caregiving activities more salient during this developmental period.

In contrast to play and affection, the overall effect for paternal caregiving trended toward significance, with fathers in the Low Readiness profile lower on paternal caregiving engagement than fathers in other profiles. Somewhat counterintuitively, fathers in the Mixed Readiness (rather than High Readiness) group showed the highest levels of caregiving engagement in infancy, and (in line with expectations) these fathers' caregiving engagement was significantly higher than those in the Low Readiness group. These findings indicate that expectant fathers with a strong desire to have children and positive beliefs about fathers' importance in child development may be more likely to contribute caregiving behaviors in infancy in spite of relatively poor interparental relationship quality and some economic distress. For some fathers with robust psychological resources, it may be that negative social-contextual circumstances could potentially motivate them to develop positive attitudes toward caregiving that facilitate more optimal engagement with their infants (e.g., Thomas et al., 2024). More research examining associations between prenatal factors and fathers' parenting in early infancy is needed in this population.

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Limitations and Future Directions

Despite multiple strengths, the current study has several limitations that could be addressed in future research. First, although results of latent profile analyses suggest that expectant fathers' prenatal readiness for parenting can be characterized by a three-class constellation, these analyses were exploratory in nature and limited to a sample of unmarried, Black fathers living in rural regions of the southeastern US. Due to the focus on a unique sample of hard-to-reach fathers, this study had a modest sample size that yielded relatively small profile groups. Future research is needed to determine whether these constellations of prenatal readiness for fatherhood can be replicated and extended to larger and more diverse samples, or to other groups with differing socio-demographic characteristics. For example, future studies could explore whether results might be specific to Black fathers in rural communities. Although some aspects of rural communities may contribute to contextual stress, other elements—including community cohesion and dense social networks (e.g., extended family and faith-based support systems)—might serve as protective factors or buffers against the economic and structural challenges commonly faced by low SES, unmarried fathers (Murry et al., 2020). Specifically, differences in access to social networks could help explain differences between fathers in the Mixed Readiness group (who lack relational readiness factors) and those in the High Readiness group. Strengths-based perspectives on rural, Black fathers may help explicate study findings and determine the extent to which they are generalizable to other populations.

Second, although the current study aimed to elucidate expectant fathers' personal experiences in their readiness for parenthood, data were comprised entirely of fathers' self-report data on prenatal factors and paternal engagement. This approach may limit interpretability and increase the risk of spurious findings due to potential social desirability bias and shared source variance. Future research could more fully integrate data from multiple informants as well as more objective assessments of both prenatal readiness (e.g., neuroendocrine functioning associated with an adaptive transition to parenthood) and parenting (e.g., observational assessments of family interactions).

Relatedly, the assessments of paternal engagement (i.e., father-child play) used in the current study were relatively limited, particularly considering the young age of the children. This may in part explain the lack of associations between parenting behaviors and both prenatal readiness profile membership as well as socioemotional competence. Future studies might also consider examining behavioral aspects of fathers' *prenatal* engagement, such as attending prenatal medical visits and birthing classes, as these activities may represent another important aspect of preparation for parenthood that could further clarify the link between prenatal readiness and postnatal father engagement. Subsequent studies should continue to include additional measurement modalities and examine other possible mediating mechanisms within the family environment (e.g., qualitative aspects of parent-infant interactions, attachment quality, coparenting dynamics) that may help to elucidate the consequences of paternal prenatal readiness for infant socioemotional development.

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Public Significance

Paternal engagement is beneficial for children's healthy development beginning in infancy, yet few studies have examined the factors that prepare fathers for the paternal role before the birth of a new child. This study identified distinct profiles of prenatal readiness for fatherhood among unmarried, Black American men, and associations with paternal engagement and child socio-emotional well-being in early childhood. Findings can inform psychoeducational practices and preventive interventions to support unmarried, Black fathers prenatally, with implications for positive socio-emotional functioning in young children.

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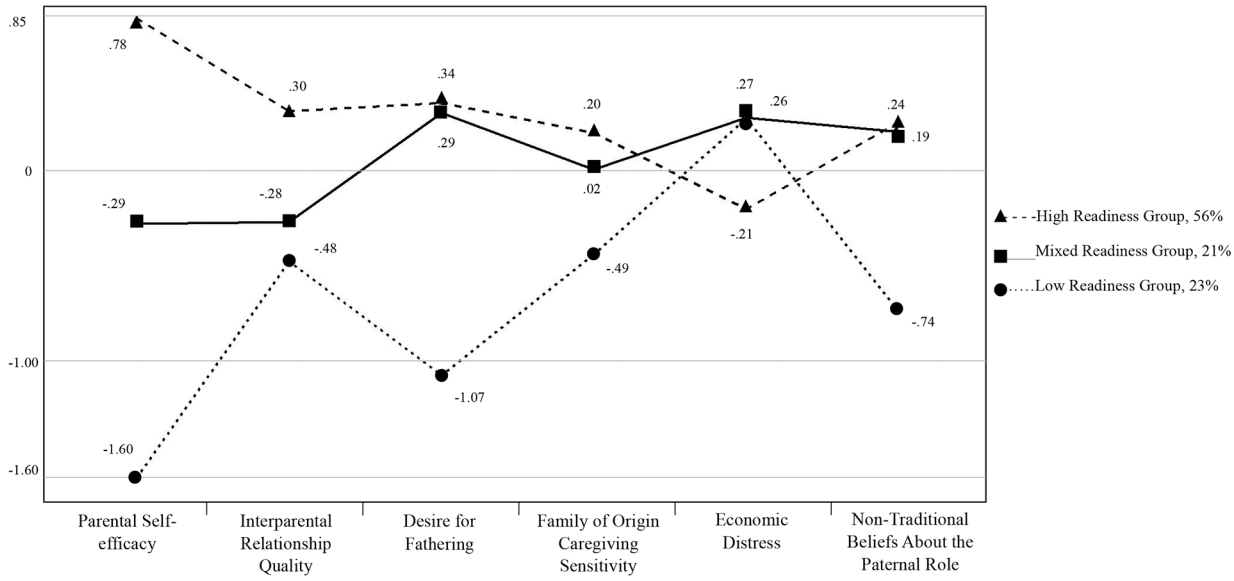


Figure 1.

Prenatal Readiness for Fatherhood Profiles

Note: Values reflect standardized (z-score) means presented for illustrative purposes.

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Table 1.

Zero Order Correlations among Continuous Study Variables

Variable	1	2	3	4	5	6	7	8	9	10	11	12
1. Father Age	-											
2. Father Education	.09	-										
Readiness for Fatherhood Indicators												
3. Paternal Self-efficacy	−.11	.02	-									
4. Interparental Relationship Quality	−.15	−.02	.33**	-								
5. Desire for Fatherhood	−.07	−.01	.54**	.22*	-							
6. Family Origin Caregiving Sensitivity	.16†	.07	.25**	.15†	.09	-						
7. Economic Distress	−.01	−.15	−.21*	−.10	−.05	−.12	-					
8. Nontraditional Paternal Role Beliefs	−.09	−.02	.38**	.13	.47**	.13	.01	-				
Paternal Engagement												
9. Affection	−.16	−.07	.01	.19	.13	−.08	.24*	−.06	-			
10. Caregiving	−.10	−.13	.12	.33**	.17	−.04	.21*	−.06	.83**	-		
11. Play	−.03	−.05	.09	.23*	.06	.01	.21*	−.16	.65**	.73**	-	
Socioemotional Child Outcome												
12. BITSEA Competence	−.17	.11	.24*	.05	.07	−.08	−.04	.33**	.05	.05	.04	-
Mean	27.99	3.37	25.69	13.14	13.94	9.34	15.64	36.70	17.99	12.49	19.16	25.19
SD	6.85	1.73	2.82	2.37	1.47	4.35	4.42	5.15	3.17	3.10	5.69	4.92
Range (min - max)	18–64	1–8	21–28	6–15	6–15	4–16	7–28	18–45	5–20	2–15	2–25	11–33
N	126	126	125	124	125	125	125	124	181	180	181	120

Note.

† $p<.08$,

* $p< .05$,

** $p< .001$.

SD = standard deviations.

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Table 2

Information Criteria Results in the Determination of the Number of Profiles for the Readiness for Fatherhood

		Parsimony Criteria			Clustering Criteria			Both
Profiles	**% of group sizes**	**AIC**	**BIC**	**ssBIC**	**CLC**	**NEC**	**Entropy**	**ICL-BIC**
1		2146.73	2180.67	2142.73	2122.73	1.00	NA	2180.67
2	P1=29%; P2=71%	1981.05	2034.78	1974.70	1949.28	0.03	0.964	2041.02
3	P1=24%; P2=56%; P3=21%	1905.86	1979.40	1897.18	1861.55	0.03	0.972	1987.09
4	P1=22%; P2=55%; P3=14% P4=09%	1844.42	1937.76	1833.40	1778.77	0.00	0.999	1938.10
5	P1=01%; P2=22%; P3=08% P4= 14%; P5=55%	1824.22	1937.35	1810.87	1744.62	0.00	0.999	1937.75

Note. P(1–5) = Profiles; *AIC* = Akaike's information criteria; *BIC* = Bayesian information criteria; *ssBIC* = Sample-size adjusted Bayesian information criteria. *CLC* = Classification Likelihood Criterion. *NEC* = Normalized Entropy Criterion. ICL = Integrated Completed Likelihood. *NA* = Not Applicable

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Table 3

Means and Pairwise Comparisons of Profile Indicators Across Readiness for Fatherhood Profiles

	Readiness for Fatherhood Profiles (Mean)			Pairwise Comparison Between Profiles and P-values					
	Low Readiness	Mixed Readiness		Mixed vs. Low		High vs. Mixed		High vs. Low	
Latent Profile Indicators			High Readiness	**Δ*M***	***p*-value**	**Δ*M***	***p*-value**	**Δ*M***	***p*-value**
1. Parental Self-Efficacy	21.20	24.88	27.88	**3.68**	.00	**2.99**	.00	**6.68**	.00
2. Interparental Relationship Quality	12.01	12.48	13.85	0.47	.57	**1.37**	.04	**1.84**	.00
3. Desire for Fatherhood	12.37	14.37	14.45	**2.01**	.00	0.08	.73	**2.08**	.00
4. Family of Origin Caregiving Sensitivity	5.43	7.18	7.81	**1.75**	.05	0.62	.47	**2.37**	.00
5. Economic Distress	16.79	16.82	14.72	0.03	.98	**−2.11**	.03	**−2.07**	.03
6. Nontraditional Paternal Role Beliefs	32.91	37.69	37.95	**4.78**	.00	0.26	.80	**5.04**	.00
Father Characteristics									
7. Father Age	30.21	26.59	27.50	−3.62	.08	0.91	.46	−2.71	.15
8. Father Education	3.62	2.63	3.57	**−0.99**	**.01**	**0.94**	**.01**	−0.06	.88
8. Planned Pregnancy	0.24	0.57	0.29	**0.33**	**.01**	**−0.28**	**.01**	0.05	.60

Note. Values for latent profile indicators reflect raw (unstandardized) scores. *ΔM* represents the mean difference between groups. Bolded values indicate statistically significant differences at p < .05. Higher scores on all latent profile indicators reflect greater readiness for fatherhood, whereas higher scores on Economic Distress indicate greater financial strain.