European Journal of Mental Health
https://doi.org/10.5708/EJMH.21.2026.0058

RESEARCH ARTICLE

Differing Perceptions of Family Functioning Among Adolescents with Eating Disorders and Their Family Members in a Hungarian Sample

Noémi GYENIS-KÁTAY [1,2] ✉, Klára SOLTÉSZ-VÁRHELYI [3], Bethany HAMILTON [4], Balázs JOHN [5,6], Athéna VAKALIOSZ [7], Dávid ROTTMAYER [7], Krisztina DORN [8], and Szabolcs TÖRÖK [9]

OPEN ACCESS

Affiliations
[1] Semmelweis University, Doctoral College, Division of Mental Health Sciences, Budapest, Hungary
[2] Bethesda Children's Hospital, Early Intervention and Diagnostic Service (KIDSz), Budapest, Hungary
[3] Pázmány Péter Catholic University, Faculty of Humanities and Social Sciences, Institute of Psychology, Budapest, Hungary
[4] Wheaton College, School of Psychology, Counseling, and Family Therapy, Wheaton, IL, USA
[5] University of Pécs, Hungary;
[6] Ego Clinic, Budapest, Hungary
[7] Heim Pál National Pediatric Institute, Adolescent Eating Disorder Unit, Budapest, Hungary
[8] University of Pécs, Department of Pediatrics, Child and Adolescent Psychiatry Unit, Pécs, Hungary
[9] Semmelweis University, Faculty of Health and Public Administration, Institute of Mental Health, Budapest, Hungary

✉ Correspondence
Noémi GYENIS-KÁTAY
Semmelweis University, Doctoral College, Division of Mental Health Sciences, Budapest, Hungary
Nagyvárad tér 4, 1089 Budapest, Hungary
Email: gyeniskatay@gmail.com

History
Received: 26 February 2026
Accepted: 6 June 2026
Published: 1 July 2026

Citation
Gyenis-Kátay, N., Soltész-Várhelyi, K., Hamilton, B., John, B., Vakaliosz, A., Rottmayer, D., Dorn, K., & Török, S. (2026). Differing perceptions of family functioning among adolescents with eating disorders and their family members in a Hungarian sample. *European Journal of Mental Health, 21*, e0058, 1–18. https://doi.org/10.5708/EJMH.21.2026.0058

Introduction: Family functioning is closely linked to adolescent anorexia nervosa, yet family members often differ in how they perceive family relationships and processes.
Aim: To examine differences in perceived family functioning among adolescents with anorexia nervosa and their family members, and to explore associations with well-being and perceived stress.
Methods: The sample included 72 Hungarian families entering family therapy (N = 243), comprising adolescents with anorexia nervosa, mothers, fathers, and siblings. Family functioning was assessed with the McMaster Family Assessment Device (FAD), well-being with the WHO Well-Being Index (WBI-5), and perceived stress with the Perceived Stress Scale (PSS-4). Linear mixed models with random family intercepts were used to account for clustering within families.
Results: Significant family-level clustering was found for overall family functioning and all FAD subscales. Patients reported poorer family functioning than mothers, fathers, and siblings, particularly in Communication, Behaviour Control, and General Functioning. Poorer perceived family functioning was associated with lower well-being and higher perceived stress. Family role remained a significant predictor of both outcomes.
Conclusions: Family members of adolescents with anorexia nervosa differ systematically in their perceptions of family functioning, with patients reporting the greatest difficulties. These findings support the value of multi-informant assessment and suggest that discrepancies in family perceptions may provide clinically relevant information for family-based treatment.

Keywords: Hungarian clinical sample, Family Assessment Device, anorexia nervosa, family functioning, family discrepancies

ISSN 1788-7119 (online)
© 2026 The Authors. Published by Semmelweis University, Institute of Mental Health, Budapest.

Introduction

Eating disorders represent a major clinical concern in adolescence, as they are associated with substantial psychiatric and medical comorbidity, impaired quality of life, and elevated mortality (Chesney et al., 2014; Jenkins et al., 2011; Udo & Grilo, 2019). Anorexia nervosa is particularly serious within this group due to its severity, potentially life-threatening medical complications, and the burden it places on both patients and their families. For many decades, however, eating disorders were widely regarded as primarily culturally-bound phenomena, closely linked to Western ideals and sociocultural pressures, and therefore assumed to occur almost exclusively in Western populations (Túry et al., 2010). Over the past two decades, this assumption has been increasingly challenged by research showing that eating disorders are also present in Central and Eastern Europe, including Hungary (Szumska et al., 2005; Túry et al., 2010). In Hungary, both historical and more recent findings indicate that eating disorders are not confined to Western contexts, but represent an increasingly relevant concern, particularly among younger populations (Túry et al., 2010, 2021).

While these prevalence studies provide an important epidemiological foundation, a growing body of literature has also highlighted the clinical relevance of family functioning and family dynamics in eating disorders, particularly in relation to symptom expression, family burden, and illness maintenance (Holtom-Viesel & Allan, 2014; Rienecke et al., 2024).

Theoretical Perspectives on Anorexia Nervosa in Family-Based Work

Family-based understandings of adolescent anorexia nervosa have evolved considerably over time. Early systemic and psychosomatic models drew attention to the relational organization of symptoms and suggested that anorexia may emerge and persist within family interaction patterns characterized by rigidity, overinvolvement, conflict avoidance, and difficulties around autonomy and boundary negotiation (Minuchin et al., 1978). Although these early formulations have later been criticized for their potentially family-blaming implications (Eisler, 2005; Le Grange et al., 2010), they were important in shifting attention away from purely intrapsychic explanations and toward the broader relational context in which symptoms are embedded.

Subsequent systemic approaches expanded this perspective. From a circular and interactional viewpoint, a symptom may be understood not simply as an individual pathology, but as part of a family process that both expresses and regulates tension within the system (Goldenberg & Goldenberg, 1996). Related transgenerational and Bowenian perspectives further highlighted difficulties in differentiation, the management of closeness and distance, and the transmission of relational patterns across generations, all of which may become particularly salient during adolescence, when developmental tasks of separation and individuation intensify (Bowen, 1978).

At the same time, more recent clinical models have moved away from etiological accounts that implicitly place responsibility within the family (Lock & La Via, 2015; Pászthy et al., 2020). In contemporary family-based approaches to adolescent anorexia nervosa, including the Maudsley model, parents are viewed not as causes of the disorder but as central resources in recovery (Lock & Le Grange, 2015; NICE, 2017). Within this framework, treatment emphasizes parental involvement in nutritional rehabilitation, the strengthening of family communication and collaboration, and the gradual return of developmentally appropriate control to the adolescent as recovery progresses (Lock & La Via, 2015; Lock & Le Grange, 2015).

In parallel, attachment and socio-emotional perspectives have highlighted the relevance of the quality of close relationships, emotional attunement, and difficulties in identifying and regulating emotions in adolescent eating disorders (Horesh et al., 2015; Lukas et al., 2022). Across these different traditions, a common assumption remains that anorexia nervosa unfolds within a relational context and that family processes are clinically meaningful—not because families can be reduced to pathogenic mechanisms, but because patterns of communication, emotional responsiveness, role organization, and behavioral regulation may shape how distress is expressed, perceived, and managed.

For the present study, these traditions are relevant as they provide a conceptual rationale for examining not only overall family functioning, but also how different family members may perceive the same family processes differently. If anorexia nervosa is embedded in a relational field, then variation in how adolescents, mothers, fathers, and siblings describe that field is itself likely to be clinically informative.

Multi-Informant and Discrepancy-Based Perspectives on Family Functioning

Family functioning is typically assessed through the reports of multiple family members, yet these reports often show only modest agreement. In adolescent mental health research, such divergences were long treated primarily

as nuisance variance or measurement error. More recent multi-informant frameworks, however, have argued that differences between informants may themselves carry clinically meaningful information rather than merely reflecting unreliability (De Los Reyes et al., 2013; De Los Reyes et al., 2015; De Los Reyes & Kazdin, 2005). This perspective has also recently appeared in the Hungarian literature, where Sulyok and Miklósi (2026) argued that informant discrepancies may represent contextually informative features of psychological assessment. Rather than assuming that one family member perceives family reality more accurately than another, these approaches propose that divergent reports may reflect differences in contextual salience, emotional involvement, and attributional processes within the same relational system.

De Los Reyes and Ohannessian (2016) argued that adolescent and parent reports of family functioning may converge or diverge in ways that are informative for understanding both family processes and adolescent adjustment. Likewise, Ohannessian et al. (2000) showed that such discrepancies were associated with adolescent self-competence. This line of work is further formalized in the Operations Triad Model (De Los Reyes et al., 2013), which distinguishes between Converging, Diverging, and Compensating Operations and proposes that at least some divergent patterns may yield meaningful insight into the contextual organization of symptoms rather than merely reflecting methodological weakness. A similar multi-informant logic has also appeared in eating-disorder research. For example, Mensi et al. (2022) compared adolescents with restrictive eating disorders, their parents, and clinical observers and found notable differences across informants, particularly in affective involvement and communication. Accordingly, the present study focuses not only on levels of perceived family dysfunction, but also on differences across family members' reports as clinically informative features of family functioning.

Previous Empirical Findings in Eating-Disorder Families

In a recent systematic review, Rienecke et al. (2024) provided a useful framework for interpreting individual studies of family functioning in eating disorders. Overall, diagnostic comparisons yielded only limited evidence for substantial differences between eating-disorder groups, although poorer family functioning was more often reported in cases involving binge/purge symptomatology than in restrictive anorexia nervosa. In contrast, discrepancies between family members' reports appeared more consistently, with patients generally rating family functioning more negatively than their parents. Although evidence on siblings remains comparatively sparse and has focused largely on sisters, the available studies point in a similar direction, with patients often reporting more impaired family functioning than their siblings. Importantly, this broader pattern is not best understood in a family-blaming framework. Rather, poorer family functioning may partly reflect the considerable strain imposed by the illness itself on the family system, as families often reorganize around the eating disorder and encounter difficulties in communication, coping, and everyday functioning. From this perspective, the more informative question is not simply whether eating-disorder families show dysfunction, but how different family members experience and evaluate the same relational processes from different positions within the family system. More specifically, these broader trends have also been reflected in individual studies examining role-specific discrepancies across particular domains of family functioning (e.g., Dancyger et al., 2005; Emanuelli et al., 2004; Gowers & North, 1999; Waller et al., 1990).

Among the measures used to assess family functioning in this literature, the McMaster Family Assessment Device (FAD) is one of the most widely used self-report instruments and has been shown to distinguish between psychiatric and non-clinical families. Importantly, the FAD assesses multiple domains of family functioning, including Problem Solving, Communication, Roles, Affective Responsiveness, Affective Involvement, Behavior Control, and General Functioning (Epstein et al., 1983; Miller et al., 1985).

In a sample of 126 female patients with eating disorders (mean age = 18.3 years), 118 mothers, and 96 fathers, Dancyger et al. (2005) found that daughters rated family functioning as significantly more impaired than mothers in Problem Solving, Communication, Affective Responsiveness, and Behavior Control. No mother-daughter difference emerged for Roles, and no significant father-daughter differences were found on any FAD dimension. In the same study, mothers and fathers differed in Problem Solving and Affective Responsiveness, indicating that discrepancies may arise not only between generations but also between parental roles.

A similar but more developmentally specific pattern was reported by Emanuelli et al. (2004), who compared 34 clinical families of adolescents with anorexia nervosa and 49 control families using the FAD. Clinical families reported significantly poorer functioning than control families on all FAD domains except Affective Involvement, but the most clinically specific within-family discrepancy concerned Communication. The Communication scale showed a significant group × family member interaction: clinical daughters rated family communication more negatively than

both clinical mothers (2.43 vs. 2.05; $t(33) = 4.16$, $p < .001$) and clinical fathers (2.43 vs. 2.18; $t(33) = 2.36$, $p < .030$), whereas control daughters differed only from their fathers. Thus, although the mean differences were numerically modest on the 1–4 FAD scale, the pattern was statistically supported and clinically relevant as it distinguished clinical from control families and highlighted communication as a particularly salient domain in adolescent anorexia nervosa.

Findings regarding fathers have been less consistent across studies. In Waller et al. (1990), which included 48 clinical families (14 with anorexia nervosa and 34 with bulimia nervosa) and 30 comparison families, daughters' FAD ratings differentiated clinical from comparison families on all six assessed dimensions. In contrast, mothers' ratings differentiated the groups only on Affective Responsiveness and Affective Involvement, and fathers' ratings did not differentiate them on any scale. In discriminant analyses, daughters' reports showed the greatest concurrent validity, correctly classifying 85.9% of families, compared with 79.5% for mothers and 66.7% for fathers. The daughters' discriminant function was based on Affective Involvement, Affective Responsiveness, Problem Solving, and Behavior Control, whereas fathers' ratings had the least discriminatory power. Waller et al. did not provide a strong explanatory account for this pattern, but suggested that it was unlikely to be explained solely by the smaller number of participating fathers and interpreted it more cautiously as indicating that fathers may have been less likely to share their daughters' perception of family interaction as problematic.

Additional support for discrepant perceptions comes from Gowers and North (1999), who studied 35 adolescents with anorexia nervosa and their mothers using the FAD, alongside clinician ratings from the McMaster Structured Interview of Family Functioning. They found that clinicians and patients were more critical of family functioning than parents.

The previous literature points to recurring but not fully consistent patterns of discrepant family perceptions. Adolescents with eating disorders often perceive family functioning more negatively than their parents, especially in communication-related, affective, and behavior-regulation domains. At the same time, the evidence is not fully consistent. The precise subscale-level pattern varies across studies, and findings concerning fathers are particularly mixed. While some studies indicate that fathers may be less likely than mothers or adolescents to report family interaction as problematic, others have found no clear adolescent–father differences. Evidence on siblings is even more limited.

These inconsistencies provide a strong rationale for multi-informant research, but the existing literature does not yet offer a stable or comprehensive account of how discrepant perceptions are distributed across the wider family system. First, most previous studies have relied on dyadic comparisons, typically focusing on daughters versus mothers, and less often daughters versus fathers. As a result, the family has often functioned more as a recruitment context than as the analytic unit itself. Although these studies have demonstrated meaningful differences between selected informants, they provide more limited insight into how discrepant perceptions are distributed across the wider family system. In particular, sibling perspectives remain strikingly underrepresented, despite the fact that siblings are embedded in the same relational environment and may both shape and be affected by family processes surrounding adolescent eating disorders.

Second, prior work has often documented discrepancies descriptively but has less often interpreted them as clinically meaningful patterns in their own right. A multi-informant perspective suggests that disagreement between family members should not automatically be reduced to measurement error or treated merely as noise. Rather, discrepancies may reflect differences in role, relational position, emotional burden, salience, and everyday experience within the same family system. From this perspective, the question is not only whether eating-disorder families report poorer functioning, but also how family members differ in their perceptions of the same relational processes, and what such divergence may reveal about family organization in the context of illness.

Finally, most of the available evidence comes from Western samples, while far less is known about discrepant perceptions of family functioning in Central and Eastern European clinical populations. This limits the cultural generalizability of the literature, particularly in relation to adolescent anorexia nervosa. These gaps justify a multi-informant study that examines adolescents, mothers, fathers, and siblings simultaneously in a Hungarian clinical sample, and that analyzes family functioning in a way that appropriately accounts for the non-independence of observations within families.

The Current Study: Aims and Hypotheses

The present study examined how adolescents with anorexia nervosa and their family members perceive family functioning in a Hungarian clinical sample. Building on previous multi-informant research, we focused both on overall perceived family functioning and on the specific domains assessed by the McMaster Family Assessment Device. Because several members of the same family contributed data, the family was treated as an analytically meaningful unit, and multilevel models were used to account for the non-independence of observations within families.

The analyses were guided by four hypotheses:

H1. Adolescents with anorexia nervosa were expected to report more impaired family functioning than mothers, particularly in Communication and General Functioning, for which previous studies have suggested salient adolescent–parent discrepancies.

H2. Adolescents were also expected to report more impaired family functioning than fathers. However, given the mixed evidence regarding paternal reports in earlier studies, this hypothesis was formulated cautiously.

H3. Mothers and fathers were expected to differ in selected domains of perceived family functioning, particularly in Problem Solving and Affective Responsiveness, based on prior evidence of parent–parent discrepancies in eating-disorder families.

H4. Higher levels of perceived family dysfunction were expected to be associated with lower psychological well-being and higher perceived stress across family members, even after accounting for family role and family-level clustering.

Two additional research questions were examined exploratorily:

RQ1. How do siblings perceive family functioning compared with adolescents with anorexia nervosa, mothers, and fathers?

RQ2. How is patient age associated with perceived family functioning, psychological well-being, and perceived stress within the clinical sample?

Methods

Research Design and Sampling Procedures

The current study explored differences in perceptions of family functioning among 72 Hungarian families, each undergoing family therapy with an adolescent suffering from anorexia nervosa. Inclusion criteria were defined as families with an adolescent member (aged 12–18 years) diagnosed with anorexia nervosa according to the Diagnostic and Statistical Manual of Mental Disorders (5th ed.; DSM–5; American Psychiatric Association, 2013) who participated in the family therapy program described below.

Participants were recruited through the nationwide "Gyermekgyógyító Plusz" ("Child-Healing Plus") grant initiative, funded by MOL, a major Hungarian oil and gas company. The program aimed to provide free family therapy within public healthcare institutions. Launched in 2023, the initiative facilitated the employment of family therapists across nine clinical centers, integrating therapeutic and research efforts. The present sample was drawn from two participating centers: the Psychosomatic Outpatient Unit of the Department of Pediatrics at the University of Pécs and the Adolescent Eating Disorder Unit at the Heim Pál National Pediatric Institute (Budapest) between January 2023 and September 2024. Participants were adolescents with a clinical diagnosis of anorexia nervosa established by treating clinicians according to ICD/DSM criteria. The family therapy program was provided as an adjunct to treatment as usual (TAU), which could include inpatient or outpatient medical and psychiatric care, depending on clinical need.

As part of the program, standardized, anonymized data were collected across participating institutions. Families receiving inpatient or outpatient care were assigned unique codes and completed questionnaire packages at three time points: prior to the first therapy session, after the seventh session, and at the closing session. This design allowed for the systematic evaluation of therapy outcomes and supported the integration of medical family therapy into Hungarian hospital-based care. The current study utilizes data from the first measurement point (baseline).

Data collection took place at the therapy sites. Questionnaires were completed either online or in paper-and-pencil format during the designated assessment points. For online administration, therapists sent a secure survey link via email, and participants completed the questionnaires using their own smartphones or tablets. In the case of paper-based administration, responses were later entered into the online data collection platform by the research team. Family members completed the questionnaires simultaneously at the specified measurement points.

The present study was conducted with ethical approval obtained from the Medical Research Council's Scientific and Research Ethics Committee (TUKEB) under case number BM/6095-4/2023. Written informed consent was obtained from all adult participants and legal guardians, while adolescents provided their assent. Participation was voluntary, and families were informed of their right to withdraw from the study at any time without affecting their medical care.

Participants

The study sample consisted of 72 families, comprising a total of 243 individual participants. Data were collected from the adolescent with anorexia nervosa (hereinafter referred to as patients), mothers, fathers, and – where available – from sibling(s). However, coverage varied across families as not all members provided data. Specifically, data were available for the patient in 60 families (83.3%). Parental participation was high, with mothers providing data in 66 families (91.7%) and fathers in 59 families (81.9%). Sibling data were obtained from 49 families (68.1%), but since some families included multiple siblings, the total number of participating siblings was 58.

Regarding participation profiles, 43 families provided a complete dataset including the patient and both parents (along with siblings where applicable). In cases with partial data, the responding members were the patient and mother (plus potential siblings) in 10 families, the patient and father (plus potential siblings) in six families, and only the patient and a sibling in one case. In the 12 families where patient data were unavailable, nine cases included responses from both parents (plus potential siblings), while three cases involved one parent and a sibling. Overall, the number of respondents per family ranged from a minimum of two to a maximum of five (e.g., the patient, both parents, and two siblings).

No additional case-wise exclusion was performed after receipt of the anonymized baseline dataset; all available baseline data from participating family members were retained for analysis.

Among the 60 patients, 54 were female (90.0%). Their mean age was 15.33 years (SD = 1.76, range = 12–18). Mothers had a mean age of 48.34 years (SD = 3.76, range = 40–58), while fathers had a mean age of 49.68 years (SD = 4.38, range = 40–64). Regarding siblings, 40.6% were female, with a mean age of 16.11 years (SD = 3.36, range = 9–23).

Measurements

In addition to a demographic questionnaire, the study utilized the McMaster Family Assessment Device, the WHO Well-Being Index, and the Perceived Stress Scale.

The McMaster Family Assessment Device (FAD)

The McMaster Family Assessment Device (FAD; Epstein et al., 1983) was used to assess perceived family functioning. The FAD is a widely used self-report instrument grounded in the McMaster Model of Family Functioning, which conceptualizes family functioning across multiple, interrelated domains reflecting structural, emotional, and behavioral aspects of family life.

The questionnaire consists of 60 items rated on a four-point Likert scale ranging from 1 (strongly disagree) to 4 (strongly agree). Higher scores indicate higher levels of perceived family dysfunction. The FAD assesses family functioning across seven dimensions: Problem Solving, referring to the family's ability to resolve instrumental and emotional problems; Communication, referring to the clarity and directness of information exchange; Roles, referring to the distribution and fulfilment of family responsibilities; Affective Responsiveness, referring to the capacity to respond with appropriate emotion to different situations; Affective Involvement, referring to the degree of interest and emotional investment family members show toward one another; Behavior Control, referring to the standards and rules governing behavior in situations involving safety, basic needs, and interpersonal conduct; and General Functioning, reflecting the overall health or impairment of family functioning. These dimensions are particularly relevant in adolescent anorexia nervosa, where tensions may arise around communication, caregiving roles, emotional attunement, autonomy, and behavioral regulation in everyday family life. Sample items include statements such as "We are able to make decisions about how to solve problems" and "In times of crisis we can turn to each other for support." The original validation of the FAD demonstrated adequate to good internal consistency, with Cronbach's alpha coefficients for the subscales ranging from .72 to .92. Furthermore, the instrument showed robust discriminative validity by significantly distinguishing between clinical and non-clinical families ($p < .001$) and established concurrent and predictive validity through its significant associations with marital satisfaction and psychological morale (Epstein et al., 1983).

Several items are reverse-scored in accordance with the original scoring procedure. Scale scores were calculated by averaging the relevant items for each subscale. In addition, an aggregate Overall Perception score was computed by averaging all 60 items to represent general family functioning.

In the current sample, internal consistency estimates were calculated for the total sample and separately by family role, as the main analyses compared perceptions of family functioning across patients, mothers, fathers, and siblings. In the total sample, the FAD Overall Perception scale showed excellent internal consistency (Cronbach's α = .96), while the FAD subscale reliabilities ranged from .75 to .83. Role-specific reliability estimates are presented in Appendix Table A1. Some role-specific coefficients were lower than the total-sample estimates, particularly for shorter subscales and smaller respondent groups; therefore, findings involving these subscales were interpreted with appropriate caution.

WHO Well-Being Index (WBI-5)

The WHO Well-Being Index (WBI-5; Bech et al., 1996) was used to measure subjective psychological well-being. The Hungarian version of the scale was validated by Susánszky et al. (2006). This unidimensional, five-item instrument assesses respondents' well-being over the previous two weeks, with items referring to states such as feeling happy and cheerful or calm and relaxed. Responses are rated on a four-point Likert scale ranging from 0 (not at all) to 3 (very typical), with higher total scores indicating higher levels of well-being. The WBI-5 has demonstrated high internal consistency (Cronbach's α > .80) and strong clinical validity in both the original international studies (Bech et al., 1996) and the Hungarian validation (Susánszky et al., 2006). In the current sample, the internal consistency of the scale was good (Cronbach's α = .80).

Perceived Stress Scale (PSS-4)

The four-item version of the Perceived Stress Scale (PSS-4; Cohen & Williamson, 1988) was used to assess perceived stress. The Hungarian version of the scale was validated by Stauder and Konkolÿ Thege (2006). This unidimensional instrument measures the extent to which situations in one's life are perceived as unpredictable, uncontrollable, and overwhelming. Items are rated on a five-point Likert scale, with relevant items reverse-scored so that higher total scores indicate higher levels of perceived stress. The original PSS-4 demonstrated acceptable reliability (α = .60) and a strong correlation with the full 14-item version (Cohen & Williamson, 1988), while the Hungarian validation reported a Cronbach's α of .79, confirming its sound psychometric properties in a Hungarian context (Stauder & Konkolÿ Thege, 2006). In the current sample, the internal consistency of the scale was acceptable (Cronbach's α = .79).

Data Analysis

To account for the nested structure of the data (individual family members nested within families), a series of Linear Mixed Models (LMMs) was utilized. In all models, Family ID was entered as a random intercept using a Variance Components (VC) covariance structure to control for the interdependence of observations within the same family. The analyses proceeded through the following steps:

To examine differences in perceptions of family functioning across family roles (H1-H3 and RQ1), a set of eight LMMs was used. The dependent variables for these eight models were the FAD Overall Perception, the General Functioning subscale, and the six specific FAD subscales. For each model, Family Role was entered as a categorical fixed effect with four levels (index, mother, father, and sibling). Additionally, Family ID was specified as a random intercept to control for the clustering of data within individual families. The Intraclass Correlation Coefficient (ICC) was calculated to quantify the proportion of variance attributable to the random effect of family clustering. Partial eta squared (η^2_p) was derived from the Wald F-statistic to estimate the effect size for the fixed effect of Family Role. Significant fixed effects were followed by pairwise comparisons of estimated marginal means (EMMs). For these pairwise comparisons, Cohen's *d* was calculated using the difference between the EMMs divided by the total standard deviation of the model.

To examine the associations between family functioning and mental health (H4) while accounting for the clustered nature of the sample, a two-step modeling approach was employed. First, two LMMs were employed to evaluate baseline differences in psychological well-being (WBI-5) and perceived stress (PSS-4) across family members, using only Family Role as a categorical fixed effect and Family ID as a random intercept. Second, to test the specific impact of family functioning, two subsequent sets of LMMs were used to predict WBI-5 and PSS-4. In total, 16 separate models were run for this second step (8 for WBI-5 and 8 for PSS-4). To prevent multicollinearity, the FAD predictors were not entered simultaneously. Instead, each model included exactly one FAD score (either the Overall Perception, the General Functioning subscale, or one of the six specific subscales)

as a continuous fixed predictor. All 16 models controlled for Family Role as a categorical fixed effect and included Family ID as a random intercept. Standardized regression coefficients (β) were calculated to estimate the strength of these associations.

To account for multiple testing across the three sets of LMMs, the Benjamini-Hochberg False Discovery Rate (FDR) correction was applied to all *p*-values, encompassing the omnibus fixed effects, the random effects, and the pairwise comparisons for Family Role. Finally, restricted to the subset of families with available patient data (N = 60), supplementary analyses were conducted to explore the relationships between patient age and FAD, WBI-5, and PSS-4 scores using Pearson correlations (RQ2).

Preliminary analyses indicated that the distributions of the FAD, WBI-5, and PSS-4 scores, as well as patient age, were suitable for parametric analyses. The FAD Overall Perception score showed acceptable symmetry and peakedness (Skewness = 0.71, Kurtosis = 0.52), as did the majority of the subscales (S ranging from 0.34 to 0.89; K from -0.46 to 0.84). While the Affective Involvement subscale showed slight deviation (S = 1.18, K = 1.98), all values remained within the limits recommended by George and Mallery (2010). The outcome measures for well-being and stress also showed acceptable distributional properties for parametric analysis (WBI-5: S = -0.10, K = -0.05; PSS-4: S = 0.46, K = -0.16), as did patient age (S = -0.22 and K = -1.08). Regarding the assumptions of the Linear Mixed Models, the normality of the residuals and homoscedasticity were verified through the visual inspection of Q-Q plots and predicted-by-residual plots, respectively, which confirmed that the models were appropriately specified. All statistical analyses were performed using IBM SPSS Statistics.

Results

Differences in Perceived Family Functioning (FAD) Across Family Roles (H1-H3, and RQ1)

A Linear Mixed Model was employed to examine differences in Overall Perception across family roles. The model included FamilyID as a random intercept and Family Role as a fixed effect.

Analysis of the covariance parameters revealed a significant random intercept for families (Wald Z = 3.62, p < .001). This indicates that there are significant baseline differences between families. Some families generally perceive the level of family problems as higher or lower than others, regardless of the individual family member's role. The calculated ICC was .385, indicating that 38.5% of the total variance in the scores is attributable to differences between families, which represents a substantial clustering effect justifying the use of the multilevel model.

The test of fixed effects indicated a significant difference in perception among the family roles, $F(3, 170.16) = 5.21$, p = .004, η^2_p = .08. Pairwise comparisons revealed that Patients reported significantly higher scores (i.e., more dysfunctionality) compared to all other family members. Specifically, Patients differed significantly from Mothers (p = .004), Fathers (p < .001), and Siblings (p = .042). In contrast, no significant differences were found among other family members (p > .050). Descriptive statistics are presented in Table 1, while the results of the LMM fixed and random effects are detailed in Table 2, and pairwise comparisons in Table 3.

Table 1. Estimated Marginal Means and Standard Error Values of the FAD Scale and Subscales

	Patients		Mothers		Fathers		Siblings	
Scale	*EMM*	*SE*	*EMM*	*SE*	*EMM*	*SE*	*EMM*	*SE*
Overall Perception	2.20	0.06	2.01	0.05	1.96	0.06	2.05	0.06
Problem Solving	2.20	0.07	2.05	0.07	2.03	0.07	2.08	0.07
Communication	2.38	0.06	2.05	0.06	2.04	0.06	2.16	0.06
Roles	2.29	0.07	2.37	0.07	2.11	0.07	2.24	0.07
Affective Responsiveness	2.25	0.08	1.96	0.08	1.96	0.08	2.19	0.08
Affective Involvement	1.96	0.06	1.96	0.06	1.94	0.06	1.84	0.06
Behavior Control	2.24	0.07	1.84	0.07	1.85	0.07	1.94	0.07
General Functioning	2.16	0.07	1.91	0.07	1.92	0.07	1.96	0.07

Note. Estimated Marginal Means (EMM) values are derived from linear mixed models accounting for the nested structure of the data (random intercept for FamilyID). FAD: McMaster Family Assessment Device (higher scores indicate higher levels of perceived family dysfunction). N(Patients) = 60; N(Mothers) = 66; N(Fathers) = 59; N(Siblings) =58.

In addition to the overall score, the individual subscales of the FAD were examined. The random intercept for families was significant across all subscales. The ICCs ranged from .216 to .421, indicating that between 21.6% and 42.1% of the variance is attributable to family membership. This substantial clustering confirms the necessity of the multilevel approach for all dimensions.

Regarding fixed effects, no significant differences were found among family roles for Problem Solving and Affective Involvement ($p > .050$). However, significant differences were observed for all other subscales. The effect sizes for these significant effects ranged between .07 and .14, representing medium to large effects.

Table 2. Linear Mixed Model Results for FAD with Fixed Effects of Family Role and Random Effects of Family Clustering

	Family Role (fixed effect)				FamilyID (random effect)		
Scale	*F*	*df1, df2*	*p*	η^2_p	*Wald Z*	*p*	ICC
Overall Perception	5.21	3, 170.12	**.004**	.08	3.62	**<.001**	38.5%
Problem Solving	1.36	3, 176.01	.294	.02	2.50	**.013**	21.6%
Communication	9.56	3, 176.79	**<.001**	.14	3.25	**.001**	30.2%
Roles	4.13	3, 171.62	**.011**	.07	3.90	**<.001**	42.1%
Affective Responsiveness	4.99	3, 173.08	**.004**	.08	3.46	**.001**	34.7%
Affective Involvement	1.11	3, 174.31	.346	.02	3.20	**.001**	30.5%
Behavior Control	9.06	3, 177.32	**<.001**	.13	3.13	**.002**	28.5%
General Functioning	3.76	3, 172.13	**.016**	.06	3.25	**.001**	32.2%

Note. FAD: McMaster Family Assessment Device. Wald *Z* statistic tests for the random intercept of FamilyID. ICC indicates Intraclass Correlation Coefficient. The *p*-values were adjusted for multiple testing using the Benjamini-Hochberg False Discovery Rate (FDR) procedure. Bold values indicate statistically significant results ($p < .050$).

Pairwise comparisons revealed distinct patterns across the significant subscales (Table 3). The dimensions of Communication, Behavior Control, and General Functioning followed the same pattern as the Overall Perception score. Patients reported significantly higher levels of dysfunction compared to Mothers, Fathers, and Siblings. No significant differences were observed among the perceptions of the other family members. Regarding Roles, mothers reported the highest levels of dysfunction; however, their scores did not differ significantly from those of Patients or Siblings. Fathers reported the lowest dysfunction, which was significantly lower than the scores reported by both Mothers and Patients. In the subscale of Affective Responsiveness, Patients reported significantly higher levels of dysfunction compared to Parents (both Mothers and Fathers), whose scores were significantly lower.

Table 3. Pairwise Comparisons of FAD Subscales by Family Role

	Compared Family Roles											
	Patient-Mother		Patient-Father		Patient-Sibling(s)		Mother-Father		Mother-Sibling(s)		Father-Sibling(s)	
	p	d	p	d	*p*	*d*	*p*	*d*	*p*	*d*	*p*	*d*
Overall Perception	**.004**	**0.44**	**<.001**	**0.54**	**.042**	**0.35**	.961	0.11	.535	−0.09	.284	−0.20
Communication	**<.001**	**0.71**	**<.001**	**0.72**	**.012**	**0.46**	.961	0.01	.230	−0.25	.226	−0.26
Roles	.286	−0.15	**.021**	**0.33**	.560	0.10	**.006**	**0.48**	.230	0.25	.226	−0.23
Affective Responsiveness	**.004**	**0.45**	**.005**	**0.46**	.560	0.09	.961	0.01	.114	**−0.36**	.114	**−0.37**
Behavior Control	**<.001**	**0.71**	**<.001**	**0.69**	**.006**	**0.54**	.961	−0.02	.416	−0.17	.407	−0.15
General Functioning	**.004**	**0.45**	**.007**	**0.43**	**.038**	**0.35**	.961	−0.02	.535	−0.10	.639	−0.07

Note. FAD: McMaster Family Assessment Device. Cohen's *d* was calculated using the total standard deviation of the model. Positive *d* values indicate higher dysfunction scores for the first member in the pair compared to the second. The *p*-values were adjusted for multiple testing using the Benjamini-Hochberg False Discovery Rate (FDR) procedure. Bold values indicate statistically significant results ($p < .050$).

Association Between Perceived Family Functioning (FAD) and Well-Being (WBI-5) and Perceived Stress (PSS-4) (H4)

Two LMMs were employed to examine differences in WBI-5 and PSS-4 among family members. In contrast to the results for the FAD scales, the random intercept for FamilyID was not significant for either well-being (Wald $Z = 1.78$, $p = .076$, ICC = 14.5%) or perceived stress (Wald $Z = 1.07$, $p = .285$, ICC = 8.0%), indicating that families did not differ significantly from one another in these domains. However, the fixed effect of Family Role was significant for both measures: WBI-5, $F(3, 175.11) = 4.00$, $p = .009$, $\eta^2_p = .06$; PSS-4, $F(3, 177.67) = 17.95$, $p < .001$, $\eta^2_p = .23$.

Pairwise comparisons (based on estimated marginal means) for well-being revealed that Patients reported the lowest scores (*EMM* = 6.89, *SE* = 0.37). This was significantly lower than the well-being of Fathers (*EMM* = 8.08, *SE* = 0.38, $p = .042$) and Siblings (*EMM* = 8.41, *SE* = 0.39, $p = .018$) but did not differ significantly from Mothers (*EMM* = 7.26, *SE* = 0.36, $p = .515$). Mothers reported significantly lower well-being compared to Siblings ($p = .042$) and marginally lower well-being compared to Fathers ($p = .093$). No significant difference was found between Fathers and Siblings ($p = .515$).

Regarding perceived stress, Patients reported the highest levels (*EMM* = 8.49, *SE* = 0.38), which was significantly higher than all other family members ($p < .001$ for all comparisons). The second highest stress levels were reported by Mothers (*EMM* = 6.43, *SE* = 0.36), followed by Siblings (*EMM* = 6.19, *SE* = 0.39, $p = .638$). Fathers reported the lowest stress levels (*EMM* = 4.74, *SE* = 0.38), which was significantly lower than the stress reported by Patients ($p < .001$), Mothers ($p = .002$), and Siblings ($p = .007$).

Finally, a set of linear mixed models was used to examine the associations between family functioning and individual mental health indicators (WBI-5 and PSS-4). Specifically, separate LMMs were fitted with WBI-5 or PSS-4 scores as dependent variables, entering one of the FAD scales as a covariate in each model. All models are controlled for the random effect of family clustering and the fixed effect of family roles. The analysis revealed significant associations for both the Overall Perception score and all FAD subscales (Table 4). The FAD scales showed a significant positive relationship with PSS-4 across all dimensions, with standardized regression coefficients ranging from β = .26 to .38, indicating a weak-to-moderate effect size. Conversely, significant negative associations were found between the FAD scales and WBI-5, with standardized coefficients ranging between β = -.14 and -.31. These results indicate that higher levels of perceived family dysfunction are consistently associated with higher perceived stress and lower psychological well-being. The fixed effects of family role on WBI-5 and PSS-4 remained significant in all LMM models.

Table 4. Associations Between the FAD Scales and Mental Health Indicators (WBI-5, PSS-4)

Scales	WBI-5					PSS-4				
	β	*SE*	*p*	*LLCI*	*ULCI*	β	*SE*	*p*	*LLCI*	*ULCI*
Overall Perception	–.30	.06	**< .001**	–.42	–.17	.38	.06	**< .001**	.27	.49
Problem Solving	–.28	.06	**< .001**	–.40	–.15	.31	.06	**< .001**	.20	.42
Communication	–.28	.06	**< .001**	–.41	–.15	.31	.06	**< .001**	.19	.43
Roles	–.21	.07	**.003**	–.34	–.08	.29	.06	**< .001**	.18	.41
Affective Responsiveness	–.31	.06	**< .001**	–.43	–.18	.33	.06	**< .001**	.21	.44
Affective Involvement	–.14	.06	**.028**	–.27	–.02	.26	.06	**< .001**	.15	.38
Behavior Control	–.17	.07	**.011**	–.30	–.04	.29	.06	**< .001**	.17	.41
General Functioning	–.31	.06	**< .001**	–.44	–.19	.36	.06	**< .001**	.25	.47

Note. FAD: McMaster Family Assessment Device (higher scores indicate higher levels of perceived family dysfunction); WBI-5: WHO-Wellbeing scale, PSS-4: Perceived stress scale. Linear Mixed Models were used to examine the association between the FAD scales and the WBI-5 and PSS-4 scores, controlling for family clustering (Random Effect: FamilyID) and family role (Fixed Effect). β represents standardized regression coefficients. Denominator degrees of freedom ranged between 209.19 and 234.36 for WBI-5 and between 189.34 and 226.63 for PSS-4 ($N = 243$). The fixed effects of family role on WBI-5 and PSS-4 remained significant in all LMM models. The *p*-values were adjusted for multiple testing using the Benjamini-Hochberg False Discovery Rate (FDR) procedure. Bold values indicate statistically significant results ($p < .050$).

The Role of Patient Age in Perceived Family Functioning and Psychological Distress (RQ2)

The relationship between patient age and family functioning showed a distinct pattern in self-reports. Older patients tended to report higher levels of family dysfunction. Specifically, positive correlations were observed between patient age and Problem Solving (r = .32, p = .007) and General Functioning (r = .23, p = .040). Similar but non-significant trends were observed for their Overall Perception score (r = .17, p = .094), Affective Responsiveness (r = .18, p = .090), and Affective Involvement (r = .16, p = .109). However, no substantial relationship was found for Roles (r = .06, p = .317), Communication (r = .05, p = .345), or Behavior Control (r = .01, p = .456). Furthermore, patient age was moderately associated with individual mental health indicators. Older patients reported lower well-being (r = -.30, p = .010) and higher levels of perceived stress (r = .35, p = .003).

In contrast to the patients' self-reports, parental perceptions of family functioning were generally unrelated to patients' age. Correlation coefficients between patients' age and the FAD scores for Mothers and Fathers typically ranged between r = -.06 and .06 across most scales, indicating a negligible relationship. The only notable exceptions were found in the dimension of Affective Involvement, where both Mothers (r = .28) and Fathers (r = .15) indicated somewhat higher dysfunction with increasing patient age, as well as for Mothers regarding Behavior Control (r = .14).

Discussion

The present study examined discrepancies in perceived family functioning among adolescents with anorexia nervosa and their family members in a Hungarian clinical sample. By applying linear mixed models, the analyses accounted for the non-independence of family members' reports and allowed family functioning to be examined as a relationally embedded phenomenon rather than as a set of isolated individual perceptions. Overall, the findings indicate that discrepancies in perceived family functioning were not randomly distributed across family roles or FAD domains. Instead, adolescents with anorexia nervosa tended to perceive family functioning as more impaired than other family members, with the most consistent differences emerging in Communication, Behavior Control, and General Functioning. In addition, higher perceived family dysfunction was associated with lower psychological well-being and higher perceived stress across family members.

This interpretation is consistent with contemporary multi-informant frameworks, which emphasize that discrepancies between informants may contain meaningful contextual information rather than simply reflecting unreliability or measurement error (De Los Reyes et al., 2013; De Los Reyes & Epkins, 2023; De Los Reyes & Kazdin, 2005; Ohannessian et al., 2000). From a family-based and systemic perspective, it is therefore not only the level of perceived dysfunction that matters, but also how differently the same family processes are experienced by patients, mothers, fathers, and siblings.

A further methodological implication of the findings is that the family should be treated not only as the clinical context of adolescent eating disorders, but also as the relevant unit of analysis in research on family functioning. The significant family-level random effects and the substantial intraclass correlations observed across the FAD dimensions indicate that perceptions of family functioning were meaningfully clustered within families. This suggests that studies of family functioning in adolescent eating disorders should account for the non-independence of family members' reports rather than treating them as isolated observations.

The first hypothesis was partially supported. Adolescents with anorexia nervosa reported more impaired family functioning than mothers in Overall Perception, Communication, Affective Responsiveness, Behavior Control, and General Functioning. The clearest support for H1 was therefore found in Communication and General Functioning, as expected, with additional evidence for patient–mother discrepancies in Affective Responsiveness and Behavior Control. At the same time, no significant patient–mother differences emerged in Problem Solving, Roles, or Affective Involvement.

This pattern is broadly consistent with previous findings suggesting that adolescents with eating disorders often perceive family functioning more negatively than their parents, but it also confirms that the exact subscale-level pattern is not uniform across studies. The present findings converge most clearly with Emanuelli et al. (2004), who also identified Communication as a prominent domain of discrepancy in adolescent anorexia nervosa. However, they diverge partly from Dancyger et al. (2005), particularly because no patient–mother difference emerged in Problem Solving in the present sample. One possible explanation is that communication difficulties may be especially salient in adolescents with anorexia nervosa, whereas discrepancies in domains

such as Problem Solving or Roles may be more sensitive to diagnostic composition, treatment setting, developmental stage, or the emotional burden carried by different family members. In the present sample, role-related strain was not uniquely perceived by patients, since mothers did not differ from patients with respect to Roles but rather from fathers.

The second hypothesis received stronger support. Adolescents reported more impaired family functioning than fathers in Overall Perception, Communication, Roles, Affective Responsiveness, Behavior Control, and General Functioning. No significant patient–father differences were found for Problem Solving or Affective Involvement. This pattern suggests that, in the present sample, fathers were generally less likely than patients to perceive family functioning as problematic across several domains.

This finding is consistent with the broader observation that paternal reports may not always mirror adolescents' perceptions of family interaction. Waller et al. (1990), for example, found that daughters' FAD reports differentiated clinical from comparison families more strongly than fathers' reports. By contrast, Dancyger et al. (2005) found no significant daughter–father differences on FAD dimensions. Thus, rather than indicating a stable paternal pattern across all eating-disorder samples, the current results suggest that father–adolescent discrepancies may be context-dependent and may vary across study designs, clinical settings, and family contexts.

The third hypothesis was only partly supported. Contrary to expectations, mothers and fathers did not differ significantly in Problem Solving or Affective Responsiveness. The only significant mother–father difference emerged in Roles, with mothers reporting more dysfunction than fathers. This pattern diverges from Dancyger et al. (2005) and suggests that parent–parent discrepancies may be organized differently in this Hungarian clinical sample. In the present study, mother–father differences appeared to be less related to emotional responsiveness or problem solving than to the perceived distribution and fulfilment of family responsibilities.

This finding may be clinically meaningful in the context of adolescent anorexia nervosa, where everyday caregiving, monitoring, meal-related responsibilities, and coordination of treatment often place considerable demands on parents. Importantly, mothers in our sample did not differ from patients on Roles, whereas fathers reported lower dysfunction than both groups. One possible interpretation is that role-related strain may be more salient from the maternal position. In the Hungarian context, women continue to bear a substantially larger share of unpaid domestic work and childcare than men, which may make tensions around role distribution and everyday caregiving responsibilities more visible to mothers than to fathers (Drjenovszky & Sztáray Kézdy, 2023).

Taken together, the within-family pattern suggests that perceptual discrepancies were not distributed evenly across dimensions of family functioning but were concentrated in domains that appear especially relevant to the relational dynamics of adolescent anorexia nervosa (Lock & Le Grange, 2015; Minuchin et al., 1978). In the present sample, the clearest discrepancies emerged in Communication, Roles, Behavior Control, and General Functioning, suggesting that these may be particularly discrepancy-sensitive aspects of family life in the context of illness. From a systemic and family-based perspective, this is clinically plausible: communication difficulties may reflect problems in mutual understanding and emotional expression; role-related discrepancies may point to asymmetries in caregiving burden and family organization, while Behavior Control may be especially salient in a condition in which autonomy, regulation, safety, and parental management become central to everyday family life (Drjenovszky & Sztáray Kézdy, 2023; Lock & Le Grange, 2015).

Sibling comparisons were exploratory as previous research on siblings' perceptions in families of adolescents with eating disorders remains limited. In the present sample, siblings' reports tended to be closer to parental reports than to patients' reports in several domains, suggesting that the predominant pattern was not generalized disagreement among all family members, but rather a patient–family discrepancy. However, Affective Responsiveness showed a different pattern: patients and siblings reported higher dysfunction than parents and did not differ significantly from one another. This may point to a more generationally structured discrepancy in the perception of emotional responsiveness. A tentative interpretation is that parents and adolescents may evaluate emotional responsiveness from different experiential positions: parents may understand it more in terms of care, involvement, and sustained attention, whereas adolescents and siblings may be more sensitive to emotional attunement and the subjective experience of being understood.

The fourth hypothesis was supported. Across family members, higher levels of perceived family dysfunction were associated with lower psychological well-being and higher perceived stress, even after accounting for family role and family-level clustering. These associations were consistent across the FAD Overall Perception score and all the FAD subscales. The strongest associations with lower well-being were observed for General Functioning, Affective Responsiveness, and Overall Perception, while the strongest associations with higher perceived stress were found for Overall Perception and General Functioning.

These findings are consistent with family-based and systemic perspectives emphasizing that adolescent anorexia nervosa affects not only the patient, but also family communication, emotional climate, caregiving roles, and parental burden (Lock & Le Grange, 2015; Rienecke et al., 2024; Rienecke & Le Grange, 2022). Because the study was cross-sectional, the direction of these associations cannot be determined. More negatively perceived family functioning may contribute to lower well-being and greater stress, but elevated stress and reduced well-being may also shape how family members evaluate family processes. It is also likely that these processes are reciprocal: illness-related stress may affect family communication, emotional responsiveness, and behavioral regulation, while difficulties in these family domains may further increase individual distress.

Importantly, family role remained a significant predictor of well-being and perceived stress in these models. This indicates that the association between perceived family dysfunction and psychological functioning did not fully explain role-based differences in distress. These findings underline the importance of assessing both relational processes and individual psychological burden in family-based treatment.

Exploratory analyses involving patient age suggested that older patients tended to report more impaired family functioning in selected domains and also reported lower well-being and higher perceived stress. Although these findings should be interpreted cautiously, they may indicate that family processes and individual psychological burden become more strained as adolescence progresses, or that older patients are more sensitive to difficulties in autonomy, problem solving, and overall family climate. Longitudinal research is needed to determine whether these age-related associations reflect developmental changes, illness duration, treatment history, or differences in symptom severity.

Taken together, the findings support a discrepancy-based approach to family functioning in adolescent anorexia nervosa. They do not imply that one family member has more accurate access to family reality than another. Rather, they suggest that family members' reports reflect different relational positions, emotional burdens, and everyday experiences within the same family system, consistent with contemporary multi-informant assessment frameworks (De Los Reyes et al., 2013; De Los Reyes & Epkins, 2023; De Los Reyes & Kazdin, 2005). In this sense, discrepancies themselves may be clinically informative, especially when they cluster around domains such as communication, behavioral regulation, role organization, and general family climate.

Strengths and Limitations

The present study adopted a multi-informant and multilevel design, allowing family functioning to be examined simultaneously from the perspectives of patients, mothers, fathers, and siblings while also accounting for the non-independence of observations within families. This design makes it possible to move beyond individual-level descriptions and to capture family functioning as a relationally embedded phenomenon. In this respect, the study contributes not only substantive findings on adolescent anorexia nervosa, but also a methodological contribution to the assessment of family functioning in clinical family research. By treating the family as the relevant analytic unit rather than merely the context from which participants are recruited, the study makes it possible to examine discrepancies as structured features of family life rather than as isolated individual differences. The inclusion of siblings further strengthens this contribution, since sibling perspectives have been largely missing from earlier research, and their inclusion here allowed a clearer distinction between patient-family divergence and generationally structured differences in perceived family functioning. A further strength is that the study was conducted in a Hungarian clinical sample, thereby extending the literature that has been dominated by research on Western populations. The findings therefore also raise the possibility that the link between family dysfunction and eating disorders may extend beyond Western settings, although further research in more culturally diverse contexts is needed to test its generalizability.

Nonetheless, several limitations should be acknowledged. First, the cross-sectional design precludes conclusions about directionality or temporal change. Accordingly, the observed associations between perceived family dysfunction, psychological well-being, and perceived stress may be bidirectional: more negatively perceived family functioning may contribute to poorer well-being and greater stress, but elevated stress or reduced well-being may also shape how family processes are perceived. Longitudinal data is needed to clarify the stability and temporal ordering of these relationships.

Second, the study did not include a non-clinical comparison group. As a result, it remains uncertain to what extent the observed pattern of perceptual discrepancies is specific to families of adolescents with anorexia nervosa and to what extent it may reflect broader processes of discrepancy in family perception that are not unique to this clinical context.

Third, the FAD assesses perceived family functioning rather than objectively observed dysfunction. The present findings therefore concern how family members experience and evaluate family processes, not whether the family is dysfunctional in any objective or externally verified sense. This distinction is particularly important in a discrepancy-focused study, where variation in perception is itself part of the phenomenon under investigation.

Finally, although the internal consistency of the FAD scales was acceptable overall, some subscales may be more vulnerable to heterogeneity in multi-informant clinical samples, where divergent perspectives are theoretically expected.

Conclusion, Clinical Implications, and Future Directions

The findings of this study have relevance for family-based clinical work with adolescents with anorexia nervosa. They suggest that assessment should not be limited to the overall level of perceived family dysfunction but should also consider how differently family members describe the same family processes. Discrepancies between patients', parents', and siblings' reports may help clinicians identify relational domains in which patients' subjective experiences diverge from those of other family members (De Los Reyes & Epkins, 2023; Ohannessian et al., 2000). The observed associations between perceived family dysfunction, lower psychological well-being, and higher perceived stress also indicate that family-based interventions need to address both interactional patterns and the psychological burden carried by individual family members.

In the present sample, the most consistent patient–family discrepancies appeared in Communication, Behavior Control, and General Functioning. These domains may therefore offer useful entry points for therapeutic exploration. Differences in how family members perceive communication and the broader family climate may reflect difficulties in mutual understanding, emotional expression, and perceived responsiveness. When patients experience the family climate as more burdened than other family members do, they may remain relatively alone with this perception. Bringing such differences into the therapeutic conversation can help family members recognize that the same interaction may be experienced in markedly different ways, without assuming that one account is necessarily more accurate than another. It may also help patients recognize that other family members may experience the overall family climate as less burdening, while still acknowledging that certain aspects of family life may be problematic for them as well.

Discrepancies in Behavior Control may also be clinically important, as issues of rules, supervision, autonomy, safety, and behavioral expectations often become especially salient in adolescent anorexia nervosa (Lock & Le Grange, 2015; NICE, 2017; Rienecke & Le Grange, 2022). Exploring concrete situations in which rules or expectations are experienced as rigid, diffuse, or inconsistent may help families clarify boundaries and develop more coordinated responses to illness-related challenges.

The role-related and sibling findings add further clinical nuance. The Roles dimension did not indicate a generalized adolescent–parent discrepancy but rather pointed to possible maternal role strain. This suggests that clinicians should pay attention to how caregiving responsibilities and household burdens are distributed and experienced within families. In the Hungarian context, where women continue to carry a substantially greater share of unpaid domestic work and childcare, such role-related discrepancies may be particularly relevant in family-based treatment (Drjenovszky & Sztáray Kézdy, 2023). The explicit renegotiation of household and caregiving tasks may function as a shared family project, supporting responsibility-taking, clearer boundaries, reduced maternal overload, and more favorable conditions for calmer family communication.

The role-based findings on well-being and stress also underline the need to attend to caregiver burden. In some cases, family therapy may need to be complemented by more individualized support for mothers, especially when guilt, feelings of failure, marked overload, or a disproportionate share of everyday illness-related interactions falls on them. Monitoring maternal burden and possible burnout may therefore be an important part of clinical care. In addition, the associations between older patient age, lower well-being, higher stress, and more negative perceptions of some aspects of family functioning suggest that timely recognition and early family-based intervention may be particularly important.

Siblings' perspectives may also be informative, as they can help distinguish difficulties shared by the wider family system from experiences that are more specific to the identified patient. Their inclusion in assessment, or in selected phases of family therapy, may therefore support a more differentiated understanding of family processes and may help bridge parental and patient perspectives.

Future studies should examine whether discrepancies in perceived family functioning have prognostic value. Longitudinal research is needed to determine whether the magnitude and pattern of discrepancies between pa-

tients, parents, and siblings predict treatment response, changes in symptom severity, psychological adjustment, or relapse risk. Such work could clarify whether perceptual discrepancies are not only concurrent markers of family experience, but also clinically useful indicators of outcome and prognosis.

Further research should also include non-clinical and other clinical comparison groups. This would help determine whether the discrepancy patterns observed in the present study are specific to families of adolescents with anorexia nervosa, or whether they reflect broader features of clinical family functioning. In addition, clinician-rated or observational measures of family functioning could provide external reference points for interpreting self-reported discrepancies and for integrating different sources of information in multi-informant assessment.

Overall, this study contributes to the literature on family functioning in adolescent eating disorders by shifting attention from family dysfunction alone to differences in how family processes are perceived by individual family members. In this Hungarian clinical sample, discrepancies were not randomly distributed but followed interpretable patterns across family roles and dimensions of functioning. The findings support a multi-informant, family-level approach to assessment and suggest that perceptual divergence within families may represent a clinically meaningful feature of the disorder context, consistent with contemporary multi-informant frameworks (De Los Reyes et al., 2013; De Los Reyes & Epkins, 2023; De Los Reyes & Kazdin, 2005). As longitudinal evidence accumulates, future research may clarify whether these discrepancies function not only as descriptive markers of family experience, but also as prognostic indicators relevant to treatment planning and outcome.

Acknowledgement

The authors would like to thank the families who agreed to fill out the questionnaires and took the time to do so and the therapists who helped distribute the questionnaires and collect the data. They are grateful to the board of trustees of the MOL-New Europe Foundation for supporting this important area of research, namely the implementation of family therapy services in healthcare institutions. They would like to thank the leaders of the participating institutions for taking on the professional challenges and administrative burden of the project to give families the opportunity to heal.

Funding

The clinical work related to the programme was supported by annual funding from the MOL New Europe Foundation through the participating hospital. The authors received no specific financial support or remuneration for the preparation, authorship, or publication of this article.

Author contribution

Noémi GYENIS-KÁTAY: conceptualization, design, methodology, investigation, project administration, data management, interpretation, writing original draft, writing review and editing.
Klára SOLTÉSZ-VÁRHELYI: investigation, data management, formal analyses, interpretation, writing original draft, writing review and editing.
Bethany HAMILTON: investigation, data management, formal analysis, interpretation, writing original draft.
Balázs JOHN: conceptualization, design, methodology, data management, writing review and editing.
Athéna VAKALIOSZ: investigation, writing review and editing.
Dávid ROTTMAYER: writing review and editing.
Krisztina DORN: writing review and editing.
Szabolcs TÖRÖK: conceptualization, design, methodology, funding acquisition, project administration, supervision, writing review and editing.

Declaration of interest statement

Szabolcs Török and John Balázs have been a consultant for MOL-New Europe Foundation.

Ethical statement

This manuscript is the authors' original work.
All participants engaged in the research voluntarily and anonymously.
Their data are stored in coded materials and databases without personal data.
The studies involving human participants were reviewed and approved by the Medical Research Council's Scientific and Research Ethics Committee (TUKEB) under case number BM/6095-4/2023.

Data availability statement

Datasets presented in this article are available from the corresponding author upon reasonable request.

Declaration on using artificial intelligence in research and manuscript preparation

The authors did use AI technologies in the preparation of the manuscript, but not their research. ChatGPT was used to improve the English used in the manuscript and to ensure the accurate use of scientific terminology. All AI-generated suggestions were reviewed and verified by the authors.

ORCID

Noémi GYENIS-KÁTAY https://orcid.org/0000-0002-8842-6318
Klára SOLTÉSZ-VÁRHELYI https://orcid.org/0000-0003-4369-6936
Bethany HAMILTON https://orcid.org/0009-0006-3339-5960
Balázs JOHN https://orcid.org/0009-0007-3356-6317
Athéna VAKALIOSZ https://orcid.org/0000-0001-7570-7623
Dávid ROTTMAYER https://orcid.org/0009-0007-0116-8373
Krisztina DORN https://orcid.org/0009-0007-2546-7036
Szabolcs TÖRÖK https://orcid.org/0000-0003-4653-1707

References

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). https://doi.org/10.1176/appi.books.9780890425596

Bech, P., Gudex, C., & Johansen Staehr, K. (1996). The WHO (Ten) Well-Being Index: Validation in diabetes. *Psychotherapy and Psychosomatics, 65*(4), 183–190. https://doi.org/10.1159/000289073

Bowen, M. (1978). *Family therapy in clinical practice.* Jason Aronson.

Chesney, E., Goodwin, G. M., & Fazel, S. (2014). Risks of all-cause and suicide mortality in mental disorders: A meta-review. *World Psychiatry, 13*(2), 153–160. https://doi.org/10.1002/wps.20128

Cohen, S., & Williamson, G. M. (1988). Perceived stress in a probability sample of the United States. In S. Spacapan & S. Oskamp (Eds.), *The social psychology of health* (pp. 31–67). Sage.

Dancyger, I., Fornari, V., Scionti, L., Wisotsky, W., & Sunday, S. (2005). Do daughters with eating disorders agree with their parents' perception of family functioning? *Comprehensive Psychiatry, 46*(2), 135–139. https://doi.org/10.1016/j.comppsych.2004.07.024

De Los Reyes, A., Augenstein, T. M., Wang, M., Thomas, S. A., Drabick, D. A. G., Burgers, D. E., & Rabinowitz, J. (2015). The validity of the multi-informant approach to assessing child and adolescent mental health. *Psychological Bulletin, 141*(4), 858–900. https://doi.org/10.1037/a0038498

De Los Reyes, A., & Epkins, C. C. (2023). Introduction to the special issue: A dozen years of demonstrating that informant discrepancies are more than measurement error: Toward guidelines for integrating data from multi-informant assessments of youth mental health. *Journal of Clinical Child & Adolescent Psychology, 52*(1), 1–18. https://doi.org/10.1080/15374416.2022.2158843

De Los Reyes, A., & Kazdin, A. E. (2005). Informant discrepancies in the assessment of childhood psychopathology: A critical review, theoretical framework, and recommendations for further study. *Psychological Bulletin, 131*(4), 483–509. https://doi.org/10.1037/0033-2909.131.4.483

De Los Reyes, A., & Ohannessian, C. M. (2016). Introduction to the special issue: Discrepancies in adolescent–parent perceptions of the family and adolescent adjustment. *Journal of Youth and Adolescence, 45*, 1957–1972. https://doi.org/10.1007/s10964-016-0533-z

De Los Reyes, A., Thomas, S. A., Goodman, K. L., & Kundey, S. M. A. (2013). Principles underlying the use of multiple informants' reports. *Annual Review of Clinical Psychology, 9*, 123–149. https://doi.org/10.1146/annurev-clinpsy-050212-185617

Drjenovszky, Z., & Sztáray Kézdy, É. (2023). The distribution of unpaid domestic work in Hungarian stay-at-home father–working-mother families. *Social Sciences, 12*(3), Article 116. https://doi.org/10.3390/socsci12030116

Eisler, I. (2005). The empirical and theoretical base of family therapy and multiple family day therapy for adolescent anorexia nervosa. *Journal of Family Therapy, 27*(2), 104–131. https://doi.org/10.1111/j.1467-6427.2005.00303.x

Emanuelli, F., Ostuzzi, R., Cuzzolaro, M., Baggio, F., Lask, B., & Waller, G. (2004). Family functioning in adolescent anorexia nervosa: A comparison of family members' perceptions. *Eating and Weight Disorders-Studies on Anorexia, Bulimia and Obesity, 9*, 1–6. https://doi.org/10.1007/BF03325038

Epstein, N. B., Baldwin, L. M., & Bishop, D. S. (1983). The McMaster Family Assessment Device. *Journal of Marital and Family Therapy, 9*(2), 171–180. https://doi.org/10.1111/j.1752-0606.1983.tb01497.x

George, D., & Mallery, P. (2010). SPSS for Windows step by step: A simple guide and reference (10th ed.). Pearson.

Goldenberg, I., & Goldenberg, H. (1996). *Family therapy: An overview* (4th ed.). Brooks/Cole.

Gowers, S. G., & North, C. (1999). Difficulties in family functioning and adolescent anorexia nervosa. *British Journal of Psychiatry, 174*(1), 63–66. https://doi.org/10.1192/bjp.174.1.63

Holtom-Viesel, A., & Allan, S. (2014). A systematic review of the literature on family functioning across all eating disorder diagnoses in comparison to control families. *Clinical Psychology Review, 34*(1), 29–43. https://doi.org/10.1016/j.cpr.2013.10.005

Horesh, N., Sommerfeld, E., Wolf, M., Zubery, E., & Zalsman, G. (2015). Father–daughter relationship and the severity of eating disorders. *European Psychiatry, 30*(1), 114–120. https://doi.org/10.1016/j.eurpsy.2014.04.004

Jenkins, P. E., Hoste, R. R., Meyer, C., & Blissett, J. M. (2011). Eating disorders and quality of life: A review of the literature. *Clinical Psychology Review, 31*(1), 113–121. https://doi.org/10.1016/j.cpr.2010.08.003

Le Grange, D., Lock, J., Loeb, K., & Nicholls, D. (2010). Academy for eating disorders position paper: The role of the family in eating disorders. *International Journal of Eating Disorders, 43*(1), 1–5. https://doi.org/10.1002/eat.20751

Lock, J., & La Via, M. C. (2015). Practice parameter for the assessment and treatment of children and adolescents with eating disorders. *Journal of the American Academy of Child & Adolescent Psychiatry, 54*(5), 412–425. https://doi.org/10.1016/j.jaac.2015.01.018

Lock, J., & Le Grange, D. (2015). Treatment manual for anorexia nervosa: A family-based approach (2nd ed.). The Guilford Press.

Lukas, L., Buhl, C., Schulte-Körne, G., & Sfärlea, A. (2022). Family, friends, and feelings: The role of relationships to parents and peers and alexithymia in adolescents with anorexia nervosa. *Journal of Eating Disorders, 10*, Article 143. https://doi.org/10.1186/s40337-022-00661-3

Mensi, M. M., Criscuolo, M., Vai, E., Rogantini, C., Orlandi, M., Ballante, E., Zanna, V., Mazzoni, S., Balottin, U., & Borgatti, R. (2022). Perceived and observed family functioning in adolescents affected by restrictive eating disorders. *Family Relations, 71*(2), 724–736. https://doi.org/10.1111/fare.12611

Miller, I. W., Epstein, N. B., Bishop, D. S., & Keitner, G. I. (1985). The McMaster Family Assessment Device: Reliability and validity. *Journal of Marital and Family Therapy, 11*(4), 345–356. https://doi.org/10.1111/j.1752-0606.1985.tb00028.x

Minuchin, S., Rosman, B. L., & Baker, L. (1978). Psychosomatic families: Anorexia nervosa in context. Harvard University Press.

National Institute for Health and Care Excellence. (2017). *Eating disorders: Recognition and treatment (NICE Guideline NG69)*. https://www.nice.org.uk/guidance/ng69

Ohannessian, C. M., Lerner, R. M., Lerner, J. V., & von Eye, A. (2000). Adolescent-parent discrepancies in perceptions of family functioning and early adolescent self-competence. *International Journal of Behavioural Development, 24*(3), 362–372. https://doi.org/10.1080/01650250050118358

Pászthy, B., Ábrahám, I., & Törzsök-Sonnevend, M. (2020). Az Emberi Erőforrások Minisztériuma egészségügyi szakmai irányelve a gyermek- és serdülőkori evészavarok ellátásáról. [Clinical practice guideline of the Ministry of Human Capacities on the management of eating disorders in children and adolescents]. *Egészségügyi Közlöny, 70*(7), 1174–1212.

Rienecke, R. D., & Le Grange, D. (2022). The five tenets of family-based treatment for adolescent eating disorders. *Journal of Eating Disorders, 10*, Article 60. https://doi.org/10.1186/s40337-022-00585-y

Rienecke, R. D., Trotter, X., & Jenkins, P. E. (2024). A systematic review of eating disorders and family functioning. *Clinical Psychology Review, 112*, Article 102462. https://doi.org/10.1016/j.cpr.2024.102462

Stauder, A., & Konkolÿ Thege, B. (2006). Az Észlelt Stressz Kérdőív (PSS) magyar verziójának jellemzői [Characteristics of the Hungarian version of the Perceived Stress Scale (PSS)]. *Mentálhigiéné és Pszichoszomatika, 7*(3), 203–216. https://doi.org/10.1556/mental.7.2006.3.4

Sulyok, R. S., & Miklósi, M. (2026). Az információforrások közötti diszkrepancia jelentősége a pszichológiai kivizsgálás során [The significance of informant discrepancies in psychological evaluation]. *Neuropsychopharmacologia Hungarica, 28*(1), 30–36.

Susánszky, É., Konkolÿ Thege, B., Stauder, A., & Kopp, M. (2006). A WHO Jól-lét Kérdőív rövidített (WBI-5) magyar változatának validálása a Hungarostudy 2002 országos lakossági egészségfelmérés alapján [Validation of the Hungarian Version of the WHO Well-Being Index (WBI-5) using data from the Hungarostudy 2002 National Health Survey]. *Mentálhigiéné és Pszichoszomatika, 7*(3), 247–255. https://doi.org/10.1556/mental.7.2006.3.8

Szumska, I., Túry, F., Csoboth, C. T., Réthelyi, J., Purebl, G., & Hajnal, Á. (2005). The prevalence of eating disorders and weight-control methods among young women: A Hungarian representative study. *European Eating Disorders Review, 13*(4), 278–284. https://doi.org/10.1002/erv.633

Túry, F., Babusa, B., & Varga, M. (2010). History of eating disorders in Hungary. *Psychiatria Danubina, 42*(1), 73–84.

Túry, F., Szabó, P., Dukay-Szabó, S., Szumska, I., Simon, D., & Rathner, G. (2021). Eating disorder characteristics among Hungarian medical students: Changes between 1989 and 2011. *Journal of Behavioural Addictions, 9*(4), 1079–1087. https://doi.org/10.1556/2006.2020.00078

Udo, T., & Grilo, C. M. (2019). Psychiatric and medical correlates of DSM-5 eating disorders in a nationally representative sample of adults in the United States. *International Journal of Eating Disorders, 52*(1), 42–50. https://doi.org/10.1002/eat.23004

Waller, C., Slade, P., & Calam, R. (1990). Who knows best? Family interaction and eating disorders. *British Journal of Psychiatry, 156*(4), 546–550. https://doi.org/10.1192/bjp.156.4.546

Appendix

Table A1. Cronbach's Alpha Values Across Subsamples

Scales	Father	Mother	Index	Siblings
FAD - Overall Perception	.95	.96	.95	.95
FAD - Problem Solving	.81	.79	.81	.68
FAD - Communication	.76	.84	.75	.82
FAD - Roles	.80	.76	.86	.81
FAD - Affective Responsiveness	.85	.85	.82	.82
FAD - Affective Involvement	.75	.72	.64	.63
FAD - Behaviour Controll	.75	.79	.75	.78
FAD - General Functioning	.88	.88	.89	.87
WHO-WBI (well-being)	.81	.79	.83	.74
PSS-4 (perceived stress)	.61	.75	.79	.79