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Childhood Interpersonal Antecedents of Adult Romantic Relationship Adjustment: Prospective Evidence From the National Institute of Child Health and Human Development Study of Early Child Care and Youth Development

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This report leveraged the subsample of romantically involved participants in the National Institute of Child Health and Human Development Study of Early Child Care and Youth Development at the most recent assessment of the cohort (n = 505; M_{age} = 28.6 years; 58.1% female; 81.7% White/non-Hispanic) to study the role of three theoretically salient childhood interpersonal experiences as potential antecedents of self-reported romantic relationship adjustment in early adulthood. Predictors were measured multiple times prospectively in childhood through adolescence and included (a) direct observations of maternal sensitivity in dyadic interactions with participants from age 1 month through 15 years, (b) participants' reports of the quality of their best friendships from Grade 3 to age 15 years, and (c) participants' primary caregivers' reports about the quality of their own romantic relationships when target participants were being reared. Composite assessments of these three childhood interpersonal exposures were each uniquely predictive of participants' romantic relationship adjustment in young adulthood after accounting for demographic covariates, though the overall effect size was modest (ΔR^2 = .05).

Keywords: romantic relationships, family processes, maternal sensitivity, friendships, social development

The quality of adults' interpersonal experiences is associated with both physical health and psychosocial health. A key meta-analysis compiling data from over 300,000 participants, for example, reported a survival odds ratio of 1.5 associated with stronger social relationships, indicating that the impact of adult relationships on mortality risk is comparable to well-established health behaviors, such as smoking (Holt-Lunstad et al., 2010). Satisfaction and adjustment within romantic relationships are also both cross-sectionally and longitudinally associated with psychosocial health (South, 2021). Although these associations appear to be bidirectional, some evidence

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Raw data and documentation for all data collected from birth to age 15 years are publicly available at https://www.icpsr.umich.edu/web and can be found by searching for "NICHD Study of Early Child Care and Youth Development." Data from the Study of Early Child Care and Youth Development Study of Health in Early and Adult Life follow-up, which were used to identify adult relationship status and dyadic adjustment in the present study, are not publicly available. However, the data and documentation from the Study of Health in Early and Adult Life assessment necessary to reproduce these analyses can be obtained by contacting the senior authors of this article, Glenn I. Roisman and Maria E. Bleil. The analyses described in this study were not preregistered. All code required to reproduce the results of this study has been made publicly available at https://github.com/RomanticRelationshipAdjustment/Developmental-Antecedents-of-Romantic-Relationship-Adjustment. A preliminary version of this work was presented by Phil Sternberg Lamb at the 2025 Biennial Meeting of the Society for Research in Child Development in Minneapolis, Minnesota.

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Phil Sternberg Lamb played a lead role in conceptualization, writing–original draft, and writing–review and editing and an equal role in formal analysis. Or Dagan played a supporting role in methodology and writing–review and editing and an equal role in formal analysis. Keely A. Dugan played a lead role in formal analysis, a supporting role in writing–review and editing, and an equal role in methodology. Maria E. Bleil played a supporting role in writing–review and editing and an equal role in data curation, funding acquisition, and resources. Cathryn Booth-LaForce played a supporting role in writing–review and editing and an equal role in data curation, funding acquisition, and resources. Glenn I. Roisman played a lead role in project administration and supervision, a supporting role in conceptualization and writing–review and editing, and an equal role in funding acquisition and resources.

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suggests a stronger relation in the direction of romantic relationships impacting psychosocial health as an outcome (Braithwaite & Holt-Lunstad, 2017).

Given the significance of higher quality adult romantic relationships, it is important to explore both proximal and distal factors that support romantic adjustment. The field of social development emphasizes the role of childhood interpersonal experiences in shaping romantic adjustment in adulthood. However, to date, relatively few studies have investigated the role of childhood interpersonal experiences in adults' romantic adjustment *prospectively*.

The quality of childhood interpersonal experiences has long been assumed to be a set of important antecedents of adjustment in romantic relationships (Collins & Sroufe, 1999; Furman & Simon, 1999; Furman & Wehner, 1994). Indeed, evidence shows that secure infant attachment (Roisman et al., 2005; Salvatore et al., 2011) and maternal sensitivity in childhood (Raby, Lawler, et al., 2015; Schoenmaker et al., 2015) both predict more adaptive romantic functioning in adulthood. Similarly, the quality of adolescent friendships predicts adult romantic relationship quality above and beyond parent–child relationship quality (Allen et al., 2022). Finally, observational and social learning of family dynamics—including those reflected in interactions between caregivers—have been proposed to influence offspring romantic relationships as well (Bryant & Conger, 2002), which may underpin intergenerational continuities in romantic relationship quality (Goldberg et al., 2019).

The three interpersonal experiences examined in the present study—maternal sensitivity, friendship quality, and mothers' emotional intimacy with their romantic partners—reflect the domains most consistently emphasized in empirical research as early interpersonal precursors of adult romantic adjustment. However, they are rarely examined side by side, thereby precluding conclusions about their unique contributions. This study addressed this gap by simultaneously examining maternal sensitivity, friendship quality, and maternal romantic emotional intimacy with their adult partners across childhood to better understand their independent associations with adult romantic adjustment.

Theoretical Frameworks for Identifying Interpersonal Antecedents of Adult Romantic Competence

The behavioral systems approach (Furman & Wehner, 1994) provides a useful integrative framework for identifying the kinds of childhood interpersonal experiences that might be implicated in the development of adults' romantic relationships. According to behavioral systems theory, romantic relationships require the integration of several behavioral systems, including the attachment, affiliative, caretaking, and sexual/reproductive systems (Furman & Simon, 1999). Because romantic relationships require integration of these behavioral systems, romantic adjustment is thought to reflect the unique contributions of distinct interpersonal experiences that scaffold the development of each system (Furman & Simon, 1999).

Early experiences with primary caregivers are theorized to promote capacity for intimacy (i.e., the predisposition to approach future relationships with closeness and intimacy) via development of the attachment system (Collins & Sroufe, 1999). By contrast, experiences with close peers/friends, who are central figures in the development of the affiliative system, provide opportunities for practice at intimacy—offering a unique opportunity to develop social skills pertinent to later romantic relationships (Collins & Sroufe, 1999).

Beyond these salient *direct* interpersonal experiences emphasized by behavioral systems theory, broader experiences of positive family climate in childhood and adolescence predict better relationship functioning in young adulthood (Xia et al., 2018). The Development of Early Adult Romantic Relationships (Bryant & Conger, 2002) model outlines characteristics within a family of origin that can promote or inhibit the development of later romantic competence, including experiential and observational factors. The latter emphasizes that children emulate interaction patterns observed in their families, which supports the development of interaction styles (e.g., problem-solving approaches) that appear relatively stable—thereby linking these to behaviors in romantic relationships. Accordingly, this study examined the roles of maternal sensitivity, best friendship quality, and mothers' romantic emotional intimacy as childhood interpersonal experiences pertinent to adult romantic relationships. Building on the theoretical foundations described above, the following sections review longitudinal evidence for each of these three focal interpersonal domains as predictors of adult romantic adjustment.

Parent–Child Relationships

Early parent–child relationships are theorized to be central to the development of the caregiving and attachment systems (Furman & Wehner, 1994). The caregiving system is initiated when someone else is experiencing distress or suffering and needs protection and help. This goal of providing care and comfort reflects the reciprocal nature of attachment and caretaking systems (i.e., receipt and provision of care and comfort). Goals of the attachment system include the drive to maintain proximity to a secure base/attachment figure. Sensitive caregiving and secure parent–child attachment support this system, as high-quality experiences in this domain may increase inclinations to approach other relationships with closeness and intimacy (Collins & Sroufe, 1999; Furman & Simon, 1999). These assumptions are supported by evidence that secure infant attachment predicts higher quality romantic relationships (e.g., Roisman et al., 2005) and faster recovery from romantic conflict in laboratory settings during emerging adulthood (Salvatore et al., 2011). Similarly, Schoenmaker et al. (2015) found that the closely related construct of maternal sensitivity in infancy and middle childhood predicted both middle-childhood attachment security and secure attachment representations in adopted young adults. Likewise, higher early maternal sensitivity is predictive of general romantic functioning at age 32 years (Raby, Lawler, et al., 2015), less romantic partner hostility at age 26 years (Dagan et al., 2021), and less autonomic reactivity during a conflictual discussion with a romantic partner (Raby, Roisman, et al., 2015).

Friendships

The affiliative system is the foundation of human motivation to pursue companionship, reciprocity, and cooperation with others (Furman & Simon, 1999). Although caregivers initially serve as figures for the affiliative system, the egalitarian nature of friendships is uniquely suited to learning how to navigate power-sharing relationships (Laursen & Bukowski, 1997). Important aspects of friendships (e.g., power sharing, reciprocity) that distinguish them from parent–child relationships also characterize romantic relationships. Friendships can, therefore, serve as a bridge to practice intimacy and begin to fulfill a friend's need for closeness (Collins & Sroufe, 1999). Generalizing these skills into romantic settings may increase satisfaction within romantic relationships. A recent longitudinal study of individuals ages 13–24 years, for example, suggests that adolescent friendships predict emotional support capacities in adult romantic relationships beyond the effects of adolescent romantic relationships (Costello et al., 2023), supporting the notion of their "transferability" to later romantic contexts. Another study found that the quality of adolescents' close friendships, but not parent–child relationships, predicted romantic relationship quality in adulthood (Allen et al., 2022). Close friendships present opportunities to practice skills such as autonomy and relatedness (Oudekerk et al., 2015), which are associated with higher romantic satisfaction (Hadden et al., 2018; Kluwer et al., 2020). Furthermore, stage-specific peer competencies within adolescence may uniquely predict later adult romantic outcomes (Allen et al., 2020).

Finally, experiences with friends are thought to expand upon the interpersonal foundations established in early child–caregiver interactions. For instance, Simpson et al. (2007) found that secure attachment at 1 year of age predicted teacher-reported social competence in Grades 1–3, which, in turn, predicted more secure friendships at age 16 years (i.e., capacity for intimacy). Security of close friendships subsequently predicted more positive emotional experiences and lower conflict in romantic relationships in early adulthood (i.e., practice at intimacy).

Interparental Relationship Quality

Experiences and observations of caregivers' romantic relationships—particularly how caregivers express emotions, manage conflict, and provide support to romantic partners—are also thought to shape children's expectations and behaviors in their own future partnerships, thereby contributing to the development of romantic competence (Development of Early Adult Romantic Relationships; Bryant & Conger, 2002). These theoretical propositions are supported by empirical work. For instance, prospective research by Bryant and Conger (2002) found that adolescents' reports of parental romantic relationship quality were predictive of their own relational functioning in early adulthood. A retrospective study by Rhoades et al. (2012) likewise found that the association between having divorced (vs. married) parents and poorer romantic adjustment in adulthood was partially explained by higher perceived levels of parental conflict and less positive role modeling in divorced families. This finding is consistent with the social learning perspective, suggesting that families marked by conflict and poor relational modeling may provide limited opportunities to learn constructive ways of managing romantic relationships. Regarding intergenerational continuity in romantic relationship quality, some evidence suggests stronger continuity within domains of relationship functioning versus across these domains. For instance, exposure to interparental violence in adolescence predicts later partner-directed violence more strongly than does general romantic quality and vice versa (Goldberg et al., 2019). This strengthens the argument that such continuities are driven by observational social learning of specific (rather than general) romantic behaviors (Goldberg et al., 2019).

In sum, theoretical and empirical research emphasizes maternal sensitivity, friendship quality, and parents' romantic quality as childhood experiences that are likely to play a role in the development of adult romantic adjustment. However, the current literature precludes evaluation of certain theoretical propositions. For instance, despite the emphasis on developmental processes within these literatures, the dearth of prospective longitudinal evidence with follow-up from childhood to adulthood limits the ability to test the core propositions of these theories. Furthermore, the notion that each of these three core interpersonal domains uniquely influences romantic adjustment has rarely been tested directly as researchers tend to examine these domains in isolation. Thus, there is a specific need to test these three focal interpersonal antecedents simultaneously to examine if they are distinct predictors of romantic adjustment.

Existing Longitudinal Evidence Linking Multiple Interpersonal Domains in Childhood to Adult Romantic Relationship Quality

Few studies have explored the combined roles of peer and caregiver–child relationships on subsequent romantic outcomes in adulthood. Oriña et al. (2011) found that lower quality of parenting in toddlerhood (2 years) and poorer capacity for conflict resolution with a best friend in adolescence (16 years) were both associated with a greater likelihood of being the less committed partner in a romantic relationship at age 21 (Oriña et al., 2011). Other studies have explored the role of interpersonal experiences using a developmental cascade model, whereby distal early factors indirectly influence adult romantic outcomes via intermediary and more proximal interpersonal experiences. Rauer et al. (2013) observed that harsh discipline in early childhood predicted poorer parental monitoring and lower peer competence in middle childhood. In turn, these factors predicted poorer perceived friendship support, greater peer deviance, and lower mother–child relationship quality in adolescence, which each uniquely predicted stability and commitment outcomes in romantic relationships in emerging adulthood. A recent longitudinal study found that close friendship quality assessed across adolescence—but not parent–child relationship quality—predicted romantic life satisfaction in early adulthood (Allen et al., 2022).

Taken together, certain studies have simultaneously examined the role of adolescents' experiences with peers and caregivers (e.g., Allen et al., 2022; Rauer et al., 2013), and others have examined caregiving in toddlerhood alongside adolescent peer experiences (e.g., Oriña et al., 2011). However, no studies have leveraged data for these two interpersonal experience domains from across childhood in aggregate. Furthermore, this study is the first to explore these two predictors alongside maternal romantic intimacy. Without accounting for other early interpersonal experiences implicated in romantic competence, it is difficult to identify the unique role of each domain in the quality of romantic relationships in adulthood.

The Present Study

To address the shortcomings of the current literature, this study leveraged data from a prospective study from birth through young adulthood. The primary goal was to examine simultaneously the role of three domains of promotive interpersonal experiences across childhood as predictors of self-reported dyadic adjustment in romantic relationships around age 30 years. Data presented here reflect repeated assessments of maternal sensitivity, best friendship quality, and mothers' romantic emotional intimacy across childhood, permitting examination of the unique role of each. Consistent with the journal's commitments to transparency and openness, below we report how we determined our sample size, along with all data exclusions, all manipulations, and all measures leveraged in this particular analysis of the National Institute of Child Health and Human Development (NICHD) Study of Early Child Care and Youth Development (SECCYD).

Method

Participants

This report utilizes data from the NICHD SECCYD and a follow-up assessment of the cohort between the ages of 26 and 31 years, which was rebranded the Study of Health in Early and Adult Life (SHINE). The original SECCYD sample included children born in 1991 and consisted of 1,364 families sampled across 10 sites in the United States (National Institute of Child Health and Human Development Early Child Care Research Network, 2005). Families were excluded from the study if the mother was younger than 18 years old, the child had a known disability, the child was part of a multiple birth, the mother self-disclosed any current substance use, or if the mother did not speak English. The original study followed these participants through age 15 years, at which point 946 participants and their parents agreed to be recontacted for future research. Follow-ups of this cohort have been conducted in young adulthood, with SHINE being the most recent (for additional details, see Bleil et al., 2023). The Institutional Review Boards at the University of Washington and the University of Minnesota approved data collection for SHINE and ongoing analysis of the SECCYD, respectively.

The present study leverages romantic relationship adjustment data collected at the SHINE follow-up. Nine hundred twenty-seven participants were eligible to be contacted for recruitment at this time point, of which 705 participated in SHINE. A subset of these participants ($n = 693$) completed questionnaires about whether they were currently romantically partnered ($n = 188$, 27%, were not partnered during SHINE). Participants who were partnered ($n = 505$) were administered the Dyadic Adjustment Scale (DAS). Among those administered the DAS, 49 (9.7%) reported they were currently dating casually, 214 (42.4%) reported being in a committed relationship, 62 (12.3%) reported being engaged to a romantic partner, and 180 (35.6%) reported they were currently married. Romantically involved participants who participated in SHINE were 58.6% female and 81.8% White/non-Hispanic. The average age of this subsample was 28.6 years (range = 26.2–31.2 years, $SD = 1.21$). Maternal education reported at the beginning of the SECCYD for this subsample was $M = 14.71$ (range = 7–21 years, $SD = 2.45$). In addition, these participants' families had an average income-to-needs ratio of 4.08 (range = 0.24–20.55, $SD = 2.92$), based on assessments acquired routinely between 1 month and 15 years (see below).

Participants lost to attrition or due to having no romantic partner at the SHINE assessment ($n = 859$) differed significantly (albeit modestly) from the participants who were romantically involved during the SHINE assessment ($n = 505$) on all demographic covariates used in this analysis. Compared with the analytic sample (81.8%, $n = 505$), the attrited sample (73.2%, $n = 859$) contained a smaller percentage of White/non-Hispanic participants, $t(1173) = -3.74$, $p < .001$, $d = -.20$. The analytic sample (58.6%, $n = 505$), relative to the attrited sample (42.3%, $n = 859$), also contained a higher proportion of female participants, $t(1362) = -5.91$, $p < .001$, $d = -.33$. Relative to the analytic sample ($M = 4.08$, $SD = 2.92$, $n = 505$), the attrited sample ($M = 3.54$, $SD = 3.04$, $n = 851$) had lower family income-to-needs ratio, $t(1354) = -3.23$, $p < .001$, $d = -.18$. Finally, compared with the current sample ($M = 14.71$, $SD = 2.45$, $n = 505$), the attrited sample ($M = 13.95$, $SD = 2.51$, $n = 858$) had mothers with fewer years of education on average, $t(1361) = -5.41$, $p < .001$, $d = -.30$. All sociodemographic variables examined in attrition analyses were included as covariates in focal analyses.

Measures

Maternal Sensitivity

Maternal sensitivity was assessed using video-taped, semi-structured interaction tasks when children aged 6, 15, 24, 36, and 54 months; Grades 1, 3, and 5; and again at 15 years. Tasks were designed to be developmentally appropriate. Thus, at younger ages, children engaged in tasks that they could only succeed at with the support of their primary caregivers (i.e., tasks were calibrated to participants' zone of proximal development at these assessments). At older ages, participants and primary caregivers engaged in joint activities, including discussion tasks. During infancy and toddlerhood (at 6, 15, 24, 36, and 54 months), mothers and their children played with various toys. These included storybooks at 15 and 24 months, dress-up clothes, washable markers, and a Duplo box at 36 months and completing an Etch-a-Sketch maze task, building identical towers using blocks, and playing with hand puppets at 54 months. In Grade 1, mothers and children drew a house together using an Etch-a-Sketch, mothers assisted children with a task of matching patterns on geometric blocks to those presented on the screen, and they played a competitive card game together. In Grade 3, mothers and children took part in a discussion task wherein they talked about their opinions on randomly selected "rules" about what parents and children should and should not do and then completed a joint activity that involved sequencing cards describing an event such as a haircut or birthday party. At Grade 5, participants and their mothers first discussed several areas of disagreement (e.g., homework, chores) they had jointly identified before taking part in a joint task that demanded they assemble a "tower of toothpicks" using various supplies within 7 min. The age 15-year assessment consisted of an 8-min discussion task regarding one or two issues of conflict (e.g., curfew, chores) between the mother and adolescent.

Trained and reliable coders rated these interactions for maternal sensitivity (see National Institute of Child Health and Human Development Early Child Care Research Network, 2001, 2004, 2008; Roisman et al., 2009, for further information regarding these tasks and scales). For each assessment, maternal sensitivity composites were created by aggregating different scales intended to capture developmentally sensitive elements of maternal sensitivity. At ages 6, 15, and 24 months, maternal sensitivity composites consisted of the sum of ratings for sensitivity to nondistress, positive regard, and intrusiveness (reversed). At 36 months, at 54 months, and in Grades 1, 3, and 5, maternal sensitivity was composed by aggregating scores for supportive presence, respect for autonomy, and hostility (reversed). Finally, at age 15 years, the maternal sensitivity composite was aggregated from mothers' scores on the validation, engagement, inhibiting relatedness (reversed), hostility/devaluation (reversed), respect for autonomy, and warmth/valuing. At 6, 15, and 24, ratings for maternal behaviors were rated on 4-point scales, whereas at 36 months; 54 months; Grades 1, 3, and 5; and age 15, they were rated on 7-point scales. Internal consistencies for maternal sensitivity composites ranged from .70 to .85 ($M = 0.79$).

To facilitate the aggregation of these scores across time points, maternal sensitivity composites were first z standardized prior to aggregation. Next, scores obtained at each of these nine assessments were averaged across assessments to create an overall composite index of maternal sensitivity across childhood. The internal reliability of this cross-childhood composite maternal sensitivity variable was adequate ($\alpha = .83$). In addition to producing a reliable composite score, this approach to aggregation has been routinely used in prior analyses of the SECCYD (e.g., Booth-LaForce et al., 2014) as well as in methodologically comparable longitudinal studies (e.g., Raby, Roisman, et al., 2015).

Friendship Quality

Perceived relationship quality with best friend was assessed via the Friendship Quality Questionnaire (Parker & Asher, 1993), a self-reported measure of children's security and satisfaction in their relationship with a best friend, reflecting perceived companionship, validation, and support. Participants were asked to identify their best friend at each assessment and answer questions on a 5-point response scale about that friendship across a range of indicators of quality, including companionship and recreation, validation and caring, help and guidance, intimate disclosure, conflict and betrayal, and conflict resolution. At Grades 3, 4, and 5, identical versions of the 21-item Friendship Quality Questionnaire were completed. For the Grade 6 and age 15 assessments, additional eight items designed to capture unique aspects of adolescent relationships were included. At each time point, a friendship quality mean score was calculated as the average of all items, with the exception of Item 1 ("This friend and I live very close to each other"), after appropriate reflection of negatively scored items (αs ranged between .87 and .93, $M = 0.90$). A composite of these friendship scores was calculated as the mean of available scores collected across five assessments (Grades 3, 4, 5, 6, and age 15). The internal reliability of this composite friendship quality variable across was adequate ($\alpha = .78$).

Mothers' Emotional Intimacy With Romantic Partners

The emotional intimacy subscale from the Personal Assessment of Intimacy in Relationship (Schaefer & Olson, 1981) was completed by mothers who reported having a spouse or cohabiting partner. The emotional intimacy subscale consists of six statements that describe relationships with a spouse or partner. Participants evaluate each statement on a 5-point Likert scale (ranging from *strongly disagree* to *agree*) indicating the extent to which it applied to their current romantic relationship. These statements (e.g., "My spouse/partner listens to me when I need someone to talk to," "I can state my feelings without him/her getting defensive") specifically intend to capture emotional intimacy within this relationship. This measure was administered at eight assessments across childhood (1, 36, and 54 months; Grades 1, 3, 5, and 6; and at age 15). At each time point, an average score was calculated as the mean across these six items. At 1 month, this measure was scaled on a 7-point scale, and thus for this report, raw scores were divided by 1.4 to match the 5-point scale used at other assessments across childhood prior to further compositing across assessments. The αs of these composite emotional intimacy scores ranged from .81 to .89 within each assessment ($M = 0.88$). For the present study, an across-childhood composite of mothers' romantic emotional intimacy was calculated as the mean of the average intimacy scores collected across the eight assessments. The internal reliability of this composite measure across these eight time-points was strong ($\alpha = 0.91$). This measure was only completed by mothers who reported a partner at the time of a given assessment. Nevertheless, for all participants but four ($n = 501$), mother-reported emotional intimacy was obtained on at least one occasion in childhood.

Adult Romantic Adjustment

Perceived quality of romantic relationships in young adulthood was measured via the DAS (Spanier, 1976). This 32-item self-report survey is designed to measure the level of dyadic adjustment within a romantic relationship across subdomains of dyadic satisfaction, cohesion, consensus, and affectional expression. For each item, participants rate the extent to which statements apply to their relationship (e.g., "indicate the extent of agreement/disagreement between you and your partner on handling family finances") or the frequency with which a statement applies to their current romantic relationship (e.g., "How often do you or your mate leave the house after a fight?"). The present study used the standard, composite sum of all 32 items as an index of overall dyadic adjustment (standardized $\alpha = .92$).

Covariates

Consistent with prior analyses of the SECCYD data set (e.g., Roisman et al., 2009), four demographic variables were used as covariates in analyses. Maternal education was defined as the highest level of education attained/number of years in education completed by mothers at the 1-month assessments. Family financial resources were measured using an average composite index of family income-to-needs ratio obtained across 13 assessments between the ages of 1 month and 15 years. Child sex was coded as a binary variable (0 = male, 1 = female) based on data collected at 1 month. Finally, child race/ethnicity was operationalized as a binary variable (0 = not White/non-Hispanic, 1 = White/non-Hispanic) given the larger percentage of White/non-Hispanic children in the 1991 birth cohort from which the SECCYD sample was drawn.

Missing Data

To maximize sample size, we used the mice package (van Buuren & Groothuis-Oudshoorn, 2011) in R (R Core Team, 2024) to conduct item-level multiple imputation for the outcome measure (i.e., DAS). There was only 0%–1% missingness per item. We created five imputed data sets using Rubin's (2004) rules to combine estimates obtained using the data sets. We could not impute item scores for two of the 505 participants who were administered with the DAS. In the first case, scores for one DAS item could not be imputed due to little variation in the responses provided by other participants (e.g., 78% of participants responded to "Do you kiss your mate?" with 4 = *every day*, creating a highly skewed distribution), which resulted in incomplete data for one participant who missed that item. In the second case, multiple missing item responses for one participant were not imputed by mice; there was likely insufficient information provided by this participant to predict their missing item scores. We handled all other (i.e., non-DAS) missing values with full information maximum likelihood.

Power Analysis

To estimate statistical power in the current analyses, we focused on our ability to identify bivariate correlations central to our more complex multivariate analyses. In the analytic sample of 505, and given an α level of .05, the estimated statistical power to detect a population correlation of 0.10, 0.20, and 0.3 was 0.61, >0.99, and >0.99, respectively. Thus, the analytic sample examined in the present analysis is sufficient to detect medium-to-large effect sizes but is not adequately powered ($\geq$0.80) for detecting population associations smaller than $r \sim .13$.

Transparency and Openness

We followed the American Psychological Association Style Journal Article Reporting Standards for the present study. Raw data and documentation for all data collected from birth to age 15 are publicly available at https://www.icpsr.umich.edu/web and can be found by searching for "NICHD Study of Early Child Care and Youth Development." Data from the SECCYD SHINE follow-up (around age 30), utilized to identify adult relationship status and dyadic adjustment in the present study, are not publicly available. However, the data and documentation from the SHINE assessment necessary to reproduce these present analyses can be acquired by contacting the senior authors of this article, Glenn I. Roisman or Maria E. Bleil. The analyses described in this study were not preregistered. All code required to reproduce the results of this study has been made publicly available at https://github.com/RomanticRelationshipAdjustment/Developmental-Antecedents-of-Romantic-Relationship-Adjustment (Dugan et al., 2025).

Results

Intercorrelations Among Variables

Before conducting regression analyses to address our primary research questions, we calculated correlations among the childhood interpersonal predictors, adult dyadic adjustment, and demographic covariates (Table 1). All three childhood interpersonal exposures of interest—maternal sensitivity ($r = .15$, $p < .01$), friendship quality ($r = .17$, $p < .001$), and mothers' romantic emotional intimacy ($r = .12$, $p < .01$)—were significantly associated with adult dyadic romantic adjustment. By contrast, among the demographic covariates, only child race/ethnicity was significantly (though modestly) associated with dyadic adjustment ($r = .16$, $p < .01$), such that White/non-Hispanic participants reported higher levels of dyadic adjustment than did participants who were not White/non-Hispanic.

Among the three interpersonal predictors, only maternal sensitivity and mothers' romantic intimacy were significantly but modestly correlated ($r = .16$, $p < .01$). In addition, several significant associations were observed between sociodemographic covariates and the interpersonal predictors. More specifically, family income-to-needs ratio was associated with maternal sensitivity ($r = .41$, $p < .01$) and mothers' emotional intimacy ($r = .22$, $p < .01$). Maternal education was associated with maternal sensitivity ($r = .52$, $p < .01$) and mothers' emotional intimacy ($r = .10$, $p < .05$). Children who were White/non-Hispanic had on average higher observed maternal sensitivity ($r = .37$, $p < .01$), and their mothers reported somewhat higher levels of emotional intimacy when target participants were being reared ($r = .09$, $p < .05$). Child sex was associated with friendship quality, such that female participants reported higher quality best friendships than did male participants ($r = .37$, $p < .01$).

Focal Analyses

Our primary research question examined how strongly each of the three focal early interpersonal exposures was uniquely associated with dyadic adjustment in young adulthood above and beyond sociodemographic variables. To address this research question, we fit two path models using the lavaan package (Rosseel, 2012) in R (R Core Team, 2024). In the first model, we regressed the participants' dyadic adjustment scores at the SHINE

Table 1
Bivariate Associations Among Study Variables

Variable	1	2	3	4	5	6	7	8
1. Dyadic adjustment	—							
2. Maternal sensitivity	.15**	—						
3. Friendship quality	.17**	−.08	—					
4. Romantic intimacy[a]	.12**	.10*	−.03	—				
5. Maternal education	.04	.52**	−.09*	.10*	—			
6. Income-to-needs ratio	.07	.41**	−.08	.22**	.54**	—		
7. Child sex	.07	.05	.37**	−.06	−.02	.00	—	
8. Child race	.16**	.37**	−.07	.09*	.20**	.22	.00	—
M	120.9	0.10	4.12	3.82	14.71	4.08		
SD	14.51	0.63	0.43	0.70	2.45	2.91		
%							59[b]	82[c]

Note. Child sex (0 = male, 1 = female); child race (0 = not White/non-Hispanic, 1 = White, non-Hispanic).
[a] Maternal romantic emotional intimacy. [b] Percent female. [c] Percent White.
* $p < .05$. ** $p < .01$.

follow-up assessment (between ages 26 and 31 years) on the four sociodemographic covariates: maternal education, family income-to-needs ratio, child sex assigned at birth, and child race/ethnicity. In the second model, we added the cross-childhood composite assessments of observed maternal sensitivity, best friendship quality, and mothers' romantic emotional intimacy as predictors of total dyadic adjustment in young adulthood. The results of these models can be interpreted in a similar manner to the results of traditional multiple regression models. Instead of using traditional linear regression to address this research question, we specified path models because multiple imputation can be more easily used with path analysis via the semTools package (Jorgensen & Johnson, 2022). The results of these models are shown in Table 2.

Among the four covariates entered in Model 1, only child race/ethnicity was found to significantly predict dyadic adjustment (b = 5.90, SE_b = 1.70, β = 0.16, p = .01), such that White, non-Hispanic participants reported higher romantic relationship quality compared with participants who were not White, non-Hispanic. In the second model, all three focal interpersonal predictors significantly predicted variation in dyadic adjustment above and beyond the effects of other interpersonal exposures and demographic covariates. The addition of focal predictors in Model 2 nontrivially increased the variance accounted for above and beyond the demographic covariates entered in Model 1 (ΔR^2 = .05). Specifically, maternal romantic emotional intimacy positively predicted dyadic adjustment (b = 2.09, SE_b = 0.92, β = 0.10, p = .02), as did maternal sensitivity (b = 2.69, SE_b = 1.23, β = 0.12, p = .03) and best friendship quality (b = 6.36, SE_b = 1.56, β = 0.19, p < .01). Finally, child race/ethnicity remained a significant predictor of dyadic adjustment in romantic relationships in young adulthood (b = 4.95, SE_b = 1.74, β = 0.13, p = .004).

Discussion

The primary goal of this study was to examine the role of three theoretically significant childhood interpersonal experiences—maternal sensitivity, mothers' romantic intimacy, and friendship quality—as predictors of self-reported dyadic adjustment in romantic relationships in young adulthood. The results of this prospective, longitudinal analysis were consistent with claims in the literature that the quality of childhood experiences in each of these key interpersonal domains independently predicts adjustment in adult romantic relationships. These findings thus align with the long-held theoretical claim that romantic relationships (in part) reflect an integration of experiences across distinct interpersonal contexts during childhood, including with primary caregivers and important peers. Thus, each may play a unique role in adult romantic competence (Furman & Simon, 1999; Furman & Wehner, 1994).

Table 2
Path Model Predicting Adult Romantic Relationship Adjustment From Interpersonal Experiences and Sociodemographic Characteristics

Variable	b	SE_b	β	t	p	R^2
Step 1						.033
Maternal education	−0.04	0.31	−0.01	−0.12	.91	
Income-to-needs ratio	0.18	0.26	0.04	0.70	.49	
Child sex	2.13	1.29	0.07	1.65	.10	
Child race	5.90	1.70	0.16	3.48	.001	
Step 2						.083
Maternal education	−0.22	0.33	−0.04	−0.68	.50	
Income-to-needs ratio	0.02	0.26	0.01	0.09	.93	
Child sex	0.06	1.36	<0.01	0.05	.96	
Child race	4.95	1.74	0.13	2.85	.004	
Maternal romantic intimacy	2.09	0.92	0.10	2.27	.02	
Maternal sensitivity	2.69	1.23	0.12	2.19	.03	
Friendship quality	6.36	1.56	0.19	4.08	<.001	

Note. Child sex (0 = male, 1 = female); child race (0 = not White/non-Hispanic, 1 = White, non-Hispanic). R^2 change between Model 1 and Model 2 = 0.05. SE = standard error.

Our finding that mothers' intimacy with their romantic partners independently predicted offspring adult romantic satisfaction after accounting for other key interpersonal exposures is a particularly important contribution. This finding suggests that adult romantic adjustment is not only developed through one's direct experiences of supportive versus unsupportive relationships with parents and peers but may also reflect childhood observations of romantic processes in one's family of origin. Although the idea that children's observations of their parents' romantic relationships shape their own relational expectations is well-established in both developmental and family science literatures (e.g., Bryant & Conger, 2002; Goldberg et al., 2019; Rhoades et al., 2012), these exposures are rarely examined in combination with other salient interpersonal experiences across childhood. As noted in the introduction, family systems models, such as the Development of Early Adult Romantic Relationships model (Bryant & Conger, 2002), emphasize the role of multiple family-level influences—including parenting quality, emotional climate, and observed interactions—in shaping romantic development. The present study extends this literature by juxtaposing three distinct but theoretically relevant interpersonal domains—maternal sensitivity, friendship quality, and parental romantic modeling—within a prospective framework.

The lack of longitudinal research that juxtaposes these three distinct domains as simultaneous predictors of adult romantic functioning has thus far precluded evaluation of the unique contribution of each domain after accounting for the others. A key contribution of the present study is demonstrating that each domain uniquely predicts romantic adjustment in adulthood. These findings support theoretical propositions that have long been assumed but seldom tested within a single framework. Although the current findings demonstrate that each domain uniquely predicts adult romantic adjustment, future research should explore the mechanisms by which these interpersonal experiences interact or build upon one another across development, beyond their independent role in predicting adult romantic adjustment. To test underlying assumptions of behavioral systems approaches, for example, it is necessary to explore if the role of childhood friendship quality is mediated by theorized intermediaries of the affiliative system (such as the development of social skills pertinent to cooperative partnerships) and whether maternal sensitivity is explained by attachment-relevant intermediaries (such as the security of attachment representations). That said, some prior research within this sample has already supported the latter model, showing that adolescent secure base script knowledge mediated the association between parental sensitivity across childhood and expressed hostility in adult romantic relationships (Dagan et al., 2021).

Future research would also benefit from examining whether the roles of these interpersonal antecedents appear robust across measurement constructs and informants. For instance, children's perceptions of interparental intimacy/relationship quality (rather than parental reports) may more directly proxy internalization of interparental observations. Similarly, social skills, friendship stability, and peer acceptance may offer unique predictive value beyond the quality of best friendships. Future research should also explore how distinct approaches to conceptualizing relationship functioning are uniquely predicted by early experiences. In addition, the use of the summary DAS score—as in the present study—precludes the ability to separate positive and negative components of these relationships, and the DAS can also be critiqued for nondiscrimination of relatively subjective (e.g., "How often do you think things between you and your partner are going well?") versus objective (e.g., "How often do you and your partner quarrel?") aspects of romantic relationships (South, 2021).

Second, we found differences in self-reported romantic adjustment by race/ethnicity, such that White/non-Hispanic individuals reported higher dyadic adjustment. This may reflect the fact that the DAS was originally normed on predominantly White samples and, as such, may not be fully sensitive to cultural variations in expressions of relational closeness, intimacy, and communication style (Ge et al., 2022; Karandashev, 2015, but see South, 2021). Alternatively, the differences we observed may reflect the impacts on romantic adjustment associated with the experiences of racial and ethnic minorities in the United States, including structural inequality and discrimination stress (Rice et al., 2023). We also found that maternal sensitivity and maternal romantic emotional intimacy were modestly associated with maternal education and income-to-needs ratio. This aligns with the family stress model (Conger et al., 1992), which posits that socioeconomic hardship increases distress, heightening relational conflict and undermining parenting, along with meta-analytic evidence linking sociodemographic risk to lower maternal sensitivity (Booth et al., 2018), likely due to increased demands on caregivers' cognitive, emotional, and attentional resources.

Strengths and Limitations

By leveraging longitudinal data, this study offers insights into the role of interpersonal experiences across childhood in adult romantic adjustment. Compositing indicators of early experience increased our confidence in the validity and reliability of focal predictors. In addition, by examining all three interpersonal domains simultaneously, this study was positioned to draw more conclusive inferences about the independent role of each.

The present study, nonetheless, has several limitations that should be highlighted. First, this analysis is limited by the one-time, self-report assessment of romantic adjustment. Not only are appraisals of a given relationship likely to shift over time, but utilizing a single outcome assessment necessarily restricts the present sample to individuals who were partnered at the time of the assessment. Given that relationship adjustment is inherently dyadic, reliance on one partner's subjective evaluations of dyadic functioning is also a limitation.

Second, the generalizability of the present results is unclear in the absence of additional longitudinal studies on this topic. Although the original SECCYD investigators initially recruited a sample of families and children that was roughly consistent with the sociodemographic characteristics of the 1991 U.S. birth cohort at the 10 geographically diverse sites from which participants were recruited, the present analytic sample of romantically involved participants in young adulthood consisted of a modestly higher proportion of White/non-Hispanic participants and had higher family income and maternal education relative to the original SECCYD cohort. We encourage future researchers to examine the extent to which the present findings can be replicated in samples with greater socioeconomic, racial, and ethnic diversity.

Third, the SECCYD is not equipped to examine or control for the potential role of genetic contributions. Given substantial evidence supporting the heritability of personality traits, as well as attachment-relevant outcomes (e.g., Fearon et al., 2014), this represents a notable limitation and important area of focus for future research. For example, shared genetic predispositions may shape both maternal romantic and parenting behaviors as well as offspring's later interpersonal functioning.

Fourth, the present analysis focused on a targeted set of childhood interpersonal experiences previously linked to adult romantic adjustment rather than attempting to account for all possible influences. Given that these factors explained only 5% of the variance in dyadic adjustment after accounting for demographic covariates, future research should examine a broader array of both distal and proximal predictors. Importantly, reliance on data from primary caregivers in this analysis (typically mothers) limits insights into the roles of other important caregivers. Longitudinal work might usefully incorporate factors such as father–child relationship quality (e.g., Dagan et al., 2021), overall family climate (e.g., Xia et al., 2018), and adverse experiences, including parental divorce (Roper et al., 2020) and child abuse (Labella et al., 2018). Additionally, this study did not consider adolescent romantic experiences, which might also shape adult romantic relationship functioning (Furman & Flanagan, 1997).

Conclusion

This study provides salient contributions to the literature on the interpersonal antecedents of romantic relationship quality. Results support the notion that distinct interpersonal experiences assessed from infancy through age 15 years, including variation in maternal sensitivity, mothers' romantic intimacy, and friendship quality, uniquely predicted romantic quality in young adulthood. Future research can build on these findings by concurrently examining the salience of other interpersonal experiences and exploring the intermediary skills that could underlie associations between childhood interpersonal experiences and adult romantic quality.

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