Current Psychology
https://doi.org/10.1007/s12144-025-07673-7

Adaptation of general family functioning assesment device (GF-FAD): its association with family adaptability, family belongingness and mental well being

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Accepted: 3 March 2025
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Abstract
Family functioning is crucial protective factor that supports a healthy family structure, fosters emotional growth, and enhances quality of life. This study examines the psychometric properties of the General Functioning Scale of the Family Assessment Device within a Turkish sample to evaluate its validity in evaluating family functionality. Two studies were conducted with distinct sample groups: Study-I (N=424, 70.3% women, 29.7% men, mean age=25.65) tested the factorial validity and measurement invariance, while Study II (N=709, 65.9% women, 34.1% men, mean age=22.63) examined structural relationships between family adaptability, belongingness, and mental well-being using structural equation modeling (SEM). Study I confirmed the 12-item unidimensional structure via confirmatory factor analysis (CFA), utilizing maxiumum likelihood robust (MLR) estimator to accommodate ordinal data. Furthermore, reliability assessments showed acceptable internal consistency and measurement invariance analyses indicated that the scale could give similar results. Family functioning correlated positively with family adaptability, communication, life satisfaction, openness, conscientiousness, extraversion, and agreeableness, while showing a negative correlation with neuroticism. Study-II revealed that family functioning and mental well-being are mediated by family belongingness and adaptability. These findings affirm that the General Functioning Scale of the Family Assessment Device is a robust and reliable instrument for assessing family functionality within this cultural context.

Keywords Family functioning · Family adaptability · Family belonging · Mental well being · Scale

Introduction

The family systems approach conceptualises the family as an interconnected system in which relational dynamics significantly influence individual and collective well-being (Morales Almeida & Nunes, 2024). However, that bring families together alone are not sufficient to fully capture the complexity of family dynamics. Family characteristics interact in a cyclical, reciprocal process, continuously influencing and shaping one another (Karaağaç et al., 2024). The emergence of a specific family trait often leads to or strengthens the development of another, thereby generating a continuous cycle of mutual influence and interdependence (Novak et al., 2021). This interconnected system ensures that various family characteristics function collectively rather than in isolation, ultimately fostering a balanced and healthy family structure. Through this dynamic interplay, families cultivate stability, resilience, and overall well-being within the family system (Rienecke et al., 2024).

Numerous factors influence family functioning, shaping the way family members interact, support each other and overcome difficulties. As dynamic social units, families are made up of individuals who share historical, social and emotional ties and form a complex network of relationships that develop over time (Gladding, 2023). These interconnected dynamics allow family members to provide emotional and psychological support, promote socialisation and

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Published online: 17 March 2025

facilitate socialisation. A well-functioning family not only ensures the emotional well-being of its members (Birgisdóttir et al., 2023), but also contributes to their cognitive and social development, strengthening positive coping mechanisms and adaptive behaviour in response to life stresses. Family functioning is a multidimensional structure covering physical, emotional and psychological interactions between family members. It plays a pivotal role in shaping individual mental health as it affects stress regulation, emotional safety and overall life satisfaction (Caro-Cañizares et al., 2024 Dysfunctional family dynamics, characterised by poor communication, high conflict and emotional detachment, have been associated with increased vulnerability to psychological distress, particularly in the context of depression and anxiety disorders (Huang et al., 2022). Research indicates that functional family environments enhance adaptability, foster social support, and facilitate emotional regulation, all of which contribute to improved psychological well-being (Boyes et al., 2023). Moreover, the role of family functioning extends beyond individual well-being; it also affects broader social integration, physical health and long-term relational stability (Gjøde et al., 2024). Even in intercultural contexts, family functioning plays a critical role in maintaining the mental health of its members (Alwuqaysi et al., 2024). Cultural values and societal expectations can shape family roles and responsibilities and influence the ways in which families provide support and overcome difficulties. In summary, family functioning provides a broad and integrative conceptual framework that interacts with multiple psychological, social and cultural factors.

Family adaptability is a fundamental concept that plays a crucial role in sustaining both family life and overall family functioning (Maurovic et al., 2020). This concept refers to a family's ability to adapt to changing circumstances, overcome stressors, and effectively manage challenges while maintaining stability within the family system. A family with a high level of adaptability is able to change its structure, roles and communication patterns in response to external pressures and ensure the well-being of all its members. Conversely, a lack of adaptability can contribute to dysfunctional dynamics, leading to increased stress levels and emotional distress among family members. From a systems theory perspective, family adaptability is based on the principle of holism, which emphasises the interconnectedness of family members and their ability to influence each other in a dynamic system (Wang & Dong, 2024). This perspective suggests that adaptability is not only an individual trait, but rather a collective family characteristic that reflects the family's capacity to reorganise itself in response to change. When families exhibit high levels of adaptability, they are more likely to maintain a supportive environment that promotes resilience, problem-solving skills, and emotional regulation. Family adaptability consists of key components such as effective communication, commitment, clearly defined roles, and quality time spent together, all of which contribute to a more balanced and cohesive family life (Oyanadel et al., 2023). Empirical research emphasises the important impact of family adaptability on mental well-being. Studies have shown that families with higher levels of adaptability tend to experience lower rates of depressive symptoms, conduct disorders and anxiety, while families with rigid or inflexible structures are more vulnerable to psychological distress (Dolz-del-Castellar & Oliver, 2021). These findings emphasise the importance of developing adaptability within family units, especially in the face of modern stressors such as economic instability, changing social dynamics, and external pressures related to work and education. Therefore, developing interventions to enhance family adaptability can be considered as a protective factor that mitigates the negative consequences of stress and promotes overall family well-being.

In addition to family functioning and adaptability, another concept that stands out as a protective factor is family belonging. Family belongingness is the experiences that enable individuals to see themselves as an indispensable part of a system (Karaağaç et al., 2024). Family belongingness establishes a supportive, harmonious bond between family members and allows them to feel themselves as a part of this system. The sense of belonging contributes to individuals to cope more effectively with multiple problems (Watts et al., 2025). Research shows that family belongingness increases intentions to engage in preventive behaviors, both to protect one's own health and the health of others (Marinthe et al., 2022). Family belonging not only reflects the existence of strong emotional ties between family members, but also plays an essential role in shaping their emotional reactions. A sense of belonging within the family enables family members to regulate their emotional responses more effectively by developing greater sensitivity to each other's emotional needs (Deniz et al., 2023; Nebot-Garcia et al., 2025). Beyond its role in shaping emotional reactions, family belonging also serves as a protective factor that supports the overall well-being of family members when faced with various adaptive challenges (Rejaän et al., 2022). Overall, family belonging serves as a crucial protective factor within the family system, contributing to both the stability of the family structure and the well-being of individuals.

The current study

Various factors that threaten individual well-being can also impact family life. Disasters, wars, and crises may cause psychological challenges but can also foster positive transformations within families. Despite the importance of

family functioning, existing psychometric instruments have not been extensively validated in the Turkish cultural context. Unlike previous studies that have mainly focussed on Western populations (e.g. Miller et al., 1985; Taylor et al., 2019), this study demonstrates the cross-cultural applicability of the GF-FAD by extending its validity to a Turkish sample. This study aims to contribute to the literature by adapting the GF-FAD and assessing its psychometric properties, including factor structure, reliability and criterion validity. Finally, by integrating recent developments in family systems theory and psychometric assessment, this study enhances the understanding of the relationship between family functioning, family adaptability, family belongingness and mental well-being, particularly within collectivist cultural contexts like Turkey. Understanding the interplay between family functioning, adaptability, and belonging is essential for shaping individual well-being (Maurovic et al., 2020). To achieve this, the research was conducted in two studies. The Study-I involved adapting the GF-FAD into Turkish and assessing its validity. The Study-II examined the relationships among family adaptability, family belongingness, family functioning, and mental well-being using a structural model based on the adapted scale. Separate data collection processes were carried out for each phase: Study I focused on scale adaptation, while Study II applied structural equation modeling to test the mediating effects. The flow chart of this research is presented in Fig. 1.

Study I

At this phase of the study, confirmatory factor analysis of the General Functioning Scale of the Family Assessment Device will be performed. As in the original form, CFA for 12-item forms of the scale will be performed. In addition, the scale will be examined utilizing maxiumum likelihood robust (MLR) and measurement invariance. Reliability analyses were also performed at this stage.

Method

Participants

Study I included 424 participants, 126 men (29.7%) and 298 women (70.3%), that were recruited from via online surveying. The mean age of participants was 25.65 (SD = 7.21 years, 18–54 years). Participants reported that 275 (64.9%) of them were single and 149 (35.1%) of them were had a relationship or married. Regarding the parental marital status, 348 participants (82.1%) reported their parents were married, while 76 participants (17.9%) indicated their parents were divorced. For housing status, 290 participants (68.4%) lived with their family, whereas 134 participants (32.6%) were living separated from their family.

Procedure

In the adaptation of GF-FAD into Turkish, translation permission was first obtained. Then, each item was translated into Turkish by 3 experts with PhD qualification. Back-translation procedures were carried out by 2 experts in English language education. The back translation process was shared with the original developers of the scale and they provided the final linguistic revision. Participants were selected through convenience sampling. Within the scope of the research, all volunteers over the age of 18 and anyone who could be reached were included in the research. The collected data were taken in the classroom environment in

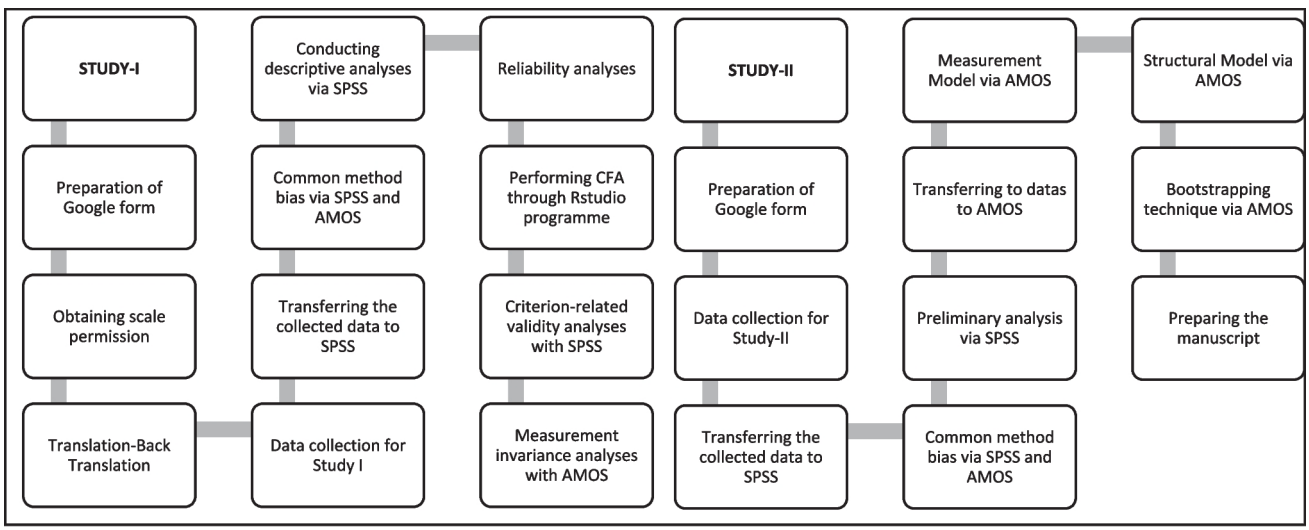


Fig. 1 A flowchart depicting the research process from data collection to data analysis

different universities from volunteer participants via Google Forms. Participants were asked to fill out the form by thinking about their own root families. In this phase, construct validity and reliability results were also analysed and and measurement invariance analyses were conducted.

Ethics

The study procedures were carried out in accordance with the Declaration of Helsinki and approved by Yıldız Technical University Social and Human Sciences Research Board (ID:006611). In addition, an informed consent form was presented to the participants before the scales.

Measures

General functioning scale of the family assessment device This scale developed by Miller et al. (1985). The unidimensional scale consists of 12 items (e.g., 'We can express our feelings to each other') and is rated on a 4-point Likert scale, with 1 being 'strongly disagree' and 4 being 'strongly agree'. High scores indicate high family functioning. Researchers have confirmed the validity and reliability of the scale with different parameters (Miller et al., 1985).

Family harmony scale This scale adapted by Duman Kula et al. (2018). The unidimensional scale consists of 5 items (e.g., 'Family members get on well with each other.') and is rated on a 5-point Likert scale, with 1 being 'strongly disagree' and 5 being 'strongly agree'. High scores indicate high family adaptability. The internal consistency reliability coefficient (Cronbach Alpha) of the original scale was found to be 0.91.

Family communication scale This scale of Geçer and Yıldırım (2023) aims to measure family communication. This one-dimensional scale has six items (e.g., 'I am satisfied with the way we communicate in our family'). This scale does not contain any reversed item, and one can use it to get the overall score. The total score on a 4-point scale with 1 meaning "strongly disagree" and 4 being "strongly agree" can range from 6 to 24. High scores indicate that participants' families communicate effectively. Reliability analysis showed that consistency reliability coefficient of the original scale was found to be 0.82.

The satisfaction with family life scale This scale, adapted by Karçkay et al. (2024), aims to measure overall family satisfaction by comparing family living conditions with personal standards and expectations. This unidimensional scale consists of 5 items (e.g., 'My family life is close to ideal in most respects') and is rated on a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). The score range can vary from 5 to 35. High scores indicate that individuals are satisfied with their family life. The internal consistency coefficient of the scale was found to be 0.93.

The satisfaction with life scale The Satisfaction With Life Scale was originally developed by Diener et al (1985). The Turkish adaptation of the scale was conducted by Baysal & Dağlı (2016). This scale developed to measure life satisfaction is a one-dimensional measurement tool consisting of 5 items. The lowest score that can be obtained from the 5-point Likert-type scale is 5 and the highest score is 25. A high score on the scale indicates an increase in individuals' satisfaction with life, while a low score on the scale indicates a low level of satisfaction with life. The internal consistency reliability coefficient of the original scale was found to be 0.87.

10-item big five inventory The scale, in which extraversion, agreeableness, conscientiousness, emotional stability and openness to experience, which are the dimensions of five-factor personality traits, are measured with two statements each, consists of ten items in total. The adaptation of the scale, which has two adjectives with similar meanings in each item, to Turkish culture was carried out by Türküm et al. (2016). In the scale, there are statements such as e.g. 'I see myself as timid and quiet' and 'I see myself as anxious and easily disappointed' prepared according to 5-point Likert scale (1: 'strongly disagree', 5: 'strongly agree'). Internal consistency coefficients were calculated as Openness 0.83, Agreeableness 0.81, Neuroticism 0.83, Conscientiousness 0.84 and Extraversion 0.86.

Data analysis

Confirmatory factor analysis (CFA) was used to evaluate the 12-item form of the scale using maximum likelihood robust (MLR) estimation in RStudio (Brauer et al., 2023). Comparative Fit Index (CFI), Tucker-Lewis Index (TLI) and Standardised Root Mean Square Residual (SRMR) were used to evaluate the model fit. Z-values, confidence intervals and standard errors were analysed. In the adaptation process of the scale, measurement invariance analyses were also performed. For the purpose of criterion validity, correlation analysis was performed through SPSS programme. Two approaches were used to assess potential common method bias (CMB): Harman's Single Factor Test and the Latent Common Method Factor (LCMF) model.

Results

To begin with, in Study-I, two different methods were used to assess potential common method bias: Harman's Single Factor Test and the Latent Common Method Factor (LCMF)

model. Firstly, Harman's Single Factor Test was performed by loading all observed variables onto a single unrotated factor using exploratory factor analysis (EFA). The analysis revealed that the first factor explained 37.72% of the total variance, which is below the commonly accepted threshold of 50% (Podsakoff et al., 2003). This finding indicates that a single factor does not dominate the variance and implies that the possibility of common method bias is low. Second, the LCMF model was implemented in AMOS and all observed variables were allowed to load both on their theoretical constructs and on a common method factor. The method factor loadings were negligible (M = −0.02), indicating that the common method variance did not have a significant impact on the results of the study. Overall, these findings suggest that common method bias is unlikely to be a significant problem, as neither evaluation method detected a strong presence of systematic method variance.

Following this, the CMB assumption was confirmed, confirmatory factor analysis was conducted. In Study-I, confirmatory factor analysis has been used for 12-item form. Then, the fit indices of the 12-item form were analysed. As modification warnings were given for the first analyses, 1 modifications were made. In these modifications, covariance was added to reduce the error load. This modification were selected due to the similar linguistic and semantic structure of the items. These modifications were made between item 6—item 11. After the related process the confirmatory factor analysis (CFA) via Maximum Likelihood Robust (MLR) revealed acceptable model fit with 12-item General Functioning Scale of the Family Assessment Device; χ^2 (127.56, N = 426) = 2.453, p < 0.001; CFI = 0.96;TLI = 0.95; SRMR = 0.037; RMSEA = 0.05. Consequently, the 12-item structure of the General Functioning Scale of the Family Assessment Device was confirmed. Factor loadings, descriptive statistics, item-total correlations and IRT results are presented in Table 1.

Following that, GFFAD and its relationship with other variables are presented in Table 2. GFFAD 12 item form was correlated with all factors (family adaptability: r = 0.80, p < 0.001; family communication: r = 0.79, p < 0.001; family life satisfaction: r = 0.74, p < 0.001; life satisfaction: r = 0.52, p < 0.001). GFFAD was also positively correlated with openness (r = 0.17, p < 0.001), conscientiousness (r = 0.28, p < 0.001), extraversion (r = 0.18, p < 0.001) and agreeableness (r = 0.17, p < 0.001) and negatively correlated with neuroticism (r = 0.20, p < 0.001). After the structure of General Functioning Scale of the Family Assessment Device was confirmed criterion-related validity studies were conducted. For this phase pearson correlation analysis has been used. The correlation between GFFAD, family life satisfaction, family communication, family adaptability, life satisfaction and five factor personality traits were analysed. Descriptive statistics and correlation results for other factors are shown in are presented in Table 2.

Measurement invariance

After examining the factor structures of the GFFAD with confirmatory factor analysis, it was analysed whether the GFFAD measures different constructs in a comparable way via AMOS. In within this framework, the results of CFA applied separately to gender-disaggregated data sets were analysed. The results of analysis are given in Table 3.

Reliability analysis

Reliability analyses were performed using Cronbach's Alpha, McDonald's Omega and Guttmann's Lambda for the 12-item form of GF-FAD. The results obtained in the reliability analysis show that the scale has a high internal consistency. Cronbach's Alpha coefficient was calculated as 0.882, McDonald's Omega coefficient as 0.883 and Guttmann's Lambda coefficient as 0.890. These values show that the reliability level of the scale is quite high and the items measure consistently with each other.

Table 1 Factor loading, descriptive statistics for GF-FAD-12

Item	Factor Loading	Mean	SD	Z-value	C.I. Lower	C. I. Upper	S.E
GFFAD—1	.43	3.06	.86	12.77	.36	.49	.03
GFFAD—2	.70	3.02	1.00	13.43	.60	.80	.05
GFFAD—3	.32	3.48	.76	12.45	.26	.36	.03
GFFAD—4	.39	3.51	.79	12.93	.33	.45	.03
GFFAD—5	.61	3.04	1.01	12.83	.52	.70	.05
GFFAD—6	.55	3.02	.99	12.50	.46	.63	.04
GFFAD—7	.30	3.34	.80	11.61	.24	.34	.02
GFFAD—8	.45	2.92	.98	11.50	.37	.52	.04
GFFAD—9	.39	3.30	.89	12.05	.33	.45	.03
GFFAD—10	.46	3.13	.95	11.99	.38	.53	.04
GFFAD—11	.48	2.85	.93	12.39	.40	.55	.04
GFFAD—12	.58	2.92	1.01	12.60	.49	.67	.05

Table 2 Descriptive statistics and correlations with GF-FAD 12-item form

					Correlation with GF-FAD 12 Item	
Variables	Mean	SD	Skewness	Kurtosis	*r*	*p*
STUDY I						
Family Functioning	37.59	7.27	-.581	.300	-	-
Family Adaptability	19.08	3.56	-.747	-.121	.80**	<0.001
Family Communication	15.77	4.88	-.577	-.471	.79**	<0.001
Family Life Satisfaction	23.87	7.44	-.593	-.356	.74**	<0.001
Life Satisfaction	16.32	4.49	-.319	-.216	.52**	<0.001
Big Five Personality Traits						
Extraversion	6.34	2.10	-.218	-.687	.18**	<0.001
Agreeableness	8.05	1.48	-.440	-.278	.17**	<0.001
Conscientiousness	7.39	1.75	-.225	-.549	.28**	<0.001
Neuroticism	5.95	1.90	.120	-.491	-.20**	<0.001
Openness	7.41	1.95	-.286	-.718	.17**	<0.001
STUDY II						
Family Functioning	37.50	6.70	-.464	-.428	-	-
Family Adaptability	19.37	4.55	-.704	-.198	.79**	<0.001
Family Sense of Belonging	69.08	11.08	-.671	-.289	.84**	<0.001
Mental Well Being	53.14	9.95	-.362	-.304	.39**	<0.001

Note. ** $p < 0.01$

Table 3 Fit indices of gender invariance

Invariance	χ^2	*df*	GFI	IFI	CFI	RMSEA	SRMR	ΔCFI	ΔRMSEA
Males	131.381	51	.928	.917	.934	.08	.065	–	–
Females	92.332	51	.948	.968	.968	.05	.039	–	–
Configural invariance	223.713	102	.924	.938	.937	.05	.039	–	–
Metric invariance	229.227	112	.922	.940	.939	.05	.040	.002	.03
Scalar invariance	245.668	122	.918	.936	.936	.05	.040	.003	.01

Study II

In Study II, after evaluating the psychometric properties of the GFFAD, a model to explain mental well-being with different family dynamics was tested using structural equation modelling. Family dynamics have the potential to influence well-being as they can affect emotional processes (Stuart & Jose, 2012). In addition, family dynamics significantly influence adolescent and adult well-being; positive family relationships and social support are positively correlated with well-being (Kukihara et al., 2020). Considering these findings, it is thought that family functioning, family adaptability and family belongingness are important in explaining mental well-being.

Method

Participants

Study-II included 709 participants reached through an online survey; 242 of these participants were men (34.1%) and 467 were women (65.9%). The mean age of the participants was 22.63 years (SD=4.22 years, range 18–45 years). 535 (75.5%) of the participants were single, 174 (24.5%) were in a relationship or married. Regarding parental marital status, 610 participants (86.0%) reported their parents were married, while 99 participants (14.0%) stated their parents were divorced. In terms of housing status, 416 participants (58.7%) live with their families, while 293 participants (41.3%) live separately from their families.

Procedure

Study II was conducted separately from study I. In addition, data were collected from another participants. Participants were selected through convenience sampling. Within the scope of the research, all volunteers over the age of 18 and anyone who could be reached were included in the research. The collected data were taken in the classrooms and research centers in different universities from volunteer participants via Google Forms Data were collected from volunteer participants via Google Forms. Informed consent was provided to the participants. Participants were asked to fill out the form by thinking about their own root families.

Measures

Family harmony scale This scale adapted by Duman Kula et al. (2018). The unidimensional scale consists of 5 items (e.g., 'Family members get along well with each other.') and is rated on a 5-point Likert scale, with 1 being 'strongly disagree' and 5 being 'strongly agree'. High scores indicate high family adaptability. The internal consistency reliability coefficient (Cronbach Alpha) of the original scale was found to be 0.91. For the present study Cronbach's α value has been calculated as 0.93.

Family sense of belonging scale This scale was developed by Mavili et al (2014). The aim of the scale is to measure the level of belonging of individuals to their families. This scale, which includes a 5-point Likert-type assessment with 1 being 'strongly disagree' and 5 being 'strongly agree', consists of 17 items and two sub-dimensions. The higher score obtained from the scale indicates a higher level of belonging to families. The internal consistency coefficient of the scale was calculated as 0.90. For the present study Cronbach's α value has been calculated as 0.92.

Warwick edinburgh mental well being scale WEMBS originally was developed by Tennant et al (2007). Keldal (2015) has adapted the scale into Turkish. The scale consists of 14 items and one dimension. It is in 5-point Likert type; 14–70 points can be obtained from the scale. Higher scores mean higher psychological well-being. The internal consistency coefficient of the scale was calculated as 0.89. For the present study Cronbach's α value has been calculated as 0.92.

Data analysis

Data were analysed using IBM SPSS Statistics 27 and AMOS Graphics version 24. Two approaches were used to assess potential common method bias (CMB): Harman's Single Factor Test and the Latent Common Method Factor (LCMF) model. The subscales of the Family Belonging Scale were constructed in accordance with the guidelines provided by the scale developers. For the other measurement instruments, item parcelling was applied based on factor loadings. Specifically, items were grouped into parcels using the odd–even numbering method, resulting in two parcels for each construct. Following the parcelling process, mediation analyses were conducted using structural equation modelling (SEM). Considering the strong relationships between family adaptability, family belongingness, family functioning and mental well-being, family functioning was analysed both as a result of belongingness and as a predictor of mental well-being. Therefore, the mediating roles of family adaptability, family belongingness and family functioning in the relationship between mental well-being and family dynamics were investigated. Bootstrap analysis was used to assess the significance of indirect effects. This approach allowed for a more robust assessment of mediation effects by creating confidence intervals for the estimated parameters..

Results

Correlation analysis

The General Functioning Scale of the Family Assessment Device that adapted in the study was found to have significant relationships with family adaptability, sense of family belonging and mental well-being. Family functioning (12 item form) was positively correlated with family adaptability ($r=0.79$, $p<0.001$), family belongingness ($r=0.84$, $p<0.001$) and mental well-being ($r=0.39$, $p<0.001$). Correlation results are given in Table 2.

In Study-II, two different methods were used to assess potential common method bias: Harman's Single Factor Test and the Latent Common Method Factor (LCMF) model. Firstly, Harman's Single Factor Test was performed by loading all observed variables onto a single unrotated factor using exploratory factor analysis (EFA). The analysis revealed that the first factor explained 34.40% of the total variance, which is below the commonly accepted threshold of 50% (Podsakoff et al., 2003). This finding indicates that a single factor does not dominate the variance and implies that the possibility of common method bias is low. Second, the LCMF model was implemented in AMOS and all observed variables were allowed to load both on their theoretical constructs and on a common method factor. The method factor loadings were negligible (M = −0.03), indicating that the common method variance did not have a significant impact on the results of the study. Overall, these findings suggest that common method bias is unlikely to be a significant problem, as neither evaluation method detected a strong presence of systematic method variance.

Measurement model

The measurement model consists of four latent variables: family adaptability, family belongingness, family functioning and mental well-being, and eight observed variables: two for family adaptability, two for family belongingness, two for family functioning and two for mental well-being. According to results the model fit was satisfactory (χ^2 /df = 4.08; CFI = 0.988; GFI = 0.976; AGFI = 0.938; NFI = 0.985; TLI = 0.976; IFI = 0.988; SRMR = 0.0184; RMSEA = 0.068). It can be said that the observed variables can represent the latent variables in a meaningful way.

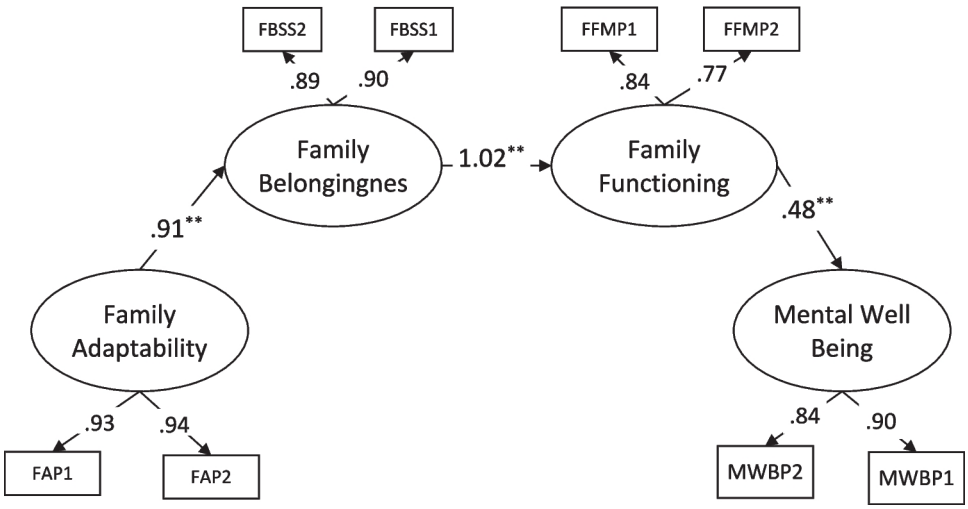


Fig. 2 Structural equation modelling for the serial mediation model. Notes. * $p<0.05$, ** $p<0.01$, FFP: parcel of GFFAD, FAP: parcel of family adaptability, MWBP: parcel of mental well being, FBSS: Family belongingnes subscale

Structural model

Structural equation modelling findings showed that the structural model fit was satisfactory (χ^2 /df=3.97; CFI=0.989; GFI=0.976; AGFI=0.949; NFI=0.985; TLI=0.981; IFI=0.989; SRMR=0.0185; RMSEA=0.065). In conclusion, According to the model, family adaptability predicted family belongingness, family belongingness predicted family functioning and family functioning predicted mental well-being positively respectively. All standardised coefficients are presented in Fig. 2.

Bootsrapping

Bootstrapping technique was applied to the full mediation model, which was hypothetically tested in the study and preferred as the best model in the SEM results. The results of bootstrapping to provide additional evidence for the significance of direct and indirect paths in the model are presented in Table 4. The direct effects was statistically significant. These results reveal the mediating role of family functioning and family belongingness in the relationship between family adaptability and mental well-being.

Table 4 Parameters and 95% C.I. for the paths of the final model

Model Pathways	Estimated	95% Confidence Interval	
		Lower	Upper
Direct link			
Family adaptability → Family belonging	.91	.885	.931
Family belonging → Family functioning	1.02	.998	1.05
Family functioning → Mental Well Being	.48	.408	.553

Discussion

This study contributes to the literature by providing statistical evidence on the psychometric properties of the GF-FAD within a Turkish sample, addressing the gap in cross-cultural validation. Additionally, by incorporating a structural model that examines the mediating roles of family adaptability and belongingness, it offers new insights into the mechanisms linking family functioning and mental well-being. To achieve these objectives, the research was conducted in two phases: Study-I and Study-II. In the Study-I, the General Functioning Scale of the Family Assessment Device was first translated into Turkish and then into English, the language of development, by experts fluent in Turkish and English. After the necessary adjustments and corrections were completed, the psychometric properties of the scale were measured. According to the results given in Table 1, the factor loadings of GF-FAD are between 0.39–0.70. At this point, all of the scale items are suitable with Turkish culture. As another result, in the confirmatory factor analysis of the 12-item form, all goodness-of-fit tests were acceptable and the one factor structure was confirmed. Confirmatory factor analysis was conducted using MLR through Rstudio. Given that the response format of the GF-FAD includes ordinal data, we used the Maximum Likelihood Robust (MLR) estimator, which is recommended for handling non-normally distributed ordinal data in confirmatory factor analysis (Brauer et al., 2023). This approach provides more accurate parameter estimation and increases the robustness of model fit indices. A modification was applied to items 6 and 11 due to their conceptual similarities, as both items assess different dimensions of family acceptance. Specifically, item 6 captures intra-family acceptance processes, reflecting how family members accept and support one another within the household. In contrast, item 11 focuses on family acceptance attitudes toward the external environment, illustrating

how the family interacts with and integrates into broader social contexts. To address potential redundancy, error covariances between the two items were allowed. However, in the Turkish cultural context, these distinctions may not have been clearly perceived. Given the collectivist nature of Turkish society, individuals may perceive family acceptance as a holistic concept, viewing both intra- and extra-family acceptance as components of a unified construct (Uysal et al., 2024).

Considering that GFFAD is used especially in Western culture, it is seen that GFFAD has a structure suitable for Turkish culture. This situation also shows that the McMaster Model is a valid model for examining family functioning even in collectivist cultures. Furthermore, the proposed one-dimensional structure yielded similar results in both men and women in the gender-based configurational, metric and scalar analysis. In the measurement invariance analysis, gender was treated as a categorical variable. The main purpose of testing measurement invariance was to determine whether the scale maintained its validity between men and women participants. Given the potential differences in gender roles in Turkish culture, it was important to examine whether these differences affected the scale scores. Furthermore, the mosaic social structure of Turkish society, characterized by both conservative and secular influences (Görpe & Öksüz, 2024), made this analysis even more necessary to ensure that the scale functioned equivalently across different gender groups. The scale demonstrated reliable results in Cronbach's alpha, McDonald's Omega and Gutmann's Lambda reliability analyses. In conclusion, the 12-item form of the scale confirmed the unidimensional structure, provided measurement invariance, had good response discrimination, and yielded reliable results. The current 12-item form is considered to be a useful instrument.

The Study-II examined the mediating role of family functioning and family belongingness between family adaptability and mental well-being. It was found that family functioning and family belongingness indirectly contributed to the relationships between family adaptability and mental well-being. As shown in Table 4 and Fig. 2, the findings suggest that family adaptability and belongingness significantly mediate the relationship between family functioning and mental well-being. These results are consistent with previous studies emphasising the importance of adaptability in the maintenance of mental well-being in families. The strong relationships between family adaptability, family functioning, and mental well-being may be due to the role of flexible family structures in reducing stress and promoting coping mechanisms, as suggested in previous studies (Boyes et al., 2023). In other words, the adaptative structure of families contributes to increase the functionality of families by making family members feel more belonging to their families and thus increase their mental well-being (Taylor et al., 2019). In parallel with the findings of the study, family functioning is directly related to the mental health of family members, and dimensions of functioning such as family adaptability and conflict are related to the psychological health of family members. In addition, parental support and resilience positively affect family functioning and increase children's well-being (Gaspar et al. 2022).

Table 2 presents the correlations between family adaptability, belongingness, family functioning, and mental well-being, indicating strong positive relationships among these variables. The significant associations highlight the crucial role of family functioning in fostering individual psychological health. A well-functioning family system helps maintain structural stability and facilitates effective communication, even in challenging circumstances (Ahlberg et al., 2023). The emotional support and adaptation present in high-functioning families act as foundational elements that positively related to mental well-being. According to the family systems approach, the interconnectedness of family members implies that individual emotional health can impact the overall system. High-functioning families often experience enhanced feelings of adaptability and belonging, which contributes to the mental health of their members. A healthy family system serves as a vital source of emotional support, thereby reinforcing individual mental well-being. As shown in Table 2, the strongest correlation was observed between family belongingness and family functioning. Consistent with previous research, this finding highlights the pivotal role of a strong sense of belonging in indirectly fostering mental well-being (Marinthe et al., 2022). Furthermore, the significant association between family adaptability and mental well-being suggests that individuals with a heightened sense of belonging within the family environment are more likely to experience greater psychological well-being. Notably, within Turkish families—rooted in a collectivist culture—belongingness appears to play a more central role compared to other variables. Furthermore, the McMaster model suggests that families with effective communication foster a strong sense of belonging (Miller et al., 2000). This type of communication allows family members to more deeply understand and meet each other's emotional needs, which can have positive effects on individuals' mental health. Emotional interaction between family members not only strengthens a sense of belonging, but also contributes to the development of healthy family dynamics, thus emphasizing the critical role of emotional involvement in maintaining healthy relationships. Such relationships between family dynamics can also act as a protective factor at the individual level (Caro-Canizares et al., 2024).

The family systems approach underscores the necessity of clearly defining each family member's role and

establishing appropriate boundaries within the family structure (Minuchin, 2018). This study indicates that effective family functioning enhances adaptation among members by maintaining system balance. This aligns with findings from Birgisdóttir et al. (2023), who observed that increased family adaptability leads to improved functionality in the context of illness. In current research, families exhibiting high functionality reported elevated levels of adaptability and belongingness, suggesting that clearly defined roles foster stronger commitments among members. Similarly, Zhou et al. (2020) found that family adaptability can become a protective factor for families. So, enhancing family adaptability emerges as a crucial intervention for promoting individual well-being within the system. Thus, it may be possible to say that the process leading to a functional family system is through family adaptability. Moreover, the significant association between belongingness and mental well-being highlights the importance of individuals perceiving themselves as integral parts of the family unit. The mediating effect of family belongingness on mental well-being indicates that strong family ties can positively influence individuals' mental health. Belonging can be strengthened with an adaptative family structure (Mörgen & Rieker, 2022). These results support the existing literature on the protective role of family belonging in mental health and show that family adaptability is indirectly related to family functioning and mental well-being. In general, the presence of adaptive roles within the family has the potential to increase belonging and family functioning. Consequently, clarifying responsibilities and maintaining healthy boundaries within the family may significantly contribute to the system's stable and healthy functioning (Minuchin, 2018).

According to Table 3 findings of this study highlight the essential role of family member relationships in mental health, supporting the family systems approach (Minuchin, 2018). Individuals experiencing high levels of family functioning tend to report enhanced feelings of adaptability and belonging, which in turn correlate with stronger mental well-being. Consistent with the Family Systems Approach, this study emphasizes that viewing family members as interconnected entities contributes significantly to the mental health of each individual within the system. Strong ties within families contribute to holistic mental balance, with trust and emotional support positively influencing individuals' psychological well-being (Wiegand-Grefe et al., 2019). The significant relationship between belongingness and mental well-being in high-functioning families suggests that a flexible and secure behavioral control structure enhances mental health by fostering commitment among members. Besides, it is important to evaluate the different dynamics that make up the family structure together (Booysen et al., 2021). The findings are consistent with previous research suggesting that family functioning is an important predictor of mental well-being (Rienecke et al., 2024). However, unlike previous studies conducted in a Western context, this study emphasises the role of family adaptability as a key mediating factor in a collectivist culture such as Turkey. This suggests that cultural dimensions may shape the impact of family functioning on psychological outcomes. It also suggests that roles within the family may become clearer in collectivist cultures and that an adaptive structure may be one of the first factors leading to overall family functioning. Therefore, family dynamics should be addressed collectively in family counseling interventions. These results align with the McMaster model, showing that high family functioning is crucial for fostering adaptability and a sense of belonging. Building a healthy family system enables therapists and families to create supportive environments. Overall, these findings provide important guidance for family counseling and therapy, emphasizing the need to clarify roles and responsibilities within the family to enhance overall well-being. The cross-cultural validation deepens our understanding of family systems theory in collectivist cultures by highlighting the role of cultural dimensions in shaping family dynamics.

Limitations and implications

While this study highlights the importance of family functioning, adaptability, belonging, and mental well-being, it has some limitations. To begin with, its cross-sectional design limits the ability to determine causality. Additionally, the sample may be restricted to a specific region and demographic, affecting the generalizability of the findings. Future studies with larger, more diverse samples across different cultures and socioeconomic groups would enhance the applicability of the results. Moreover, only certain variables were examined, overlooking factors like personality, life stress, and economic status, which may also influence family dynamics and mental health. Including these in future research would provide a more comprehensive view.

Family therapists can use the GF-FAD to assess clients' family dynamics in more depth. In particular, recognizing the relationship between sense of belonging and mental well-being, therapeutic techniques aimed at enhancing this sense can be applied. Improving family functioning in counseling can play an essential role in strengthening individuals' emotional and mental well-being. Counselors can intervene to promote greater adaptation and belonging among family members by providing a practical tool to understand family dynamics and guide the intervention process. By objectively assessing family functioning with the GF-FAD, therapists can track progress throughout the therapeutic journey. Family counseling can address critical issues such as role clarity,

task allocation, expression of commitment and willingness to spend time together. According to the Family Systems Approach, a strong sense of belonging positively affects mental health by promoting mutual support and solidarity. Therefore, strengthening family adaptability and belonging can be effective strategies in family therapy, ultimately promoting a balanced family system and enhancing the mental well-being of individuals within the family context.

Conclusion

The aim of this study was to validate the General Family Functioning Assessment Device (GF-FAD) in a Turkish sample and to examine the relationships between family adaptability, family belongingness, and mental well-being. Findings confirm that the GF-FAD demonstrates strong psychometric properties and provides support for its use in assessing family functioning in non-Western, collectivist cultural contexts. Measurement invariance analyses also revealed that the scale maintained consistency across gender groups, strengthening its applicability across different demographic populations. Furthermore, the findings highlight the crucial role of family adaptability and family belongingness in fostering mental well-being. Notably, family belongingness emerged as a stronger predictor of mental well-being than family adaptability, indicating that social and emotional ties within the family serve as the primary protective factor in the Turkish cultural context. While these results align with existing research on family systems theory, they also underscore the importance of considering cultural differences when assessing family dynamics. Nevertheless, despite these contributions, this study has some limitations. The cross-sectional design of the data limits causal explanations and future longitudinal studies are needed to validate the proposed mediation model. In conclusion, this study contributes to the literature by validating a widely used family functioning scale in a new cultural context, providing empirical evidence on the mediating roles of family adaptability and belongingness, and emphasizing the importance of family support systems in mental well-being. These findings have practical implications for family therapists, psychologists, and policy makers, who can use this scale to assess family functioning and develop culturally informed interventions to foster family dynamics and increase mental well-being.

Appendix

GF-FAD 12 Items	Strongly Disagree	Disagree	Agree	Strongly Agree
1. We can express our feelings to each other	1	2	3	4
2. We can't get along together.[a]	1	2	3	4
3. We confide each other	1	2	3	4
4. There are lots of bad feelings in the family.[a]	1	2	3	4
5. We can't talk to each other about the things that make us sad[a]	1	2	3	4
6. We feel accepted as we are	1	2	3	4
7. We support each other in times of crisis	1	2	3	4
8. We avoid discussing about our fears and worries[a]	1	2	3	4
9. We can make decisions to solve our problems	1	2	3	4
10. Making decisions is a problem in our family.[a]	1	2	3	4
11. Everyone is accepted as they are	1	2	3	4
12. We have difficulty planning family activities because we often misunderstand each other.[a]	1	2	3	4

[a]Reverse items

Acknowledgements This research is based on the master's thesis of Ali Berke Körün prepared under the supervision of Prof. Dr. Seydi Ahmet Satıcı.

Authors' contribution Ali Berke Körün was responsible for the writing, data collection, data analysis and reporting of the article. Seydi Ahmet Satıcı supervised the writing, data analysis and reporting of the article. Gabor I Keitner supervised the writing and reporting of the article.

Funding Open access funding provided by the Scientific and Technological Research Council of Türkiye (TÜBİTAK).
Not applicable.

Availability of data and material Data will be available on request.

Declarations

Ethical approval This research was ethically approved by Yıldız Technical University Institute of Social Sciences Ethics Committee with document number 006611.

Consent to participate Informed consent was obtained from all the individual participants that were included in the study.

Pre-registration statement This study was not pre-registered.

Conflict of interests On behalf of all authors, the corresponding author states that there is no conflict of interest.

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References

Ahlberg, M., Persson, C., Berterö, C., & Ågren, S. (2023). Exploring family functioning and - hardiness in families' experiencing adult intensive care - A cross-sectional study. *PLoS ONE,18*(7), e0288149. https://doi.org/10.1371/journal.pone.0288149

Alwuqaysi, B., Abdul-Rahman, A., & Borgo, R. (2024). Cross-cultural study on social media usage and its correlation with mental health and family functioning. *Computers in Human Behavior Reports,16*, 100513. https://doi.org/10.1016/j.chbr.2024.100513

Birgisdóttir, D., Grenklo, T. B., Kreicbergs, U., Steineck, G., Fürst, C. J., & Kristensson, J. (2023). Family cohesion predicts long-term health and well-being after losing a parent to cancer as a teenager: A nationwide population-based study. *PLoS ONE,18*(4), e0283327. https://doi.org/10.1371/journal.pone.0283327

Booysen, F., Botha, F., & Wouters, E. (2021). Conceptual causal models of socioeconomic status, family structure, family functioning and their role in public health. *BMC Public Health,21*(1), 191. https://doi.org/10.1186/s12889-021-10214-z

Boyes, M. E., Mah, M. A., & Hasking, P. (2023). Associations between family functioning, emotion regulation, social support, and self-injury among emerging adult university students. *Journal of Child and Family Studies*. https://doi.org/10.1007/s10826-022-02516-6

Brauer, K., Ranger, J., & Ziegler, M. (2023). Confirmatory factor analyses in psychological test adaptation and development: A nontechnical discussion of the WLSMV estimator [Editorial]. *Psychological Test Adaptation and Development,4*(1), 4–12. https://doi.org/10.1027/2698-1866/a000034

Caro-Cañizares, I., Sánchez-Colorado, N., Baca-García, E., & Carballo, J. J. (2024). Perceived stressful life events and suicide risk in adolescence: The mediating role of perceived family functioning. *Behavioral Sciences (Basel, Switzerland),14*(1), 35. https://doi.org/10.3390/bs14010035

Dağlı, A., & Baysal, N. (2016). Yaşam doyumu ölçeğinin türkçe'ye uyarlanmasi: geçerlik ve güvenirlik çalişmasi. *Elektronik Sosyal Bilimler Dergisi, 15*(59). https://doi.org/10.17755/esosder.263229

Deniz, M. E., Arslan, U., Satici, B., Kaya, Y., & Akbaba, M. F. (2023). A Turkish adaptation of the fears and resistances to mindfulness scale: Factor structure and psychometric properties. *Journal of Social and Educational Research, 2*(2). https://doi.org/10.5281/zenodo.10442299

Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The satisfaction with life scale. *Journal of Personality Assessment,49*(1), 71–75. https://doi.org/10.1207/s15327752jpa4901_13

Dolz-del-Castellar, B., & Oliver, J. (2021). Relationship between family functioning, differentiation of self and anxiety in Spanish young adults. *PLoS ONE,16*(3), e0246875. https://doi.org/10.1371/journal.pone.0246875

Duman Kula, M., Ekşi, H., & Demirci, İ. (2018). Aile uyum ölçeği'nin türkçe formunun psikometrik özellikleri. *Eskişehir Osmangazi Üniversitesi Sosyal Bilimler Dergisi,19*(1), 97–106. https://doi.org/10.17494/ogusbd.457082

Gaspar, T., Gomez-Baya, D., Trindade, J. S., Botelho Guedes, F., Cerqueira, A., & de Matos, M. G. (2022). Relationship between family functioning, parents' psychosocial factors, and children's well-Being. *Journal of Family Issues,43*(9), 2380–2397. https://doi.org/10.1177/0192513X211030722

Geçer, E., & Yıldırım, M. (2023). Family communication and psychological distress in the era of COVID-19 pandemic: Mediating role of coping. *Journal of Family İssues,44*(1), 203–219. https://doi.org/10.1177/0192513X211044489

Gjøde, I. C. T., Müller, A. D., Hjorthøj, C., Hemager, N., Ingversen, S., Moszkowicz, M., Christensen, S. H., Mikkelsen, L. J., Nielsen, S. S., Melau, M., Forman, J., Nordentoft, M., & Thorup, A. A. E. (2024). Effects on family functioning and the home environment of a family-based preventive intervention for children of parents with severe mental illness: A randomized controlled trial. *Journal of Consulting and Clinical Psychology*. https://doi.org/10.1037/ccp0000924

Gladding, S. T. (2023). *Aile terapisi: Tarihi, kuram ve uygulamaları*. Türk Psikolojik Danışma ve Rehberlik Derneği Yayınları.

Görpe, T. S., & Öksüz, B. (2024). Perception and contribution of public relations to society: What does the public think? *Insights from Türkiye. Social Sciences,13*(12), 675. https://doi.org/10.3390/socsci13120675

Huang, X., Hu, N., Yao, Z., & Peng, B. (2022). Family functioning and adolescent depression: A moderated mediation model of self-esteem and peer relationships. *Frontiers in Psychology,13*, 962147. https://doi.org/10.3389/fpsyg.2022.962147

Karaagac, Z. G., Satici, S. A., & Engin Deniz, M. (2024). Unraveling the link between childhood psychological maltreatment and mental well-being: The serial mediation role of family belongingness, family coherence, and loneliness. *The Family Journal, 0*(0). https://doi.org/10.1177/10664807241248180

Karçkay, A. T., Sarı, T., & Bakalım, O. (2024). Satisfaction with family life scale: A validity and reliability study in the Turkish context. *BMC Psychology,12*(1), 510. https://doi.org/10.1186/s40359-024-02037-5

Keldal, G. (2015). Warwick-Edinburgh mental iyi oluş ölçeği'nin Türkçe formu: Geçerlik ve güvenirlik çalışması. *The Journal of Happiness & Well-Being,3*(1), 103–115.

Kukihara, H., Yamawaki, N., Ando, M., Nishio, M., Kimura, H., & Tamura, Y. (2020). The mediating effect of resilience between family functioning and mental well-being in hemodialysis patients in Japan: A cross-sectional design. *Health and Quality of Life Outcomes, 18*(1), 233. https://doi.org/10.1186/s12955-020-01486-x

Marinthe, G., Brown, G., Jaubert, T., & Chekroun, P. (2022). Do it for others! The role of family and national group social belongingness in engaging with COVID-19 preventive health behaviors. *Journal of Experimental Social Psychology,98*, 104241. https://doi.org/10.1016/j.jesp.2021.104241

Maurović, I., Liebenberg, L., & Ferić, M. (2020). A review of family resilience: Understanding the concept and operationalization challenges to inform research and practice. *Child Care in*

Practice,26(4), 337–357. https://doi.org/10.1080/13575279.2020.1792838

Mavili, A., Kesen, N. F., & Daşbaş, S. (2014). Aile Aidiyeti Ölçeği: Bir ölçek geliştirme çalışması. Sosyal *Politika Çalışmaları Dergisi* (33). https://doi.org/10.21560/spcd.19507

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

Miller, I. W., Ryan, C. E., Keitner, G. I., Bishop, D. S., & Epstein, N. B. (2000). The McMaster approach to families: Theory, assessment, treatment and research. *Journal of Family Therapy,22*(2), 168–189. https://doi.org/10.1111/1467-6427.00145

Minuchin, S. (2018). *Families and family therapy*. Routledge.

Morales Almeida, P., & Nunes, C. (2024). Family climate as a mediator of the relationship between stress and life satisfaction: A study with young university students. *Behavioral Sciences (Basel, Switzerland),14*(7), 559. https://doi.org/10.3390/bs14070559

Mörgen, R., & Rieker, P. (2022). Doing foster family with young refugees: Negotiations of belonging and being at home. *Children & Society,36*(2), 220–233. https://doi.org/10.1111/chso.12460

Nebot-Garcia, J. E., Ballester-Arnal, R., Ruiz-Palomino, E., Fernández-García, O., & Gil-Llario, M. D. (2025). Family reaction to coming out (FRCO): A Spanish adaptation and validation of perceived parental reactions scale. *Family Process,64*(1), e13047. https://doi.org/10.1111/famp.13047

Novak, M., Parr, N. J., Ferić, M., Mihić, J., & Kranželić, V. (2021). Positive youth development in Croatia: School and family factors associated with mental health of Croatian adolescents. *Frontiers in Psychology,11*, 611169. https://doi.org/10.3389/fpsyg.2020.611169

Oyanadel, C., Worrell, F. C., Pinto-Vigueras, J., Betancur, S., Véliz Tapia, T., Au-Castro, M., Peña-Reyes, G., González-Loyola, M., & Peñate, W. (2023). Time balance and family functioning: The role of time perspective in the cohesion and adaptability of families with adolescents. *European Journal of Investigation in Health, Psychology and Education,14*(1), 117–132. https://doi.org/10.3390/ejihpe14010008

Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *The Journal of Applied Psychology,88*(5), 879–903. https://doi.org/10.1037/0021-9010.88.5.879

Rejaän, Z., van der Valk, I. E., & Branje, S. (2022). The role of sense of belonging and family structure in adolescent adjustment. *Journal of Research on Adolescence,32*(4), 1354–1368. https://doi.org/10.1111/jora.12694

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

Stuart, J., & Jose, P. E. (2012). The influence of discrepancies between adolescent and parent ratings of family dynamics on the well-being of adolescents. *Journal of Family Psychology,26*(6), 858–868. https://doi.org/10.1037/a0030056

Taylor, W. D., Cobigo, V., & Ouellette-Kuntz, H. (2019). A family systems perspective on supporting self-determination in young adults with intellectual and developmental disabilities. *Journal of Applied Research in Intellectual Disabilities: JARID,32*(5), 1116–1128. https://doi.org/10.1111/jar.12601

Tennant, R., Hiller, L., Fishwick, R., Platt, S., Joseph, S., Weich, S., Parkinson, J., Secker, J., & Stewart-Brown, S. (2007). The Warwick-Edinburgh Mental Well-being Scale (WEMWBS): Development and UK validation. *Health and Quality of Life Outcomes,5*, 63. https://doi.org/10.1186/1477-7525-5-63

Turkum, A. S., Satici, S. A., Yilmaz, M. F., & Kayis, A. R. (2016, May). Turkish version of 10-Item Big Five Inventory's psychometric properties. In *X. European Conference on Social and Behavioral Sciences*. Sarajevo, Bosnia and Herzegovina.

Uysal, D. A., Yigit, R., & Uzun, N. B. (2024). Turkish Validation and Cultural Adaptation of the Family Care Ability Assessment Scale for Pediatric Oncology Caregivers. In *Seminars in Oncology Nursing, 40*(6), 151726. https://doi.org/10.1016/j.soncn.2024.151726

Wang, Z., & Dong, W. (2024). Relationship between family variables and career adaptability: A meta-analysis. *Behavioral Sciences (Basel, Switzerland),14*(9), 840. https://doi.org/10.3390/bs14090840

Watts, K. J., Wagaman, M. A., Eaton, A. D., Leung, V. W. Y., & Craig, S. L. (2025). Examining the role of peer and family belongingness in the mental health of Black LGBTQ + youth. *Child & Youth Services,46*(1), 153–172. https://doi.org/10.1080/0145935X.2023.2261364

Wiegand-Grefe, S., Sell, M., Filter, B., & Plass-Christl, A. (2019). Family functioning and psychological health of children with mentally ill parents. *International Journal of Environmental Research and Public Health,16*(7), 1278. https://doi.org/10.3390/ijerph16071278

Zhou, Y., Hu, D., Zhang, K., Mao, J., Teng, F., Yu, T., Xu, K., Tan, R., Ding, X., & Liu, Y. (2020). The mechanism of family adaptability and cohesion in suicidal ideation among Chinese cancer patients. *Journal of Psychosocial Oncology,38*(5), 612–626. https://doi.org/10.1080/07347332.2020.1757799

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