

## Family Assessment Device (prepared by Beth Skelton Cosgrove, PhD, CPNP-PCRN)

**Title of Measure:** The McMaster Family Assessment Device (FAD)

**Website:** [https://commondataelements.ninds.nih.gov/report-viewer/23019/Family%20Assessment%20Device%20\(FAD\)#:~:text=The%20Family%20Assessment%20Device%20\(FAD,been%20used%20in%20TBI%20samples](https://commondataelements.ninds.nih.gov/report-viewer/23019/Family%20Assessment%20Device%20(FAD)#:~:text=The%20Family%20Assessment%20Device%20(FAD,been%20used%20in%20TBI%20samples)

### Reference for original article describing how the measure was developed and tested

- 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>

### Purpose/Background

- **Purpose:** Based on the McMaster Model of Family Functioning (MMFF), The Family Assessment Device (FAD) measures the structural, organizational, and transactional characteristics of families. The FAD can be used in both research and clinical practice to screen and identify families experiencing problems and the domains in which those problems occur and to assess change following treatment. It has been found to distinguish between health and nonhealthy families.
- **Background:** The FAD consists of 6 dimensions of the MMFF: Problem Solving, Communication, Roles, Affective Responsiveness, Affective Involvement, Behavior Control, and a 7th scale measuring General. During the development of the measure, some items were found to be highly correlated, so the developers of the measure took these items and created a 7<sup>th</sup> area of General Functioning. The original item bank contained 240 items that were created to match each of the dimensions based on 3 criteria:
  - Had to be written for the relevant dimension
  - The set of items had to be highly intercorrelated so that the scale had maximal internal consistency
  - Items in a scale had to correlate more highly with it's scale than the general functioning scale or any of the other scales

Using a recursive process- item selection stopped when the reliability was greater than .7 and the item did not increase the correlation between any other scale and there were no items that would increase the scale reliability

### Psychometrics:

- **From Original Article (Epstein, Baldwin, & Bishop, 1983)**
  - Sample for psychometric testing was primarily psychology students and families of persons inpatient psychiatric units

Dimension	Reliability ( <i>Chronbach's alpha</i> )	Number of Items
Problem Solving	.74	5
Communication	.75	6
Roles	.72	8
Affective Responsiveness	.83	6
Affective Involvement	.78	7
Behavior Control	.72	9
General Functioning	.92	12

- Correlations between each scale ranged from .4 to .6
  - Factor Analysis: There is correlation between the 7 dimensions and each is not independent of each other

- Researchers explain this by stating the dimensions of family functioning would be correlated, problems in one area would have ramifications in others
- Validity: Compared clinical and nonclinical data and found that nonclinical scores were lower indicating better family functioning. Also measured validity comparing to the Locke Wallace Marital Satisfaction Scale and found a better positive predictive value of the FAD
- **Psychometrics Completed in 1990 Study** (Kabacoff, et al., 1990)
  - Increased from 53 items to 60 items
  - Includes families with a “medically disabled” member that were not included in the original sample
  - Included 3 groups psychiatric, medical and nonclinical
  - Roles should be used with caution in a nonclinical sample ( $\alpha = .57$ )
  - Used Oblique Multiple Groups Procedure for confirmatory factor analysis and found to have a stable factor structure

Internal Reliability with Cronbach’s alpha values

Scale	Nonclinical (n=627)	Psychiatric (n=1,138)	Medical (n=298)
<b>Problem Solving</b>	.74	.80	.80
<b>Communication</b>	.70	.70	.76
<b>Roles</b>	.57	.69	.69
<b>Affective Responsiveness</b>	.73	.73	.75
<b>Affective Involvement</b>	.76	.78	.70
<b>Behavioral Control</b>	.70	.73	.71
<b>General Functioning</b>	.83	.84	.86

- **Other studies examining reliability and validity**
  - Has established test-retest reliability (Miller, Epstein, Bishop & Keitner , 1985)
  - Established evidence of criterion validity (Stevenson-Hinde & Akister, 1995; Sawyer, et al., 1988)
  - Established evidence of construct validity (Miller, Epstein, Bishop & Keitner , 1985; Miller et al., 1994)
  - Established reliability and validity of the 6 question General Functioning subscale (Boterhoven de Haan, Hafekost, Lawrence, Sawyer, & Zubrick, 2015)
  - Good internal reliability and validity of the 12- item general functioning scale of nonclinical children age 4-16 (Byles, et al., 1988)
  - Evidence of criterion validity and construct validity of the 12-item General Functioning scale (Mansfield, et al., 2015)
  - Able to differentiate satisfaction in family members non-clinical settings (Mansfield, Keitner, & Dealy, 2015)
  - Has good clinical utility in identifying families with problematic functioning (both the full and the General functioning 12) and the full FAD can be used to identify specific problem areas (Mansfield, Keitner, & Dealy, 2015)
  - Clinical cut off scores have been created for each subscale
    - Clinical Cutoff Scores with Sensitivity and Specificity (Miller, et al., 1985)

Subscale	Cutoff Score	Sensitivity	Specificity	Diagnostic Confidence
Problem Solving	2.2	.70	.79	.87
Communication	2.2	.83	.73	.89
Roles	2.3	.63	.64	.85
Affective Responsiveness	2.2	.63	.64	.77
Affective Involvement	2.1	.81	.60	.68
Behavioral Control	1.9	.57	.67	.68
General Functioning	2.0	.67	.64	.83

### Scoring Procedures (Epstein, Baldwin, & Bishop, 1983)

- 4 point Likert scale ranging from “strongly agree” to “strongly disagree”
- Answers are coded with a value from 1-4 with 4 (or a higher score) being more problematic functioning
- Clinical cutoffs for each score is listed in table above

### Populations the measure has been used with: Greater than age 12

- Clinical and nonclinical families
- Medical and psychiatric families
- Families in a urban community setting
- Specific conditions FAD has been used with
  - Cancer
  - Childhood asthma
  - Chronic Gastritis
  - Chronic Headache
  - Chronic heart disease
  - Dementia
  - Diabetes (Type 1)
  - Epilepsy
  - Fibromyalgia Syndrome
  - Guillan-Barre'
  - Hearing Impairment
  - HIV
  - Huntington disease
  - Inflammatory Bowel Disease
  - Multiple Sclerosis
  - Obesity
  - Osteoarthritis
  - Palliative Care
  - Preterm birth
  - Psychogenic nonepileptic seizures
  - Sickle Cell Disease
  - Traumatic Brain Injury
  - Ulcerative Colitis

- Psychiatric Disorders
  - Schizophrenic spectrum disorder
  - Bipolar disorders
  - Major depression disorder/Depression
  - Dysthymia
  - Anxiety disorders
  - Eating disorders
  - Substance abuse
  - Adjustment disorders
  - Maternal psychiatric illness
  - OCD
  - ADHD

**Languages the measure is available in:**

- **Armenian** – (Kazarian, 2010)
  - 12 item General Functioning Scale
- **Chinese** – (Shek, 2001)
  - 12 item General Functioning Scale
  - Factor analysis elicited 3 factors. This was an adolescent population but has been used in numerous studies of other Chinese population
- **English**
- **French** (Spennanza, et al., 2012)
  - Also yielded a 3 factor analysis
- **German-** (Beierlein, et al., 2017)
  - 51 item, eliminated the behavioral control subscale
- **Greek-** (Tsampanli, Petmeza, McCarthy, Adamis, 2018)
  - The Greek FAD has good psychometric properties, although its factor structure might differ from the original version
- **Hindi and Marathi**
  - Stated used a “translation expert” but did not discuss by what means the translation was completed
- **Icelandic** (Juliusdottir & Oladottir, 2014)
  - strong reliability and validity but showed differing factors- warrants further inquiry
- **Italian-** (Rancone, et al., 1998)
  - The factor analysis showed poor translation into Italian and the studies’ authors did not recommend use in Italian
  - Cannot find other studies validated studies for Italian although Mansfield et al. refers to Italian translations
- **Portuguese** (Pires, Goncalves de Assis, Avanci, & Pesce, 2016)
- **Spanish** (Barroilhet, et al., 2009)
  - found that the factor analysis on elicited 3 factors and may differ from the original theoretical structure
- **Swedish** (Bylund, et al., 2016)
  - On a limited population (participants following gastric bypass surgery)
  - Showed Satisfactory results for reliability for the general Functioning Scale
- **Turkish** (Bulut, 1990)

**Strengths and Limitations of the Measure:**

- **Strengths**
  - Most widely used measure of family assessment according to Sanderson, et al., 2009

- Has been translated into 6 and 12 general functioning short scales that have shown criterion validity and distinct results from the clinical and nonclinical cases (Hamilton & Carr, 2016)
- Can be used for multi-informant assessment and completed by multiple family members
- Has been translated into many languages
- **Limitations**
  - Factor Analysis shows that the 6 subscales are not distinctive enough and show overlapping factors (Hamilton & Carr, 2016)
  - Strictly a screening tool (Hamilton & Carr, 2016) but subscales may focus some concerns on certain parts of family functioning
  - Initial development did not include demographic information and on a limited sample
- **References for articles that include a discussion of the strengths and limitations of the measure:**
  - Hamilton, E. & Carr, A. (2016). Systematic review of self-report family assessment measures. *Family Process*, 55(1), 16-30.  
<https://doi:10.1111/famp.12200>

#### References for articles by IFNA members and others who have used the measure

- Barroilhet, S., Cano-Prous, A., Cervera-Enguiz, S., Forjaz, M.J., Guillen-Grima, F. (2009). A Spanish version of the Family Assessment Device. *Social Psychiatric Epidemiology*, 44(12), 1051-65 <https://doi:10.1007/s00127-009-0022-8>
- Beierlein, V., Bultmann, J.C., Moller, B., von Klitzing, K., Flechtner, H-H., Resch, F., Herzog, W., Braehler, E., Fuhrer, D., Romer, G., Koch, U., & Bergelt, C. (2017). Measuring family functioning in families with parental cancer: reliability and validity of german adaptation of the Family Assessment Device (FAD). *Journal of Psychosomatic Research*, 93, 110-117. <https://doi:10.1016/j.jpsychores.2016.11.007> Epub 2016 Nov 21. PMID: 28107886.
- Boterhoven de Haan, K.L., Hafekost, J., Lawrence, D., Sawyer, M.G., & Zubrick, S.R. (2015). Reliability and validity of a short version of the general functioning subscale of the McMaster Family Assessment Device. *Family Process*, 54(1), 116-23. <https://doi:10.1111/famp.12113>
- Byles, J., Byrne, C., Boyle, M. H., & Offord, D. R. (1988). Ontario Child Health Study: Reliability and validity of the General Functioning subscale of the McMaster Family Assessment Device. *Family Process*, 27(1), 97–104. <https://doi:10.1111/j.1545-5300.1988.0087.x>
- Bylund, A., Arestedt, K., Benzein, E., Thorell, A., & Persson, C. (2016). Assessment of family functioning: evaluation of the general functioning scale in a Swedish bariatric sample. *Scand J Caring Sci*, 30(3), 614-622, <https://doi:10.1111/scs.12269>.
- Herzer, M., Godiwala, N., Hommel, K. A., Driscoll, K., Mitchell, M., Crosby, L. E. et al. (2010). Family functioning in the context of pediatric chronic conditions. *Journal of Developmental and Behavioral Pediatrics*, 31(1), 26– 34. <https://doi.org/10.1097/dbp.0b013e3181c7226b>
- Juliusdottir, G. & Olafsdottir, H. (2014). An Iceland version of McMasters Family Assessment Device. *Research on Social Work Practice*, 25(7). <https://doi:10.1177/1049731514538673>
- Kabacoff, R.I., Miller, I.W., Bishop, D.S., Epstein, N.B., & Keitner, G.I. (1990). A psychometric study of the McMaster Family Assessment Device in psychiatric, medical

and nonclinical samples. *Journal of Family Psychology*, 3(4), 431-439.

<https://doi.org/10.1037/h0080547>

- Kazarian, S.S. (2010). Cultural appropriateness of the Family Assessment Device (FAD) in the case of ethnic Armenian adolescents in Lebanon. *International Journal of Social Psychiatry*, 56(3), 230-8. <https://doi:10.1177/0020764009105646> Epub 2009 Jul 10. PMID: 19592435.
- Leibach, G.G. & Everhart, R.S. (2017). Family Assessment Device: real-world validity in urban families of children with asthma. *Journal of Family Psychology*, 31(5), 642-647. <https://doi.org/10.1037/fam0000313>
- Leonard, B. J., Jang, Y. P., Savik, K., & Plumbo, M. A. (2005). Adolescents with Type 1 diabetes: Family functioning and metabolic control. *Journal of Family Nursing*, 11(2), 102– 121. <https://doi.org/10.1177/1074840705275152>
- Mansfield, A.K., Keitner, G.I., & Dealy, J. (2015). The Family Assessment Device: an update. *Family Process*, 54, 82-93. <https://doi.org/10.1111/famp.12080>
- 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>
- Morris, T. M. (1990). Culturally sensitive family assessment: An evaluation of the Family Assessment Device used with Hawaiian-American and Japanese-American families. *Family Process*, 29(1), 105-116. <http://dx.doi.org/10.1111/j.1545-5300.1990.00105.x>
- Sanderson, J., Kosutic, I., Garcia, M., Melendez, T., Donoghue, J., Perumbilly, S. et al. (2009). The measurement of outcome variables in couple and family therapy research. *American Journal of Family Therapy*, 37(3), 239-257. <http://doi:10.1590/S1518-8787.2016050005832> PMID: 27355464; PMCID: PMC4917332.
- Sawant, N.S., & Jethwani, K.S. (2010). Understanding family functioning and social support in unremitting schizophrenia: A study in India. *Indian Journal of Psychiatry*, 52(2), 145-149. <http://doi:10.4103/0019-5545.64593>
- Sawyer, M. G., Sarris, A., Baghurst, P. A., Cross, D. G., & Kalucy, R. S. (1988). The Family Assessment Device: Reports from mothers, fathers, and adolescents in community and clinic families. *Journal of Marital and Family Therapy*, 14(3), 287-296. <https://doi.org/10.1111/j.1752-0606.1988.tb00748.x>
- Shek, D.T. (2001). The general functioning scale of the Family Assessment Device: does it work with Chinese adolescents? *Journal of Clinical Psychology*, 57(12), 1503-1516. <https://doi:10.1002/jclp> 1113. PMID: 11745592
- Spenranza, M., Guenole, F., Revah-Levy, A., Egler, P-J., Negadi, F., Falissard, B., & Baleyte, J.M. (2012). The French version of the Family Assessment Device. *Canadian Journal of Psychiatry*, 57(9), 570-577. <https://doi:10.1177/070674371205700908> PMID: 23073035.
- Staccini, L., Tomba, E., Grandi, S., & Keitner, G.I. (2015). The evaluation of family functioning by the Family Assessment Device: a systematic review of studies in adult clinical populations. *Family Process*, 54(1), 94-115. <https://doi:10.1111/famp.12098>
- Stevenson-Hinde, J., & Akister, J. (1995). The McMaster model of family functioning: Observer and parental ratings in a nonclinical sample. *Family Process*, 34(3), 337–347. <https://doi.org/10.1111/j.1545-5300.1995.00337.x>
- Tsampanli, A., Petmeza, I., McCarthy, G., & Adamis, D. (2018). The Greek version of the McMaster Family Assessment Device. *Psych Journal*, 7(3), 122-132. <https://doi:10.1002/pchj.218>