

Article

Ten-Year Longitudinal Associations Between Family Alliance in Infancy and Adolescent Psychological Outcomes: An Exploratory Study

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Abstract

Objective: This exploratory study investigated the 10-year longitudinal associations between Family Alliance (FA) in infancy and various outcomes in adolescence (e.g., psychopathological symptoms, self-esteem, life satisfaction). **Background:** Extensive evidence suggests that the quality of family relationships plays an important role in children's development. However, few studies have documented this association using observational assessments of the family both in infancy and adolescence, and fewer studies have used longitudinal designs to explore these effects. **Method:** Using a convenience sample of N = 38 mother–father–child triads, FA was assessed in infancy (at 3, 9, and 18 months postpartum) and in early adolescence (at age 10–13). Adolescent symptoms, self-esteem, and satisfaction with life were self-reported. **Results:** Regression analyses showed that FA in infancy predicted neither psychopathological symptoms nor self-esteem, but it did predict scores of life satisfaction. FA in infancy and adolescence was significantly and positively associated. **Conclusion:** The quality of an infant's relational environment may predict life satisfaction in adolescents. **Implications:** In health services, promoting family relationships of high quality in the postpartum period may have long-term effects that persist until adolescence.

Keywords: family interactions; family alliance; infancy; adolescence; coparenting; child and adolescent development



Academic Editors: Joseph G. Grzywacz and Marina Everri

Received: 11 November 2025

Revised: 21 January 2026

Accepted: 2 February 2026

Published: 10 February 2026

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1. Introduction

Family-level relational processes involve both parents and the child(ren) and occur across dyadic subsystems and within family triads and polyads (Paley & Hajal, 2022). One line of research that has taken a family-level perspective is the field of coparenting, which can be defined as the relationship and teamwork between two adults regarding childrearing (McHale, 2007). In family psychology, coparenting refers broadly to how parents coordinate and support one another in raising their child, whether they are separated or not, live together or not, across diverse family structures (Feinberg, 2003). Coparenting encompasses both positive and negative dimensions: positive coparenting typically involves high levels of cooperation, support, and mutual engagement, whereas negative coparenting includes

conflict, tension, and undermining behaviors between parents. Evidence has shown that coparenting is predictive of children's adjustment in a way that goes beyond the specific effects of each parent's parenting (for a meta-analysis, see [Teubert & Pinquart, 2010](#)). Another adjacent line of research has focused on the construct of Family Alliance (FA), which refers to the degree of coordination among all family members during everyday activities such as play, meals, or discussions ([Favez et al., 2017](#); [Fivaz-Depeursinge & Corboz-Warnery, 1999](#)). Although closely related, FA and coparenting are conceptually distinct. FA encompasses coparenting insofar as effective coordination between parents constitutes a necessary foundation for achieving high levels of triadic family coordination, particularly in cooperative forms of FA. At the same time, FA extends beyond coparenting by explicitly incorporating the child as an active participant in family-level interactional processes. Accordingly, the present study focuses on FA as a family-level construct that includes, but is not reducible to, coparenting. Nevertheless, given the close conceptual and empirical overlap between these constructs, the findings should be interpreted as reflecting family-level coordination processes that include a strong coparenting component, rather than isolating the unique contribution of FA independently of coparenting. The present study also focuses on FA because it offers a robust method to investigate family-level processes (including coparenting) and utilizes observational methods, which provide a direct and dynamic view of family functioning, capturing unconscious behaviors, multi-informant perspectives, and real-time interpersonal processes within the entire family ([Kerig, 2001](#)).

The FA model was initially designed to characterize the quality of triadic interactions in the early family using an assessment of verbal and nonverbal interactive behaviors. It assumes that the capacity of the two parents and the child to coordinate together is an index of the quality of family dynamics and cohesion. This assessment is based on four theoretical interactive functions: participation (is everyone engaged in the interaction?), organization (are interactive roles respected?), focalization (is there a mutual focus and co-construction?) and affect sharing (is there empathy and do positive affects circulate?). Three types of FA have been defined as follows: cooperative, conflicted, and disordered. Cooperative FA is characterized by the participation of all family members, coordination between coparents, co-construction, and sharing of positive and authentic affects in the triad. Conflicted FA is characterized by overt or covert tensions in coparenting or marital relationships, which occur at the expense of coordination and positive affect sharing in the family. Disordered FA is characterized by the (self-)exclusion of one or several family members, which hampers the family triad in coordinating and sharing positive affects. According to the principles of family systems theory, and particularly with the structural approach ([Colapinto, 2019](#); [Minuchin, 1974](#)), cooperative FA can be considered as functional, because the parents and the child form an alliance that respects the structure of the family (the parents cooperate to create a context appropriate for the child to thrive in) as well as the emotional needs of all the individuals within the triad. Conflicted and disordered FAs on the other hand, can be considered as dysfunctional, because the family structure takes the shape of coalitions in which the child is embedded, which is due to underlying conflicts within the coparenting dyad. These theoretical premises have been confirmed by empirical data. Indeed, research has demonstrated that FA in early childhood is predictive of various psychological outcomes in infancy, toddlerhood, and preschool years, such as an earliest development of Theory of Mind, lower levels of child symptoms, and better physiological emotion regulation ([Favez et al., 2006a, 2012](#); [Rattaz et al., 2024](#)). More studies now need to be conducted to investigate if the quality of these early family dynamics exert long-lasting influences on the child until adolescence and beyond.

One recent study reported that the effects of FA measured in childhood on child outcomes might extend to adolescence. Tissot et al. (2022) investigated a longitudinal sample of families who were assessed for FA at 3, 9, and 18 months postpartum, followed by a measure of social cognition skills in children at 4.5 and 15 years. Controlling for social cognition at 4.5 years, they found that higher FA scores in infancy were related to 15-year-old adolescents' higher ability to identify emotional expressions. This study revealed that family-level processes in the mother–father–infant triad may have long-term effects on key socioemotional competences in adolescents. However, it remains unclear whether FA in infancy predicts only social cognition skills or whether its effects extend to other key aspects of adolescent psychological development and mental health, such as psychopathological symptoms, self-esteem, or life satisfaction. Indeed, whereas research in adolescence has shown that these important variables for adolescent well-being seemed to be related to the quality of family functioning measured in adolescence or even earlier during early childhood (Coffey et al., 2015; Izzo et al., 2022; Orth, 2018; van Eldik et al., 2020), the potential long-term influence of early family functioning on adolescent psychological well-being still needs to be documented.

A study investigating the links between FA and adolescent psychological functioning would allow us to address several gaps that exist in the line of research investigating the long-term effect of early family functioning on adolescent outcomes. First, while most studies in the field rely on self-reported data (by parents and/or children), studies investigating specifically how the quality of early family dynamics observed during parent–child interactions may set a path toward negative (i.e., psychopathological symptoms) or positive developmental outcomes (i.e., self-esteem, life satisfaction) remain scarce. Second, although positive aspects such as high self-esteem and life satisfaction have been shown to be essential protective factors against adverse life situations (Seligman & Csikszentmihalyi, 2000), more studies investigated how negative family functioning predicts the development of psychopathological symptoms in adolescence, while much less attention was paid to how positive family functioning may foster the development of self-esteem or life satisfaction in children. In line with this reasoning, Tissot et al.'s (2022) study showed that higher FA in infancy was especially associated with adolescents' better recognition of positive emotional expressions, thereby potentially indicating that FA in infancy might be related to positive outcomes in adolescence.

The purpose of the present study was thus to address these gaps by conducting an exploratory investigation of the links between the quality of the FA, measured at three time points during early infancy (3, 9, and 18 months), and positive (self-esteem and life satisfaction) and negative (psychopathological symptoms) outcomes reported by the children themselves at the beginning of adolescence. Moreover, we included an assessment of FA in adolescence to account for its potentially confounding role in the longitudinal associations between FA in infancy and adolescent outcomes.

Guided by prior theoretical and empirical work, we expected that higher levels of FA in infancy would be associated with lower levels of psychopathological symptoms and higher self-esteem and life satisfaction in adolescence, after accounting for FA in adolescence. However, given the extended developmental interval and the number of unmeasured factors that may influence both early FA and later outcomes, these expectations were considered exploratory and hypothesis-generating rather than confirmatory.

2. Materials and Methods

2.1. Sample Characteristics

Our research group initiated a longitudinal study in 2009 on a sample of non-referred families to investigate the associations between parental subclinical depressive symptoms,

FA in the postpartum period, and various outcomes in infants in a sample of families from the general population. When the children reached adolescence (aged 10–13), we invited the same families to participate in a follow-up study to measure adolescent psychological outcomes while controlling for the quality of family relationships. Regarding the measures in infancy, a sample of $n = 69$ non-referred mother–father–infant triads was recruited from the general population in Switzerland. Families were recruited using flyers distributed at an annual baby expo, as well as in the maternity service of the Lausanne University Hospital. Inclusion criteria included speaking French (the language of the study material, such as questionnaires) and both parents living in the same household with the child, while inclusion criteria included a severely preterm birth, the presence of a neurological impairment in the child, and a parent suffering from a severe psychopathology (to avoid confounding effects with diagnoses other than depression, but also to exclude severely depressed parents since our focus was to study the impact of non-diagnosed and subclinical forms of depression). Regarding the measures in adolescence, families were contacted for the follow-up study when children were 10–13 years old, which is described as early adolescence in international definitions (e.g., WHO) and the scientific literature (Steinberg, 2014). $N = 38$ families agreed to participate. Adolescents included 13 girls and 25 boys ($M = 12.45$; $SD = 0.60$). At T4, the mothers' ages ranged from 36 to 54 ($M = 45.05$; $SD = 3.97$), and the fathers' ages ranged from 38 to 56 ($M = 46.84$; $SD = 4.74$). Based on the two-factor Hollingshead index adapted to Switzerland (Genoud, 2011), none of the families were in the lower or lower-middle socioeconomic classes, $n = 3$ families were in the middle class (7.9%), $n = 5$ in the upper-middle class (13.2%), and $n = 28$ in the upper class (73.7%). Parents were separated or divorced at T4 in $n = 4$ families (10.5%), and the mother in one family was a widow at T4. The adolescent was a single child in 13.2% of cases, and 28.9% were youngest children, 2.6% were middle children, and 55.3% were eldest children. The language spoken during family interactions in adolescence was French for most families (English in one family and Spanish in another). Interacting in their usual language was allowed, in order to foster interactions that were as typical as possible. The child's sex, age of each parent, and socioeconomic status at 3 months postpartum were tested as sources of attrition from the original sample ($n = 69$ families). Attrition was not linked to parents' age or socioeconomic status; however, it was more frequent in families with a female child. Regarding missing data, there were missing data for the variable of socioeconomic status in $n = 2$ families. Video data of family interactions in adolescence were missing for 4 of the 38 family triads, given that one of the four separated or divorced families participated in the same way as the other families (while the other three only completed the questionnaires), and that the single-parent family was unable to participate. Regarding data of self-reported adolescent psychological outcomes, they were all missing in $n = 1$ family).

2.2. Procedure

Data collection in infancy occurred in three waves: at 3 (T1), 9 (T2), and 18 (T3) months postpartum. These time points were selected to capture key developmental milestones in infants' emerging social, communicative, and symbolic capacities (Ammaniti & Trentini, 2024). Data collection in early adolescence occurred in a fourth wave (T4), at an age range between 10- and 13-years. Most families ($n = 36$ out of 38) participated in all four waves, while two families did not participate at T3 because they had temporarily moved abroad. At each wave during infancy, family triads were invited to the laboratory to complete the Lausanne Trilogue Play (LTP; Corboz-Warnery et al., 1993; Favez et al., 2019), which was a semi-standardized observational situation. The LTP is a widely used research procedure that was specifically designed to capture the quality of triadic interactions during early childhood (Fivaz-Depeursinge & Corboz-Warnery, 1999; Marcu et al., 2016; McHale et al.,

2008; Witte et al., 2020). The procedure requires the family members to sit on chairs that are placed in an equilateral triangle, with the center of each chair positioned 80 cm from each other. The infant sits on a baby chair that can be oriented either to one parent or the other, which allows them to be in a seated or laid position (based on whether the parents lean the chair forward or backward, respectively). The LTP scenario has a four-part structure: (1) one parent plays with the infant while the other remains “simply present”, (2) parents switch roles, (3) all three play together, (4) and parents speak to each other while the infant remains “simply present”. Such a scenario allows us to observe all possible interactive configurations in the triad. The duration of each LTP part is free, but instructions mention that the global task should last around 8–10 min at 3 months, 10–12 min at 9 months, and 12–15 min at 18 months postpartum. LTPs are video recorded for subsequent coding of interactions using the Family Alliance Assessment Scales (FAAS; Favez et al., 2011).

Using the LTP across the three first waves allowed us to assess family functioning within a coherent triadic interaction framework. Importantly, the LTP has been extended and validated for use in adolescence through the LTP–Conflict Discussion Task (LTP–CDT; Romet et al., 2025a), which preserves the core structure of the original paradigm while eliciting developmentally appropriate challenges. This continuity in observational methodology ensured that we captured changes in FA using comparable constructs across two distinct developmental periods. During adolescence (T4), we contacted families by postal letter to be informed about the new study wave. Families who agreed and gave their written consent returned to the laboratory to complete the Lausanne Trilogue Play–Conflict Discussion Task (LTP–CDT), which is a semi-standardized observational situation designed to elicit conflict interactions in the mother–father–adolescent triad (Romet et al., 2025a). The procedure requires the family members to sit on chairs that are placed in an equilateral triangle, with the center of each chair positioned 120 cm from each other. First, the instructions include a moment for the parents and the adolescent to select the most recent, frequent, and “hot” conflict topic between them (e.g., screen time, homework). Once the conflictual topic is selected, the family is asked to discuss and attempt to resolve it during the discussion task, according to a four-part scenario. The LTP–CDT has a structure similar to that of the LTP, except that parts 3 and 4 are in reverse order, so that the fourth and last part occurs with all three family members trying to wrap up the conflict resolution process. The LTP–CDT lasts for 12 min, with each part lasting exactly 3 min. Family members are instructed to follow an audio signal from the control room, which indicates when the LTP–CDT starts and when to carry each transition. The order of the first two LTP–CDT parts was randomized, so that some families started in a father–adolescent (mother being asked to remain “simply present”) configuration ($n = 19$, 55.9%) and others started in a mother–adolescent (father being asked to remain “simply present”) configuration ($n = 15$, 44.1%). Previous analyses on a larger dataset of families showed that the order of the first two LTP–CDT parts was not associated with the quality of family interactions (Romet, 2024). Regarding the selection of the discussion topic, families tried to resolve conflicts about the following domains of family life: screen time ($n = 6$, 17.6%), school homework ($n = 6$, 17.6%), relationship with siblings or parental unfairness when comparing treatment toward each sibling ($n = 6$, 17.6%), chores and cleaning at home ($n = 4$, 11.8%), rule-setting and respect for rules in the family ($n = 3$, 8.8%), parent–adolescent relationship ($n = 3$, 8.8%), adolescent autonomy ($n = 2$, 5.9%), family activities ($n = 2$, 5.9%), or other topics ($n = 2$, 5.9%). Family conflict interactions were filmed using a two-camera setting, one facing the adolescent and the other focusing on the two parents. Video recordings of the LTP–CDT were later coded using the Family Conflict and Alliance Assessment Scales for adolescents (FCAAS; Romet et al., 2023, 2025a). This new task and coding system were designed to

allow for the assessment of FA in adolescence and because it was shown to be necessary in the field of family interactions with adolescents (Romet, 2024).

Following this encounter, family members had two weeks to complete online questionnaires using REDCap[®] electronic data capture tools (Harris et al., 2009). Within a year following data collection, video-feedback was offered to families who wanted to observe the video recording of their interactions with our research team, whose goal was to highlight resources available to the family (Fivaz-Depeursinge & Corboz-Warnery, 1999). The research protocol was approved by the Ethics Committee of the State of Vaud (CER-VD, Switzerland).

2.3. Measures

2.3.1. Family Alliance in Infancy

The FAAS is a validated coding instrument that allows for assessing the quality of early family interactions during the LTP. This assessment consists of nine 3-point scales that focus on specific behaviors and aspects of early family interactions: postures and gazes, inclusion of partners, role implication, co-construction, parental scaffolding, family warmth, validation of the child's emotional experience, authenticity of the expressed affects, and repairs of interactive mistakes during the play (Favez et al., 2011). Scores range from 0 (inappropriate) to 2 (appropriate), with 1 corresponding to a “moderate” score. A total score was obtained by summing the scores (range 0–18 points), which showed excellent internal consistency at all three waves combined ($\alpha = 0.89$).

In order to investigate the inter-rater reliability, one rater coded all interactions at all three waves, while a second coder double-coded 57 tapes interactions, randomly selected across the time waves ($n = 20$ at T1, $n = 19$ at T2, and $n = 18$ at T3). The double-coded tapes related to 57 different families (no family was coded twice). Inter-rater reliability was calculated on the FAAS total scores using intraclass correlation coefficient, with a two-way random model with an absolute agreement criterion and a single measure coefficient. The results showed a good inter-rater reliability (ICC = 0.81). To establish the final ratings, the two raters resolved the disagreement by consensus.

2.3.2. Family Alliance in Adolescence

Family alliance was assessed using the Family Conflict and Alliance Assessment Scales (FCAAS; Romet et al., 2023, 2025a). This instrument allows for the assessment of the quality of interactions in families with adolescents based on ten 5-point scales: (1) postures and gazes, (2) turn-taking, (3) mutual respect for coparenting roles, (4) conflict resolution, (5) affective climate, (6) mentalization, (7) role reversal, (8) coparenting support, (9) autonomy promotion, and (10) adolescent autonomy. Scores range from 1 (inappropriate behaviors) to 5 (appropriate behaviors). As reported in a recent validation study (Romet et al., 2025a), our analyses have shown that this instrument has adequate criteria, construct, and ecological validity, as well as excellent inter-rater reliability. Moreover, the validation study has shown that the FCAAS captures two related but distinguishable dimensions: one indexing global family alliance and triadic coordination, and a second indexing the functioning of the coparenting system, as reflected in scales directly assessing coordination between the two parents. This structure is consistent with the conceptualization of FA as a family-level construct that encompasses, but is not reducible to, coparenting. Accordingly, while the present study focuses on FA as the primary construct of interest, the observational assessment necessarily incorporates variance related to both triadic family coordination and coparenting. The FA score was computed by summing the scores of the scales loading on the FA factor (1, 2, 4, 5, 6, 9, and 10) and showed sufficient internal consistency ($\alpha = 0.86$ for the FA factor).

Coding Strategy and Inter-Rater Reliability

In order to investigate the inter-rater reliability, there were two new raters who had not coded families in infancy. $N = 13$ family interactions were independently double-coded (38.2%). Inter-rater reliability was estimated according to the recommendations and terminology of [Ten Hove et al. \(2022\)](#), who developed a method to calculate coefficients in various cases of incomplete or unbalanced designs (i.e., numbers of raters per subject differ in the sample). We used absolute agreement between raters, maximum likelihood estimation (MLE) of variance terms (i.e., lower and upper bound, and standard error [SE]), and the average ratings of the double-coded interactions were kept for subsequent analyses, which corresponded to using a coefficient type that includes these methodological choices (i.e., ICC [A, Khat]) ([Ten Hove et al., 2022](#)). ICCs were excellent for the FA factor (ICC = 0.91 [0.77, 0.98]; SE = 0.05).

2.3.3. Socio-Demographic Characteristics

Participants completed online questionnaires that included questions about the adolescent's age, sex, family situation (parents together or separated/divorced), level of education, profession category, and current professional situation.

2.3.4. Psychopathological Symptoms

The strengths and difficulties questionnaire (SDQ; [Goodman, 2001](#)) is a 25-item questionnaire that aims to screen for children's and adolescents' risk for psychopathology (i.e., emotional symptoms, conduct problems, hyperactivity-inattention, peer problems) as well as strengths (i.e., prosocial behavior). Each dimension relies on summing the scores of five items, and agreement with the items ranges from 0 (not true) to 2 (certainly true). Higher scores correspond to higher levels of difficulties or strengths. A score of internalizing symptoms can be computed by summing the dimensions of emotional symptoms and peer problems, and a score of externalizing symptoms can be summed on the basis of the dimensions of conduct problems and hyperactivity-inattention. The SDQ has a teacher and a parent version, but we only used the self-report version, which has been translated and validated in French ([Capron et al., 2007](#)). The internal consistency was acceptable for the internalizing score ($\alpha = 0.75$), whereas it was low for the externalizing score and the dimension of prosocial behavior ($\alpha = 0.67$ and $\alpha = 0.65$, respectively). Therefore, we retained only the internalizing score as an outcome in our analyses.

2.3.5. Self-Esteem

The Rosenberg self-esteem scale (RSES; [Rosenberg, 2015](#); [Vallieres & Vallerand, 1990](#)) is a questionnaire that measures global self-esteem using 10 items such as "I take a positive attitude toward myself" and "I certainly feel useless at times". Adolescent self-esteem was self-reported. Agreement with items ranges from 1 (strongly disagree) to 4 (strongly agree), and half of the items are reversed. The sum of item scores gives a total score ($\alpha = 0.85$), with higher scores indicating higher self-esteem.

2.3.6. Satisfaction with Life Scale

The Satisfaction with Life scale (SWLS; [Bacro et al., 2020](#); [Diener et al., 1985](#)) is a 5-item self-report that assesses the cognitive-evaluative component of subjective well-being, i.e., the individual's global life satisfaction (e.g., "I am happy with my life"). Adolescents self-reported their satisfaction with life. Responses range from 1 (totally disagree) to 5 (totally agree), and the sum of these scores gives a total score ($\alpha = 0.75$). Higher scores indicate higher life satisfaction.

2.4. Statistical Analyses

First, we computed a set of descriptive statistics and bivariate Spearman correlations for all study variables, including three control variables (i.e., adolescent age, sex, and family socioeconomic status). Second, we computed bivariate correlations among all variables under study. Because our correlation matrix included variables with ordinal or categorical scaling, we used Spearman's rho, which is a non-parametric coefficient appropriate for mixed measurement levels. Then, in order to limit the number of variables in subsequent analyses and to preserve statistical power, we operated some data reduction: for example, we computed the mean of the three FA scores in infancy (T1–T3). This approach was selected because previous studies have shown that FA is relatively stable in infancy and possibly across childhood until adolescence (Favez et al., 2006b, 2012; Fivaz-Depeursinge et al., 2021; Frascarolo et al., 2018; Tissot et al., 2022). Third, we investigated whether FA in infancy predicted adolescents' internalizing symptoms, self-esteem, and satisfaction with life. A hierarchical linear regression was performed for each of these outcomes, as the predictors were entered in blocks (block 1: adolescent sex; block 2: mean FAAS score from T1 to T3; block 3: FA factor based on the FCAAS at T4). Thus, we could control for the potential effect of adolescent sex and FA in adolescence. All statistical analyses were performed using SPSS (IBM Corp., 2022). Missing data were handled using pairwise correction, which uses all available data for each analysis excluding only specific cases involving missing values (Newman, 2014).

3. Results

3.1. Descriptive Statistics and Bivariate Correlations

Descriptive statistics and Spearman correlations between all study variables are presented in Table 1. Several significant positive correlations were found between FA at 3, 9, and 18 months postpartum. FA in adolescence was significantly correlated with FA at 3 months postpartum and, even more strongly, with FA at 18 months postpartum. FA at 9 months, however, did not show significant correlations with FA at 18 months and in adolescence. Concerning the links between FA and outcomes, higher FA scores in adolescence were associated with greater internalizing symptoms and higher FA at 3 months was linked to higher satisfaction with life in adolescence. Concerning the links between outcome variables, higher self-esteem was associated with higher satisfaction with life. Regarding the control variables, only adolescent sex was significantly related to FA or adolescent outcomes: FA scores at 18 months were greater in families of boys, while adolescent boys also reported greater satisfaction with life and higher self-esteem.

Table 1. Spearman correlations and descriptive statistics of study variables.

Study Variables	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
1. FAAS_3m	1									
2. FAAS_9m	0.337 *	1								
3. FAAS_18m	0.379 *	0.275	1							
4. FCAAS_FA	0.363 *	0.101	0.579 **	1						
5. SDQ_intern	0.012	−0.014	−0.010	0.419 *	1					
6. RSES	−0.021	−0.068	0.044	−0.257	−0.282	1				
7. SWLS	0.385 *	0.190	0.177	−0.102	−0.077	0.536 **	1			
8. Ado age	−0.057	−0.307	0.073	0.083	0.044	0.115	0.231	1		
9. Ado sex	0.097	0.056	0.398 *	0.278	−0.067	0.420 **	0.420 **	0.117	1	
10. Family SES	−0.106	−0.021	0.194	0.189	−0.054	−0.104	−0.252	0.111	−0.073	1
Mean	12.66	11.89	12.36	26.49	4.62	30.78	21.16	12.45	0.66	82.94
SD	3.46	3.95	3.70	5.21	3.28	5.44	2.76	0.60	0.48	9.55

Note. N = 34–38. FAAS_3m = FAAS score at 3 months postpartum; FAAS_9m = FAAS score at 9 months postpartum; FAAS_18m = FAAS score at 18 months postpartum; SDQ_intern = internalizing score; RSES = Rosenberg Self-Esteem Scale; SWLS = Satisfaction with Life Scale; Ado = adolescent; Adolescent sex: 0 = girls; 1 = boys; SES = socioeconomic status. * $p < 0.05$; ** $p < 0.01$.

3.2. Hierarchical Linear Regression Analyses

As shown in Table 2, longitudinal links were observed between mean FA scores in infancy and measures of FA scores or psychological outcomes in adolescence. For the model predicting the internalizing score, the models and predictors at steps 1 (adolescent sex) and 2 (FA in infancy) were non-significant. Adding FA in adolescence at step 3 explained a significant proportion of the variance, although the whole model did not explain a significant part of the variance. FA in adolescence was positively associated with internalizing scores, indicating that better FA scores were associated with more internalizing symptoms.

Table 2. Hierarchical linear regression models predicting psychological outcomes in adolescents.

Variable	Internalizing Score				Self-Esteem				Satisfaction with Life			
	B	β	R^2	ΔR^2	B	β	R^2	ΔR^2	B	β	R^2	ΔR^2
Step 1			0.00	0.00			0.17 *	0.17 *			0.21 **	0.21 **
Ado sex	−0.23	−0.03			4.68 *	0.41 *			2.64 **	0.46 **		
Step 2			0.00	0.00			0.19 *	0.02			0.25 *	0.04
Ado sex	−0.14	−0.02			5.03 *	0.45 *			2.39 *	0.42 *		
FA_infancy	−0.07	−0.06			−0.27	−0.14			0.19	0.19		
Step 3			0.16	0.16 *			0.34 **	0.15 *			0.43 ***	0.19 **
Ado sex	−0.82	−0.12			6.14 **	0.54 **			3.02 **	0.53 **		
FA_infancy	−0.32	−0.28			0.15	0.08			0.42 *	0.43 *		
FA_ado	0.30 *	0.47 *			−0.48 *	−0.46 *			−0.28 **	−0.52 **		

Note. N = 34–38. Ado = adolescent; adolescent sex: 0 = girls; 1 = boys; FA_infancy = mean of FA scores in infancy; FA_ado = scores at the FA factor of the FCAAS instrument (measure in adolescence). * $p < 0.05$. ** $p < 0.01$. *** $p < 0.001$.

The model predicting self-esteem was significant at step 1 (adolescent sex), so that adolescent boys reported significantly higher self-esteem. At step 2, adding FA in infancy did not significantly improve the model; however, the model remained significant, with the previously mentioned association between adolescent sex and self-esteem. At step 3, adding FA in adolescence significantly improved the model, which remained significant but with a larger part of explained variance. Better FA scores in adolescence were associated with lower self-esteem in adolescents.

For the model predicting life satisfaction in adolescents, it was highly significant at step 1. Adolescent sex significantly predicted life satisfaction, indicating that adolescent boys reported higher life satisfaction. Adding FA in infancy at step 2 did not significantly improve the model although it remained significant. Adolescent sex and life satisfaction also remained significantly associated. At step 3, adding FA in adolescence strongly improved the model, which became highly significant. Adolescent satisfaction with life was significantly predicted by all three predictors. Higher satisfaction in life was significantly more likely in boys and was significantly associated with higher FA scores in infancy and lower FA scores in adolescence.

4. Discussion

Using a longitudinal sample of family triads with preadolescents aged 10–13, this study explored the longitudinal links between FA in infancy and several psychological outcomes in adolescence, while controlling for FA in adolescence. The main finding of the present study is that average FA score in infancy was not significantly linked to adolescents' scores of internalizing symptoms or self-esteem, but was significantly associated with adolescents' scores of satisfaction with life. These findings should be interpreted within an explicitly exploratory framework. The observed associations are best viewed as hypothesis-generating, suggesting potentially meaningful links between early FA and later adjustment. However, given the observational design and the extended developmental interval, the present study does not allow conclusions about directionality, causality, or long-term effects.

4.1. Family Alliance and Adolescent Outcomes

Regarding internalizing symptoms, our results may be surprising because previous studies have generally associated higher family functioning or lower intensity of interparental conflict with lower symptomatology in children and adolescents, whether with the SDQ or other measures of psychopathological symptoms (e.g., [Hua, 2023](#); [Marshall et al., 2018](#)). However, given that these studies were cross-sectional and used questionnaires, the present study is different because it covers long-term associations between family-level processes in infancy and adolescents' psychopathological symptoms while controlling for the quality of family interactions in adolescence. The different results might stem from our methodology, as we used an observational method instead of questionnaires to measure the quality of family relationships. Another possibility is that family-level relationships in infancy may have larger implications for adolescents' socioemotional skills ([Tissot et al., 2022](#)) than on adolescent psychopathological symptoms. These smaller effects may be less evident to detect in studies with smaller sample sizes. Regarding self-esteem, the same tentative explanations can be made, as our findings did not align with previous findings, which have highlighted cross-sectional and longitudinal associations between various family variables such as the quality of the parental relationship and individuals' self-esteem ([Krauss et al., 2020](#); [Orth, 2018](#); [Shi et al., 2017](#)).

Regarding satisfaction with life, higher FA in infancy was associated with higher life satisfaction among adolescents while controlling for FA in adolescence, which is consistent with previous findings ([Izzo et al., 2022](#)). For instance, [Coffey et al. \(2015\)](#) found that infants who experienced more positive affects were more satisfied later in life. Although the study by [Coffey et al.](#) did not specifically assess triadic family relationships, it focused on a measure that might be related to FA in infancy. Indeed, infants in higher FA may experience more positive affects because FA is mostly a positive construct that revolves around the presence of coordination, positive affects sharing, and mutual support within the family ([Favez et al., 2017](#)). This is potentially why FA in infancy may be more strongly associated with positive outcomes than with negative outcomes in adolescence. It is possible that a baby's experience of shared positive feelings with both parents may constitute a resource for her ability to feel more positive emotions about her life later in adolescence. This echoes the findings of [Tissot et al. \(2022\)](#), who found that higher FA in infancy was related to the adolescent's better recognition of emotional expressions, especially positive ones. Accordingly, the present study and the findings of [Tissot et al. \(2022\)](#) suggest that an individual's capacity for well-being (e.g., tendency to feel positive emotions about their life or to recognize positive emotions in others) may be impacted by the quality of triadic family relationships in their infancy. More research is needed to explore these longitudinal associations and to investigate whether FA in infancy influences both positive and negative psychological outcomes in adolescents.

Regarding cross-sectional links in adolescence, we found a counterintuitive effect as higher-quality family interactions in adolescence were associated with higher levels of psychopathological symptoms, lower self-esteem, and lower satisfaction with life. Because FA in infancy and in adolescence were positively correlated (better interactions in infancy were associated with better interactions in adolescence). Based on the literature, one possible explanation might be that, contrary to the expected direction of influence presented in the introduction (i.e., family relationships influence child development; [Peterson, 2005](#)), child development may also influence family relationships, and there might be some mutual influences between these two variables (e.g., [Cui et al., 2007](#); [Lerner & Spanier, 1978](#); [Romet, 2024](#)). Therefore, families might react to the adolescent's diminished well-being by tightening their bonds, which may then be reflected in better family interactions ([Romet et al., 2025b](#)). This may be especially true because the families in our sample came from the

general population and presented no particular difficulties regarding family functioning or adolescent mental health. Thus, strengthening family ties might be a way for healthy families to support their adolescent child when they experience difficulties. Different results might have emerged if our sample had included families consulting mental health professionals for challenges related to family functioning or problematic symptoms or behaviors in the adolescent.

4.2. Family Alliance from Infancy to Adolescence

Correlational analyses highlighted several associations between FA assessed at different developmental stages. FA at 3 and 18 months postpartum was significantly associated with FA in adolescence, whereas FA assessed at 9 months postpartum was not. This pattern suggests that different stages of early family life may be differentially related to later family functioning, although the absence of a significant association at 9 months remains difficult to interpret. One possibility is that developmental timing influences the extent to which family-level organization is expressed and captured by observational paradigms. In particular, the stronger association observed between FA at 18 months and adolescence may reflect the fact that, by toddlerhood, increased child mobility, communicative competence, and participation in triadic interactions allow underlying family coordination patterns to be more fully expressed in ways that are comparable to later developmental periods. More broadly, these findings are consistent with the view that higher-quality family interactions in the postpartum period are a harbinger of better family functioning in adolescence, supporting the notion that family alliance exhibits meaningful continuity from infancy into later developmental stages (Fivaz-Depeursinge et al., 2021). Intercorrelations among FA assessments at 3 and 18 months and in adolescence ranged from small-to-moderate to moderate in magnitude ($r = 0.33\text{--}0.58$), which, in the context of observational assessments of complex family-level constructs across rapidly changing developmental periods, are non-trivial and indicative of continuity. At the same time, such correlations should not be interpreted as direct indicators of construct-level stability. In observational research, correlation coefficients are shaped by situational specificity, developmental changes in interactional demands, and measurement error, and thus primarily index rank-order consistency within a given assessment context rather than the persistence of family-level organization per se.

4.3. Control Variables

Regarding control variables, there were no significant associations between FA in the postpartum or adolescent periods and adolescent age or family socioeconomic status. These results suggest that the quality of family relationships may be stable and that whether families were followed up 9 or 11 years after infancy (at 18 months of age), there was no significant difference in the quality of family relationships. In addition, the absence of association between the family's socioeconomic status and quality of family relationships did not align with previous findings (Conger & Donnellan, 2007). This result, however, may be due to the homogeneous characteristics of our sample of low-risk families, which may have prevented us from detecting such an effect. In contrast to the other control variables, child sex was correlated with several variables. First, FA at 18 months postpartum was higher in families of boys than in families of girls. Such an effect aligns with some findings on FA (Tissot et al., 2015), whereas it does not align with other findings (Favez et al., 2012). This result could be due to differences in parenting (e.g., parent and infant sex interact to affect the degree of sensitivity; Schoppe-Sullivan et al., 2006); however, the role of child sex in family relationships calls for attention in future studies. Another effect of child sex was found regarding psychological outcomes, as adolescent boys reported higher self-esteem

and satisfaction with life than adolescent girls, which is in line with the literature (for meta-analyses, see [Chen et al., 2020](#); [Zuckerman et al., 2016](#)).

4.4. Strengths and Limitations

A key strength of the present study lies in the observational assessment of family alliance during infancy. By relying on trained coders rather than self-report, this approach reduces concerns about shared method variance and reporter bias when examining long-term associations with adolescent self-reported outcomes. At the same time, this strategy necessarily captures family functioning within a relatively bounded and structured interactional context. As such, it compresses a complex, dynamic family-level construct into a situational observation, which may not fully reflect its expression across contexts or over time. These features of the assessment strategy have important implications for how family-level continuity and long-run prediction should be interpreted.

This study has several limitations. The first is the sample size, which was small. This can be explained by the fact that high attrition scores are expected in a 10-year follow-up, especially since FA assessment requires the simultaneous presence of both parents. Future studies should attempt to include more families in infancy to compensate for attrition scores in follow-ups, so that more statistical power may allow to properly reveal the significance of smaller size effects. Moreover, larger sample sizes could allow for the investigation of more complex pathways (e.g., mediation), and as well control for other confounding variables such as the adolescent's temperament, reported or observed functioning of the coparenting relationship, and parents' marital satisfaction. Indeed, such variables may interact with the associations tested in our analyses. A second limitation might be that our sample mostly included families from middle-upper and upper socioeconomic classes and from the general population (i.e., non-referred families); however, it is preferable for such small samples to be homogeneous because it is difficult to assess the influence of heterogeneity in small sample sizes. Therefore, caution is required when interpreting our results because they may not be generalized to all families. As a next step, longitudinal investigations similar to those reported in our study should be extended to low-income or referred families. Third, because our sample includes only early adolescents (ages 10–13), the findings may not generalize to the entire adolescent period, and future studies should explore middle and late adolescence. Fourth, the low internal consistency of the scores of externalizing symptoms and prosocial behaviors of the adolescent did not allow us to include this outcome in the analyses. Therefore, our account of psychopathological symptoms is only partially completed as it is limited to adolescents' internalizing scores, and future studies should extend our findings to externalizing symptoms.

5. Conclusions

The present study explored 10-year longitudinal links between FA in infancy and adolescent psychological outcomes and found that the quality of the infant's relational environment was linked to some developmental outcomes in their adolescence. Our results also suggest that the quality of family relationships might be stable from infancy to adolescence. Adopting an explicitly exploratory framework does not diminish the contribution of the present findings. On the contrary, by systematically examining longitudinal associations between FA in infancy and adolescent outcomes across multiple developmental time points, this study provides an empirical foundation for future preregistered and confirmatory research. Moreover, additional follow-ups may be of interest to determine whether the effect of FA in infancy may persist later in adolescence and emerging adulthood. The clinical implications of our findings are that promoting good-enough relationships in the early triad and supporting coparents in the postpartum period might have long-term

implications. It also stresses the potential benefits for clinicians to include both parents in early interventions, whereas most intervention models in infancy and toddlerhood focus on the mother–child dyadic relationship. This knowledge may be particularly relevant in hospital services where health professionals work with infants and their families. This study provides limited but additional support for the long-term effects of the family environment on some aspects of an individual’s psychological development. More broadly, our results highlight the value of adopting a systemic, triadic perspective in early clinical work and suggest that strengthening family collaboration may have ripple effects that extend into adolescence. Finally, it should be stated once again that the present findings should be viewed as provocative rather than conclusive. They offer initial empirical guidance for future studies aimed at testing the robustness, mechanisms, and developmental significance of associations between early FA and later psychosocial adjustment.

Author Contributions: M.R.: Conceptualization, data curation, formal analysis, investigation, visualization, writing—original draft. N.F.: Conceptualization, supervision, writing—review and editing. S.U.: Conceptualization, supervision, writing—review and editing. U.K.: Resources, editing. H.T.: Resources, conceptualization, project administration, supervision, writing—review and editing, investigation, formal analysis. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Institutional Review Board Statement: The study was conducted in accordance with the Declaration of Helsinki, and approved by the Ethics Committee of the State of Vaud (CER-VD; project-ID 2021-01859, approved on 25 October 2021).

Informed Consent Statement: In accordance with Swiss regulations concerning research on human subjects, parents signed an informed consent for themselves, as well as for their minor child’s participation in the study. Children received an informed consent and were asked for their consent to participate verbally.

Data Availability Statement: Data are available upon reasonable request to the corresponding author.

Acknowledgments: This work was supported by the University Psychotherapy Institute (Department of Psychiatry, Lausanne University Hospital and University of Lausanne, Lausanne, Switzerland).

Conflicts of Interest: The authors declare no conflicts of interest.

Abbreviations

The following abbreviations are used in this manuscript:

FA	Family alliance
LTP	Lausanne Trilogue Play
LTP-CDT	Lausanne Trilogue Play-Conflict Discussion Task
FAAS	Family Alliance Assessment Scales
FCAAS	Family Conflict and Alliance Assessment Scales
ICC	Intraclass correlation coefficient
SDQ	Strengths and Difficulties Questionnaire
RSES	Rosenberg Self-esteem Scale
SWLS	Satisfaction With Life Scale

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