

THE McMASTER FAMILY ASSESSMENT DEVICE*

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This paper describes the McMaster Family Assessment Device (FAD), a newly developed questionnaire designed to evaluate families according to the McMaster Model of Family Functioning. The FAD is made up of seven scales which measure Problem Solving, Communication, Roles, Affective Responsiveness, Affective Involvement, Behavior Control and General Functioning. The paper describes the procedures used to develop the FAD and presents scale means and scale reliabilities from a sample of 503 individuals.

Over the past two decades, interest in family therapy has increased dramatically (Epstein & Bishop, 1973; Group for the Advancement of Psychiatry, 1970; Gurman & Kniskern, 1981; Haley, 1971; Olson, 1970; Zuk, 1971), as evidenced, e.g., in the rapidly increasing number of publications relating to family therapy and family functioning (Aldous & Dahl, 1974; Aldous & Hill, 1967; Olson, 1979; Olson & Dahl, 1975, 1977). With this growing interest has come a need for assessment tools and procedures designed to provide therapists and researchers with reliable information about family functioning on a wide variety of clinically relevant dimensions (Cromwell, Olson & Fournier, 1976; Gurman & Kniskern, 1978; Strauss, 1969).

Family functioning is a very complex phenomenon which can be assessed in a variety of ways. We designed the McMaster Family Assessment Device (FAD) to be a screening instrument only. Given this purpose, the instrument had merely to identify problem areas in the most simple and efficient fashion possible. Previous work (Westley and Epstein, 1969) indicated that family functioning is much more related to transactional and systemic properties of the family system than to intrapsychic characteristics of individual family members. Based on these findings we constructed the FAD to collect information on the various dimensions of the family system as a whole, and to collect this information directly from family members.

We might have followed other strategies in developing a family assessment procedure. We could have based the procedure on observations of family members interacting, but this approach has a number of disadvantages. It is very time-consuming for both the family and the assessor. The behavior of families in the observation setting

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may not generalize their behavior to the real world. Furthermore, family observations generate vast amounts of data which are both difficult and expensive to reduce to clinically meaningful dimensions. Another approach would have been to collect information about each family member (and perhaps on dyads and triads in the family as well). The information on these subunits could then be combined to provide a description of the family system as a whole. Like family behavior observation, this approach has the disadvantages of being time-consuming and expensive to use. It also does not directly assess the variables that we have found to be most clinically relevant in working with families. The approach to family assessment embodied in the FAD does not have these disadvantages. Since the FAD is a screening instrument, its use does not preclude collecting other information. In fact, any problems in family functioning that are identified with the FAD should be investigated in more detail by looking at the significant and relevant biological, psychological and sociological factors in as much depth as possible.

In designing the FAD, we took the position that a family may not be perceived in the same way by observers with different points of view. Family members are likely to see things differently from participant observers (therapists) who will have a still different view from non-participant observers (researchers). We sometimes find differences in perception among family members and also between family members and therapists. Very likely, outside observers would sometimes have still different perceptions. We take this to mean that there are genuine differences in view. This does not mean that any one perception is correct and the others are wrong. Rather the differences are themselves worthy of empirical study, and can provide useful information for the clinician working with the family.

We have designed the FAD to assess a number of dimensions of family functioning in a form useful to researchers and family clinicians (Epstein, Baldwin & Bishop, 1981). In this paper we will describe the FAD, its development, and some of its psychometric properties including scale reliabilities, intercorrelations and the distribution of scores on the scales. We will present preliminary evidence of the validity of the instrument, and discuss the current status of the FAD and our plans for future work.

DESCRIPTION OF THE FAD

The FAD is based on the McMaster Model of Family Functioning (MMFF), a clinically oriented conceptualization of families. The model has evolved from previous work (Epstein, Sigal & Rakoff, 1962; Westley & Epstein, 1969). It describes structural and organizational properties of the family group and the patterns of transactions among family members which have been found to distinguish between healthy and unhealthy families.

The model identifies six dimensions of family functioning. *Problem Solving*, the first dimension of the MMFF, refers to the family's ability to resolve problems (issues which threaten the integrity and functional capacity of the family) at a level that maintains effective family functioning. Seven steps of effective problem solving are identified. The second dimension of the MMFF is *Communication*, which is defined as the exchange of information among family members. The focus is on whether verbal messages are clear with respect to content and direct in the sense that the person spoken to is the person for whom the message is intended. The third dimension is *Roles*. Here the MMFF focuses on whether the family has established patterns of behavior for handling a set of family functions which include provision of resources, providing nurturance and support, supporting personal development, maintaining and managing the family systems and providing adult sexual gratification. In addition, assessment of the Roles dimension includes consideration of whether tasks are clearly and equitably assigned to family members and whether tasks are carried out responsibly by family

members. The fourth dimension, *Affective Responsiveness*, assesses the extent to which individual family members are able to experience appropriate affect over a range of stimuli. Both welfare and emergency emotions (Rado, 1961) are considered. The fifth dimension, *Affective Involvement*, is concerned with the extent to which family members are interested in and place value on each other's activities and concerns. The healthiest families have intermediate levels of involvement, neither too little nor too much. The final dimension of the MMFF is *Behavior Control* which assesses the way in which a family expresses and maintains standards for the behavior of its members. Behavior in situations of different sorts (dangerous, psychological and social) is assessed as are different patterns of control (flexible, rigid, laissez-faire and chaotic are considered). More extensive descriptions of the MMFF are available elsewhere (Epstein & Bishop, 1981; Epstein, Bishop & Baldwin, 1980; Epstein, Bishop & Levin, 1978).

The FAD is made up of seven scales. One, General Functioning, assesses the overall health/pathology of the family. The other six assess the six dimensions of the MMFF. It is a paper and pencil questionnaire which can be filled out by all family members over the age of twelve. The 53 items in the questionnaire are statements a person could make about his or her family. These items are listed in Table 1.

Table 1
Items and Subscales of the McMaster Family Assessment Device

PROBLEM SOLVING

We usually act on our decisions regarding problems.
After our family tries to solve a problem, we usually discuss whether it worked or not.
We resolve most emotional upsets that come up.
We confront problems involving feelings.
We try to think of different ways to solve problems.

COMMUNICATION

When someone is upset the others know why.
You can't tell how a person is feeling from what they are saying.
People come right out and say things instead of hinting at them.
We are frank with each other.
We don't talk to each other when we are angry.
When we don't like what someone has done, we tell them.

ROLES

When you ask someone to do something, you have to check that they did it.
We make sure members meet their family responsibilities.
Family tasks don't get spread around enough.
We have trouble meeting our bills.
There's little time to explore personal interests.
We discuss who is to do household jobs.
If people are asked to do something, they need reminding.
We are generally dissatisfied with the family duties assigned to us.

AFFECTIVE RESPONSIVENESS

We are reluctant to show our affection for each other.
Some of us just don't respond emotionally.
We do not show our love for each other.
Tenderness takes second place to other things in our family.
We express tenderness.
We cry openly.

Table 1, continued

AFFECTIVE INVOLVEMENT

If someone is in trouble, the others become too involved.
You only get the interest of others when something is important to them.
We are too self-centered.
We get involved with each other only when something interests us.
We show interest in each other when we can get something out of it personally.
Our family shows interest in each other only when they can get something out of it.
Even though we mean well, we intrude too much into each other's lives.

BEHAVIOR CONTROL

We don't know what to do when an emergency comes up.
You can easily get away with breaking the rules.
We know what to do in an emergency.
We have no clear expectations about toilet habits.
We have rules about hitting people.
We don't hold to any rules or standards.
If the rules are broken, we don't know what to expect.
Anything goes in our family.
There are rules about dangerous situations.

GENERAL FUNCTIONING

Planning family activities is difficult because we misunderstand each other.
In times of crisis we can turn to each other for support.
We cannot talk to each other about the sadness we feel.
Individuals are accepted for what they are.
We avoid discussing our fears and concerns.
We can express feelings to each other.
There are lots of bad feelings in the family.
We feel accepted for what we are.
Making decisions is a problem for our family.
We are able to make decisions about how to solve problems.
We don't get along well together.
We confide in each other.

Each family member rates his or her agreement or disagreement with how well an item describes their families by selecting among the four alternative responses: strongly agree, agree, disagree, and strongly disagree. The questionnaire takes approximately fifteen to twenty minutes to complete.

Psychometric Properties

We have based the FAD development on the responses of a sample of 503 individuals. Of these individuals, 294 come from a group of 112 families. This group includes four families of children in a psychiatric day hospital, six families of patients in a stroke rehabilitation unit and nine families of students in an advanced psychology course. The remaining ninety-three families in this group contained one member who was an inpatient in an adult psychiatric hospital. The inpatient members had a variety of DSM-III diagnoses. (Some who had originally been classified according to DSM-II criteria have been re-classified into DSM-III categories.) Twenty-one had Adjustment Disorders. Thirteen had Major Depressive Disorders. Twelve had Bipolar Affective Disorders. Eight had Personality Disorders. Eight had Organic Mental Disorders (five with alcohol abuse and three with Phencyclidine abuse). Five had Schizophrenic Disorders. Five had Somatoform Disorders. Three had Mental Retardation. There was insufficient information on the remaining eighteen to classify them according to DSM-III

criteria. In addition, the total sample of 503 people includes 209 students in an introductory psychology course. Since the data was collected in the classroom it was not practical to have other members of the family fill out the questionnaire. The total sample was selected so that it would contain individuals from families varying considerably in their level of functioning. All subjects gave their informed consent before filling out the questionnaire.

A common strategy in developing a questionnaire such as the FAD is to generate a large item pool, and to hope that the items will adequately cover all aspects of the domain which is to be assessed. A large number of subjects then responds to the items, and the pattern of responses is used to identify a set of factors or scales. At least two general problems exist with this approach. The scope of the instrument is very much determined and limited by the initial item set. If areas in the domain are underrepresented or not represented in the item pool, then these areas will be more or less untapped in the final instrument. Secondly, the scales that are produced, while having nice mathematical properties, are frequently hard to interpret and not clinically useful.

In designing the FAD we took a different approach in order to avoid these problems. We used the MMFF to define the domain which the instrument was to assess, thus assuring adequate coverage of the areas of family functioning which we have found to be important. We also planned from the beginning to have the FAD contain scales measuring the six dimensions of the MMFF. These six scales would thus be easily interpretable and would be clinically relevant. To develop an item pool, we started with goal attainment scale point descriptions from a previous outcome study (Woodward, Santa Barbara, Levin, Epstein & Streiner, 1977; Woodward, Santa Barbara, Levin, Goodman, Streiner & Epstein, 1975). Additional items were added to cover all areas of each dimension. All items were rewritten so that each applied to a single dimension of the MMFF and so that there was an equal number of items describing healthy and unhealthy functioning for each dimension. The first version of the FAD consisted of a set of 240 items, 40 items for each of the six dimensions of the MMFF.

We worked with each of the six sets of forty items separately. Within each set, we selected the smallest subset of items which taken together produced a scale with the highest reliability (Chronbach's *alpha*). The range of *alphas* was between .83 and .90 with from 17 to 22 items in the six scales. Unfortunately, these scales were also highly intercorrelated. An examination of the data indicated that a cluster of items was responsible for the high correlations.

We returned to the item pool and selected all items which correlated highly with all six scale scores. We then selected the most highly intercorrelated subset of these items to make a General Functioning scale which assesses the overall health/pathology of the family. This scale is made up of twelve items, (one from Problem Solving, four from Communication, two from Roles, one from Affective Responses, three from Affective Involvement and one from Behavior Control).

We then returned once again to the original set of 240 items and selected items for the six dimension scales according to three criteria. First, the items had to be written for the relevant dimension. Second, the set of items making up a scale had to be as highly intercorrelated as possible so that the scale had maximal internal consistency. Third, items in a scale had to correlate more highly with that scale than with either the General Functioning scale or other five dimension scales. This scale construction process was a recursive one. Each time the set of items making up a scale was modified, the correlations between that scale and the individual items and that scale and other scales changed. The item selection process for a scale stopped when the scale reliability was over a minimum ($\alpha = .70$) and either there were no items to add which would increase scale reliability or any item which might increase the scale reliability would also increase the correlation of that scale with one of the other scales. This procedure

resulted in scales containing between five and twelve items. The scales are of different sizes since the number of items in a scale is only indirectly related to the selection criteria.

This procedure resulted in the FAD. It contains 53 items which make up seven scales (each item is contained in only one scale). Table 2 presents the number of items, reliability levels, means and standard deviations for each of the seven scales based on the responses of 503 individuals.

Table 2
Reliabilities, Means, and Standard Deviations
of the Seven Scales of the FAD
(N = 503)

	Reliability (Chronbach's <i>alpha</i>)	Mean*	Standard Deviation	Number of Items
PROBLEM SOLVING	.74	2.3	.47	5
COMMUNICATION ROLES	.75	2.3	.51	6
AFFECTIVE RESPONSIVENESS	.72	2.4	.43	8
AFFECTIVE INVOLVEMENT	.83	2.4	.61	6
BEHAVIOR CONTROL	.78	2.2	.50	7
GENERAL FUNCTIONING	.72	2.0	.41	9
	.92	2.2	.58	12

*Scores range from 1 to 4 with 1 reflecting healthy functioning and 4 reflecting unhealthy functioning.

The scales we have developed are moderately independent. The correlation between the six dimension scales ranged from .4 to .6. These correlations are found in Table 3.

Table 3
Pearson Product Moment Correlations
among the Seven FAD Scales
(N = 503)

	SCALES						
	PS	CM	RL	AR	AI	BC	GF
PS	—	0.66	0.49	0.62	0.54	0.43	0.76
CM	0.66	—	0.50	0.67	0.57	0.38	0.75
RL	0.49	0.50	—	0.50	0.55	0.37	0.60
AR	0.62	0.67	0.50	—	0.61	0.41	0.76
AI	0.54	0.57	0.55	0.61	—	0.42	0.71
BC	0.43	0.38	0.37	0.41	0.42	—	0.48
GF	0.76	0.75	0.60	0.76	0.71	0.48	—

PS = Problem Solving; CM = Communication; RL = Roles; AR = Affective Responsiveness; AI = Affective Involvement; BC = Behavior Control; GF = General Functioning.

However, partial correlations between the dimension scales approach zero when General Functioning is held constant. The variance shared between the dimension scales is for the most part accounted for by the variance that each shares with the General Functioning scale (see Table 4).

Table 4
Partial Correlations Among the Six
Dimension Scales with the Effect
of General Functioning Removed
(*N* = 503)

	SCALES					
	PS	CM	RL	AR	AI	BC
PS	—	0.23	0.08	0.12	0.01	0.11
CM	0.23	—	0.10	0.23	0.08	0.03
RL	0.08	0.10	—	0.10	0.23	0.12
AR	0.12	0.23	0.10	—	0.16	0.08
AI	0.01	0.08	0.23	0.16	—	0.13
BC	0.11	0.03	0.12	0.08	0.13	—

PS = Problem Solving; CM = Communication; RL = Roles; AR = Affective Responsiveness; AI = Affective Involvement; BC = Behavior Control.

Validity

There are two findings which suggest that the FAD has validity. First, using data from the sample described above we compared the FADs of individuals from families which were clinically presenting with individuals from families which did not present clinically. Data from only one individual in a family was included in this analysis. The expectation was that the former set of FADs should reflect less healthy family functioning. Individuals' FAD scores for 218 nonclinical families and 98 clinical families (five in this group were excluded because they had missing data) were used in a discriminant analysis to predict whether the family came from the clinical or nonclinical group. Sixty-seven percent of the nonclinical group and sixty-four percent of the clinical group were correctly predicted. Overall, the results were highly statistically significant ($p < .001$). The means and standard deviations on the seven FAD scales for each group are presented in Table 5. In every case the nonclinical group mean was lower (more healthy) than the mean for the clinically presenting group.

We recently conducted a study of retirement adjustment in which we interviewed a random sample of 178 couples in their sixties. We collected data using the FAD, the Philadelphia Geriatric Morale Scale (Lawton, 1972; Lawton, 1975) and the Locke Wallace Marital Satisfaction Scale (Locke & Wallace, 1959). To assess concurrent validity we used regression analysis. The FAD predicted 28% ($R = .53$) of the variance on the Locke Wallace for both husbands and wives analyzed separately. Thus, the two measures were assessing related phenomena. In a test of predictive validity, the FAD also predicted 22% ($R = .47$) of the variance in the morale scores for husbands and 17% ($R = .41$) of the variance for wives. In a parallel analysis the Locke Wallace predicted only 11% ($R = .34$) of the variance for husbands and 13% ($R = .36$) for wives. Clearly, the FAD was the more powerful predictor.

Table 5
Means and Standard Deviations of Clinical and Nonclinical
Samples on FAD Scales

	MEAN		STANDARD DEVIATION	F
	NONCLINICAL (N = 218)	CLINICAL (N = 98)		
PROBLEM SOLVING	2.20	2.38	.44	15.51***
COMMUNICATION ROLES	2.15	2.37	.48	15.30***
AFFECTIVE RESPONSIVENESS	2.22	2.47	.39	30.25***
AFFECTIVE INVOLVEMENT	2.23	2.42	.57	7.03**
BEHAVIOR CONTROL	2.05	2.23	.48	10.07**
GENERAL FUNCTIONING	1.90	2.02	.39	5.90*
	1.96	2.26	.53	25.00***

F Ratios all have 1 and 314 degrees of freedom.

* $p < .02$

** $p < .01$

*** $p < .0001$

DISCUSSION

The FAD has the potential for being a very useful instrument and as it now stands has a number of attractive features. It is an economical paper and pencil test containing 53 items. Like most other family assessment questionnaires it measures people's perceptions of their families. It provides assessments of families in terms of a well-described specific model that has itself been proven useful in clinical work (Bishop & Epstein, 1980; Bishop et al., 1980; Epstein & McAuley, 1978; Gilbert, 1971; McAuley & Epstein, 1978; Weston, 1972), teaching (Cleghorn & Levin, 1973; Epstein & Levin, 1973), and research (Baldwin, Epstein & Bishop, 1981; Bishop, Horn & Byles, 1982; Byles, Bishop & Horn, 1982; Woodard et al., 1975; Woodard et al., 1977). The FAD provides a more detailed picture of families than do other available scales, because it contains seven different scales, each having acceptable reliability.

The seven scales which make up the FAD are intercorrelated. This conflicts with traditional psychometric practice which dictates that subscales of an instrument should be independent of each other. If a set of scales intercorrelates very highly, then using a single scale provides almost as much information as all the scales used together and it is more efficient to use only the single scale. On the other hand, there is no reason to think that different aspects of family functioning will be totally independent of each other. In fact, we would expect problems in one area of family functioning to have ramifications in other areas. Some families might have trouble only with behavior control, others only with communication, and some might have problems in both areas. Total independence of scales thus seems an illogical demand to place on a family assessment instrument. The FAD scales are sufficiently independent to be distinguishable and we have attempted to strike a balance between the demands of psychometry and reality. Whether this balance is a good one will be tested in future validity studies.

Future Research

We are planning a number of studies in the near future to further explore the usefulness of the FAD (Validity) in both research and clinical practice and to investigate

further its other psychometric properties. We have also developed the McMaster Clinical Rating Scale (CRS) (van der Spuy, Croskerry, Epstein & Bishop, 1982) which assesses clinicians' perceptions of the functioning of family systems. We will compare the CRS with the FAD across a range of families. We will collect data to establish the test-retest reliability of the scale. We have already used it in the retirement study mentioned previously and are beginning to use it with families participating in an affective disorder program. We have begun studies involving work with the families of patients with rheumatoid arthritis, with systemic lupus erythematosus, and who have suffered a stroke. In the more distant future, we plan to use the FAD in outcome studies testing the effectiveness of training people to carry out family treatment using our problem-centered approach to family therapy.

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