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Tools for assessing family relationships

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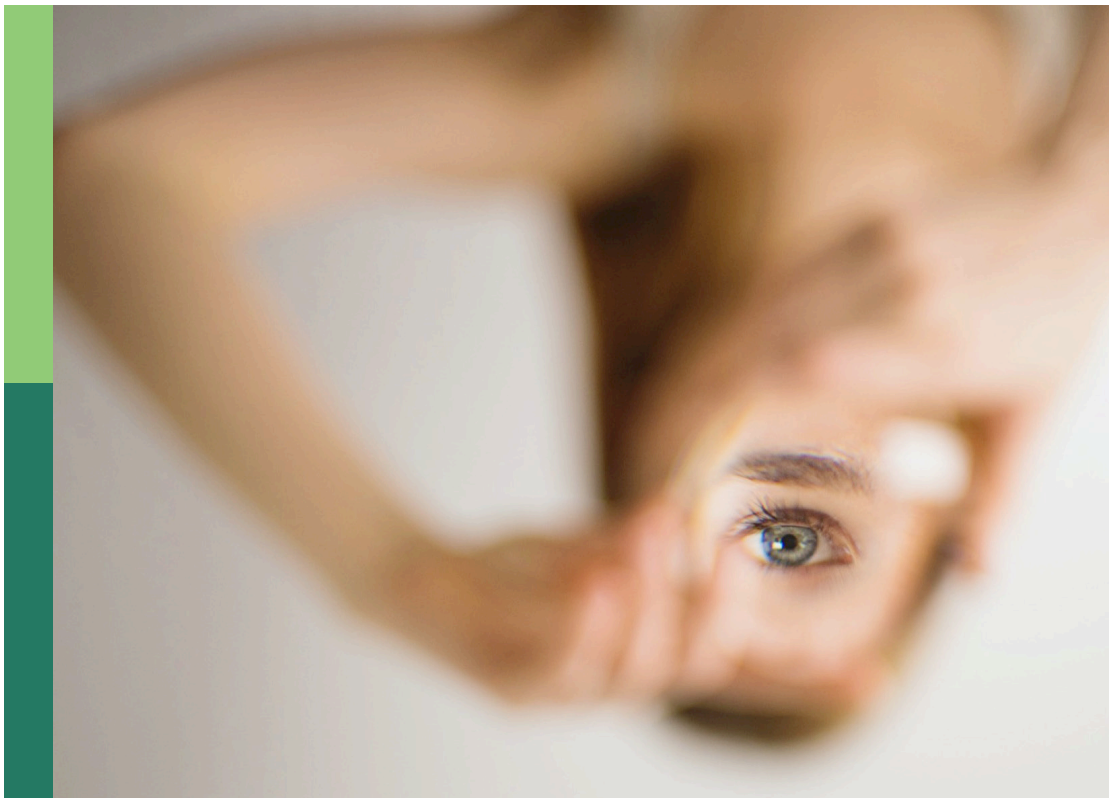

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Tools for assessing family relationships

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Editorial: Tools for assessing family relationships

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Editorial on the Research Topic
Tools for assessing family relationships

Family relationships are one of the most interesting and significant areas of study in clinical psychology. The family, as the first and most important context for human development, is composed of affective and interactive dynamics that profoundly shape individuals, influencing their socio-emotional wellbeing, mental health, and relationship skills. These influences persist across the entire lifespan.

The inherent complexity of family relationships emerges from the recognition that each family system is a dynamic entity, composed of unique individuals with distinct perceptions, needs, and personal stories. Their reciprocal interactions give rise to a relational framework that is systemic and constantly evolving. Therefore, understanding family dynamics is a highly complex undertaking that requires a rigorous and diversified methodological approach. A multidimensional perspective is indispensable, highlighting the internal representations and lived experiences of different family members, as well as the quality of the family relationships and interactions, through a variety of investigative instruments and constructs.

Our main goal in curating this Research Topic was to present some of the most recent tools for studying the multifaceted nature of family functioning from a relational perspective. A secondary objective was to elicit contributions from researchers around the world. Indeed, understanding family relationships cannot be disentangled from the cultural context in which they develop. Caregiving practices, social expectations, and the meanings attributed to affective bonds vary significantly across cultures, making it essential to adapt and validate assessment instruments within specific contexts (see contributions by Rinaldi et al.; Aschieri, Cera et al.; Velotti et al.; Shek et al.).

Another important element we held in mind was that multiple perspectives must be considered within a family system. To navigate this complexity, research on family relationships has traditionally used both quantitative and qualitative approaches and frequently incorporates mixed-method designs that combine these ways of understanding family systems. This methodological integration allows for the exploration of family dynamics from complementary angles, leading to a deeper and more nuanced picture of how families work.

Among the widely used quantitative methodologies, self-report questionnaires stand out. These instruments, completed individually by family members (grandparents, parents, or children), facilitate the collection of standardized information regarding their

internal working models, attitudes, and experiences related to family relationships. An example is the Italian validation of the CPRS-I by Rinaldi et al., which assesses parental perceptions of closeness, conflict, and dependence in the parent-child relationship. Similarly, the Parent Experience of Assessment Scale (QUEVA-G) by Aschieri, Brasili et al. focuses on parental satisfaction with the psychological assessments of their children and their relationship with the assessors. The Chinese Family Assessment Instrument (C-FAI) by Shek et al. is a self-report measure designed to evaluate adolescents' perceptions of their family's functioning. The Parental Stress Scale, studied in its Russian version by Bochaver et al., specifically examines parental stress.

Clinical interviews are an important tool for in-depth exploration of family narratives, the meanings attributed to relationships, and the history of the family system. Their flexibility and capacity to delve into specific themes enable researchers and clinicians to grasp the nature of family experiences, construct a shared narrative of relational dynamics, and uncover partially unconscious meanings and experiences. The Clinical Generational Interview (CGI), described by Tamanza and Gennari, is a structured interview that assesses family relationships based on the construct of family generativity. Through a series of questions and pictorial stimuli, the CGI reconstructs family history, couple dynamics, and parental expectations via a dialogue with the parental couple, analyzing intergenerational bonds and transmission processes. The Current Relationship Interview (CRI), whose Italian validation was examined by Velotti et al., focuses instead on romantic relationships, drawing from attachment theory to evaluate individuals' internal working models in their current intimate relationships. The CRI may be used with married or unmarried couples. The Adult Attachment Projective Picture System (AAP) by George and Wargo Aikins is a performance-based test that is administered individually; it has proven to be an efficient, rigorously validated tool for assessing internal representations of attachment. The AAP is valuable for therapists who seek to understand dysfunctional family processes and formulate therapeutic goals.

Along with self-report instruments and qualitative interviews, observational methods play a crucial role in studying family interactions. These approaches allow for the direct analysis of behavioral and relational dynamics in real time, offering insights into communication patterns, interactive sequences, and the quality of exchanges among family members. Direct observation, supported by structured coding systems, overcomes the limitations of subjective reports by capturing relational dynamics that might not be consciously reported by family members. In this regard, the Triadic Interactional Analytical Procedure (TIAP), described by Cigala et al., exemplifies an observational methodology that examines micro-interactions among family members in different configurations, revealing fundamental aspects of family functioning. This tool assesses a family system's ability to cope with developmental tasks, communicate effectively, establish clear and flexible rules, and provide support to its members. Similarly, the Marschak Interaction Method of Psychometrics (MIM-P) and the Assessment of Parent–Child Interaction (APCI), whose psychometric properties were studied by Jacobsen et al., are observational tools designed to evaluate caregiver-child relationships through structured tasks and the analysis of non-verbal and affective interactions.

Interactive graphic tools provide an additional view of family relationships, by facilitating the expression of complex and unconscious relational dynamics, especially in contexts where verbal communication may be limited or challenging. An example is the Family Life Space (FLS), described by Gennari et al.. This task actively engages all family members in the joint creation of a drawing representing their family system. The analysis of the drawing, together with the observation of interactions during the creative process, provides valuable insights into relational quality, power dynamics, feelings of belonging, and potential areas of conflict or emotional distance within the family.

In closing, we believe that the diverse articles assembled for this Research Topic demonstrate that the intricate and fascinating mosaic of family relationships can only be fully understood through a multimethod, multidimensional perspective that combines both individual and systemic elements. Such an approach illuminates both the richness and complexity of family systems and is helpful to researchers and clinicians alike.

Author contributions

MG: Writing – original draft, Writing – review & editing. SF: Writing – review & editing, Writing – original draft. AS: Writing – original draft, Writing – review & editing. GT: Writing – review & editing, Writing – original draft.

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Initial psychometric properties of the Parental Stress Scale examined using a sample of Russian mothers

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Parental stress is defined as a personal response to stressors associated with being a parent. In recent studies, parental stress has been viewed as a component of normative parenting. The purpose of this study was to collect initial evidence of the construct validity and reliability of the Russian version of the 18-item Parental Stress Scale (PSS) using a sample of mothers of Russian primary school students. The results are the first wave of a longitudinal study. Mothers (n = 900) of fourth-grade students participated in the study and filled out an online survey. The exploratory and confirmatory factor analyses of the PSS on the Russian mothers indicated two factors: parental stress and parental satisfaction, with good estimates of reliability. The PERMA-Profiler questionnaire was used to examine the convergent and divergent validity of the PSS. The results revealed significant correlations between parental stress and satisfaction and different aspects of well-being among the respondents. The initial investigation of this Russian adaptation of the PSS provides evidence of its reliability and validity. Despite the limitations and the need for further research, this version of the PSS can be recommended for use in studies on modern parenting as well as in psychological support, education, and development of programs promoting positive parent–child relationships by targeting parental needs.

KEYWORDS

parental stress, parental well-being, parent–child relationships, parenting, stress measure

1. Introduction

The construct of parental stress was introduced by Selye (1978) and has been actively researched since. Extensive research on the subject in the 1980s–1990s produced a nuanced understanding of stress (Lazarus, 1999). Currently, parental stress is defined as a personal response to stressors associated with being a parent and executing a parenting role (Abidin et al., 2022). It is an intensely negative reaction toward oneself and/or the child that occurs when a caregiver feels overwhelmed or lacking in the skills and resources required to fulfill the requirements of their parental role and has difficulties adapting to it (Rivas et al., 2021). Parental stress may manifest in all parents to varying degrees (Deater-Deckard and Scarr, 1996) and may be considered a psychological cost of being a parent (Deater-Deckard, 1998). It differs conceptually from other life stressors, such as financial problems or negative life events, although they are frequently related (Rivas et al., 2021).

Studies on parental stress have been conducted since the 1980s, initially focusing on clinical and high-risk populations and medical contexts to examine the stress experienced by parents (Abidin, 1982; Abidin and Wilfong, 1989). Gradually, in the 1990s, the view of parental stress

shifted toward normalization. Research has shown that parenting stress might be a normative process that affects every parent, although its previous definition included parents' perceptions of their children's behavior and their feelings of incompetence in parenting (Deater-Deckard and Scarr, 1996). As Crnic and Greenberg (1990) wrote, "all parents have some experience with being nagged or whined at, settling arguments between siblings, repeatedly cleaning up their children's messes, as well as a myriad of other possible everyday events of a similar nature. Although any one of these events may have little significance in and of itself, their cumulative impact over a day, several days, or longer may represent a meaningful stressor for a parent" (1628).

Crnic and Greenberg (1990) used the term "hassles" to describe the irritating demands that characterize the everyday transactions of parents with their environment. These hassles may be infrequent and situationally determined, or repetitive and stable.

Research studies have typically identified child and parental components of parental stress. The main child-related stressors are the daily routines associated with caring for children and the child's undesirable behaviors. Parent-related stress can be caused by both objective factors (e.g., reduced time for sleep and leisure) and subjective ones (e.g., the perception of oneself as an incompetent parent; Crnic and Greenberg, 1990). Family composition and transitions such as separation or incarceration have also been found to be related to higher stress (Webster-Stratton, 1990; Barbot et al., 2014; Maguire, 2015; Steele et al., 2016; Gil-Rivas et al., 2017; Louie et al., 2017). A higher level of stress is typical for parents who see their children as difficult and demanding, or who perceive themselves as ineffective parents. Contradictory results have been obtained as to whether mothers or fathers tend to be more stressed (Deater-Deckard and Scarr, 1996; Deater-Deckard, 1998; Yeh, 2002; Oelofsen and Richardson, 2006; Alzawad et al., 2021; Perez-Brena et al., 2021; Gómez-Ortiz et al., 2023).

Parental stress has been associated with poor, harsh, neglectful, or abusive parenting, and was suggested to be a predictor of negative social adjustment in children. However, individual differences and parental behavior were discovered to be mediators between parental stress and child outcomes (Deater-Deckard, 1998). Factors relating to both the parent and the child contribute to parenting stress and are affected by it in a complex transactional process with consequences for the well-being of both parties (Crnic and Ross, 2017).

Parental experience is complicated, and recent studies within the social-ecological framework have demonstrated reciprocal relationships between parental and child behavior (Rivas et al., 2021). For example, children with a diminished sense of security display anger or distress, increasing parental stress and thereby creating a chaotic family environment. This then contributes to children's behavioral problems and feelings of powerlessness, which lead to low self-esteem and high anxiety. Levels of parental stress are related to individual child differences and developmental maladjustment (Louie et al., 2017), particularly depressive symptoms, autism spectrum disorders (ASD), and attention deficit hyperactivity disorder (ADHD; Thomason et al., 2014; van Steijn et al., 2014; Mackler et al., 2015; Stone et al., 2016; Barroso et al., 2018). Parental stress could also lead to child maltreatment and adverse childhood experiences, such as witnessing or experiencing domestic violence or receiving verbal and emotional abuse (Calvano et al., 2022; Geprägs et al., 2023). Therefore, it seems appropriate to consider parental stress more as a symptom indicating various problems, such as a family's low SES, parent's psychiatric disorders, illnesses, and difficult behavior of the child, than as a separate phenomenon.

In Russia, parental stress has not been studied intensively, and the articles dedicated to it have mostly only been published in the last few years (Savenysheva et al., 2019). However, despite this recent increased interest in investigating parental stress, there are few measures available. The Parental Stress Index has been validated on a Russian sample (Vasilenko et al., 2021) but is not yet available for free. To assess parental distress, questionnaires on daily stressors (Petrash et al., 2018) and parental burnout (Efimova, 2013) can be used. Our study is aimed at addressing the lack of research on parental stress and of valid and reliable measures, specifically by validating the Parental Stress Scale (PSS; Berry and Jones, 1995).

1.1. Parental stress scale

There are several reliable tools to measure parental stress (Holly et al., 2019). Since the 1980s, the Parenting Stress Index (PSI), a 120-item self-reported measure, has been widely used in clinical and research contexts. However, the most compact and psychometrically sound survey available is the Parental Stress Scale (PSS; Berry and Jones, 1995). PSS was developed as an alternative to PSI and was based on a transactional model of stress, where parental stress was conceptualized as a bidirectional interaction between parents and children. According to Louie, "A transactional model of parenting stress was novel; it challenged the dominant view in parenting at the time that focused on the impact of parents on children" (Louie et al., 2017, p. 361). Due to the bidirectional and complicated nature of parent–child relationships, this 18-item questionnaire includes items measuring not only opportunity costs and limitations on personal resources (stress and lack of control by parents) but also rewarding aspects of parenting, such as fulfillment and personal growth, that contribute to the parenting experience.

Although several studies support the initial factor structure and reliability of PSS, there is no consensus regarding which and how many of the original 18 items should be included, nor is there a robust factor structure with satisfactory reliability. Berry and Jones (1995) collected data from a heterogeneous sample of mothers and fathers of both neurotypical, normally developing children and children receiving school-based or outpatient services for emotional and/or behavioral problems. The initial psychometric research on PSS identified four factors: Parental Rewards (Items 1, 5, 6, 7, 8, 18), Parental Stressors (Items 3, 9, 10, 11, 12, 16), Lack of Control (Items 14, 15, 16), and Parental Satisfaction (Items 13, 17, 18). Two items (16 and 18) yielded significant loadings on two of the factors, whereas two items (2 and 4) failed to load on any of the four factors. These findings "support the dichotomy of the parenting experience and the theoretical bases of the Parental Stress Scale" (Berry and Jones, 1995, p. 470). Changes to item number and wording and to the response scale were made in subsequent studies. The samples in these studies included parents of children of different ages and different health statuses, parents with health issues, stepparents, grandparents, and people from various cultural backgrounds. However, a person's background can influence how questions are understood and may have impacted the results. Louie et al. (2017) recommended changing the initial wording of Item 2 because of its repeated ambiguity. In Iran,

an adaptation of PSS given to a sample of 500 mothers of premature infants resulted in three factors: parenting stress, mother-infant turbulent interaction, and parental expectations (Habibpour et al., 2018). In Indonesia, statistical analysis of responses from 449 parents of children aged 3–12 years revealed a two-dimensional structure among 15 of the PSS items; the other three items were removed (Kumalasari et al., 2022). In Portugal, a study of 3,842 parents of 3–10-year-old children supported the original four-factor structure of PSS (Algarvio et al., 2018). Data from Korea sampled 160 parents of children with ADHD and demonstrated two sub-factors, namely parental stress and parental satisfaction, for 11 of the items; Items 2–5, 7, 8, and 11 were deleted (Park et al., 2021). In Norway, data from a sample of 1,096 parents of one-year-old children revealed a two-dimensional structure of parental stressors and a lack of rewards across 13 PSS items (Items 1, 2, 4, 15, and 18 were removed; Nærde and Sommer Hukkelberg, 2020). In the Danish version of PSS, validated on 1,110 mothers of children aged 0 to 12 months, Items 2 and 11 were eliminated. The remaining items did not make up a unidimensional scale but rather two subscales: a nine-item scale measuring parental stress and a seven-item scale measuring lack of parental satisfaction (Pontoppidan et al., 2018).

These various PSS adaptations for use in different countries are characterized by different factor structures and varying sets of items. It is therefore important to test the scale on a sample of Russian mothers. The present study examined the psychometric properties of the Russian version of PSS and used complementary exploratory and confirmatory factor analyses to investigate the underlying factor structure of the PSS items. This work follows from that of other authors engaged in developing adaptations of PSS in different countries (Habibpour et al., 2018; Nærde and Sommer Hukkelberg, 2020; Park et al., 2021; Kumalasari et al., 2022).

1.2. Validity and reliability

The validation of PSS is framed in terms of the unified validity framework articulated by Messick (1995) and Hubley and Zumbo (2011), in which validity is defined as "an overall evaluative judgment of the degree to which empirical evidence and theoretical rationales support the adequacy and appropriateness of interpretations and actions on the basis of test scores or other modes of assessment" (741). Since validity is dependent on the reliability of scores (American Educational Research Association, 2014), we examined the accuracy and consistency of the scores as well. Accordingly, this paper evaluates three types of validity evidence for PSS: (1) construct validity; (2) convergent and divergent validity; and (3) reliability. The purpose of this study was to establish initial evidence for the validity and reliability of the PSS on a sample of Russian mothers as part of an ongoing longitudinal study.

2. Materials and methods

2.1. Participants and procedure

The sample comprised 900 mothers whose children (9–10 years old) were attending the fourth grade in schools in and around Nizhny Novgorod, Russia. The mothers' ages ranged from 24 to 56 years old (Mean = 38.08, SD = 5.46). Most of the mothers had a bachelor's degree or higher (73%).

The current validation study is part of the research project "Longitudinal Study of Factors Related to School Failure." After receiving approval from HSE University's Ethics Committee (#19), the data collection took place online with participants recruited from 40 public schools. Before filling out the surveys, parents were informed about the purpose of the study and signed online consent forms.

2.2. Instruments

The participants completed the following questionnaires:

1. The Parental Stress Scale, which includes 18 items and measures the levels of parental stress (Louie et al., 2017). Eight items are reversed, describing positive parenting experience. The original paper suggested four subscales: Parental Rewards [e.g., "I enjoy spending time with my child(ren)"], Parental Stressors (e.g., "I feel overwhelmed by the responsibility of being a parent"), Lack of Control (e.g., "Having children has meant having too few choices and too little control over my life"), and Parental Satisfaction (e.g., "I am satisfied as a parent"; Berry and Jones, 1995). Two items did not relate to any scale (2 and 4). The original response scale ranged from 1 (strongly disagree) to 5 (strongly agree), with a midpoint of 3 (undecided). In this study, the intermediate option was removed. Respondents were offered a response scale from 1 (strongly disagree) to 4 (strongly agree) for greater parental response accuracy.
   As the first step of the validation process, the PSS items were translated into Russian by an expert in psychology. Two other experts in psychology and education independently checked the Russian translation. The discrepancies in wording were resolved during the experts' discussion with the translators and psychometricians involved in the project, including the authors. As the final step, the Russian translation of the items was back-translated into English independently by the first and second authors of the manuscript, both of whom have native-like fluency in English. See Appendix Table 1 for further details.
2. The PERMA-Profiler, the Russian adaptation of which measures five pillars of well-being (Seligman, 2011; Butler and Kern, 2016; Isaeva et al., 2022). The original survey includes 15 items across five subscales of well-being: Positive Emotion (e.g., "In general, how often do you feel joyful?"), Engagement (e.g., "How often do you become absorbed in what you are doing?"), Relationships (e.g., "To what extent do you receive help and support from others when you need it?"), Meaning (e.g., "In general, to what extent do you feel that what you do in your life is valuable and worthwhile?"), and Accomplishment (e.g., "How much of the time do you feel you are making progress toward accomplishing your goals?"). It includes eight additional items assessing Negative Emotion, Loneliness, and Physical Health which were removed from this study due to their weak factor loadings in the primary source and its Russian adaptation. The response scale in the original and in the Russian adaptation ranges from 0 (never) to 10 (always). However, for this study, we modified the response scale so that it ranged from 1 (never) to 5 (almost always). This decision was

made to simplify the choices for the respondents and make the responses more interpretable. We chose the PERMA-Profiler because there is evidence of its validity and reliability for the comprehensive measurement of well-being (Butler and Kern, 2016). This scale has previously been used in conjunction with PSS to develop a tool for evaluating positive parenthood in Greece (Kyriazos and Stalikas, 2019). The reliability indices on a sample of Russian mothers ($n = 900$) indicated high estimates ($\omega h = 0.76$, $\omega t = 0.95$).

2.3. Data analysis

The data analyses were conducted in R. The *likert* package was used for the descriptive statistics and summaries (Bryer and Speerschneider, 2022). To examine the factor structure, EFA analysis was performed in the *psychometric* package (Fletcher, 2022), and CFA analysis in *lavaan* (Rosseel et al., 2023). The *psych* package (Revelle, 2023) was used to run Pearson *r* correlation analysis and identify McDonald's omega reliability estimates. The missing data analyses were conducted using the *mice* (van Buuren et al., 2022) and *VIM* (Templ et al., 2022) packages.

3. Results

3.1. Missing data

The initial dataset of 1,071 responses was checked for missing data values and the proportion of mothers and fathers. The Pearson's chi-squared test generated large *p*-values, which suggested that there was no association between missing information on the PSS and PERMA-Profiler questionnaires and the observed values of parental sex or income. The results indicated that the missingness mechanism was not systematic for the variables considered, and missing values were possibly missing completely at random. After removing the responses with missing data and the responses of 68 fathers due to the small sample size, the final sample included only complete observations provided by mothers ($n = 900$).

3.2. Exploratory factor analysis

Based on the results of PSS validation studies in different countries and the lack of a reliable factor structure, we decided to reexamine the internal structure of PSS, like Nærde and Sommer Hukkelberg (2020). We randomly split the sample ($n = 900$) into equal parts and conducted Exploratory factor analysis (EFA; $n = 450$) and CFA ($n = 450$). The EFA was conducted on the original 18 items, and CFA verified the PSS structure proposed by EFA. Factor analyses contribute to validity evidence by verifying that the latent structure of the survey fits the items, and by providing a parsimonious model to establish internal consistency (reliability) and criterion and construct validity (Boateng et al., 2018).

Before conducting the EFA, the data correlations and assumptions of factorability and sphericity were checked. The inter-item correlations indicated small to medium positive and negative correlations among items (from −0.06 to 0.74). As expected, items within the same domains were more highly correlated with each other than with items from other domains. The negative correlations resulted from the reverse-scored items in the dataset. The Kaiser Meyer Olkin (KMO) factor adequacy overall estimate was 0.91, and the estimates for each item ranged from 0.86 to 0.93. This suggested that factor analysis could be performed, as KMO estimates equal to or larger than 0.60 are considered adequate for conducting factor analysis (Dziuban and Shirkey, 1974). The Bartlett test of sphericity also suggested that it was appropriate to conduct a factor analysis, $\chi^2(153) = 4858.93$, $p < 0.001$.

The factor structure, based on eigenvalues and scree plots of the principal axis factor analysis, suggested a three-factor model. A separate parallel analysis suggested two factors, which were analyzed using oblique rotation. The two-factor model showed an acceptable model fit. Therefore, the factor loadings made conceptual sense and suggested two subscales, parental stress and parental satisfaction, with eight items in each (Table 1). Since Items 3 and 4 had the lowest factor loadings, we decided not to include them in the final version of the survey.

3.3. Confirmatory factor analysis

The confirmatory factor analysis (CFA) analysis was conducted on the second half of the sample ($n = 450$) to examine the two-factor structure. The diagonally-weighted least squares (DWLS) estimator was used to estimate the model parameters due to the ordinal nature of the PSS. The CFA indicated a good model fit, $\chi^2(103) = 236.04$, $p < 0.000$, CFI = 0.99, TLI = 0.99, RMSEA = 0.05, SRMR = 0.06. The estimates of factor loadings are reported in Figure 1 and item-level statistics in Table 1. The χ^2/df coefficient resulted in 2.29.

3.4. Convergent and divergent validity

Since establishing convergent validity requires measuring the same construct using different methods and instruments (American Educational Research Association, 2014), and we did not measure parental stress/ parental satisfaction using another scale, this paper focuses on the evidence of convergent and divergent validity using PERMA-Profiler, assessing different aspects of well-being.

The correlations between all five PERMA-Profiler subscales of well-being had statistically significant positive correlations with the subscale of parental satisfaction (from 0.09 to 0.24, Table 2), which provides some evidence of convergent validity. The correlations between the subscales of Positive Emotion, Relationships, Meaning, and Accomplishment had statistically significant negative correlations with the parental stress subscale (from −0.16 to −0.22), which is evidence of divergent validity. These results provide initial evidence of convergent and divergent validity but should be interpreted with caution, since PERMA-Profiler does not measure parental stress or parental satisfaction.

3.5. Reliability

The reliability analysis was performed by estimating McDonald's omega since it is a better reliability estimate than Cronbach's alpha

TABLE 1 Reliabilities and item level estimates for the adapted PSS (n = 450).

		McDonald's omega$_h$	McDonald's omega$_t$	Mean (SD)	Item total correlation	ITC if item is dropped
	Parental stress scale	0.49	0.89			
	Parental stress	0.83	0.93			
1.	I feel stressed and depressed because of the responsibility of being a parent.			1.4 (0.81)	0.83	0.78
2.	Having children has led to limited choice and control over my life.			1.6 (0.91)	0.83	0.78
3.	It is difficult for me to combine different responsibilities because of the child (children).			1.8 (0.86)	0.79	0.72
4.	The birth of my child (children) had a negative impact on my financial well-being.			1.6 (0.83)	0.81	0.75
5.	If I had to go through this again, maybe I would decide not to have children.			1.3 (0.78)	0.76	0.69
6.	I am often embarrassed or nervous because of the behavior of my child (children).			1.8 (0.87)	0.77	0.69
7.	Having a child (children) has limited my personal time and freedom in my life.			1.9 (0.96)	0.76	0.67
8.	My child (children) is (are) the main source of stress in my life.			1.7 (0.92)	0.75	0.66
	Parental satisfaction	0.75	0.9			
9.	I like to spend time with my child (children).			3.7 (0.46)	0.77	0.69
10.	I like being a parent.			3.8 (0.42)	0.76	0.68
11.	I feel a strong attachment to my child (children).			3.7 (0.52)	0.73	0.63
12.	I think my child (my children) is (are) wonderful.			3.8 (0.47)	0.64	0.53
13.	I will do anything for my child (children), if necessary.			3.8 (0.46)	0.65	0.54
14.	I feel that we have a close, trusting relationship with my child (children).			3.5 (0.55)	0.72	0.60
15.	I am more confident and optimistic about the future because I have a child (children).			3.6 (0.61)	0.70	0.57
16.	I am happy with myself as a parent.			3.4 (0.64)	0.66	0.50

(Deng and Chan, 2017). The final model of the adapted PSS survey consisted of two subscales of parental stress and parental satisfaction. The reliability indices across two scales were high: parental stress ($\omega_h = 0.83$, $\omega_t = 0.93$) and parental satisfaction ($\omega_h = 0.75$, $\omega_t = 0.9$). The whole scale resulted in a hierarchical omega of 0.49, which suggests that it should consist of two distinct factors.

4. Discussion

This paper reports on the initial psychometric properties of the Russian adaptation of PSS, which includes 16 items and two scales. There has previously been no reliable, convenient, and short instrument with which to assess levels of parental stress in the Russian population, so this tool could potentially fill this ga PSS can be used for research in the areas of developmental, family, clinical, and educational psychology as part of the process of designing prevention programs and psychological counseling for parents.

The data analysis of the Russian version of PSS provided evidence of acceptable reliability and convergent and divergent validity. It also showed this adaptation to include two factors. This result confirms the unstable factor structure of the questionnaire and corresponds with the results assessing PSS adaptations in different countries, in which either two (Pontoppidan et al., 2018; Nærde and Sommer Hukkelberg, 2020; Park et al., 2021; Kumalasari et al., 2022), three (Habibpour et al., 2018), or four (Algarvio et al., 2018) factors were obtained. The small yet significant associations between the PSS and PERMA-Profiler scales support the conceptual closeness, but not the similarity, of their constructs. This finding is important due to the need for more specific instruments to measure parenting experiences, rather than a general, multidimensional sense of well-being.

Forty years ago, the suggested psychological intervention goals for optimizing parental stress focused on stress reduction for parents with a high level of anxiety and stress augmentation for parents with low levels of stress, in order to increase sensitivity and commitment toward their children (Abidin, 1982). Later, parental stress was perceived as a uniquely negative characteristic, although normative. As a result, practitioners started developing diverse ways to help parents cope with it.

Different protective factors against parental stress have been discovered in studies, such as family values, social support within the family (Miranda et al., 2019; Lo et al., 2023), and co-parenting alliances (Delvecchio et al., 2015). Parental stress reduction is now considered a common and relevant goal of preventive and

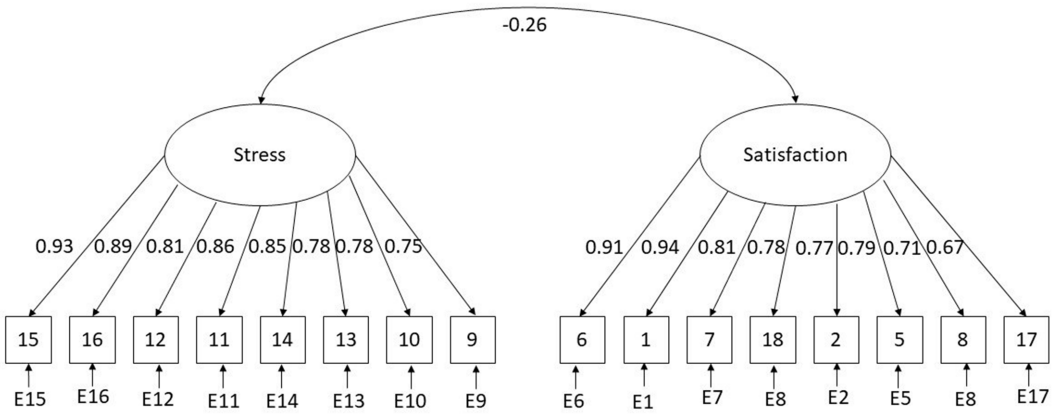

FIGURE 1
The final two-factor model of the Adapted PSS ($n = 450$).

TABLE 2 Correlations among Subscales of PERMA-Profiler and PSS ($n = 900$).

	Positive emotion	Engagement	Relationships	Meaning	Accomplishment	Stress	Satisfaction
Positive emotion	1						
Engagement	0.59***	1					
Relationships	0.62***	0.50***	1				
Meaning	0.63***	0.52***	0.69***	1			
Accomplishment	0.61***	0.56***	0.60***	0.77***	1		
Stress	−0.16***	−0.05	−0.18***	−0.22***	−0.16***	1	
Satisfaction	0.15***	0.09**	0.19***	0.24***	0.18***	−0.09**	1
Mean (SD)	4.3 (0.52)	4.0 (0.6)	4.28 (0.64)	4.4 (0.60)	4.28 (0.56)	1.61 (0.67)	3.67 (0.42)

***$p < 0.001$.
**$p < 0.01$.

rehabilitative parenting programs (van Steijn et al., 2014; Rivas et al., 2021; Bauch et al., 2022; Nurlaila et al., 2023). Different informational campaigns, psychological programs, and recommendations have been developed to help parents understand and deal with their own stress and that of their children. They are aimed at anger management, communication skills, awareness, time management, and other skills. The study of factors that contribute to and prevent parental stress in Russian parents is still in an early stage, although it is an important and promising area of research. In this way, our adapted PSS opens opportunities for expanding knowledge in this area.

While this study presents a short yet psychometrically sound instrument, it has some limitations. These included the homogeneity of the sample, due to the similarity of the children's ages and only mothers' participation; the limited set of instruments; and the collection of data in only one region of Russia. To expand the knowledge of parental stress in Russian families, further research is needed to analyze the convergent and divergent validity using more instruments and with a more diverse sample of parents of younger and older children, mothers and fathers, and people from multiple regions. In addition, future validity studies should examine intended and unintended personal and social consequences of score use and interpretation of the adapted PSS (Hubley and Zumbo, 2011). Also, given the unstable factor structure of PSS across validation studies, future work should examine parental response processes, focusing on item interpretations, testing settings and time, cultural and personal values, and other possible extraneous variables contributing to the parental responses to PSS.

5. Conclusion

This paper reports the initial psychometric properties of the Russian version of PSS. The initial results provide enough evidence to use PSS to measure the positive and negative aspects of parenting in Russia. The adapted scale includes 16 items across two scales: parental stress and parental satisfaction. This tool widely extends the opportunities for research in the field of family and developmental psychology in Russian-speaking populations. It can be used both to study the specifics of parental stress in different social contexts or regions of the same country and for cross-cultural comparisons. Hence, data obtained from PSS can be used to develop intervention programs aimed at decreasing home violence and child abuse, reducing parental stress, and increasing the quality of parent–child relationships.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

The studies involving humans were approved by Committee on Interuniversity Surveys and Ethical Assessment of Empirical Research of the HSE University. The studies were conducted in accordance with the local legislation and institutional requirements. The participants provided their written informed consent to participate in this study.

Author contributions

AB developed the main idea of the paper, wrote the first draft of the manuscript, and contributed to the manuscript revisions. DA contributed to the study's conception and the first draft of the manuscript, performed the statistical analysis and contributed to the manuscript revisions. RB collected the data, organized the database, contributed to the study's conception and design and the statistical analysis. EF contributed to the organizing the database and the statistical analysis. All authors contributed to the article and approved the submitted version.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Supplementary material

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The representation of child–parent relation: validation of the Italian version of the child–parent relationship scale (CPRS-I)

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This study proposes a psychometric validation of the Italian version of the Child–Parent Relationship Scale (CPRS) developed by Pianta in 1992. Based on attachment theory, the scale assesses parents' relationship perceptions with their own child and comprises three scales: Closeness, Conflict, and Dependency. A sample of 501 parents (188 fathers and 313 mothers) completed 30 items of the Italian version of the Child–Parent Relationship Scale (CPRS-I) online, but only 437 answered 85% of the entire protocol; hence, the analyses only focused on 437 participants. The first analysis of the original theoretical model revealed poor fit, item loadings, and internal consistency. Therefore, a follow-up analysis was conducted. Exploratory and confirmatory analyses with a split sample (EFA = 218; CFA = 219) confirmed the original three-factor structure of the Italian sample, although some items were eliminated. The validity and reliability of the Italian version of the CPRS-I were also verified by correlating the above three factors with measures of adult attachment styles and children's internalizing and externalizing behaviors. The CPRS-I showed significant correlations with all tested constructs, in line with those found by Driscoll and Pianta for the short form of the scale. Our results confirm that the CPRS-I has the same structure as the original scale; therefore, it can be a useful tool for assessing parents' perceptions of their relationship with their children. The implications for educational and clinical settings are also discussed.

KEYWORDS

child–parent relation, attachment, parent representation, Italian validation, conflict, closeness, dependency

1. Introduction

The characteristics of the affective relationships between children and their family caregivers play a central role in their development in terms of socio-emotional skills, mental health, language and cognitive skill, mentalization abilities (Repetti et al., 2002; Tamis-LeMonda et al., 2004; Fonagy et al., 2016), positive relationships with peers (Solak Arabaci and Demircioğlu, 2021), academic achievement, and school adjustment (Pianta and Steinberg, 1992; Pianta and Stuhlman, 2004; Pianta, 2019). The main framework used to analyze affective relationships is

the attachment theory (Bowlby, 1969), according to which the closeness/exploration behavioral dynamic is the first relevant experience of caregiver availability and sensitivity. Based on this experience, infants adapt their relational behavior to their caregiver responses. During development, they internalize these reciprocal behaviors and build internal working models—representations of the attachment bonds that guide the individual in constructing new affective bonds with other significant partners across their life-span, such as extra-familiar educators, teachers, romantic partners.

In the parent–child relationship, parents' behaviors are guided by an underlying caregiving behavioral system (Bowlby, 1982), including a broad array of behaviors with two main functions: providing a safe haven to support the attachment behavior of the child and providing a secure base for the child to support her/his exploration (Feeney and Woodhouse, 2016). According to Driscoll and Pianta (2011), parents' internal representations of the relationship are components of this caregiving system and contributes to shaping the quality of the relationship with the child (Chow et al., 2017); for example, in a close relationship, the parent functions as a safe haven, whereas in a dependent relationship, the parent does not promote the exploration and autonomy of the child. In this framework, Dyer et al. (2017) argued that parental representations of the relationship with the child are well-described as closeness and conflict. Driscoll and Pianta (2011) defined closeness as warmth, affection, and open communication of emotions and considered it an important predictive factor of a child's social competence and adjustment from early childhood to adolescence. Conflict is defined as behavioral opposition or overt disagreement, usually present in the parent–child bond (Maccoby, 1992). In younger children, a high level of conflict refers to discordant interactions and a lack of security in the relationship between adults and children. In adolescence and adulthood, conflict management differs according to attachment style: in secure attachment, conflict management is characterized by positive negotiation to reach a compromise; in insecure attachment, individuals engage in whining, nagging, hostile, and aggressive behavior (La Valley and Guerrero, 2012). According to Pianta's perspective (Pianta, 1992; Koomen et al., 2012), dependency also contributes to describe the affective relationships. Dependency refers to attachment behavior, such as seeking contact and attention from adult caregivers to elicit caregiving responses. A high level of dependency entails overreliance on the parent, excessive and inappropriate help-seeking, and clinging behavior toward that parent (Verschueren and Koomen, 2012); thus, limiting exploration of the world and the possibility of building social interactions with peers.

1.1. Parent–child quality assessment

The quality of the parent–child relationship can be studied by focusing on each of its many components, such as parents' sensitivity, emotional availability, and stress (Foran et al., 2020), or by focusing on the characteristics of the relationship itself, as proposed by Driscoll and Pianta (2011) with the Child–Parent Relationship Scale (CPRS). Regarding the latter category, the literature proposes self-report questionnaires and scales for parents perspective, such as the Parent–Child Interaction Questionnaire Revised (Lange et al., 2002), composed of Conflict resolution and Acceptance factors; the Parent–Child Relationship Inventory (Gerard, 1994), assessing parental attitudes toward parenting, parenting behaviors, and children; the Parent–Child Relationship Questionnaire (Furman and Giberson, 1995), assessing warmth, closeness, disciplinary warmth, power assertion, and possessiveness; the Parent-Adolescent Relationship Scale (Burke et al., 2021), composed of connectedness, shared activities, and hostility factors. Although some of these tools include factors close to or overlapping those of the CPRS (e.g., closure/connectedness and conflict/hostility), none have focused on the three CPRS factors. In addition, a search for closeness, conflict, and dependency, separately, does not reveal many assessment tools. Recently, to assess closeness, Chung et al. (2022) created three items based on the Driscoll and Pianta perspective, and Fang et al. (2021) proposed three questions on emotional and behavioral connectedness. Regarding the relational conflict, near to the tools assessing violent and nonviolent forms of conflict between parent and child, such as the Parent–Child Conflict Tactics Scale (Straus et al., 1998), the literature proposes the Parent–Child Conflict Scale of the Parental Environment Questionnaire (Elkins et al., 1997; Wong et al., 2023), assessing how each family member perceives the level of conflict in her/his relationship with the other family member, or the Conflict Resolution Styles Questionnaire (Peterson, 1990; Feeney, 2006) assessing avoidance, attack, and problem-solving in the conflict.

The tools reported here highlight the complexity of assessing the quality of parent–child relationships, which can be described from multiple perspectives. In our opinion, the CPRS allows us to focus simultaneously on three important facets of the relationship indicated by the Pianta's theory, making it possible to describe different aspects of the parent's perception of the relationship with a single tool.

1.2. The child–parent relationship scale (CPRS)

The CPRS (Pianta, 1992) is a self-report scale assessing parents' perceptions of their relationship with their child and is considered a key indicator of the quality of the parent–child relationship. The scale measures both positive and negative aspects of the parent–child relationship through the closeness, conflict, and dependency dimensions. This CPRS structure was derived from the Student–Teacher Relationship Scale (STRS; Pianta, 2001), which assesses the perception of the student–teacher relationship along the same three dimensions. From a multiple-caregiver perspective, the relationship with the parent and with the teacher are certainly different, but they show some similarities that allow both to be considered attachment relationships. These relationships are different for exclusivity, duration, emotional investment, and type of caregiving behavior. However, their similarity results from the caregiver acting as a safe haven and a secure base in both cases. Moreover, the pattern of separation–reunion behavior is similar, and harmony, comfort-seeking, resistance, and avoidance are dimensional characteristics in both relationships (Verschueren and Koomen, 2012). Additionally, the student–teacher relationship can be considered an attachment bond (Valle et al., 2019, 2022), temporary "used" by the children when the parent is unavailable.

Regarding the factors assessed by the CPRS, Closeness is considered a positive aspect of the relationship and is evaluated through items, such as "If upset, my child will seek comfort from me" (Item 3) and "My child spontaneously shares information about

himself/herself" (Item 10). Conflict is considered a negative aspect of the relationship, and is assessed with items, such as "My child and I always seem to be struggling with each other" (Item 2) and "Dealing with my child drains my energy" (Item 21). Finally, dependency is considered a stressful feature of the attachment relationship, and is assessed with items, such as "My child reacts strongly to separation from me" (Item 9) and "My child is overly dependent on me" (Item 11).

In the original version devised by Pianta (1992), the CPRS-long form (CPRS-LF) is composed of 30 items, each describing a specific behavior that the child shows with the parent. The adult indicates her/his responses on a five-point Likert scale, with answer options ranging from "Definitely does not apply" to "Definitely applies."

Two validation studies of the CPRS-LF were proposed for its Turkish translation with two different samples comprising mothers and fathers. The first study involving mothers was conducted by Akgun and Yesilyaprak (2010). Using principal component analysis, the authors individuated two factors, Conflict (14 items) and Positive Relationship (10 items), with alpha values of 0.85 and 0.73 for each factor, respectively. The conflict factor consisted of 12 items belonging to the original conflict dimension plus two items belonging to the original dependence factor. The second study by Uzun and Baran (2019) investigated the internal consistency and stability of the CPRS-LF among fathers. Through an exploratory factor analysis, they derived a scale composed of 23 items organized into three factors: Positive Relationships (10 items), Incompatibility (7 items), and Conflict (6 items). Cronbach's alpha reliability coefficients were 0.76 for the positive relationships, 0.61 for incompatibility, 0.62 for conflict factors, and 0.71 for the whole instrument. This structure explained 36.8% of the total observed variance. As suggested by Escalante-Barrios et al. (2020), the two aforementioned studies by Akgun and Yesilyaprak (2010) and Uzun and Baran (2019) showed that the factorial structure of the CPRS-LF differed between the United States and Turkish cultures, as well as between mothers and fathers.

Adapting this type of assessment to different cultures was pursued more systematically using the short form of the CPRS (CPRS-SF) developed by Driscoll and Pianta (2011). The CPRS-SF comprises 15 items: seven in the closeness factor and eight in the conflict factor. Both mothers and fathers completed the CPRS-SF when their children were 54 months old and in first grade (between 6 and 7 years). The results showed that maternal and paternal ratings of both closeness and conflict were stable during the period considered and that mothers showed higher levels of closeness and conflict than fathers in both surveys. More recently, Dyer et al. (2017) confirmed the two-factor structure of the scale in a sample of non-resident fathers, showing the validity of the CPRS-SF in the US context. Simkiss et al. (2013) validated the CPRS-SF in a UK sample, confirming the two-factor structure and eliminating one item (item 4), assessing the perception of avoidance of physical contact and affection. The same result was achieved by Escalante-Barrios et al. (2020) in the Turkish version of the scale with low-income parents.

One of the most important differences between the CPRS-LF and the CPRS-SF seems to be the dependence factor, which is not included in the SF because of its low reliability (Zhang and Chen, 2010). Dependency is classically considered a relatively stable, individual trait (see Ainsworth, 1969) that is able to generate stress in the adult, thus impacting her/his caregiving behaviors, but not necessarily related to attachment security (Howard, 2010). More recently, Verschueren and Koomen (2021) proposed considering dependency as a relational construct that varies in quality across different caregiving relationships (i.e., the relationship with the mother, father, and teacher) and caregiver behaviors.

In line with this last proposal, we decided to validate the LF of the CPRS in the Italian context because we consider the dependency level showed by the child and perceived by the parent as a result of the specific caregiver–child relationship.

1.3. Parent–child quality relationship from a cultural perspective

The validation of the CPRS in Italy is consistent with the increasing interest in parent–child relationships from a cultural perspective. In the attachment framework, a large part of the literature argues for the existence of fundamental principles in cultures: all children look for an adult figure to attach themselves to (the universality hypothesis), and the adult has to respond to infant signals in order to promote safety, sense of security, and emotional support to children (the sensitivity hypothesis), thus promoting their social–emotional development (the competence hypothesis; Mesman et al., 2016). Nevertheless, some literature suggests not only that the parent–child relationship can be influenced by cultural factors, such as caregiving practices and social expectations, but that the above-cited principles are not universal because they depend on the means that specific cultures attribute to this relationship. Starting with the difference between studies in Western middle-class people and non-Western traditional people, Keller (2018) analyzed one of the most important principles of security attachment—the caregiver's sensitivity and responsiveness. In Western cultures, sensitivity is demonstrated through verbal input (taken with the child), whereas, in Eastern cultures, mothers usually prefer physical proximity. The author supposes that this difference reflects a deeper difference in caregiving behaviors, parenting representations, and beliefs. In Western cultures, the baby is considered an independent intentional agent who develops autonomy mainly in dyadic relationships within the family, whereas, in other cultures, families socialize with infants to follow the directives of caregivers in multiple caregiving contexts where different partners attend to different attachment functions. Keller (2018) denied the universality of attachment, considering care practices and the culturally determined parent–child relationship. This hypothesis underlined Trommsdorff (2006) studies—according to the author, in Western individualistic countries, development is characterized by ever-greater autonomy, whereas in Eastern collectivistic countries, development is considered the capacity to fulfill familiar roles and responsibilities.

Additionally, in the Western cultures—also considered individualistic cultures—a difference in the families is demonstrated; in Mediterranean countries, the families are named "strong-families," characterized by closer and more intense relationships and emotional bonds than the "weak families" in the US and northern Europe (Giannotta et al., 2013). This can explain the fact that dependency on the family is perceived differently in Italy than in Anglo-Saxon countries; in fact, dependency on parents is considered the normal condition of Italian children, such that autonomy from the original family is reached very late with respect to Anglo-Saxon or northern European countries

(Mancinelli et al., 2021). This is also evident in parenting; Italian mothers are more intrusive, have less autonomy with respect to English mothers, display a high level of control and protection, and show more warmth than English mothers (Raudino et al., 2013)—highlighting all cues of a dependent relationship. Despite these specificities, Western cultures aim to promote children's independence and autonomy as they grow up, unlike Eastern cultures, in which interdependence and bonds with adults and peers are promoted. In view of these remarks, we are interested in the role of dependency in Italian child–parent relationships, assuming that it emerges in the CPRS-I, as theorized for its original version.

Another culturally related question is the father's role in parent–child caregiving. In Western countries, fathers have become increasingly involved in the care of children from infancy over the past few decades; therefore, they are considered attachment figures in their own right. In addition to the functions of a safe haven and secure base, the father plays a role in the dynamic (Grossmann et al., 2002) characterized by the capacity to excite and destabilize the child during play while providing safety and security. This dynamic indicates that behaviors related to fathers' sensitivity are different from those of mothers, but research concludes that they are equally important in the construction of an attachment relationship (Cabrera, 2020; Van Bakel and Hall, 2020). This sensitivity involves a distinctive level of closeness and dependency. In a secure attachment, the father is neither too close nor too far from the child, so he can control the child during her/his autonomous play and protect her/him in case of danger. In addition, conflict is considered a fundamental characteristic of the father–child relationship. Referring to the identity theory, Dyer et al. (2017) affirmed that the perceived conflict level reflects a dissonance between the relationship characteristics and the father's expectations, that is, the performance standard that is in part culturally defined. Thus, the level of perceived conflict can be a cue for the father's sense of adequacy in his parental role.

1.4. Aims and hypotheses

This study aims to test the psychometric validity and reliability of the Italian version of the CPRS-LF (CPRS-I) using a cohort of Italian parents. Specifically, we aim to:

1. Test factorial validity (using confirmatory factor analysis (CFA) of the CPRS-LF). We hypothesize that the CPRS-I would replicate the three-factor structure of the original scale. Although the factorial structure of the Turkish validations of the CPRS-LF is different from the original, we expect the dimensions individuated by the CPRS-I to be the same as those of the original scale. Turkey seems to have characteristics of both individualistic and collectivistic cultures (Escalante-Barrios et al., 2020), whereas Italy is considered an individualistic culture (Mancinelli et al., 2021) similar to the US, thus assuming the same scale structure.
2. Explore the measurement invariance of the CPRS-I regarding parent's and daughters'/sons' sex by employing multigroup confirmatory factor analysis.
3. Test the assessment's reliability (through internal consistency) and concurrent and convergent validity (through Pearson's correlation) by examining associations between the CPRS-I and parents' attachment style (assessed by the Attachment Style Questionnaire, ASQ) and daughters'/sons' behavioral problems (assessed by the Child Behavioral Check List, CBCL). In light of the link between attachment and parent–child relationship quality and caregiving and between attachment style and family functioning (López-de-la-Nieta et al., 2021), we hypothesize a correlation between the CPRS-I and the parent's attachment style; more specifically, we hypothesize positive correlations between conflict and dependency, and insecure attachment styles (discomfort with closeness, need for approval, preoccupation with relationships and relationships as secondary ASQ dimensions) and a negative correlation between closeness and the discomfort with closeness ASQ dimensions.

Moreover, we hypothesize that closeness negatively correlates with children's behavioral problems, and that conflict and dependency are positively correlated with children's behavioral problems, as found by Driscoll and Pianta (2011).

2. Materials and methods

2.1. Participants

In total, 505 Italian parents of school-aged children and adolescents (6–18 years) participated in the study: 188 (37%) were fathers, and 313 (62%) were mothers (4 answers are missed). The age range of the patients was 32–74 years. A total of 485 participants (96.04%) were biological parents of their children, and 13 (2.57%) were adoptive parents. Moreover, 261 (51.68%) participating parents declared having a son, and 242 (47.92%) declared having a daughter. 68 (13.46%) parents did not complete the questionnaire and were excluded from the analysis. The final sample consisted of 437 participants.

The characteristics of the participants are shown in the table below (Table 1).

2.2. Measures

2.2.1. Sociodemographic information

All participants were asked to provide sociodemographic information, such as sex, year of birth, education level, marital status, employment status, and residence type. The inclusion criteria were legal age (i.e., over 18 years in Italy) and having at least one child between the ages of 6 and 18 years.

2.2.2. Adult attachment style

The adult attachment style was assessed by the ASQ (Feeney et al., 1994) in the Italian version of Fossati et al. (2003, 2007). The ASQ is a 40-item self-administered questionnaire designed to measure the five dimensions of adult attachment on a 6-point scale, ranging from 1 (totally disagree) to 6 (totally agree). The five dimensions of attachment with the corresponding attachment styles (as indicated by López-de-la-Nieta et al., 2021) included: Confidence (8 items; range 8–48; $\alpha = 0.69$), corresponding to the secure attachment; Discomfort with

TABLE 1 Demographic information.

		Number (percentage)
Employment status	Employment status	445 (88.12%)
	Unemployed	17 (3.36%)
	Housewives	29 (5.74%)
	Retired	10 (1.98%)
Marital status	Married	413 (81.78%)
	Single	42 (8.31%)
	Divorced	45 (8.91%)
	Widowed	1 (0.19%)
Cohabitation	Live with the spouse and child/children	453 (89.70%)
	Live with the child/children	37 (7.32%)
	Live alone	2 (0.39%)
	Live only with the partner	2 (0.39%)
	Live with relatives other than partner and child/children	2 (0.39%)
Educational level	Education lower than a high school diploma	271 (53.66%)
	High-school diploma	145 (28.71%)
	University degree	39 (7.72%)
	Post-graduate	271 (53.66%)

Closeness (10 items; range 10–60; $\alpha = 0.68$), corresponding to the avoidant style; Need for Approval (7 items; range 7–42; $\alpha = 0.69$), corresponding to the preoccupied style; Preoccupation with Relationships (8 items; range 8–48; $\alpha = 0.64$), corresponding to the anxious/ambivalent and preoccupied style; Relationships as Secondary (7 items; range 7–42; $\alpha = 0.73$), corresponding to the dismissing style.

2.2.3. Children's behavioral and emotional problems

Parents' perceptions of their children's emotional and behavioral problems in children aged 6–18 years were assessed using the Child Behavior Checklist (CBCL/6–18; Achenbach and Rescorla, 2001) in the Italian translation of Frigerio (2001). The CBCL 6–18 is a 113-item parent report measure designed to detect internalizing and externalizing problems among children and adolescents. It can be completed in person or online by the parents on a 3-point Likert scale (0 = "Absent," 1 = "Occurs sometimes," 2 = "Occurs often"). The score was assessed by assigning one point to each answer. The CBCL comprises eight subscales: anxiety/depression, depression, somatic complaints, social problems, thought problems, attention problems, rule-breaking behavior, and aggressive behavior. These subscales can be grouped into two higher-order factors: internalization and externalization. Scoring was obtained by summing up all the problem items from a minimum of 0 to a maximum of 226. Internalizing behaviors were calculated by summing up the anxious/depressed, depressed, and somatic complaints subscales ($\alpha = 0.90$), while externalizing behaviors were calculated by summing up the rule-breaking behavior and aggressive behavior subscales ($\alpha = 0.94$).

2.3. Procedure

Data were collected through an online survey hosted on the Qualtrics platform between March 2019 and January 2020.

The participants were administered using a protocol composed of the Italian version of the original English CPRS,[1] followed by the above-mentioned measures translated from English to Italian—by a professional translator and a psychologist with a back-translation procedure—to ensure that the meaning of each sentence or item was accurately reflected. Once the study protocol was implemented and completed, a survey link was presented to university courses at the Department of Human and Social Sciences at the University of Bergamo and the Faculty of Education at the Catholic University of the Sacred Heart of Milan. The same link was sent to the authors' personal contacts and other participants using a snowball sampling method. In addition to providing a survey link, the participants were presented with all the necessary information, including the study purpose, instructions, and survey duration, which was estimated in approximately 30 min. On the first page of the survey, participants were informed about personal data processing, and only those who provided informed consent were included in the data collection. All participants were treated in accordance with the ethical guidelines for research provided by the Declaration of Helsinki, American Psychological Association, and Italian Psychological Association. According to APA ethical standards, this study was approved by the local ethics committee of the Department of Psychology of the Catholic University of the Sacred Heart of Milan. Participants provided sociodemographic information first and then completed the CPRS-I, ASQ, and CBCL, in the same order.

2.4. Statistical analyses

First, we explored the normality of the data according to West et al. (1995), who suggested considering items whose skewness and kurtosis did not exceed |2| and |7|, respectively, as normal.

We then focused on the factorial structure of the CPRS. However, when a scale is translated into a different language and applied to a cultural context different from the original version, there may be differences in its latent structure. Therefore, we first conducted a CFA on the original model to test its fit. However, we also assessed the latent structure through exploratory analysis, followed by confirmatory analysis. We first randomly divided the sample into two subsamples. One subsample (Subsample A) was used to conduct parallel analysis and subsequent Exploratory Factor Analysis (EFA; $n = 218$). In order to aid in deciding how many factors should be retained in the study we considered the following: (1) the subjectivity of deciding how many factors to retain through exploring the screen plot, and (2) the decision rule, "eigenvalue is sgreater than one," is associated with the number of items (Greco et al., 2022). Thus, made use of Horn's method to conduct a Parallel Analysis (Horn, 1965). We then conducted an EFA, in which the Kaiser-Meyer-Olkin

1 Available at https://education.virginia.edu/research-initiatives/research-centers-labs/center-advanced-study-teaching-and-learning/castl-measures.

(KMO; which should be at least 0.50) and Bartlett's test of sphericity (which should be significant) were run to ensure that the data were suitable for the analyses (Horn, 1965). We employed the principal axis factor and promax oblique rotation because theoretical reasons indicate that the CPRS factors are related. Initially, all 30 CPRS items were included in the EFA. Items showing loadings <0.32, items showing loadings >0.32 on more than one factor, and items whose secondary loading was higher than half the primary loading were eliminated in a stepwise fashion (Tabachnick and Fidell, 2001), whereas those that did not were retained. Furthermore, we focused on communality to verify the item's quality (items with communality higher than 0.25 were retained).

Once a satisfactory factor structure was reached, CFA was conducted on the second subsample (subsample B, $n = 219$). We adopted a Maximum Likelihood estimator and relied on the following indices to test the fit of the CFA models: chi-square test statistics, root-mean-square error of approximation (RMSEA), and standardized root-mean-square residual (SRMR). Further, in cases where the RMSEA of the null model was >0.158, we also reported the Comparative Fit Index (CFI) and Tucker-Lewis Index (TLI) as null RMSEA <0.158 makes the CFI and TLI non-interpretable (Kenny et al., 2015). RMSEA and SRMR ≤0.08, CFI and TLI ≥0.90 and non-significant χ^2 were interpreted as a reasonable fit.

Multigroup CFA was conducted on the entire dataset to test for sex invariance (both parents and children). Three different models were obtained and compared: (i) configural invariance, where the factor structure was assumed to be the same across groups; (ii) metric invariance, where loadings were also assumed to be the same across groups; and (iii) scalar invariance, where, in addition to the previous intercepts, were also assumed to be the same. We concluded that the tool was sex invariant when the changes in RMSEA were ≤ 0.015, ≤ 0.030 for SRMR, and for those cases where we also reported the CFI and TLI, their changes were ≤ 0.010 (Cheung and Rensvold, 2002; Chen, 2007).

In addition, we explored the reliability and validity of the entire dataset. Cronbach's α and McDonald's α.60 were deemed indicative of acceptable internal consistency (Nunnally and Bernstein, 1994). Validity was tested using Pearson's correlations between CPRS scores and both CBCL and ASQ scores. Finally, we explored the effect of sex (both parents and children) on CPRS scores using a MANOVA.

Parallel, correlation, and internal consistency analyses were conducted using Jamovi version 1.6 (The Jamovi Project, Sydney, Australia). Descriptive statistics, EFA, and MANOVA were performed using SPSS version 27 (IBM Corp., Armonk, N.Y., United States). Confirmatory Factor Analysis (CFA) and Measurement Invariance were conducted in R version 4.0.3 (R Core Team, 2020) and R studio (version 1.3.1093; RStudio Team, 2020 using the R Package Lavaan; Rosseel, 2012).

3. Results

3.1. Preliminary analyses

The average scores of responses to the CPRS items ranged from 1.86 to 4.70 (Sdmin = 1.10; Sdmax = 1.94). None of the items was distributed non-normally ($Skewness_{min} = 0.015$, $Skewness_{max} = 1.97$; $Kurtosis_{min} = 0.002$, $Kurtosis_{max} = 3.22$).

3.2. Confirmatory factor analysis of the original model

CFA of the entire dataset, assuming the original model, showed a satisfactory fit, $\chi^2(296) = 723.26$, $p < 0.001$, RMSEA = 0.057, SRMR = 0.068. The CFI and TLI were not reported as null models (RMSEA < 0.158). However, there were items with non-significant loadings, several had low loadings, and only the factor "Conflict" showed satisfactory reliability (Table 2). Therefore, we tested a revised version of CPRS.

3.3. Factor structure of the revised CPRS scale

Data from Subsample A—including all 30 items–were used to perform Parallel Analysis and an EFA. Parallel Analysis suggested a three-factor solution (Figure 1). Concerning EFA, Bartlett's test of

TABLE 2 Items significance and loadings of the original CPRS model.

Item	*p*	Loadings
Closeness (α=0.60, ω =0.62)		
CPRS_29	–	0.71
CPRS_01	0.15	0.08
CPRS_03	<0.01	0.43
CPRS_05	0.96	0.00
CPRS_08	<0.01	0.20
CPRS_10	<0.01	0.64
CPRS_13	<0.01	0.17
CPRS_16	<0.01	0.52
CPRS_22	0.12	0.09
CPRS_30	<0.01	0.48
Conflict (α=0.82, ω =0.82)		
CPRS_02	<0.01	0.53
CPRS_12	<0.01	0.58
CPRS_14	<0.01	0.59
CPRS_17	<0.01	0.50
CPRS_18	<0.01	0.38
CPRS_19	<0.01	0.42
CPRS_21	<0.01	0.58
CPRS_23	<0.01	0.49
CPRS_24	<0.01	0.56
CPRS_25	<0.01	0.62
CPRS_27	<0.01	0.44
CPRS_28	<0.01	0.60
Dependency (α=0.44, ω =0.50)		
CPRS_06	–	0.29
CPRS_09	<0.01	0.68
CPRS_11	<0.01	0.57
CPRS_26	<0.01	0.26

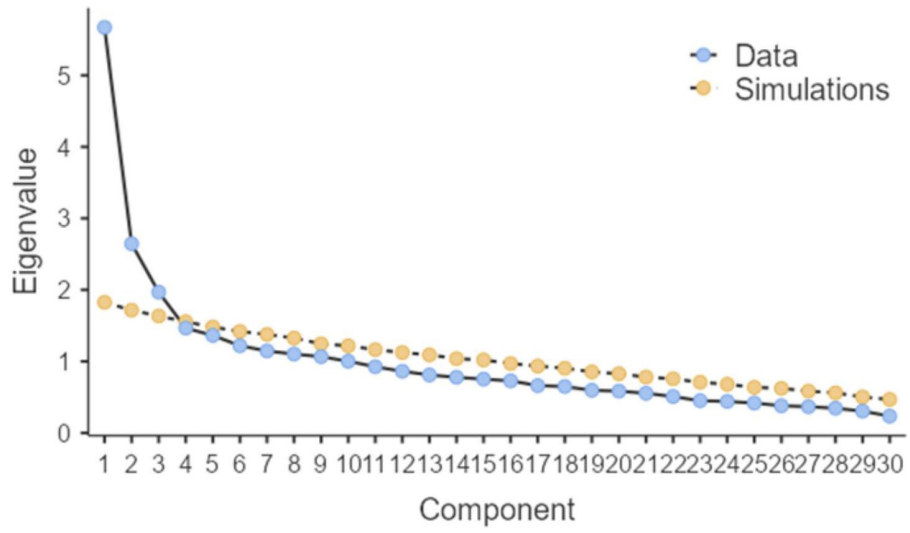

FIGURE 1
Screen plot of the parallel analysis.

sphericity, $\chi^2(435) = 1657.43$, $p < 0.001$, and KMO, 0.78, indicated that the data were suitable for EFA. Based on the results of the Parallel Analyses, we conducted an EFA, forcing a three-factor solution. The initial pool of 30 items was reduced to 23 items after subsequent factor analyses were conducted in a stepwise manner. Two items were excluded because they showed low loadings, cross-loadings, and low communality (CPRS_01: "I share an affectionate, warm relationship with my child"; CPRS_22: "I've noticed my child copying my behavior or ways of doing things"). Two items were excluded because they showed cross-loadings (CPRS_08: "When I praise my child, he/she beams with pride"; CPRS_27: "My child whines or cries when he/she wants something from me"). One was excluded because it showed cross-loading and low communality (CPRS_05: "My child values his/her relationship with me"), one because showed low loading and communality (CPRS_13: "My child tries to please me"), and one because showed low communality (CPRS_26: "I often think about my child when at work"). The factor loadings of the three-factor exploratory measurement model for the CPRS items are presented in Table 2. The first factor explained 17.32% of the variance and included 14 items measuring conflict between parents and children. The second factor explained 7.69% of the variance and included five items measuring closeness between parents and children. The last factor explained 6.71% of the variance and included four items measuring dependence. Hence, the model explained 31.72% of the variance. As reported in Table 2, none of the items showed loadings <0.32.

A CFA was conducted on subsample B based on the EFA loadings and showed a good fit, $\chi^2(227) = 433.15$, $p < 0.001$, RMSEA = 0.064, SRMR = 0.069. The CFI and TLI were not reported as null models RMSEA < 0.158. The item loadings for the CFA are reported in Table 3.

3.4. Reliability, measurement invariance, validity, and relationship with outcome variables

The following analyses were conducted on the entire sample. Internal consistency was good for conflict ($\alpha = 0.83$, $\omega = 0.84$) and closeness ($\alpha = 0.68$, $\omega = 0.69$), and acceptable for dependency ($\alpha = 0.62$, $\omega = 0.63$). Multigroup CFA showed that the model had scalar invariance for both parents' and children's sex. Indeed, changes in RMSEA never exceeded 0.003, SRMR never exceeded 0.012, and the BICs of the more parsimonious model (i.e., scalar invariance) were always lower than those of the other models (i.e., metric and configural invariance; Table 4).

To test validity, we calculated the CPRS factor scores as means, whereas the factor scores of the CBCL and AQS were calculated as sums. Table 5 shows the correlations between the CPRS, CBCL, and AQS for the entire sample without differentiating by sex, whereas Table 6 shows the correlations separately for mothers and fathers. The correlational pattern indicated good validity of the CPRS.

Finally, we conducted a MANOVA with the CPRS scores for Closeness, Conflict, and Dependency as the dependent variables, and parents' and children's sex, as well as their interaction, as the independent variables. At the multivariate level, the effect of parental sex was significant, Pillai's $F(3, 431) = 3.13$, $p < 0.05$, $\eta_p^2 = 0.02$, whereas children's sex, Pillai's $F(3, 431) = 0.39$, $p = 0.76$, $\eta_p^2 = 0.00$, and the interaction effect, Pillai's $F(3, 431) = 0.81$, $p = 0.49$, $\eta_p^2 = 0.00$, were not significant. At the univariate level, considering that the assumption of homoscedasticity was not respected, we used Welch's F. Only significant results concerned the relationship between parents' sex and factor Dependency, Welch's $F(1, 414.43) = 7.20$, $p < 0.01$, Hedge's $g = -0.25$. Mothers ($M = 2.54$, $SD = 1.21$) reported lower scores than that of fathers ($M = 2.83$, $SD = 1.04$).

4. Discussion

The first aim of this study was to test the factorial validity of the Italian version of the Child–Parent Relationship Scale in a cohort of Italian parents. Second, we aimed to explore the measurement invariance of the scale regarding parents' and children's sex. Finally, we investigated the scale's reliability and concurrent and convergent

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TABLE 3 Factor loadings from the EFA and CFA.

	Subsample A – EFA			Subsample B – CFA
	Conflict	Closeness	Dependency	
Loadings				
CPRS_14	**0.67**	0.09	−0.03	0.59*
CPRS_12	**0.65**	0.07	0.08	0.57*
CPRS_02	**0.61**	0.04	−0.11	0.56*
CPRS_23	**0.58**	0.05	0.02	0.40*
CPRS_25	**0.57**	−0.24	0.00	0.59*
CPRS_24	**0.54**	−0.15	0.03	0.50*
CPRS_20	**0.52**	0.19	−0.07	0.34*
CPRS_21	**0.51**	0.00	0.02	0.62*
CPRS_07	**0.49**	−0.08	−0.02	0.52*
CPRS_28	**0.47**	−0.23	0.13	0.49*
CPRS_17	**0.46**	−0.01	0.04	0.50*
CPRS_19	**0.45**	0.03	−0.01	0.46*
CPRS_04	**0.45**	0.01	−0.07	0.55*
CPRS_06	**0.34**	0.11	0.15	0.37*
CPRS_10	0.20	**0.70**	−0.09	0.64*
CPRS_29	−0.01	**0.66**	−0.02	0.71*
CPRS_03	0.06	**0.51**	0.14	0.42*
CPRS_30	0.00	**0.49**	−0.03	0.47*
CPRS_16	−0.09	**0.40**	0.12	0.61*
CPRS_11	−0.10	0.01	**0.69**	0.55*
CPRS_09	−0.01	0.11	**0.65**	0.58*
CPRS_18	0.13	0.02	**0.52**	0.47*
CPRS_15	−0.03	−0.08	**0.51**	0.40*

*$p < 0.001$. Bold items indicate factor membership.

TABLE 4 Multigroup CFA for children's and parents' gender measurement invariance testing.

		CHISQ	DF	RMSEA	ΔRMSEA	SRMR	ΔSRMR	BIC
Child Gender	Configural	817.880	454.000	0.061		0.068		37613.540
	Metric	849.575	474.000	0.060	0.000	0.074	0.006	37523.640
	Scalar	892.589	494.000	0.061	0.001	0.075	0.001	37445.050
Parent gender	Configural	832.183	454.000	0.062		0.070		37505.110
	Metric	895.039	474.000	0.064	0.002	0.083	0.012	37446.370
	Scalar	977.533	494.000	0.067	0.003	0.086	0.003	37407.270

Limits: ΔRMSEA 0.015, ΔSRMR 0.030. Δs are calculated as absolute difference.

validity by examining the associations of the CPRS-I with parents' attachment styles and daughters'/sons' behavioral problems.

Referring to the factorial structure of the CPRS-I, explorative and confirmative factor analyses confirmed the original three-factor structure: Closeness, Conflict, and Dependency. The CPRS-I comprised 23 items; we excluded seven items, five of which were part of the original closeness factor. In the CPRS-I, four of the five items that constitute the closeness scale refer to the partners' feelings (the last one regards the sharing of information by the child); the sense of closeness in our sample appears to be related to the emotional sharing in the parent–child relationship, reflecting the particularly intense emotional bonds typical of the Mediterranean "strong-families" (Giannotta et al., 2013). The excluded items of the scale have some characteristics that differ from the included items: the excluded items described the topic of the question in a more general way and required the parent to infer the children's internal states more than the included items (i.e., "My child values his/her relationship with me"; "My child tries to please me"). It seems that the Italian respondents focused their attention on items that specifically describe children's behaviors (i.e., "My child openly shares his/her feelings and experiences with me") or

TABLE 5 Correlational matrix between the CPRS, CBCL e ASQ.

	CPRS closeness		CPRS conflict		CPRS dependence		CBCL internalizing behavior		CBCL externalizing behavior		ASQ confidence		ASQ discomfort with closeness		ASQ relationships as Secondary		ASQ need for approval		ASQ preoccupation with Relationships	
Closeness	—																			
Conflict	−0.331	***	—																	
Dependence	0.011		0.302	***	—															
CBCL internalizing behavior	−0.311	***	0.412	***	0.236	***	—													
CBCL externalizing behavior	−0.327	***	0.572	***	0.201	***	0.598	***	—											
ASQ confidence	0.083		−0.178	***	−0.090		−0.141	*	−0.095		—									
ASQ discomfort with closeness	−0.146	**	0.188	***	0.207	***	0.194	**	0.142	**	−0.463	***	—							
ASQ relationships as secondary	−0.090		0.223	***	0.269	***	0.032		−0.021		−0.289	***	0.371	***	—					
ASQ need for approval	−0.131	**	0.275	***	0.209	***	0.241	***	0.117	*	−0.242	***	0.277	***	0.420	***	—			
ASQ preoccupation with relationships	−0.048		0.310	***	0.207	***	0.279	***	0.214	***	−0.250	***	0.346	***	0.262	***	0.520	***	—	

*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$.

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TABLE 6 Correlational matrix between the CPRS, CBCL e AQS separated for mothers and fathers.

	CPRS closeness	CPRS conflict	CPRS dependence	CBCL internalizing behavior	CBCL externalizing behavior	ASQ confidence	ASQ discomfort with closeness	ASQ relationships as secondary	ASQ need for approval	ASQ preoccupation with relationships
Closeness	—	**−0.29**	0.08	−0.34	**−0.26**	0.14	−0.10	0.00	−0.13	−0.05
Conflict	**−0.36**	—	**0.48**	**0.56**	**0.55**	**−0.22**	**0.26**	**0.33**	**0.28**	**0.40**
Dependence	−0.02	**0.20**	—	0.27	**0.29**	−0.09	**0.30**	**0.42**	**0.33**	**0.33**
CBCL internalizing behavior	**−0.33**	**0.40**	**0.23**	—	**0.73**	0.05	0.15	0.08	0.15	0.23
CBCL externalizing behavior	**−0.39**	**0.59**	**0.20**	**0.58**	—	−0.07	0.17	0.03	0.00	**0.21**
ASQ confidence	0.03	**−0.14**	−0.07	**−0.17**	**−0.13**	—	**−0.34**	**−0.22**	−0.12	−0.11
ASQ discomfort with closeness	**−0.17**	**0.14**	**0.16**	**0.19**	**0.15**	**−0.53**	—	**0.45**	**0.32**	**0.44**
ASQ relationships as secondary	**−0.13**	**0.16**	0.11	0.03	0.10	**−0.34**	**0.37**	—	**0.55**	**0.41**
ASQ need for approval	−0.12	**0.27**	0.11	**0.25**	**0.20**	**−0.32**	**0.25**	**0.25**	—	**0.61**
ASQ preoccupation with relationships	−0.04	**0.24**	**0.12**	**0.28**	**0.22**	**−0.36**	**0.29**	**0.16**	**0.44**	—

Values above the diagonal refer to fathers, whereas values below the diagonal refers to mother.
Bold indicate $p < 0.05$.

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their own experiences (i.e., "My interactions with my child make me feel effective and confident as a parent") that are easier to understand with respect to the excluded items. Moreover, our sample is constituted by working parents with a high level of education: it is possible that these parents are particularly attentive to their children's needs and are therefore highly able both to observe them and to reflect on their own emotions in the parental relationship.

The specificity of Mediterranean cultures is also evident in the dependency scale. Mediterranean countries can be defined as "family-oriented" countries, and the relations between parent and children are characterized by warmth, friendliness, and heightened care, with mothers showing a higher level of preoccupation compared to the Eastern cultures mothers (López-de-la-Nieta et al., 2021); moreover, in Italy, children are held closer and live with their parents for a long time (Jurado Guerrero and Naldini, 1996). Our results showed that in Italian families, dependency on parents can be considered a characteristic of the parent–child relationship, a characteristic that emerges as a factor in the CPRS-I. Moreover, this result aligned with the Verschueren and Koomen (2012, 2021) model, according to which dependence is a relational construct that plays different roles in different cultures. In the CPRS-I, we excluded one item that was originally part of the Dependence Scale: "I often think about my child when at work." In the Italian version, all other items of this scale referred to the child, whereas this is referred to the parent itself, underlying that Italian respondents evaluate the dependency level by observing children's behaviors and not one's thoughts.

Related to our second aim, we showed that the CPRS-I is invariant for the sex of both parents and children, indicating that the items assess the same factors for both mothers and fathers in relation to daughters and sons. Therefore, any differences between mothers and fathers can be attributed to actual variations in the responses to some items and not to the differential functioning of the scale; the same can be said for any differences between daughters and sons. Despite the differences between the attachment behavior and characteristics of mothers and fathers (Grossmann et al., 2002), the dimensions through which both parents evaluate the quality of their parental relationships are the same, indicating that in Italian culture, the sense of closeness, conflict, and dependency perceived by caregivers are important cues of the quality of the relationship for both mothers and fathers.

Regarding the third aim, we found interesting correlations between the CPRS-I and parents' attachment styles in the dimensions assessed using the ASQ.

The ASQ results showed that "Discomfort with Closeness" and the "Need for Approval"—both dimensions of insecure attachment styles—negatively correlated with the closeness perceived in the parent–child relationship (CPRS-I); as assumed, avoidant and anxious parents experienced a low level of closeness and warmth in the relationship with their children. Correlations differentiated for sex highlighted that two insecure attachment styles, in the "Discomfort with Closeness" and "Relationship as secondary" dimensions, negatively correlated with the closeness perceived by the fathers, whereas no correlations were found regarding the mothers. If the perception of closeness involves warmth, affection, and open communication of emotions, it is possible that these characteristics (particularly warmth and affection) are independently perceived by the mothers from their attachment style because of their pivotal role in caregiving (Mancinelli et al., 2021), whereas the father's level of involvement in child-rearing and education perception is linked to his attachment style. If Italian fathers are usually less involved in childcare than the mothers (Riem et al., 2021), and avoidant and dismissive fathers may be less involved in caregiving; thus, they perceived low levels of closeness in the relationship.

All four dimensions of insecure attachment styles assessed by the ASQ positively correlated with the conflict factor of the CPRS-I, whereas confidence (which indicates a secure style) negatively correlated with the conflict perceived by the parent. In the parent–child relationship, conflict is usually present (Maccoby, 1992) because it is part of the educational role of the adult; it is possible that confident/secure parents attribute a positive meaning to the conflict, recognize the conflict as a natural part of the relationship, and are able to manage the conflict when it appears, resulting in a low perception of the interpersonal conflict. At the same time, we can assume that parents with attachment styles characterized by avoidance and anxiety are less able to cope with conflict because of their tendency to avoid intense emotional situations or because of the high level of anxiety that the conflict elicits, so they perceive the conflict as particularly intense. Future research could combine the observation of the behavior of the two partners with the CPRS-I to verify whether it is not only the perception of conflict but also the presence of conflict itself that is different.

Finally, all four dimensions of insecure attachment styles assessed by the ASQ were positively correlated with the CPRS-I dependence factor. Dependency is defined as a developmentally inappropriate degree of overreliance and possessiveness of the child in the relationship (Koomen et al., 2012), indicating a lack of security and, consequently, difficulty in exploration. As in the case of conflict, a certain level of dependency is naturally necessary for the parent–child relationship, and parents should recognize this aspect to properly take care of the child. High levels of dependency perceived in the CPRS-I could indicate difficulty for the parent in assuming her/his caregiver role, showing anxiety about the relationship, underestimating or avoiding one's own role, which occurs in insecure attachment styles.

The correlations between the CPRS-I and the evaluation of behavioral and emotional problems in children confirmed the results found by Driscoll and Pianta (2011)—closeness perceived in the relationship negatively correlated with both internalizing and externalizing behaviors, and conflict positively correlated with these two types of behaviors. A high sense of closeness, typical of secure attachment, seemed to be a protective factor for behavioral problems (Pianta, 1999), in which children learn to express and explore their own emotions, and parents are supportive of this process; this dynamic is related to children's high levels of adaptive and social behavior (David and DiGiuseppe, 2016). In contrast, in relationships characterized by high levels of conflict, the expression and regulation of emotions can be less supported by adults so children tend to show more behavioral and emotional difficulties. As reported by Acar et al. (2019), conflict relationships negatively impact children's behavior and are positively associated with their externalizing behaviors. Moreover, using the CPRS, these authors showed that parent–child closeness and conflict moderate the associations between authoritarian parenting and children's externalizing and internalizing behaviors, respectively, confirming the important role of the parent–child relationship in behavioral problems. Finally, in our sample, dependency positively correlated with internalizing and externalizing behavioral problems—high levels of dependence seemed to indicate an anxious relationship in which the child is incapable of exploring the world and being autonomous from the parent, thus showing inappropriate behaviors.

The comparison between mothers and fathers showed that mothers consider their daughters and sons to be less dependent on them than fathers perceive them to be. Although the literature has not found significant differences between mothers and fathers in caregiving representations (Psouni, 2019), it is possible that fathers and mothers interpret children's behaviors with different degrees of dependency. In Italy, mothers are often the main caregivers who care for their children's daily needs, with fathers participating to a lesser extent. It is possible that mothers and fathers react to the same child's behavior differently, with mothers considering it as part of their daily routine and fathers evaluating it as a lack of autonomy.

4.1. Limitations and future perspectives

This study has some limitations. The first pertains to the type of task used. In fact, a self-report scale evaluating parents' perceptions of the relationship with the child cannot highlight the relational behaviors that are enacted. Moreover, children's behavioral problems were assessed by the same parent who completes the CPRS-I, and in the future, it would be interesting to add a direct observation of the relationship (see Driscoll and Pianta, 2011) and of children's behavior to verify the accuracy of subjective perception with respect to what is happening between parents and children. Moreover, the sample was not balanced in terms of sex, as most respondents (62%) were mothers (as often happens when questionnaires regard parenting). Another limitation concerns snowball sampling, which started from universities and involved mostly two parent households. In light of the important role of culture and family characteristics on the parent–child relationship, these aspects could reduce the generalizability of the results. In the future, studies may look into applying the CPRS-I with a more balanced and simple approach, considering parents' sex, educational level, and family characteristics. A further limitation of this study is the lack of the exploration of possible differences in the parent's perception of the relationship based on the children age. In line with previous CPRS validation studies, we used the children's age as an inclusion criterion, but in the future, exploring differences in the parents' perception of the relationship with respect to this data, would better delineate the quality of the parent–child relationship at different stages of children's development. Finally, this validation investigated the parent's perception of the relationship at a single time. In the future, scholars could carry out a longitudinal study, as done by Driscoll and Pianta (2011), for the short form of the CPRS, in order to confirm the stability of the scale in the time.

Despite the above-mentioned limitations, the CPRS-I may have relevant applications both in research and in the clinical field. The scale is simple to administer, composed of 23 items assessing the characteristics of a specific attachment relationship. In this research area, this scale may be used to assess affective relationships, complementing the attachment profiles that emerge using other tools focused on the internal working model. Therefore, a professional will be able to investigate not only the representation of attachment *per se*, but also its specific activation in the case of relationships with children, providing fundamental information to improve family relationships. In the clinical field, CPRS-I may help the therapist and patient individuate critical aspects of the affective bonds with the children and hypothesize effective modes of intervention for that specific situation. Knowing adults' perceptions of their relationship with their children allows us to highlight the motivations that direct the relational and educational behaviors of parents themselves, providing important knowledge that can be used to improve the relationship itself. In addition, the scale can be offered at different time points in the parent–child relationship, allowing the monitoring of changes over time. This could be particularly useful in the case of children with neurodevelopmental disabilities, where parents' perceptions of the child and the relationship may change quickly (for example, before and after a diagnosis), specifically about closeness, conflict, and dependence. Finally, the CPRS-I can be used as a specific tool in university training programs for future professionals, especially psychologists interested in the field of education.

5. Conclusion

In this research, we confirmed the three-factor structure of the Italian long form of the Child–Parent Relationship Scale and showed the measurement invariance of the CPRS-I regarding the sex of parents and daughters or sons. This work has contributed to individuating a validated research task that can measure the main characteristics of a specific parent–child relationship in different cultures, as Escalante-Barrios et al. (2020) pointed out, and has offered a scale that considers three core aspects of the relationship: closeness, conflict, and dependency. Moreover, this work confirmed the relationship between parents' perceptions of their relationship with their own daughters and sons and other psychological variables, such as parents' attachment style and children's behavior, highlighting the importance of the quality of the parent–child relationship for both partners involved.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

The studies involving humans were approved by Commissione Etica per la Ricerca in Psicologia CERPS, Università Cattolica del Sacro Cuore, Milano. The studies were conducted in accordance with the local legislation and institutional requirements. The participants provided their written informed consent to participate in this study.

Author contributions

AV, IC, AG, and RP contributed to conception and design of the study. TR collected the data and organized the database. AG and NP performed the statistical analysis. IC, RP, and AM supervised the research. AV wrote the first draft of the manuscript. TR and NP wrote sections of the manuscript. IC, AM, and RP contributed to manuscript revision. All authors contributed to the article and approved the submitted version.

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Publisher's note

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Cultural adaptation and validation of the Italian version of the current relationship interview

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Background: The study of romantic relationships is based on attachment theory and the Current Relationship Interview (CRI) is a powerful tool that allows the optimal investigation of attachment representations toward romantic partners. However, evidence in this field is still unsatisfactory and further research is needed. This study aims to examine the associations between the adult attachment to partner, the style of conflict resolution, and dyadic adjustment.

Methods: We administrated the Italian version of the CRI, the Dyadic Adjustment Scale (DAS), and the Rahim Organizational Conflict Inventory questionnaire - Section II (ROCI II) – to a sample of 100 heterosexual couples.

Results: Individuals with preoccupied attachment reported lower levels of dyadic adjustment and men, but not women, with preoccupied attachment reported lower levels of dyadic cohesion. Levels of dyadic adjustment reported by women/men did not vary according to their attachment types. Levels of dyadic adjustment reported by couples and by women did not vary according to the matching status of attachment types between partners. However, men in romantic relationship characterized by a mismatch between attachment types reported higher levels of consensus compared to their counterparts.

Conclusion: The Italian version of the CRI proves an useful tool to investigate processes underlying romantic relationships. The role of current attachment in these processes appears to be highly complex and its investigation might be impacted by methodological issues, calling for additional studies.

KEYWORDS

romantic attachment, dyadic adjustment, conflict resolution strategies, current relationship interview, adult attachment

Introduction

Human psychological development is strongly determined by the quality of early relationships with significant others. This is the core statement of attachment theory, elaborated by Bowlby (1962, 1980), operationalized by Ainsworth et al. (1971), and extended by Main and Goldwyn (1994). According to this perspective, the nature of the repetitive interactions between the child and their caregivers regarding the child's attachment needs gradually shapes general representations of prototypical child-caregiver interactions in the context of attachment. These heuristics, called Internal Working Models (IWMs), typically consist of expectations that will

shape the individual's behavior in contexts triggering the activation of the attachment system. IWMs include interrelated representational components referring to the significant other, to the self, and to the relationship between the two.

The traditional tool employed to assess the nature of IWMs is the Strange Situation, a well-known observational procedure that allows to evaluate children aged 12–24 months (Ainsworth et al., 1978). In adulthood, a plethora of attachment-based instruments is available, but most are thought to assess the behavioral facet of IWMs (i.e., attachment styles) rather than their representational nature. In contrast, the Adult Attachment Interview (AAI; George et al., 1985) has been indicated as the gold standard instrument that allows to identify the nature of IWMs developed in early childhood.

Adult attachment and romantic relationships

Despite IWMs being relatively sensitive to the changing quality of relations with caregivers in the first years of life, as the years go by, these become increasingly stable and eventually remain available throughout the entire life span. According to this framework, as a core component of personality, IWMs would impact a range of psychological functioning domains such as emotion regulation capacities or interpersonal functioning (Bowlby, 1969, 1973). A key life domain that is greatly impacted is romantic interpersonal functioning (Knies et al., 2021), with several authors stating that the quality of romantic relationships is rooted in the vicissitudes of early attachment experiences (Owens et al., 1995; Roisman et al., 2005; Velotti et al., 2014).

Although the question of the continuity of IWMs from childhood to adulthood is still under debate, a consensus has been reached towards the utility of investigating the topic of romantic relationships through the lens of the attachment theory (Hazan and Shaver, 1987; Crowell et al., 1999; Simpson and Rholes, 2012; Gray and Dunlop, 2019). Indeed, it has been stated that the attachment system would drive the individual to establish attachment bonds also with extra-familial significant others being typically friends (in adolescence) and romantic partners (in late adolescence and adulthood) (Berlin et al., 2008). The psychological functions of the old attachment figures (e.g., the parents) would be carried out by a new significant other (e.g., the romantic partner) who would be expected to satisfy the individual's attachment needs. Again, the implicit interpersonal knowledge regarding the ways the individual's attachment needs are framed and satisfied within this specific relationship would shape expectations towards the self, the other, and the individual's emotional experience in the relationship. Because this specific IWM – referred to the specific romantic partner – will structure the individual's behaviors in this current romantic bond it is expected to greatly impact on a wide range of outcomes related to this relationship.

The strong theoretical framework advancing the idea that attachment might be a key construct in the understanding of romantic relationships led several authors to develop research tools to investigate the topic. In line with the general trend in the field of research on attachment, most authors preferred the use of self-report questionnaires to assess romantic adult attachment styles. However, the Current Relationship Interview (CRI), a well-known tool to evaluate romantic IWM has been developed by Crowell and Owens (1996) to grasp the current attachment representations and stimulated the whole field of research (San Martini and Zavattini, 2011). Despite the soundness of the theoretical framework underlying the instrument and the spread of its use in several countries, it is noteworthy that no data have been published regarding the properties of the Italian version of the interview to date. An additional gap in the existing literature is related to the scarcity of data brought by the scientific community regarding the predictive value of romantic attachment, measured with the CRI, and some key outcome variables related to romantic relationship functioning. In particular, as better illustrated in the paragraph below, evidence is lacking regarding the capacity of romantic attachment – as measured by the Italian version of the CRI – to predict the perception of dyadic adjustment and styles of conflict resolution with the romantic partner.

Romantic attachment and relationship-related outcomes

Romantic relationship quality has a relevant impact on individuals' wellbeing. For individuals involved in an intimate relationship, such dimension assumes a central role in their life, being either a resource and/or a source of significant stress (Velotti et al., 2013; Farero et al., 2019). A plurality of terms have been used to refer to romantic relationship wellbeing including dyadic/marital adjustment (Locke and Wallace, 1959; Spanier, 1976), an umbrella term that describes the wellbeing of the relationship as an entity (Farero et al., 2019). This refers to both overall wellbeing in a relationship along with specific components (cohesion, consensus, affective expression, and satisfaction) related to the resolution of relationship difficulties (Spanier, 1976, 1979; Busby et al., 1995). The Dyadic Adjustment Scale (DAS; Spanier, 1976) is one of the most widely utilized self-report measures in clinical and research settings for measuring relationship wellbeing (Carey et al., 1993; Sabourin et al., 2005; Herrington et al., 2008; South et al., 2009). Theoretically, dyadic adjustment levels are expected to be associated with a positive, secure attachment to the partner. More precisely, these levels are expected to vary according to the impact of the individuals and their partner IWMs as well as according to the impact of the interaction between these two components (Velotti and Zavattini, 2011). Regarding this last factor, contributions highlight that beyond the quality of the attachment bond, the matching status between attachment types across the partners (i.e., being both secure, both insecure, or being mismatched), may have relevant implications for the relationship functioning (Simpson, 1990; Strauss and Morry, 2012; González-Ortega et al., 2017; Velotti et al., 2022; Cataudella et al., 2023). Empirically, few but promising pieces of research supported this perspective showing that security in attachment to partner significantly and positively predicted dyadic adjustment during the transition to parenthood (Velotti et al., 2011; Castellano et al., 2014). Of note, despite the predictive role in longitudinal studies, the cross-sectional association of security of romantic attachment as measured by the Italian version of the CRI with dyadic adjustment levels has not been tested yet.

Another central feature of romantic relationship functioning is related to the way conflicts are experienced and managed in the couple. Conflict is a natural outcome of interpersonal interactions when the parties perceive themselves as being in opposition to each other. This opposition may involve preferred outcomes, attitudes, values, and behaviors (Elsayed-Ekhouly and Buda, 1996;

Chakrabarty et al., 2002). The growing interest in research on couple conflict stimulated the development of a plurality of assessment tools. For instance, the Rahim Organizational Conflict Inventory questionnaire, initially developed for and validated in organizational contexts, has been used in research on close relationships (Hammock et al., 1990; Castellano et al., 2009). Of note, IWMs may be especially influential for how partners perceive and respond to conflict (Lin, 2003; Mikulincer and Shaver, 2005; Schudlich et al., 2013). Indeed, in couples, the different points of view of each partner can lead to the onset of friction as well as explicit conflicts that affect individual and interpersonal wellbeing (Castellano et al., 2009). There may be important differences between securely and insecurely attached individuals in their approach to managing conflict within romantic relationships. Insecure attachment has been associated with relatively less adaptive or supportive conflict tactics and behaviors (Kobak and Hazan, 1991; Cohn et al., 1992; Cowan et al., 1996; Simpson et al., 1996; Guerrero et al., 2009; Sierau and Herzberg, 2012; Ricco and Sierra, 2017). However, empirical evidence regarding the link between attachment security to partner measured with the CRI and conflict resolution strategies is still lacking. Roisman et al. (2005) observed that security levels assessed with the CRI significantly discriminated between couples showing a good relationship quality in a conflict task and couples being rated with a poor relationship quality. Also, levels of coherence of the CRI transcripts resulted to be positively and significantly associated with the dyadic capacity to solve conflict assessed through an observational measure (Haydon et al., 2012). Moreover, the security of attachment to a partner measured with the CRI has been negatively correlated with the frequency of marital disagreements over the last week (Waldinger et al., 2015). An Italian study found that insecurity predicts lower levels of adaptive conflict resolution strategies during the transition to parenthood such as the cooperative integration strategy (Castellano et al., 2014).

The present study

As briefly illustrated, despite the utility of the attachment theory in explaining romantic relationship-related processes and the uniqueness of the tool developed by Crowell and Owens (1996) – the CRI – information regarding the properties of its Italian version is lacking. In addition, the promising empirical evidence regarding the predictive role of attachment security as measured by the CRI and both dyadic adjustment and conflict resolution strategies profiles still need to be replicated and extended by additional studies. The present study aims to partially fulfil these gaps by administrating the Italian version of the CRI to a sample of adults and measuring its predictive role towards these two outcomes.

Methods

Participants and procedure

The study involved a total of 102 adult Italian heterosexual couples (50% males) with a mean age of 36.42 years (*S.D.* = 4.69). Regarding education levels, 39.4% of the sample report to have a middle and/or high school degree with the others having a university degree. Most couples were married (71.4%) and with children (84.1%). The group was drawn from a normal population and all participants were recruited through a convenience sampling technique. Specifically, the study was promoted thought university announcements, and students of psychology courses as well as colleagues of researchers were asked to promote the study in their networks of friends and family. Also, after the procedure was completed with a couple, participants were asked to promote the study in their personal networks.

Inclusion criteria were the following: (a) to be more than 18 years old; (b) to have a good understanding of Italian language; (c) to be involved in a romantic relationship for at least 1 year. Exclusion criteria were the following: (a) to suffer from an acute psychotic episode; (b) to have been severely intoxicated by substance or alcohol intake within the past 3 months; (c) to suffer from a neurological disease; (d) to have received a diagnosis of cognitive deficit.

Before the involvement of each participant in the research procedure, research's aims and scopes were briefly exposed and information on privacy and anonymity was delivered. Upon reading and approval of the informed consent, participants were asked to fill several self-report questionnaires under the supervision of a psychologist. Then, a semi-structured interview was administrated and audiotaped. No compensation was given. All procedures complied with the official directions established by the American Psychological Association.

Measures

Participants completed an initial survey (information sheet), created specially for the purpose of the study, collecting demographic information such as age, gender, educational levels and profession, marital status, and family situation.

Afterward, the nature of romantic attachment representations was investigated with the Italian version of the Current Relationship Interview (CRI; Crowell and Owens, 1996; Santona and Zavattini, 2007). The Italian version of the CRI is available upon request from the corresponding author. The purpose of the interview is to reveal how participants mentally represent attachments in romantic relationships, as reflected in their manner of speaking about their relationship. The questionnaire was built using the Adult Attachment Interview (AAI) as a model; it consists of 15 questions, the formulation of which considers the reciprocal nature of adult romantic relationships. The interview contains questions about the participant's dating history; the nature of the present relationship and characteristics of the partner; and routine behaviors within the relationship, especially those related to providing and seeking support from the partner. To elicit an overview of the relationship, questions include topics such as what they have learned from each other and their hopes and concerns about the future of the relationship. The evaluation is based on the transcript and allows the individual to be placed in two groups: Secure (S) and Insecure depending on the profile that emerges from the scores (from 1 to 9) obtained on 18 evaluation scales. The classification system of the CRI distinguishes, within the group of individuals with insecure attachment, those who avoid talking about attachment in terms of a secure basis or who devalue it (distancing/devaluing profile - D), those who, instead,

place a particular emphasis on these aspects and compulsively try to control them (preoccupied profile - P) and finally those who fall into the Unresolved category (U). Importantly, despite the administration of the interview does not require a specific training, the coding of the transcripts does. In the current study, both the administration and the coding of the transcript were performed by trained researchers.

Participants were then asked to fill two self-report questionnaires.

The way in which people tend to respond to interpersonal conflicts have been investigated using the Rahim Organizational Conflict Inventory questionnaire, Section II (ROCI II; Rahim and Majer, 1995). The questionnaire consists of 28 items on a 5-point Likert scale ranging from 1 (*Strongly Disagree*) to 5 (*Strongly Agree*) investigating the modalities of discussion with the other according to five independent responding styles: Collaborating Style, Accommodation Style, Competing Style, Avoidant Style, Compromising Style measured by 7, 6, 5, 6 and 4 statements, respectively. The internal consistencies of the scale was 0.71.

Romantic relationship quality was assessed using the Dyadic Adjustment Scale (DAS; Spanier, 1976; Gentili et al., 2002). This is a 32-item rating instrument that may be completed by either one or both partners in a relationship. Respondents are asked to rate each of the items on different Likert-type scales choosing the most suitable response options by indicating the extent of agreement or disagreement between the individual and his/her partner for each item. The most useful way of interpreting DAS is through the subscale scores: Dyadic Consensus (13 items; the degree to which the couple agrees on matters of importance to the relationship), Dyadic Satisfaction (10 items; the degree to which the couple is satisfied with their relationship), Dyadic Cohesion (5 items; the degree of closeness and shared activities experienced by the couple), and Affective Expression (4 items, the degree of demonstrations of affection and sexual relationships). A person taking this test can obtain a score from 0 to 151. The lower scores on DAS are indicative of having a problem, while the higher the score the better the person's adjustment to the relationship. The instrument provides an estimation of the dyadic adjustment level perceived by each partner separately and by the couple (i.e., the average score obtained by each partner). In our study, the reliability of the instrument was confirmed by Cronbach's α, with values ranging from 0.63 to 0.93.

Statistical analyses

Cronbach's alphas were computed to explore the internal consistency of continuous measures. Then, descriptive analyses were carried out namely frequencies, means, and standard deviations. Comparisons between groups were performed through Kruskal-Wallis tests and chi-square difference tests. All statistical analyses were performed using SPSS v.25 software for Mac.

Results

To investigate the differences on dyadic adjustment levels across types, individuals were classified according to a four-categories (i.e., secure, insecure-dismissing, insecure-preoccupied, other) attachment model. The number of participants belonging to each group, in the whole sample and divided by gender, is displayed in Table 1. Because only one participant was classified as "Other" and no standard deviation was therefore available for this category, she was excluded from subsequent analysis.

TABLE 1 Frequencies of romantic attachment classifications in the whole sample and in the sample of men and women.

	Whole sample	Men	Women
Secure	43	16	27
Insecure dismissing	22	17	5
Insecure preoccupied	13	6	7
Other	1	1	0

Differences in dyadic adjustment across romantic attachment classifications

Differences in dyadic adjustment levels according to romantic attachment were investigated following complementary approaches. First, we tested the hypothesis that individual perceptions of dyadic adjustment would differ according to individual romantic attachment type in the whole sample and in men and women separately. Then, we explored whether individual dyadic adjustment differed according to the partners' romantic attachment style. Afterward, we explored whether the dyadic adjustment differed according to individuals' romantic attachment type. Lastly, we tested the hypothesis that both individuals and dyadic estimation of adjustment would differ according to the matching between romantic attachment styles between the partners.

As displayed in Table 2, in the whole sample, individuals classified with a preoccupied attachment compared to individuals with a secure attachment obtained lower scores in the general level of dyadic adjustment. Also, men with a preoccupied attachment, compared to those with a secure attachment, obtained lower scores on the cohesion subscale of the DAS. No other significant differences were identified.

Then, we investigated if women and men DAS scores significantly differed according to their attachment types. As displayed in Table 3, no significant differences were observed.

Also, the hypothesis that dyadic evaluation of adjustment would differ according to attachment type was tested in the sample of women and men separately. Results, illustrated in Table 4, did not identify any significant difference.

Lastly, we explored the possibility that matching status between attachment types (either matching or no matching) would have discriminant between dyadic adjustment levels. This hypothesis has been tested regarding couple levels of dyadic adjustment as well as dyadic adjustment as perceived by men and women separately. As displayed in Table 5, we found that women involved in a relationship characterized by matching attachment types between partners reported significantly lower levels of consensus compared to women involved in relationships characterized by an attachment type mismatch. To further deepen this result, we test the presence of significant differences on cohesion levels perceived by women, between couples matched on secure ($n = 17$) versus insecure ($n = 9$) attachment types. However, no significant difference emerged ($p = 0.839$).

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TABLE 2 Differences between individual perceptions of dyadic adjustment according attachment types.

Total sample	Secure		Dismissing		Preoccupied		*p*	*Post hoc*
	M	SD	*M*	SD	*M*	SD		
Adjustment	48.09	5.13	47.58	5.83	42.62	6.53	**0.039**	S>P
Cohesion	55.95	7.06	58.09	7.96	55.38	9.06	0.233	–
Affective expression	53.74	8.49	53.95	9.30	52.54	8.30	0.818	–
Satisfaction	43.05	4.57	42.18	3.42	39.38	6.89	0.089	–
Consensus	46.05	5.37	4.32	7.18	43.54	7.23	0.613	–
Men only	**Secure**		**Dismissing**		**Preoccupied**		**p**	**Post hoc**
	M	**SD**	**M**	**SD**	**M**	**SD**		
Adjustment	49.56	5.81	48.76	5.51	42.50	6.29	0.087	–
Cohesion	63.44	7.55	60.24	7.09	55.00	3.63	**0.041**	S>P
Affective expression	55.19	8.94	55.12	7.40	52.17	8.18	0.626	–
Satisfaction	43.44	5.33	42.88	2.80	39.83	6.55	0.143	–
Consensus	46.56	5.67	46.65	7.50	40.33	5.92	0.144	–
Women only	**Secure**		**Dismissing**		**Preoccupied**		**p**	**Post hoc**
	M	**SD**	**M**	**SD**	**M**	**SD**		
Adjustment	47.22	4.57	44.00	5.96	42.71	7.25	0.207	–
Cohesion	57.89	5.97	50.80	7.80	57.71	12.37	0.820	–
Affective expression	52.89	8.26	50.00	14.77	52.86	9.05	0.218	–
Satisfaction	42.81	4.14	39.80	4.55	39.00	7.66	0.953	–
Consensus	45.74	5.27	45.20	6.61	46.29	7.50	0.127	–

The bolded value indicated statistically significant result at $p < 0.05$.

TABLE 3 Differences between women/men perceptions of dyadic adjustment according to men/women attachment types.

Women scores	Secure		Dismissing		Preoccupied		*p*	*Post-hoc*
	M	SD	*M*	SD	*M*	SD		
Adjustment	47.81	4.86	46.18	4.54	42.17	8.75	0.165	–
Cohesion	57.56	7.07	56.53	7.09	52.62	10.50	0.774	–
Affective Expression	55.37	8.85	51.00	9.68	52.67	7.15	0.252	–
Satisfaction	44.06	2.70	38.00	8.17	44.06	2.70	0.051	–
Consensus	47.56	4.90	46.00	5.09	42.17	8.91	0.244	–
Men scores	**Secure**		**Dismissing**		**Preoccupied**		**p**	**Post hoc**
	M	**SD**	**M**	**SD**	**M**	**SD**		
Adjustment	48.84	5.69	47.40	3.43	43.86	7.36	0.224	–
Cohesion	61.08	7.23	58.60	6.69	58.00	7.02	0.641	–
Affective Expression	55.88	7.52	49.20	12.09	53.14	6.72	0.274	–
Satisfaction	43.16	4.49	41.20	2.17	40.71	6.40	0.166	–
Consensus	46.32	6.59	47.40	3.58	40.29	7.80	0.144	–

Differences in conflict resolution strategies across romantic attachment classifications

To test whether the distribution of constructive versus destructive conflict resolution strategies differed according to attachment type, a series of chi-square tests were performed. First, we found that conflict resolution style was not significantly more frequent among individuals with a secure, dismissing, or preoccupied attachment towards their partner. This result was replicated in the whole sample ($p = 0.261$), among men only ($p = 0.715$), and among women only ($p = 0.115$).

Discussion

The illustrated study aimed to extend the current literature regarding current attachment in romantic relationships provided by the Italian version of the CRI.

TABLE 4 Differences between dyadic evaluations of adjustment according to men/women attachment types.

Women attachment	Secure		Dismissing		Preoccupied		*p*	*Post hoc*
	M	SD	*M*	SD	*M*	SD		
Adjustment	48.08	4.55	45.70	3.65	43.29	6.43	0.123	–
Cohesion	59.22	5.70	54.70	6.34	56.86	9.19	0.553	–
Affective expression	54.84	6.60	49.60	11.89	53.00	7.56	0.211	–
Satisfaction	43.02	3.78	40.50	3.14	39.86	6.93	0.510	–
Consensus	46.10	4.60	46.30	2.71	43.29	6.56	0.336	–
Men attachment	**Secure**		**Dismissing**		**Preoccupied**		**p**	**Post hoc**
	M	**SD**	**M**	**SD**	**M**	**SD**		
Adjustment	48.69	4.69	47.47	4.04	42.33	7.14	0.069	–
Cohesion	60.50	6.37	58.38	6.47	63.83	6.54	0.139	–
Affective expression	55.28	6.26	53.06	6.97	52.42	7.50	0.068	–
Satisfaction	43.75	3.65	42.06	6.68	38.92	7.03	0.403	–
Consensus	47.06	4.24	46.32	4.16	41.25	6.30	0.168	–

TABLE 5 Differences between dyadic evaluations of adjustment according to matching status between attachment types.

Dyadic scores	Match (*n* = 26)		No match (*n* = 10)		*p*
	M	SD	*M*	SD	
Adjustment	47.00	5.27	46.90	4.91	0.915
Cohesion	58.58	6.00	57.90	8.01	0.090
Affective expression	54.58	5.80	51.90	11.42	0.620
Satisfaction	42.31	4.73	41.65	4.40	0.817
Consensus	44.83	5.09	47.90	3.60	0.764
Women scores	**Match**		**No match**		**p**
	M	**SD**	**M**	**SD**	
Adjustment	45.73	5.60	46.90	6.05	0.670
Cohesion	56.35	7.44	56.20	8.82	0.803
Affective expression	53.46	6.72	52.50	13.72	0.736
Satisfaction	41.54	5.50	42.30	4.88	0.482
Consensus	44.27	5.38	50.10	5.41	**0.014**
Men scores	**Match**		**No match**		**p**
	M	**SD**	**M**	**SD**	
Adjustment	48.27	6.03	46.90	5.93	0.435
Cohesion	60.81	6.33	59.60	8.54	0.887
Affective expression	55.69	7.08	51.30	10.66	0.168
Satisfaction	43.08	4.53	41.00	5.16	0.295
Consensus	45.38	7.39	45.70	5.68	0.631

Regarding dyadic adjustment, data towards the discriminant capacities of attachment types are lacking. First, this study suggested that preoccupied attachment may negatively impact the overall perception of dyadic adjustment. However, results failed to identify a specific dimension of dyadic adjustment accounting for this observation in the whole sample. In contrast, we found that among men, but non among women, preoccupied attachment is associated with a lack of perceived cohesion in the couple. Preoccupied attachment is known to be associated with high levels of need for approval from the significant other (Hazan and Shaver, 1987). This result may therefore suggest that men with a preoccupied attachment may be more sensitive to disagreements in the context of intimate relationships. Moreover, the fact that this result was not replicated among women, highlights the relevance of controlling for gender effect when investigating the association between attachment and processes underlying intimate relationships (Barry et al., 2015).

These findings are only partially in line with what has been found in studies carried out with self-report questionnaires, measuring romantic attachment styles that typically observed a negative association between both anxious and avoidant attachment and dyadic adjustment levels measured with the DAS (e.g., Busonera et al., 2014). This discrepancy in results supports the idea that self-report questionnaires and the CRI do measure different, albeit potentially partially overlapping, facets of the construct of romantic attachment. Also, it cannot be excluded that the estimation of the associations observed between self-report questionnaires measuring romantic attachment and the DAS may suffer from an inflation due to the similarity in the tool characteristics. In addition, the results found here partially confirm and extend what has been observed in previous longitudinal studies, using the CRI, documenting the predictive role of romantic attachment types during transitions to parenthood (Velotti et al., 2011; Castellano et al., 2014). The fact that in our cross-sectional study we found only an effect of preoccupied attachment led to two complementarily reflections. First, the role of current attachment may be especially strong in case of sensitive periods of the cycle of life that activate the attachment system (e.g., transition to parenthood) and be more hidden out of these critical time frames (i.e., in our cross-sectional study). Secondly, the exception to this rule might consist of the constant impact of preoccupied attachment on dyadic adjustment regardless of the critical nature of the life period experienced by the partners. Of note, this explanation would be in line with the idea that preoccupied attachment is characterized by a difficulty to deactivate the attachment system (Mikulincer et al., 2002).

Then, it was observed that the attachment type of an individual did not impact his/her partner's perception of dyadic adjustment. This might indicate that romantic attachment is a factor primarily involved in the representation the individual has of his/her relationship but not, at least directly, in the perception the partner has of this relationship. Future studies conducted on larger samples or using longitudinal designs of research may further investigate this issue, for instance by testing the indirect path linking attachment type on partner perception of dyadic adjustment through an individual's own perception of dyadic adjustment. Lastly, and in line with these findings, attachment type did not discriminate levels of dyadic adjustment perceived by the couple.

Moreover, we did not find many relevant differences in dyadic adjustment levels according to the matching status of attachment type. An exception was observed in relation to the consensus levels perceived by men, that resulted to be lower among couples with matching attachment types. This suggests that reaching agreements on relevant topics for the couple may be more important for couples with partners having divergent attachment models. Indeed, the diversity in attachment type is likely to lead to diversity in the strategies used to negotiate and solve disagreements. Therefore, couples built on a mismatch in attachment type may have a special need for finding consensus in the relationship therefore reporting higher levels of dyadic consensus on the questionnaire used.

Lastly, we tested the hypothesis that the types of conflict resolution strategies may differ across individuals with different romantic attachment models. However, we found no significant differences, suggesting that romantic attachment may not impact the way individuals negotiate conflict in intimate relationships or that other uncontrolled factors may moderate this link. Of note, our analysis was performed differentiating only between constructive and destructive conflict resolution strategies as the frequencies of some strategy types were too low to allow statistical tests. This may have provided misleading results as different attachment types may be related to specific conflict resolution strategies. Therefore, future studies with a larger sample and with a higher heterogeneity regarding prevalent conflict resolution strategies would be useful to extend our knowledge regarding this issue. Our findings are not aligned with evidence documenting an association between insecure attachment and maladaptive conflict tactics (Kobak and Hazan, 1991; Cohn et al., 1992; Cowan et al., 1996; Simpson et al., 1996; Guerrero et al., 2009; Sierau and Herzberg, 2012; Ricco and Sierra, 2017). However, these studies did not measure romantic attachment representation but attachment styles, potentially explaining the discrepancy with our data. Our observations also contrast with previous studies using the CRI and documenting an association between attachment types and variables related to conflict resolution. However, the study of Castellano et al. (2014) reported data regarding the association between romantic attachment and conflict during the transition to parenthood. Because couples recruited in this study were not necessarily under a similar stressful period eliciting or exacerbating conflicts, this may explain why we failed to grasp a significant association between attachment and conflict resolution strategies. In addition, the other studies did not exactly measure conflict resolution strategies rather than the frequency of disagreements in the last week (Waldinger et al., 2015), the capacity to solve conflict (Haydon et al., 2012), and the overall quality of relationship during a conflictual experimental situation (Roisman et al., 2005). These variables are undoubtfully related to the construct measured in our study but are not totally overlapping, evidencing the fact that conflict resolution is a highly complex topic and that results of studies investigating different facets of the construct might not be comparable.

Limitations and future directions

Despite the value of this study, the reader should appreciate its results in light of some important limitations. First, we used a convenience sampling procedure, therefore self-selected participants may not be fully representative of the whole population of Italian couples, limiting the generalizability of our findings. This is especially true for couples seeking psychotherapy, which may imply specificities related to their clinical conditions. In addition, the small sample size limits the heterogeneity of variables investigated, reducing in turn the type of analyses that we were able to perform. For instance, only one participant was classified as having an "other" type of attachment model and this category was therefore excluded from further analyses. Also, the poor heterogeneity regarding conflict resolution strategy types did not allow for testing more complex hypotheses regarding this variable. Another issue is related to the absence of measurement of some variables that may moderate the relationships observed. For instance, emotion regulation capacities are considered to be tightly related to the attachment model and may greatly impact the outcomes measured and especially the type of conflict resolution strategies (Halperin, 2014; Garofalo et al., 2016). Lastly, the use of self-report measures to assess both dyadic adjustment and conflict resolution strategies may be considered a limitation of the study. Indeed, most of the contrasting results brought by past studies employed observational measures. This methodological issue may be further investigated in future studies to test whether the type of instrument measuring these variables may significantly impact the estimation of their link with current attachment types.

As a whole, this study highlights the complexity of the issue regarding the impact of current attachment in romantic relationships and calls for future studies investigating the topic through the CRI.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

The studies involving humans were approved by Sapienza University Ethic Committee. The studies were conducted in accordance with the local legislation and institutional requirements. The participants provided their written informed consent to participate in this study.

Author contributions

PV, RC, and GZ contributed to conception and design of the study. GR organized the database and performed the statistical analysis. EG and VA wrote the first draft of the manuscript. All authors

contributed to manuscript revision, read, and approved the submitted version.

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Developing a secure base in family intervention: using the adult attachment projective system to assess attachment in family relationships

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Families are core to human well-being. Therapeutic intervention may be needed in the context of family disruptions. Attachment theory conceptualizes parents as the secure base and safe haven that support children's optimal development. Parents who have experienced their own attachment difficulties or traumas may not provide quality caregiving necessary for balanced secure parent–child attachment relationships. Following Bowlby's original thinking (1988), an attachment approach to family intervention views the therapist as a secure base that enables families to explore individual and system problems to restore equilibrium. Attachment informed therapy uses attachment theory to understand family functioning. However, the unavailability of valid economical assessment for examining attachment representations has constricted the practical utility of attachment theory in family therapy beyond applications of general concepts. This chapter describes the Adult Attachment Projective Pictures System (AAP) and explores its use as an efficient manner for assessing attachment representations within families that allows therapists to understand problematic interactions, disabling defensive processes, make predictions concerning negative patterns, and create targets for change and restorative intervention. Consolidating three decades of attachment and caregiving system research, we describe how distinct patterns of AAP responses for each adult attachment group map onto expected parenting and family system expectations and behaviors to provide a concise and informative framework. In addition to the traditional adult attachment patterns (Secure, Dismissing, Preoccupied, Unresolved), we describe for the first time expectations for two additional forms of incomplete pathological mourning (Failed Mourning and Preoccupied with Personal Suffering) that have been overlooked in the field.

KEYWORDS

attachment, representation, adult attachment projective picture system, parents, trauma, family therapy

Introduction

Families are the center of human life. Establishing, sustaining, and mourning relationships past and present are essential family themes. The attachment aim of family intervention is to create a secure base. In attachment theory, the secure base is the foundation of security and survival that encourages children to reach out for protection when they are distressed (Bowlby, 1988; Ainsworth and Bowlby, 1991). When applied to families, the secure base is the network of resources from which the family can explore new solutions to family problems with shared awareness of availability and collaboration (e.g., Byng-Hall, 1995; Kim et al., 2018). Optimally, parents support children's security when they are committed, sensitive, responsive, flexible, consistent, and thoughtful about their and their children's internal states (George and Solomon, 2008, 2016). Parent–child attachment relationships regulate neurophysiological systems of emotion-, stress-, and self-regulation (Schore and Schore, 2008). The emphasis on caregiving behavior, parents' state of mind (also termed "representation"), and the conceptual emphasis on affect and affect regulation provides a pragmatic framework for change "rooted in dynamic relational processes" (Schore and Schore, 2008; Diamond et al., 2021) and helps refocus therapy from a single problem source to the family.

Today, many family therapists are familiar with and may implement an attachment lens in their practice (Byng-Hall, 2006; Diamond et al., 2021). Attachment-based goals are consistent with long-standing approaches to family therapy (Johnson and Whiffen, 2003). Attachment theory provides the groundwork for conceptualizing family difficulties and deficits rather than introducing new therapeutic approaches for family therapy (e.g., family system therapy). At the individual and family levels, attachment's unique contribution to the therapeutic milieu is its conceptual roots in evolutionary biology. It provides an organic context for families to explore tension, conflict, and fear in ways that regulate emotional distress and reduce shame that can threaten family emotional-communication bonds; this exploration is fundamental to basic human survival. Clients often feel relief when they learn that their discomfort, anger, and shame are biologically based and not irrational products of their imaginations.

Although familiar, most therapists have yet to be trained to apply the depth and complexity of attachment ideas to family intervention. Even fewer know how to access reliable, valid assessments that uncover the depth of unconscious processes rooted in each family member's representational attachment state of mind. Each family member brings a different script or representational map about how relationships work and stressful triggers. Parents tend to replicate their attachment patterns because this is what they know. They typically do not constructively think about and revise their representation of the past to meet the present challenges, especially when their past is laden with trauma. Knowing about individual attachment patterns can help therapists understand and create an empathic environment for family members and help solve family problems by predicting and pre-empting responses to family situations or therapy (Byng-Hall, 1995).

Unique to applying attachment theory to therapeutic intervention is the notion that the therapist is a secure base for the family. Through this role, not only can the therapist serve as a trusting, sensitive, and responsive figure that may differ from family members' previous experiences, but also the therapist may model for parents how they may fill these roles for each other and their children. By serving as a secure base, therapists promote exploring difficulties within therapy. Without the safety of these therapist-family relationships, family members may not be able to examine the obstacles within their families or how their own attachment representations are re-enacted and transmitted in their current family. Over time, once new ways of relating and problem-solving have been established, the safety and security provided by the therapist can be transferred to the network of family relationships.

The chapter begins by conceptualizing the family from an attachment theory perspective, addressing the function and goal of attachment relationships. Here, we also define attachment trauma, which is poorly explained in most attachment literature, and discuss how past trauma can subvert the family as a secure base. We next introduce the *Adult Attachment Projective Picture System* (AAP, George and West, 2012; George et al., 2023) as a rich, valid, and economical assessment for family intervention. We next present the nuances of unique representational maps, describing individuals' defenses, expectations, and anticipated interaction patterns. The discussion focuses on the parents in the family system. One may also use the AAP with adolescents to uncover the map they contribute to family processes.

Conceptualizing the family in terms of attachment

Understanding one another's feelings, motivations, and behaviors within family life contributes significantly to family interactions (Byng-Hall, 2006). As such, conceptualizing the family using an attachment lens is not a new idea. Attachment is a systems theory and families reflect a system of interactions (Stevenson-Hinde, 1990). The family develops a shared working model encompassing individual and family rules for how members think and behave.

At the core, attachment begins with the child-caregiver relationship and, by adolescence, is a fundamental facet of one's identity as a person who feels worthy of protection and care and able to protect others (George and Solomon, 2008; Aikins et al., 2009). Attachment is an inherited "organized behavioral system" that interacts with other fundamental inherited systems, such as fear and exploration or peer relationships, to ensure one gets the protection needed to survive and create a new family (Bowlby, 1982). The ultimate function of attachment, then, is survival; the goal in everyday life is to stay close to or be able to summon the persons who are responsible for your protection (Bowlby, 1982). The *attachment system* is complemented by the parents' *caregiving system* that, in tandem, achieves these goals (Bowlby, 1982; George and Solomon, 2008). The function of the caregiving system is to protect children with the goal of keeping children close enough to keep them safe (George and Solomon, 2008).

The attachment system does not exist in isolation. Just as the attachment system is juxtaposed with the caregiving system, these systems are placed within the broader context of the family (Stevenson-Hinde, 1990). Each dyad within the family is a subsystem of this larger framework. Dyads develop patterns of adaptive or maladaptive behavior and communication that become representational maps of the self in relation to others and the rules for

sustaining these relationships (Bowlby, 1982). As such, Stevenson-Hinde (1990) stressed that therapeutic targets in family systems therapy models include "allocation of roles, behavior control, problem-solving, communication, affective responsiveness, affective involvement, and overall functioning {are related} to patterns of attachment" (p. 224) in part reflecting that patterns developed during childhood tend to be recycled and perpetuate (Bretherton and Munholland, 2016).

One feature that is especially subject to perpetuation is attachment trauma. Called *intergenerational transmission,* parents can unconsciously perpetuate the interactions and effects of their own traumatic experiences even when they are working very hard not to do so. This is because trauma is not just an experience. Indeed, actual behavior may not be replicated. What is transmitted from parent to child is an attachment trauma state of mind. The dictionary defines trauma as a violently produced physical or psychological wound accompanied by shock (Webster's dictionary). In psychiatry, trauma is partly determined by the enduring emotional effects of shock and alarm, including chronic debilitating anxiety, fear, and anger. The attachment theory approach is narrower, beginning historically with Bowlby's discussion of loss (Bowlby, 1980; Main and Solomon, 1986; Main and Hesse, 1990).

The past three decades of attachment research have focused almost unilaterally on trauma, defined as loss or abuse. Of particular interest to clinicians, however, are individuals who show signs of trauma but not experienced loss or abuse. Instead, clients describe experiences clinicians often call "little t trauma" (e.g., divorce, emotional abuse, chronic parental mis-attunement, parental chemical dependency). What all forms of attachment trauma have in common is threats to the self or the attachment-caregiving relationship that risks leaving the child vulnerable and unprotected (Solomon and George, 2011; George and West, 2012). Attachment trauma "assaults" the child's biological need for protection. Children who experience enduring "failures" in parental protection become dysregulated, chronically frightened, and determined to find ways to protect themselves or feel they will perish (George and Solomon, 2008). Consequently, failed protection by attachment figures, regardless of whether there is experience of abuse or loss, compromises psychological safety, self-integrity, and ultimately, survival. These children feel physically or psychologically abandoned in those frightening moments when they need protection the most (Solomon and George, 2011; George and Solomon, 2016).

Family intervention using attachment concepts benefits from moving beyond general concepts and therapeutic guesswork about attachment patterns to developing a thorough understanding of the nuances of different attachment patterns, especially for patterns where trauma is involved. Ideas about the role of attachment in family intervention date back over three decades. Why, then, has attachment remained on the periphery for many family clinicians? Why have not attachment-minded therapists been able to integrate the rich variations in the attachment maps of clients with different attachment patterns in their work? We have found that a significant problem clinicians encounter in family intervention settings is assessment. Readers familiar with the family systems literature are likely acquainted with discussions of the *Adult Attachment Interview* (AAI, George et al., 1985; Main and Goldwyn, 1998). The AAI is an interview that designates a client's attachment pattern from the interview narrative about experiences and thoughts about the past. Unfortunately, it is impractical for most clinical use. It is expensive, cumbersome to learn and implement, and does not assess a client's full scope of attachment trauma experiences (interview questions are limited to loss and abuse). The assessment-minded reader may also have been interested in paper and pencil attachment self-report tests. Self-report measures assess social cognitions. These are subject to positive self-report bias where reported attachment dimensions, which for many clients, are sabotaged by unconscious defensive processes (e.g., Riggs et al., 2007). Further, extensive empirical scrutiny of self-reports shows that the assessment findings are poorly related to childhood experience (George and West, 2012; George et al., 2023). This body of work shows then that the AAI and self-report measures are easily subject to withholding trauma (Spieker et al., 2011).

The following section summarizes the AAP, a clinically friendly, economical alternative to the AAI that delves deeper into attachment trauma than any other available attachment assessments. The reader who would like more information about the AAP than described here is referred to two comprehensive volumes that discuss the development, validation, and scoring and classification system (George and West, 2012; George et al., 2023).

The Adult Attachment Projective Picture System (AAP)

Bowlby (1982) stressed the importance of observing attachment "in action," that is, behavior and thinking when the attachment system is activated. Attachment is activated when individuals or relationships are threatened, or physical or psychological safety is compromised. Strictly speaking, of course, the internal working model that is the foundation of an individual's attachment map is not directly observable; therefore, assessment is used to activate the system to "see" the variations in its representational manifestations. The AAP reveals the client's current responses and thoughts about attachment. Clinicians also use the AAP narratives to help uncover the details of past events.

The AAP's depictions of major attachment events, including illness, solitude, separation, death, and threat, activate the attachment system. The AAP opens and renders amenable to interpretation those personal elements of attachment that individuals may ordinarily keep locked away and excluded from conscious awareness. Individuals make sense of the various scenes by using their perceptual and affective responses to give meaning to the picture stimuli. The external stimulus (the attachment "pull" of the pictures) initiates an internal search for applicable mental concepts, including trauma.

The AAP picture system comprises eight black-and-white line drawings. The drawings contain only enough detail to identify an event; strong facial expressions and other details are absent. The character depictions are diverse regarding culture, gender, and age. The scenes, in the order of administration, are: *Neutral* – two children play with a ball; *Child at Window* – a child looks out a window; *Departure* – an adult man and woman with suitcases stand facing each other; *Bench* – a youth sits alone on a bench; *Bed* – a child and woman sit opposite each other on the child's bed; *Ambulance* – a woman and a child watch ambulance workers load a stretcher into an ambulance; *Cemetery* – a man stands at a headstone; *Child in Corner* – a child stands askance in a corner.

Two critical features of attachment experience are addressed in the stimulus set. One is the availability of an attachment figure. Only prompt and effective attachment figure responsiveness can successfully "terminate" attachment distress (Ainsworth et al., 1978) and create a sense of "felt security" (Sroufe and Fleeson, 1986). Infants and young children require physical proximity and access to attachment figures. Proximity and access are increasingly balanced by psychological proximity in older children, adolescents, and adults. Individuals in these older age groups can appeal to *internalized* attachment figures when attachment needs are activated, and attachment figures are absent. Some scenes portray an adult or a child alone ("alone" pictures), potentially eliciting representations of internalized attachment figures. Other AAP scenes portray adult-adult or adult-child dyads ("dyadic" pictures) that depict the physical proximity and availability of a potential attachment figure. The second critical feature is that the stimuli incorporate a lifespan perspective (Bowlby, 1982; Ainsworth, 1989). The scenes show characters that represent a range of ages, from the young child to the elderly.

The AAP is administered individually in a private setting, a therapist's office, or a quiet space for virtual administration. The client is asked to describe what is happening in a scene, what led up to that scene, what the characters are thinking or feeling, and what happens in the end. Responses are audio-recorded and transcribed. Administration is typically 25 min. Although the pictures are potent stimuli, most individuals respond to the assessment with a cooperative attitude. They typically do not get upset during the "AAP experience" (unlike the AAI), although some may tear up or cry. On rare occasions, the interviewee asks to stop. There are clear administration guidelines to help interviewers identify defensive resistances compared with cues that would require terminating the administration session. These guidelines meet the standards for professional clinical practice.

Coding and classification

Attachment classification using the AAP picture system analyzes the verbatim transcript of the "story" responses to the seven attachment pictures. Classification is based on coding categories we developed to evaluate the patterns and integration of three response dimensions: (1) narrative, (2) story content, and (3) defense. The following provides an overview of these dimensions. The coder evaluates these dimensions separately for each story. Of course, these features are inextricably intertwined; however, identifying the specific qualities of these features is essential to discriminating among attachment groups. There is not enough room here to provide examples and detailed descriptions. These are provided in the AAP books (George and West, 2012; George et al., 2023).

Narrative

The first task is to evaluate the narrative to identify portions of the response that might include personal descriptions of experience. The AAP instructions direct the individual's attention to the depicted characters. The AAP is not a biographical interview; it does not ask the client to specify how stories are related to real life. The inclusion of personal experience indicates difficulties maintaining self-other boundaries. This tendency indicates intense distress and is often seen in the responses of individuals in the Preoccupied or Unresolved classification groups (Buchheim and George, 2011; George and West, 2012).

Story content

The content dimensions evaluate how the narrative conveys meaning to the relationships depicted in the storyline. *Agency of self* and *connectedness* evaluate mutuality and integrated attachment in the alone stories. *Synchrony* evaluates the combination of these features in dyadic stories.

Agency of self evidences if the capacity of the person portrayed in the picture (the projected self) takes productive steps to face the challenges introduced in the storyline (i.e., what led up to the scene). According to theory, agency best develops with consistent experiences of sensitive and responsive parental care during infancy and early childhood (Sroufe et al., 2005). In the AAP, agency of self is required to solve the problem or change the situation when facing distress or threat alone.

There are two forms of agency. The most integrated (i.e., balanced, restorative) form is when attachment figures are portrayed as a "haven of safety." Haven of safety is depicted in themes of caregiver sensitivity to the character's attachment need (Ainsworth et al., 1978). The other is the "internalized secure base." Representation allows the individual to explore the inner world of the self. It is coded when the story portrays the character as drawing upon internal resources to think about distress and relationship problems. George and West (2012) developed this concept to capture the internal processes of thoughtful exploration of self, attachment figures, and events. The concept of the internalized secure base is a fundamental feature contributing to attachment security and can only be assessed using the AAP.

The other form of agency is the "capacity to act." Capacity to act depicts the character's ability to respond to attachment challenges or distress with constructive action. The capacity to act does not rebalance or fully assuage attachment distress, but it addresses the problem or regulates or contains the emotional response.

The alone stories are also coded for connectedness. This dimension evaluates the representational availability of intimate relationships to the alone self. Human biology defines several fundamental behavioral systems that can provide protection, including the parent (caregiving system), friends (affiliative-sociable system), and sexual-romantic relationships (sexual system) (Bowlby, 1982; Hinde, 1982; Marvin et al., 2016). The most integrated form of connectedness depicts the character reaching out to one of these fundamental relationships. By contrast, some stories depict successful connections to other people who are not part of the biological core but can be helpful (e.g., strangers or society helpers, such as doctors or police). Other stories develop themes where connections are blocked (characters fight or die). In yet other stories, the character remains alone.

Synchrony evaluates relationship quality in the dyadic pictures. Integrated synchrony is coded when interpersonal interactions depict mutual enjoyment or caregiving sensitivity. Other types of interactions portray functional behavior (e.g., giving medicine for an illness without comfort) or failures to respond (e.g., ignore the child's bid for a hug). These responses do not qualify as integrated.

Defensive processes

The AAP is the only attachment assessment that shows how clients use defenses to modulate distress. Defensive processes select,

exclude, and transform behavior, thought, and emotional appraisals to terminate distress as much as possible to prevent extreme discomfort or dysregulation. Attachment theory has three forms of defense: deactivation, disconnection, and segregated systems (Bowlby, 1980). Defenses are evaluated from the narrative words, images, and patterns for all seven AAP stories. Here we describe the general characteristics of each defense.

Deactivation shifts attention away from events or feelings that activate the attachment system and prevent the individual from becoming distracted by attendant attachment distress (Bowlby, 1980). The goal is to downplay emotions, especially anger. Deactivated contact with attachment figures serves a functional purpose; emotions are not part of the conversation. Evidence of deactivation may include themes of social rules (i.e., socially correct behavior), materialism, authority, or achievement. Interestingly, deactivation can fail to achieve the goal of neutrality and narratives "leak" underlying depictions of the self or others as negative or unworthy, expressed as themes of transgression, punishment, and rejection. Deactivating attachment defenses in the absence of integration and rebalance typify the Dismissing attachment pattern.

Disconnection splits attachment information and affect from the source (Bowlby, 1980). This process undermines the client's ability to "see" and describe a unitary, consistent attachment state of mind when the attachment system is activated. Disconnection is evidenced in the story by vague, confusing, or oscillating events or feelings (e.g., good-bad, happy-depressed) story elements. Disconnection interferes with telling a unitary storyline, producing confusion and ambivalence about events and emotions. Characters are caught in cycles of waiting, wondering, and wishing for something to happen. Disconnection feeds emotions. Compared with deactivation, clients are preoccupied with emotional responses (e.g., anger, anxiety, frustration) often to the extent that they need to withdraw. Disconnecting attachment defenses in the absence of integration and rebalance typify the Preoccupied attachment pattern.

Deactivation and disconnection are "normative" regulating defenses. That is, both forms help clients regulate attachment distress. The third form of defense evidences dysregulation and attachment trauma. Bowlby (1980) called this form *segregated systems,* a concept he developed to modernize psychoanalytic repression. This extreme form of defensive exclusion develops when there is a developmental history of chronic or severe attachment threats combined with parental failed protection. Experiences and affect associated with the attachment figure and trauma (i.e., threats to broken attachment relationship or self) are "packaged up" and locked away (literally segregated) from consciousness. By activating attachment, the AAP can unleash evidence of segregated systems and trauma representations that risk emotional dysregulation. Themes may emerge in hypothetical or personal experience narratives. They include fear, helplessness, threats by others (including attachment figures), and abandonment. Segregated systems are also noted when story themes describe dangerous action (e.g., jumping out of a three-story window), or feeling out of control, or isolated. Some segregated themes include images that based on theory link unresolved attachment and dissociation (e.g., Liotti, 2017) as opposed to what is written there now.

We have found that the AAP is more sensitive to uncovering trauma than other assessments, including trauma that clients hold in a protected mental space and are reticent to discuss with others. Revealed trauma is often a source of shame. We reason that this effect is because the AAP task is not defined as a biographical report. When speaking with clients about the AAP in follow-up conversations, they often express surprise at how much we have learned about the trauma in their mental map.

Attachment patterns: the attachment underpinnings of clients in family intervention

In this section, we describe the three traditional regulated attachment patterns –Secure, Dismissing, and Preoccupied – and three incomplete trauma patterns – Failure to Mourn (a form of Dismissing attachment), Preoccupied with Personal Suffering (a form of Preoccupied attachment), and Unresolved. Our discussion draws from several decades of attachment research that describe the nuances of each of these patterns, including expected behavior and evaluations of self and others by mothers and fathers in the context of the family system (George and Solomon, 2008, 2016; George and West, 2012; Cassidy and Shaver, 2016; George et al., 2023).

Knowing the nuances of pattern groups can facilitate clients and therapists exploring the "why" behind parents' actions and reactions, their attributions about the motivations and emotional life of self and others, and intervention goal setting. Although a discussion of children's contributions to family processes is beyond our current scope, we note that the AAP has been validated for adolescents as young as 13. Many clinicians use the AAP in family contexts to understand teens' representations of attachment, reflections on parents, and other issues around autonomy seeking and relatedness that are important during this developmental period (Allen, 2008).

Secure – flexibly integrated

The field of attachment extrapolated the term *secure* used to describe infants and children to apply to adults. Our preference is to describe this pattern as *flexibly integrated*. The reason is that there are two paths to security in adolescence and adulthood. One is a continuous path from childhood built on a foundation of sensitivity, mutual trust, flexibility, and support for emotional communication and autonomy (Ainsworth et al., 1978; George and Solomon, 2016). The other path, termed "earned secure" (Hesse, 2016), is bumpy; children do not experience the features of security listed above. Earned secure individuals work hard – often in therapy – to explore their past and why their parents acted the way they did.

Regardless of the path, the hallmark of the secure-flexible map is a rich examination of the past that creates a representation of self as worthy of attachment-figure comfort and protection and trust that parents and other attachment figures will respond in kind (Summarized in Table 1). This representational pattern on the AAP demonstrates the value of attachment-caregiving relationships as sources of reciprocal sensitivity, comfort, and mutual enjoyment. The stories show that the speaker holds images of attachment figures as present and effective in their minds when attachment is activated. The stories demonstrate the capacity to maintain boundaries – self and other, past and present; what is hypothetical and personal are distinguished. Themes of integrated agency show

TABLE 1 Secure-flexibly integrated adult attachment and parenting and family dynamics.

Secure-flexibly AAP representation	Parenting and family dynamics
Secure-flexibly integrated Attachment figures sensitive Agency: integrated; functional agency Connectedness: attachment figures and friends Synchrony: integrated Defenses support integration Trauma: resilience, repair, rebalance	Attachment: haven of safety Exploration: secure base autonomy Problem solving: balanced communications and solutions Conflict: repair, reconciliation Emotions: emotional clarity; empathy Trauma: unlikely to be triggered; seeks adult attachment figures; buffer family members from trauma

representations of attachment figures as accessible, comforting, sensitive to distress, and children and parents invested in relationship repair. The integrated agency in the stories often shows how rebalancing leads to constructive action (capacity to act). Secure-flexible individuals seek connections with other people, especially attachment figures and peers, when they are distressed or seek companionship. Their dyadic stories portray attachment-caregiving integration with sensitive caregiving, attunement, and mutual enjoyment. Defenses are used to support integration, relationship intimacy, and sensitivity. The AAP can show evidence of earned security, especially in those individuals whose stories include trauma indicators. Segregated systems are activated but regulated through integration that restores psychological homeostasis and demonstrates the development of confidence in relationships as the foundation of a resilient self.

In the family system, flexibly integrated parents are committed to and enjoy being with their children. They preserve adult-child boundaries and set limits intended to guide children's development. Established rules are subject to open discussion and negotiation. Parents serve as a haven of safety by being sensitive and valuing children's attachment needs. Secure-flexibly integrated parents provide a secure base for exploration. The purpose of exploration is not just to learn; exploration also serves as the basis for building relationships and mutual enjoyment. The secure base fosters confidence in exploring on one's own, knowing it is possible, and encourages a return to attachment figures for comfort and safety if exploration begins to feel uncomfortable or risky. This is especially true for fathers for whom research has shown father-child relationships emphasize exploration over comfort.

The secure-flexibly integrated parent values personal and family problems as topics for conversation. The goals of communications and actions are to find practical solutions without undermining flexibility, keeping in mind age-appropriate or situation-appropriate attachment needs and socialization demands. By maintaining adult-child boundaries, parents also create an environment that buffers children from involvement in parents' personal or couple problems and conflicts. Problems involve potential conflict. Conflict resolution goals and outcomes for these parents demonstrate repair (i.e., rebalance, homeostasis) and reconciliation (i.e., managing discrepancies interfering with a goal). These parents value emotions and emotional communication and encourage developing a broad emotional palate. Children learn to express emotions without worrying about retribution or being squelched, including negative affect (e.g., sadness, shame, fear, anger). This quality of emotional communication creates the developmental foundation of empathy. Parents can be triggered by personal events or vicarious trauma when their children are endangered. When this happens, parents work to restore balance without turning to their children. They reach out to their adult attachment figures as havens of safety, such as their partners, parents, or professionals (e.g., therapists).

TABLE 2 Dismissing and failed mourning adult attachment and parenting and family dynamics.

Dismissing AAP representation	Parenting and family dynamics
Deactivated Attachment figures rejecting, distanced, functional. Firm boundaries Functional or fractured agency, connectedness, synchrony Themes: reject or disable attachment needs Trauma: regulated through functional agency, connectedness, or synchrony. No repair	Attachment: dismiss attachment needs. Functional. Authoritarian parenting. Deflect attachment needs ➔ achievement, peers, social role adults Exploration: functional, pseudo-togetherness Problem solving: rational Conflict: reject, avoid conflict Reconciliation without repair Emotions: neutralize, reject. Sympathy without empathy Trauma: repressed or dismissed
Failure to Mourn Same as Dismissing + prevalent references to trauma. Role reversal and dissociation/depersonalization risk. If regulation breaks down ➔ Unresolved pattern	Deactivation dynamics collapse ➔ Unresolved parenting, role reversal risk

Dismissing

The defining quality of the Dismissing pattern is defensive deactivation. Deactivation is evident as the primary form of coping throughout the AAP (Summarized in Table 2). Dismissing individuals tell stories in which they maintain firm representational boundaries – both distinctions between past and present or personal and hypothetical. Boundaries are critical components of depicting attachment figures and other adults as authority figures who give permissions, make or teach the rules of appropriate behavior, and punish transgressions. Integrated themes of agency and synchrony are rarely depicted. Rather, narratives emphasize the alone self and dyadic interaction as functional. Although distress is managed, what is missing is these narratives is the safe haven or sensitivity that only parents can provide to completely assuage attachment distress. Connectedness to others – whether adults, peers, persons in the community, or strangers – is also functional. These features of the story themes result from deactivating defenses that create distance from, minimize, reject, or avoid negative affect and outcomes. As a result, problem solving is rational (without emotions), situational, social rules that dictate behavior are paramount, and interpersonal attachment themes are deflected to emphasize achievement and personal strength. Trauma is regulated with functional agency, connectedness, synchrony, or reconciliation; representations of homeostasis and rebalancing are rare.

Parents' needs and rights are more significant than their children's needs for Dismissing parents. They deactivate attachment needs by minimizing, rejecting, and ignoring them. Parents and other adults need to be inflexible authorities, set strict limits, and enforce boundaries. Bids for attachment, including emotional needs, are discouraged, and viewed as signs of weakness. Discouraging attachment is also accomplished by shifting away from relationship closeness to stress independence, achievement, and success for social status and material gain. The independence paradox in these relationships is that these parents and their children express the most separation anxiety of any other group. Parent–child activities have a quality of *pseudo-togetherness* where interactions lack emotional sharing, intimacy, and enjoyment. Problem-solving efforts are limited to the facts needed to achieve a rational solution. Emotions are unwelcome and discouraged, especially anger and sadness. There is a strong emphasis on avoiding conflict and rejecting people and situations at the source. This posture helps parents maintain an authoritarian position. When there is conflict, goals stress productive outcomes and reconciliation to avoid future disruption without repairing relationships. Because emotions are uncomfortable, dismissing parents do not encourage emotional communication, especially anger. When negative affect emerges (which is inevitable in relationships and families), it is neutralized (e.g., everybody feels that way when this happens) or rejected (e.g., you do not feel sad, you are just hungry; we do not talk about these things). Dismissing parents quickly notice misbehavior and transgressions, the source of fault, and punish. This approach to parenting undermines the development of empathy. Dismissing parents can sympathize, but only when others are deemed worthy.

In addition, Dismissing parents who experienced significant attachment trauma typically do not complete mourning and are at risk for *Failed Mourning* (*Failure to Mourn*). Mourning is blocked. This representational map shows how deactivating defenses are armor to wall off the painful threat of mourning. As Bowlby predicted (1980), Failed Mourning parents tell stories that portray images of parent–child role reversal (parentification, role inversion) because their experience is that their distraught parents are helpless to protect them. These AAPs also evidence the risk of derealization and depersonalization.

For many of the parents with trauma, deactivating strategies are so effective that they are puzzled about why the feel frustrated or sad. Our work has shown that about 50% of Failed Mourning parents cannot consistently manage their emotional state, and the Dismissing caregiving strategies we described above break down. When this happens, they become dysregulated and act like parents with Unresolved adult attachment (see below). Our work shows that it is not unusual when this happens for their children to be role reversed (i.e., the child acts like a parent) because of their sensitivity to their parents' vulnerability until deactivating defenses restore walled off trauma.

Preoccupied

The defining quality of the Preoccupied pattern is disconnecting defenses (Summarized in Table 3). Disconnection creates a mental fog or smoke screen that clouds the individual's ability to create a unitary picture of attachment experience and affect. It also makes it difficult to maintain boundaries. Preoccupied individuals blur self-other distinctions, and their AAPs are more likely than the AAPs of others to digress into stories of personal experience. When stories involve attachment figures, the descriptions are often confusing because there are so many ideas about possible story themes, characters' behaviors, and emotions. In other stories, attachment figures are portrayed as unpredictable, inaccessible (but not rejecting), or unable to decide how to respond to a child. Still other stories are laden with sentimental overtures to fill in for missing caregiving sensitivity. The smorgasbord of possibilities with no definitive outcome and confusion of the Preoccupied mental map splinters attempts to describe agency, connectedness, and synchrony. At best, these themes are functional. Often though, there is no agency or connection in alone stories. Dyadic stories often miss the point (e.g., a scared child is offered tea and cookies instead of comfort). Stories are more likely to be emotional than the stories of Dismissing individuals. Emotions are heightened and entangling. Commonly, individuals attempt to disconnect from trauma with euphemisms (e.g., something "horrible" happened, the child is trying to manage something "hard and heavy").

TABLE 3 Preoccupied and preoccupied with personal suffering adult attachment and parenting and family dynamics.

Preoccupied AAP representation	Parenting and family dynamics
Preoccupied – disconnected Attachment figures unpredictable, confused, palliative. Blurred boundaries Agency, connectedness, and synchrony are functional, fractured, or absent. Themes: confused, emotionally preoccupied and entangled Trauma: fractured regulation through functional agency, connectedness, or synchrony	Attachment: confused, inconsistent, noncontingent responsiveness. Permissive parenting. Blurred boundaries. Disconnect from/tune out distress Exploration: enjoys, encourages immaturity and dependency Problem solving: fairness, guilt driven Conflict: deflect, circumvent, exaggerate emotions Emotions: heightened ➔ moody, worry, anger, frustration, guilt. Sentimental without empathy. Trauma: confused
Preoccupied with personal suffering Same as preoccupied + frequent references to trauma. Dissociation or depersonalization risk. Fragile regulation	Same as Preoccupied.

Children's rights are more significant than the parents' needs for Preoccupied parents. Parents value emotional intimacy and happiness, seemingly at all costs. Attention to children's attachment cues is heightened, contributing to an undercurrent of anxiety and tension. Given the confusion in the AAP, it should not be surprising that these parents are confused about how to read situations and what to do about them, which for some end up as complaints of being stressed and exhausted. Yet when given a chance to "get away" from children, they lament that they cannot wait to get home. Their behavior can be unpredictable, noncontingent, guilt-ridden, embarrassing, or absent all-together. These parents encourage and enjoy dependency. Confused about the best strategies to protect children, they want to keep them physically and emotionally close "to the nest" at the cost of age-appropriate exploration. Problem-solving focuses on fairness and

family equality. Emotions are welcome but poorly differentiated. Empathy for others is confounded by blurred boundaries that have trouble differentiating the needs of individual family members. Preoccupied parents try to circumvent conflict by changing the subject or distraction. Emotions are heightened since they are so important in these relationships. Without clear emotional communication, however, parents and children are flustered and complain about emotional ambiguity. Parents, children, and other family members are often seen as inexplicably moody, worried, or frustrated. Anger, guilt, and shame are poorly managed because of lingering unaddressed emotional residues.

Preoccupied individuals with childhood trauma are at risk for chronic incomplete mourning, called *Preoccupation with Personal Suffering*. We see in their AAP representational map attempts to remove or blur the effects of trauma with vague aspirations that someone will come along and help or magical thinking that somehow the character will survive without being able to describe how this happens. These AAPs also show evidence of derealization and depersonalization.

Our work has shown that preoccupied parents and preoccupied sufferers engage similarly with their children. The smoke screens surrounding trauma created by disconnecting defenses appear to effectively diffuse the potential for caregiving breakdown and keep these parents involved. Hope and magical thinking also help out when they are triggered.

Unresolved

Unresolved attachment can have elements similar to any other patterns (Summarized in Table 4). The defining quality of the Unresolved map is the inability to regulate trauma. This failure creates a state of mind where terrifying memories and emotions threaten to flood consciousness. The Unresolved pattern shows the greatest tendency for personal experience intrusions in the AAP narratives, including their trauma. Deactivating and disconnecting defenses, and agency, connectedness, and synchrony break down, and themes of trauma that were segregated invade the narrative. There are two Unresolved AAP responses. One is a flooded and dysregulated narrative (i.e., trauma is not managed or contained); the other is a constricted response where the individual freezes up and cannot describe anything to the picture stimulus. Constriction is a mammalian fear response that freezes thoughts, feelings, and actions so they cannot be "seen." Constriction is the antidote for flooding.

TABLE 4 Unresolved adult attachment and parenting and family dynamics.

Unresolved AAP representation	Parenting and family dynamics
Unresolved - dysregulated segregated trauma AAP patterns could be like Secure-Flexible, Dismissing, or Preoccupied. Risk of intrusion of personal traumatic experiences Segregated system defenses and trauma themes: fear, isolation, helpless, loss, abuse Flooded – dysregulated, not contained Constricted – cannot respond	Flooded Attachment: abdicate, fail to protect Exploration: risky, unmonitored Problem solving: controlling strategies Conflict: combative Emotions: frightened, emotionally intelligent Trauma: overwhelmed. Risk of re-enacting trauma Constricted Attachment: role-reversed Exploration: frozen, cannot explore Problem solving: role reversed Emotions: emotional merging Trauma: dissociation or depersonalization risk

In low-stress family interactions, Unresolved parents approach parenting in ways similar to any of the three regulated patterns we described above. However, these parents are chronically at risk of being triggered and re-enacting their trauma and experiences. The stress triggers can be low and idiosyncratic. Unresolved parents become frightened, overwhelmed, and helpless. Their children experience their attachment figures as turning away and abdicating the fundamental protective function of caregiving. This failure is most visible for flooded parents. Failure risks dangerous situations within or outside the family without parental remedy. Children come to understand at an early age that they must manage on their own. Without a haven of safety or a secure base, the children of Unresolved parents are anxious, hypervigilant, and risk engaging in reckless activities without regard to threat. Internally frightened because they cannot protect themselves, these children develop external strategies to dominate and control their parents and environment. These strategies may appear to others as independence and leadership; however, the psychological undercurrent motivating these strategies are brittle attempts at self-protection and controlling the people around them and their environments. Unresolved parents develop controlling behavior for these same reasons – internal helplessness and fear of failed protection. When both interactive partners are desperate for control, conflict and arguments in these dyads become combative battles that aim to win, not resolve problems. In summary, flooded by unmetabolized trauma, this pattern of Unresolved attachment injects emotional dysregulation and chaos into family life.

The pattern for constricted Unresolved parents is qualitatively different. Similarly helpless, these parents shut down. They appear vulnerable, childlike, immature, and are at risk of physically or psychologically disappearing (e.g., dissociation risk). Their children, then, take on the caregiving safe haven responsibility to fortify parents and nurture them back to the role of the stronger and more caring person in the relationship. Like their parents, these children are frightened, but the role reversal directed toward their parents is mutually nurturing and helps rebuild the relationship. As with children of flooded parents, the children of constricted parents do not explore. These parents do not create the secure base-safe haven dynamic that supports exploration. The children of constricted parents can appear frozen, not curious, and unwilling to risk launching away from their parents or the home because they are frightened and hypervigilant to danger. Our work shows that constricted parents do not report many family problems, likely because role reversed children remedy potential conflict. Parents tell us that their children are so precocious, sweet, empathic, and attuned to the emotional life and circumstances of others that problems rarely occur. In addition, many children take on the roles of comedian or clown, a phenomenon we have observed as early as toddlerhood. Keeping the parent happy through laughter is a well-received way to control a relationship (as opposed to combative punitive behavior). These parents and their

children are very empathic toward others. Our work shows that the source of their empathy is boundary dissolution where parents and children are emotionally merged. Sadness and concern for self, equate to sadness and concern for the other family and community members.

Using the AAP in family therapy

The versatility of the AAP lends itself to a wide range of ways it can be used in therapy to help move parents, children, and the family system in the direction of a secure base for exploration of individual and relationship dynamics. Our purpose in this section is to provide the reader with a few examples of how the therapist may use the AAP with the family members who tell these stories to understand themselves and relational functioning.

Earlier we presented details about each attachment and incomplete pathological mourning group. Knowing the AAP attachment group can help the therapist pinpoint and anticipate where many of the family problems originate. In some situations, questions may center on why parents are not working well as a dyad and as coparents; attachment assessment reveals the layers that explain why. Consider the example of a family with one Dismissing parent and one Preoccupied parent (a common co-parent variation). Both parents are vulnerable and insecure; they did not get their attachment needs met in childhood and are poorly poised to provide for their children's attachment needs. However, their attachment maps for interacting with each other and their children are diametrically opposed. We can expect to see these differences expressed in how they view themselves and family relationships. The Dismissing parent was raised to reject vulnerability and stress relationship distance, independence, and rationality. We would expect to observe this parent to reject their partner's and their children's attachment needs, pushing independence, rational problem solving, and especially for children, achievement success. The Preoccupied parent was raised in an environment of entangled relationships, emotionality, confusion, and dependency. We would expect to observe this parent to seek intimacy and closeness beyond their partner's comfort zone and have trouble deciding on parenting goals and strategies. We would not be surprised that this parent radiates guilt, worry, and frustration, which is unacceptable to their Dismissing partner. Children develop different relationships with different parents. The children in this family would be caught in a system contradiction, having to straddle different expectations from each parent and not getting their attachment needs fully met by either of them. In clinical work, it is not unusual for us to work with families where one or both parents have experienced childhood trauma. The AAP provides insight as to how and to what degree parents have completed mourning. The common challenge for these adults as parents and partners is their childhood experiences of parental failed protection. The nuances in their AAP are key to observing and understanding how different defensive maps regarding failed protection plays out in family dynamics. Thus, by highlighting the family at the dyadic levels, we can observe how knowing the attachment representations in addition to the AAP content and defenses can help us identify how partner, coparent, and parent–child dances are not functioning. The AAP both provides a snapshot of how parents' attachment representations lie at the core of family difficulties and cascade to these other relationships, and provides insight for how family therapy can address each of these relationships to align in the direction of secure base functioning.

The AAP stories are powerful tools in and of themselves. We look "inside" the stories to get a clearer picture of the interaction of content and defensive processes than depending on the classification group alone. For example, LeBlond et al. (2023) described using the AAP to better inform the care provided to adolescents with a kidney transplant from a parent donor. The adolescent patient's AAP in their case example was Unresolved. The AAP stories identified the specific nature of this patient's dysregulating problems, which were feeling isolated, parental failed protection, and fears of abandonment and death. These authors stressed how important uncovering the specifics of this patient's fears was for treatment as well as recognizing the effect of the father's denial of his child's risks, which included death. The patient's AAP stories negated their interview narrative of joy and gratitude toward the father by exposing his unconscious fears. The AAP uncovered the "psychological and impact of living with chronic disease," (p. 176) that was unspoken and denied. Similarly, Mazzeschi et al. (2023) described the power of incorporating the AAP in family Therapeutic Assessment for treatment of childhood obesity. The authors explained how the AAP assessment had identified the parents and the patient all revealing some form of incomplete pathological mourning. The parents were Unresolved, and the adolescent patient was Failed Mourning. They explained how knowing the parent's AAP map informed the therapist about the care needed to buffer the parents from becoming overwhelmed by their attachment fears while discussing their helplessness and fears surrounding helping their child. The therapist also saw from the patient's AAP that they had created deactivated armor to block becoming flooded by fear and helplessness. The AAP also showed that the patient viewed their parents as rejecting and unable to see or respond to their distress about their condition. The therapist's goal was to "interrupt the cycle of unconscious activation of [their] fears and worries and begin to address them directly" (p. 198) to move the patient in the direction of mourning and family change.

Clients often are amenable to change when they are helped to see and name their attachment-related strengths and wounds in the AAP stories. Therapists can select single stories, for example, to explore with their clients. We describe in this example a traumatized adolescent client whose stories evidenced intense attachment trauma throughout the AAP. What stood out to the therapist was one particular trauma story that portrayed parentified role reversal, a nuance that had not been expressed in earlier therapist-client discussions. The therapist read this story aloud with the client, including the attachment-theory interpretation of what the story meant. The client broke down, sobbing and affirming a secret that had never before been spoken; they described how overwhelming it had been to be in the position to take care of others their whole life. The therapist later read this story to the client's parents, who never before realized their child's parentification or knew the burden their child carried of failed protection and role reversed caregiving.

Conclusion

Across many, if not most therapeutic approaches, the non-specific factors that the therapist brings are thought to account for a percentage of change (Priebe et al., 2020). The attachment approach of

conceptualizing the therapist as a secure base from which to explore difficulties in therapy builds on this idea. The therapist in this manner is a key element of change through the role they are able to play in a providing secure relationship for the families they treat. In turn, the therapist supports parents to become the secure base and safe haven in their families.

Although some family therapists have used attachment theory as a basis for thinking about family difficulties, the ability to implement the nuances of this approach requires assessing attachment representations among family members to better understand *specific* family dynamics. Assessment has been a significant barrier. The AAP provides an efficient yet rich approach to assessing parents' attachment representations that therapists can use to guide their understanding of the complex interplay of family relationships. Extensive research regarding the attachment and caregiving systems provides predictions regarding individuals' behaviors that allows therapists to quickly pinpoint likely sources of family difficulties and potential targets for intervention. The AAP may provide therapists with a perspective on family dynamics that might otherwise take substantial information gathering to inform the therapeutic framework and approach.

The AAP is an easy economical measure to use clinically. Therapists would administer it individually to adult and adolescent family members. Trainings are available to teach the coding and classification system. Following training, therapists are encouraged to engage in a reliability process to ensure the quality of AAP interpretation and ethical use. There are also resources for trained therapists to have their clients' AAPs coded by master judges. Many therapists join consultation groups comprised of AAP users to learn about others' views, interpretations, and therapeutic approaches when using the AAP with their clients. For more information, the interested reader is referred to the AAP website – www.attachmentprojective.com.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Author contributions

CG: Conceptualization, Writing – original draft. JW: Conceptualization, Funding acquisition, Writing – review & editing.

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The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Psychometric properties of the Chinese Family Assessment Instrument: evidence from mainland China

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Regarding the assessment of family functioning in Chinese people, there are several research gaps. First, although there are some instruments in the field, there are very few validated instruments. Second, while some translated measures have been developed, there are very few assessment tools based on indigenous Chinese concepts. Third, compared to Hong Kong, research on family assessment is relatively inactive in mainland China. Fourth, there are very few family assessment tools to assess perceived family functioning in older children and early adolescents. Fifth, few studies used large samples to validate family assessment tools. Sixth, researchers seldom utilized longitudinal data to examine the psychometric properties of family assessment tools. Finally, few studies have examined factorial validity across samples and time to demonstrate the stability of Chinese family assessment measures. In Hong Kong, based on focus group data (i.e., indigenous concepts of family functioning) and an integration with the family science literature, we have developed the Chinese Family Assessment Instrument (C-FAI) to assess perceived family functioning according to the perception of adolescents. Results showed that the C-FAI possessed good reliability and validity. Specifically, five dimensions of the measure (mutuality, communication, conflict, parental concern and parental control) were supported via exploratory factor analysis and confirmatory factor analysis. Convergent validity and reliability of the C-FAI were illustrated. To understand the psychometric properties of the C-FAI in mainland China, we collected three waves of data from students in the period of preadolescence and early adolescence in mainland China ($N = 3,732$). Based on the data, we examined the psychometric properties of the measure, particularly factor invariance in different samples and at different times. Confirmatory factor analysis provided support for the five dimensions in C-FAI, including factorial invariance in terms of configuration, factor loading, intercepts, and over time. There was evidence for convergent validity and discriminant validity of the measure. Finally, reliability analyses showed that the total C-FAI scale and its subscales are internally consistent. The present findings suggest that family researchers and practitioners can use the C-FAI to objectively assess perceived family functioning in preadolescence and early adolescence in different Chinese communities.

KEYWORDS

Chinese Family Assessment Instrument, psychometric properties, China, family functioning, measurement invariance

Introduction

The concept of family functioning can be viewed as the general quality of the family environment and the relationships among its members (Folk et al., 2020). Different family theories, such as Beavers system theory (Beavers and Hampson, 2000), McMaster family functioning mode theory (Miller et al., 2000) and family therapy theories (Alexander and Parsons, 1982; Minuchin, 2012) have proposed different but conceptually related dimensions of family functioning. For example, Beavers system theory proposed six dimensions of family functioning, including family structure, mythology, goal-directed negotiation, autonomy, family affect, and global health pathology (Beavers and Hampson, 2000). Besides, the McMaster family functioning model theory proposes six dimensions of family functioning, such as effective communication, clear family roles, and appropriate affective responses. Studies have revealed the positive impact of positive family functioning on the developmental outcomes of children and adolescents such as engagement in learning, happiness, mental health, and proper behaviors (Izzo et al., 2022; Tamayo-Aguledo et al., 2022; Peng S. et al., 2023; Qi et al., 2023).

To assess family functioning, researchers have adopted different assessment methods such as direct observation (Giusto et al., 2019), interviews (Sumari et al., 2020), and self-reported instruments like Olson's (2000) Family Adaptability and Cohesion Evaluation and Epstein et al.'s (1983) McMaster Family Assessment Device. In fact, self-reported family functioning scales are commonly utilized to examine the perceived family functioning of people (Cong et al., 2022). As such, the development of family functioning measures with sound psychometric properties is of paramount importance for clinical and research purposes. However, most of the studies are WEIRD studies, with data collected from Western, educated, industrialized, rich, and democratic societies.

As most of the family functioning measures have been developed in the West, researchers have translated and adapted these measures into their local languages like Portuguese and German (e.g., Beierlein et al., 2017; Almeida et al., 2020). Nevertheless, other researchers have challenged cross-cultural adaptation of these measures because of cross-cultural differences, such as differences in individualistic versus collectivistic values in different cultures. In Sumari et al.'s (2021) study, the authors found that some factors of their indigenous family functioning scale were the same as those identified in the Family Assessment Device and Family Environment Scale. However, these factors had different meanings based on Malaysian local cultural understanding and interpretations. For instance, the communication and cohesion factors have the elements of courtesy and tolerance, respectively, and this reflects the importance of the preservation of family harmony in Malaysian collectivistic culture. Besides, other researchers have constructed indigenous measures to assess the perceptions of family functioning in their own countries, such as the Japanese version of Survey of Family Environment (Hohashi and Honda, 2012) and Korean version of Family Dynamic Environment Scale (Kim and Kim, 2007).

With specific reference to mainland China, there is rapid growth of family interventions in mainland China. The increase in the research on the importance of improving family functions for parents and children (e.g., Mao et al., 2019; Zhang et al., 2020; Lee et al., 2023) has called for the development of validated assessment tools to objectively examine family functioning in mainland China (Siu and Shek, 2005; Shek, 2006). Nevertheless, there are very few holistic, validated family functioning instruments despite the fact that Chinese people constitute roughly one-fifth of the world population. After checking with the PsycINFO database using "family assessment" in Abstract in November 2023, we found 27,967 records. However, we found only 32 records of family assessment using "family assessment" and "mainland China" and 121 records of family assessment using "family assessment" and "Hong Kong." Besides, while there are validated translated instruments such as the Chinese version of Family Assessment Device (e.g., Wong et al., 2022), some important indigenous concepts of Chinese family functioning such as mutuality and avoidance of family conflict are lacking. Besides, although there are some existing Chinese family assessment tools, most of them are not comprehensive and only assess either family interaction (e.g., Wu et al., 2017) or parenting of Chinese families (e.g., Zhao et al., 2023). Furthermore, few studies have examined factorial validity of the different family functioning measures in China (Cheng et al., 2011; Zheng and Yang, 2022).

Responding to this gap, based on focus group data (i.e., indigenous concepts of family functioning) and integration with the family science literature, Shek (2002) developed the Chinese Family Assessment Instrument (C-FAI) to assess the perceived family functioning of Hong Kong adolescents. Specifically, the data gathered from focus groups with adolescents and their parents illustrated that the absence of conflict, family harmony, mutuality, sense of belonging, and good parent–child relationships were regarded as vital elements of a healthy family, whereas emotional expression and communication were least emphasized as important constituents of an optimal family. Past research has revealed that the C-FAI possesses good reliability and validity (Siu and Shek, 2005; Shek and Ma, 2010). In particular, the five dimensions of the C-FAI (mutuality, communication, conflict and harmony, parental concern and parental control) were validated by exploratory factor analysis and confirmatory factor analysis. There was also support for its convergent validity and reliability. However, the supporting evidence was confined to Hong Kong.

In view of cultural disparities between Hong Kong and mainland China, the applicability of the C-FAI to assess the perceived family functioning of adolescents in mainland China deserves further exploration. Under the principle of "one country, two systems," Hong Kong does not possess the same economic and social systems as those in mainland China. For example, children acting in a non-filial manner will be publicly sanctioned in mainland China. Substance abuse in young people is also unique in Hong Kong (Shek, 2007). Besides, there are other differences between Hong Kong and mainland China, including (a) Hong Kong is more individualistic whereas mainland China is more collectivistic; (b) Hong Kong is a Capitalistic society whereas mainland China is a Socialist society with Chinese characteristics; (c) mainland China is still more susceptible to traditional Chinese values (e.g., Lunar New Year holidays). As such, exploration of the psychometric properties of the C-FAI, which was originally developed and validated using Hong Kong adolescents as the sample, is warranted for preadolescents and adolescents in mainland China.

Besides, there are several gaps in the existing literature in this field. First, validated family functioning measures in mainland China are very limited. Second, as mentioned above, compared to Hong Kong, research on family assessment is relatively inactive in mainland China. Third, there are very few family assessment

tools to examine perceived family functioning in children in preadolescence and adolescence. As adolescents may have tense relationships with parents during puberty, understanding their perceived family functioning is important. Fourth, very few studies have adopted longitudinal research design with a large sample size to examine the psychometric properties of family functioning assessment tools. Fifth, few studies have investigated factorial validity across samples and time to demonstrate the stability of family assessment measures. In response to these research gaps, we asked several research questions in the present study based on students in preadolescence and early adolescence in mainland China:

Research Question 1: What are the dimensions underlying the C-FAI based on the responses of participants in preadolescence and adolescence? With reference to previous findings (Siu and Shek, 2005; Shek and Ma, 2010), we expected that the five-factor structure of the C-FAI would be supported (Hypothesis 1).

Research Question 2: Are the dimensions underlying the C-FAI invariant across random sub-samples? Based on Shek and Ma's (2010) study, we hypothesized that the five-factor structure of the C-FAI would be invariant across random sub-samples (Hypothesis 2).

Research Question 3: Are the dimensions underlying the C-FAI invariant across time? We expected that the factor structure of the C-FAI would be invariant across time (Hypothesis 3).

Research Question 4: Is there support for the convergent validity of the C-FAI? Based on previous studies (e.g., Schumm et al., 1986; Shek et al., 1993; Gaspar et al., 2022), we expected that C-FAI scores would be positively related to measures of family support (Hypothesis 4).

Research Question 5: Is there support for the discriminant validity of the C-FAI? Drawing upon the practice of previous studies (Schumm et al., 1986; Shek et al., 1993), we expected that C-FAI scores would not be strongly correlated with the measures that are theoretically unrelated to family functioning (Hypothesis 5).

Research Question 6: What is the reliability of the C-FAI total and subscale measures? We expected that the total scale and subscales of the C-FAI would have acceptable reliability (Hypothesis 6).

Materials and methods

Participants and procedures

In this study, we conducted a 3-wave longitudinal research on the psychosocial adjustment of Chinese preadolescents and adolescents with data gathered at three different time points: a baseline (Wave 1), six months later (Wave 2), and one and a half years later (Wave 3) from the baseline (e.g., Dou et al., 2023; Peng L.-L. et al., 2023). In 2020, there were 623 elementary schools, 317 junior secondary schools, and 156 schools admitting both elementary and junior secondary students in Chengdu. All of them were public schools. Prior to the onset of the COVID-19 pandemic (Wave 1), a cluster sampling method was used to select five schools (one elementary school, one junior secondary school, and three admitting both elementary and junior secondary students) to participate in this study. Among these participating schools, two were situated in southern suburban areas, two were in northern suburban areas, and one was in the downtown area. In the scientific literature, there are studies in which data from elementary and secondary school students are collected (Chai et al., 2022; Obregón-Cuesta et al., 2022).

In sum, a total of 11,154 students from five selected schools participated in this study. Among them, 3,019 students completed the survey at either one wave, 2,008 students completed the survey at either two waves, and 6,127 students completed the survey at all three waves. Students were asked to answer an identical questionnaire containing a Chinese Family Assessment Instrument in class during the survey. For primary school students, the questions on the questionnaire were read aloud to the students, item by item, by the class teacher in each class. This practice is commonly used in similar studies in the field (Miller and Meece, 1997; Stutz et al., 2017). As such, the class teacher could help clarify any misunderstandings when asked questions by students. For high school students, students read the questions and responded to the questions on their own. Before starting the survey, we got consent to take part in the survey from parents and students in addition to ethics permission for research from Sichuan University. Moreover, some vital principles such as anonymity and voluntary participation were told to students. After the survey, students' data at 3 waves were matched.

To understand the research questions for students in the period of preadolescence and early adolescence, we primarily examined the responses given by students aged 10 and above (e.g., Larson, 1997; McMakin and Alfano, 2015). In the matched sample aged 10 and above ($N = 3,732$), there were 1,938 primary school students at Wave 1 (51.8% males and 48.2% females; average age was 10.7 ± 0.72 years old; 99.1% Hans; 31.3% students have no siblings; average family monthly income was 118,773 CNY; 12.0% fathers and 10.5% mothers possess "university and above" as their highest educational level). There were 1,794 high school students at Wave 1 (49.4% males and 50.6% females; average age was 12.8 ± 0.76 years old; 99.2% Hans; 34.3% students have no siblings; average family monthly income was 181,531 CNY; 14.0% fathers and 11.8% mothers possess "university and above" as their highest educational level).

Instrument

The students responded to a questionnaire assessing psychosocial adjustment in children and adolescents. It contains a 33-item Chinese Family Assessment Instrument (C-FAI) which has been employed to investigate the perceived family functioning of Chinese adolescents (Shek, 2002). It has five dimensions, including mutuality (12 items, e.g., "family members understand each other"), communication (9 items, e.g., "family members are cohesive"), harmony and conflict (6 items, e.g., "poor marital relationship of parents"), parental concern (3 items, e.g., "parents take care of their children"), and parental control (3 items, e.g., "parental control too harsh"). These five dimensions encompass the primary characteristics of positive family functioning in Chinese families, involving absence of conflict, mutuality, and effective communication among family members, in addition to favorable parent–child and spousal relationships. Students' responses were assessed using a 5-point scale (1 = most similar, 5 = most dissimilar). All positively worded items were reverse coded. As such, an item score and the level of functioning of Chinese families was positively correlated. C-FAI has been found to be a valid and reliable tool for assessing family functioning in past studies using Hong Kong adolescents (e.g., Shek and Ma, 2010; Yu and Shek, 2013).

Besides the Chinese Family Assessment Scale, three additional items were employed to evaluate the convergent validity of the C-FAI: (a) mutual support among family members ("family members mutually support each other"); (b) degree of understanding of family members regarding the situations of each other ("family members know to understand the situations of each other"), and (c) relationship between the participant and his/her caregivers ("Is the relationship between you and your caregivers good?"). Students were asked to respond to the first two questions along a 6-point scale (1 = strongly disagree, 6 = strongly agree) and along a 10-point scale (1 = very worse, 10 = very well) for the last question.

Moreover, three additional items theoretically unrelated to family functioning were added to assess the discriminant validity of the C-FAI involving the items measuring the amount of time for sleeping ("What is your daily amount of sleeping time?") and doing exercise ("What is your daily amount of time to do exercise"), and the amount of sweet drink students take in per week/month ("On average, how much sweet drink do you take in per week/month?). In the literature (e.g., Shek et al., 1993; Armenta et al., 2013; Tsukayama et al., 2013), researchers have used this approach to assess the discriminant validity of a measurement instrument.

Data analysis

In this study, we performed confirmatory factor analysis (CFA) and measurement invariance (MI) tests to assess the factorial validity, convergent validity, discriminant validity, and reliability of the C-FAI, and its stability across groups and over time. CFA and MI tests were conducted using structural equation modeling techniques via Lisrel 8.54. Parameters were estimated by utilizing maximum likelihood estimation (ML) and robust maximum estimation (RML) methods. RML was chosen because it could reduce standard errors of the estimates caused by the violation of multivariate normality of the data. Convergent and discriminant validity of the C-FAI were assessed using Pearson correlation with the aid of SPSS 26.0.

The present investigation implemented five sequential steps. First, CFA was performed to assess the factor structure of the C-FAI using three waves of data (Wave 1 to Wave 3) individually. As stated by Brown (2006), the factor model of the C-FAI fits the data adequately when the values of the standardized root-mean-square residual and the root-mean-square error of approximation are less than 0.08 (MacCallum et al., 1996; Hu and Bentler, 1999), and the values of the non-normed fit index (NNFI) and the comparative fit index (CFI) are more than 0.90 (Bentler and Bonett, 1980).

Second, after identifying the factor structure of the C-FAI and establishing its factorial validity, we assessed the stability of the factor structure of the C-FAI across groups. Initially, the total sample at each wave was randomly divided into two subsamples based on cases. Multigroup confirmatory factor analysis (MCFA) was then used to assess the measurement invariance of the C-FAI across subsamples at each wave. Following the steps outlined by Dimitrov (2010), the levels of measurement invariance were assessed in the following order: separate groups, configural invariance, weak measurement invariance, strong measurement invariance, and strict measurement invariance. These steps are commonly followed when testing the measurement invariance of a scale (e.g., Castillo et al., 2015; Carr et al., 2017). Hence, a series of models ranging from least restrictive to most restrictive models were compared.

At the beginning, a five-factor model of the C-FAI was assessed separately for each group. Then, the five-factor structure of the C-FAI was evaluated simultaneously across groups to establish configural invariance in the analysis. The models were specified with no restriction in factor loadings, intercepts and uniqueness of the corresponding indicators between groups. Afterwards, weak measurement invariance was examined with the same models of configural invariance except the equality of factor loadings was imposed between the corresponding indicators of both groups. Later, strong measurement invariance was investigated with the same models of weak measurement invariance except the equalities of factor loadings and intercepts were imposed between the corresponding indicators of both groups. Finally, strict measurement invariance was examined with the same models of strong measurement invariance except the equalities of factor loadings, intercepts and uniqueness were imposed between the corresponding indicators of both groups. After establishing measurement invariance of the C-FAI, structural invariance of the 5-factor correlated model of the C-FAI was further explored by testing invariance in factor variances and factor covariances of the C-FAI model. Invariance in factor variances was examined with the same models of strict measurement invariance except the equalities of factor loadings, intercepts, and uniqueness were imposed between the corresponding indicators, and the equality of variances between corresponding factors was imposed between corresponding factors of both groups. Furthermore, invariance in factor covariances was assessed with the same models of factor variances invariance except the equalities of factor loadings, intercepts, and uniqueness were imposed between the corresponding indicators, and the equalities of variances and covariances were imposed between corresponding factors of both groups. For each form of factorial invariance, the model was compared with the model that preceded it.

As chi-square difference tests tend to reject the null hypothesis of no difference between two nested models in large samples even though the difference is trivial (Cheung and Rensvold, 2002), changes in CFI and RMSEA values were also commonly used to assess model fit for the factorial invariance of the C-FAI (Vandenberg and Lance, 2000). An acceptable model fit for more restrictive invariant models is based on the change in CFI value that is not more than 0.002 (Little, 2013), and the change in RMSEA value that is not more than 0.01 (Chen, 2007).

Third, after confirming the stability of the factor structure of the C-FAI across groups, we further tested whether the factor structures were stable across time. Identical factor analytic procedures and criteria for the fit of invariant nested models mentioned above were conducted to assess the stability of the factor structure across three waves of data (Wave 1 to Wave 3), with autocorrelation of uniqueness specified among same observable indicators in Wave 1, Wave 2 and Wave 3.

Fourth, apart from investigating the factorial validity and invariant properties of the C-FAI, we also assessed the convergent and discriminant validity of the C-FAI. The convergent validity of the C-FAI is demonstrated when the "average variance extracted" (AVE) for each factor at all waves was more than 0.50 (Hamid et al., 2017). It means that each construct explained more than 50% of the total variance in their respective indicators, and hence the convergent validity of the 5-factor structure of the C-FAI was supported. Besides, the convergent validity

of the C-FAI was illustrated when the total score of the C-FAI is correlated significantly and substantially with the scores of three conceptually related items in the questionnaire, including (1) there is mutual support among family members, (2) family members know to understand the situations of each other, and (3) relationship between you and caregivers. On the other hand, the discriminant validity of the C-FAI was illustrated when the total score of C-FAI did not show any substantial correlation with those of items unrelated to the measurement of family constructs, such as the items tapping the amount of time for sleep and doing exercise, and the amount of sweet drink the participants take in per week and month. This approach was adopted in previous studies to examine the convergent and discriminant validity of a measure (e.g., Shek et al., 1993; Armenta et al., 2013; Tsukayama et al., 2013).

Lastly, we examined the reliability of the C-FAI using composite reliability, in which the acceptable value for it is 0.70 and above (Raykov, 2004). Moreover, we utilized Cronbach's alphas and mean inter-item correlations of the C-FAI to further examine the internal consistency reliability of the subscales and the total scale of the C-FAI (see Schmitt, 1996). A value of Cronbach's alpha greater than 0.7 indicates acceptable reliability, while the value of mean inter-item correlations in-between 0.3 to 0.7 illustrates adequate internal consistency of the scale (Lin et al., 2009).

Results

Descriptive statistics

Means, standard deviations, skewness, and kurtosis of each item of the C-FAI were assessed. The range of mean and standard deviation was 3.44–4.49 and 0.94–1.51, respectively. All items were normally distributed because the absolute values of univariate skewness (ranging from 0.43 to 2.00) and kurtosis (ranging from 1.26 to 3.76) values were not more than 2 and 7, respectively.

Factorial validity of C-FAI

Table 1 summarizes the results of CFA according to the sample at Wave 1, Wave 2, and Wave 3. The findings of this study illustrated that the five-factor correlated model of C-FAI, with four error covariances fitted the data of each wave adequately (Wave 1: SBχ^2 = 18,464, df = 481, $p < 0.001$, NNFI = 0.94, CFI = 0.94, RMSEA = 0.100, SRMR = 0.105; Wave 2: SBχ^2 = 10,303, df = 481, $p < 0.001$, NNFI = 0.96, CFI = 0.96, RMSEA = 0.074, SRMR = 0.103; Wave 3: SBχ^2 = 21,044, df = 481, $p < 0.001$, NNFI = 0.94, CFI = 0.95, RMSEA = 0.107, SRMR = 0.123). Nevertheless, it is noteworthy that the RMSEA and SRMR values in the model of each wave represented fair fit only, although NNFI and CFI indices illustrated good fit. Apart from two items (item 14 and item 23) which had the loadings less than 0.34, factor loadings of all other items were higher than 0.40 and significant at 0.05 level. As such, Hypothesis 1 was supported.

Multigroup invariance across subsamples

A series of invariance tests were conducted across two subsamples at each wave to assess multigroup invariances of the C-FAI. As indicated in Table 2, the five-factor correlated model of the C-FAI showed an acceptable fit to the data of the subsamples at each wave, with NNFI and CFI values ranging from 0.93–0.96 and 0.94–0.97, respectively. As such, a series of factorial invariance tests were conducted across two subsamples in each wave of data subsequently. As the result of the chi-square difference test is too sensitive to large sample size (Schumacker and Lomax, 2004), a practical approach was adopted (ΔCFI $\leq$0.002; ΔRMSEA <0.01) for demonstrating the measurement invariance property of the C-FAI in the present study (Chen, 2007; Little, 2013). The findings of this study revealed equivalent fit indices between all pairs of the more restrictive model and the comparison model since changes in CFI and RMSEA values were less than the cutoff values of 0.002 and 0.01, respectively. As such, C-FAI is measurement and structural invariant across subsamples of three waves of data. Multigroup invariance of the C-FAI was confirmed and Hypothesis 2 was supported. Specifically, the most restrictive model of the C-FAI supposing equality in factor loadings, intercepts, uniqueness of indicators, factor variances and covariances illustrated fair fit indices at Wave 1 to Wave 3 (RMSEA and SRMR values ranged from 0.072–0.104, and 0.102–0.121, respectively), in spite of good fit demonstrated by NNFI and CFI indices.

Longitudinal invariance across time

After confirming the multigroup invariant property of the C-FAI, its longitudinal invariance was further explored. As the five-factor correlated model of the C-FAI demonstrates an acceptable fit to the data of each wave (see Table 1), a series of measurement invariance tests were conducted over three waves of data subsequently to investigate the longitudinal invariance of the C-FAI. In Table 3, Model 1 demonstrated a good fit to the observed data (χ^2 = 58942.8, df = 4,536, $p < 0.001$, NNFI = 0.961, CFI = 0.964, RMSEA = 0.071, and SRMR = 0.073), suggesting the generalizability of the factor structure of the C-FAI over time (configural invariance). Then, a more restricted model (Model 2) for assessing the weak measurement invariance of the C-FAI was performed. In Model 2, factor loadings were specified to be the same across three waves of data. As the change in both CFI and RMSEA values between Model 1 and Model 2 were less than 0.002, the weak measurement invariance of the C-FAI was supported. Given all factor loadings of items were invariant, strong measurement invariance of the C-FAI was examined. In this form of invariance test, factor loadings and intercepts were specified to be equal across three waves of data in Model 3. Since there was no change in CFI and RMSEA values between Model 2 and Model 3, the strong measurement invariance of the C-FAI was also supported. Given all factor loadings and intercepts of items were invariant, strict measurement invariance of the C-FAI was examined. In this form of invariance test, factor loadings, intercepts as well as uniqueness of indicators were constrained to be identical across three waves of data (Model 4). As the change in CFI values between Model 3 and Model 4 was 0.003, which was greater than the cutoff value of 0.002, the strict measurement invariance of the C-FAI was not supported. In sum, the findings of this study indicate that the factor structure of the C-FAI remained consistent across time, demonstrating longitudinal invariance. Additionally, latent means could be compared without bias. This confirmed Hypothesis 3. In sum, C-FAI has good factorial

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TABLE 1 Results of CFA of the five-factor correlated model of the C-FAI at Wave 1, Wave 2, and Wave 3.

Fit indices of the C-FAI model		Wave 1	Wave 2	Wave 3
SBχ^2		18,464	10,303	21,044
df		481	481	481
value of p		<0.001	<0.001	<0.001
NNFI		0.94	0.96	0.94
CFI		0.94	0.96	0.95
RMSEA		0.100	0.074	0.107
SRMR		0.105	0.103	0.123
Standardized factor loadings				
Factors	Item number and content			
Mutuality	1. Family members support each other	0.77	0.81	0.85
	2. Family members love each other	0.79	0.84	0.88
	4. Family members care about each other	0.80	0.85	0.87
	5. Family members mutually consider each other	0.85	0.87	0.91
	6. Family members understand each other	0.82	0.85	0.88
	15. Family members get along well	0.64	0.82	0.82
	17. Family members have good relationship with each other	0.72	0.83	0.74
	18. Family members tolerate each other	0.63	0.67	0.65
	19. Family members are patient with each other	0.64	0.72	0.68
	20. Family members accommodate each other	0.55	0.62	0.62
	21. Family members trust each other	0.74	0.84	0.77
	32. Children are filial	0.56	0.60	0.58
Communication	7. Family members talk to each other	0.81	0.83	0.85
	8. Family members frequently arrange family activities	0.65	0.70	0.72
	9. Family members are cohesive	0.87	0.88	0.91
	10. Family members enjoy getting together	0.83	0.83	0.87
	11. Not many barriers among family members	0.71	0.73	0.78
	25. Parents know children's needs	0.57	0.69	0.65
	26. Parents understand children's mind	0.62	0.70	0.66
	27. Parents often talk to their children	0.62	0.71	0.67
	28. Parents share children's concerns	0.57	0.65	0.62
Harmony and conflict	3. Family members do not mutually concern with each other	0.52	0.63	0.63
	12. Much friction among family members	0.59	0.60	0.61
	13. Frequent fighting among family members	0.71	0.69	0.62
	14. Not many quarrels among family members	0.25	0.26	0.31
	16. Lack of harmony among family members	0.69	0.74	0.73
	33. Poor marital relationship of parents	0.48	0.58	0.58
Parental concern	22. Parents love their children	0.86	0.85	0.85
	23. Parents do not care about their children	0.33	0.29	0.33
	24. Parents take care of their children	0.86	0.87	0.88
Parental control	29. Parents scold and beat children	0.80	0.82	0.85
	30. Parents force children to do things	0.79	0.81	0.81
	31. Parental control too harsh	0.68	0.72	0.70

(Continued)

TABLE 1 (Continued)

AVE for the total scale and each factor, and inter-factor correlations																		
	Wave 1						Wave 2						Wave 3					
Factors	(1)	(2)	(3)	(4)	(5)	AVE	(1)	(2)	(3)	(4)	(5)	AVE	(1)	(2)	(3)	(4)	(5)	AVE
1. MU	1.0					0.51	1.0					0.61	1.0					0.61
2. COM	0.94	1.0				0.49	0.95	1.0				0.56	0.96	1.0				0.57
3. HC	0.49	0.45	1.0			0.32	0.40	0.34	1.0			0.36	0.47	0.42	1.0			0.35
4. PCONC	0.73	0.62	0.41	1.0		0.53	0.81	0.76	0.41	1.0		0.52	0.74	0.68	0.49	1.0		0.54
5. PCONT	0.34	0.34	0.73	0.28	1.0	0.58	0.30	0.29	0.79	0.33	1.0	0.62	0.37	0.36	0.76	0.35	1.0	0.62
TFF						0.48						0.55						0.55

All standardized factor loadings and correlations are significant at 0.05 level. MU, mutuality; COM, communication; HC, harmony and conflict; PCONC, parental concern; PCONT, parental control; TFF, total score of family functioning.

TABLE 2 Multigroup invariance of the C-FAI across two subsamples at Wave 1, Wave 2, and Wave 3.

	Global fit indices							Models	Δ test			
	$SB\chi^2$	*df*	*p* value	*NNFI*	*CFI*	*RMSEA*	*SRMR*		$SB\chi^2$	*p* value	*CFI*	*RMSEA*
Invariance tests at Wave 1												
Sample 1 (*N* = 1863)	10169.4	481	<0.001	0.93	0.94	0.104	0.113	-	-	-	-	-
Sample 2 (*N* = 1867)	8640.2	481	<0.001	0.94	0.95	0.095	0.098	-	-	-	-	-
1.Configural MI	18266.4	962	<0.001	0.939	0.944	0.098	0.098					
2.Weak MI	18483.1	990	<0.001	0.940	0.944	0.097	0.102	1 vs. 2	216.7	<0.001	0.000	0.001
3.Strong MI	18725.1	1,023	<0.001	0.942	0.944	0.096	0.102	2 vs. 3	242.0	<0.001	0.000	0.001
4.Strict MI	18508.0	1,056	<0.001	0.944	0.944	0.094	0.101	3 vs. 4	217.1	<0.001	0.000	0.002
5.Factor variance MI	18516.2	1,061	<0.001	0.944	0.944	0.094	0.101	4 vs. 5	8.2	0.146	0.000	0.000
6.Factor covariance MI	18506.6	1,071	<0.001	0.945	0.944	0.093	0.102	5 vs. 6	9.6	0.476	0.000	0.001
Invariance tests at Wave 2												
Sample 1 (*N* = 1864)	4772.5	481	<0.001	0.96	0.97	0.069	0.104	-	-	-	-	-
Sample 2 (*N* = 1868)	5935.8	481	<0.001	0.96	0.96	0.078	0.102	-	-	-	-	-
1.Configural	10976.6	962	<0.001	0.960	0.964	0.075	0.102					
2.Weak MI	11214.1	990	<0.001	0.961	0.963	0.074	0.103	1 vs. 2	237.5	<0.001	0.001	0.001
3.Strong MI	11386.5	1,023	<0.001	0.962	0.963	0.074	0.103	2 vs. 3	172.4	<0.001	0.000	0.000
4.Strict MI	11281.3	1,056	<0.001	0.963	0.963	0.072	0.104	3 vs. 4	105.2	<0.001	0.000	0.002
5.Factor variance MI	11292.2	1,061	<0.001	0.963	0.963	0.072	0.104	4 vs. 5	10.9	0.053	0.000	0.000
6.Factor covariance MI	11339.0	1,071	<0.001	0.964	0.963	0.072	0.105	5 vs. 6	46.8	<0.001	0.000	0.000
Invariance tests at Wave 3												
Sample 1 (*N* = 1859)	10739.5	481	<0.001	0.94	0.95	0.107	0.126	-	-	-	-	-
Sample 2 (*N* = 1857)	10674.6	481	<0.001	0.94	0.94	0.107	0.120	-	-	-	-	-
1.Configural	22550.3	962	<0.001	0.940	0.945	0.110	0.120					
2.Weak MI	22748.7	990	<0.001	0.942	0.945	0.109	0.120	1 vs. 2	198.4	<0.001	0.000	0.001
3.Strong MI	23069.9	1,023	<0.001	0.943	0.945	0.108	0.120	2 vs. 3	321.2	<0.001	0.000	0.001
4.Strict MI	22573.3	1,056	<0.001	0.945	0.945	0.105	0.121	3 vs. 4	496.6	<0.001	0.000	0.003
5.Factor variance MI	22592.3	1,061	<0.001	0.945	0.945	0.105	0.121	4 vs. 5	19.0	<0.01	0.000	0.000
6.Factor covariance MI	22609.9	1,071	<0.001	0.946	0.945	0.104	0.121	5 vs. 6	17.6	0.062	0.000	0.001

NNFI, non-normed fit index; CFI, comparative fit index; RMSEA, root-mean-square error of approximation; SRMR, standardized root-mean square residual; MI, measurement invariance.

validity and possesses multigroup and longitudinal invariant properties across sub-samples and over time.

Convergent and discriminant validity

Regarding convergent and discriminant validity of the C-FAI, the findings revealed that the average values of AVE for all factors across three waves (except the harmony and conflict factor) ranged from 0.53 to 0.61, which were higher than the cutoff value of 0.50 (Table 4). In addition, the total score of family functioning correlated significantly ($p < 0.05$) and substantially with three conceptually related indicators in each wave of data, including (1) there is mutual support among family members (r ranged from 0.34 to 0.35), (2) family members know to understand the situations of each other (all rs were 0.40), and (3) relationship between you and caregivers (r ranged from 0.43 to 0.52). As

TABLE 3 Longitudinal measurement invariance of the C-FAI across time (Wave 1 to Wave 3).

Invariance model	Global fit indices							Models	Δ test			
	χ^2	*df*	*p* value	*NNFI*	*CFI*	*RMSEA*	*SRMR*		χ^2	*p* value	*CFI*	*RMSEA*
1.Configural	58942.8	4,536	<0.001	0.961	0.964	0.071	0.073	-	-	-	-	-
2.Weak MI	59116.1	4,592	<0.001	0.961	0.963	0.071	0.073	1 vs. 2	173.3	<0.001	0.001	0.000
3.Strong MI	59974.7	4,658	<0.001	0.961	0.963	0.071	0.073	2 vs. 3	858.6	<0.001	0.000	0.000
4.Strict MI	63858.1	4,724	<0.001	0.959	0.960	0.074	0.074	3 vs. 4	3883.4	<0.001	0.003	0.003

NNFI, non-normed fit index; CFI, comparative fit index; RMSEA, root-mean-square error of approximation; SRMR, standardized root-mean square residual; MI, measurement invariance.

TABLE 4 Correlations between total score of family functioning and six indicators at three waves of data.

Indicators	Wave 1	Wave 2	Wave 3
1. Family members mutually support each other.	0.34	0.35	0.35
2. Family members know to understand the situations of each other.	0.40	0.40	0.40
3. Is the relationship between you and your caregivers good?	0.43	0.50	0.52
4. What is your daily amount of sleeping time?	0.14	0.10	(0.00)
5. What is your daily amount of time to do exercises?	(0.01)	(−0.01)	(−0.01)
6. On average, how much sweet drink do you take in per week / month?	−0.16	−0.12	−0.17

The correlation coefficient inside the bracket is insignificant ($p > 0.05$).

TABLE 5 Reliability of the C-FAI based on the whole sample at three waves of data.

	Mutuality	Communication	Harmony and conflict	Parental concern	Parental control	Total scale
Wave 1						
Composite reliability	0.93	0.90	0.72	0.75	0.80	0.97
α	0.93	0.91	0.69	0.67	0.80	0.94
Mean inter-item correlation	0.53	0.52	0.28	0.43	0.57	0.35
Wave 2						
Composite reliability	0.95	0.92	0.76	0.74	0.83	0.97
α	0.95	0.93	0.75	0.62	0.83	0.95
Mean inter-item correlation	0.61	0.59	0.33	0.41	0.61	0.39
Wave 3						
Composite reliability	0.95	0.92	0.76	0.75	0.83	0.97
α	0.95	0.93	0.74	0.66	0.83	0.95
Mean inter-item correlation	0.62	0.60	0.32	0.43	0.62	0.41

such, Hypothesis 4 was supported and the convergent validity of the C-FAI was demonstrated. Regarding discriminant validity of the C-FAI, the findings revealed that the total score of family functioning did not correlate substantially with other three conceptually unrelated indicators, including (4) amount of sleep per day (r ranged from 0.00 to 0.14), (5) amount of time for doing exercise per day (r ranged from −0.01 to 0.01), and (6) on average, the amount of sweet drink which you take per week/month (r ranged from −0.12 to −0.17). Consequently, Hypothesis 5 was supported and discriminant validity of the C-FAI was confirmed.

Reliability

Table 5 illustrates the reliability of five subscales and the total scale of the C-FAI. The findings of this study showed that the composite reliability of the subscales and the total scale ranged from 0.72–0.97 at Wave 1, 0.74–0.97 at Wave 2, and 0.75–0.97 at Wave 3. They illustrated that the C-FAI was reliable. The reliability of the C-FAI was further supported by Cronbach's alpha and mean inter-item correlations (at Wave 1: 0.67–0.94 and 0.28–0.57; at Wave 2: 0.62–0.95 and 0.33–0.61; at Wave 3: 0.66–0.95 and 0.32–0.62, respectively). As such, Hypothesis 6 was supported. In sum, the factorial, convergent and discriminant validity as well as the reliability of the C-FAI were confirmed. In addition, longitudinal and multigroup invariance of it were evident. As such, C-FAI is a psychometrically sound measure to investigate adolescents' perceived family functioning in mainland China.

Discussion

This study aimed to examine the factor structure, convergent validity, discriminant validity and reliability of the C-FAI as well as its

invariance across subsamples and time, among children and adolescents residing in mainland China. One of the primary features of this work was its use of a longitudinal research approach with a large sample size to perform a construct validation study of the C-FAI. As such, the stability of the factor structure of the C-FAI over time was explored. It is important because the longitudinal invariant property of the C-FAI is largely neglected in previous studies using family functioning measures (e.g., Wang et al., 2021, 2023; Wang X. et al., 2022; Zhang et al., 2023). Besides, apart from adopting RML estimation to address multivariate non-normality of the data, this study recruited a large sample for investigation. This would lower standard errors of the estimates and hence, enhance the accuracy and credibility of the findings. In addition, as most of the self-reported family functioning measures focus on adults instead of children and adolescents (Tiffin et al., 2011), this study provided empirical support for the usefulness of the C-FAI to assess subjective family functioning among preadolescents and adolescents in mainland China.

In response to the question about the factor structure of the C-FAI among preadolescents and adolescents in mainland China (Research Question 1), our findings offered empirical support for the five-factor structure of the C-FAI (mutuality, communication, conflict and harmony, parental concern, and parental control), hence supporting Hypothesis 1. It echoes the findings of Siu and Shek's (2005) and Shek and Ma's (2010) study, which revealed the same factor structure of the C-FAI among adolescents in Hong Kong. As stated by Cultural Atlas Editors (2016), even though there are some social and cultural differences between people in Hong Kong and mainland China, Confucianism still serves as the foundation of the cultural roots of people in both places. Some important Confucian values, such as filial piety, are still prevalent among children and adolescents, which in turn determine their perceptions of a good and healthy family (Li et al., 2014). For instance, under the filial piety tradition, children and adolescents will follow and respect their parents while parents will take care of and accept their children. As such, family harmony would be preserved by developing mutuality among family members. Moreover, as the dimensions of the C-FAI identified in this study have high similarity to three important dimensions of family functioning in Western studies, which are cohesiveness, communication, and flexibility, these three aspects of family functioning seem to be universal across both Western and Chinese cultural contexts.

Nonetheless, similar to the findings using Hong Kong adolescents (Siu and Shek, 2005), the "conflict and harmony" dimension identified in this study reflects that the "absence of conflict" is also viewed as an important element of a good family for children and adolescents in mainland China. In addition, "parental concern" and "parental control" factors are associated with the functioning of parents, which in turn reflects the significant role of parents in determining the functioning of families in mainland China. In sum, as stated by Wong et al. (2022), there are two perspectives to conceptualize family functioning, including process-oriented and result-oriented perspectives. The former perspective classifies families into different kinds based on the features of the family (e.g., see Olson's (2000) Annular Mode model of family functioning), while the latter perspective is mainly concerned with the essential components for the development of healthy families (e.g., see Miller et al.'s (2000) McMaster family functioning model). The dimensions of the C-FAI involve both result-oriented (mutuality, communication, and conflict and harmony) and process-oriented elements (parental concern and parental control), which would offer holistic insights into the development of positive family functioning in mainland China.

For the second research question, our findings supported Hypothesis 2 that the dimensions underlying the C-FAI were invariant across random subsamples. It is consistent with the findings of Shek and Ma's (2010) study, which illustrated strong measurement invariance of the C-FAI across subsamples based on case numbers (even and odd). However, the results of this study offered additional empirical evidence in support of the strict measurement invariance and structural invariance of the C-FAI across random subsamples. These findings suggest two random subsamples have same interpretations of C-FAI items, and the factor and observable means of the level of family functioning between two subsamples could be compared without bias. Moreover, the relationships among the five factors of the C-FAI were equally applied to two subsamples. As such, two subsamples have the same conceptual understanding of the areas of functioning in Chinese families. For example, the "mutuality" and "communication" factors would be highly correlated because effective communication among family members would promote their mutuality (White et al., 2010).

The findings of this study indicate that the factor structure of the C-FAI remained consistent throughout time, hence providing support for Hypothesis 3. This finding provides evidence for the long-term stability of the C-FAI. Please be advised that the use of C-FAI has been observed in longitudinal research conducted with teenagers in mainland China (e.g., Wang et al., 2021, 2023), the longitudinal invariant property of the C-FAI has not been well addressed. The strict longitudinal invariance of the C-FAI found in this study adds to the extant literature and supports the fact that the C-FAI assesses the same family functioning construct at different points of time. As such, C-FAI could be used to assess age-varying changes in the subjective family functioning of Chinese people from childhood to adolescence to adulthood, especially during the period of adolescence in which teenagers may have negative relationships with parents (Gniewosz and Gniewosz, 2020). In addition, as mentioned in the review article by Dai and Wang (2015), research on the development of family functions at different periods during the life of a family is very limited. C-FAI would be a promising family functioning measure to address this gap and assess changes in the functions of a family over the life course.

Apart from supporting the factorial validity of the C-FAI, the construct validity of the C-FAI was further confirmed by establishing its convergent and discriminant validity. Regarding the fourth research question, the present results revealed substantial correlations between the total score of the C-FAI and the measures of family support, hence supporting Hypothesis 4. Convergent validity of the C-FAI was confirmed. The results of Gaspar et al.'s (2022) research align with the findings presented here, demonstrating a significant positive association between parental emotional support and family functioning among a sample of 1,757 parents from Portugal. 'Besides, the present results did not reveal substantial associations between the total score of C-FAI and theoretically unrelated constructs, and thus supported Hypothesis 5. As such, discriminant validity of the C-FAI was also confirmed. As stated by Strauss and Smith (2009), construct validity of a measure is commonly regarded as a unifying form of validity for psychological measurements and hence encompasses cumulative sources of evidence supporting specific interpretations of a score from a measure. The establishment of the convergent validity

and discriminant validity of the C-FAI definitely offers additional validity support for what the C-FAI intends to measure, that is perceived family functioning.

Lastly, the findings of this study illustrated acceptable reliability of the total and subscale measures of the C-FAI, hence supporting Hypothesis 6. It is consistent with the findings of Hu et al.'s (2023) and Lam and Chen's (2022) study, which showed the total scale of the C-FAI and its subscales were reliable. In sum, C-FAI is a valid and reliable measure of perceived family functioning among children and adolescents in mainland China. It is a stable family functioning instrument that would be utilized to compare the latent means between groups and detect the changes of latent means across time.

Implications

Theoretically, this study provided empirical support to an indigenous conceptualization of family functioning in the Chinese context. As stated by Dai and Wang (2015), theoretical models of family functioning in China are mainly focused on translated literature and the Western-developed models may not be culturally appropriate in the Chinese culture. Therefore, the development of unique Chinese family functioning models is of paramount importance. Hence, the study is an innovative attempt using rigorous conceptual arguments and research methods (e.g., longitudinal design and use of confirmatory factor analyses). This study also paves the way for the development of more sophisticated family functioning models for Chinese people.

Basically, family functioning theory is classified into two categories in the West. The first one is result-oriented family functioning theory, which defines family functioning by special features of the family such as family intimacy and family communication styles. Another one is process-oriented family functioning theory, which describes family functioning in terms of tasks families need to complete, such as affective involvement and behavior control of the child in the family. Literature review has illustrated that a theoretical model of family functioning with both result-and process-oriented elements is very rare. However, the conceptual model underlying the C-FAI is composed of both result-oriented elements (mutuality, communication, and conflict and harmony) and process-oriented ones (parental concern and parental control). This conceptual model of family functioning would add to the literature and serve as an innovative reference model to facilitate the cross-cultural examination of family functioning in different cultural contexts.

Practically, C-FAI would serve as a psychometrically sound family functioning instrument to identify family problems and hence support clinical practices in mainland China and Hong Kong. In light of the increase in family problems, youth education problems and psychological problems in mainland China in recent years, the demand for family therapy and intervention has been raised by leaps and bounds (Yao, 2022). As such, the provision of family therapy and intervention has been greatly increased. Nevertheless, Quek and Chen (2017) commented on the applicability of Western-based family therapy approaches and screening instruments to the Chinese context. As C-FAI has been developed in the Chinese context, it could be utilized to conduct family functioning research in mainland China and Hong Kong appropriately. In fact, Hu et al. (2023) have already utilized the C-FAI to identify families with different levels of family environment dysfunction and subsequently explored the effects of the family environment on non-suicidal self-injury among secondary school students in mainland China. C-FAI would be used to help counselors and family therapists to identify the problematic areas of family functioning in an unhealthy family and subsequently provide appropriate intervention and treatment to clients. In addition, as the current findings illustrated that the C-FAI exhibited favorable psychometric properties, it could be utilized as an objective reference tool in future studies on family functioning within various Asian contexts, thereby contributing to the broader international research landscape.

Limitations

There are certain limitations of the study. First, we only used three-wave data to assess longitudinal invariance of the C-FAI. To delineate a holistic picture of measurement invariant property of the C-FAI over time, future research should aim to collect more waves of data over an extended period of time. Second, multigroup invariance of the C-FAI was assessed using random subsamples only. As family functioning has been found to be associated with gender and family SES of the participants (Berge et al., 2013), future research should explore whether the C-FAI is invariant across gender and family SES among children and adolescents in mainland China. Third, the study sample was limited to preadolescents and adolescents residing in Chengdu. Although studies focusing on a single province have been conducted (e.g., Dou et al., 2021; Wang L. et al., 2022), it is necessary to replicate the generalizability of the current findings across diverse populations in various regions of China.

Conclusion

This innovative study aimed to examine the factorial validity, convergent validity, discriminant validity, reliability and measurement invariance of the C-FAI in preadolescents and adolescents in mainland China. Based on rigorous conceptual arguments and utilizing advanced research design and methods, the results of this study provided support for all kinds of validity of the C-FAI and its multigroup and longitudinal invariance. As such, we conclude that C-FAI is a valid and reliable tool to assess perceived family functioning among children and adolescents in mainland China. The present findings provide support for an integrated indigenous Chinese model of family functioning. Besides, in view of its sound psychometric properties, the practical significance of the findings is that family practitioners and researchers can utilize the C-FAI to identify different problematic areas of the functioning in Chinese families and implement effective intervention and treatment to their clients.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

The studies involving humans were approved by Ethics Research Committee of Sichuan University. The studies were conducted in accordance with the local legislation and institutional requirements. Written informed consent for participation in this study was provided by the participants' legal guardians/next of kin.

Author contributions

DS: Conceptualization, Funding acquisition, Investigation, Methodology, Supervision, Writing – review & editing. KL: Formal analysis, Writing – original draft. XL: Methodology, Writing – review & editing. DD: Writing – review & editing.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Publisher's note

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Psychometric properties of the Marschak Interaction Method of Psychometrics and the Assessment of Parent–Child Interaction within residential care and non-referred settings

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Introduction: Assessment and identification of children with developmental needs and their interaction with primary caregivers are critical for emotional and social development. However, to the best of our knowledge, there is a scarcity of valid observation-based tools that guide the work with family communication, which is essential for the child's healthy development.

Method: The Marschak Interaction Method of Psychometrics (MIM-P) and Assessment of Parent–Child Interaction (APCI) are both interaction and observation-based assessment tool, and they were explored for their validity and reliability in assessing caregiver-child interaction. The study included 30 trained and certified professionals who recruited referred and non-referred caregiver-child dyads over 11 months. Assessment data was collected from 139 caregiver-child dyads for the MIM-P with 278 individuals (100 referred and 178 non-referred) and 129 caregiver-child dyads for the APCI with 257 individuals (95 referred and 162 non-referred).

Results: The psychometric analyses show that both the MIM-P and APCI presents relevant sources of reliability and validity for assessing caregiver-child interaction including interrater reliability, internal consistency, test re-test reliability as well as concurrent and construct validity.

Discussion and conclusion: The study highlights the need for observation-based assessment tools within social work and contributes to the understanding of the importance of relationships and interaction in children's emotional and social development. However, further research is needed to explore norms and further strengthen implementation and quality of the tools.

KEYWORDS

caregiver-child, assessment, observation-based, interaction-based, nonverbal communication, emotional communication

1 Introduction

The referral of children to mental health institutions due to regulatory problems and attachment issues has become a significant concern in recent times. It highlights the importance of the complex and bi-directional link between caregiver-child synchrony, the healthy development of emotional regulation, and the need to assess both the child and the caregiver-child interaction or relationship (Bowlby, 1953a,b; Trevarthen, 2005). Colegrove and Havivhurst (2016) highlighted the lack of observational tools and interventions that focus on non-verbal communication in parent–child dyads, although previous and recent research has emphasized the importance of professionals understanding the nonverbal and emotional dynamics of vulnerable families and caregiver-child interaction (Colegrove and Havivhurst, 2016; Apter et al., 2020).

Research supports the shift toward relationship-focused assessment and interventions, with the closest caregiving relationships providing a more accurate predictor for future outcomes than an examination of a child's individual characteristics (Shonkoff et al., 2012). Parental sensitivity, which includes the ability to structure and support a child in their zone of proximal development, has enduring implications for development and adaptation into adolescence and adulthood (Grossmann et al., 2006; Sroufe et al., 2010).

In 2017, one of the authors conducted an unpublished literature review focused on dyadic assessment methods for caregiver-child interaction within the age range of 3–12 years (Hart, 2018). The ensuing Table 1 encapsulates the findings derived from this examination.

This literature review identified six assessment methods, categorized into three overarching theoretical frameworks. Specifically, only one other method (besides APCI & MIM-P) is grounded in attachment theory, two in a systemic approach, and three in communication theory. All the identified methods are rooted in observation techniques, developed between the late 1990s and 2015, relying on structured or unstructured observations of video recordings. These observations are subsequently rated either qualitatively or quantitatively, based on video excerpts.

The six assessment methods predominantly focus on nonverbal communication, objectively rated through the detection of facial expression, voice pitch, volume and tempo, posture, and gesture. Alternatively, through subjective psychological values, defined as dimensions such as parental sensitivity, structuring, engagement, child responsiveness, and involvement. Five of these methods utilize a Likert-type scale or a multi-modal tool for rating responses. The three attachment theory-based assessment methods for parent–child interaction are the EAS, APCI, and MIM-P and they all have a clear understanding that the parent–child relationship is an asymmetrical relationship, and that the parents play a crucial role and bear the responsibility for creating a setting where the child feels comfortable and regulated.

Emotional Availability Scale (EA; Biringen and Easterbrooks, 2012) theory analyzes the parent–child relationship emphasizing emotionality. EAS comprises parental sensitivity, structuring, non-hostility, and non-intrusiveness and from the child's side responsiveness and involvement. EAS refers to the degree to which a connection is genuinely affectively positive and to the extent to which the dyad can accommodate and downregulate negative affect also keeping in mind, that these regulative needs of the child change during development. As it uses an unstructured setting EA observation have varied from stressful separation-reunion contexts into most used free-play situations videotaped either at the clinic of at home for a minimum of 20 min. All the dimensions are rated top-down as global perception as well as from bottom-up requiring rating of all six dimensions on a 29-point metric. Extant publications on the EAS have shown that both parent and child dimensions of EAS relate to key aspects of the mother–child relationships as well as to maternal characteristics and child behavior, and certain risk in developmental psychopathology (see Bornstein et al., 2012). Compared to APCI and

TABLE 1 Dyadic assessment methods for caregiver-child interaction.

Name of test	Author, year	Age group	Main focus	Analysis method
EAS (Emotional Availability Scale)	Biringen and Easterbrooks (2012)	0–16 years	Observation of nonverbal communication in the parent–child dyad, derived from attachment theory.	Video/rating
IFIRS (Iowa Family Interaction Rating Scales)	Melby and Conger (2001)	5–12 years	Parents and child are instructed to engage in a discussion and problem-solve issues. Use of silence, smiles, hugs, pauses in discussion, body position. Draws on social interaction, behavioral and social contextual theory.	Video/rating
Kahen Affect Coding System.	Gottman et al. (1996)	11–16 years	Emotion socialization. Vocal tone, facial expression, posture, gesture. Draws on social interaction, behavioral and social contextual theory.	Video/rating
SACS (Simple Affect Coding System)	Jabson et al. (2003)	All ages	Objective display of affect as relationship interaction. Interpersonal space, facial expression, tone of voice. Draws on social interaction, behavioral and social contextual theory.	Video/rating
SCIFF (System for Coding Interactions and Family Functioning)	Lindahl and Malik (2000)	0–16 years	Parents and child are instructed to discuss a recent family argument, while the interaction is rated on a Likert-type scale. Derived from a systemic approach.	Video/rating
SPAFF (Specific Affect Coding System)	Gottman and Krokoff (1989)	All ages	Coding interactions through facial expression, voice pitch, volume and tempo, posture, gesture. Draws on social interaction, behavioral and social contextual theory.	Video/rating

MIM-P EA measures different aspect of the dyadic relationship and use a different kind of setting.

MIM-P is a structured play-based observational method that has the dyadic relationship as its field of investigation. The building blocks for the original MIM were laid out by Marianne Marschak, who in 1958 developed MIM under the auspices of the Yale Child Study Center. Marschak's original MIM model was called the Controlled Interaction Schedule (CIS), and several articles were published on the model under that name before it was changed in the late 1960s to the Marschak Interaction Method (Booth et al., 2011). Marschak published her first MIM design in 1960, and at Michael Reese Hospital in Chicago, her daughter, Ann Jernberg, and her colleague Austin DesLauriers first used MIM in long-term studies in 1964 (Booth et al., 2011). When Jernberg became responsible for the psychological services of the newly established Head Start Program in Chicago in 1967, she made use of MIM in relation to vulnerable children and their mothers. In this context, Marschak made the first film recording of the use of MIM in practice (Marschak, 1967). Marschak wanted to capture the interaction between parent and child. For MIM use, Marschak therefore selected only material that could be expected to capture dimensions of interaction behavior between the adult and the child, so that the quality of both adult and child behavior could be examined (Booth et al., 2011). Over the years, MIM became increasingly integrated with the intervention method Theraplay, and long before Marianne Marschak died, she had accepted that Jernberg would adapt MIM to Theraplay.

MIM was originally developed as a qualitative clinical tool or a qualitative observation method. Since the 1990s, several diverse groups have attempted to standardize the method (see, e.g., Hitchcock et al., 2008; Martin et al., 2008; Bojanowski and Ammen, 2011; Salo and Mäkelä, 2018). In Denmark, we have come one step closer to further development of MIM with the development of a scoring system with a theoretical anchoring in neuroaffective developmental psychology. Thus, the observation method is both anchored in an attachment theory context and made quantifiable through psychometric qualities (hence MIM-Psychometric), so that it can be included in a research study where it becomes possible to conduct reliability and validity studies of the test.

Almost 20 years ago in 2005, the first author of this manuscript embarked on her professional journey as a music therapy intern within a family care center situated in Denmark. She investigated the feasibility of evaluating parent–child interactions as a music therapist within a multidisciplinary team. The family care center was renowned as an alternative approach to safeguarding children from being separated from their parents. Upon arrival, many of the families were often frustrated and anxious, leading them to deviate from their customary behavior. Some families presented a facade, concealing their genuine emotions, while others found themselves overwhelmed by their anxiety, rendering them unable to display their usual strengths.

Despite challenges, music therapy positively influenced families, allowing them to relax and connect. Jacobsen developed an initial qualitative version of APCI during her master's thesis, collaborating with Professor Tony Wigram in 2007 (Jacobsen and Wigram, 2007). Recognizing its effectiveness, Jacobsen pursued a Ph.D. to enhance the tool through quantitative methods, aiming for rigorous validation. Her motivation was to offer objective assessments for families, particularly those with emotionally neglected children and struggling parents. Jacobsen was committed to ensuring decisions about removing a child from their family were based on objective measures and professional evaluations instead individual subjective interpretations (Jacobsen et al., 2014; Jacobsen and Killén, 2015; Jacobsen and McKinney, 2015).

Only a few assessment methods/tests in the literature review revealed video-based observations of communication and focused on developing and examining psychometric properties. MIM-P has been the focus of detailed examination, resulting in the development of two distinct scoring systems by separate researchers. Pilot psychometric studies have been conducted for both scoring systems: the Emotional Interaction Style (EIS) devised by Salo (Rye and Drozd, 2021) and MIM-P devised by Hart (2018). These preliminary investigations aim to establish the reliability and validity of the respective scoring systems. In a parallel, APCI underwent psychometric scrutiny in 2015, contributing to the broader understanding of its measurement properties (Jacobsen and McKinney, 2015). Similarly, the EAS has been subjected to comprehensive investigations into its validity and reliability. The extensive scrutiny of EAS is reflected in studies conducted by Aran et al. (2022), Salo and Flykt (2010), as well as Salo et al. (2009), collectively contributing to the robustness of its psychometric foundation. Historically and even currently, a young child's functioning is often assessed outside of the context of their relational environment or without representing a child's functioning with reference to regulatory dynamics between caregiver and child (Dickson and Kronenberg, 2011; Boele et al., 2019).

The child's personality development and the development of self-regulation skills are supported by implicit synchronization processes linked to coordinated interactions, in which small moments of encounters occur between the child and the caregiver (Trevarthen, 1993, 2005; Stern, 2000). These are structured and synchronized interactions that can be assessed and measured through MIM-P based on structured interaction activities, where the assessor captures the interaction between the caregiver and child. The purpose is to uncover both the child's development and developmental processes in the child's relational environment to find the "key" to relevant goals and interventions aiming to develop the child's emotional, personality and social skills and support the child's relational environment (Marschak, 1960; Salo and Mäkelä, 2018).

Interpersonal interaction depends on non-verbal communication channels. Verbal language is an inadequate medium to express the quality, intensity, and nuances of emotions and affect in different social situations (Mandal and Ambady, 2004). To understand verbal and nonverbal communication, Knapp and Hall (2009) argued that the ability to send and receive nonverbal messages is an important part of communication competence. For parents to attune to their child, they must be able to decode non-verbal cues and respond sensitively to expressed needs. Nonverbal communication skills are crucial for parents, as emotional parenting is about providing predictable and accessible emotional communication; something that is strongly influenced by parents' relational competence (Fonagy and Target, 1997). It is the establishment or re-establishment of the pre-verbal ability for rhythm and synchronization between child and caregiver that can be explored through improvisations and through relational focus. A non-verbal and musical approach can be particularly valuable when working with families or dyads where the level of mentalization is not within reach or not part of the zone of proximal development yet (Hart, 2016).

Hence, there is a growing need for tools which are standardized and present sources of validity for assessing caregiver-child interaction that are useful in planning functional and relationship-based intervention. This article aims to present a study investigating the psychometric properties of observation-based tools and the importance of assessing the relational environment as part of assessing the child's social, emotional, and personality capacity with methods that are structured and presents sources of validity (Hart, 2018; Hart and Jacobsen, 2018).

The research questions addressed in this article consist of the following:

- What are the psychometric properties of the MIM-P including reliability and validity of the scale and subscales: Structure, Co-regulation, Engagement, Nurture, and Challenge?
- What are the psychometric properties of the APCI including reliability and validity of the scale and subscales: Mutual Attunement; Nonverbal Communication, Emotional Support; Parent–Child Interaction and APCI Profile?

2 Materials and methods

The study is part of a larger collaboration between Aalborg University and 'LIVSVÆRK', a voluntary Danish association that since 1898 has provided social support for people in vulnerable positions through professionally qualified services. The larger research study included training 110 professionals in four newly developed assessment tools focusing on emotional and social skills and collecting assessment data from 864 participating children, adolescents, and adults. The tools implemented were Neuroaffective Analysis (NAA), Emotional Mentalizing Scale (EMS), and the two interaction and observation-based tools relevant for this partial study was The Marschak Interaction Method of Psychometrics (MIM-P) and Assessment of Parent–Child Interaction (APCI). In this collaboration with LIVSVÆRK, the assessment methods are meant to be used as a framework for providing background knowledge to offer realistic interventions targeting the interaction between a caregiver and child. Results from psychometric analyses of NAA and EMS are presented through other submitted but not yet published articles.

The psychometric properties of MIM-P and APCI are the focus for the current study, and they are explored for their validity and reliability in assessing caregiver-child interaction. The study includes 30 trained and certified professionals who rated 139 dyads using MIM-P with a total of 278 individuals (100 referred and 178 non-referred) and 129 caregiver-child dyads for the APCI with a total of 257 individuals (95 referred and 162 non-referred).

2.1 Project design and organization

A key objective of the research project was to implement two out of four assessment methods and collect data from daily practice to further validate the assessment methods and examine their psychometric properties. This was done through three phases planned together with the participating professionals and residential care institutions to ensure data collection and ethics. In the first 6 months phase, assessment training courses were conducted to ensure quality in the implementation. The training courses for the different methods ranged from 20 to 30 participating professionals and consisted of 3 days' training with a subsequent online certification. Around 80 percent managed certification through distinct types of online testing and try-outs with non-referred dyads.

During the following 12 months and the second phase, the certified professionals collected data and analyzed each other's data. Looking at the observation-based interaction assessment tools of MIM-P and APCI, 201 dyads participated in recruitment and data collection as 30 trained and certified professionals performed the observation-based assessment sessions and rated the video data using online web-based platforms. The third and final phase focused on data analysis, reporting, dissemination, and further practice implementation.

2.2 Participants

In organizing the study and recruiting professionals and participants some specific considerations were made. The professionals were required to have a basic education as a pedagogue, psychologist, social worker or other relevant education at BA or MA level to ensure quality and comparability. Furthermore, the professionals were organized in teams with 2–4 trained professionals from each institution, as they followed each other during the course participation to ensure continuous supervision and implementation quality. The team helped each other in the use and understanding of the assessment methods. It was possible for each team to be formed across institutions to support cohesion. Specifically, they had the task to analyze each other's data as part of the investigation of the reliability and validity of the methods. The institutions took responsibility to ensure data collection and researchers ensured that storage of data was carried out in accordance with the General Data Protection Regulation (GDPR), which enabled the professionals to focus their time on training and data collection. The study only included anonymized data, which was submitted through customized Excel files. Thus, the research project did not include any video files or documents with the names of participating caregivers or children.

The referred participants were all referred to one of LIVSVÆRK's residential care institutions and the main reason for referral was a concern for the child's mental health and/or concern for the parent's capacity to support the child's development. The non-referred participants were recruited individually by professionals from invitations at local schools and within the local area community with an exclusion criteria of the family having no overt contact with social services, no developmental disabilities or no psychiatric diagnosis.

2.2.1 Participant demographics

As mentioned, this article refers to a partial study where MIM-P data included 26 professionals from seven different residential care institutions and the APCI data included 21 professionals from five residential care institutions. Out of these 47 professionals, 17 were certified in and collected data using both MIM-P and APCI. The MIM-P analyses included 139 recruited dyads and the APCI included 129 dyads, and this formed the basis for the psychometric investigations and analyses of reliability and construct validity. Included in the MIM-P were 37 dyads of professional caregivers and

referred children; 28 referred parents and referred children; 67 non-referred parents and non-referred children; 7 non-referred parents and referred children. Included in the APCI were 37 days (about 1 month 6 and a half days) of professional caregivers and referred children; 29 referred parents and referred children; 63 non-referred parents and non-referred children. As the professionals oversaw data collection and rating sessions as well as oversaw finding participants, it was not possible to blind the groups of non-referred and referred.

2.3 Instruments

2.3.1 MIM-P

MIM-P is used for parental competence examinations and child psychological examinations. As the interpretation of MIM-P is based on clinical insight and in-depth knowledge of the child's development and the interaction between caregiver and child, professionals using MIM-P must have extensive clinical experience. An important aspect of the use of MIM-P lies in the way in which they can provide information that strengthens the design of an intervention plan. When caregiver and child are together and carry out the specific activities included in the method, typical interaction patterns emerge. Many interaction patterns are not conscious, which is why observing interaction firsthand can nuance the parents' and child's stories about themselves and their family. For example, watching problem behavior unfold in the interaction and observing how it occurs can provide better insight into how it can be changed. By seeing strengths and coping strategies, one gains an insight into the resources that also exist in family dynamics (Booth et al., 2011). For inclusion purposes or in school and treatment homes, MIM and MIM-P can be used advantageously when finding the child's development potential in contact and interaction with the primary educator.

MIM-P consists of a MIM-P suitcase with 10 numbered bags. In addition, MIM-P consists of 10 activity cards (see Supplementary material). Each activity card is placed in the bag, together with the material required for several of the activities. When the caregiver and child are about to start, they are instructed to sit next to each other at a table with a video camera opposite. They are instructed that there is no fixed amount of time for carrying out the activities, but most spend approx. 30–45 min. Once finished, they call the assessor, who asks the caregiver and child some questions regarding the MIM-P activities. The MIM-P activity cards are available in three versions: Children 0–2 years, Children/adolescents 3–17 years, and a Family version. The method is based on 10 simple structured activities that caregiver/parent and child perform together. MIM-P in this study focuses on children from 3 to 17 years together with their primary caregiver (see list of activities in Supplementary material). The activities in MIM-P are designed to clarify behavior within five dimensions of caregiver and child interaction: Structure, Co-regulation, Engagement, Nurture, and Challenge (see Supplementary material). Through these dimensions, MIM-P assesses the caregiver's ability to support the child's emotional development and the child's ability to accept what the caregiver offers. To uncover the dyadic interaction, an interaction score is established from multiplying the parent's score with two, adding the child's score and dividing the sum with three. This is to say that the caregiver bears the main responsibility of the interaction. The process is video recorded while the caregiver and child are in the room on their own. When the video recording is finished the MIM-P facilitator enters the room and asks the caregiver and child to answer a few structured questions regarding the video recording session.

2.3.2 MIM-P scores

MIM-P consists of a quantitative psychometric scale to score the five dimensions; Structure (10–90), Co-regulation (10–90), Engagement (4–36), Nurture (4–36), Challenge (4–36), and Total (32–288). The scoring system is conceptually based on a thermometer with scores from 1 to 9, divided into three zones: RED, YELLOW, AND GREEN. Scores of 7–9 (green zone) indicate good and sufficient performance. A score of 4–6 (yellow zone) is less of a concern and differs most clearly from one of 1–3 in that there is potential to create change processes through intervention. A score of 1–3 (red zone) indicates concern in the dimension and indicates serious gaps in interaction (see Supplementary material).

In addition, the red and yellow zones are both divided into three; too much, unbalanced, and too little, while the green zone is undivided. This means that the thermometer is fork-shaped (see Table 2 for an example and Supplementary material). Thus, in total, three factors within each dimension are considered:

a. Sum of scores
b. Number of scores in the categories red, yellow, and green
c. Factors for red, and yellow categories; too much (H), too little (L) unbalanced (U).

The scoring considers the child's development, such as the age at which the child is normally expected to be able to develop a certain competence. It considers behavior that for school children can be a sign of good socialization, such as focusing on listening to the adult, can, if it occurs on a large scale, be worrying obsessive behavior. An infant or preschooler's search for the parent's attention can be a healthy skill, but problematic if it is an older child. In an investigation of a relationship, MIM-P cannot stand alone, but must be supplemented with other sources of information, e.g., examination of the child's emotional development, the caregiver's mentalization ability, unstructured interaction observations, other people's descriptions of the child, etc.

MIM-P requires certification to be used as an assessment tool with sources of reliability. The training course has two modules lasting 3 days and an online certification process (Hart, 2018; Hart, 2021).

2.3.3 APCI

The Assessment of Parenting Competences (APCI) serves as a crucial source of quantitative data, complementing emotional and

TABLE 2 MIM-P scores.

Scores	Range
Structure	10–90
Engagement	4–36
Nurture	4–36
Challenge	4–36
Co-regulation	10–90
Total score	32–288

dynamic descriptions offered initially by music therapists and in this study a modified version for psychologist and pedagogues/social workers. It employs consistent, systematic instructions yielding valuable insights into family dynamics, attachment patterns, and their responsiveness to a child's emotional needs. These scores benefit both healthcare professionals working with the family and the family itself. Remarkably, APCI demands minimal additional resources, relying on a small selection of simple musical instruments. It transforms subjective qualities of the therapeutic relationship into objective data using established and systematic methods. APCI requires certification to be used as an assessment tool with sources of reliability. The training course consists of 3 full days, analyzing 5 training dyads, and an on-line certification process (Swanick and Jacobsen, 2019).

Assessment of Parent–Child Interaction (APCI) consists of two identical 25-min assessment sessions that follow a set procedure or "protocol." Based on the protocol, actual caregiver-child interactions can be assessed using structured and free musical activities, with analysis based on observation of improvisation and non-verbal expression. There are five specific exercises in the protocol that aim to highlight the interactions between the caregiver and child. Each assessment session is video-taped, and this is used to analyze the interactions. Scores are then calculated using a fixed analysis via a website portal. The analyses produce 16 APCI profiles that describe communication patterns and attachment behaviors (Jacobsen, 2018).

The APCI assessment protocol contains two sessions, 1 week apart, following a consistent structure. It starts with an informal opening, occasionally accompanied by a welcome song or activity, which is not analyzed. The dyad is then invited to explore musical instruments and the room freely. This initial phase assesses their reaction to an unstructured start and the primary caregiver's spontaneous response to the child.

Next, three structured exercises follow, each with two parts. In exercise one, the dyad takes turns choosing and playing instruments, observing initiative, autonomy, and emotional responses. Exercise two involves turn-taking without talking, assessing the dynamics of sharing musical space. Exercise three focuses on following and leading events, evaluating mutual attunement and evaluating emotional responses.

Exercise four is a free play improvisation, allowing the dyad to interact without specific instructions. The facilitator joins to create a sense of safety and to gain insight into the dyad's autonomy, relationship, and emotional responses.

Consistency is key to maintaining the protocol's efficiency and validity. It ensures ethical trustworthiness for the dyad and establishes clear boundaries, fostering a sense of safety and trust. The APCI aims to identify concerns and positive skills within the dyad, offering hope for the future. The assessment prioritizes dyad interactions, cooperation, and engagement, with the facilitator's role being to enable this within their defined scope (Swanick and Jacobsen, 2019).

2.3.4 APCI scores

The Mutual Attunement score is derived from three of the activities in the APCI and is analyzed using a 9-point Likert scale ranging from attuned, not consistent to not attuned for the parent/caregiver and child's leading and following behavior toward the counterpart. The Mutual Attunement score ranges from 12 to 108. See Supplementary material for more detailed information.

The Nonverbal Communication score is derived through turn-taking activities and assesses the dyad's ability to read and produce nonverbal information. The analysis concentrates on how the parent/caregiver and child pass turns to each other, including an analysis of gestural, musical or confusing signals, and the number and quality of turns, including whether turns are interrupted. The Nonverbal Communication score ranges from 0 to 38. See Supplementary material for more detailed information.

Emotional Response Score reflects how the parent/caregiver responds to the child's emotional needs during the assessment sessions. There are six response types derived from relevant literature in music therapy, sociology, and developmental psychology. The response types are rejecting, dominant, over-involved, passive, supportive, and emotionally exchanging. Four of the five exercises in the assessment sessions are used to collect this information. Emotional Response ranges from 0 to 16. See Supplementary material for more detailed information (Swanick and Jacobsen, 2019).

The Total APCI score is a weighted sum of the 3 sub-scores Mutual Attunement, Nonverbal Communication, and Emotional Response Score and ranges from 12 to 106. There are 16 APCI profiles which indicate a different combination of Mutual Attunement, Nonverbal Communication, Emotional Response, and Child Autonomy Behavior (which is calculated based on primary following or leading behavior in exercise 1,3, and 4). The profiles are based on the data from the primary areas of the assessment analysis. Table 3 below details APCI scores and profiles.

An example of two profile descriptions is available in Supplementary material. The APCI Profile Score is a weighted sum of the specific cutoffs for each of the sub-scores and the child autonomy behavior ranging from 4 to 28.

2.4 Statistical analyses

The statistical analysis focused on the MIM-P and APCI investigating analyses of interrater reliability and internal and external consistency. Construct validity was analyzed by correlating the MIM-P and APCI results between referred and non-referred groups, between gender, and between groups of professionals and parents as caregivers.

SPSS Version 29 was used in all the statistical analyses. Since the MIM-P and the APCI is a scale, and because there were sets of two professionals, the researchers chose intraclass correlations (ICC) for the interrater reliability analysis, as this estimates the extent to which data/observations are related as a function of some of shared characteristics and in this case both professionals are rating the same dyad (Cicchetti, 1994; Koch, 2006).

TABLE 3 APCI scores.

Scores	Range
Mutual attunement	7–108
Nonverbal communication skill	4–36
Emotional response	0–16
Total score	50–176
APCI profile	14–28

Cronbach's alpha was used for analyzing the internal consistency of the MIM-P and the APCI, including an investigation of the correlation matrix between the subscales Structure, Co-regulation, Engagement, Nurture, Challenge, and Total Score for MIM-P and Mutual Attunement, Nonverbal Communication, Emotional Response, Total Score for APCI and APCI Profile (Coolican, 2014).

To further analyze the ability of the MIM-P and the APCI to differentiate between the referred and non-referred groups, a study of construct validity was chosen through an independent *t*-test. This analysis was chosen because construct validity is the scientific process of establishing that a psychological construct in fact exists or is a theoretical sound concept that fits into surrounding theory (Coolican, 2014; Furr and Heuckeroth, 2019). For the external validity between the MIM-P and the APCI, Pearson's correlation was used. An alpha level of 0.05 was used for all statistical tests.

2.5 Ethical considerations

The professionals, parents, and children included in the study were informed of the study's purpose and of the risks and value of participating. Parents signed an informed consent form and a consent form concerning the use of video recordings from the MIM-P and APCI assessment sessions. The parents and children were treated with the utmost respect and care and given as much information as possible, without overwhelming them with complex information. If any of the parents or children wanted to decline to be part of the research project, this was naturally accepted. However, no dyads chose to withdraw from the study. The Regional Committee on Health Research Ethics for Northern Jutland exempted the project from ethics approval, as the study was considered minimal risk.

3 Results

In the following, the study results are presented the reliability, internal consistency, and construct validity analyses.

3.1 MIM-P results

3.1.1 Internal consistency MIM-P

The MIM-P has good internal consistency: Cronbach's Alpha $\alpha = 0.822$ with correlation matrix presented below in Table 4. The significant correlations between scores ranged from $r = 0.777$ to $r = 0.980$. As the scores correlate well, it seems acceptable to add all the scores to achieve a total score.

3.1.2 Interrater reliability MIM-P

There was a significant, positive correlation between the scoring of professional raters 1 and 2 in MIM-P on each of the five subscales and the total interaction score, which indicates strong agreement between the raters (Table 5). This suggests strong interrater reliability for the MIM-P.

3.1.3 Construct validity MIM-P

In the comparison of similarities and differences between the referred and the non-referred groups, two control variables from demographic data (gender and age) were analyzed. The MIM-P sample included 44 referred and 30 non-referred boys; 28 referred and 69 non-referred girls.

Independent samples *t*-test and Chi square revealed no significant difference between the referred and non-referred groups regarding age and gender as the value of *p* is not significant (>0.05). In comparing referred and non-referred in the MIM-P groups, independent samples *t*-test revealed a significant difference between referred and non-referred regarding all subscales and total scale (Table 6). This

TABLE 4 Correlation matrix for MIM-P between dimensions.

MIM-P Cronbach's alpha ($\alpha = 0.822$) $N = 277$	Co-regulation	Engagement	Nurture	Challenge	Total
Structure	0.938**	0.881**	0.866**	0.814**	0.972**
Co-regulation		0.892**	0.907**	0.806**	0.980**
Engagement			0.844**	0.782**	0.923**
Nurture				0.775**	0.927**
Challenge					0.869**

** $p < 0.01$, *** $p < 0.001$.

TABLE 5 MIM-P interrater reliability.

MIM-P between professional 1 og 2	ICC $N = 129$
Structure	0.890***
Co-regulation	0.889***
Engagement	0.864***
Nurture	0.848***
Challenge	0.773***
Total	0.889***

*** $p < 0.001$.

indicates that MIM-P is equipped to differentiate between groups of referred and non-referred, which is essential in clinical work.

3.2 APCI results

3.2.1 Internal consistency APCI

The APCI appears to have good internal consistency: Cronbach's Alpha $\alpha = 0.78$ with correlation matrix presented below in Table 7. The correlations between scores ranged from $r = 0.133$ to $r = 0.803$. As each score correlates well with other scores, and as they all correlate well with the APCI profile and the APCI total score, it seems acceptable to add all the scores to achieve a total score.

3.2.2 Interrater reliability APCI

There was a significant, positive correlation between the scoring of professional raters 1 and 2 in APCI on each of the three subscales, the APCI profile, and the total APCI score, which indicates strong agreement between the raters (Table 8). This suggests strong interrater reliability for the APCI.

3.2.3 Construct validity APCI

In the comparison of similarities and differences between the referred and the non-referred groups, two control variables from demographic data (gender and age) were analyzed. The APCI sample included 36 referred and 25 non-referred boys; 30 referred and 38 non-referred girls as well as 4 referred and 20 non-referred men; 25 referred and 79 non-referred women.

Independent *t*-test analyses and chi-square analyses revealed no significant difference between the referred and non-referred groups regarding age and gender. In comparing referred and non-referred APCI results, independent samples *t*-test revealed a significant difference between referred and non-referred regarding all subscales as well as total scale except Nonverbal Communication score (Table 9). This indicates that APCI is equipped to differentiate between groups of referred and non-referred, which is essential in clinical work. Further research is needed to understand subscale Nonverbal Communication, which will be discussed below.

3.2.4 APCI test re-test reliability

In comparing results from the identical APCI session held 1 week apart, correlation analyses using Pearson's *r* showed significant correlations between scores as the rater was the same person. The correlations range from 0.51 to 0.85 indicating that results are similar and acceptable (Table 10). Further analysis using Paired Samples Test show no significant differences between scores from session one and session two. This indicates that APCI might be suitable for effect studies or for monitoring improvement or regression in clinical or social work.

TABLE 6 Means and SDs between referred and non-referred in the MIM-P.

MIM-P referred/ non-referred $N = 278$	Mean referred $N = 100$	SD	Mean non-referred $N = 178$	SD	df	F	t	p	95% CI
Structure	63.57	12.13	75.03	8.99	276	15.38	−8.962	0.000	[−13.97, −8.94]
Co-regulation	62.25	12.55	75.38	9.03	276	20.02	−10.073	0.000	[−15.65, −10.57]
Engagement	25.40	5.63	30.03	3.80	276	20.75	−8.169	0.000	[−5.75, −3.52]
Nurture	24.02	5.82	29.06	4.46	276	15.58	−8.089	0.000	[−6.26–3.81]
Challenge	24.73	5.06	28.81	4.40	183	1.71	−6.750	0.000	[−5.27, −2.89]
Total	200.01	39.06	238.58	28.19	276	17.91	−9.491	0.000	[−46.55, −30.56]

TABLE 7 Correlation matrix for APCI between scores.

APCI Cronbach's alpha ($\alpha = 0.78$) $N = 257$	Nonverbal communication	Emotional support	APCI profile	APCI total
Mutual attunement	0.387**	0.560**	0.657**	0.753**
Nonverbal communication		0.133*	0.584**	0.651**
Emotional support			0.606**	0.623**
APCI profile				0.803**

* $p < 0.05$, ** $p < 0.01$.

TABLE 8 Interrater reliability.

APCI between rater 1 og 2	ICC $N = 38$
Mutual attunement	0.880***
Nonverbal communication	0.751***
Emotional support	0.825***
APCI profile	0.830***
APCI total	0.605***

*** $p < 0.001$.

TABLE 9 Means and SDs between referred and non-referred in the APCI.

APCI *N* = 257	Mean referred *N* = 95	SD	Mean non-referred *N* = 162	SD	df	F	t	p	95% CI
Mutual attunement	77.45	15.46	87.46	10.46	145	20.41	−6.174	0.000	[−13.20, −6.81]
Nonverbal communication	28.97	9.66	30.04	5.96	255	1.77	−1.30	0.214	[−2.75, 0.62]
Emotional support	12.57	3.65	14.48	2.17	133	61.90	−4.6	0.000	[−2.73, −1.10]
APCI profile	22.42	4.22	24.79	3.54	170	5.57	−4.61	0.000	[−3.33–1.40]
APCI total	111.08	15.59	118.52	15.06	255	2.33	−3.77	0.000	[−11.35, −3.51]

TABLE 10 APCI test re-test reliability.

APCI between session 1 & 2	Pearsons r *N* = 55
Mutual attunement	0.800***
Nonverbal communication	0.651***
Emotional support	0.515***
APCI profile	0.683***
APCI total	0.854***

*** $p < 0.001$.

TABLE 11 Correlation between APCI and MIM-P.

N = 63	Attunement	Non-verbal	Emotional support	Parent–child inter.	APCI profile
Structure	0.320**	0.169	0.437**	0.458**	0.499**
Co-regulation	0.321**	0.106	0.426**	0.452**	0.517**
Engagement	0.378**	0.044	0.435**	0.365**	0.451**
Nurture	0.338**	0.180*	0.417**	0.400**	0.475**
Challenge	0.231*	0.246*	0.421*	0.419**	0.512**
Total	0.335*	0.156	0.451**	0.442**	0.519**

* $p < 0.05$, ** $p < 0.01$.

3.3 Correlation between the MIM-P and APCI

The external validity study included the correlation study between APCI and MIM-P with 67 individuals participating. In the calculation of correlation between MIM-P and APCI, a significant positive correlation was found on all parameters. The study used Pearson's correlation coefficient. Alpha level of 0.05 was used for all correlations (see below in Table 11). MIM-P correlated significantly with all subscales and total scores in APCI.

These results reveal a high degree of correlation between the APCI and the MIM-P which indicate that the two assessment tools are both measuring a dyadic caregiver-child capacity, thus showing that the two tests measure various aspects, while supporting and supplementing each other meaningfully.

4 Discussion

The following section discusses the findings related to the reliability and validity, connection with existing literature clinical applicability, limitations, and future research.

4.1 Psychometric results

The analysis of interrater reliability and internal consistency revealed acceptable and good psychometrics for both the MIM-P and APCI with a few exceptions. A comparison of MIM-P and APCI scores for referred versus non-referred groups showed significant differences between the whole group of referred and non-referred. This indicates that MIM-P and APCI can distinguish between referred and non-referred groups and is in line with theories of how the focus on implicit synchronization interactions and the child's relational environment is important for the child's emotional and social skills and well-being and that nonverbal communication skills are influences by parent's relational competence (Marschak, 1960; Stern, 2000; Knapp and Hall, 2009; Salo and Mäkelä, 2018).

4.1.1 MIM-P specifics

Although significant correlations exist, it is essential to acknowledge the differences in the context of modest correlation coefficients for challenge and nurture (0.775**) and challenge and engagement (0.782**). These distinctions may stem from moderating variables impacting the connections between challenge, nurture, and engagement. For instance, participant age might moderate these relationships,

resulting in varying correlation strengths across different age groups in the study. Additionally, the precision and reliability of measurements for challenge, nurture, and engagement can influence correlation strength as these aspects might be more difficult to rate as also suggested by the lower interrater reliability correlation. Measurement errors in these variables can attenuate observed correlations.

It is important to recognize that correlation coefficients primarily capture linear relationships between variables. If the relationships between challenge, nurture, and engagement are nonlinear, correlations may not fully convey their associations. Furthermore, it is crucial to remember that correlation does not imply causation. Causation is often more complex than simple correlations suggest. Further analysis and exploration may be necessary to gain a deeper understanding of the relationships between these dimensions within the MIM-P. As discussed in early prior investigations, parent's mentalizing of their own upbringing holds significant importance in creating an atmosphere of shared intersubjectivity, particularly in the dimensions of engagement and challenge. This suggests that the quality of intersubjectivity between parent and child may be more contingent on the parent's mentalizing capacity than on the child's emotional development and competencies (Hart, 2018).

The lower interrater reliability for the "challenge" dimension can be attributed to several factors. The concept of "challenge" is inherently subjective and open to interpretation. Different raters may have varying perspectives on what constitutes a challenge, leading to greater disagreement in their assessments. The criteria for assessing the challenge dimension may be less clear than those for other dimensions, resulting in inconsistent ratings among different raters. Participants' diverse experiences of challenges, influenced by factors like their background, expertise, or personal context, can hinder raters from reaching a consensus on challenge ratings. To improve reliability, it can be considered to provide clearer definitions and guidelines for assessing the challenge dimension to reduce ambiguity and ensure comprehensive training for raters to enhance their understanding and consistency in evaluating challenge.

4.1.2 APCI specifics

The Nonverbal Communication Score has some of the same tendencies as the MIM-P Challenge Score. The correlation with Emotional Response (0.133*) show us how it is possible to have a low emotional response and a clear nonverbal communication in the interaction between primary caregiver and the child and to have a high emotional response and unclear emotional response which is also evident in the APCI profiles. However, it seems less likely to have the same reciprocal relationship between attunement and nonverbal communication (0.378**). The relationships between the APCI scores are nonlinear, so correlations may not fully convey their associations. However, it is worth noticing that the internal consistency has a much stronger correlation (0.78**) indicating that the combination of scores and the APCI profiles is what constitutes the reliability for APCI. As for the MIM-P, the precision and reliability of measurements for Nonverbal Communication Score can influence correlation strength as this aspect might be more difficult to rate as also suggested by the lower interrater reliability correlation. Looking at relevant literature, Knapp and Hall (2009) discussed how family communication environment can impact individual's ability to both encode and decode nonverbal behavior. In families characterized by high expressiveness, children may excel in expressing themselves but might not develop refined decoding skills due to the clarity of surrounding expressions. Conversely, in families with lower expressivity, children may struggle with expression skills but excel in decoding because they need to interpret minimal or ambiguous cues from family members. As such, correlation does not imply causation and the results seem to confirm how nonverbal communication skills in a parent–child dyad in complex and non-linear.

The lower interrater reliability for the "non-verbal" score can be attributed to several factors. The Nonverbal Communication analysis does require some musical knowledge and skills and not all psychologist and pedagogues were equally skilled musically as this was not necessarily a part of their basic education leading to greater disagreement in their ratings. The definitions of clear and unclear turns and turn cycles may be less clear than the less musical focus on mutual attunement and emotional response. To improve reliability, it might make sense to provide clearer definitions and guidelines for assessing the non-verbal communication and through that ensure sufficient training for raters.

4.1.3 Across APCI and MIM-P

The structure of the two tools is different in the way that all sub-scores in MIM-P strongly correlate indicating that the sub-scores are highly interdependent while the sub-scores in APCI correlate significantly but with a lower degree of correlation between scores while correlating stronger with the total score indicating that the scores are less interdependent while they all contribute to a coherent and cohesive construct. This aspect is also displayed in the correlation between the two tools where some scores highly correlate across the tools and others are further apart even though the total scores correlate strongly and significantly.

Both MIM-P and APCI measure the interaction between caregiver and child of a structured dyadic interaction. Where MIM-P is a play and activity-based method, the APCI is a tool based on nonverbal interaction using music. Both tools use video, and the interactions are scored through a recorded session. In general, the results indicate a high degree of correlation between the APCI and the MIM-P. The slightly lower correlation between Nonverbal Communication and Nurture and Challenge confirms the already discussed tendencies from the reliability results. The correlation between Mutual Attunement; Emotional Support; Parent–Child Interaction in the APCI profile and the five dimensions Structure; Co-regulation; Engagement; Nurture; Challenge in the MIM-P profile indicates substantial correlations but also that the tools seem to measure different aspects, which is not surprising as both tool focus on different but similar aspects of intersubjectivity and nonverbal interaction as well as social and emotional communication between a caregiver and a child.

4.2 Clinical applicability

Both the MIM-P and APCI are designed to be facilitated by a trained professional evaluating the caregiver's and child's interaction capacity. The aim of implementing MIM-P and APCI is to train professionals in tailoring realistic intervention plans to develop emotional, relational, and social competencies and set relevant goals and aims. The assessment tool requires one or two assessment sessions, which means it is not too demanding for the caregiver and child to

take part. Also, most children find the assessment enjoyable, as many of the items consist of plays and music.

The MIM-P and APCI provide two structured ways of evaluating the intersubjectivity between caregiver and child. It is not a measure intended to stand alone, and it does not cover other critical areas, such as personality traits or cognitive abilities. However, with its focus on the caregiver and the child's capacity to interact with and perform relevant activities together, the results can guide professionals on how to approach and support the child's interaction capacity and through the intersubjective experiences and develop emotional capacities on both implicit and explicit levels.

The MIM-P and APCI may be helpful in organizing the intervention according to the resources and vulnerabilities in the caregiver-child's interaction strategies based on assessment results with sources of validity and reliability assessment results. For instance, if the structure dimension is challenged an intervention aimed at helping the caregiver making structure for the child and helping the child accepting the caregiver's structure is relevant etc. This might include working with structured play and games. If the attunement and the parent–child interaction are challenged an intervention working with rhythmic and synchronization activities through music therapy or "theraplay" are relevant, as the processes involved in these types of activities appear to improve the co-regulation dimension in the MIM-P and the attunement and interaction in the APCI etc. (Hart, 2016; Jacobsen and Holck, 2016; Daniel and Trevarthen, 2017; Jacobsen, 2017; Lindvang and Beck, 2017).

4.3 Limitations and further research

Several limitations of the present study are fully recognized. A larger, restrictive, and rigorous recruitment of non-referred participants would increase the validity of the results and enable investigations of norms of each tool and would make it possible to for instance perform exploratory factor analysis. However, this is not possible for the current sample because of the selection bias. We intend to evaluate factor analysis and confirmatory factor analysis in future studies with a sample that can be characterized as a general representation of the public. Furthermore, in the study there was an overrepresentation of female caregivers compared to male, which makes the psychometric analyses less trustworthy.

Another important limitation is the fact that it was not possible to blind the group of professional raters, as they knew when the participants were a referred or a non-referred dyad, which may have led to detection bias (Higgins et al., 2011).

The interdisciplinary inclusion of different professionals being trained and rating data might have made the psychometric analysis less valid, as the professions are not fully comparable even though all professionals went through the same certification process. In clinical practice, it is a great advantage to have interdisciplinary collaborations in using observation-based tools, but further analyses into differences across raters looking at professions are needed to better understand the depth of these clinical applications.

It would be relevant in future studies to compare with other standardized tools to further examine concurrent validity even though other former APCI and MIM-P studies have investigated this before. It would be pertinent to conduct an external validity study to juxtapose EAS with the APCI and MIM-P. This comparative analysis would enhance the robustness of all three observation-and attachment based assessment tools to measure dyadic caregiver-child relationship. To establish reliability norms for the MIM-P and APCI, future research should strive for a larger normative non-biased sample of caregiver-child dyads randomly recruited with no inclusion criteria for clinical or nonclinical features. Once establishment of norms has been investigated, novel studies for reliability and validity should be conducted. Further research may reveal whether the MIM-P as is indicated for APCI offers a suitable method for monitoring effect over time.

5 Conclusion

The empirical study of the psychometric properties of MIM-P and APCI revealed how the tools present sources of consistency, reliability, and validity of caregiver-child interaction capacity. There was a significant difference between scores from referred and non-referred groups and significant correlations between the observation-and interaction-based tools.

The results are promising both regarding the MIM-P and APCI. This study suggests that the MIM-P and APCI seems to offer a consistent measure of the caregiver-child intersubjectivity and is suited for preparing an intervention plan for either family therapy or intersubjectivity between professional and child, although more research is needed.

MIM-P and APCI both serve as powerful tools for the comprehensive assessment of the caregiver-child relationship. It delves into the overall quality and intrinsic nature of micro-regulation and sheds light on the strengths and vulnerabilities inherent in the nonverbal and emotional communication between the caregiver and the child, facilitating an in-depth examination of the intricate dynamics at play.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

The studies involving humans were approved by SEKRETARIATET for DEN VIDENSKABSETISKE KOMITÉ for REGION NORDJYLLAND Niels Bohrs Vej 30 9220 Aalborg Ø. The studies were conducted in accordance with the local legislation and institutional requirements. Written informed consent for participation in this study was provided by the participants' legal guardians/ next of kin.

Author contributions

SJ: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Project administration, Resources, Software, Supervision, Writing – original draft, Writing – review &

editing. SH: Conceptualization, Funding acquisition, Investigation, Methodology, Project administration, Supervision, Writing – original draft, Writing – review & editing. JA-I: Data curation, Investigation, Methodology, Visualization, Writing – review & editing. GG: Conceptualization, Formal analysis, Investigation, Methodology, Writing – review & editing.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Publisher's note

Supplementary material

The Supplementary material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/fpsyg.2023.1296113/full#supplementary-material

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Psychometric properties of the Italian version of the Parent Experience of Assessment Scale

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This paper describes the psychometric properties of the Italian version of the Parent Experience of Assessment Scale. Overall, 185 participants took part in the study. Confirmatory factor analysis and structural equation modeling tested the scale structure and its relationship with clients' satisfaction. Reliability and multivariate analysis of variance measured the factors' consistency and the differences among different typologies of assessment. Results replicated the original five factors structure of the scale (Parent-Assessor Relationship and Collaboration; New Understanding of the Child; Child-Assessor Relationship; Systemic Awareness; Negative Feelings). Full scale and individual factors' reliability ranged from high to excellent. Structural equation modeling showed that Parent-Assessor Relationship and Collaboration and New Understanding of the Child factors had the strongest direct effects on parents' General Satisfaction, measured by the Client Satisfaction Questionnaire. A multivariate analysis of variance showed that the type of assessment, the children's age and the way the scale was completed impacted on the outcomes of the QUEVA-G. Results suggest that the Italian version of the Parent Experience of Assessment Scale is a valid and reliable tool for assessing parents' experience of their child's assessment.

KEYWORDS

child assessment, therapeutic assessment, parent satisfaction, PEAS, psychometric properties, confirmatory factor analysis, structural equation modeling

Introduction

Customers' satisfaction, opinions, and perceptions are considered crucial indicators to evaluate the effectiveness and quality of service and to define its benefits and possible improvements (Lebow, 1983; Farmer and Brazeal, 1998; McMurtry and Hudson, 2000). However, until a few years ago, the practice of assessing clients' satisfaction was exclusively based on the practitioner's experience or scales with unknown psychometric properties (Young et al., 1995). Hence, in the past decades, there has been an increased interest in the development of valid and reliable measurement instruments to assess customers' satisfaction in multiple contexts. To date, the Client Satisfaction Questionnaire (CSQ; Larsen et al., 1979), available in 5 different versions (namely, CSQ-3, CSQ-4, CSQ-8, CSQ-18A, and CSQ-18B), is the most commonly used single-factor measure of satisfaction.

Most consumers' satisfaction research has been focusing on medical and healthcare services for adult patients and clients, while very few studies have been dedicated to childcare services. In this field, satisfaction with children's mental health services is measured through their parents' reports. Many studies carried out so far on parental satisfaction with childcare services have been focused on mental health treatment (Byalin, 1993; Young et al., 1995; Brannan et al., 1996; Godley et al., 1998; Martin et al., 2003; Riley et al., 2005) and selected populations, for example, severely emotionally disturbed children (Rouse et al., 1994), disabled

children (Clare and Pistrang, 1995), or children with chronic health problems (King et al., 1996). As a result, information on parental satisfaction with their child's assessment services is still limited. This lack of research is potentially problematic because parents' satisfaction, as an outcome of the assessment process, is highly relevant to promote family engagement in treatment recommendations.

In Italy, specifically, public mental health services face a significant influx of requests and lengthy waitlists. The more effectively assessors can engage families in the assessment of their children, the greater the likelihood that these families will effectively utilize the long-anticipated assessment results.

To fill the gap in the literature and provide a specific measure of parents' experience with children's psychological assessment services, Austin (2011) developed the Parent Experience of Assessment Scale (PEAS, Austin, 2011), a 24-item scale that measures five factors: Parent–Assessor Relationship and Collaboration (PARC), New Understanding of the Child (NUC), Child–Assessor Relationship (CAR), Systemic Awareness (SA), and Negative Feelings (NF). The scale exhibited appropriate internal consistency reliability (Cronbach's alpha from 0.76 to 0.88). Additionally, evidence of convergent construct validity has been provided through significant two-tailed Pearson correlations between the revised PEAS subscales and the CSQ-8 scores (Pearson's r between 0.20 and 0.64; $p < 0.05$).

In their study (Austin et al., 2016), the authors compared three models: (1) a first-order model with five correlated factors; (2) a second-order model, in which it was assumed that a hierarchical factor, called "General Satisfaction," could account for the covariance of the PEAS subscales; and (3) another second-order model in which the previous General Satisfaction factor was replaced by the PARC factor. This final model showed the best fit for the data. Austin et al. (2016), while testing different factor structures through CFA, emphasized a pragmatic rationale. Indeed, the PARC factor was used as a second-order factor based on the empirically assessed covariances among it and the other first-order factors, as well as on its 0.96 covariance with the General Satisfaction factor of the previous model.

Also, the authors' findings may provide an overly positive picture of the scale fit and its ability to predict parental satisfaction. Indeed, the authors added modification indices between errors pertaining to items from different factors: item 2 (PARC) and 14 (CAR), 9 (NUC) and 14 (CAR), 15 (CAR) and 16 (SA), 4 (PARC) and 12 (NUC), and 7 (PARC) and 16 (SA). Furthermore, while employing a structural equation model (SEM) to investigate which of the PEAS subscales were predictive of the General Satisfaction factor given by the CSQ-8, they represented this domain as an observed variable rather than an estimated variable.

In our study, on the contrary, we aim to maintain separation between a theory-driven CFA and a data-driven SEM (Sorgente et al., 2023). Our confirmatory factor analysis compared two models: one in which the five factors were considered as correlated factors of the measure of parents' assessment experience, and one in which the five first-order factors had an overarching second-order factor accounting for their covariances. In the SEM, we tested which configuration of the QUEVA-G's factors accounts best for parents' satisfaction measured through the CSQ-8 items.

In Italy, there has been no research on any of the broadband scales to measure clients' satisfaction, let alone those dedicated to children's psychological services. Hence, this study aimed to translate and validate the Parent Experience of Assessment Scale (PEAS; Austin, 2011) in an Italian sample of parents. The development of an Italian scale for measuring parental satisfaction with children's assessment would allow us to (1) evaluate the quality of the psychological assessment services provided to clients; (2) collect valuable feedback about how to improve the delivery of the services; and (3) promote research on the effects of delivering psychological assessment to children and their families using more traditional or collaborative/therapeutic models (Tharinger et al., 2022).

Aim of the project

This study has four aims. The first aim is to investigate the structure of the five-factor model of the Italian version of PEAS (Questionario sull'Esperienza della Valutazione dei Genitori, QUEVA-G; (Appendix A)). The second aim is to evaluate the QUEVA-G's reliability. The third aim is to predict general satisfaction for children's psychological assessment (measured through the CSQ-8) through the QUEVA-G. Finally, the fourth aim is to explore, without any a-priory hypotheses, the effects of the administration (paper or online), children's features (gender and age), and type of assessment on the parents' experience of their child's assessment.

Methods

Sites

In our study, we collected data through both paper ($n = 35$) and online questionnaires ($n = 150$). Paper questionnaires were distributed at several facilities in the northern region of Italy, particularly in Milan and its surrounding areas. Specifically, two facilities provided the majority of paper-based data: a private practice specializing in neuropsychological assessments ($n = 11$) and a private psychological and neuropsychological clinic in Milan ($n = 24$). The facilities participating in data collection responded affirmatively to our request for collaboration in this research study. Initially, the invitation was extended to the network of public mental health services in Milan as well as to several private centers. One of the co-authors, Anna Cavallini, oversaw the administration of the paper version of the questionnaire. The staff of the two facilities administered the questionnaires to parents at the end of the assessment. Once parents responded to the questionnaires, they left them, anonymously, in a box in which all questionnaires were collected.

The online questionnaires were administered through Qualtrics and distributed via social networks. The links to the questionnaires were distributed in self-help groups for parents of children with psychological diagnoses or in self-help groups for parents. Data collection was anonymous.

Participants

We recruited parents whose children completed a psychological evaluation less than a year before the scale's administration to ensure that the memory of the assessment was still vivid. For example, children were assessed for either emotional–behavioral problems, cognitive–neurodevelopmental issues, or the co-occurrence of both types of problems. All questionnaires were completed after the last session of the assessment. There were no exclusion criteria in terms of children's diagnosis, children's level of functioning, or the type of assessment completed.

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Altogether, 212 respondents participated in the study. Twenty-three participants opened the questionnaire link but did not provide any response. Among the remaining 189 participants, three individuals were excluded because their child's age at the time of assessment was outside the prescribed range of 4–18 years. Ultimately, one additional case was excluded due to random responses. One hundred eighty-five protocols were included in the analyses (Table 1).

Most of the respondents to the questionnaires in our research were female respondents ($n = 174$); only a small percentage of the total sample were male respondents ($n = 11$). In almost all cases, respondents were biological parents ($n = 176$), but in our sample, there were also adoptive parents ($n = 5$), foster parents ($n = 1$), and other first-degree relatives ($n = 2$). The majority of families were of Italian descent ($n = 178$); nevertheless, among the paper-based data collected at the two facilities, there were families hailing from Africa ($n = 1$), Asia ($n = 2$), Latin America ($n = 1$), and Eastern Europe ($n = 3$). Despite the different geographical origins, all participants were able to understand and answer the questions; prior to administering the questionnaire to the individuals from other countries, the research team ensured that their comprehension of the Italian language was adequate by asking the psychologists who had the opportunity to interact with the parents during their child's evaluation process.

TABLE 1 Descriptive statistics of participants.

Variables	*n*	%
Format of administration		
Online	150	81.1
Paper form	35	18.9
Gender of the parent		
Male	11	5.9
Female	174	94.1
Kinship		
Biological parents	176	95.7
Adoptive parents	5	2.7
Foster parents	1	0.5
Other first-degree relatives	2	1.1
Gender of the child		
Male	127	68.6
Female	58	31.4
Age range		
4–11	122	65.95
12–18	63	34.05
$M = 10.41$ $SD = 3.4$ min = 4 max = 18		
Origin of the family		
Italy	178	96.2
Africa	1	0.5
Asia	2	1.1
Eastern Europe	3	1.6
Latin America	1	0.5
Type of assessment		
Cognitive and neurodevelopmental	116	62.7
Emotional and behavioral	15	8.1
Cognitive and emotional (mixed)	20	10.8
Unidentified	34	18.4

$n = 185$.

Instruments

The Italian version of the Parent Experience of Assessment Scale (QUEVA-G)

The QUEVA-G consists of 24 items, rated using a 5-point Likert-type scoring system. The scale is composed of five factors. Parent–Assessor Relationship and Collaboration (7 items) includes the parents being informed about each step in the assessment process and having a positive, supportive, and empathetic relationship with the assessors (feeling the assessors were genuinely interested in helping, and feeling respected, liked, and listened to them). New Understanding of the Child (5 items) focuses on the chance that, at the end of the assessment, parents might know better how to deal with their child, understand his or her feelings and behaviors, and be provided with new and more effective parental skills. The Child–Assessor Relationship (4 items) investigates the parents' perception of the relationship between their child and the assessors in terms of empathy, tuning, support, and understanding. Systemic Awareness (4 items) focuses on the possibility that parents may be able to recognize in a more systemic way their child's problems and to understand that the whole family needs to change to help him or her. Negative Feelings (4 items) explores how much parents felt blamed, ashamed, or judged during the assessment. The scale was translated into Italian and back-translated into English prior to its administration, and the final version of the scale was approved by a bilingual author of the original study (S.E. Finn). Subsequently, to ensure its comprehensibility, the questionnaire was administered in a pilot study to a subset of families. Table 2 shows correlations among subscales.

The Client Satisfaction Questionnaire

The client satisfaction Questionnaire (CSQ-8; Larsen et al., 1979; Attkisson and Zwick, 1982). The CSQ-8 is a measure of clients' general satisfaction and consists of 8 items using a 4-point Likert-type scale with four reverse-scored items (items 1, 3, 6, and 7). The Italian version of the CSQ-8 is protected by copyright, and its items cannot be publicly distributed. However, the scale can be obtained from Dr. Attkisson through appropriate permission. In our study, the CSQ-8 exhibited excellent reliability, as indicated by a Cronbach's alpha coefficient of 0.97.

Procedure

The study obtained the Catholic University of the Sacred Heart institutional review board approval (number of the practice: 42–23). Both paper and online questionnaires included the description of the study, the informed consent, and the two scales, i.e., the QUEVA-G and the CSQ-8.

Analyses

Confirmatory Factor Analysis (CFA) and Structural Equation Modeling (SEM) were conducted with SPSS Amos version 29.0. The

TABLE 2 Correlations among the QUEVA-G subscales.

Subscale	1	2	3	4	5
1. Parent–Assessor Relationship and Collaboration	–				
2. New Understanding of the Child	**0.539****	–			
3. Child–Assessor Relationship	**0.641****	**0.470****	–		
4. Systemic Awareness	0.037	**0.145***	−0.290	–	
5. Negative Feelings_(R)	**0.539****	**0.312****	**0.440****	**−0.318****	–

$n = 185$. R, reverse scored.
*$p < 0.05$. **$p < 0.01$.

following parameters were used to evaluate the models: Chi-square (X^2), degrees of freedom (df), discrepancy index (X^2/df), value of p (p), comparative fit index (CFI), root mean square of approximation (RMSEA), standardized root mean square residual (SRMR), Tucker Lewis index (TLI), and Akaike information criterion (AIC). Discrepancy index (X^2/df) values lower than 3 indicate a good fit of the model to the data (Kline, 2004). Comparative fit index (CFI) values above 0.95 indicate a good fit of the model to the data (Hu and Bentler, 1999; West et al., 2012). Root mean square of approximation (RMSEA) and standardized root mean square residual (SRMR) indicate good adaptability of the model to the data with values below 0.008 (Hu and Bentler, 1999). Tucker-Lewis index (TLI) indicates a good fit of the model to the data when above 0.90 (Byrne, 1994) or 0.95 (Hu and Bentler, 1999; West et al., 2012). Finally, regarding the Akaike information criterion (AIC), the best model is the one that explains the greatest amount of variability using the smallest number of independent variables; therefore, lower AIC values are preferred. If a model has an AIC lower by two units than another, then it can be considered significantly better (Wagenmakers and Farrell, 2004).

There were virtually no missing data for the 185 QUEVA-G protocols, with only 2 missing out of 4,440 individual item responses, for a total of 0.045% missing responses. These two missing data were estimated by calculating the mean of responses given to items belonging to the same subscale of QUEVA-G.

Correlation and SEM were run on a total of 177 individuals since 8 respondents did not complete the CSQ-8. Two missing answers in the CSQ-8 scale out of 1,416 individual item responses, for a total of 0.14% missing responses, were estimated by calculating the mean of responses given to the remaining items of the CSQ-8.

Other analyses (such as descriptive statistics, Cronbach's alpha, and MANOVAs) were conducted using SPSS 27.0. Cronbach's alpha has been estimated for each subscale and the total QUEVA-G questionnaire. A MANOVA was used to analyze the differences in the subscales among socio-demographics for child and parent respondents and among the type of assessment. Results were commented if alpha was below 0.05, and differences between groups were interpreted according to their effect size (Cohen, 1988).

Results

Analysis 1: scale factor structure

We tested the fit of the first-order model and a higher-order model as in Austin et al. (2016).

First-order model

In the first-order model (Figure 1), we assumed five correlated factors. Standardized loadings for all items were above 0.50. Modification indices suggested that we correlate error terms for items 4 and 5 (belonging to the factor "Parent–Assessor Relationship and Collaboration"), for items 6 and 7 (belonging to the factor "Parent–Assessor Relationship and Collaboration"), and for items 5 and 6 (belonging to the factor "Parent–Assessor Relationship and Collaboration"). Although X^2 for this model was statistically significant, all other fit indices suggested a good fit of the model to the data (Table 3). In our first-order model, significant covariances are observed only among four subscales, such as PARC, CAR, NUC, and NF. The highest covariances are between PARC and CAR ($r = 0.75$), NF ($r = -0.64$), and NUC ($r = 0.56$), similar to what was found by Austin et al. (2016). On the contrary, SA seems to be a relatively more independent dimension, being weakly correlated only with the NF subscale ($r = 0.34$). This suggests that in this sample, the more parents realize their personal implication in the child's difficulties, the more likely it is that they will develop negative feelings in the assessment.

Second-order model

A second-order (hierarchical) model was also tested (Figure 2). We assumed that a hierarchical factor, called "General Satisfaction," could explain other factors' variances. Allowing for the covariance of the same error terms of items as in model 1, this model shows a good fit to the data. Although the two models both have a good fit, Table 3 shows that the first-order model has a relatively better fit.

Analysis 2: scales reliability

Table 4 shows subscale descriptive statistics and the reliability of each factor and the full scale. The Cronbach alpha reliability for the five QUEVA-G subscales and the full scale indicated high to excellent internal consistency (alphas from 0.82 to 0.94).

Analysis 3: relationship of QUEVA-G subscales to overall satisfaction

Correlation analysis showed a strong positive correlation ($r = 0.83$) between the QUEVA-G total score and the CSQ-8 score, which represents parents' General Satisfaction with the received service. This suggests that the parents' satisfaction measured by the CSQ-8 has a substantial overlap with the one measured by QUEVA-G items, thus indicating a strong convergent construct validity. Correlations

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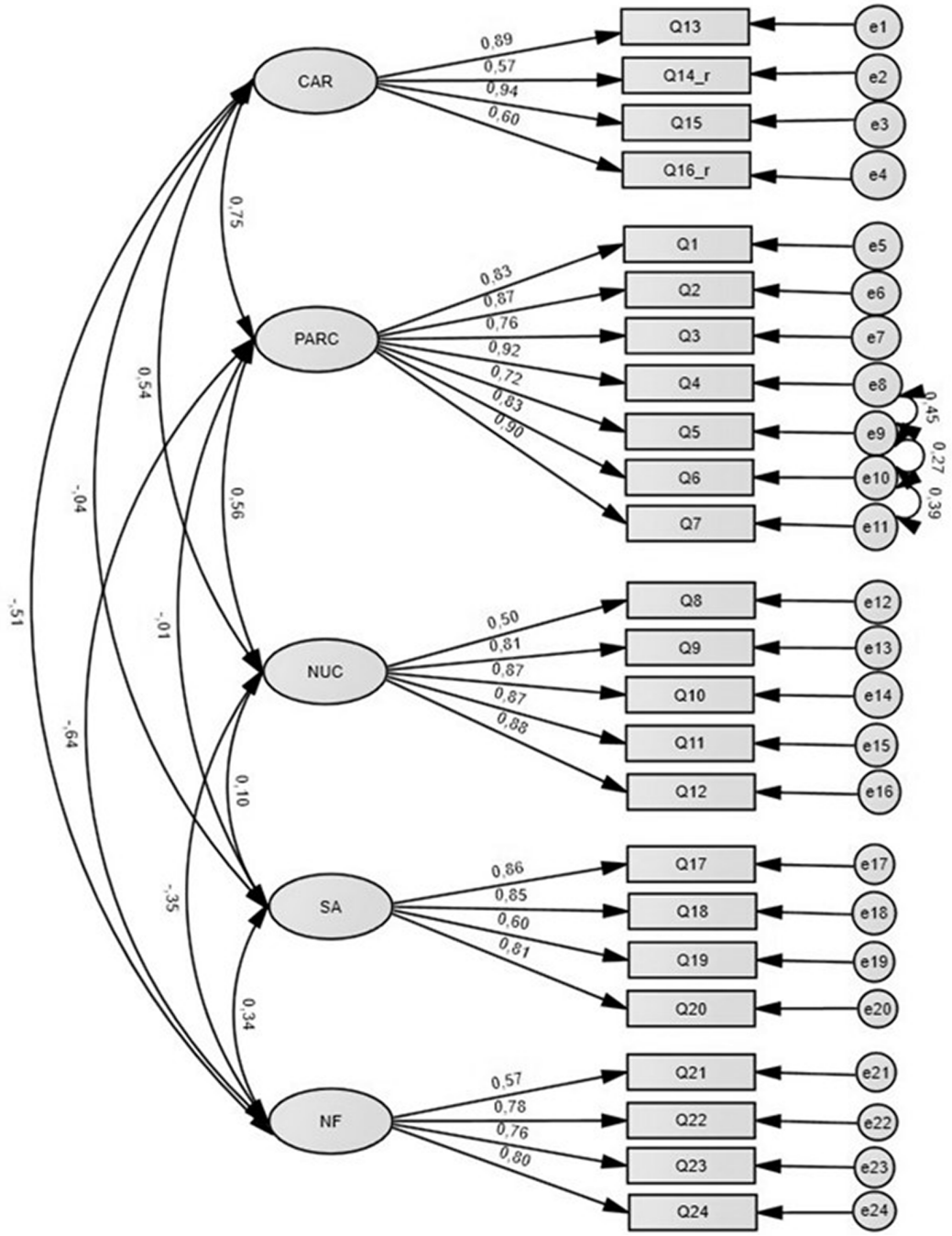

FIGURE 1
First-order CFA model and standardized coefficients (with modification indices).

TABLE 3 First-order and second-order CFA model fit indices.

Model	X^2	*df*	*p*	X^2/df	TLI	CFI	RMSEA	95% CI for RMSEA	SRMR	AIC
First-order model	406.215	239	0.000	1.699	0.918	0.948	0.062	[0.051; 0.072]	0.0654	528.215
Second-order model	432.198	244	0.000	1.771	0.933	0.941	0.065	[0.055; 0.075]	0.0698	544.198

X^2, Chi-square; df, degrees of freedom; *p*, *p* value; X^2/df, discrepancy index; CFI, comparative fit index; RMSEA, root mean square of approximation; SRMR, standardized root mean square residual; TLI, Tucker-Lewis index; AIC, Akaike information criterion.

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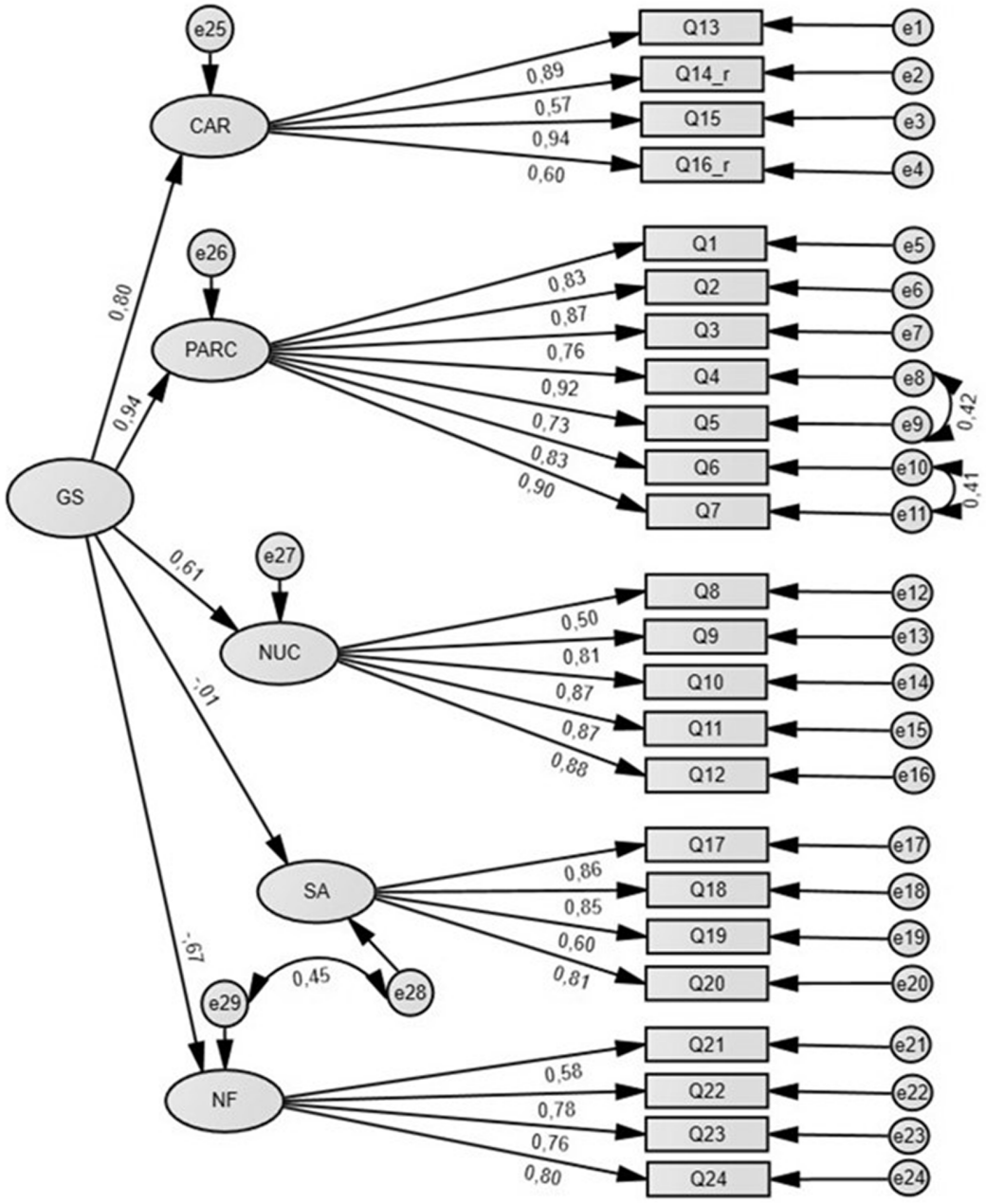

FIGURE 2
Second-order CFA model (with modification indices).

computed between the QUEVA-G subscales and the CSQ-8 total score showed statistically significant coefficients for every QUEVA-G subscale, except for the Systemic Awareness factor (Table 5).

Specifically, results showed that the CSQ-8 total score is strongly and positively correlated with the PARC subscale ($r = 0.86$). This suggests that parental General Satisfaction measured by the CSQ-8 is strongly associated with the quality of the relationship and the degree of collaboration established between parents and the assessor. Furthermore, strong positive correlations were also found between the CSQ-8 total score and the New Understanding of the Child subscale ($r = 0.66$), the Child–Assessor Relationship one ($r = 0.64$), and the reversed "Negative Feelings" factor ($r = 0.53$). This indicates that parental satisfaction is positively correlated with the possibility of achieving a greater understanding of the child, the quality of the relationship between the child and the assessor, and the absence of negative feelings during the assessment.

In addition, SEM was used to show the influence of each QUEVA-G subscale on General Satisfaction; in particular, we tested the fit and the paths among variables in a first-order model. In this configuration, we assumed that each of the five correlated factors could have a significant effect on the latent variable given by the CSQ-8 items called General Satisfaction. Modification indices suggested allowing the covariance of the error terms for the same items as the CFA (Figure 3).

Although X^2 for this model was statistically significant, all other fit indices suggested a good fit of the model to the data (Table 6). As shown in Table 7, the path analysis of our model suggested that the

TABLE 4 Descriptive statistics and reliability coefficients of the QUEVA-G.

Subscale	Alpha	Number of items	*M*	*SD*
Parent–Assessor Relationship and Collaboration (PARC) The assessor was genuinely interested in helping us. I felt the assessor respected me. I was informed about each step of the assessment. I liked the assessor. I trusted the assessor. I felt that my opinion was valued. The assessor really listened to me.	0.94	7	27.50	7.326
New Understanding of the Child (NUC) I have lots of new ideas about how to parent my child. I learned a tremendous amount about my child from this assessment. I am better able to communicate with my child. Now I know what to expect from my child. I understand my child so much better now	0.89	5	17.40	4.688
Child–Assessor Relationship (CAR) My child felt comfortable with the assessor. My child never really warmed up to the assessor (R). My child and the assessor really connected well. My child did not like the assessor (R).	0.84	4	15.50	4.035
Systemic Awareness (SA) My child's problems are partly caused by other struggles in our family. Many of my child's difficulties have to do with our family. The assessment revealed how family members play a role in my child's problems. I now see how our family's problems affect my child.	0.85	4	7.47	3.918
Negative Feelings (NF) The assessment made me feel ashamed. I felt blamed for my child's problems. The assessment made me feel like a bad parent. I felt judged by the assessor.	0.82	4	16.98	3.765
Questionario sull'Esperienza della Valutazione dei Genitori (QUEVA-G)	0.91	24	84.84	16.29

$n = 185$. (R), reverse scored.

TABLE 5 Correlation coefficients between CSQ-8 and QUEVA-G results.

	QUEVA-G					
	Subscale					Total score
CSQ-8 total score	PARC	NUC	CAR	SA	NF_(R)	
	0.865**	**0.656****	**0.636****	0.030	**0.533****	**0.832****

$n = 177$. (R), reverse scored.
**$p < 0.01$.

Parent-Assessor Relationship and Collaboration subscale (PARC) had the stronger significant direct effect on General Satisfaction ($\beta = 0.802$). Also, the New Understanding of Child subscale had a significant direct effect on GS ($\beta = 0.266$) even if weaker than PARC. The other QUEVA-G's subscales, such as CAR ($\beta = -0.033$), SA ($\beta = -0.054$), and NF ($\beta = 0.037$), did not show a statistically significant effect.

Analysis 4: differences in parent experiences of psychological assessments

The MANOVA did not show any significant effect of children's (Table 8) gender on the QUEVA-G results.

On the contrary, the administration of the QUEVA-G online led to statistically significant lower ratings for PARC (online $M = 3.758$; $SD = 1.074$; in person $M = 4.657$; $SD = 0.443$), NUC (online $M = 3.385$; $SD = 0.968$; in person $M = 3.883$; $SD = 0.664$), CAR (online $M = 3.768$; $SD = 1.038$; in person $M = 4.329$; $SD = 0.722$), NF (online $M = 4.155$; $SD = 0.976$; in person $M = 4.629$; $SD = 0.654$), and for the total score (online $M = 16.92$; $SD = 3.282$; in person $M = 19.41$; $SD = 1.817$) (Table 9). Effect sizes turned out to be small for NUC ($\eta^2 = 0.043$), CAR ($\eta^2 = 0.048$), and NF ($\eta^2 = 0.039$), while for the total score and PARC, they were, respectively, medium ($\eta^2 = 0.093$) and large ($\eta^2 = 0.114$).

Furthermore, when parents participated in assessments that dealt with emotional and behavioral issues ($M = 2.300$; $SD = 1.303$), compared with cognitive and neurodevelopmental issues

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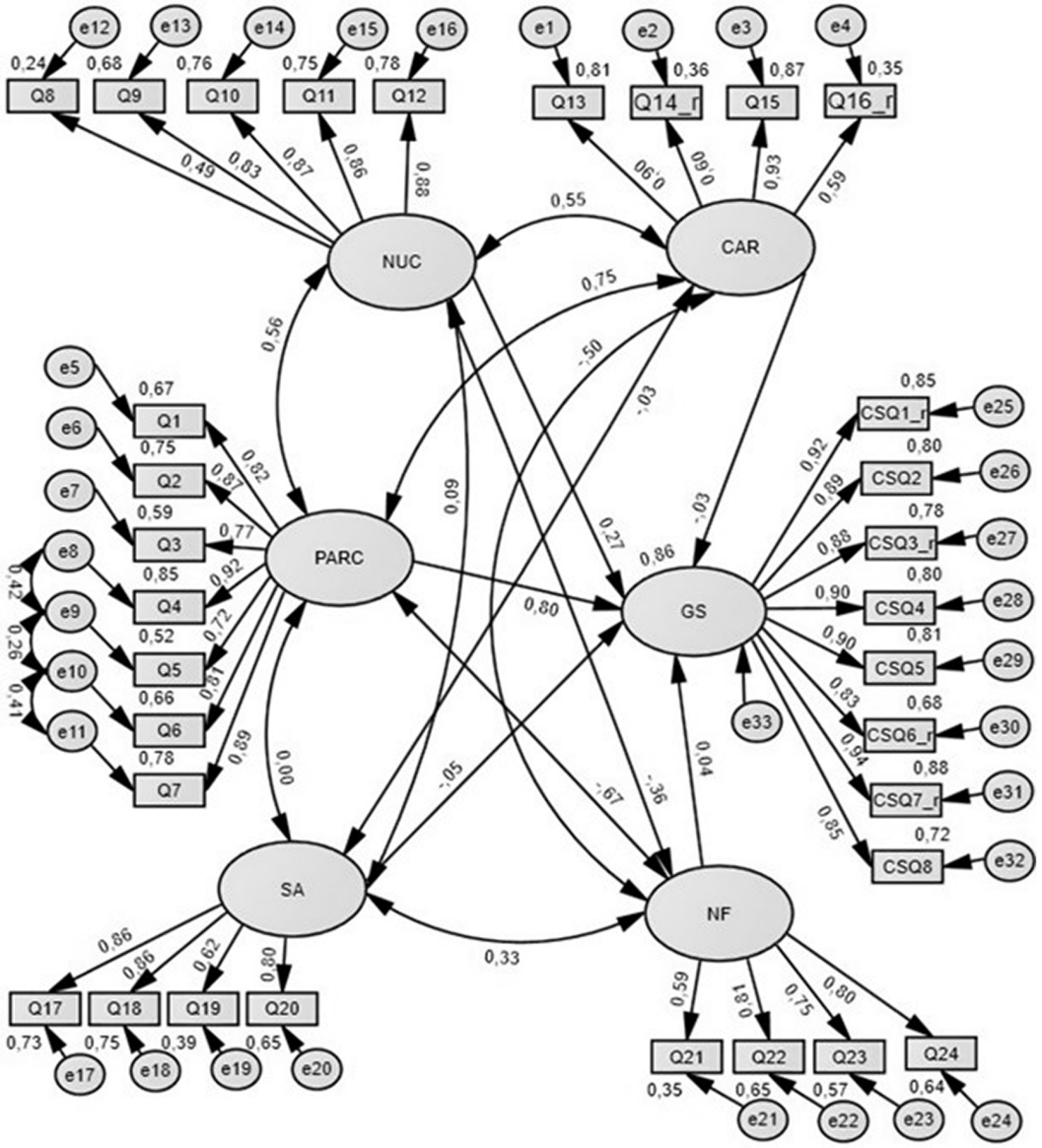

FIGURE 3
Effect of the QUEVA-G on General Satisfaction.

TABLE 6 Model fit for the effect of the QUEVA-G on general satisfaction.

Model	X^2	*df*	*p*	X^2/df	TLI	CFI	RMSEA	95% CI for RMSEA	SRMR	AIC
First-order model	657.308	446	0.000	1.474	0.953	0.958	0.052	[0.043; 0.060]	0.0596	821.308

X^2, Chi-square; df, degrees of freedom; *p*, *p* value; X^2/df, discrepancy index; CFI, comparative fit index; RMSEA, root mean square of approximation; SRMR, standardized root mean square residual; TLI, Tucker-Lewis index; AIC, Akaike information criterion.

($M = 1.685$; $SD = 0.834$), their ratings of SA were significantly higher. Additionally, participants who experienced mixed ($M = 3.725$; $SD = 1.243$) or emotional and behavioral assessments ($M = 3.650$; $SD = 1.145$) scored lower ratings of NF compared with cognitive and neurodevelopmental evaluations ($M = 4.398$; $SD = 0.800$). SA's effect size was small ($\eta^2 = 0.053$), while NF's effect size was medium ($\eta^2 = 0.100$; Table 10).

Finally, assessments of older children were experienced more positively by parents, in PARC (4–11 years-old $M = 3.760$; $SD = 1.095$; 12–18 years-old $M = 4.254$; $SD = 0.864$), NUC (4–11 years-old $M = 3.381$; $SD = 0.963$; 12–18 years-old $M = 3.670$; $SD = 0.861$), SA (4–11 years-old $M = 1.766$; $SD = 0.924$; 12–18 years-old $M = 2.063$; $SD = 1.059$), and the total score (4–11 years-old $M = 16.97$; $SD = 3.312$; 12–18 years-old $M = 18.21$; $SD = 2.842$). All of these effect sizes were small (Table 11).

TABLE 7 Estimates of direct effects of the QUEVA-G on general satisfaction.

Subscale	Direct effect on general satisfaction	*p*
CAR	−0.033	0.601
NUC	**0.266**	**0.000**
PARC	**0.802**	**0.000**
SA	−0.054	0.231
NF	0.037	0.580

$n = 177$.

TABLE 8 Main effect of child's gender on QUEVA-G results.

Subscale	*F* (*df*)	*p*	η^2	Gender of the child	*n*	*M*	*SD*
PARC	$F(1;183) = 0.250$	0.618	0.001	Male	127	3.902	1.013
				Female	58	3.985	1.123
NUC	$F(1;183) = 0.091$	0.763	0.000	Male	127	3.465	0.917
				Female	58	3.510	0.989
CAR	$F(1;183) = 0.120$	0.729	0.001	Male	127	3.892	0.988
				Female	58	3.836	1.061
SA	$F(1;183) = 0.012$	0.913	0.000	Male	127	1.862	1.020
				Female	58	1.879	0.891
NF_(R)	$F(1;183) = 0.000$	0.992	0.000	Male	127	4.244	0.960
				Female	58	4.246	0.907
Total Score	$F(1;183) = 0.032$	0.858	0.000	Male	127	17.36	3.052
				Female	58	17.46	3.550

$n = 185$. (R), reverse scored.

TABLE 9 Main effect of the format of administration on QUEVA-G results.

Subscale	*F* (*df*)	*p*	η^2	Format of administration	*n*	*M*	*SD*
PARC	**F (1;183) = 23.501**	**0.000**	**0.114**	**Online**	**150**	**3.758**	**1.074**
				Paper form	**35**	**4.657**	**0.443**
NUC	**F (1;183) = 8.310**	**0.004**	**0.043**	**Online**	**150**	**3.385**	**0.968**
				Paper form	**35**	**3.883**	**0.664**
CAR	**F (1;183) = 9.139**	**0.003**	**0.048**	**Online**	**150**	**3.768**	**1.038**
				Paper form	**35**	**4.329**	**0.722**
SA	$F(1;183) = 0.098$	0.755	0.001	Online	150	1.857	1.004
				Paper form	35	1.914	0.876
NF_(R)	**F (1;183) = 7.436**	**0.007**	**0.039**	**Online**	**150**	**4.155**	**0.976**
				Paper form	**35**	**4.629**	**0.654**
Total Score	**F (1;183) = 18.723**	**0.000**	**0.093**	**Online**	**150**	**16.92**	**3.282**
				Paper form	**35**	**19.41**	**1.817**

$n = 185$. (R), reverse scored.

These results suggest that, in our study, parents completing the QUEVA-G online had more negative experiences during their children's assessment than those completing it in person right after its conclusion. Whether this finding suggests that parents participating in self-help groups online might have actually experienced fewer fulfilling assessments or if the administration format might have enhanced a social desirability response set in parents completing the QUEVA-G in person is still unclear. The relatively better experience of parents whose children were older at the time of the assessment suggests that the child's age may also play a role in the overall experience of their assessment.

Discussion

Our study aimed to describe the psychometric properties of the Parent Experience of Assessment Scale (PEAS; Austin, 2011),

TABLE 10 Main effect of the type of assessment on QUEVA-G results.

Subscale	*F (df)*	*p*	η^2	Type of assessment	Comparison	*p*	*n*	*M*	*SD*
PARC	$F(2;148) = 0.972$	0.381	0.013	Cognitive	Emotional	0.615	116	3.947	1.028
					Mixed	0.490			
				Emotional	Cognitive	0.615	15	3.676	1.029
					Mixed	0.998			
				Mixed	Cognitive	0.490	20	3.657	1.175
					Emotional	0.998			
NUC	$F(2;148) = 1.563$	0.213	0.021	Cognitive	Emotional	0.210	116	3.465	0.904
					Mixed	0.959			
				Emotional	Cognitive	0.210	15	3.013	1.205
					Mixed	0.268			
				Mixed	Cognitive	0.959	20	3.429	1.155
					Emotional	0.268			
CAR	$F(2;148) = 2.264$	0.108	0.030	Cognitive	Emotional	0.137	116	3.888	0.990
					Mixed	0.477			
				Emotional	Cognitive	0.137	15	3.350	1.194
					Mixed	0.754			
				Mixed	Cognitive	0.477	20	3.600	1.077
					Emotional	0.754			
SA	**$F(2;148) = 4.107$**	**0.018**	**0.053**	**Cognitive**	**Emotional**	**0.042**	**116**	**1.685**	**0.834**
					Mixed	0.170			
				Emotional	**Cognitive**	**0.042**	**15**	**2.300**	**1.303**
					Mixed	0.777			
				Mixed	Cognitive	0.170	20	2.087	1.052
					Emotional	0.777			
NF_(R)	**$F(2;148) = 8.199$**	**0.000**	**0.100**	**Cognitive**	**Emotional**	**0.008**	**116**	**4.398**	**0.800**
					Mixed	**0.007**			
				Emotional	**Cognitive**	**0.008**	**15**	**3.650**	**1.145**
					Mixed	0.968			
				Mixed	**Cognitive**	**0.007**	**20**	**3.725**	**1.243**
					Emotional	0.968			
Total Score	$F(2;148) = 1.595$	0.206	0.021	Cognitive	Emotional	0.253	116	17.38	3.001
					Mixed	0.842			
				Emotional	Cognitive	0.253	15	16.00	4.110
					Mixed	0.570			
				Mixed	Cognitive	0.842	20	16.60	3.565
					Emotional	0.570			

$n = 151$. (R), reverse scored.

translated into Italian, in an Italian sample of parents. We found that the QUEVA-G is a five-factor questionnaire with a good fit to the data, excellent reliability, and predictive validity for parents' general satisfaction.

Our findings suggest that establishing a positive and collaborative relationship with parents, facilitating parents' development of a new and more respectful understanding of the child, allowing a more positive perception of the parent–child relationship, and providing a positive emotional experience to all participants are very highly correlated processes. Of note, parents' greater systemic awareness is correlated with their negative feelings about the assessment, suggesting that when parents acknowledge their own responsibility for their child's difficulties, they are likely to experience negative feelings, such as guilt and shame. Future studies should try to discern whether this result is inherent to parents' experience of their child's assessments or if it is related to the specific ways assessments are performed.

TABLE 11 Main effect of child's age on QUEVA-G results.

Subscale	*F (df)*	*p*	η^2	Age range	*n*	*M*	*SD*
PARC	**F (1;183) = 9.693**	**0.002**	**0.050**	**4–11**	**122**	**3.760**	**1.095**
				12–18	**63**	**4.254**	**0.864**
NUC	**F (1;183) = 4.004**	**0.047**	**0.021**	**4–11**	**122**	**3.381**	**0.963**
				12–18	**63**	**3.670**	**0.861**
CAR	*F* (1;183) = 0.275	0.601	0.002	4–11	122	3.846	0.987
				12–18	63	3.929	1.055
SA	**F (1;183) = 3.883**	**0.050**	**0.021**	**4–11**	**122**	**1.766**	**0.924**
				12–18	**63**	**2.063**	**1.059**
NF_(R)	*F* (1;183) = 0.302	0.583	0.002	4–11	122	4.217	0.977
				12–18	63	4.298	0.873
Total Score	**F (1;183) = 6.419**	**0.012**	**0.034**	**4–11**	**122**	**16.97**	**3.312**
				12–18	**63**	**18.21**	**2.842**

n = 185. (R), reverse scored. PARC, Parent–Assessor Relationship and Collaboration; CAR, Child–Assessor Relationship; NUC, New Understanding of the Child; SA, Systemic Awareness; NF, Negative Feelings; GS, General Satisfaction.

SEM findings suggest that parental satisfaction with their child's assessment is mostly predicted by parents' positive and collaborative relationship with the assessor. This result is consistent with the research hypotheses that Austin et al. (2016) initially wanted to demonstrate but did not, since the PARC's effect in their model is extremely weak and negative, as well as in their second-order model, it has only an indirect but moderate effect through CAR and NUC. In addition, our analysis suggests that the assessor's ability to establish a positive and collaborative relationship with parents is not sufficient to enhance parents' satisfaction. On the other hand, results suggest that higher parent satisfaction was correlated with a better understanding of their child's problems.

Our analyses highlight the existence of some variables that can affect parents' perception of their child's assessment and, therefore, their level of satisfaction. First, differences in QUEVA-G scores emerged regarding the type of assessment received. Specifically, parents whose children received an assessment for emotional and behavioral distress achieved higher levels of systemic awareness than those whose children received cognitive and neurodevelopmental assessments. In addition, the former experienced more negative feelings than the latter. This perception is consistent with the above-mentioned statement that certain parents may feel uncomfortable acknowledging their role in their child's difficulties. This finding suggests that it would be useful for clinicians to help parents overcome their negative emotions of guilt and shame and promote compassionate and beneficial solutions for the entire family. This is consistent with the following two goals that Therapeutic Assessment practitioners strive to achieve: (1) to improve parental systemic awareness about their child's problems and (2) to empower parents to feel more self-assured and capable of finding solutions (Finn, 2007).

Finally, other differences were found relating to the child's age: parents of adolescents (12–18 years) achieved higher scores than parents of younger children (4–11); therefore, it seems that the former were globally more satisfied.

Limitations and future directions

Although the sample size was above the minimum 100 cases recommended for CFA (MacCallum et al., 1996, 1999), a larger sample size would have provided even stronger data in terms of the fit of models.

There was some variability in the data collection procedures (paper form or electronic form). Parents who completed QUEVA-G in the paper form at the clinics reported more global satisfaction than those who completed it online. Specifically, the analysis revealed that the latter reported a weaker relationship with the evaluator, a lower-quality perception of the evaluator–child relationship, a worse understanding of the child, and more negative feelings. It could be speculated that this result may be due to a general distrust toward the assessors. Future studies should be carried out with more homogenous and/or controlled samples to capture the differences between groups regarding satisfaction with the service received (such as comparing public and private services).

Furthermore, given that the majority of our sample comprised female participants, it would be worthwhile to consider administering the QUEVA-G to fathers as well, as previous research has shown that respondents' gender can influence their experience of clinical interventions (Cooper et al., 2019).

The fit of the QUEVA-G to the data was good. However, based on the modification indices suggested by AMOS, we allowed correlating error terms for three items (4 and 5, 5 and 6, and 6 and 7), implying that there could be an additional construct or unexplored thematic area influencing these items. The correlation among the error terms may reflect the presence of a residual variance unaccounted for by the five factors considered in the model. Moreover, items might be formulated ambiguously, thus needing a revision. Further research should focus on these items.

Future studies should also address whether the QUEVA-G maps all the possible areas of parental experience using a qualitative approach. Indeed, QUEVA-G seems to be more focused on what happens in the assessment room in terms of relationships, effects, and feelings, while it could be further investigated, for example, what happens outside (e.g., relationships with other services; Aschieri et al., 2023).

Conclusion

This study represents an initial effort to address the gap concerning measurement instruments for parental satisfaction with child assessments. While Larsen et al. (1979) previously considered parental satisfaction as a monofactorial construct, there is now significant evidence highlighting its multidimensional nature (Lewis, 1994). Compared to commonly used single-factor satisfaction measures, the QUEVA-G enables more precise reporting of various facets of parents' experiences during their child's psychological assessment, offering valuable insights for clinical practice and quality assurance programs.

Finally, the present study provides evidence for supporting the theoretical hypotheses of Therapeutic Assessment (TA), for instance, by demonstrating the crucial role of the PARC subscale compared to the other factors. Indeed, the present study highlights the great importance of the family-assessor relationship in parent satisfaction with the assessment process, which is consistent with prior research findings on this theme (Pascoe, 1983; Sheppard, 1993; Lewis, 1994), and with research stressing the need of actively involve families in the delivery of mental health services (Bogenschneider et al., 2012; Carrà, 2018).

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

The studies involving humans were approved by the Catholic University of the Sacred Heart. Number of institutional review board approval: 42–23. The studies were conducted in accordance with the local legislation and institutional requirements. The participants provided their written informed consent to participate in this study. Written informed consent was obtained from the individual(s) for the publication of any potentially identifiable images or data included in this article.

Author contributions

FA: Methodology, Conceptualization, Funding acquisition, Resources, Supervision, Validation, Writing – review & editing. SB: Methodology, Data curation, Formal analysis, Investigation, Software, Writing – original draft. AC: Data curation, Supervision, Writing – review & editing. GC: Data curation, Formal analysis, Investigation, Methodology, Software, Writing – original draft.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Supplementary material

The Supplementary material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/fpsyg.2023.1271713/full#supplementary-material

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A retrospective study exploring parents' perceptions of their child's assessment

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The current study investigates parents' perceptions of their child's assessment, focusing on their responses to the Italian version of the Parents' Experience of Assessment Scale (QUEVA-G). Twenty parents, who voluntarily agreed to be contacted after completing the questionnaire, participated in qualitative interviews to gain deeper insights into their assessment experiences. A thematic analysis was conducted on the interview transcriptions, highlighting three primary domains of parental experience: (1) parental perceptions of the assessment process; (2) effects of the assessment; and (3) parental perceptions of their relationship with their children's teachers. The findings indicate that the QUEVA-G accurately captures most areas of interest as well as reveals unexplored aspects.

KEYWORDS

clients' perspective, family assessment, grounded theory, parents' satisfaction, parental perceptions, parent–teacher relationship

Introduction

There is consensus among researchers in recognizing therapeutic alliance as a crucial element concurring to the success of treatments with patients of all ages (Elvins and Green, 2008). In adult psychotherapy, treatments are often conducted individually, whereas those of children and adolescents almost always involve other family members. Therefore, it is essential to work toward building multiple alliances between the therapist and the child, the therapist and the parents, and the parents and the child (Shelef et al., 2005; Robbins et al., 2006).

Establishing a positive and collaborative relationship with parents is essential for several reasons. Parents play a pivotal role in fostering an alliance between the child and the therapist (Kazdin et al., 2006; Campbell and Simmonds, 2011). In addition, they are involved in the definition of children's motivation to accept assistance and stick to the treatment plan (Fields et al., 2004). Moreover, the literature highlights that the level of parental involvement in children's therapy is associated with treatment outcomes as the active engagement of only one or both parents in their child's therapy sessions is necessary for its success (Fields et al., 2004; Karver et al., 2018). Indeed, parental commitment, both within and outside of therapy sessions, facilitates therapeutic change in the child/adolescent (Kazdin et al., 2006; Marker et al., 2013). Kazdin et al. (2006) also highlighted that limited parental involvement reduces the likelihood of beneficial changes for the child.

Brodard et al. (2019) explored the connections between alliance, parental expectations, and the relationship with the psychologist in the context of the assessment of a child. They found general feedback from parents about the helpfulness and clarity of the assessment process to be positive and a generally higher involvement and motivation for change for mothers in the assessment process compared with fathers. Initially, parents wished to increase the understanding of their children and to learn how to improve their children's behaviors at school. The alliance between the assessor, parents, and children increased during the assessment. The initial alliance between assessors and parents predicted the evaluation of the utility of the assessment at its conclusion, mediated by the final level of alliance between parents and assessors. Of interest, initial lower levels of perceived alliance between children and assessors from parents predicted higher levels of parental motivation for change and perception of the utility of the assessment at its end. These results highlight that alliance, expectations, and the quality of the experience of parents play a fundamental role in the assessment of children and their families.

This study presents the qualitative segment of a research project aiming at uncovering how parents perceive the psychological assessment process of their child and the factors that contribute to its evaluation through a mixed-method approach that integrates quantitative and qualitative data. Specifically, this article presents the follow-up of quantitative research that provided the psychometric proprieties of the Parent Experience of Assessment Scale (PEAS; Austin, 2011; Austin et al., 2016), in Italy (QUEVA-G; Aschieri et al., 2024). The QUEVA-G, which maps five important dimensions of psychological assessment in children and adolescents with their families according to the Therapeutic Assessment model (Tharinger et al., 2022), includes the following factors: Parent-Assessor Relationship and Collaboration (PARC), New Understanding of the Child (NUC), Child-Assessor Relationship (CAR), Systemic Awareness (SA), and Negative Feelings (NF). Parent-Assessor Relationship and Collaboration (7 items) refers to the extent to which parents, during the assessment process of their child, were able to perceive themselves as actively engaged and genuinely assisted by the assessor [e.g., "*I was informed about each step of the assessment*"]. New Understanding of the Child (5 items) assesses the potential for parents to develop more accurate narratives regarding their child's issues and acquire more effective educational skills through the assessment process [e.g., "*I have lots of new ideas about how to parent my child*"]. The quality of the relationship between the child and the assessor, expressed in terms of empathy, support, and understanding, is investigated through the Child-Assessor Relationship factor (4 items) [e.g., "*My child felt comfortable with the assessor*"]. Systemic Awareness (4 items) focuses on the possibility that parents, through the assessment process, may arrive at a more systemic view of their child's issues, thus perceiving that the entire family needs to make small changes to assist him or her [e.g., "*The assessment revealed how family members play a role in my child's problems*"]. The extent to which parents have felt ashamed, blamed, or judged during the assessment is explored by the Negative Feelings subscale (4 items) [e.g., "*The assessment made me feel like a bad parent*"].

Typically, qualitative surveys are used to validate or develop appropriate quantitative instruments. However, in this project, a reverse approach was adopted. Initially, a quantitative investigation was conducted using the Italian version of the PEAS (QUEVA-G), followed by a qualitative exploration of some participants' experiences. This approach bears some resemblance to that of assessors using Therapeutic Assessment (TA; Finn, 2007; Durosini and Aschieri, 2021; Aschieri et al., 2023), a semi-structured and brief therapeutic intervention grounded in psychological assessment, where qualitative aspects follow quantitative measures. After administering standardized tests, clinicians engage in an extended inquiry involving a semi-structured collaborative discussion with clients about their testing experiences. This unique approach enabled the identification of the unmet needs of parents and informed necessary changes to provide more satisfactory services that address the needs of all involved individuals.

Aims

This study aimed to investigate the thoughts, feelings, and experiences that underlie the responses provided by participants to the items of QUEVA-G, hence providing qualitative information about parents' experience of the assessment process and outcomes. The rationale of the study is to explore, starting from QUEVA-G scores, and without any fixed *a priori* hypothesis, the experiences of parents whose children participated in an assessment. The primary objective was to gain a comprehensive understanding of how parents perceive the psychological assessment of their child, specifically by exploring (1) the factors contributing to positive or negative assessment experiences, (2) which of these factors are addressed by QUEVA-G and which ones remain unexplored, and (3) the unmet parental needs concerning children's and adolescents' mental health services and practices.

Method

Participants

Recruitment

Participants were recruited as part of a research project using the Italian version (Aschieri et al., 2024) of the Parent Experience of Assessment Scale (PEAS; Austin, 2011). The sample consisted of parents whose children had undergone an assessment in the previous year—to ensure that the memory of the evaluation was still vivid—and had reported their experience using QUEVA-G. These parents also expressed their willingness to be contacted for a follow-up interview regarding their experience. No exclusion criteria were applied concerning the children's diagnosis, their level of functioning, or the typology of assessment completed. The researchers contacted the parents who volunteered to participate, provided them with a detailed explanation of the study's procedures, and obtained informed consent. All participants were Italian-speaking adults.

Among the initial pool of the previous study's participants (Aschieri et al., 2024; $N = 185$), 53 parents (29.94%) indicated their availability to be contacted for this study at the end of the QUEVA-G administration. Through convenience sampling, we contacted potential participants to schedule the interview. In the process of data collection, five parents withdrew their availability to be interviewed. Altogether, 20 parents were interviewed. The sample

size was motivated by the saturation of thematic categories. Generally, in qualitative research with homogeneous participants (i.e., parents whose children undergo psychological assessment) and a relatively narrow focus (i.e., the parents' experiences of the assessment), the literature indicates an array of interviews ranging from 9 to 17 for data saturation (Hennink and Kaiser, 2022). Following Young and Casey (2019), saturation was defined using a "code frequency count" approach: Transcripts were read sequentially while counting the number of new codes that emerged from each interview until no more codes were identified. In our study, we reached a consensus that thematic saturation was achieved after interviewing 20 participants.

Sample characteristics

Twenty participants were interviewed, all of whom were biological mothers, with the exception of one grandmother. The majority of children and adolescents undergoing assessment were boys ($n = 13$; 65%). The age of the assessed children and adolescents ranged from 4 to 15 years, with a mean age of 8.9 years (SD = 3.15 years). In most cases ($n = 14$; 70%), the assessment focused on cognitive or neurodevelopmental disorders, particularly specific learning disabilities (SLD) and attention-deficit/hyperactivity disorder (ADHD). Additionally, 5% of the sample sought assessment for emotional or behavioral problems in their child ($n = 1$). In 15% of cases, the assessments addressed mixed concerns, involving both cognitive and emotional-behavioral aspects ($n = 3$). Finally, in 10% of cases, the type of assessment could not be clearly identified ($n = 2$).

Instruments: the extended inquiry (EI)

Participants engaged in an extended inquiry (EI) during which they were asked about the responses they provided on the QUEVA-G. The EI is a semi-structured collaborative discussion between the assessor and the client immediately after the test is administered. Its purpose is to gather information that may not be captured in the norm-based results by delving into the personal meaning behind the client's responses. In an EI, assessors begin with general questions such as "*What was it like for you to complete this questionnaire?*" or "*Did you notice anything that caught your interest in any of the items you responded to?*" Following these questions, assessors shifted their focus to more specific topics, such as "*I observed that you did not answer all the items related to…*" or "*I noticed that your eyes became teary when you mentioned missing your mother deeply*." This process facilitates a deeper understanding of how test responses and results align with the broader context of the clients' lives. In the clinical setting, the EI encourages clients to establish their own connections, thereby enhancing their sense of self-efficacy and self-esteem (Fantini et al., 2022). Following up on clients' observations and experiences about the testing often highlights relevant associations and unexpected themes that respondents find significant and related to their goals for the assessment.

During the interviews conducted in our study, two main themes were explored. First, we delved into participants' general impressions and subjective evaluations of the questionnaire and how it related to their experience of the assessment. Following, we present an excerpt of this process from an interview (participant #6):

> *Interviewer (I.): Thank you for agreeing to be interviewed. The first topic I'd like to discuss with you is, what was it like to reflect on the assessment while completing the QUEVA-G?*

Second, the interviews focused on relevant items, such as those scored at the extremes of the response scale (e.g., "*The assessment made me feel ashamed*," 5—very much) or when respondents scored in opposite directions on similar items (e.g., "*Now I know what to expect from my child*," 1—Not at all, and "*I understand my child so much better now*," 5—very much). Following, we present an excerpt from another interview (participant #13):

> *(I.): An aspect I noticed is that you indicated not feeling judged and not feeling ashamed during the assessment. The only item you scored high was "The assessment made me feel like a bad parent," and that intrigued me because all the other scores are very low. So, I wanted to ask how is that?*

Procedure

The study obtained institutional review board approval (Practice number: 42–23). Data collection took place between November 2022 and April 2023. The average duration of each interview was 43 min, with the maximum and minimum durations being approximately 75 and 19 min, respectively. Participants were given the option to choose between remote interviews via WhatsApp or Teams or in-person interviews. All interviews were audio recorded and subsequently transcribed.

Data analysis

A thematic analysis (Braun and Clarke, 2006) was conducted on the interviews, focusing on identifying emerging recurring patterns of meanings represented as codes or subthemes. These codes were then organized into broader conceptual categories known as themes, and their interconnections were explored to construct an explanatory model.

The coding process was inspired by Braun and Clarke's (2006) guidelines. While interviewing participants, researchers familiarized themselves with the data by thoroughly reading and re-reading the transcripts of the interviews to gain familiarity with the data. In this phase, interviewers started generating initial codes by associating them with specific segments of text. Individually and in group meetings, the authors developed a tentative grouping of these codes into potential themes, considering their conceptual coherence and continuity. The revision and refinement of the themes into a thematic map reflecting the collective data occurred once the saturation of codes was reached.

Eventually, the thematic map was defined through further revisions and enhancements.

The reliability of findings was ensured by a detailed report of transcripts pertaining to all codes (examples of all codes are presented in Appendix A). As in Aschieri et al. (2021), the trustworthiness of the results was supported by the analysis of notes written during and after debriefings among co-authors. Emotional reactions of interviewers facing the parents' accounts of their children's assessments were processed with the first author through debriefings. Throughout the

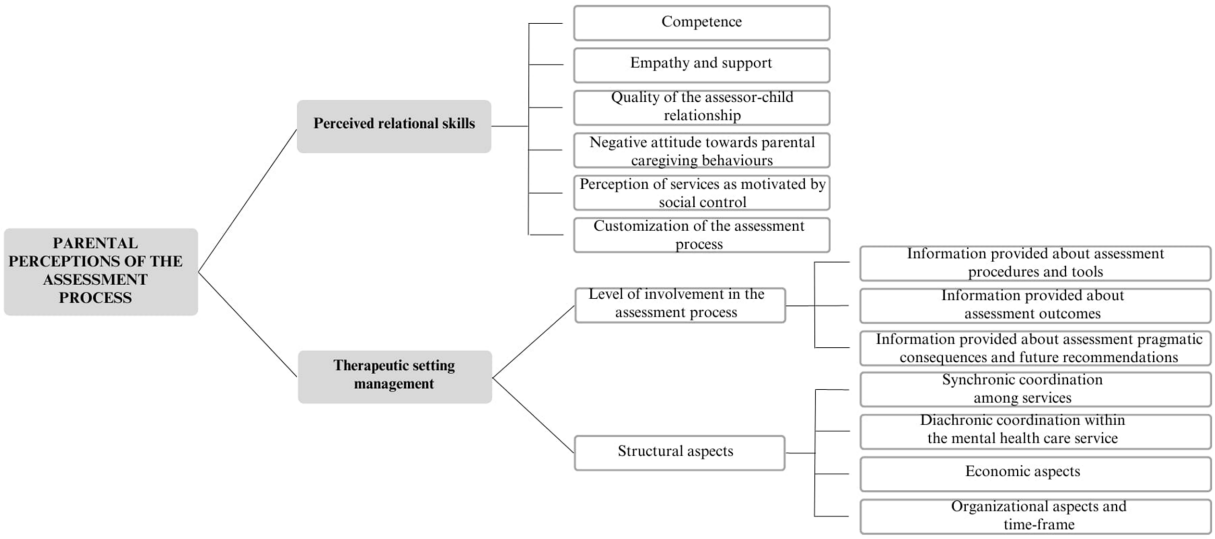

FIGURE 1
Parental perceptions of the assessment process.

research process, there was an ongoing reflexive dialogue between the researchers that constantly reflected on their own positioning, biases, and assumptions in relation to the phenomenon under investigation.

Results

The final coding scheme comprised four levels of analysis: main themes, themes, secondary themes, and subthemes. The three main themes that emerged from the coding process were (1) parental perceptions of the assessment process (Figure 1), (2) effects of the assessment (Figure 2), and (3) parental perceptions of the relationship with their children's teachers (Figure 3).

Parental perceptions of the assessment process

The first main theme encompasses parents' perceptions developed throughout the entire assessment process, encompassing their views of both the assessor and the mental healthcare agency. Particularly, parents' perceptions of the assessor are influenced by various relational skills, such as competence and empathy. Moreover, parental perceptions of the assessor and the service are intertwined with the management of the therapeutic setting. This aspect is closely related to their level of involvement during the assessment and various structural aspects, including organizational and economic factors.

Perceived relational skills

a Competence: Some participants expressed that their trust in the assessor was influenced by the assessor's professionalism. For instance, P13 stated, «*During the speech therapy session, they mentioned that my child seemed to have dysgraphia issues because he could not draw well. They emphasized that, at his age, children should be able to draw certain things, and his geometries were not typical of a five-year-old. However, I asked them, "Did you inquire about what he was trying to draw?" and they responded with, "No, no"*».

b Empathy and support: Parents' trust in the assessor was influenced by the assessor's ability to empathize with them and provide support. P3 shared the following experience: «*Whenever I had any doubts or came across new information and asked for explanations, she was always very helpful. She explained what options would be beneficial for us and what might not work. She encouraged us to try different approaches because what works for one person may not work for another. I found her to be consistently positive and open to discussions. Initially, I had many questions, but she was always kind and supportive, even when helping us explore different methods*».

c Quality of the assessor–child relationship: Some participants indicated that their trust in the assessor was influenced by the assessor's relationship with their child. For instance, P14 shared, «*My daughter and I are very pleased with the assessment. My niece always leaves with a happy mood, and when I ask her about her experience there, she always tells me how happy she is to go there*».

d Negative attitude toward parental caregiving behaviors: Some parents reported feeling criticized by the assessor and being accused of being the "cause" of their child's problems. P1 shared, «*The doctor accused me of being too overprotective with my daughter; I felt like, "Oh my God, maybe I'm overreacting? Am I not seeing things clearly?" So, I started doubting myself. The same thing happened with the therapists at the private clinic I visited, where they said, "Stop medicalizing your daughter!"*».

e Perception of services as motivated by social control: Some participants expressed the belief that mental healthcare services might not have genuine intentions to assist them, leading to suspicions that these services could be driven by social control

purposes. P19 stated, «*But also, for example, the mood stabilizer that the psychiatrist immediately prescribed… There are natural alternatives: natural mood-stabilizing solutions (…). So why do we rely on medications? Many parents are unaware of this, and what happens? They continue to administer drugs to their children (…) and the children keep gaining weight or remaining sedated. It's like they want to sedate them, control them, and waste all the parents' money*».

f Customization of the assessment process: Parental perceptions of their child's evaluation were influenced by the assessor's ability to create an individualized assessment path based on the specific needs of the family. P2 stated, «*The impression I had was that the assessor did her job in a very impersonal way, just reporting the evaluation, conducting the tests, and then "goodbye and thank you"*».

Therapeutic setting management

Level of involvement in the assessment process:

a Information provided about assessment procedures and tools: Participants' satisfaction with the assessment was influenced by the amount of information provided by the assessor about the assessment procedure, including the tools used and the steps followed. P13 mentioned, «*We left the child alone during the assessment, and in the end, we were unaware of how it went and what tests were conducted*».

b Information provided about assessment outcomes: Parents' satisfaction with the assessment was linked to the amount of information provided by the assessor regarding the evaluation's outcomes to gain a deeper understanding of their child's difficulties. P1 expressed, «*At the time of receiving the functional diagnosis, I wanted to know as soon as possible what it meant to have a hyper-kinetic syndrome. I wondered, "Is this ADHD? Is it temporary? Will it pass? Was it caused by me or the school?". I could not comprehend it fully, and it wasn't explained in detail, so it caused me a lot of suffering*».

c Information provided about pragmatic consequences of the assessment and future recommendations: Parental satisfaction with the assessment was influenced by the level of information given by the assessor about post-assessment involvements and future interventions. P12 shared, «*They recommended that my daughter started a therapy because she is very emotional and has difficulty speaking in front of others. So, I was advised to start this process*».

Structural aspects:

a Synchronic coordination among services: Parental satisfaction was influenced by the ability of services (school and mental healthcare agencies) to interact with each other in delivering interventions. P11 explained, «*For example, the assessor wrote a report that we gave to the school (…), but there was no communication between her and the school. So, I ended up delivering the report to the teachers myself, and I do not even know if it would have been helpful for her to talk to the teachers, but she did not propose it, and they did not ask for it*».

b Diachronic coordination within the mental healthcare service: Parental satisfaction was influenced by the ability of mental healthcare agencies to provide continuous intervention to the family, enhancing their perception of being deeply supported. P2 stated, «*The assessment is a journey that should begin and continue, but instead, it ends with just a diagnosis sheet. As a parent, you feel lost, carrying this sheet and shouting, "Help! Help!"*».

c Economic aspects: Economic factors affected parents' satisfaction with the received service in different ways, primarily depending on the financial situation of the family and the perceived utility of the assessment. P10 expressed, «*There is no adequate support from the National Health Service or the municipalities. For instance, municipalities are not interested because they have more serious cases to handle. They do not provide the Health Service bonus, claiming we are not entitled to it. But I cannot handle it alone… often, I need support, but I cannot afford it because I cannot pay for it…*».

d Organizational aspects and time frame: Parental satisfaction with the mental healthcare agency was influenced by the waiting time before receiving the assessment and the overall duration of the process. P13 shared, «*For our feedback, however, I waited for a year because the person who had initially tested my son – was she a PhD student? – had left, so the operators would have had to redo the entire evaluation. So, they simply looked at what she had written; there was no further exploration of my child's aspects, and I could not ask why they told me so about my child because they could not answer*».

Effects of the assessment

This second main theme deals with what the assessment process has provided to the family both cognitively and emotionally.

Cognitive aspects

Parents' understanding of the child:

a New understandings are achieved: The assessment process facilitated a deeper and more nuanced parental understanding of the child. P4 stated, «*After the assessment, it's like you are given a magnifying glass, and you can understand everything better. It's like saying to someone who is blind, "Sorry, but you read, right? How can you not read?". Well, I could not see that my child was blind and it did not make sense to ask her to try*».

b Previous ideas about the child are confirmed: The assessment process confirmed parents' previous views about their child without adding new information. P5 mentioned, «*At least, maybe, the neuropsychiatrist told me that she is a sensitive child, just as the teachers have noticed before, telling me that she must feel supported… but I have already known this. They reported things that I had observed myself and that I correctly understood her*».

c New understandings are gained through alternative sources: Despite the assessment, some parents obtained a deeper understanding of their child through alternative sources

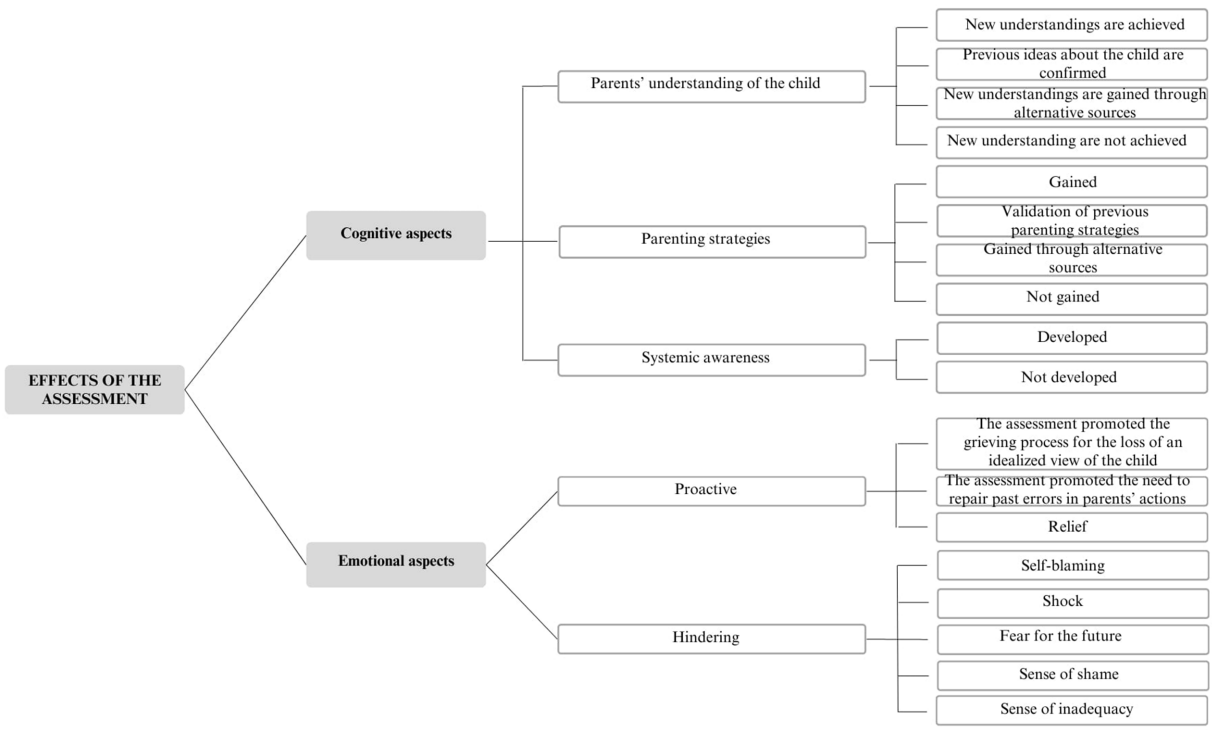

FIGURE 2
Effects of the assessment.

rather than through the assessment process. They sought support from other parents facing similar difficulties, read articles about their children's diagnosis online, or engaged with books and parents' associations on the subject. P1 explained, «*So the information that I learned the most was through other parents, sharing experiences where you recognize yourself in the same problems, and I read articles about ADHD on the internet*».

d New understandings are not achieved: Some parents did not gain a deeper understanding of their child's traits and difficulties through the assessment process. P11 expressed, «*The assessment was a mostly positive experience, but it did not provide all the answers or solve all the doubts… I still feel the need for a key to understand what lies behind the difficulties of my child*».

Parenting strategies:

a Gained: The assessment process enabled parents to acquire more effective parenting strategies to deal with their children. P8 stated, «*I understand now why my son does certain things… I did not understand his stereotypes before, and I used to correct them. Now, I know how to approach him when he engages in certain repetitive behaviors*».

b Validation of previous parenting strategies: The assessment process validated parents' previous parenting strategies without suggesting new approaches. P6 mentioned, «*I asked the assessor for some suggestions, not about daily education but more related to everyday tasks. But, they mostly confirmed the things I was already doing*».

c Gained through alternative sources: Despite the assessment, some parents gained new strategies for dealing with their child through alternative sources rather than through the assessment process. They sought support from other parents, pursued information online, and engaged with relevant books and parents' associations. P18 explained, «*I figured out how to handle it, but by reading and training. For example, everyone said, "Hold still. Sit still," but if he does not manage it, we cannot keep telling him that. Instead, we can say, "Do not hurt your sister" (…). I trained myself, but nobody provided any guidance after the diagnosis*».

d Not gained: Some participants did not acquire new parenting strategies. P9 shared, «*The assessment did not help me at all. It did not help my son either…Its effectiveness was as transparent as air…It did not provide any helpful tools*».

Systemic awareness:

a Developed: Through the assessment process, parents gained awareness of their family's influence on their children's difficulties. P20 explained, «*My daughter's dad lives in a family that's a bit entangled. We are quite hypochondriacal and very anxious, and I believe that living with these dynamics sometimes particularly accentuates an anxious symptomatology in my daughter. She's the only little niece in a family of older people, so she grew up in an environment where she is the center of the world, and this probably contributed to her immaturity from various points of view*».

b Not developed: Some parents were not able to recognize their impact on their children's difficulties. P16 stated «*Irrespectively of the assessment, I do not think my son's difficulties depend on*

family conflicts. I think he would have been the same anyway because even when he was a little boy, he was like that. So, I do not see a correlation».

Emotional aspects

Proactive:

a The assessment promoted the grieving process for the loss of an idealized view of the child: During the assessment, parents developed the ability to embrace their children's unique traits and put themselves in their shoes. P12 explained, «*I learned to try to put myself in my children's shoes, which is sometimes difficult, and to accept them as they are. Before, I used to get angry if they got a bad grade or if I thought the mark was not what they were supposed to get. But now, I have learned to accept them as they are and understand that they have some difficulties, and some may have more or fewer difficulties, and to accept them as they are*».

b The assessment promoted the need to repair past errors in parents' actions: Parents felt guilt for their past actions with their children, and this motivated them to make positive changes and create a more comfortable environment for their children. P2 shared, «*I allowed my husband to do many things that maybe I should not have allowed, and that marked my son's childhood. Not anything dramatic, but phrases that I might have noticed the impact they could have on him. So… I could have done more, but maybe it's a feeling that all parents have, or at least those who question themselves*».

c Relief: The assessment process resulted in a confirmation of the parents' suspicion that something was going on with their children, leading to a deeper sense of wellbeing for the entire family. P19 said, «*In about 80% of the cases, the assessment comes when the parent now has awareness that something is wrong. Before this, most of the time, they treat you like you are overreacting, but when the evaluation comes, it gives you a sense of relief. It's like saying, 'Gosh, it's not that I'm wrong, it's not my daughter who's wrong. We were not wrong when thinking about an assessment to figure out what was happening*».

Hindering:

a Self-blaming: Some parents criticized themselves, believing themselves to be the "cause" of their children's difficulties. P18 shared, «*At first, when my son was diagnosed, I thought I might have given him this negative gene*».

b Shock: Some parents experienced traumatic feelings upon discovering their children's diagnosis, such as desperation and hopelessness. P8 explained, «*When you get these things, it's like a cold shower, and you think, "Why me? Why him? Why us?"*».

c Fear for the future: Some parents did not know what to expect for their child's future, such as how their difficulties might evolve or who could help them. P13 expressed, «*The problem is the uncertainty about what happens next because nobody knows what to do with it. It's not like having a problem with a solution, especially in the case of intellectual giftedness. So, what do you do? What do you do with the child's relationships? There is no specific intervention option, such as speech therapy used for learning disabilities, for example*».

d Sense of shame: Some parents felt ashamed of themselves because of their children's difficulties or for not having discovered their diagnosis earlier. P4 shared, «*Not recognizing the pathology in him and not being able to understand it made me feel ashamed, to be honest. I felt ashamed that I did not get it, that I yelled at him, gave him a smack, and said, "How can you not understand multiplication tables?"*».

e Sense of inadequacy: Some participants felt like "bad parents" because of their lack of knowledge about their children's diagnosis and their incapacity to discover it earlier. P20 expressed, «*I think of myself as a bad parent because when I had the first hints, I should have acted immediately. Instead, it took me a year… before getting my daughter evaluated. I feel a little guilty because it took me a while to start*».

Parental perceptions of the relationship with their children's teachers

This main theme comprises four variables that influence how parents perceive their child's teachers and their relationship.

a Competence: Some parents expressed that their interactions with teachers were influenced by the educators' expertise and theoretical knowledge in recognizing and addressing children's difficulties. Participant 3 stated, «*Unfortunately, they are not really prepared, or perhaps not at all, to identify difficulties that go beyond the usual 'he is lazy, he is listless, maybe he has*

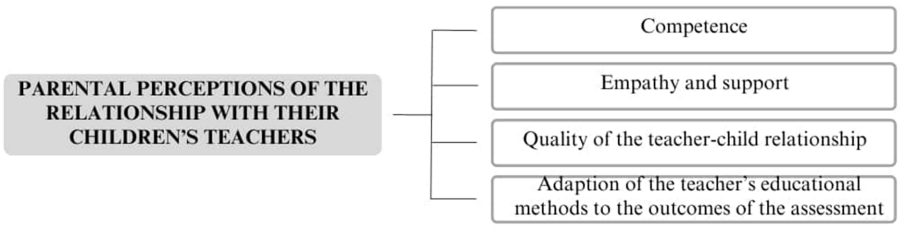

FIGURE 3
Parental perceptions of the relationship with their children's teachers.

difficulty in some school subject.' In fact, there was something else: there was a learning disorder».

b Empathy and support: Certain parents felt that the quality of their relationship with teachers depended on the educators' ability to empathize with and support both the parents and their children. Participant 4 shared, «*I communicated with the teacher, saying, "My daughter believed she was assisting her!" and the teacher replied, "I cannot attend to twenty boys: the others can manage on their own." That's when I became upset. I'm glad that others may succeed, but she cannot do it alone*».

c Quality of the teacher–child relationship: The parent–teacher relationship was influenced by how parents perceived the teacher's interactions with their child. P19 recalled, «*My daughter recalls her school experience as a period of being bullied by her teachers, not by her classmates. She was told things like "You're not good, you are not committed, you are stupid" despite having a memory disorder and a very serious learning disability*».

d Adaptation of the teacher's educational methods to the outcomes of the assessment: The parent–teacher relationship was affected by how teachers adjusted their educational methods based on the child's specific needs identified during the assessment process. Participant 6 explained, «*In the second year, after I clarified things and informed them [the teachers] that I would soon have my son undergo an evaluation, there was a noticeable change. They seemed to become more aware of his difficulties. I kept them informed about all the steps we took during the process. Afterwards, they began approaching us differently: when I shared the diagnosis with them, everything changed*».

Discussion

The thematic analysis has yielded a comprehensive set of results, revealing multiple factors that influence the quality of parents' experiences during their child's assessment. These findings align with a multidimensional view of the satisfaction construct, which is consistent with previous research on satisfaction (Donabedian, 1988; Rouse et al., 1994). The results of this study also align with the dimensions investigated by the QUEVA-G scale in accordance with the theoretical principles of Therapeutic Assessment. However, some new themes have emerged from this research that are not addressed by the scale.

Parental perceptions of the assessment process

The results highlight the crucial role played by the relationship with the assessor in shaping parental experiences during their child's assessment process. Participants expressed a more positive view of the assessment when they perceived the assessor as a reliable and competent figure who genuinely cared about helping them and addressing their concerns. Additionally, feeling understood, heard, and respected by the assessor contributed to a positive experience. This aspect aligns with the theoretical principles of Therapeutic Assessment: According to Finn's (2007) perspective, establishing a positive and secure relationship between the assessor and parents promotes parental satisfaction and encourages their active participation throughout the evaluation process. Furthermore, parents emphasized the importance of the clinician building an excellent relationship not only with them but also with their children. On the other hand, negative experiences were reported when parents felt criticized for their caregiving behavior, perceived the clinician's approach as impersonal, or believed that the clinician was more focused on exercising social control than genuinely helping them.

The management of the therapeutic setting by the assessor and the level of parental involvement during the evaluation process also strongly influenced their experience. Providing detailed information about the assessment process, its different phases, tools used, evaluation results, and future interventions was essential for parents. In contrast, inadequate provision of such information led to feelings of frustration, helplessness, and disorientation as parents were unable to fully comprehend their child's special needs or make informed decisions regarding their child's mental healthcare. These results further support the Therapeutic Assessment perspective as it encourages complete parental involvement and collaboration with the assessor throughout the evaluation process (Finn, 2007).

Although not investigated by the QUEVA-G scale, structural aspects of the evaluation process were found to be crucial in shaping parental experiences. Participants expressed frustration regarding the expensive cost of many private services, the lengthy waiting periods, and the high turnover of clinical staff. Moreover, effective coordination between different services, such as mental health services and schools, as well as between professionals involved in the evaluation and therapeutic phases, was crucial for successful outcomes. Collaborative efforts among different actors can lead to more synergistic and integrated interventions, promoting better wellbeing for the child. In contrast, a lack of proper coordination among services can result in misunderstandings, disconnections, and delays in the child's care journey.

Effects of the assessment

The main theme related to the effects of the assessment is well explored by the QUEVA-G scale although some subthemes are less considered. Assessment is particularly appreciated when it helps parents develop more accurate and empathetic narratives about their child, promote more functional family interactions, and foster a more systemic understanding of their child's difficulties (Finn, 2007; Tharinger et al., 2009; Aschieri et al., 2013; Frackowiak et al., 2015). The items of the New Understanding of the Child and the Systemic Awareness subscales in QUEVA-G investigate these phenomena, referred to as "cognitive aspects."

The other aspect of the main theme pertains to the emotional experience of parents during the evaluation process, encompassing both positive and negative emotions. The "Negative Feelings" subscale of QUEVA-G, as the name implies, only assesses the presence of negative emotions without delving into the plausible fear parents might have for their children's future.

However, the QUEVA-G does not explore the positive feelings associated with the assessment process. In these interviews, the participants indicate that the evaluation frequently leads parents to experience a sense of reparative guilt, which can be instrumental in

driving positive changes for the entire family. Additionally, the symbolic process of mourning connected to the child's diagnosis—characterized by various stages, starting with denial and anger and progressing through bargaining and depression until acceptance—and the relief that it eventually brings represent crucial themes, even though they are not addressed by the scale, in assessments involving parents. Indeed, as Mazzoncini and Musatti (2012) pointed out, a developmental disorder is often experienced by parents as a form of mourning not only associated with the loss of their child's skills and competencies but also involving a simultaneous loss of the ideal child and their own self-image as parents capable of raising a child without difficulties. Furthermore, this revelation is typically accompanied by a profound sense of guilt as parents frequently search for possible causes in their own behaviors. Therefore, it becomes the responsibility of the assessor to assist parents in correctly interpreting the assessment results and to support them in the process of understanding their child's difficulties while also providing space for the anxieties and fears that inevitably emerge.

Parental perceptions of the relationship with their children's teachers

Unexplored by the QUEVA-G, the parental relationship with their child's teachers appears to play a pivotal role in our participants' experiences. The children of these participants have exhibited various developmental difficulties that can potentially impact their academic journey within the school system. Consequently, these parents are highly engaged in their interactions with teachers, finding greater satisfaction with the assessment process when teachers demonstrate unwavering commitment and genuine interest in assisting their child as well as providing personalized attention to their educational needs.

To facilitate the academic progress of these children and adolescents within the school system, Tharinger et al. (2011) proposed an intriguing application of Therapeutic Assessment techniques in the school environment. This approach emphasizes involving teachers as active participants in their students' evaluations and supporting their curiosity, thereby fostering a sense of relevance in the child's life. Consequently, teachers are more inclined to embrace the suggested recommendations and gain fresh perspectives in understanding the child's difficulties. However, altering educational strategies in response to assessment findings can be challenging for teachers, who must balance their dedication to a single student with their broader responsibilities to the entire class (Mazzoncini and Musatti, 2012). To address these concerns and considerations, proposing focused intervention sessions and tailoring recommendations based on the individual teacher's resources and the specific school context can be beneficial. This approach, as emphasized by Tharinger et al. (2011), has the potential to bring about concrete improvements in the lives of all parties involved.

Implications for clinical practice, limitations, and future directions

To ensure parents' satisfaction with their child's psychological assessment, clinicians should consider the following guidelines: (1) consistently provide support to parents; (2) actively involve parents in the assessment process; (3) promote positive emotional and cognitive changes for both parents and children; (4) minimize waiting lists for assessments; (5) ensure that services are easily accessible and affordable; and (6) ensure continuity and coordination in service provision.

The significance parents place on teachers' role in their child's education has practical implications. Parents appreciate when teachers are trained to recognize and acknowledge their child's disorders.

The teacher's response to the communication of a child's diagnosis by parents also holds importance. Parents find it important that assessors directly communicate assessment findings to the school and are engaged in translating assessment findings into educational strategies for the children.

The findings of this study should be considered while acknowledging its limitations. First, expanding the sample to include male participants would provide insights into fathers' perceptions as well. The limitation of having a sample composed solely of female respondents is relevant even in the context of a qualitative study like this. While we searched for saturation of the thematic categories, conducting interviews with new participants until new themes emerged, the inclusion of fathers could have offered distinct perspectives and categories.

However, the absence of fathers in our sample can not only be considered a representative of the current cultural reality in many Western societies, where mothers often still bear the primary responsibility for childcare, but also aligns with findings from the literature. In Tiano et al.'s (2013) study, for instance, it was not possible to find any significant effect for the association between paternal involvement and acceptance of the proposed treatment (PCIT), primarily because the fathers in the sample spent significantly less time with their children than mothers. In this regard, in a recent review by Jukes et al. (2022), the authors attempted to identify potential gender differences in facilitators and barriers to parental engagement in their child's treatment: While mothers reported obstacles relating to competing demands (e.g., housework and caregiving for sick relatives), fathers regarded seeking help as a sign of weakness and were less inclined to engage when they did not see themselves as primary caregivers or when their involvement conflicted with their 'provider' role.

Conclusion

This study aimed to enhance our comprehension of the factors contributing to parental satisfaction with their child's assessment by exploring with 20 qualitative interviews the experience of caregivers who volunteered to participate in the study. Despite the lack of generalizability of our results, participants' voices have provided useful insights to understand which aspects of the assessment delivery process matter most to parents.

The first objective of the study was to investigate the factors contributing to positive or negative assessment experiences. According to the existing literature, the quality of the parent–assessor relationship emerges as the main factor in defining the parental experience of their child's assessment, thereby exerting a significant influence on their care trajectory. However, other aspects need to be considered, including the opportunity for parents to gain a deeper understanding of their child's problems, the feelings

related to the evaluation process, satisfaction pertaining to structural components (such as economic factors, wait period, and coordination among services), and the role of the school in this context.

The second aim of this study was to identify which of these factors are addressed by QUEVA-G and which ones remain unexplored. Altogether, most of the identified codes are mapped by QUEVA-G (Aschieri et al., 2024), thus proving to be a more valuable and effective tool to investigate parental experiences than traditional measures such as CSQ. However, the structural aspects of the assessment process and the role of schools and teachers within the child's journey of care are not considered by the QUEVA-G but have a significant impact on our participants' narrations. Research about customers' satisfaction has already investigated the structural aspects of service delivery. Our results suggest that the measurement of parental satisfaction with the assessment should also include the relationship between the parents and the school, and among these and the assessors. Parents' relationship with their children's teachers is strictly linked to the assessment process. Indeed, while recalling the evaluation experience, parents have almost always mentioned the school.

Finally, the third objective of this study was to identify the unmet parental needs regarding children's and adolescents' mental health services and practices. Each parent's needs are different and unique, but our results demonstrate that some necessities are demanded by multiple participants. For instance, several parents stressed the importance of effective communication regarding their child's diagnosis by the assessor to better understand his/her behavior and respond appropriately. In addition, participants mentioned the desire that clinicians might be able to serve as a bridge between them and the school system, thus helping teachers to better understand and respond to the child's special needs.

The inclusion of a qualitative section in our research brought to light new perspectives, allowing us to gain a more comprehensive and nuanced understanding of our sample's parental perceptions. Finally, this study represents an initial step to explore (also using a mixed-method approach, Creswell and Clark, 2017) the factors that may affect parents' experience of their child's assessment. In addition, it lays the groundwork for the development of new satisfaction measures that can consider those aspects that, even if important to parents, are not to date addressed by the existing tools (e.g., the relationship between services and schools).

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

The studies involving humans were approved by the Catholic University of the Sacred Heart. Number of institutional review board approval: 42–23. The studies were conducted in accordance with the local legislation and institutional requirements. The participants provided their written informed consent to participate in this study. Written informed consent was obtained from the individual(s) for the publication of any potentially identifiable images or data included in this article.

Author contributions

FA: Methodology, Conceptualization, Funding acquisition, Resources, Supervision, Validation, Writing – review & editing. GC: Methodology, Data curation, Formal analysis, Investigation, Software, Writing – original draft. EF: Data curation, Supervision, Writing – review & editing. SB: Data curation, Formal analysis, Investigation, Methodology, Software, Writing – original draft.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Publisher's note

Supplementary material

The Supplementary material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/fpsyg.2023.1271746/full#supplementary-material

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TIAP: an observational procedure for assessing family relationships: a clinical case from the parenting evaluation context

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TIAP is an observational procedure to assess family functioning detecting simultaneously the role of each participant and the interdependence of relational behaviors. In particular, the procedure requires family members to play according to different interactive configurations (parent1-children; parent2-children, all together, children and parents as separate units) and therefore different microtransitions from one configuration to another. As such, the procedure allows to study how family members coordinate to maintain stability, promote change, and encourage members to explore different interactive configurations within the family system. TIAP has been validated through several studies conducted with different non-clinical groups of families that have highlighted the salient aspects of family functioning, and significant correlations with variables external to the family system, such as children's social–emotional competence in the educational context. This paper focuses on the use of TIAP in the contexts of assessing parental competence. Specifically, the article aims to describe, through the reference to a clinical case, the results emerged from a study conducted with 33 families involved in a parenting assessment process. The study is part of a broader collaborative project between the Child and Adolescent Neuropsychiatry Clinic of the Italian National Health Service in Parma, the University of Parma, and the Bologna Family Therapy Center. TIAP was administered to all the families involved as a complement to other tools routinely used for all cases handled by the professionals of the clinic. The coding system includes different indices. Some analyze the interactive family modes: family coordination (mutual attention and responsiveness), the responses to potentials for change (disregard, absorption, amplification), and intra-familiar exploration. Other indices concern the quality of the interactions: the relational triadic dynamic of microtransition (detaching-entrusting-welcoming-joining) and the consistency/inconsistency of the communication channels. The results highlighted how TIAP makes it possible to identify the specific interactive modalities of the different members and their interdependence and reciprocity, favoring the identification of both family weaknesses and family resources, including the children's contribution. Furthermore, the general data trend showed that TIAP indices detect some important prognostic elements capable of guiding the court's decisions.

KEYWORDS

family relationships, parenting evaluation, observational methods, family assessment, family functioning, triadic interactions

1 Introduction

In the field of family studies, various analogical methods using narrative, symbolic, metaphorical, and observational tools have been elaborated to detect the representations that family members have of themselves as a group, to explore the dynamics between members, and, in psychotherapy, to introduce elements that can foster change (for a review see Kerig and Lindahl, 2001; Di Nuovo, 2015; Venturelli et al., 2016, 2022). The explicit need is to focus on research, evaluation, and intervention procedures consistent with the relational, systemic, and processual nature of the object of analysis (Lanz and Rosnati, 2002; O'Brien, 2005; Lanz et al., 2015).

Among the several tools, observational methods are particularly adequate to analyze family interactions, dynamics, and processes. Indeed, they allow to directly observe how one's behavior interrelates with others'; to study how the different interactive behavioral sequences unfold across time, thus, they allow to observe and describe the ongoing family processes (Margolin et al., 1998). The observational methods respond to the need underlined by many scholars and clinicians to use tools able to acknowledge the complexity, processes, and interdependence of family relationships (Fivaz-Depeursinge and Corboz-Warnery, 1999; McGoldrick et al., 2011; McHale and Lindahl, 2011; Venturelli et al., 2016; Walsh, 2016; Venturelli et al., 2022).

TIAP (*Triadic Interactional Analytical Procedure*) (Venturelli et al., 2022) is an observational instrument for assessing family functioning. It is the result of a research composed of several studies conducted with non-clinical families and through various experiments in different applicative contexts. It is a research process that has taken place thanks to the convergence of different perspectives (social, developmental, and clinical), and that has focused on different yet connected constructs such as configurations, microtransitions, family coordination, potential spaces for change, stability, change, intrafamilial exploration that have proved particularly useful in analyzing families' functioning in a daily and process-oriented perspective (Cigala et al., 2014, 2018).

1.1 Theoretical premises of TIAP

The theoretical framework of the research that led to the development/elaboration of TIAP is based on the following points:

1.1.1 The triad as a minimum unit of analysis

The triadic approach provides a method of study that simultaneously considers the position of individuals in the system, the interpersonal relationship each one has with another, the relational dynamics between all and the circularity between these different levels (individual, dyadic, systemic). Triadic models are consistent with a systemic approach -traditionally and fruitfully used for the study of family dynamics- and deepen it because they make it possible to analyze interpersonal interactions, focusing on the active role of all members, without losing sight of the whole group (Parke, 1988).

Through the observation of a triad, it is possible to detect the behavior of people who find themselves from time to time in the position of those who are directly involved with another, while the third observes; in the position of those who observe the other two engaged in a reciprocal exchange, and therefore peripheral to that exchange; finally, in the position of those who interact simultaneously with all the others. The analysis of triadic situations makes it possible to detect important psycho-social abilities of the participants such as: the ability to stay in the relationship with another, the ability to stay out of it, and the ability to interact with two partners at the same time without shirking or excluding anyone. These capacities emerge as interconnected in the triadic dynamic and constitute the outcome of a coordination between all the components of the triad. In fact, on the one hand, the capacity to be in the relationship is an individual capacity that can be expressed through behaviors such as paying attention, responding to the interlocutor's needs, emotionally connecting with the partner, leaving the third party in a peripheral position, i.e., avoiding soliciting him/her to participate in the ongoing dyadic exchange. On the other hand, the capacity to be in a relationship may be favored or hindered by the position assumed by the peripheral third party, who, reciprocally, may tolerate remaining on the margins or instead intervene or self-exclude. But the peripheral position of one of the interlocutors will be more easily maintained the more the interaction of the others is perceived as harmonious. Moreover, the ability to interact with more than one interlocutor implies that each one avoids capturing one of the interlocutors within a dyadic exchange, excluding the third; but this is also facilitated by the condition that no one, by withdrawing from the interaction, ends up authorizing others to engage in an exclusive dyadic exchange (Fruggeri, 2002).

In triadic contexts, it is also possible to experience distancing within a safe context so that detachment does not produce traumatic experiences but becomes an opportunity to stimulate growth and the expansion of relational opportunities. As well as there is the possibility of distancing oneself from a network of relationships without experiencing the discomfort of abandonment. The triad, unlike the dyad, constitutes a context in which the detachment from someone can be contingent on reliance on someone else, thus filling that void that may occur while passing from one involvement to another. The triadic context allows for a relational coordination in which the one who separates can entrust his or her interlocutor to a third party who is in turn ready to welcome the one who has been left (Fruggeri, 2002; Cigala et al., 2013, 2014). In a dyadic context, separation can take on the connotation of abandonment; in a triangular/systemic context, detachment is the complementary process of entrusting to others and thus the precursor of new relational involvements.

In the analysis of triadic forms of interactions, it is possible to focus on the interdependence of relational contexts that characterize families. The meaning assumed by a relationship between two components depends both on the interaction in which they are directly involved, and on the quality of the relationships they experience with other components; in turn, what is negotiated in terms of the quality of the relationship between two interlocutors will have a repercussion on the other relationships in which they are directly or indirectly involved. In triadic relational contexts, processes are co-evolutionary in that, due to the interdependence that defines them, a change that occurs in one dyadic relational context will have repercussions in all the other relational contexts in which the members of the dyad are involved (Fruggeri, 2018; Venturelli, 2018; Fruggeri et al., 2023).

1.1.2 Families in everyday life

The study of family processes has gained benefits from the approach based on the analysis of everyday practices (Fiese, 2006;

Emiliani, 2013). It is a research perspective that focuses on how family members coordinate in dealing with their tasks. The focus is thus on "the how" of family life instead of "the what"; the attention is then paid to processes, interactive dynamics, and relational patterns (Fiese, 2006; Emiliani, 2008).

In families, everyday practices are characterized by different forms of triadic interactions, and by microtransitions that mark the passage from one form of triadic interaction to another. These microtransitions involve deconstructions, reconstructions, further deconstructions and reconstructions of interactive configurations (Cigala et al., 2009). For example, consider a family scenario in which mother and child are playing together while the other mother is in the same room sitting on the couch reading a book; at a certain point she turns to her partner and asks her to sit next to her, because she wants to show her a sentence. The first mother stops playing with the child, joins the partner and starts talking to her. The child continues to play. In this moment of family life, it is possible to identify the microtransition from an interactive configuration in which the second mother has a peripheral position to a new configuration in which the little girl assumes a peripheral position. It is conceivable that shortly thereafter, the child stops playing, joins the mothers who interrupt what they are doing to involve themselves with their daughter, and then later they all move on to yet another configuration in which the first mother goes to set the table for dinner and the second mother accompanies the child to wash her hands.

But think also of the deconstructions and reconstructions of interactional configurations involved in the day-to-day care of a child by the kindergarten teachers or grandparents. Microtransitions from one interactional configuration to another are crucial moments that require the ability of the members to coordinate with each other; they involve complex capacities such as those of separating and rejoining with another partner, of tolerating being peripheral with respect to an interactional scene, as well as of tolerating the other being in a peripheral position, of paying attention to the signals of others, etc. The alternation and succession of many micro-transitions marks the unfolding of daily family life through which identity, relationships, personal, interpersonal, and social skills are built.

1.1.3 The processes that define the quality of family functioning

From research conducted with non-clinical families, certain processes were found to be particularly significant in discriminating different styles of family functioning. They are family coordination, family stability, family change, intra-family exploration (Venturelli et al., 2022).

Family Coordination refers to an interactive form whereby a family member coordinates his or her own behavior (verbal, corporal, and expressive) with that of another family member who in turn interacts with a third (Westerman and Massoff, 2001). A triad is highly coordinated when all members are attentive to each other's moves, notice them, realize that something has changed and organize themselves together in such a way as to arrive at a condition of new stability (new in the sense of another stability, which may be within the previous configuration or a different one). In other words, high triadic coordination allows each member to remain available to the information of the others and in connection with the others, so that the triad is ready to deconstruct and restructure the forms of interactions through which the everyday family life unfolds (Cigala et al., 2010).

Family change is meant as the relentless process that takes place in everyday family life, when members are constantly involved in situations that may require a re-organization of their relational and interactive patterns. Family microtransitions are those moments or micro-moments of everyday life when the members of a family negotiate, redefine, reorganize, readjust relational and behavioral roles, interactive modalities, reciprocal positioning, power relations, hierarchy and daily routines. In other words, microtransitions are local interactive moments or micro-moments through which family members construct what they are and what they are going to be (Breunlin, 1988; Cigala et al., 2013, 2014).

Family stability refers to how members coordinate their behaviors for the maintenance of the daily practices, routines and rituals that constitute the scaffolding of the development of the group and its components. The studies on family routines have shown how the maintenance of the family's continuity/identity over time provides a secure context for its members, who can experience belonging and rely on clear rules and stable contexts of meaning (Fiese, 2006). Stability enables members to recognize a sense of belonging and the typical family interactional patterns. The constant search for stability and continuity is considered a protective factor of family well-being, as it increases the sense of security, belonging, cohesion, satisfaction (Fiese and Wamboldt, 2001; Emiliani, 2013) and strengthens the social skills of members, especially children (Spagnola and Fiese, 2007). Family stability is a state that needs to be continually constructed in front of the countless inputs coming from inside and outside the family. This is why we connote family stability as a process (Cigala et al., 2015, 2018).

Intra-family exploration (Byng-Hall, 1995a). The everyday manifold and ever-changing relational scenario described above implies that family members move constantly from one situation to another in a sort of a dance in which people connect and detach to join someone else, and eventually get all together. The exploration of all these different interactive configurations is a developmental task since family members experiment separations and joining, interact with more partners at the same time, take a central and a peripheral position, are involved in change processes and in the maintenance of stability; and in so doing they also develop the social abilities needed to explore the world outside the family.

TIAP has been specifically elaborated to operationalize these processes.

1.2 The triadic interactional analytical procedure

Based on the previous theoretical premises, TIAP is an observational procedure to assess family functioning detecting simultaneously the role of each participant and the interdependence of relational behaviors. TIAP analyses the interactive microanalytic processes that occur daily between family members, involving different verbal, gestural and expressive communicative channels.

TIAP has been validated through several studies conducted with different non-clinical groups of families that have highlighted the salient aspects of family functioning, and significant correlations with variables external to the family system, such as children's

social–emotional competence in the educational context (Cigala et al., 2013, 2014, 2018; Venturelli et al., 2016). Recently, TIAP has also been tested in the contexts of family therapy and parenting assessment with very interesting results (Venturelli et al., 2022).

1.2.1 The TIAP task

The task requires family members to play according to different interactive configurations (one parent-children, the other parent-children, all together, children and parents as separate units). All family members are invited to sit around a table and are given the following instructions: "We are asking you to play together for approximately 20 min, in four different combinations: first a parent plays with the child whilst the other parent watches; next the other parent plays with the children while the parent previously involved watches; next, all of you play together; and finally parents talk with each other whilst the children play alone."

Through the assigned task, taken in part from the Lausanne Trilogue Play procedure (Fivaz-Depeursinge and Corboz-Warnery, 1999), the family triads are asked to act in four different configurations and thus to deconstruct and re-construct their interactional configuration three times, accomplishing three transitions: from a configuration in which a parent plays with the children and the other parent watches [(P1-C) P2], to another in which the other parent plays with the children and the parent who had previously played is in a peripheral role [(P2-C)P1], to one in which they all play together [(P1-C-P2)], and finally to the configuration in which the parents interact whilst the children are in the peripheral position [(P1-P2)C].

This task allows the observation of a family while the members jointly reproduced, within a short time, different interactive situations that usually take place in everyday life. Each member of the family is asked to separate and join several times taking different interactive positions. Thus, this task allows to analyze how family members coordinate to maintain stability, promote change, and encourage members to explore different interactive configurations within the family system.

The play materials used must be suitable for the age of the children, unstructured and without specific purposes. It does not have to be a problem-solving task, since the aim is to observe how family members interact spontaneously, in the absence of specific goal. For example, Lego constructions fulfill both the age-appropriateness requirement for children and the absence of predefined objectives if they are without instructions (Venturelli et al., 2022).

1.2.2 The TIAP coding system

Consistent with the previous premises, the daily interactions of a family can be conceptualized and represented as an interactive flow, characterized by some perturbations and by the responses to these perturbations.

In the interactive flow that occurs daily between family members, which is reproduced in the TIAP task, it is possible to distinguish 3 different units of analysis: configurations, potential spaces for change and microtransitions (Figure 1).

Configuration refers to the interactive space in which individuals act jointly while maintaining the same interactive positions: active or peripheral. Potential for change refers to the verbal, corporal and expressive movements of any participant that, corresponding to a variation in her/his position, could bring about a change in the whole ongoing configuration. We called such movements potentials for

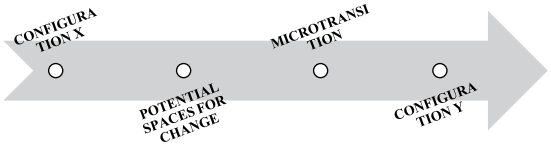

FIGURE 1
The interactive flow.

change because the chances that they could trigger a variation in the configuration depend on the responses of the other partners in the interactive space. Three are the possible responses to the potentials for change: disregard when the potential for change falls in the void, it is not seen or it is voluntarily ignored; consequently, the ongoing configuration does not vary; absorption when one partner acknowledges the potential for change yet maintains her/his position in the ongoing configuration; amplification when the potential for change is noticed, fed back and amplified by a change in the position of everyone involved. In this case the potential for change becomes the first action of deconstruction of the ongoing configuration, thus the beginning of a microtransition. The analysis of the first two responses to the potentials for change allowed us to observe how families reconstruct stability. The analysis of microtransitions allowed us to explore how families deal with the change of interactions.

TIAP provides a coding system which, through specific indicators of this interactive flow, allows to study the family functioning through the observation of the following processes: family stability, family change, family coordination, and the intra-family exploration (Figure 2).

Family stability is analyzed through the potentials for change of the family system (frequency and member enacting them) and through the types of responses implemented by the other family members that reconstruct the previous interactive configuration: disregard and absorption.

Family change is analyzed through the relational triadic dynamic of detaching-entrusting-welcoming-joining implied in the microtransitions that allows the deconstruction of a configuration and re-construction of a new one. Each of these processes is operationalized in term of verbal, corporal and expressive movements (Table 1). For each microtransition each process is coded in terms of occurrence/not occurrence and consistency/inconsistency of the communicative channels used (verbal, corporal, expressive). The presence of these 4 processes allows a family to build a relational context of safety that makes change possible (Cigala et al., 2018).

Family Coordination is assessed in each configuration and in each microtransition through the descriptors of attention, responsiveness, re-proposition of signals by all members (the signal of a member is rephrased and readdressed to the others) and contingency between responses. According to the combination of these descriptors, each family is ranked according to a four-point Likert type scale (present-very good/ present-good/discontinuous/absent) (Table 2).

The *intra-family exploration* is evaluated considering the number and the type of configurations that families can perform during the TIAP task. Through these indices it is possible to analyze the system's ability to explore the various possible interactive scenarios in which a family member may be involved. The more scenarios family members can experience, the more exploration is allowed within the family. The

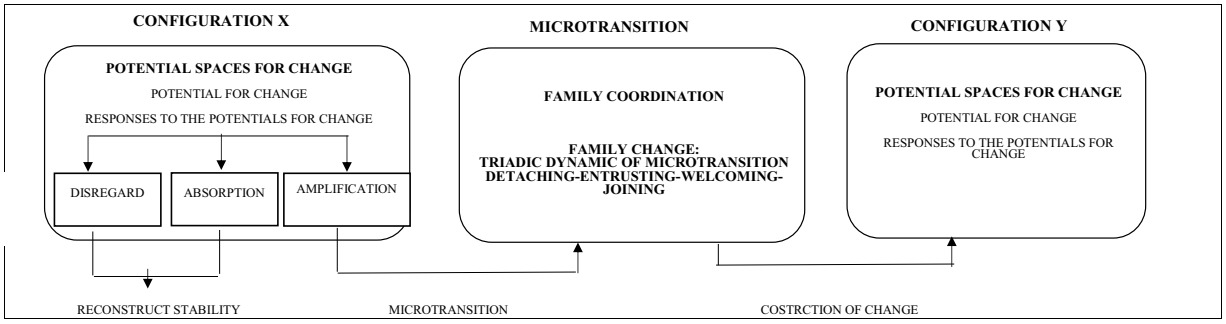

FIGURE 2
Coding system of TIAP.

TABLE 1 The relational triadic dynamic of microtransition.

Processes	Definition
DETACHMENT	Verbal, corporal and expressive movements that allow one or more members to separate from the ongoing interaction and relate to other members, or choose the role of observer
ENTRUSTING	Verbal, corporal and expressive movements through which the active adult prepares the child for a new interactional involvement: the child can be left in one parent's care (entrusted to one parent); in both parents' care (jointly entrusted); or left to play alone (self-entrusted)
WELCOMING	Verbal, corporal, expressive movements through which a partner shows a willingness to become involved in the interaction
JOINING	Verbal, corporal, expressive movements through which the partners propose or consolidate a new interactive configuration

number and type of explored configurations provides us with the information of the presence or absence of different family skills such as: the ability to explore the different forms of interaction within the family; the ability to interact with two people at the same time; the ability to stand on the periphery of the interactive scene; the ability to be in interaction with another, in the awareness of the presence of a third party.

Each of the indicators of the TIAP coding system (see TIAP coding grid; Table 3) allows three descriptions at three different levels: individual, systemic, and procedural. At the individual level we can describe the behavior of the individual, for example one parent is withdrawn from the interaction between the second parent and daughter. At a systemic level it is possible to observe how one's behavior is complementary to the behaviors of the others. For example, the withdrawal of one parent corresponds to a particularly active behavior of the other parent and vice versa. At the procedural level it is possible to reconstruct the interactive dynamics that lead to a specific functioning at a given moment. In other words, it is possible to reconstruct how one's behavior is the result of a relational dynamic that has developed over time. For example, we observe that parent1 enacts several potentials for change that both parent2 and daughter systematically ignore (disregard: fall into the void response); correspondently, we observe that parent1 stops attracting their attention and withdraws, while parent2 and daughter continue to play.

The execution of the task by the families is video recorded to allow an accurate and in-depth analysis of the material collected. The coding of the interactions is carried out by several observers who can be independent (experimental research context) or dependent (clinical and therapeutic context) (Kreppner, 2009).

TIAP has been used to evaluate parenthood and family functioning in cases involved in the legal context.

1.3 Parenting evaluation context

The concept of parenting can be defined as the generative capacity of an individual, understood in the Eriksonian perspective (Erikson, 1968) as the capacity to take care of someone other than oneself. As such, parenting does not coincide with biological generativity and has a relational and process-oriented nature. The parental functions derive from the relationships that the individual has experienced and experiences in everyday life and they develop over the course of the personal history and evolve constantly. Parenthood is not conceived as attributable to individual characteristics alone, rather as a function that emerges from the complexity of intra/extra-family relationships (Scabini and Cigoli, 2000; Bastianoni and Taurino, 2007). A further important aspect in the definition of parental functions is the concept of expanded parenting. It is based on the capability and possibility of parents to entrust their children to others who can play a positive role in the development of minors and to entrust themselves to others who can help them in the care of their children. Consciously accepting to take care of children in a broader context means enhancing parental functions by being able to rely on the resources available in this context (Venturelli, 2018; Fruggeri et al., 2023).

The Court's most frequent requests regarding the evaluation of parenthood are: (1) assessing the personal characteristics of the parents and the child, (2) detecting the quality of the relationship between minor and parents, (3) identifying their parenting competence. In this perspective, the context of assessment of parenting is often connoted as an evaluation space clearly separate from that of intervention. However, in the court's request for psychological assessment there is also a request, albeit sometimes implicit, to make a prognosis about the potential future functioning of the family system. Identifying and assessing a family's specific resources, possibilities for change, and directions for change allows for a

TABLE 2 Levels of family coordination.

Very good	Good	Discontinuous	Absent
Attention and responsiveness by all members	Attention and responsiveness are completely present by two members or nearly completely by three members	Attention and responsiveness are present sometimes or they involve two members at a time	Absence of attention and responsiveness
Re-proposition by the system	Re-proposition by system is present when attention and responsiveness involve all members	Re-proposition by the system is absent	Re-proposition is absent
Contingency between responses is complementary	Contingency between responses is consecutive—fluid: some members start the process and the others follow it almost immediately	Contingency between responses is consecutive—difficult: the actions of the members take place in different times	Contingency between responses: rare—absent

recoverability perspective. From this point of view, the space of parenting assessment can also become a space for containing and "transforming" parental conflict, and for activating the parents' or family's resources by promoting the achievement of shared solutions. According to Cigoli and Pappalardo (1997) the context of parenting assessment can represent a suspended time in which the family story can be better understood, and the resources can be activated to favor the restructuring of family relationships.

Conceiving the evaluation process as transformative implies some important reflections and methodological choices. Firstly, if the assessment should also give indications regarding recoverability, it becomes essential to provide in the evaluation process a space that includes the entire system involved. In this setting all the members can act the dynamics of interdependence and mutual coordination, and the psychologist or psychotherapist can interact with the whole family system, and evaluate the family overall resources, through the tools she/he considers most appropriate.

If the parenting assessment can also have a transformative value, the possibility of creating an alliance between the family and the clinician is fundamental. This alliance can be fostered if each of the member of family system involved can live the experience of "being together" and can perceive this context as a "transparent" and "fair" space, in which everyone is considered and informed, in order to reduce persecutory thoughts and fears of possible coalitions between subsystems (Escudero and Friedlander, 2017). To construct a transformative evaluation context of parenting, it is necessary to employ procedures that include some moments of "shared reflection" with the family, in which the clinician shares the meanings emerging during the sessions of family interaction. These meanings can help the family to read their relationships differently and to understand certain ways of functioning in a more circular and processual perspective.

2 Aim

The present paper focuses on the use of TIAP (*Triadic Interactional Analytical Procedure*) in parenting evaluation contexts and it aims to describe, through a clinical case, the main results emerged from a study conducted with families involved in a parenting assessment process.

In specific, the study is part of a broader collaborative project between the Child Psychiatry Unit (CPU) of the Italian National Health Service in Parma, the University of Parma and the Centro Bolognese di Terapia Familiare (CBTF). The main goal of this project is to highlight the potential of TIAP in the process of parenting assessment to identify specific aspects of family functioning that can give prognostic indications.

3 Participants

This project has currently involved 33 families involved in a parenting assessment process: 15 presented conflictual separation problems, while for the other 18 families episodes of violence were reported within the couple and/or toward the children. Twenty-seven families were seen at the CPU service and 6 were evaluated by the consultants of the CBTF. In general, the court involves the CPU professionals to evaluate parenting following reports of maltreatment of minors; while private consultants (like CBTF) are involved when one parent sues the other with the accusation of inadequacy in the management of the children.

All parental couples were heterosexual. Twenty-six families were Italian, 4 were foreign (1 South American, 1 African, 1 Eastern European, 1 Northern European), 3 mixed couples (2 Italian-African, 1 Italian-Moldavian). The ages of the 49 children ranged from 1 to 18 (all ages represented). 12 families had 1 child, 19 had 2 children, and 2 had 3 children. In 27 families the couple was divorced, of which 2 were remarried, 2 remarried than divorced; in 1 family with divorced couple, children were temporary in the custody of the paternal grandparents. Six families had cohabiting parental and marital couple, of which 1 was an adoptive family, 1 foster family, 1 family was composed of a single mother and foster parents.

The families participating in the study are characterized by a high variability both in terms of age of the children and cultural origin, as often happens in clinical research. Taking into consideration this variability, TIAP is a suitable method since both the procedure and the task can adapt to all cultures and all ages of children (Venturelli et al., 2022). Written informed consent to participate in this study was provided by the participants.

4 Procedure

TIAP was proposed to families together with other tools used routinely in parenting assessment protocols (Buone pratiche per la valutazione della genitorialità: raccomandazioni per gli psicologi, Ordine degli Psicologi dell'Emilia Romagna, 2009). The families involved were asked to sign the consent for video recording and research. The procedure was applied according to the described protocol. The recordings were analyzed by a team composed of

TABLE 3 TIAP coding grid.

Constructs	Indicator	Indexes	CONF I				MICROTR I				CONF II				MICRO II				CONF III				MICRO III				CONF IV			
			P1	P2	S1	S2	P1	P2	S1	S2	P1	P2	S1	S2	P1	P2	S1	S2	P1	P2	S1	S2	P1	P2	S1	S2	P1	P2	S1	S2
Family stability	Potential for change	Number																												
		To whom (P1/P2/S1/S2)																												
		Role (P_NP)																												
	Responses to the potentials for change	Type (ABS/AMPL/DIS)																												
		To whom (P1/P2/S17S2)																												
		Role (P_NP)																												
Family change	Triadic dynamic of microtransition	Detaching-entrusting-welcoming-joining (DET/ENT/WEL/JOI)																												
		Consistency/inconsistency C/I																												
Family coordination	Quality of coordination	Individual coordination Attention/responsiveness/contingency																												
		Family coordination Very good-good-discontinuous-absent																												
The intra-family exploration	Quality of exploration	Type of configuration (I/II/III/IV)																												

TO WHOM: Parent 1, Parent 2, Son 1, Son 2, etc.
ROLE: P, peripheral; NP, no peripheral.
TYPE: ABS, absorption; AMPL, amplification; DIS, disregard.

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psychological practitioners and researchers; all trained in the analysis of interactions according to TIAP.

To promote a context of trust and build a positive alliance, families were informed that the procedure was proposed to obtain the information necessary to help them overcome the current difficulties.

The team connected the results of the analysis with those emerging from the history of the family, thus providing the basis for the formulation of a hypothesis about family functioning. TIAP was applied for prognostic purposes: the team intended to give indications to the court highlighting both the dysfunctional aspects and the family's resources to identify the necessary interventions to overcome the current critical issues. The analysis of family functioning resulting from the application of TIAP was shared with the families who were invited to reflect together on the inputs provided by the team. In this way, family members could begin to develop a reflexive ability, thus an awareness of their family functioning.

The research project was approved by all the centers (CPU of the Italian National Health Service in Parma, the University of Parma and the CBTF in Bologna) as well as by all the families involved.

5 Results

From the analysis of the 33 families, TIAP emerged as an extremely useful procedure in contexts of parenting skills assessment. In this article, one case will be presented in detail to exemplify the use of the method. The case was chosen because it allows to describe the various aspects of the family dynamic brought about by the application of TIAP that offer useful indications at a prognostic level, such as: the quality of co-parenting, the distinction between the marital and parental level, the role of the children. The description of the case includes how the information was returned to the family and the court.

5.1 George and Kate: marital couple or parental couple?

5.1.1 Information from the family's story

George and Kate met 19 years ago at the age of 50 and 30, respectively. She was single and he married, without children. She is a fashion designer, and he is an accountant, they first established a working relationship and then a sentimental one at the same time.

During their relationship, Kate's desire for parenthood arose, George shared the same desire, as no children were born from the relationship with his wife. The years passed and the two became increasingly involved in the search for a pregnancy while at the same time George continued to be married and to live with his wife, with the promise to separate. Finally, when she is 36 and he is 56 the pregnancy arrives. A baby girl, Charlotte, is born. In the meantime, George spends a lot of time with Kate and the little girl, but he still lives with his wife. After a few months, another pregnancy unexpectedly arrives and after 13 months a boy is born: Aron.

A few months after the second birth, George reveals the situation to his wife, and she gives him her approval to take care of the children without divorcing.

Until the children are 5 years old, the situation proceeds in an ambiguous way: George spends a lot of time at home with Kate and the children, but he never moves in permanently and does not divorce his wife. Meanwhile, Kate puts him increasingly on the spot until, faced with the ultimatumt (either stay with us or leave), George decides to leave but to continue looking after the children. George returns to live permanently with his wife and asks for joint custody of the children, to which Kate objects; the judicial process thus begins. At first, the judge establishes a fifty-fifty joint custody, which Kate does not respect. According to her, the children do not want to go to their father because of inadequate relational attitudes on his behalf. Over the years, however, the children have always seen their father even at his home in the presence of his wife, but with many difficulties raised by Kate: obstacles to overnight stays, request for the presence of an external figure to protect the children. During this period, the children express a general unease about being with their father, particularly at his home.

Finally, George initiates new court proceedings to clarify the situation and to obtain effective 50/50 custody of the children. Nowadays, Charlotte is 13, Aron 12, George 69, and Kate 49.

5.1.2 The court's request

In front of the above scenario, the court makes this specific request:

"The court consultant shall listen to the children on the express delegation of the Court and update the situation of the family, verifying the developments that have taken place in the meantime, determining what is at present the most suitable placement and attendance of children in their best interest, and indicating the most appropriate modalities for the establishment of a meaningful relationship with both parents."

The parties' consultants appointed by George's and Kate's lawyers agree on using TIAP as suggested by the Court's consultant to have a better understanding of the relational dynamic among the four of them, a closer look at the relationship of children with each parent, and a more specific analysis of the relationship of George and Kate both as co-parents and as ex-partners.

5.1.3 The information about the family before TIAP

The psychologist and the social worker of the child protection service, the Court's and the parties' consultants are the professionals involved in the case. The following is the information they collected during several conversations with each parent and each child and passed on to the professionals in charge of TIAP.

Kate is convinced that she must defend her children from George who is considered by her totally inadequate. She constantly blames her ex-partner and points out his shortcomings.

George claims that his difficulties in playing the parental role depends on Kate's lack of legitimization, and on the impediments that she imposes on him in the everyday management of their children.

The psychologist saw Aron as a very inhibited and insecure young boy who appears somewhat stuck at a developmental stage prior to his age, both physically, emotionally, and cognitively. He speaks in a very low tone of voice, his answers are evasive, sometimes he even refuses to respond to the professionals' questions. According to the psychologist's observations, the mother adopts a symbiotic mode with Aron; she exclusively points out his frailties and problematic aspects, thus hindering his process of identification. Aron speaks of his father as someone who is not very playful, who sometimes teases him; Aron feels little considered by his father, but he does not report any

detrimental experience. The results of the Double Moon test (Greco, 1999), show that Aron does not include his father in the circle of the significant persons. For these reasons, the social worker suggests helping the father to adopt more appropriate behaviors and attitudes toward his son to connect with him at a deeper interpersonal level. The social worker thinks that the negative judgment that Aron expresses toward his father comes from experiencing a constant conflict between his parents, and that it could change if he could have a different relationship with him.

Charlotte appears to the psychologist and to the social worker very contradictory in describing both her own and her brother's feelings when spending time with their father: some descriptions are positive, and some others are negative. However, when the professionals ask for details, no distressful episodes are referred.

The psychologist, who has been following Charlotte for about a year, reports that Charlotte has always attended the meetings but has maintained a rather superficial level in the discussion of topics concerning the intimate and family sphere: she immediately made it clear that she did not want to talk about her relationship with her father. From the conversations with Charlotte, the psychologist understands that the girl appreciates the current family organization, in which the children see their father little and do not stay overnight with him. Charlotte struggles to delve into the personal and intimate area of her life, focusing rather on topics pertaining the extra-familiar area. According to the psychologist, Charlotte also tends to take a complacent attitude toward professionals and her father, whom she generally tries to please by showing a smiling and cheerful attitude even in uncomfortable situations.

According to the psychologist's report, the children are involved in the parental conflict in which they feel compelled to take a side.

No information is reported by the professionals about how children see their mother.

5.1.4 The analysis of family interactions from TIAP

Family members arrive on time and together. They willingly agree to play and engage in the proposed Lego activity. The family sits spontaneously around the table according to this arrangement: father, Charlotte, Aron, mother. Before the end of the handover, the mother asks for some specifications on the various steps of the procedure. Father and mother negotiate who starts playing first, without involving the children. At first, both invite each other to start, then the mother in a sarcastic tone urges the father and he takes an active role.

Family stability: In the first configuration (11 min), father is active in playing with the children while the mother takes a peripheral observer position. The children are composed and silent, sitting very close together, they carry out their own constructions (each their own) with some reciprocal exchanges. Charlotte responds to her father both verbally and with brief exchanges of glances, albeit with little dialog. Aron ignores his father, does not respond to him, sometimes makes barely uttered sounds; at the same time, he constantly looks at mother and she returns the glances. During this configuration, an interactive dynamic emerges in which the father, not receiving responses from Aron, addresses him in an increasingly insistent manner; when he does this, mother intervenes and enters the game, Aron stops playing, the father responds to the mother and the children resume playing together thanks to Charlotte who invites her brother back to play. In this configuration, the potentials for change are: Aron's toward his mother (many shared glances while the father is talking) and they are absorbed; the mother's abandoning the peripheral position to enter the game when the father becomes more direct and pressing toward Aron; mother toward father reminding him that soon it will be her turn to play ("when you are too desperate you tell me that I will play"); the answers are absorbed by Aron e and sometimes Geroge and ignore by George. Charlotte never makes any potential for change and never looks at her mother. In general, the emotional climate is poor, there are no moments of sharing and understanding between the active participants in the interaction.

In the second configuration (6 min), the mother plays with the children, and the father is in a peripheral position. The emotional climate changes as soon as the mother starts playing with the children; Aron becomes more active, he moves and plays in a more engaging way, he has several verbal exchanges with the mother who addresses both children together and individually. In this configuration the potentials for change are made by father, who maintains a peripheral position with great difficulty: he intervenes often, moves around, plays alone. In the rare moments when he observes, he has a sad and withdrawn expression. The only one who pays attention to him and absorbs his potentials for change is sometimes Charlotte, while the others always ignore him.

In the third configuration (5 min), they are supposed to play together, which is not what happens, as they are never all active, connected and interacting. Sometimes the mother is in interaction with Aron while Charlotte is interacting with the father, thus creating two parallel dyads; sometimes the children play with the mother and the father plays alone; finally, there are brief moments in which mother and father talk and the children play.

In the fourth configuration (7 min), the task requires that children play together while the parents talk. The atmosphere is relaxed, and the siblings play together with involvement. The mother turns to the father, looking at him and starting a conversation, the father responds but shifts his gaze to the children and makes numerous potentials for change by inviting them into the conversation. The potentials are ignored by Aron who continues to play quietly and are occasionally absorbed by Charlotte; more often it is the mother who brings the father back into the conversation with her. In general, the emotional climate is positive and there are shared looks and positive emotional attitudes especially from the mother toward the father.

Family change. The first microtransition (from father playing with children to mother playing with children): After 5 min of the father playing with the children, the mother makes a first potential of change by saying "when you are too desperate, you tell me and I'll play," to which the father does not follow up, and the ongoing configuration continues for another 5 min; then the father says to the children "eventually, you could continue this with mom" while continuing playing; the mother responds "I was beginning to despair, the best Lego pieces are all gone" but she does not enter the game. Both parents show an incoherence between verbal and nonverbal behaviors. Six minutes from the previous potential, the mother says, "who's going to let me play?" ironically looking at the father who replies, "I'll let you play," but he continues to move the Lego pieces and talk. At this point the mother looks at the Lego box and says to the father "can you bring it a bit closer to me?" the father replies "sure" and begins to explain what they have been doing so far, thus remaining active. In the meantime, the children stay still. The father continues to address the children, the mother in turn begins to interact with them. Both children respond to her promptly and an interaction starts between

the three of them (the children's welcoming of their mother and a mutual involvement is observed) while the father continues to intervene (father's difficulty in detaching).

The second microtransition (from mother playing with children to playing all together) is preceded by a preannouncement from the mother who after 5 min of playing with the children says "afterwards we have to play together with daddy" and turning to the father she says ironically "you do not want to do anything, do you?, just watch us work …" the father replies "I worked before …," meanwhile he takes some pieces from the table and passes them to Charlotte. At that point, the father proposes to use some pieces for a new construction while the mother is talking to Aron, Charlotte responds to the father facilitating his involvement (Charlotte welcomes the father).

Finally, in the last microtransition (from playing all together to children playing alone and parents talking) there is another preannouncement from the mother who after about 5 min says to the children "in a little while you guys play alone so we can rest" and continues to play, the children do not say anything and the father says to the children "when you say you are ready we take off"; the mother laughs, Charlotte looks amazed and the father says "Aron are you ready to be an architect?" Aron does not answer and the father asks, "Yes, or no?" Aron with a thread of voice says "no" and the father says, "but we are here." They all continue to play. Meanwhile the mother talks to the father about a film, calling him by his nickname (the mother welcomes the father) and the father continues to talk to the children. Then the father says, "now we'll let them play the final part" and stops playing (father's detachment), in the meantime the mother has also stopped playing (mother's detachment) and continues to address the father by looking at him, the father speaks loudly, gesticulating and keeping the children inside the conversation.

All moments of transition are difficult for this family and are led by the adults; the children are never involved nor verbally guided by their parents. The mother takes the lead in proposing the change of configuration (she also decided who had to start playing from the first configuration). A high degree of incoherence is observed between the verbal and nonverbal language on the part of both parents, who, for example, verbally propose a change in the configuration remaining in the same position.

The moments of microtransition for this family are characterized by the absence of the construction of a safe context, as the entrusting process is rarely present and mainly incoherent. Welcoming is only present from the children toward the mother; from Charlotte toward the father (never from Aron); from the mother toward the father but only in the configuration in which they talk to each other and not when they all must play together.

Family Coordination is discontinuous. During microtransitions, attention and responsiveness are not shown by all members and are only present at times. Neither one of the parents re-proposes the other parent's signals to the children. Contingency between responses is consecutive– difficult: the actions of the members take place in different times. A total lack of attention and responsiveness by Aron toward his father is observed during the configurations. Both parents are attentive toward their children but the lack of reciprocity between father and son and the lack of re-proposition by the other parent makes exchanges difficult in both the first and third configurations.

Intra-family exploration: The family explores all configurations but with different specificities. In the first configuration Aron does not play with his father and there are different potentials for change toward and from the mother. Charlotte responds to the father's urging and has a facilitating role in bringing Aron back into playing. In the second configuration mother and children play together and the father struggles to remain in the peripheral role of observer. In the third configuration there is never a four-way game but either two parallel dyads (father and Charlotte; mother and Aron) or mother and children with the father playing alone. In the fourth configuration the children play with each other, and mother and father talk with numerous potentials for change enacted by the father who tries to call the children in.

Comment: At the end of the game, the psychologist asks how they felt during the procedure, and they all answered that it had been a positive experience.

5.1.5 Reflection and hypothesizing starting from the observational data

The following aspects emerge from the administration of TIAP. The analysis of the interactions reveals certain relational dynamics and redundant roles.

Aron's rejection of his father: Throughout the game, Aron does not interact with father, he timidly answers when faced with the strong pressing from him. On the contrary, he talks and plays with both mother and sister. What is Aron saying with this behavior? Moreover, Aron looks at the mother every time the father seeks for a contact with him, and when the father becomes more directive, the mother intervenes interrupting the interaction between the two. On the other side, the mother never facilitates and supports the interaction between the father and the children.

Charlotte's appropriateness: In all configurations Charlotte is the only family member who has a role appropriate to the task. She accepts to have an interaction with her father, with her mother, with her brother, and with both parents together, but she is focused on the activity, without any exchange or sharing emotional connection with them.

It seems that the two siblings have taken dichotomous roles: Aron obstructs the relationship with their father while Charlotte fosters it, one divides the family and the other connects it while the parents do not build a safe context for these children within which to explore various relationships. Aron in his role is at the center of both mother's and father's attention, Charlotte is less central.

Inconsistency of messages from parents to children is detected at different times during all configurations and particularly during microtransitions. These are messages that simultaneously convey different content: at the verbal level, one parent expresses an intention to engage the other parent, but at the nonverbal level does not change his or her position to allow the other to enter, who in turn does not follow up on the proposal. This dynamic facilitates neither family coordination nor the construction of a safe context for children.

Kate's role as a mother and as a partner: analysis of the interactions reveals a different way Kate relates to George when they are in the parental position and thus in interaction with the children or when, as in the last configuration, they are prompted to relate in the absence of the children. Kate appears very likely to accommodate George when the children are playing alone and in parallel seems to disregard him when he is in the parental role.

George is ignored as a father by both Aron and Kate, and in parallel he tends to become pushy by enacting interactive modes that

are not always appropriate. Both aspects can become the cause of each other fueling a negative vicious cycle.

Comments:

To increase the well-being of the children and of the system in general, we think it is useful to work with these parents on the separation of the marital and parental axes. How does the story of their relationship affect their parenting today? Mother seems at ease to interact with George alone (as in the fourth configuration), but not when he takes on his paternal role (as in the first and third configurations). On the other side, the father seems to be focused on his involvement with the children yet showing no interest in a direct interaction with Kate (see last configuration). Where do George and Kate stand with respect to processing their separation? Is it possible that the conflict between them comes from the fact that while George is concentrated on the relationship with his children, she is interested in clarifying her relationship with him as former partners? It could be useful to work on these issues with the two parents to distinguish between the two levels: that of parenting where a coordination and recognition of each other's roles are fundamental, and that of the marital relationship which is defined as finished but probably not yet completely processed from an emotional point of view.

Another aspect, which we consider important and complementary, concerns the building of the paternal role. This implies working with mother to remove the possible psychological conflict that prevents her recognition of George's role. Working with George to become more sensitive to his children's emotional needs.

Individual support for Aron and Charlotte to help them to cope with the situation while their parents work to restore a parental collaboration.

The analysis of Tiap was first shared with the professionals involved in terms of an overall analysis of the situation showing the possible future positive evolution for all. Then the Court's consultant sent his report to the judge.

5.1.6 Return to the court

This is a synthesis of the analysis that the Court's consultant reported to the judge.

The two parents are in serious relational difficulty toward each other, both heavily involved in their personal conflict. Neither parent is currently able to disentangle him/herself from the conflict, so it would be useful and necessary to help them to process their difficult history, right from the start.

The parents never managed to communicate together to the children their decision to separate, nor they ever reassured them about the continuation of parenting on behalf of both. This has certainly affected the children's experience from an early age. A restoring of co-parenting is essential for the children; thus, parents must see experts that help them to reach this goal. A greater presence of George in children's life (as he desires) could be positive for both the children and Kate, but this is possible only after a restoration of their relationship as ex-partners.

The goal "to establish a meaningful relationship of children with both parents" makes it necessary to consider and intervene on the following aspects:

Children do not perceive the mother's trust on father. This does not build a secure relational context, which would instead facilitate the creation of a reassuring and evolutionary relational environment for the two children and for the separated family itself.

George and Kate do not seem aware of the importance to invest in their relationship as parents. Reflection and attention on this issue should be shared with both.

There is a lack of facilitation and support for interaction between the father and the children on Kate's part, without which the children do not feel legitimized in their relationship with their father.

A key element contributing to the breakdown of the family's relational dynamic is the lack of coordination between the two parents. This lack prevents the construction of a bridge from each parent to the other, highlighting an absence of collaboration, and preventing the transmission to the children of the concept of co-parenting, which, in fact, is currently absent.

Given the current emotional state of the children, they should continue to stay with mother, with the possibility of father to spend time with them that should gradually increase according to some interventions that include:

Psychological support for both children, who live a precarious and difficult emotional condition.

Massive support and constant monitoring from the Social Services with the aim of working directly and indirectly on the above-mentioned relational aspects.

A parental coordinator acting in support of the Social Services' work about the above mentioned psychological and relational issues.

Without these interventions the psychological conditions of the children may further deteriorate and until their accomplishment it is not possible to envisage a definitive custodial agreement for which a new further assessment may be necessary in the future.

6 Discussion

As evidenced by the analysis of the case, an added value of TIAP over other instruments used in the assessment of parenting skills is that it offers the possibility of simultaneously observing the family at different levels: the individual, the subsystems, and the whole system. These different levels represent complementary points of view that allow the clinician to reconstruct a systemic and complex understanding of family functioning, escaping the unidirectional and linear causal logic that induces the search for the "culprit" that families under evaluation often propose and with which professionals risk colluding.

In this sense, the possibility to analyze co-parenting is certainly among the strengths of TIAP. In evaluating parents' skills, co-parenting is often not directly observed but "reconstructed" from the cross-referencing of the results coming from individual instruments administered to each parent. Instead, TIAP allows to observe how the parents coordinate while they interact, thus allowing to describe the process, the circularity and the interdependence involved in such an interactive situation. In addition, the procedure, as shown very well in the case analyzed, makes it possible to analyze the role of each parent in facilitating or not facilitating the children's access to the other parent (see for example the different degree of coordination between parents in each specific configuration and the presence or absence of the entrusting process).

As noted by Margolin et al. (1998), relying on narratives and accounts, individual self-report methods collect retrospective and global (general) descriptions of the phenomenon under study;

observational methods, instead, allow the moment-by-moment description of the process as it takes place. In the case described above, for example, the analysis conducted thanks to TIAP allowed to detect relational aspects that had not emerged from the individual interview conducted with the family members before the administration of TIAP. During the interviews, Kate described a conflictual relationship with George who emerged as an untrustful and negative parent. During TIAP it was possible to observe the positive relational attitude of Kate toward George when the procedure asked them to interact independently from the children. This is what led the professionals think that if they wanted to work with them as parents, they had first to make sure that the couple processed the end of their relationship as a marital couple to avoid the dysfunctional dynamic of "negotiating children for the couple relationship."

Moreover, as reported by the psychologist and the social worker, both children appeared particularly reticent to express themselves regarding family issues during the individual interviews. Thanks to the administration of TIAP, the importance and specificity of their role within the family dynamic emerged very clearly. In particular, the professionals that had interviewed the children before TIAP had noted that the children did not want to meet their father, without though identifying any specific distressful episode or particularly harmful attitude on father's side, thus concluding that an intervention was needed to help him to learn how to deal with his children's emotional status. During the application of TIAP, though, it became clear how Aron's rejection of his father was part of a larger family dynamic: the father urges Aron to play together; Aron refuses the father's invitations to interact; the father awkwardly insists to involve him; the mother intervenes and interrupts the interaction. Charlotte invites his father to play. This is a dynamic that could never be reported by the family members since they participate in it without being aware. Through TIAP the "voices" of children become clear within the context of family relationship: what cannot be said, it is shown (Anolli, 2002).

The analysis of the triadic relational dynamics of detaching/entrusting/welcoming/joining allowed to evaluate the resources of the system with respect to the possibility of co-constructing a safe family relational context which enables parents and children to deal with separations in a secure way (Byng-Hall, 1995b). This dynamic recurs in daily experience when children pass from the custody of one parent to the another or to other caregivers. These moments often turn out to be critical events for families with divorced parents. In the assessment of parental competence, the process of entrustment of children by one parent to the other is an important indicator of the capability/incapability of parents to cooperate to help the child to cope with change.

In the TIAP approach, family stability and change are not conceived as opposite poles of a continuum, but as different processes that can be analyzed through different indicators. In this sense, TIAP makes it possible to separately evaluate the abilities of family members to stay in certain configurations and those to change, thus allowing a specific analysis of criticalities and resources. For example, our study highlighted how through the TIAP index of intra-family exploration, it is possible to identify which family interactive spaces can be practiced by family members and which not. This information has proved to be particularly useful in orienting the judge's decision regarding the type of parental custody, on one side; and to indicate the area of relationships that should be supported with a psychotherapy, on the other.

From a general overview of all the cases analyzed emerged that TIAP has proven to be an inexpensive method of observation, implying a shared, involving task, perceived as low-stressful and low-judgmental by both parents and children, who can perceive themselves as active and competent participants (Venturelli et al., 2022). The analysis of all cases through TIAP highlighted some strengths of the method, which in particular allowed:

1) To *focus on parental resources*, where clinical interviews and self-report tests have mainly identified criticalities; this allowed the psychologist in charge of the case to give a prognostic opinion to the family and to the Court.
2) To *involve in the procedure significant figures others than parents*, enabling to conduct trigenerational or multinuclear families analyses and to understand parents' difficulties in such a context, but also to identify eventual resources for future interventions. For example, in four cases it was possible and necessary to involve in the procedure other significant persons present in the children's lives: the father's partner; the grandmother; the foster parents together with the biological parents. In particular, in foster care situations, TIAP can be very useful for analyzing the complex relational triadic dynamic involving the foster child (cf. Greco and Iafrate, 2001). Specifically, in two cases, TIAP was applied to a foster situation of two children aged 2 and 5 involving the biological mother and the foster parents, through two observational moments: a first triad formed by biological mother, children, foster mother and a second triad formed by biological mother, children, foster father. The involvement of both biological and foster parents in the procedure allowed for the observation of the dynamics of mutual trust between the different family units, and the children's role in this internuclear dynamic. In applying TIAP, it is possible to expand or narrow the observed system, creating a different focus and connecting parts that are in danger of not being seen or of remaining isolated from each other.
3) To *analyze the quality of co-parenting* with respect to the following specific processes: family coordination, the ability to foster and build a safe context, the accessibility to the other parent and the possibility to explore certain family interactive configurations.
4) To *give voice to children*, whose subjectivity is recognized on a par with everyone else's, highlighting their active role within family dynamics. This both in cases where children were very young and had difficulty expressing themselves verbally, and in situations where children or teenagers had already expressed their views through interviews or other tests, allowing through the observation of family relationships to substantiate that information and give it relational meaning.
5) To *collect information that can be used by the professionals* of the child protection tea*m* (in the public sector) or by the Court's and parties' consultants (in the private sector). These professionals relying on the analysis of the whole family, can avoid the iatrogenic position of colluding with the conflictual dimension of the family by taking sides with one or the other part involved.

In all cases, the evaluation of the parenting skills conducted through TIAP has shown how this procedure constitutes both an evaluation tool and a tool for building a therapeutic alliance (Escudero and Friedlander, 2017). The administration of TIAP allows the clinician to observe family relationships in action, and the family members to observe themselves. The "play" represents, in fact, an "acted out and co-constructed plot" accessible to all members of the family system, based on which the clinician builds her/his narrative of the family also integrating what emerged from the administration of other individual tools. This narrative or clinical hypothesis, being able to rely on a plot shared by all family members, allows them to feel seen and to recognize themselves in a shared narrative.

The results of the application of TIAP can be shared within a network of professionals with different functions and roles (Fruggeri et al., 2023, cap.9). The collected data shed light contemporary on the individuals, the dyads, the whole family and on how these different levels of the system intertwine, thus returning to the network of professionals (court-appointed technical consultant, party technical consultants, social workers, educators, psychologists, etc.) a complex picture which offers the context for understanding in a non-blameful way the functioning of the system, avoiding possible collusion of the group of consultants with the family conflicts. TIAP does not deny the information collected from different instruments, it allows to understand them within a larger context.

Given these reflections derived from the case analyses, we believe that it would be desirable to continue the research by increasing the group of participating families and by involving a greater number of families belonging to different cultural contexts, as well as including family systems with same-sex parents. A systematic analysis of the functioning of these families would allow us to verify whether the TIAP procedure, could be reliable, in terms of both the proposed task and coding system, to evaluate parental functioning in different family forms. This direction of research could be very interesting in the clinical field, because it would allow to verify whether TIAP can overcome the limitations of many clinical tools used in the evaluation of parenting skills which are strongly influenced for example by cultural variables or gender stereotypes (Gato et al., 2013).

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

The studies involving human participants were reviewed and approved by the Child and Adolescent Neuropsychiatry Clinic of the Italian National Health Service in Parma and the Bologna Family Therapy Center. Written informed consent for participation in this study was provided by each participant, in the case of minors present in the family, written informed consent of their parents or legal guardians/next of kin was obtained. Written informed consent was obtained from the individuals or legal guardians/next of kin for the publication of any potentially identifiable data included in this article.

Author contributions

AC: Conceptualization, Data curation, Investigation, Methodology, Supervision, Writing – original draft, Writing – review & editing. EV: Conceptualization, Data curation, Investigation, Methodology, Writing – original draft, Writing – review & editing. LF: Conceptualization, Data curation, Investigation, Methodology, Supervision, Writing – original draft, Writing – review & editing.

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The Clinical Generational Interview. An instrument for family assessment

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Interviews are the privileged tool for carrying out qualitative research and clinical assessments on family relationships. Nevertheless, there are limited examples of interviews in clinical and psychosocial literature that are explicitly aimed at the evaluation of relational-family constructs. This paper presents the essential characteristics of the Clinical Generational Interview (CGI): an original tool for investigating and evaluating family relationships, that aims to combine the complexity of the subject being studied with the systematic and rigorous approach. It was created according to the following criteria: a flexible qualitative approach, the production and relational reading of information, intersubjective measurability and control of the inferential/interpretative process, and clinical use. Although it is organized in a structured and well-defined form and provides a precise system for encoding information, it is not a test, nor an algorithm that can be used in a mechanically diagnostic sense; it is a very versatile psychological tool that can be used in two different areas: the first is related to clinical research on family and couple relationships, the second to relational assessments. The contribution illustrates the path of construction and elaboration of the instrument, considering first of all its theoretical foundations and the constructs derived from them and around which the set of items is organized. The criteria for coding and analyzing the information thus produced and the different possible areas of application are then described. Finally, the theoretical and methodological characteristics of the instrument are also considered in relation to the main interviews in the literature in order to highlight differential particularities.

KEYWORDS

couple interview, family relations evaluation, intergenerational assessment, clinical interview, qualitative tool

1 Introduction

Interviews are the privileged tool for carrying out qualitative research and clinical assessments on family relationships. Nevertheless, there are limited examples of interviews in clinical and psychosocial literature that are explicitly aimed at the evaluation of relational-family constructs.

The contribution illustrates the Clinical Generational Interview (CGI): a tool for investigating and evaluating family relationships (Cigoli and Tamanza, 2009). It aims to combine the complexity of the topic studied (family relationships) with the systematicity and rigor of an intersubjective analysis procedure. It was created according to the following criteria: a flexible qualitative approach, the production and relational reading of information, intersubjective measurability and control of the inferential/interpretative process, and clinical use.

Although it is organized in a structured and well-defined form and provides a precise system for encoding information, it is not a test, nor an algorithm that can be used in a mechanically diagnostic sense; it is a very versatile psychological tool that can be used in two different areas: the first is related to clinical research on family and couple relationships; the second to relational-generational assessments.

The CGI is built around the macro-construct of family generativity (Cigoli and Scabini, 2006). This construct was chosen and conceptually defined starting from the clinical and psychosocial literature on family relationships, especially taking the acquisitions developed within the relational-symbolic model into account. Generativity is conceived as a "synthetic measurement" of the complexity of bonds and, more properly, of the quality of the exchange developed between generations. Its reference and source of information is the couple, and its implementation is divided into three dimensions (or axes) concerning the origins of each partner, the formation and development of the couple relationship and the passage and transmission to the next generation (the child(ren)).

Several years of work were required to build the CGI, and several clinical and psychosocial research teams were involved. Qualitatively discriminating items had to be chosen for each analytical dimension. Subsequently, the calculation system was constructed in order to obtain an analytical measurement method (for each dimension/axe) and a summary of the total family generativity considered. Over time, the instrument has been used to investigate different domains of family relationships, both with reference to different stages of the life cycle (Tamanza et al., 2016; Gennari and Tamanza, 2018; Tamanza et al., 2019) and considering different clinical intervention contexts LIKE…(Molgora et al., 2014; Ranieri et al., 2016; Gennari et al., 2018). The application of the CGI to these different objects and contexts has confirmed the usability of the instrument in its structure and sequence of items and, at the same time, its adaptability about how it is applied. This concerned, in particular, the possibility of administering the CGI in a single time session, but also in multiple sessions, as well as meeting with the couple jointly, but also with individual partners.

Antecedents to the CGI can be connected to theoretical references from the psychodynamic panorama (aspects from relational psychoanalysis, gestaltism and systemic relational therapy) which, as mentioned, were then taken and translated into key concepts and a research methodology falling under the Relational-Symbolic Model (Cigoli and Scabini, 2006). This paper presents the essential characteristics of the tool and the elements that distinguish it from other types of interviews, the logic that entails its use, as well as the criteria for analyzing and interpreting the information produced.

2 Comparison with other family interviews

Clinical research on family relationships has widely used qualitative methodologies, developing some interesting tools for observation and analysis of interactions. Much more limited, however, are the examples of instruments aimed at structured analysis of discursive productions that:

a are explicitly aimed at the evaluation of relational-family constructs and, even less, attributable to the issue of generativity;

b are organized in a structured way and provide for a specific system of analysis and information encoding.

In our exploration of the literature, we have identified six interesting tools from a conceptual and methodological point of view which are relevant for dissemination and use. Table 1 presents a summary of the various interviews considered according to the identification of constructs, the setting (or detection unit), the encoding system and the measurement system. As can clearly be observed, this is a rather varied panorama consisting of very different tools, even if they have certain similar aspects.

As for content, it should be noted that only two tools are created with synthetic constructs: the Current Relationship Interview (Crowell and Owens, 2004) and the Cumberwell Family Interview (Vaughn and Leff, 1976), even if only the former has a construct referring to a precise and consolidated theoretical framework. The other tools refer to a plurality of variables and dimensions which, although they make an overall reading of the themes investigated possible, are not attributable to a unitary construct, in some cases also referring to different theoretical assumptions.

There is also a high degree of variability in the measurement systems adopted in the various interviews, both in terms of the founding method (in some cases the use of quantitative systems and in others qualitative systems), and the different degree of rigor, systematicity and inference. On the contrary however, they are much more similar in terms of the "setting" and encoding unit of the information produced, which is however almost always of an individual type.

The Clinical Generational Interview differs from each of these tools in the specificity of the reference construct and its clearly relational nature, the setting to produce information, the consequent encoding unit which attributes a distinctly peculiar significance to the couple, and lastly the measurement system tethered to the semantic evaluation of the propositional content, which includes a complex articulation of quantitative and qualitative elements.

The Clinical Generational Interview is placed within a precise theoretical-methodological reference that identifies the distinctive and identity-constituting character of the family within generativity. It is a "three-dimensional macro-construct" (origins, couple, passage to the next generation) that identifies the crucial dynamic and evolutionary junction of its constitution in the couple. From a procedural point of view, it follows that the joint meeting with the couple becomes the elective setting to produce information. The interview must also be conducted using specific relational methods that take the following aspects into account:

a management of the exchange methods to facilitate the dialogue-conversational-imaginal production of both partners in relation to the proposed themes, and respectful of the specificities of the joint setting;

b different modulation in introducing questions and regulating communication. The first part of the Interview (related to the partners' origins) is in fact addressed to each partner, always in the presence of the other, while the second and third parts (couple and passage) are jointly addressed to the couple. In fact, it is as if the first part is an interview "in couple" (the other partner is present and may speak) and the second an interview "of couple";

TABLE 1 Comparing family interviews.

	Construct	Setting	Encoding unit	Measurement system
Oral history interview (Buelhman and Gottman, 1996)	Multidimensional	Couple (observant)	Individual couple	Quantitative
Current relationship interview (Crowell and Owens, 2004)	Synthetic (*The attachment system*)	Individual	Individual	Quantitative and qualitative
Camberwell family interview (Vaughn and Leff, 1976)	Multidimensional and Synthetic (*expressed sensitivity*)	Individual	Individual	Quantitative
Darligton family interview (Wilkinson, 2000)	Multidimensional	Individual	Individual	Quantitative
Structured family interview (Watzlawick (1966))	Multiple	Multiple (individual, couple, family)	Multiple	Qualitative
Personal history interview (McAdams, 1997)	Multiple	Individual	Individual	Qualitative
Generational clinical interview	Multidimensional and synthetic (*Generativity*)	Couple (interacting)	Individual couple	Qualitative and quantitative combined

c the interviewer must behave in a way which solicits openness from the parental couples and their active involvement in the task they have been proposed. Dialogue is exchanged both with the interviewer and between the partners themselves, and discursive production should be encouraged and facilitated, allowing it to develop according to the progress of the couple's exchange itself, rather than according to a rigid and mechanical sequence of questions and answers.

In other words, the Interview should be conducted with the couple using the typical style and sensitivity of clinical work.

3 The path of construction and validation of the instrument

The path of construction of the CGI was developed in three distinct and logically consequential stages (see Figure 1): the conceptual design of the instrument; the selection of the discriminant items and the construction of the coding system; the empirical validation of the instrument based on a normative sample.

The first phase of the work was carried out according to an *up-down* logic, that is, from a theoretical-conceptual vision assumed *a priori*. It consisted of two moments: the identification of the synthetic construct (generativity) and its tripartite articulation (i.e., the three analytic dimensions) and the identification of a set of verbal and imaginative stimuli. They were initially constructed by the research team during some "ideative production" sessions and then selected based on their comprehensibility and relevance through the contribution of some "focus groups" conducted with clinical psychologists and family psychotherapists. In this way, a "preliminary version" of the interview was obtained, which, in the second time, was administered to a sample of thirthy parents' couples[1] for the purpose of verifying its usability, i.e., to assess the discriminating value of each stimulus and thus obtain an effective and manageable version of the instrument.

This second phase of work involved four steps: the construction of the coding system for each stimulus, the identification of the computational rules for measuring each axis/size, the selection of the discriminating stimuli for each axis/size, and the definition of the final version of the interview. In this second phase, the path followed a *bottom-up* logic, like the process of "*item analysis*" typically used in the construction of metric scales[2], with the relevant difference that in this case it involved the development of a system of analysis and measurement of *dialogic-discursive* material coded in categorical terms, including also the interrelation of three different analytical measures and the construction of a single summary assessment.

This second version of the interview, significantly smaller than the preliminary version[3], was then administered, in the third phase of the course, to a second sample[4] and the results thus obtained were the subject of two further analyses carried out quite independently: a *clinical evaluation* and a *linguistic-textual analysis*.[5] This was done to be able to carry out a comparative evaluation of the results produced through the three different modes of analysis and thus to be able to obtain further elements of validation (or possible disconfirmation) of the adequacy and reliability of the CGI.

1 The sample consisted of couples who were going through different stages of the life cycle, namely: couples with children aged 3–6years, couples with adolescent children (14–18years), couples with disabled children, adoptive parents and separated parents.

2 Following Clark and Watson (1995), a frequency distribution analysis was conducted on the initial pool of items (in order to exclude those items with high rates of nondeterminability or excessive concentration in a single response mode) and then a confirmatory factor analysis (CFA) (Stewens, 1996) was conducted.

3 In fact, the preliminary version included 35 dialogic-discursive stimuli, while this second version consists of 23 items.

4 This second sample consisted of sixty pairs, thirty of which were nonclinical (and divided into different stages of the life cycle, like the first sample) and thirty marked by specific clinical and social issues.

5 Linguistic-textual analysis was carried out with the help of T-LAB, a software program that, by means of numerous algorithms, allows for a series of in-depth text operations of an exploratory and interpretative nature. (Lancia, 2004).

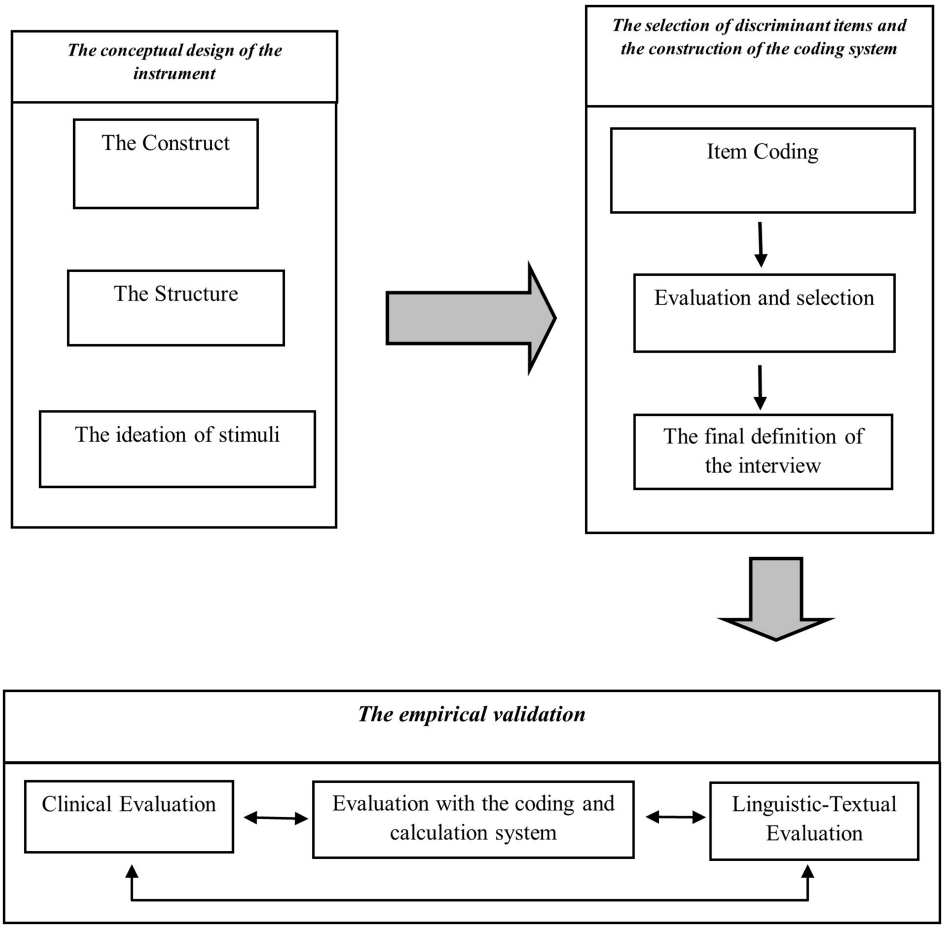

FIGURE 1
The path of construction and validation of the instrument.

4 Thematic contents

In its entirety, the CGI consists of 23 openings for dialogue and two series of graphic-pictorial stimuli (paintings by authors), divided into three sections: the relationship for each partner with his/her origins (8), the couple relationship (9) the generational passage (6).

All the stimuli (dialogue-pictorial) were created by the research team during creative production sessions and subsequently chosen based on their comprehensibility and relevance, thanks also to the contribution of some "focus groups" conducted with clinical psychologists and family psychotherapists. The creation of stimuli was based on the following criteria:

a congruence with the conceptual construct (generativity) and its articulation in the three distinct dimensions/axes;
b production of representational elements and actions related to the affective and ethical dimensions of the family bonds (Cigoli and Scabini, 2006) concerning the three dimensions/axes.

These different stimuli were conceived in terms of integration, in the sense that the imaginative stimuli were introduced with the aim of promoting the partners' reflection and verbalisation of their own family experience and couple dialogue, and not as independent indicators of the variables considered. This is why they are considered together with the discursive productions that accompany them in the subsequent encoding system. As will be better illustrated in the following paragraph, these stimuli were also the subject of preliminary work aimed at selecting the most suitable images for eliciting certain emotions, by grouping them into homogeneous categories.

First, we shall present the stimuli related to the first section (see Table 2).

The first Interview section is related to origins. This dimension regards each member of the couple specifically and in a differentiated manner. The relative items are therefore addressed and referred to each partner and are encoded separately for each of them. However, it is conducted in the presence of both partners, who are also invited to comment on the choices and responses of the other at the end of their discussion.

After the presentation of the objectives, the interview begins with a moment for "warming-up." This helps facilitate the couple's involvement in the proposed task and helps them mentally place themselves in their own generational history. It then proceeds in alternation, asking one partner the questions first, and then the other partner.

The first Interview questions investigate the content and quality of the representations related to the origins. That is, they are aimed at

TABLE 2 Relationship with the family of origin.

Item	Description
Warm-up	First of all, we ask you to immerse yourselves in your *origins*, i.e., the living environment, places, historical moment, traditions, family and extended family relationships as if you were going back in time and are seeing these things from your eyes as a child. Your mind will evoke images and scenarios. We want you to focus on them. We will give you both a few minutes to do this, closing your eyes if you like.
1.1	Good, now can you show us your living environment, each his or her own?
1.2	Thinking about your family, what were the important moments of family life? Go back in your mind to both everyday life and to particularly significant moments in family life. What was happening?
2	What were the "golden rules" of family life for relationships within the family and with the outside? From whom and how were they supported?
	Think of some childhood memories about:
3	Your relationship with your mother
4	Your relationship with your father
5	The relationship between siblings (if you did not have siblings, between cousins or friends)?
6	Now look at these images (reproductions of landscape paintings are shown). Silently, please each choose one that expresses and shows your environment of origin. Can you comment on the image you have chosen?
7	What did you learn in your family of origin about couple relationships and couple life? Were there "golden rules" on this subject too? Give me an example of the relationship your parents had through one or two memories.
8	Can you tell me, again with memories, about the relationship your parents had with their families of origin? What happened?

exploring how the partners mentalize their family and cultural origins and the representations and affections that characterize them. The opening question/stimulus reveals various aspects:

1.1 Firstly the capacity/willingness of the couple to "go back in time." The act of "letting go," also by closing the eyes, conveys whether or not you trust in the clinical context, as well as the partners' available mental resources. The producers of images and scenarios are therefore the partners themselves, and their focus is not on the confusion or the "void" of an image, but what actually results.

There are similarities here between the Interview and Gestalt's techniques.

Last but not least, "showing the other" is a way to immediately put the relationship on the playing field. In doing so, one partner can interpret the other's representations of his or her "origins," gathering similarities as well as profound differences. Both a disqualification of others' experiences and a lack of cognitive-sentimental focus correspond to deficits in the relational matrix.

The researcher-clinician also forms his or her own representation. Thus, in turn, he or she can intervene both to clarify and to further certain aspects. After this part of the interview, the attention is directed to family rituals (presence/absence and quality).

1.2 "Origins" and "rituals" are in fact connected to each other. The poor mentalization of contents and affects also includes the absence of significant rituals (ruinous typology); mentalization with open and suspended problems and widespread negativity also includes uncertain and confused rituals (critical typology); mentalization which is rich in contents and affections is associated with an active and heartfelt ritual (productive typology). Gregory Bateson (1972) discussed "heart algorithms" in this regard, meaning that family life practices, and in particular rituals, reveal meaning with regard to relational exchange. For our part, we attribute a sacred dimension to the origins (Cigoli, 2006), and a lack of sacredness has negative effects on family bonds.

Questions 2/5 seek to further, in specific terms, the re-evocation of the "environment of origin" previously carried out. There are two semantic areas solicited: the profound dimension of rules (the "golden rules") of family life and the memory of relational events with the most significant figures, and the relative range of feelings inherent in the maternal-paternal-fraternal relationship.

At this point the first task concentrating on images is proposed, asking the couple to choose their "landscape of origin." Thanks to their specific polysemic nature, the introduction of pictorial stimuli aims to activate imaginative thinking in the subjects (poiesis), and also aims to enrich dialogue. In fact, the entire interview is held in the presence of the partner, who is reciprocally invited to comment on the other's choice.

The images were chosen based on the identification of three categories highlighted by research work on landscapes in painting (Cigoli, 1999; Büttner, 2006). The categories of the images are: ideal landscapes, real landscapes and ambiguous landscapes (see Figure 2). The ideal landscapes include paintings where the artist's intention is to communicate mental states of "paradise," a "golden age," an "ideal well-being." The real landscapes include paintings where the artist's intention is to communicate the "lived life," "good and bad weather," a "conflictual state" (heat and cold, light and shadow, the virginity of nature and the occupation of man, etc.). The ambiguous landscapes include paintings where the artist's intention is of an uncertain nature, disturbing and alienating.

It is important to note that the categories of chosen images, both as regards the landscapes of origin and the couple scenarios, have nothing to do with the normal/abnormal, healthy/ill, correct/incorrect polarities and the like. Indeed, the images are to be considered visual stimuli that encourage a choice and not indicative in themselves of unique and discriminating meanings. What matters is how the partners react to and consider the image from a cognitive (perception, focus of attention, communication), affective (referring to the world of emotions-feelings) and ethical (referring to the value, or less, of the bond) point of view. Lastly, what matters is how the partners talk to each other. In this regard, the

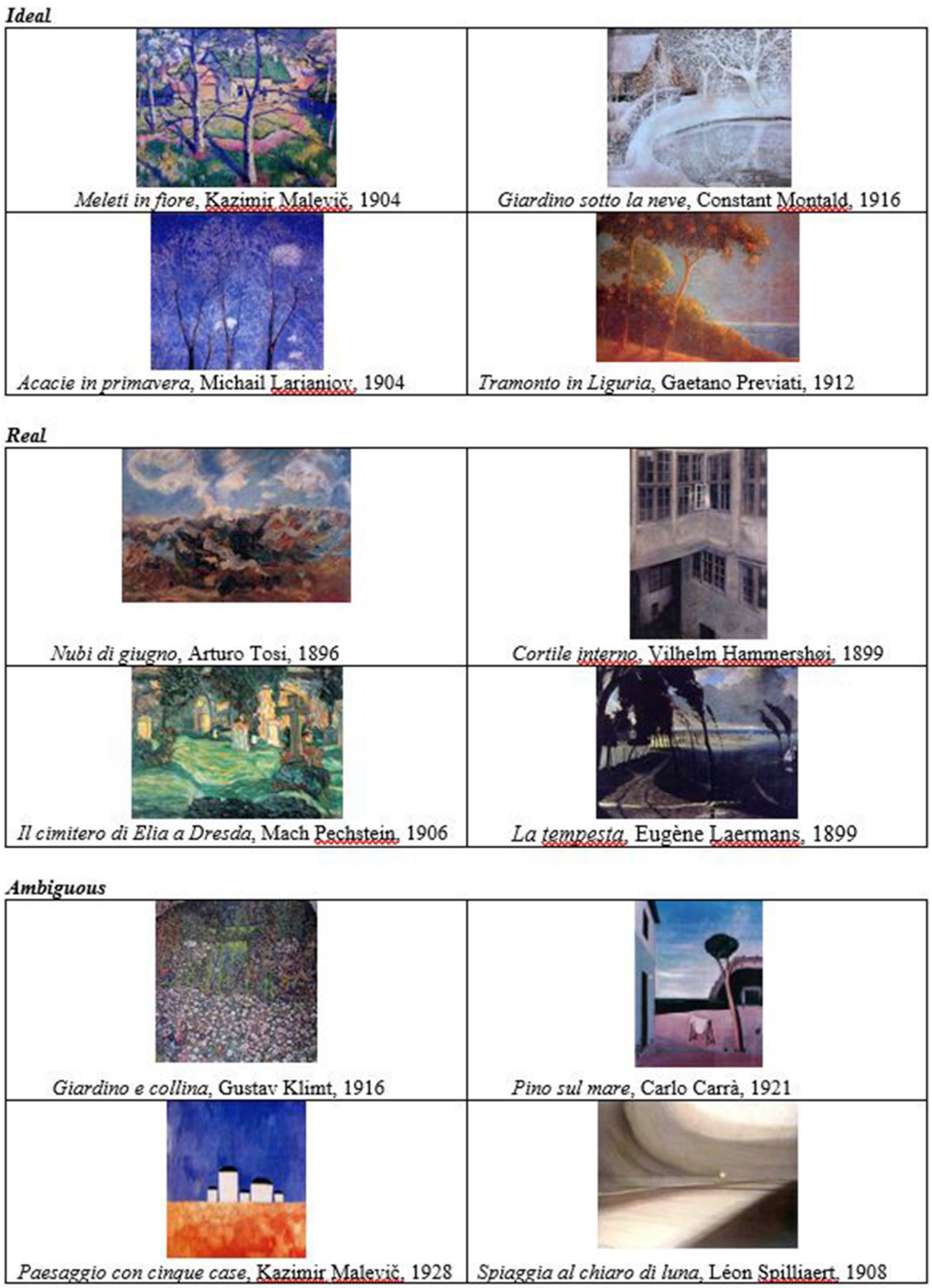

FIGURE 2
Landscape painting. Reproduced from Cigoli and Tamanza (2009, p. 117-120).

criteria related to communication (according to attention, socio-emotional and prognostic variables) that have been highlighted by systemic research for many years are valid.

The following questions (7/8) put the partners in "third-party position," meaning they become observers involved in the relationships of others, whether they are those of a parenting couple of origin or those between parents and families of origin (in the sense of clan membership, ethnicity, lineage).

Striving for "having learned" (questions 7/8) serves to introduce, in a latent way, the identification issues affecting the generations. In the same way the problem-theme of the relationship between families of origin is introduced through the couple.

The following Table 3 presents the stimuli related to the second section: the couple relationship.

The second section of the interview concerns the couple relationship. The related questions are addressed and refer to the

TABLE 3 The couple relationship.

Item	Description
	At this point the interviewer turns to both partners and lets them continue the dialogue.
1	How did you meet?
2	What made this meeting turn into a bond? (optional extension: Did you promise each other anything?)
3	What do you think you married in the other?
4	Did you find what you were looking for in each other?
5	What new aspects have you discovered in the other?
6	Have there been any particularly difficult moments in the relationship? And how did you deal with them? (was there forgiveness?)
7	Now you have a series of images before you (reproductions of paintings of couples are presented). Each of you should choose one to express how you experience your couple's relationship, the feelings you have. Can you comment on the image you have chosen? Can you comment on the image chosen by the other?
8	Now I would like you to talk about the interaction between you as a couple and your families of origin, with her/his family. Could you explain the interaction with some episodes taken from everyday life, or even through metaphors or images?
9	How do you envision your future as a couple?

couple as a whole, and the partners themselves will decide how to respond and react to the questions asked. The encoding of the information produced is based on the response of the couple as such.

The interactive-communicative dynamic is not analytically encoded (microanalysis), but constitutes useful information about the adequacy of the interviewing process. In this regard, the researcher is advised to take note, on a separate sheet, of the recurring methods of exchange, as is traditional in interactive research (and clinical setting) on family relationships. It is also one of the fundamental elements the interviewer uses to modulate and manage the relationship with the couple. As mentioned, it is important for the couple to engage in the proposed dialogue according to its own methods, also ensuring that each partner expresses his or her position in relation to the proposed themes.

The first question ("How did you meet") refers to Watzlawick's (1966) famous Family Interview. It is however formulated as an opening based on dialogue, immediately followed by mentally urging the partners to grasp the difference between interaction and bond (question 2). Interactions are innumerable, but only few become a bond characterized by needs and desires that interlock and require a response. The crucial theme of the promise can also be introduced. Following Hanna Arendt (1958), we hold that this bond cannot hold true through life, living and its trials without any promises having been made. The Relational-Symbolic Model considers "secret interweaving" and the "promise" as the crucial dimensions of a couple bond (Cigoli and Scabini, 2006).

The following questions (3/5) imply a strong reference to the interpersonal plane (the relationship with the other) and projective and interjective identification processes. They are aimed at focusing the couple's dialogue on the foundations of the bond, which in this case concern the previously mentioned "secret understanding," i.e., the latent and often unconscious dimension of the bond itself. As can easily be understood, it is important to invite the partners to explore sensitive and very delicate topics and contents, and the interviewer must maintain a trusting and collaborative atmosphere, avoiding making the members of the couple feel excessively exposed or threatened in relation to any intimate and vulnerable aspects. In any case, the "climate" the interviewer senses is one of the indicators to be taken into account.

Question 6 instead focuses on the relationship-bond as such. It assumes that there is no bond without conflict (the soul of the relationship) and difficulties which must be faced, and calls on the couple's commitment to cope with it. The "commitment" variable is very developed in the psychosocial research related to bonds and can be considered an analogue of the promise (to have an obligation, to pledge) that can be assumed, fragile, disqualified and attacked. "Promising," however, is knowing how to "go beyond" the same perspective, while commitment concerns the resonance of the word given in the present. In any case, it is a "good accompaniment."

Then a second task is proposed which is focused on images, this time with a new choice of pictures that concern "couple's scenes." The methods and aims of the proposal are substantially the same as those already illustrated in relation to the first series of images (the "landscapes of origin"): they favour the partners' identification with the relationship by soliciting psychological characteristics. In short, the subject the images depict is not as important as the effect they have on an affective-ethical level.

In this case the three types, with four pictures for each of them, are the following: ecstasy, dialogue, division (see Figure 3). Ecstasy refers to paintings in which the artist's intention is to communicate the presence of an ecstatic, fusional, paradisiacal, idyllic relationship: the couple transcends the everyday and "escapes" the present. Dialogue refers to paintings in which the artist's intention is to compare the male and the female, to consider the similarities and differences and any shared aspects: the couple is at the forefront and takes each other by the hand. Division refers to paintings in which the artist's intention is to highlight the presence of a fracture, isolation, discord: the couple is in a painful, broken, anguished, desperate state. After choosing the image, the partners are explicitly invited to comment on the choice made by the other, in order to enrich the couple's dialogue and thus bring out the characteristics of the bond.

As the literature on family relationships has clearly highlighted, it is impossible to divide the couple relationship from that of both partners' families of origin, in the sense that it is an integral part of the same bond. For this reason, the theme of the "other" (the other lineage) and the modalities of reception or rejection are introduced at this point in the interview. The partners' experiences and above all the couple's dialogue (the commentary) help us add another piece to the "puzzle" of the couple bond and its qualities, considering the relationship between the couple and their respective families of origin. In various cultures, whether patriarchal or matriarchal, cognatic or bilinear, the relationship between lineages and classes of belonging, as well as socio-economic status, involves and even anticipates the couple bond.

The "family of origin" should be understood as a place of interaction/clash, of domination and marginalization, of communion and rejection or isolation. In other words, the generative basis (and its drama) does not remotely end with the parent–child relationship, but opens up to the causes in a vertical sense and to the exchange between memberships and clans, also involving souls and the dead (Cigoli, 2006).

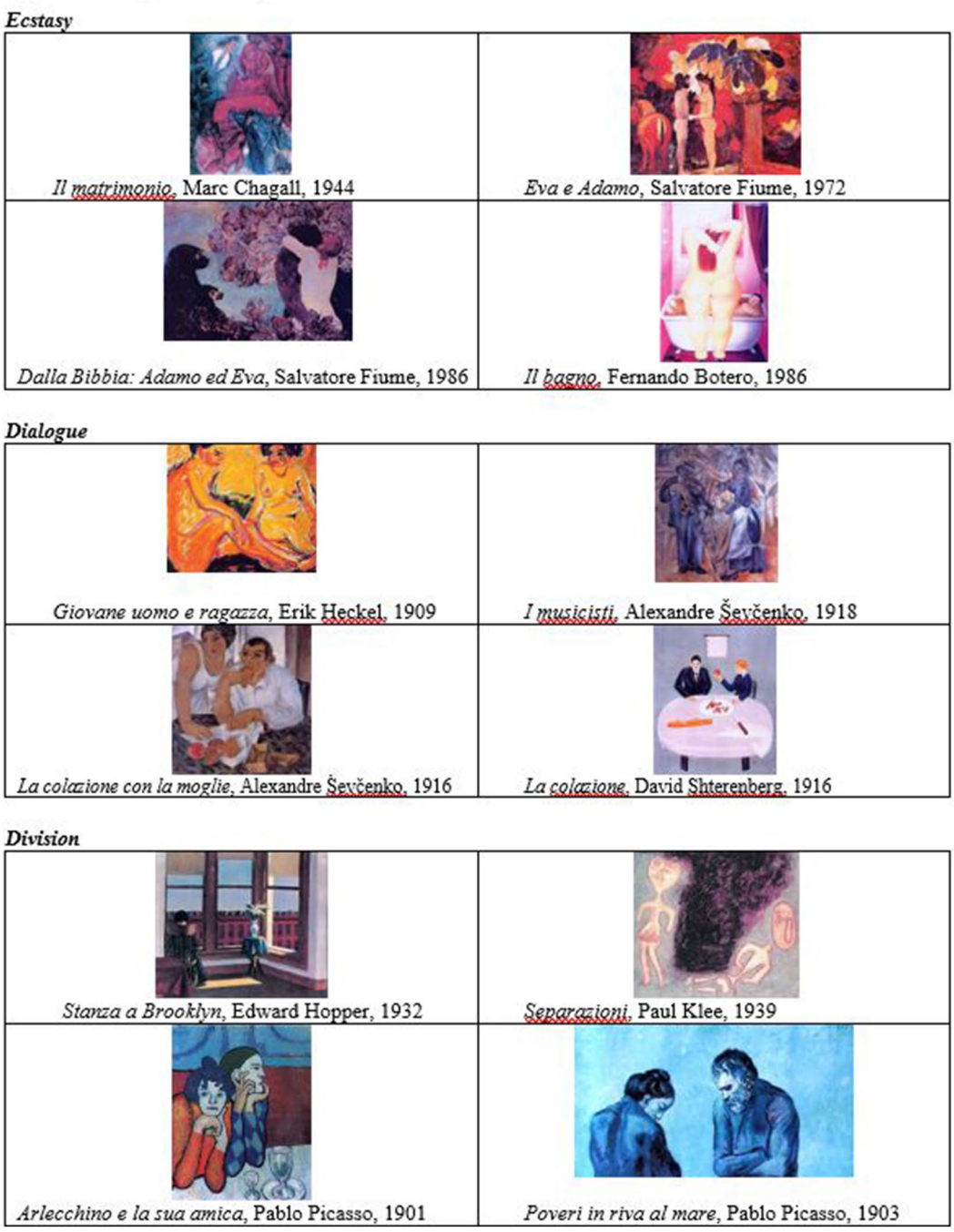

FIGURE 3
Couple's painting. Reproduced from Cigoli and Tamanza (2009, p. 117-120).

The last question (9) of this part of the Interview features an imaginative opening onto the future. It is obvious that the future being discussed, as well as the past, is in the present of the relationship, as taught by St. Augustine. This is how we have another source available for qualifying the "reality" of the couple bond. Furthermore, opening with the future helps us introduce and prepare the third part of the Interview relating to parenting (see Table 4).

The third part of the Interview concerns generational change. While the first two parts of the interview can be used in clinical and research contexts that involve all couple situations, this third part of the CGI explicitly refers to couples with children, i.e., families. Also in this case, the related questions are addressed and refer to the couple as a whole and the parents themselves decide how to respond and react to the proposed questions. The encoding of the information thus produced will result in a parental couple evaluation as such.

The thematic areas that are explored concern the prefigurative capacity (1) of the parent-partners (a method of "taking hold," or less, on the future) and their ability to compare the examples with the actual family reality (2). "Equal" and "different" introduce the

TABLE 4 The generational change.

Item	Description
	The interviewer always turns to both parents-partners and lets them carry out the dialogue.
1	Before getting married, or becoming a couple, how did you imagine family life? Can you give some general examples?
2	In the reality of everyday life, which examples have come to be true, and which have not? What has been the same and what has been different?
3.1	What do you consider important to pass on to your children? What values, what life models?
3.2	Do these things relate to what your parents passed on to you?
4	Do you think you are able (or have been able) to pass on these values and life models? (What can be an obstacle? And a resource?)
5	Think of your children (in the case of more than one). Who do you think they have received this information from, and what is specific about them?
6	What has caused more pain and what has given hope/trust to family life?

themes of coincidence and surprise that can be experienced positively or negatively. The next two questions (3.1 and 3.2), which due to their connected meaning are encoded together, aim to connect the world of values and life models with generational change and with the recognition that parents are themselves also children. Is there continuity and a transformation of values through the generations, or a break? The theme of lineage ("your parents") is also proposed again.

Cognitivist-oriented family research appropriately insists on the aspect of parental effectiveness (4): an expectation is one thing, while the result of an action from which specific feelings arise is another, such as satisfaction or serious disappointment. Moreover, it is easy for the parents to involve the social scene, which can be considered as helpful or harmful.

Lastly, the parents' dialogue regarding their children addresses the presence of both continuity and differentiation (5). A child is such only if he "has inherited," but is also recognized for his specific traits. This concerns each child, and so it is not a matter of considering them "in equal parts," but each according to their specificity (his "own"). This is the challenge.

The last question (6) is intended to recapitulate, as it invites people to reflect on aspects of family history that have spread grief and hope in relationships. Its purpose is to evaluate the ability of parents to recognize risky and resourceful elements inherent in the bonds. But here they are specified in terms of hope and trust which, not by chance and together with justice and equality, are recognized as the symbolic foundation of bonds. We will thus have, still considering the inherent fragility in the bonds between people, cases in which trust and hope are brought to safety and sustained and cases in which they collapse in deep distrust and despair. The Model that guides the Interview, taking up some old wisdom, underlines how the family climate is a decisive factor (not directly causal) in the construction of its members' personalities. The result is that the so-called "quality of the relationship" is not measured in terms of satisfaction, communication, problem-solving, affective expression and so on, but precisely in terms of trust/mistrust, hope/despair, justice/injustice. We could even consider them from two different psychological languages.

5 The encoding and measurement system

The CGI uses a dual encoding system: typological and taxonomic (Bailey, 1994).

In our case, the taxonomic classification is made up of the set of "semantic categories" through which each textual/discursive unit is encoded and is therefore variable and specific for each item/question. This has also been built empirically (bottom-up) from the verbal productions present in the normative sample and is, by its nature, a classification which is open and can be integrated.

On the contrary, the typological classification is based on a three-step scale (productive/critical/ruinous) and is used for the evaluation of every single item/question, as well as for the evaluation of the whole axis (origins/couple/passage) (see Figure 4).

So, it possible to analytically encode family bonds for each Interview axis (origins, couple and children) and is composed of three possible forms: productive, critical and ruinous. These forms of family bonds have been conceived and applied on a theoretical basis, starting from the reference model at the tool's core. More specifically, productive and ruinous are, respectively, the functional and dysfunctional modes of the bond, while critical represents an uncertain bonding mode, that is to say dubious, confused, with contradictory aspects. In short, these are the three qualitatively different modes of bonds, each with its own distinctive properties.

The analytical typological encoding on the three axes is independent, in the sense that each axis of the family bond can be intrinsically traced back to each of the three forms, that is, regardless of the encoding of the other two axes. Thus, specific situations could arise, for example similar encoding on the three axes (for example an always productive bond), or different encoding on all three axes (for example a productive bond in the relationship with the origins, a critical bond in the couple relationship and a ruinous bond in the relationship with the children, even if highly improbable).

Furthermore, each form of the bond has a meaning that is specifically characterized according to the axis to which it refers. Thus, for example, the ruinous form of the bond relating to origins is qualitatively distinct from the ruinous form of the couple bond, although in both cases it is a "problematic bond," or an indicator of de-generativity.

Lastly, a joint encoding for both partners is immediately applied to the axes relating to the couple relationship and the relationship with the children, while for the origin-related axis there is initially a specific encoding for each partner. Subsequently, on the basis of a specific combinatorial rule (see Cigoli and Tamanza, 2009), a unitary measurement is established that envisages both pure and mixed typologies.

Now we will examine beyond the labels by clarifying the meaning of each encoding category.

We will begin with origins. Productive origins are characterized by the partners' possibility to identify themselves with members of previous generations, starting from the recognition of the resources that come from the same. This recognition involves the prevalence of feelings of trust and hope, as well as justice and fairness towards the generational bond. Although pain, grief, mistakes and shortcomings are not lacking, they are tolerated, forgiven and cleared. On the contrary, ruinous origins refer to a scorned bond in which the partners are unable to overcome the traumas endured and the

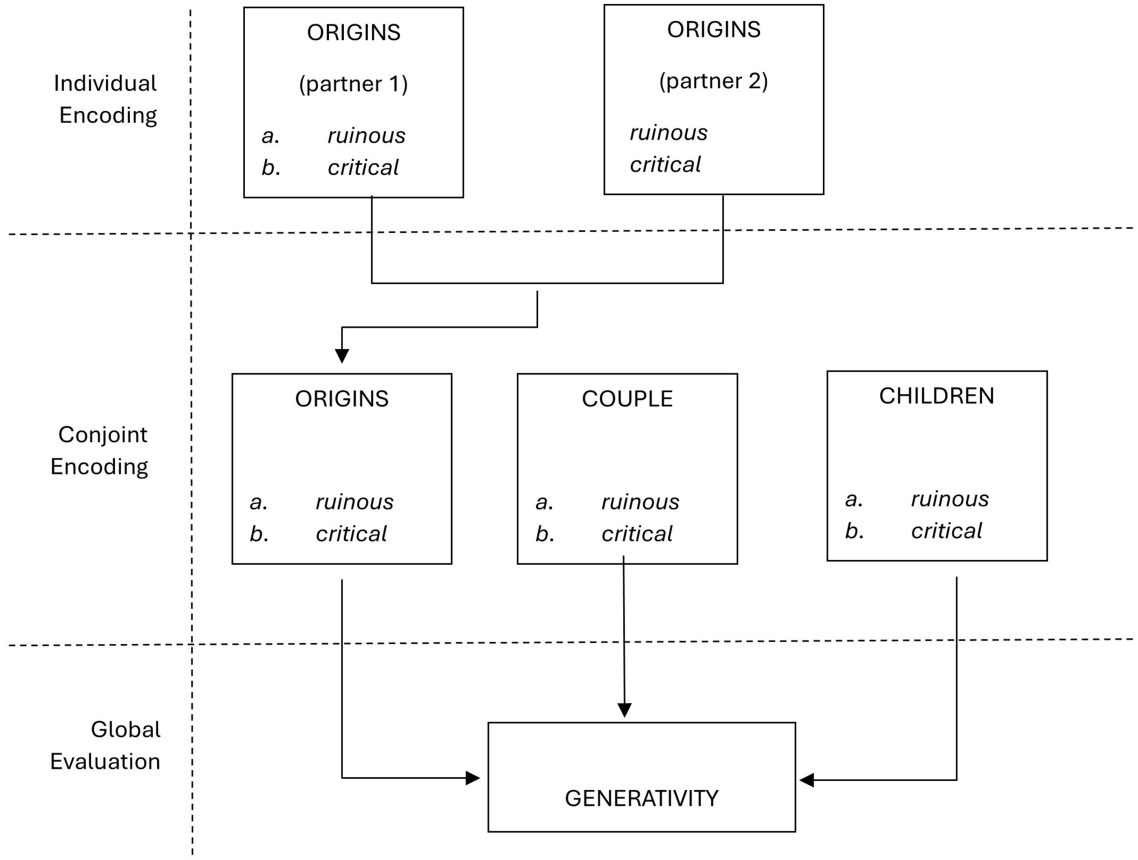

FIGURE 4
The encoding and measurement system.

suffering deriving from them. The indifference and/or abuse the partners feel victimized by lead to a scarcity of feelings which, if expressed, are negative and connoted in terms of distrust, despair and injustice. Lastly, critical origins are characterized by the presence of negative feelings which, however, do not prevent the partners from recognizing positive identifying sources and seeking the possibility of redemption.

Now we will discuss the couple bond. A productive couple bond is characterized by the partners' ability to invest in the bond, recognizing its value and feeling their belonging to it (the "us" of a couple). A ruinous couple bond is instead characterized by each partner's will to dominate and manipulate the other, not recognizing his or her specificity. In fact, a ruinous couple bond is an "anti-bond," in the sense that the partners do not act in favor of the bond, but against it, even if they need it (Racamier, 1992). Among various concepts, the author has developed the concept of relational perversion. It is characterized precisely by the use-abuse of the other to achieve one's goals. This also applies to the law, not in the sense of "that which binds men to each other," but as a tool for achieving one's goals. The commonality of this method is an aspect of daily life. Lastly, a critical couple bond is characterized by the presence of a constant sense of danger for themselves and for the fate of the bond, so that it is perpetually uncertain and unsettled. This does not mean that the partners do not also show aspects of intimacy and room for possible movement.

Finally, we consider the bond with the children. It is productive when an investment in the future is possible which, despite being connected and continuous with the family's past, recognizes the children's "proprium," as well as recognizing the differences in the times. "Transgression" is given value precisely for this reason, in the sense of going beyond what tradition can do in order to innovate it. This can involve rituals, as well as the "rules of life" and the values that guide them.

Thus, we have two forms of transgression: one that violently attacks expectations, values and rituals and one that innovates them. This is so, for example, in the value currently attributed to "intimacy" in the bond compared to that of "respect" that has marked genders and generations. Transgression is particularly visible in its different forms in cases of family migration, where the wisdom of the older generation is frequently replaced by the technological skill and consumerist spirit of the new generation, or supported by the same skill. The parental bond is considered ruinous when a feeling of resentment and "autogenesis" prevails in the partners, which prevents the children from finding their own place within the family-generational history. Lastly, a critical bond is characterized by the presence of feelings of anguish and distrust towards the future, so that parents experience constant uncertainty both in relation to their own abilities and to their children's destiny.

A transverse reading of the forms of bonds along the three axes suggests that each of them has constant properties beyond the axis

itself. Thus, the three forms of ruinous bonds are united by the absence of movement, i.e., a very painful and "untreatable" situation that is constantly repeated. For their part, the productive forms are not as characterized by the absence of pains and limits as for the possibility of boosting the bond with trust and hope. Lastly, the critical forms show marked contradictions both on the ethical and affective sides.

The second encoding system, namely the taxonomic classification, must be referred to for the analytical classification of each axis of the family bond. This classification concerns the individual Interview stimuli, presents specific labelling categories for each of them and is associated with the corresponding "typological measurement." Each unit of text corresponding to each stimulus of the CGI is thus read simultaneously in a qualitative manner (through the semantic categories of the taxonomy) and quantitatively (through the scale of the typology). This second measurement of the items forms the basis of the synthetic typological measurement of the axis according to an accumulative process and a prevalence criterion encoded in unique terms. At the end of the encoding process, a typological measurement of the three dimensions investigated by the CGI (origins, couple, passage) will be available alongside the semantic analysis which, through a subsequent combinatorial step, will make it possible to obtain a synthetic measurement of family generativity. The empirical work constructing and validating the CGI has made it possible to identify six different forms of generativity: fertile, evolutionary, blocked, chaotic, degenerative and poor. These are qualitatively distinct forms, each with its own peculiar characteristics and distinguished by its own space-temporality that can also be graphically depicted (see Cigoli and Tamanza, 2009, p.99).

6 Use in clinical assessment

The Clinical Generational Interview is a useful tool not only in research on family relationships, but also and above all in clinical practice, configuring itself as a therapeutic assessment tool. The CGI serves as a "medium" for the creation of the bond between the parental couple and the clinician, which forms a "working group" that is indispensable for good progress in the clinical pathway and its outcome. Couple assessment, in particular, has proved to be one of the elective clinical areas for the use of the CGI, since the proper setting for this tool is the joint meeting with the couple.

Alongside this homologous setting, however, there is also a substantive reason which makes it, so to speak, quite natural to imagine the use of the CGI in couples counselling. This is due to the fact that, beyond the different theoretical-conceptual references, any preliminary understanding of the couple's functioning must, to some extent, be based on a recognition of the events and meanings that mark the foundation and development of the same couple's story: topics that are analytically addressed by the CGI. In this regard, the specialised literature offers many conceptualisations of what function the relationship's psychological organiser takes on; his recognisability and individuation, however, invariably comes from the reconstruction of the historical methods of the meeting and its subsequent development (see Dicks, 1967; Pincus and Dare, 1983; Ruszczyski, 1993; Losso, 2000; Zavattini, 2001). The importance that the bond with the family environments of origin and the exercise of parenting takes on is widely recognised for understanding the couple's dynamics (Andolfi, 1988; Canevaro, 1988; Framo, 1996).

The CGI has recently been used in a systematic way in many clinical interventions with couples who were facing the same critical event, namely separation/divorce and the family's rearrangement. These couples are those met in work contexts such as in cases requiring a Court-Appointed Counsellor and Clinical Couple's Counselling: they are two very different and specific intervention pathways in relation to their purposes, the access modes and the institutional context, but fairly homogeneous as regards the subject and issues addressed (Gennari and Tamanza, 2017). In fact, the Court-Appointed Counsellor is arranged by the judicial authority within contentious procedures which usually feature particularly intense conflict, and has an eminently evaluative purpose. Clinical Counselling, on the other hand, starts from the independent request of the parties and has often constituted, in our case, the preliminary analysis and decoding work relating to family mediation, or couple's psychotherapy.

From a technical point of view, both cases focus on and circumscribe pathways that primarily aim at producing an understanding of the couple's situation and its disruptive dynamics, as well as identifying the resources that can be activated in order to achieve effective parenting and, where possible and desired, boost the relationship.

In the cases we refer to, the CGI has been used alongside other tools, including tests, but has always held a central importance because it has established the thematic track that guided the exploration of family history and the reconstruction of the couple's story. It was initially applied in different formats to verify which administration method was best suited to the context and objectives of clinical work. After repeated attempts, we were able to verify the usefulness of introducing two variants in relation to the administrative procedure envisaged for the research activity, while still maintaining the content and formulation of the stimuli unaltered.

The first concerns the subdivision of the administration of the interview into three parts; that is, proposing the dialogic stimuli related to the three axes of the CGI in three different consecutive meetings and with a more implicit interlocutory mode. This is in relation to clinical work's typical need of having sufficient time to retrace elements of personal and family life history in detail and in depth, which is at times marked by painful feelings or which, however, cannot often be easily recognised and shared, thus provoking resistance. Spreading out the administration time of the interview not only satisfies the requirement to accommodate people's need to develop their narratives with appropriate times and rhythms, but first of all the need to ensure that the "working relationship" can be established as a sufficiently safe and trusting one, constituting itself as an appropriate container for the ethical-affective processes solicited by involvement in the proposed task.

The second variation concerns a different articulation of the task of choosing and commenting on the couples images. It is placed at the end of the second part of the interview and, above all, envisages that people choose - initially independently and privately - not one, but up to three images, which refer to three different temporal moments: the first refers to the present, the second refers to the past, and more precisely to the initial phase of the couple's history and the third refers to the near future (five years later), stating that it must express how

people "imagine their relationship will be," and not as they would like it to be. The emphasis on "prediction" rather than "desire" has been much more functional in helping people confront the "factual truth" of their relational situation. A second way to use the images which has been prompted by emerging needs in clinical work with couples is to modulate the task according to the specific "critical periods" of the couple relationship. Rather than directing the choice of images according to a generic temporal succession (past-present-future), it may be useful to request the choice of an image for each significant moment (acme) of the couple relationship.

The subsequent commentary and comparison thus concern a sequence of images, facilitating and enriching reflection on the diachronic elements of the couple relationship. Not only that, the sequence of images facilitates an overall and synthetic reconstruction of the sense it assumes for each person allowing, with a relative immediacy, access to meanings and contents that often cannot be sufficiently expressed and recognised within the narrative reconstructions. As mentioned, thanks to their complex and polymorphic structure (form, content, colour, stroke, use of space, etc.), the images (the paintings) permit access to a world of meanings that articulates deep cognitive and affective contents which are more difficult to censure than the verbal language the couple can clearly control more. They therefore condense and immediately convey a multiplicity of elements that are particularly useful in order to have an overall picture of the relationship, also in reduced times.

When couples are confronting the topic (potential or current) of crisis, working with images in this way not only helps the clinician, but the subjects themselves, to reinterpret the couple's reality and crisis in less rigid and self-centred terms (Tamanza et al., 2018). The synoptic "contemplation" of the two sequences of images manifestly demonstrates how the reality of the bond cannot be traced back to the juxtaposition of two different points of view, but refers to a complex and dynamic articulation. The comparative method of the partners' choices in relation to the same period of the relational event makes it possible to access, in a less inferential way, the vision of the same relationship, identifying themes and elements that cross and go beyond the individual personal positions and which immediately allow access to relational rather than intra-psychological indicators. In doing so, the critical junction can be faced which concerns the need to identify methods and tools that make the scientific community's widely developed theoretical paradigms that assign priorities to the same relationship highly operational and transmittable, understood as the true subject of clinical action compared to the individual positions of the partners (see Cigoli, 2006).

The diachronic succession of images then forces questioning the reasons and the meaning of the change (or absence of change) found in the succession itself. It also helps to examine, in more realistic terms, the existing gap between desire and reality and to search for traces and signs of a possibility to transform the relationship. In other words, the possibility of identifying resources, to be understood as tolerability of the process of overcoming the crisis, with the limits, risks and effort connected to it, as a space for movement and re-signification of what is existing in a perspective of openness to the new and to the unknown, as an assumption of responsibility for one's own needs and desires and the world of bonds.

Lastly, the observation of the interactive and behavioral methods the couple uses to deal with the proposed task is an important source of information, both in relation to the possibility of using the resources offered in a more or less functional way within the specific counselling setting, and in a perspective and prognostic sense in relation to the possibility and usefulness of promoting subsequent intervention projects.

7 Final considerations

The Generational Clinical Interview, as its name explicitly indicates, is a tool for organizing the clinical encounter with the family from a psychodynamic-generational perspective. Its main intent is to constitute an aid for the investigation and evaluation of family relationships, which can combine an inclusive aspect of the complexity of the object of study with the systematicity and rigor of a structured procedure, useful for increasing the ostensibility and intersubjective validation of the knowledge it produces. A research tool that, formalized in strong coherence with the theoretical assumptions from which it derives, is not only proposed as an algorithm for testing preconstituted hypotheses, but first and foremost as a device aimed at promoting and facilitating the construction of dialogic and participatory understanding of the family relationships. The structured sequence of stimuli and the taxonomic and typological system of coding discursive productions represent the conceptual and procedural framework that guides the exploration and analysis of family ties. They also constitute a double constraint: they constrain the clinician/researcher within a dialogic-narrative canvas that is not rigid but coherent and, at the same time, they also constrain the couple in the same canvas, in a continuous guided confrontation with the origins of each of the two, with the historical and affective plot of the relationship, and with the responsibility of transmission to the children.

There are three areas of use of the Generational Clinical Interview: the first is related to research on family and couple relationships, the second is related to assessment situations, and the third is related to clinical intervention.

As much as the three areas have their specificity of "setting" (or configuration) they are also interrelated. The problem, in fact, is not so much to narrow the gap between "academic/scientific" research and field research, but to flip the relationship in favor of the clinical, remembering that without direct implication in the relational field there is no clinic, and this also applies to the researcher. In fact, the essential purpose of research is to produce the necessary information so as to be able to achieve the knowledge he or she seeks, whether it is exploratory in nature, that is, aimed at formulating descriptions and interpretative hypotheses of a given phenomenon, or evaluative in nature, aimed at corroborating or falsifying previously elaborated hypotheses. Through CGI, the researcher is directly involved in the dialogue-conversation with the couple (i.e., he or she is not external to the family relationship as in the case of the use of self-administered tests or questionnaires) and leaves room for the parental couple to *reflect* on what was experienced through the Interview. Rather, it is the very structure of CGI that, by targeting the world of relationships, creates a meaningful context from a relational perspective.

The second elective area, is that of therapeutically oriented assessment. In the context of clinical and psychosocial services, whose purpose is to structure intervention plans of various kinds and to assess the outcome of them, CGI constitutes a useful tool and

procedure for relational diagnosis, that is, for assessing the generative or degenerative character of generational transitions.

Through the Interview it is indeed easy not only to focus on productive, critical, or ruinous areas of exchange, but also to mobilize some family resources from the outset and thus open an emotional and relational space for the construction of tractability.

The third set (configuration) of use of CGI is that of clinical/therapeutic intervention. It can be realized through specific and very differentiated modes of intervention, but, in any case, the Interview highlights all its value in creating a *space for sharing* and thus activating a "working group" oriented to the transformation of family relationships. Finally, since clinical psychotherapeutic work needs (and deserves) verification, the Interview, or parts of it, can serve this purpose. This leads us to a final methodological consideration: recognizing the specificities that distinguish clinical work and assuming a consequent attitude that intentionally devotes care and attention to them does not mean misrecognizing the value and necessity of using methodologically reliable tools and techniques. The fact that research and clinical intervention respond to different logics and needs does not mean that they are incompatible. Quite the contrary. Even in clinical work, in fact, it remains of essential importance to proceed systematically to the production and analysis of crucial information with respect to the object under examination (in our case precisely the world of family relationships), and for this purpose the use of structured and empirically validated tools can be particularly valuable.

In any case, the most innovative and distinctive character of CGI is the balanced synthesis between the need to proceed in a systematic and controlled manner in the collection and evaluation of crucial information related to the couple's relationship and the need to foster a gradual and progressive active involvement of people in the clinical process. Added to this is its structurally relational orientation, that is, its ability to induce a "relational perspective," because it forces one to think of the reality examined as a problem of relational/generational exchange and not of individuals.

Recourse to the imaginary register then produces an unexpected "displacement" with the breaking of the "escalation" mechanisms and a verbal interlocution reduced to an empty and timed script; this opens up an area for potential listening and interrogation for the couple and offers new ideas for re-defining and understanding the relationship.

The generational segmentation of the proposed topics then calls for a reconsideration of the couple's history and its difficulties in the context of the exchange between generations, highlighting the possibility of a new definition of the parenting function in the face of the possible, or already occurred, separation. In fact, it is not uncommon for couples to move from a feeling of condemnation of themselves and/or the entire family world to pacification with their own history and with the actors who took part (understanding the conjugal relational history phase), questioning and then looking for ways to "save" the good that the relationship has produced.

However, the most relevant element is the fact that the CGI has proved to be a tool that amplifies and makes it less difficult to have a "collaborative" clinical assessment and even an expert assessment. It allows the spouses/partners to understand the meaning of their respective positions within the relational history, to clarify their respective expectations and fears and, thus, to be able to consciously choose one's present-future. We could also say that the CGI makes it possible to move within a profoundly epistemological ethical perspective that makes sharing, participation in knowledge and responsible decision-making the main construction techniques of the clinical intervention.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

Ethical approval was not required for the studies involving humans in accordance with the local legislation and institutional requirements. The participants provided their written informed consent to participate in this study.

Author contributions

GT: Conceptualization, Data curation, Investigation, Methodology, Writing – original draft, Writing – review & editing. MG: Conceptualization, Data curation, Investigation, Methodology, Writing – original draft, Writing – review & editing.

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Supplementary material

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Assessing family relationships through drawing: the Family Life Space

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The Family Life Space (FLS) is a graphic instrument that may aid the relational assessment of families. This interactive instrument involves all members of the family in a joint task, that of collectively making a drawing of their own family system and it allows the gathering of information related to the overall family organization. The FLS was originally conceived by Danuta Mostwin in the early 70s and used as an instrument for clinical intervention. After having been applied to several contexts, the present contribution aims at presenting the key indicators to use the instrument as a tool for assessing family relations. Specifically, the characteristics of the instrument that allow the gathering of relevant information at the individual, relational, and family level will be outlined. For each of these levels, the data regarding the quantity and quality of the elements in the drawing that define the family space (i.e., the number and graphic quality of the actual elements in the drawing) as well the quantity and quality of the relationships among family members and with their community at large (i.e., the number and type of lines connecting the various elements in the drawing) will be presented. The instrument can therefore provide useful insights on the following constructs: quality of life, power dynamics within the family, feelings of belonging, closeness and/or distance as well as conflict or acknowledgement between family members and the overall attitude family members have toward their context and the critical events they had to face. The application and complete potential of the instrument are further elaborated upon through the presentation of a clinical case. This case not only aids in comprehending the tool's usage but also enables the collection of psychological information about the family and provides a clinical interpretation of family relationships.

KEYWORDS

family relations quality, family dynamics, family clinical intervention, family assessment, interactive tool, relational clinical tool

1 Introduction

The comprehensive understanding of family functioning, beyond a mere description of its interactive patterns, represents the ultimate objective of a relationally-oriented family assessment. Specifically, employing a relational lens in family assessment involves delving into the meanings and motives underlying family actions, thereby grasping the "whys" of observed behaviors and narratives, not just the "hows."

This process demands not only a specific theoretical orientation but also a consistent set of tools and procedures. To attain this objective, both the setting and the entire data collection process must be conducive to gathering relational information—data that

transcends individual family members and instead weaves together the various pieces of information produced by different individuals within the family.

The Family Life Space (FLS) emerges as a graphic-symbolic tool particularly well-suited for use in a relationally-oriented family assessment procedure. This interactive instrument engages all family members in a collective task, facilitating the collection of information regarding the overall family organization. Initially conceived as a therapeutic tool by Danuta Mostwin in the early 1970s, in the international context its utilization and scholarly examination have been infrequent (Barker et al., 1997; Beeton and Clark, 2019) Introduced in Italy in 1978 (Cigoli and Galbusera Colombo, 1980), the FLS has been utilized in various studies by researchers at the Center for Family Studies and Research in Milan. Its diverse adaptations and applications underscore its flexibility and versatility, expanding its application contexts (Gennari et al., 2015). Twenty-five years ago, the FLS underwent further modifications, especially concerning data gathering and interpretation.

Gozzoli and Tamanza (1998) developed a coding system providing a metric analysis of the graphic-symbolic products obtained through the administration of the FLS. The authors devised an algorithm capable of transforming the symbolic family drawing into a series of mathematical and geometric indicators, considering both its individual elements (lines, points, space occupation density, etc.) and the overall composition (the gestalt formed by the collection of all the individual elements) (Tamanza, 2018).

This article will briefly introduce the tool and discuss its methodological characteristics and assets, with a particular focus on its role as a clinical instrument for family assessment.

2 The tool's theoretical foundations

The theoretical underpinnings of the Family Life Space (FLS) draw upon a comprehensive conceptual framework that encompasses the "ecological perspective," Lewin's Field Theory, General Systems Theory, and Symbolic Interactionism.

Consistently with Kurt Lewin's definition of field, Mostwin defined the family life space as a "bio-psychosocial territory characterized by meaning" (Mostwin, 1980). The Family Life Space centers on spatial analysis, presuming the spatial representability of psychic reality (Hartung, 2013; Birdwell-Pheasant and Lawrence-Züniga, 2020; Wahl and Gerstorf, 2020). Put simply, it suggests that the structures and dynamics within each individual, particularly in family relationships, can be represented through graphic symbols.

The graphic outputs of the FLS provide a tangible representation of family organization, reflecting its capacity to be either a welcoming and warm or a hostile and distancing space for its members. The end result goes beyond a mere representation of the family and its relationships; instead, it encapsulates a compilation of representations and experiences that, through the collaborative effort of all family members, convey the meanings and characteristics associated with the family as a whole.

The fundamental postulate is one of homology, not mere analogy, between family actions and their graphic products (Gozzoli and Tamanza, 1998, cit.).

The instrument relies on a theoretical principle asserting that space not only serves as a container for representation—enabling the graphical depiction of the family organization—but also concretely shapes family action. In other words, the space on the paper symbolizes the actual emotional and relational space (or lack thereof) the family provides for its members and their interactions. In this perspective, the FLS is not merely a projective tool, it is deeply imbued with experiential and emotional connotations, serving as a context where family relationships are constructed, organized, and reproduced.

Within this framework, the FLS is a valuable instrument in working with families as it has proven particularly suited to analyze relations and comprehend the functioning of the family as a whole.

3 The administration and the rationale of the tool

The following materials are necessary for the Family Life Space (FLS) administration:

a Vertically-oriented white sheet (50 cm by 70 cm) with a 14 cm-radius circle drawn in the center using a black marker.
b Markers of different colors.
c A sheet for the researcher/administrator's observations.
d A recorder or video recorder to keep track of the family members' interactions during the administration.

The sheet should be positioned on a wall or any support perpendicular to the floor, allowing family members a shared perspective on the drawing. All family members must stand on the same side of the sheet, ensuring uniformity in orientation (top, bottom, right, and left) for a unified interpretation of the drawing.

The specific administration involves the following steps:

The researcher presents the sheet, explaining: "This circle represents your family space, while the outer space is the environment that surrounds it. Therefore, things, people and whatever you consider as part of your family should be drawn inside the circle or on its border, whereas whatever you view as not being part of your family should be placed outside of the circle."

Detailed instructions follow:

1 Indicate yourself with a symbol (point or circle) and assign each symbol you draw a progressive number. You should retain the same marker throughout the drawing.
2 Use a symbol (point or circle) to represent other important individuals in your life, such as relatives, friends, or acquaintances.
3 Once again using the same symbols, indicate important life events as well as significant organizations, groups, and institutions.
4 Mark the quality of relationships among family members using three types of lines connecting the symbols among them: a straight line indicates a good relationship, a dotted line indicates a fair, "so-so" relationship whereas an interrupted line indicates a conflictual relationship.

One of the tool's strengths lies in its simplicity of application and execution. A white sheet with a circle serves as a metaphor for the family space, and family members use symbols to represent their mutual positions and relationships. The drawing, accompanied by verbal and non-verbal communication, becomes valuable material for the family's relational assessment.

Moreover, the instrument can be administered twice during the same session, inviting the family to imagine their situation at a certain timepoint in the past or in the future, depending on the clinical objectives.

When explaining the tool, family members need to understand the placement of symbols and the representation of emotionally significant events.

These straightforward instructions, albeit somewhat ambiguous, guide the family in addressing the task. Family members are then asked to indicate the perceived quality of relationships using lines, revealing not only the relationship qualities but also whether they are aligned, distinct, or share a common line of action.

4 Analysis criteria

The Family Life Space (FLS) has been conceptualized and employed since its development with clinical purposes and mainly used within a qualitative research methodology that relies heavily on inferential procedures of a phenomenological-interpretative nature (Mostwin, 1980). The interpretive process assigns psychological meaning to the graphic elements presented by family members, forming the basis for the evaluation of the depicted elements.

Within this framework, specific emphasis is placed on certain formal and topographic aspects of the representation. These include the frequency, quality (positive or negative), and positioning of individual elements, the presence or absence of lines, the distribution within and outside the circle, and the presence vs. absence of symbols in specific areas of the drawing, specifically the center and the border of the circle. The overall representation, its gestalt, is also considered, and this aspect is associated with an overall assessment of the family functioning.

The main indicators for interpreting the FLS can be summarized as follows. These indicators arise as clinically meaningful given the research and clinical applications of the tool over the past 25 years. The FLS has been utilized across various contexts, including assessment, consultation, and psychotherapy, catering to a range of populations such as families with elderly members, families of adolescents, immigrant families, as well as separated and blended families and family with disabled children (Gozzoli and Tamanza, 1998, cit.; Gozzoli and Tamanza, 2000; Tamanza, 2000; Onnis et al., 2010; Canzi and Rosnati, 2011; Gozzoli et al., 2012; Gennari et al., 2015, cit.; Gennari et al., 2018; Tamanza, 2018). In all scenarios where the FLS has been utilized, the indicators we present hold significance in distinguishing between family dynamics and functioning:

1 Drawn symbols: The coding procedure involves several steps. Initially, the symbols drawn by each individual family member and collectively by the entire family are tallied. Comparing the number of symbols drawn by each member offers valuable insights into specific family dynamics, such as the level of intimacy, willingness to disclose oneself in front of others, and the power and influence of one family member over the others (Olson, 2000; Madanes, 2014). However, the primary focus lies in the qualitative interpretation of the drawn symbols, which provide relevant clinical information. This includes identifying who is included in the drawing and who is omitted, recognizing repetitions of symbols as well as symbols that are unique to a specific family member. Quantifying each participant's contribution to the overall representation sheds light on how family members allocate roles, responsibilities, tasks, power, and affection. The comprehensive evaluation of symbols facilitates both quantitative assessment, indicating the richness or paucity of family elements and themes, and qualitative assessment, revealing joyful, significant, problematic, and dramatic events the family has encountered.
2 Connecting lines: In this case, it is important to record the quantity of lines connecting the various elements in the drawing. This entails recording both the number of connections drawn by each family member and the overall count of connections. Moreover, the quality of such connections (positive, negative, or neutral) is also acknowledged together with the member(s) responsible for drawing a higher versus lower number of connecting lines. The overall consideration of the number and quality of connecting lines provides an insight on the complexity and nature of family bonds (Szydlik, 2012): connections solely among elements within the family, connections solely with symbols external to the family, or balanced connections between internal and external elements provide a direct understanding of the family enmeshment/detachment and of its inner and outer boundaries (Minuchin, 2018).
3 The center of the circumference holds geometric significance, being equidistant from every point on the circumference. As per the homology principle previously highlighted, occupying the center signifies relevance, power, and centralization of the family organization. It also indicates the presence of significant relations with other elements in the drawing and among family members (Mostwin, 1982).
4 Occupation of the circumference: The border of the FLS's circle is a defining line, separating and enclosing, creating a space that separates the inside from the outside. In this respect, particular attention should be placed to which symbols fall within the circle and which are placed on the border or outside the circumference. The topic of family boundaries has been extensively explored by Minuchin (2018), cited; who defined families as centripetal or centrifugal, based on their ability or inability to relate to and integrate external elements. In this context, the occupation of the border may also signify the family members' capability to create and share a liminal space for connection. The border is viewed as a common area bridging inner and outer spaces while also creating a shared ground among family members. In essence, borders are openings that facilitate the encounter with the others and openness to novelties, thus symbolizing a willingness to change and transform (Cigoli, 1992, cited; Gennari and Tamanza, 2022). In this perspective, determining whether only specific family members can cross and inhabit the boundary or whether this represents a distinctive family trait is particularly interesting.
5 Gestalt coding: This aspect allows for an understanding of the family as a unit. When the overall composition is considered,

the above-mentioned homology between the drawing-making process and the family organization is most relevant. In fact, it is precisely the gestalt which uncovers the signs of family spatiality, understood not as a geometric space, or a purely representative one, but as a lived space, filled with affections and meaning. The gestalt resulting from the collection of all the individual symbols shows a representation of the family organization and it enables the emergence and understanding of the family dynamics. Over time, the systemic-relational paradigm (Cigoli and Scabini, 2006) has grappled with the challenge of gathering supra-individual information. This instrument permits the observation of family members individually, as well as in dyads (Tamanza et al., 2018) and triads. This is particularly pertinent as the theoretical foundations of the relational-symbolic model posit that relations are better understood from a triangular perspective or using a triangular matrix. Additionally, the overall image is indicative of the "gestalt" (Cigoli, 1992, cited; Lobb and Conte, 2018) - the specific form experienced and expressed by the family at a given moment. The gestalt coding process involves two levels: the first pertains to the analysis of the geometric figure obtained by ideally connecting all the outer symbols drawn by each family member and comparing the resulting polygon with those of other family members. This identifies, for each family member, the portion of space occupied and its relation (closeness vs. distance; up vs. down) to the space occupied by others. The second level involves comparing the area of the circle to the geometric figure obtained by connecting all the outer elements drawn by the entire family. This comparison yields four possible scenarios: (1) "concentration," where the family's polygon is contained within the circle but does not occupy the entire area; (2) "filling-saturation," where the circle is dense with symbols and overlapping connections; (3) "measurement," where family members each occupy a specific sector of the circle with few close symbols; and (4) "separation," where family members occupy specific sectors with no contact or shared areas (Gozzoli and Tamanza, 1998, cited; Tamanza, 2018, cited).

6 Comparison between two FLS productions - present/past or present/future: Families can be administered the instrument twice, providing a representation of the family in the present and offering insights into the family's past or potential future. Depending on the clinician's goals, family members are instructed to reflect on a specific moment in their past or imagine a moment in the immediate or distant future. The two versions of the drawing are then compared and evaluated based on the aforementioned indicators. This examination allows for an assessment of changes that have occurred or are expected/feared, offering valuable prognostic indicators and insights for clinical work. Such comparisons may also provide insights for future work, revealing shifts and transitions promoted or hindered by the family, deepening our understanding of family functioning (Cigoli, 1992).

Table 1 provides a concise summary of the areas and indicators used in the FLS interpretation.

It should be reminded that the drawing interpretation is not solely based on individual and collective graphic productions; transcripts of family interactions and exchanges are also taken into consideration. Throughout the process, family exchanges contribute to understanding the qualitative attributes and meanings attached to each symbol, their positioning, and their mutual relations. The process of interaction in drawing is read qualitatively through the following indicators: cooperation (designing the drawing together and agreeing on who draws what), consensus (expressing verbal agreement on a member's drawing), abstention (not interacting with family members during drawing or not drawing when prompted by a family member), dissent (verbally expressing objections or disagreements regarding someone's drawing), conflict (drawing together becomes an occasion for argument or conflict among family members). The indicators have been selected from the most recent literature on observing family exchanges (Kerig and Lindahl, 2001; Seikkula et al., 2012). In this perspective, this instrument relies on a multidisciplinary approach.

The Family Life Space (FLS) enables clinicians to thoroughly and systematically analyze the essential elements present in the graphic-symbolic representation created by the family. The analysis of the areas and elements described above yields a wealth of information. However, these measurements do not automatically correspond to specific profiles or characteristics of family functioning. They require interpretation in alignment with the tool's underlying theoretical assumptions and the unique attributes of the individuals within the family. For example, similar drawings in terms of portions of the space occupied by members or the position of the elements may have completely different interpretations depending on whether the family comprises only adults or also includes children. The same principle applies when considering the overall figure: the geometric figures resulting from connecting various elements in the drawing take on different meanings according to the elements involved in the figure formation (e.g., a parent or a child, a present or absent person, an organization, or a critical event).

For these reasons, it's crucial to discuss the findings of the drawing with the family. This is a second and indispensable level of analysis that validates the hypotheses generated by the tool and unveils the underlying meanings of the geometric and spatial shapes produced. It also serves as a means for eliciting thoughts, emotions, memories, and plans. In this way, the tool becomes an opportunity for stimulating reflection and change.

5 Case study

A case study illustrating the use of the FLS as a family assessment tool will now be presented. The marital couple was referred to the psychologists by the family Court amidst a highly contentious separation process. The family is composed of the mother, father and three siblings, two of which are adults and have long started living independently.

We will first examine the drawing created by the family and then proceed with a clinical interpretation of the results using the indicators outlined above. The instrument was administered to a family consisting of a father (53 years old), a mother (45 years old), and their son, Pietro (14 years old).

Figure 1 displays the family's drawing. It is immediately evident that the family, comprising three present members, engaged in the assigned task in a quantitatively uneven and unbalanced manner, both in terms of the number of symbols and connections.

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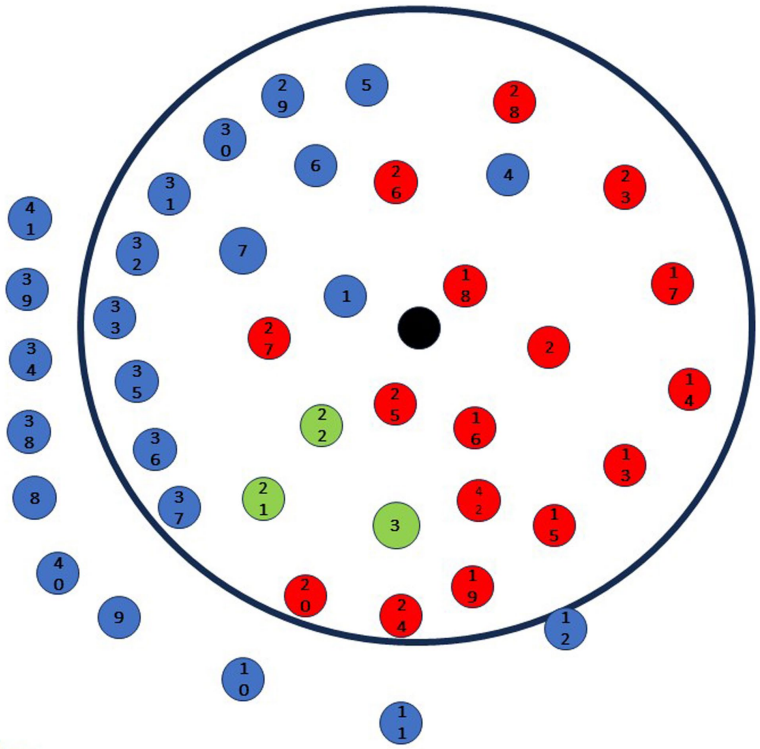
TABLE 1 Indicators of Family Life Space.

Area of the sheet	Unit of analysis	Unit of observation	Data collection	Clinical insight
Points/symbols	Each member	Number of points	Frequency	Comparison between members, in search of the differences/similaritties and key characteristics of the family members
		Quality of points	Count positive and negative elements	
			Presence-absence, repetition	
	Family	Number of points	Frequency	Richness/poverty of contents and themes
		Quality of points	Frequentcy of positive and negative elements	Quality of the themes/events and avoidance/repetition
			Presence-absence, repetition	Quality of the themes/events and avoidance/repetition
Lines/connections	Each member	Number of lines	Frequency	Comparison between members, in search of the differences/similaritties and key characteristics of the family members
		Quality of lines (positive, negative, so-so)	Frequency of positive, negatives and so-so lines	
			Presence-absence, repetition	
	Family	Number of lines	Frequency of positive, negatives and so-so lines	Comparison between positive and negative relatiosnhips
		Which points/symbols are connected and which aren't	Observation of the points connected amomg them	Capability of giving value to the people/events within the family and/or outside the family
Center of the circle	Center of the circle	Occupied/empty	Observation of the center	Presence/absence of an element organizing the family
		Who/what occupies the center	Observation of who/what occupies the center	Power dynamics, roles played in terms of family organzation, influence and family relations
Border	Border of the circle	Crossed/not crossed by lines	Observation of the lines crossing the border	Openness toward the external environment on the side of one or more family members; assumption of a centriguge or centripetal position on the side of one or more family members
		Presence of points/symbols	Observation of the points/symbols on the border	Elements/themes occupying a marginal posotion with repsect to the family and the social context
Gestalt	Each member's geometrical figure	Idetifying the figure connecting the points drawn by each family member	Observation and drawing of an imaginary line connecting the outer points of each member's drawing in order to define the portion of space occupied by each family member	Comparison between the figures obatained for each family member in order to explore their closeness/dustance as well as their influence on the family structure and organization
	Family's geometrical figure	Idetifying the figure connecting the points drawn by all the family members	Observation and drawing of an imaginary line connecting the outer points of the overall drawing in order to define the portion of space occupied by the family as a whole	Identifucation of the family form by comparing the family polygon with the circle: concentration, filling-saturation, measurement, separation
Comparison between the two administrations (present-future or present-past)	Each member's drawing	Highlight the differences/similarities with respect to drawings by each family member	For each family member, identify the changes in the points, connections, positions with respect to the center and the border	Highlight the individuals' willingness/openness to change (if the future versioni s administered); explore how each family member perceived the changes (if the past version is administered)
	Family's drawing	Highlight the differences/similarities between the two drawings	Compare the two drawings overall in terms of the changes in the points, connections, positions with respect to the center and the border	Highlight the family's openness to change (if the future version is administered); explore the perceived changes (if the past version is administered)



1 Mother
2 Father
3 Pietro 14 y..
4 Children
5 Family of origin
6 Colleagues and friends
7 Friends
8 Colleagues
9 ex Husband and his family
10 People who left because of my separation
11 Acquaintances
12 Psychologists
13 Close Relatives
13b Children's Friends
14 Children
15 Wife
16 Relatives
17 Wife's relatives
18 Assistance and support from psychologists and lawyers
19 Colleagues and collaborators
20 Acquaintances
21 Family... in general
22 Friends
23 Meeting and marriage with the wife
24 Separation
25 Red Cross
26 Parents' death
27 Birth of children
28 Quitting smoking
29 Anniversary of a new life
30 Birth of children
31 Work
32 Children's education
33 Separation
34 Marriage
35 Father's and grandparents' death
36 118 (emergency services number in some countries)
37 Friends' death
38 Social Services of the court
39 Discovery of cancer
40 Religious groups
41 Many heavy arguments
42 Religious friends

FIGURE 1
Graphic-symbolic drawing made by the family: points.

Regarding the elements in the drawing, the mother (indicated by the color blue) drew 23 points, the father (red) drew 15 points, and Pietro (green) only drew two elements. While the parents positioned themselves in the middle of the circle, symmetrically with respect to the center (see points 1, 2, 3), Pietro placed himself below and in an intermediate position between them. There is a clear prevalence of points drawn by the mother, while Pietro's perspective is underrepresented.

In terms of content, the mother, in addition to family members and her job, depicted her extended family network, significant positive and

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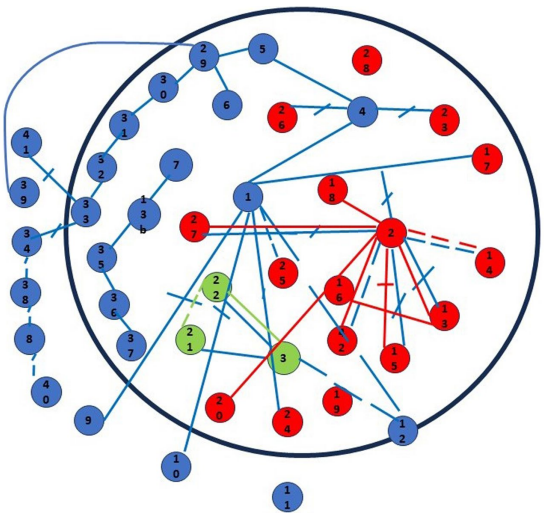


FIGURE 2
Graphic-symbolic drawing made by the family: connections.

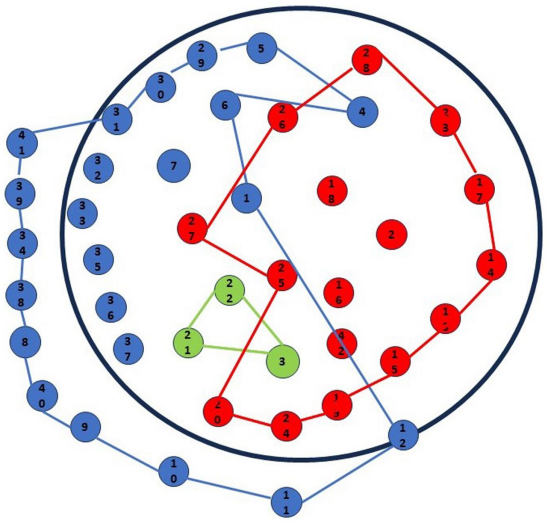


FIGURE 3
Graphic-symbolic drawing made by the family: individual and family shapes.

negative life events, both personal and family-related, and the people connected to them. The father, in addition to family members, represented his colleagues as well as some personal and family life events. Pietro represented the family with a single point and subsequently used another point to collectively represent his friends. Regarding the quality of the elements in the drawing, both parents depicted positive and negative events. However, Pietro did not represent any aspect of his life, except, as previously mentioned, his family and friends. There are multiple repetitions between the two parents, especially regarding family members, work colleagues, and some specific events (i.d., the birth of their children, their marriage, and separation).

As shown in Figure 1, the mother starts drawing and is followed by the father and their son. After the first round, the mother and father take turns drawing various elements."

Several conclusions can be drawn by examining the connections between the elements (see Figure 2): the mother not only links the points she has drawn among themselves but also traces lines connecting her son's and husband's points. She eventually connects some of her points with those of her husband, totaling 34 relationships drawn by the mother. The father draws nine connecting lines exclusively among the symbols he drew, while the son draws only two lines, solely among his symbols. Once again, the mother represents more relationships and is the only one connecting the symbols of the other family members.

Concerning the quality of the mother's relationships, 16 are considered positive (i.e., represented by continuous lines) and tie her symbols and those drawn by her son, 10 are seen as negative (i.e., an interrupted line) and mainly regard her husband's symbols and some specific events in her life, eight are viewed as fair (i.e., represented by a dotted line) and they are evenly distributed among her own symbols and those of her husband. In conclusion, positive relationships are drawn between elements of the mother's personal life and her family members, while problematic or conflictual relationships are observed regarding her marriage, separation, and some members of her husband's family. Relationships with the institutions and other professionals involved in the separation are ambivalent ("so-so"). Particularly interesting is the observation of the negative relationships drawn by the mother, including between the father and the children, the father and some relatives of him, the father and her, the father and the birth of their children, the children and the death of paternal grandparents and the marriage of the parents. Additionally, negative relationships involve the husband and her relatives, and the relationship between the mother and the separation.

The father positively connects himself to the birth of their children, himself to religious groups as well as to acquaintances and close relatives. Negative relations he drew with his former wife while the bond with their children is seen as ambivalent. The only connection that does not directly involve him is the positive relationship between the relatives and close relatives.

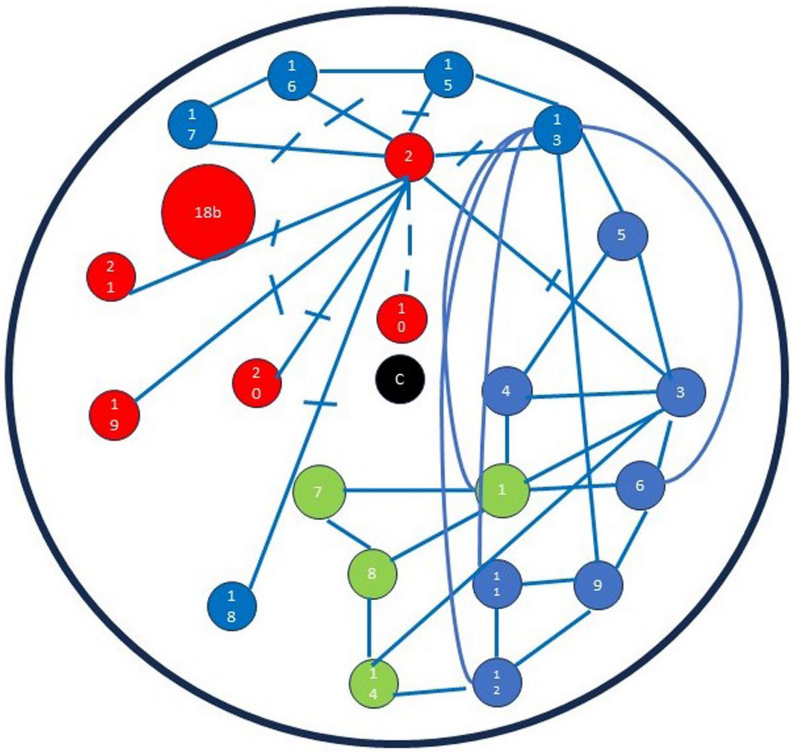
Pietro links his points by drawing an ambivalent relationship between his family and his friends and a positive relationship between himself and his friends.

When looking at the process, it should be noted that the parents took turns and almost shadowed one another when asked to draw connections between the points. Pietro remained on the sidelines until the parents had completed their work, and then he drew his two relationships.

With regards to the center of the circumference, Figure 2 shows it is occupied by two lines. The mother's line indicates a conflictual relationship, while the father's line is indicative of a positive one, both the lines connect the father to the birth of the children.

On the other hand, the boundary of the circumference is crossed by five lines (four of which indicate conflicting relationships), drawn by the mother. The border is also occupied by a point, once again drawn by the mother, representing the psychologists. The outside of the circumference is occupied by the mother with nine points representing events and people with whom she has a conflictual or ambivalent relationship. This includes her marriage, illness, some people she considers hostile as well as her husband and his family.

Now, the overall gestalt of the drawing will be considered (see Figure 3).



1 Pietro
2 Father
3 Mather
4 Children and their families
5 Work collegues
6 Family
7 Friends
8 Family
9 Friends
10 Children and their families
11 Emergency services
12 University
13 Being here
14 Driver's license
15 Meetings with children at home
16 Being a grandmother
17 Graduated children
18 Legal issues
18b Legal issues
19 Being a grandfather
20 Wife with a clear mind
21 Children who think for themselves

FIGURE 4
Graphic-symbolic drawing made by the family: the future (in 5 years).

The points drawn by the mother and father occupy two opposing and symmetrical areas of the sheet with extensive overlapping in the middle. The balance and tension between the maternal and paternal realms, encompassing the entire circle, are clearly visible. In contrast, Pietro's drawing occupies a relatively small area on the sheet, primarily within the mother's domain and partially within the father's.

The polygon formed by connecting the outermost points in the family drawing mirrors the shape of the circumference but also extends beyond its border. The circumference is entirely filled with points.

In addition to the present version, Pietro's family also completed a future iteration of the FLS. Specifically, the family was asked to envision their situation 5 years from the present. Figure 4 depicts the results of this second administration.

In terms of the points, the mother draws 11, the father draws six, and Pietro draws four. Notably, Pietro initiates the drawing process, followed by his father and then his mother. The events depicted are predominantly positive, except for a symbol drawn by both parents representing legal issues. The interactive and fluid alternation of family members on the sheet during this second administration is evident in the legend of Figure 4.

The relationships between points are only drawn by the mother and Pietro. The mother connects her points positively, as well as those of her son. Conversely, all relationships between her points and those drawn by her former husband are either negative or ambivalent. Pietro establishes positive connections between his points, envisioning positive relationships with his family and friends.

The center is now vacant, with a symbol representing the future families of the children just above it. The circumference's boundary, as well as the area outside the circle, are not occupied by any symbols of lines.

Regarding the area occupied by individual representations, Figure 5 reveals a contraction of the areas occupied by the parents and a slight expansion of Pietro's area. Specifically, the mother's area remains the largest, while the father's area is considerably more limited. There is a partial overlap between these two areas, and Pietro's area is almost entirely enclosed in the mother's domain.

The figure obtained by connecting all the family members' points fills the circle but white space can still be seen: the points and relationships do not appear to completely saturate the area inside the circumference. This configuration can be classified a measured, according to the definitions provided above. Measurement is characterized by each family member occupying a specific sector of the circle while symbols and relationships are well differentiated (see Figure 2).

The comparison between the present (see Figure 2) and future (see Figure 4) versions of the FLS shows some interesting changes. Firstly, the parents reduce the number of points they each draw, while Pietro's presence is increased, albeit only with the addition of only one element. In terms of quality, the points drawn by both parents lose their negative connotation: only legal issues are viewed as negative and drawn by both parents. It is interesting to note that Pietro adds the "driver's license" as a significant event. The father does not draw any relationships in the second administration, while the mother's only problematic relationships are those related to her former husband; all the relationships with her own as well as with Pietro's symbols are positive. Pietro confirms his positive connections with his friends and family. In the second version, the center is no longer occupied, and the boundaries and outside area appear empty. When the area occupied by each family member is observed, a less poignant contraposition between the mother's and father's drawings is noted: while the father shrinks his domain both in terms of number of points and connections, the mother still takes up a large amount of space with both points and connections between them.

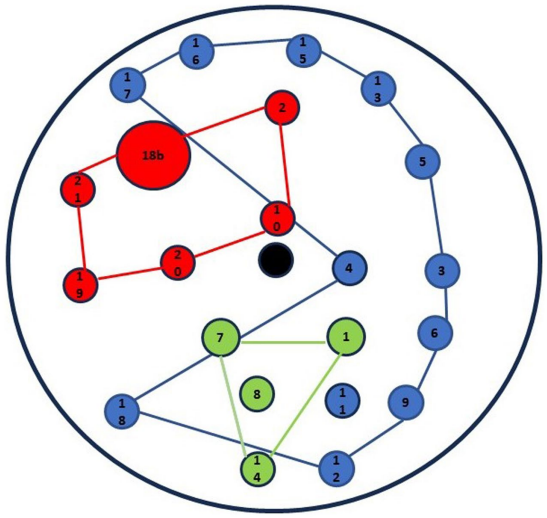


FIGURE 5
Graphic-symbolic drawing made by the family: individual and family shapes in the future (in 5 years).

In both the administrations the mother takes up a domineering role, to the point that she is the one drawing the larger number of elements and connections, moreover, a difficult relationship with the area outside the circle can be observed both in the present as well as in the future version. While in the present the points falling outside the circle are extremely close to its border and are generally given a negative connotation, in the future version there are no points or lines outside of the circumference.

6 Clinical interpretations

The data and conclusions derived from administering the Family Life Space (FLS) contribute to formulating a clinical interpretation of the family. As previously mentioned, the FLS was administered to three individuals within the same family: Pietro, 14 years old; the father, 53 years old; and the mother, 45 years old. Pietro is the youngest of four siblings, with the other three being above 18 at the time of the evaluation.

Over the past 8 years, the parents have been entangled in a highly conflictual judicial separation, involving the family court. The father contested the judge's decision on custody arrangements, claiming persistent difficulties in visiting his children. Specifically, he found it impossible to see his youngest son, Pietro, in the recent period. On Pietro's part, he does not wish to adhere to the judge's decision regarding visitation schedules.

Given this situation, the judge referred the entire family to a psychologist for an evaluation of family dynamics, aiming to better understand Pietro's needs and decisions and assist in developing more functional relations between the adolescent and his parents. The evaluation process unfolded gradually, with individual sessions with the parents and children separately and some couple sessions before the FLS administration with the entire family.

What insights can we glean from the FLS administrations?

To begin with, it is readily apparent that the mother commands a substantial presence on the sheet: she is the one initiating the drawing. Moreover, her symbols outnumber those drawn by her ex-husband and son. The father draws fewer symbols, occupying a smaller opposing space to that of his former wife. Pietro, in contrast, depicts only two points in addition to himself and positions them beneath his parents' symbols. The mother plays a major role in determining family dynamics, exerting power and influence over the other members, as we will later elaborate on with other indicators.

Regarding the content (quality of the elements in the drawing), Pietro's representation is limited to the essential (his family and friends), while the mother's drawing is detailed, depicting both positive and negative events (these latter are mainly related to her ex-husband, the separation, and illness).

The father's drawing includes symbols representing his family and life events, most given a positive connotation, except for the separation. The elements provide a rich understanding of the parents' lives, especially the profound impact of the separation. Pietro remains a passive observer of his parents' drawing process.

Connections in the drawing confirm previous observations, with family patterns recurring across administrations: the mother explicitly conveys the negative connotation attached to her

relationship with her former husband, the post-separation life, and the discovery of the tumor. Conversely, her other relationships, particularly those with her family and job are seen as positive. In this second administration, the mother goes to the point of connecting elements she did not draw (i.e., her ex-husband and her son). More specifically, the connections regarding Pietro are viewed as positive by the woman, whereas those pertaining her former husband are mainly negative. In this perspective, she imposes her interpretation on elements drawn by other family members, taking up all the space available and drawing a great number of lines. The father connects only the symbols he has drawn: positive (between himself and the birth of his children, himself and some religious groups, himself and acquaintances and close relatives), negative (between himself and his former wife), and ambivalent (himself and the children) connections are present. Thus, the father also expresses the conflict associated with the separation and the relationship with his ex-wife; in this perspective, his representation is both similar and opposed to that of his ex-wife. The drawing becomes the arena in which each of the parent re-enacts the family conflict in front of they son, Pietro, who observes impassively.

The mother and father have different views on specific relations; while they both consider father-children, father–mother, and father-close relatives' relations as negative, the relationships between the father and religious groups and the father and the birth of the children are viewed negatively by the mother and positively by the father. Of particular interest is the divergent perception between the mother and father regarding the father's relationship with the birth of their children. This connection assumes significant symbolic importance, and the mother disqualifies the father's experiences at the birth of the children, including Pietro.

It's crucial to note that Pietro, the youngest child, is present and exposed to his parents' conflicting views during the administration.

In light of this data, we question whether the irreconcilable differences between the partners emerged after the birth of the children or if the contrasting view of the father-children relationship sparked the conflict.

Pietro draws only two connections, expressing positivity with his friends and challenges between his family and friends. While typical for an adolescent, this picture raises questions about the hindrances to a positive relationship between Pietro's family and friends. These two domains currently remain irreconcilable, prompting further investigation by clinicians to shed light on Pietro's world.

Regarding boundaries, the drawings by the father and son never extend beyond the circumference, signifying that life is only possible within its safe haven. The circumference, as per FLS instructions, represents family space. The outside holds no psychological relevance and is uninhabited; individuals can only envision themselves within the family. We question whether this space outside family life will ever be inhabited, considering Pietro's developmental phase involves forming relationships and experiences outside the family.

From the father's perspective, the impossibility of crossing the boundary is relevant, posing questions due to the pervasiveness of family conflict. The mother, on the contrary, can inhabit the space outside the circumference with points and lines crossing the boundary. Symbols and connections outside the circumference have negative connotations, portraying the outside as populated by threatening and painful aspects—an attempt to externalize or distance oneself from those difficulties.

From a Gestalt perspective (see Figure 3), the geometric figures formed by connecting the points of each family member confirm their positions and roles: the mother occupies the largest portion of space, and the figures of the mother and father complement each other, occupying opposing yet partially overlapping areas on the sheet. These contrasting positions suggest a conflict between the parents, involving various elements, including Pietro and the parents themselves. Pietro's space is very limited, enclosed within his mother's drawing and partially within his father's. Consequently, Pietro is caught in the tensions between his parents that leaves him with no room for himself.

The hypothesis emerging from the Family Life Space (FLS) is that the intense conflict between the parents not only involves Pietro but also fails to provide the adolescent with sufficient space free from his parents' interference.

With regards the first drawing concerning the present moment, the family gestalt can be classifies as a form of "filling-saturation." The family space is dense and filled with points and relationships (see Figure 2), indicating limited possibilities for opening up to new events, as the family space within the circumference is entirely occupied. Interpreting such an indicator prognostically is complicated, as the current dysfunctional dynamics seem to hinder any change.

It is the comparison between the current and future version of the FLS that allows to draw some conclusions regarding the space for change available to this family.

In the future version, both the mother and father draw a lesser number of points, and these points mainly carry a positive connotation, except for the judicial separation. Pietro adds one element to those drawn in the present version: the driving license, symbolizing partial autonomy. The fact that Pietro initiates the drawing indicates greater participation and assertiveness. Moreover, when the drawings contents are considered, greater individual and family proactivity can be acknowledged.

With regards to the connections between the elements, the mother replicates the same patterns shown in the previous administration: she connects her own and Pietro's symbols with straight lines, indicating positive relationships. The lines connecting herself to her ex-husbands' symbols as well as those connecting the man's points are, instead, dotted, to suggest an ambivalent, "so-so" relationship. Pietro's connection are all positive while the father does not draw any connecting lines. The persistence and repetition of the same dysfunctional and invasive pattern on the mother's side strike as problematic. On the other hand, the father appears to give up on relationships, while Pietro proposes a positive resolution to the present conflict. The family demonstrates the capacity for change, with the father and son being the main promoters.

Interestingly, the center of the circumference is now empty; just above the center, there is a point representing the children's future families. This point might signify the family's ability to evolve and change.

In the second version of the FLS, the border and the area outside the circumference are empty, indicating a persistent difficulty for the family in envisioning connections with the outside world, possibly due to intense internal conflicts.

Considering both individual drawings and the overall graphic production, Figure 5 reveals significant changes compared to the previous FLS. The parents now occupy a smaller portion of the space available, indicating a limited yet not precluded possibility to redefine the spaces occupied by each family member and the relationships

among them. The overlap between the mother's and father's drawings is reduced, and Pietro's polygon is now only partially enclosed within that of his mother.

The different drawing obtained in the future version suggests a more balanced distribution of space within the circumference and a reduction in conflict between the parents. From a gestalt point of view, the family's drawing can be now classified as "measured"; according to the definitions provided above, measurement occurs when each family member occupies a specific sector of the circle and their symbols and connections are well-differentiated (see Figure 2).

7 Conclusion

A large body of research, documenting the impact of a family's functioning on health outcomes, highlights the importance of introducing the evaluation of family dynamics into clinical judgment.

It's abundantly clear that delving into the intricate dynamics of family life demands a nuanced approach like the multiple informant methodology proposed by Wagner et al., (2010). This methodological framework proves indispensable for capturing the nuanced interplay of interpersonal dynamics within families. By employing a diverse array of quantitative, qualitative, or mixed methods, researchers can delve deep into the multifaceted nature of familial relationships.

Quantitative methods, for instance, offer a structured means of extracting individual perceptions and experiences within the familial context. These data points can then be statistically transformed into dyadic scores, enabling researchers to glean insights from multiple perspectives within a family unit. Within scholarly literature, a plethora of quantitative scales exists, each stemming from a systemic understanding of family dynamics. These scales are designed to explore various family theoretical constructs such as cohesion, flexibility, communication, affectivity, commitment, and problem-solving (Hamilton and Carr, 2016).

However, it's noteworthy that the Family Life Space (FLS) predominantly adopts a qualitative stance. Qualitative methods focus from mere quantification to a deeper exploration of the 'how' behind familial interactions, prioritizing the qualitative richness of shared experiences (Lanz et al., 2017). Thus, the qualitative approach offers a more holistic understanding of family dynamics, emphasizing the intricacies of relational dynamics over mere statistical metrics.

By encouraging collaborative data production among family members, qualitative approach acknowledges the family unit as a whole—a web of interdependent individuals rather than a mere sum of its parts. Morover, the term "family functioning" - from a family system perspective which assumes that the family members are part of a complex integrated system-refers to the ability of the family to work together as a unit to satisfy the basic needs of its members (Ryan and Keitner, 2009). Hence, it becomes imperative to utilize instruments that authentically evoke family interactions, enabling the observation of their dynamics within an ecological framework that minimizes deviations from real-life settings.

There is a scarcity of instruments in our repertoire designed to observe families in action and offer comprehensive insights into their dynamics. Among those familiar to us, we note Family Sculpture (Onnis et al., 1994), the Conjoint Family Drawing (Gennari and Tamanza, 2022), the Family Interaction Game (Favez et al., 2016), and the Lausanne Trilogue Play - LTP (Fivaz-Depeursinge and Corboz-Warnery, 1999), the Double Moon (Greco et al., 2020). The commonality among them lies in the systemic observation of family members engaging in activities, yet the specific observation indicators may vary. The FLS unquestionably falls within this category, sharing with the aforementioned tools not only a theoretical background but also the capacity to conduct clinical research while being applicable in clinical practice. Their utilization merges diagnostic assessment with prognostic aims, and the empirically significant information they yield complements clinical endeavors by stimulating facets of awareness and reflection.

The Family Life Space (FLS) holds numerous advantages, combining methodological robustness with adaptability across various contexts. It serves as an interactive tool for evaluating families from a relational perspective. Methodologically, the coding procedure relies on specific and objective elements, facilitating the collection of easily verifiable information that can be shared among clinicians and researchers (Mascolo, 2016). This instrument offers insights at individual, relational, and interactive levels, utilizing a unique approach to studying family relationships and providing specific insights into family dynamics. Unlike self-report instruments that gather individual perceptions, the FLS is a collaborative task involving all family members simultaneously. Self-report instruments are often ill-suited for investigating family relations, which are better assessed through interactive and relational tools (Seale, 1999; Tagliabue and Lanz, 2004). Interactive tools for generating relational information are currently rare and largely confined to clinical or qualitative use (Gilgun and Sussman, 2014).

Furthermore, the interactive nature of the FLS does not require family members to directly engage with the researcher while disconnecting from their family system. Instead, information is gathered by observing the family in its own environment, adopting an ecological perspective. The collaborative nature of the task allows each individual's production to be viewed within a larger context and in relation to those of other family members.

As demonstrated in the case above, the set of elements identified and gathered through the instrument's analysis serves as a valuable guide for the subsequent clinical interpretation of the family-provided information. Rather than offering a mere interpretation, it facilitates a shared, intersubjective understanding of the obtained information.

Moreover, its simple instructions and straightforward administration procedure make the instrument extremely versatile and easily applicable to both research and clinical assessment. In research settings, the FLS can compare different families, considering their respective lifecycle stages or the events members are facing (e.g., birth of a child, death of a parent, adolescence of a child, etc.). Comparisons can also be made regarding family structure and functions, such as parenting roles or the position held by children within the family or couple dynamics.

In clinical practice, the FLS allows for the interpretation of individual, relational (dyadic), and gestalt aspects of the family. Considering all these intertwined aspects provides insight into family dynamics and allows for the emergence of a holistic, complete picture. Finally, its simple instructions and administration procedures make it suitable for various individuals and families, including those with limited language proficiency (Gennari et al., 2015).

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Ethics statement

Ethical approval was not required for the study involving humans in accordance with the local legislation and institutional requirements. The studies were conducted in accordance with the local legislation and institutional requirements. Written informed consent for research purposes was obtained from all adult participants engaged in the clinical assessment. Written informed consent for participation in this study was provided by the participants' legal guardians/next of kin. Written informed consent was obtained from the individual(s) for the publication of any potentially identifiable images or data included in this article.

Author contributions

MG: Writing – review & editing, Writing – original draft, Methodology, Investigation, Conceptualization. CG: Writing – review & editing, Writing – original draft, Methodology, Investigation, Conceptualization. GT: Writing – review & editing, Writing – original draft, Methodology, Investigation, Conceptualization.

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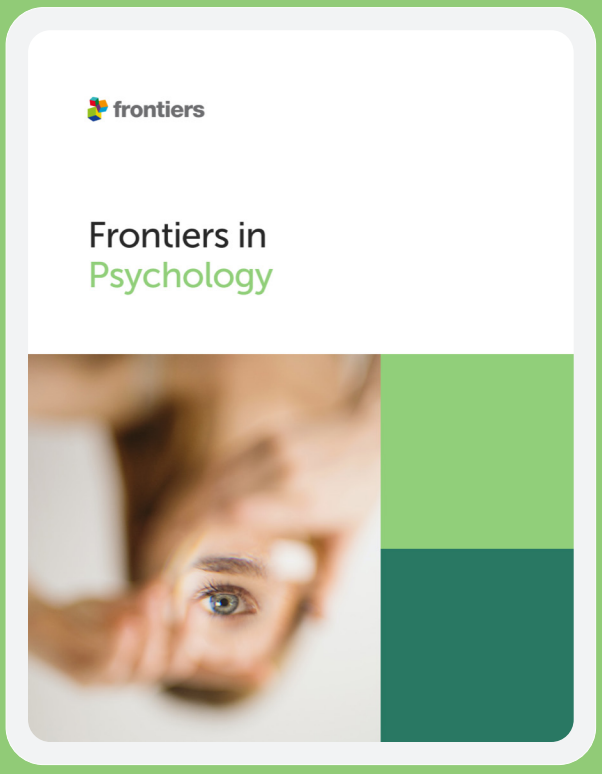

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