

Detection of Affective Disorders in Family Practice: 126 Assessments

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Home visits provided the setting for interim assessments by a clinical psychiatrist and a research assistant between December 1978 and April 1979. Two instruments were used: a standardized 61-question interview and a self-rating checklist. Forty-seven cases of affective disorder, 47 age-sex-marital status matched compeers, and 32 spouses participated. Results show little agreement between family practice records (drug and problem lists) and assessment at home visits. Over 46 percent of adults showed signs of anxiety, depression, or both. Gaps in physician-patient communication account for some of the missed diagnoses. Prospective studies of these common disorders are handicapped by problems of: (1) definition and criteria, (2) fluctuations in sick/well status over time, (3) changing levels of severity and levels of detection, and (4) losses of the sicker persons from the population for follow-up study. A generally useful model for affective disorders emphasizes the interaction between intrinsic factors (subjective stress) and extrinsic factors (objective stress). A flow sheet is used to help the clinician assess the major components of stress, patient's ability to cope, and plan for management.

A summer project of 1975 was the first stage of a longitudinal prospective study of the natural history of affective disorders in family practice.¹ Among 298 adults followed for two years, about six percent (18) developed an affective disorder each year: 3.8 percent anxiety, 1.9 percent depression, and 0.4 percent episodes of both. The sex ratio was predominantly female (2.7:1).

Of the three approaches to recognizing affective disorders, none was wholly satisfactory: (a) the *problem list* using ICHPCC codes, generated by the residents, contributed 77 percent of the cases; (b) a computerized *prescription* file contributed an additional 23 percent of cases; and (c) *self-rating scales* routinely collected (at a time between visits for illness) were the least productive in terms of sensitivity or specificity.²⁻⁴

Present Study

Another approach might be more efficient at detecting the full spectrum (depth and breadth) of affective morbidity in family practice. A planned series of standardized interviews could be con-

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Glossary

Terminology is in a state of modification. See the latest proposed revisions in the classification of the American Psychiatric Association ("DSM-III"). Five axes are proposed.⁷

Anomie A state of the individual in which normative standards of conduct and belief are weak or lacking, commonly characterized by lack of purpose, problems of identity, and social isolation.

Anxiety Signs and symptoms detectable during a half-hour home visit which indicated feelings of apprehension and fear, marked by doubt concerning one's ability to cope with some threat, real or imagined.

Compeers A term preferred by many epidemiologists to describe persons selected for comparison with index cases. "True controls" do not exist, since persons cannot be matched on more than a few selected attributes (age, sex, race, marital status).

Coping (Ability to cope) A level of adaptation assessed in terms of role fulfillment and self-fulfillment. Manifest in the activities of daily living: loving, working, playing, fighting, parenting, and relating to others.

Depression Signs and symptoms of sadness or loss of interest and pleasure, with feelings of hopelessness and helplessness. In addition, there is impaired function in at least three of the following areas: sleep, appetite, energy, sexual function, concentration, decision making, self-esteem.

Filters Three psychosocial factors frequently associated with, and predisposing to affective disorders: anomie, poor social support, and personality deficiency.

Objective stress Life circumstances and recent life events acting as psychosocial stressors. Stressors operate in areas such as interpersonal relationships, occupation, finances, legal matters, developmental tasks, physical illness/injury, natural or man-made disasters or threat of disaster, and others.

Personality Deficiency Deeply ingrained, inflexible patterns of perceiving and thinking about the environment and oneself; these patterns are severe enough to impair the activities of daily living and to cause subjective distress.

Psychotherapy The treatment of mental or emotional disorders by psychological means.

Sadness Signs and symptoms of grief or unhappiness, detectable by verbal and nonverbal communication.

Sociotherapy The treatment of mental or emotional disorders by social intervention to provide that environment which is most conducive to the development of the personality.

Well Persons without anxiety and/or depression, as of August 1977, but who may have any level of physical disability or illness.

ducted in the homes of identified *cases* and age-sex-marital status matched *compeers* by a seasoned observer (a board certified psychiatrist with 10 years experience in ambulatory care as a general practitioner and 15 years experience in clinical psychiatry). The observer-blinded features of the survey would simulate the family physician's office encounter with a new patient without the benefit of prior knowledge of clues to emotional status; also the home visit would be timed as an interim visit, between office visits for illness or medical care.⁵

The cohort of patients surveyed in this study (December 1978-April 1979) can be traced back to the opening of the teaching practice in August 1972 (Table 1). Of the original 333 adults participating in 1975, 298 were still active in 1977 when 85 patients were identified by medical problem list and/or

drug list as cases of affective disorder. Of these 85 cases (in December 1978) 12 were inactive, 14 had disconnected telephones or no listing, and 12 refused to participate. Of the refusals, 11 were female and one was male, reflecting the preponderance of women among cases (70/15). Of the 59 cases who could be contacted, 47, or 79.7 percent, agreed to participate.

For each case, a compeer was sought from the list of still active patients from the original cohort of 213 non-cases. Each compeer was matched with an index case for sex, age within five years, and marital status. In five instances, there were couples with two cases ("homologous" couples); the head of the household provided the matching characteristics for the compeer couple. The characteristics of the 47 cases, 47 compeers, 14 case-spouses, and 18 compeer-spouses are shown in

Table 1. Timing of Prospective Study and Selection of Patients for Home Visits

Year	Activity	Population Characteristics
1972	Teaching practice opens	Recruited from a broad range of census tracts (greater Charleston, South Carolina)
1975 (July-August)	First of a series of summer projects to acquaint each new resident (15-16) with his newly assigned families (300)	Approximately 10 percent of active enrolled families participated, including 298 adults. They received dental examinations, home visits, self-rating tests, and multiphasic screening tests
1977 (August)	First follow-up study estimates 5-year prevalence and 2-year incidence rates for affective disorders (men and women)	85 adults identified as cases by combining drug list and problem list to include all persons with one or more episodes of anxiety, depression, from 1972-1977
1978-1979 (December-April)	Second follow-up study utilizes a case-compeers, observer-blinded design with 126 assessments during 84 home visits, by two observers: a psychiatrist and a research assistant	Two major groups: n ₁ =47 cases* n ₂ =47 compeers Two minor groups: n ₃ =14 spouses of cases n ₄ =18 spouses of compeers
*Cases, representing sicker persons in the population, tend to be lost in long-term medical follow-up studies ⁶		

Table 2. The matching process and participation rates resulted in quite similar groups of patients for evaluation and comparison.

Methodology

In order to test the implied hypothesis (what is the true incidence/prevalence of affective disorders in a sample of adults in a family practice?), a protocol for data collection was designed with the following features:

A. Observer Blinded

Only the research assistant would have prior knowledge as to case/compeer status at the time of the interim home interview.

B. Standardized Psychiatric Interview

A comprehensive, semi-structured interview was designed to cover major areas, including

work, play, sleep, aggression, affection, sex, mood, appetite, self-esteem, life events, social supports, alcohol, and smoking.* Some open-ended questions (eg, "Anything missing in your life?") permitted free flow of information which was retrieved as notes in the margin (together with other impressions which were dictated by the psychiatrist-observer upon return to the office). Interviews were conducted in the living room, dining room, or kitchen. Spouses were interviewed in separate rooms, one receiving the self-rating questionnaire from the research assistant while the other received the psychiatric interview; then the investigators would exchange places to continue the process with the respective spouse. The average time elapsed was 25 minutes per person.

*Questionnaire available on request by writing to Dr. Simon Ramesar, Family Medicine Centre, 220 Bagot Street, Kingston, Ontario, K7L 5E9, Canada.

Table 2. Description of Study Population, Showing the Results of Matching		
Characteristic	Cases	Compeers
Number	47	47
Females	40	40
White	19	21
Black	21	19
Males	7	7
White	4	3
Black	3	4
Marital Status		
Married*	25	29
Widowed	16	12
Divorced	3	1
Separated	2	4
Single	1	1
Age (years)		
Range	24-81	23-81
Mean	51.1	51.1
Socioeconomic Estimate		
Poorest (5)	20	15
(4)	14	17
Average (3)	11	10
(2)	1	5
Highest (1)	1	0
Spouses		
Participating	14	18
Average Age	46.9	49.3
Refusals	1	1
*Married couples include two cases in each of five households (homologous couples)		

C. Home Setting

Planned home visits were used in all instances. The advantages of the home setting were: (a) convenience for the patients, (b) relaxed setting of time and day chosen by patients, (c) separation of the field study from ongoing service, scheduling, and fee collecting activities of the outpatient unit. In each instance, the psychiatrist-observer was introduced as a "visiting professor/doctor from Canada" whose pertinent findings would be shared only with the attending resident physician.

D. Drug Inventory

During the home visit, questions were asked to assess any self-medication or prescription use

which would be relevant to signs and symptoms under study (eg, "Think about the past 48 hours. Exactly what have you taken in the way of medicines, pills, or remedies?") The results indicated very little evidence of self-medication, overuse of prescribed drugs, or overlapping of prescribed drugs.

E. Weekly Panel Review of Home Visit Findings

Due to the mixture of objective and subjective data being collected, the importance of recent recall of observation, and the importance of consistency of criteria being used, a weekly panel review was held. All four of the authors participated,

Table 3. Flow Sheet Used at Weekly Conferences to Summarize Multiple Intrinsic and Extrinsic Factors for Each Patient
 Four women are charted: two sick and two well, by 1977 criteria

1977 Diagnosis**	Patient Number	Stress				Filters*	Outcomes Ability to Cope* Overall Adjustment			Specific Therapies Recommended					
		Objective*	Subjective				Good	Marginal	Poor	Psychotherapy	Sociotherapy	Medical Therapy			
			Anxiety*	Depression*	Sadness*	Psychosomatic	Anomie*	Lack Social Support	Deficient Personality*						
W	#1	+	0	+	+	+	+	+	+			C	R	R	
D	#2	+	+	+	+	0	0	+	+		C		R	R	R
A	#3	0	0	0	0	+	0	0	0	C					R
W	#4	+	0	0	0	+	0	0	0	C					R

Key:

W=Well*
 D=Clinical depression
 A=Anxiety
 C=Coping
 R=Recommended
 +=Present
 0=Absent

Clinical Profiles:

- #1 is a 52-year-old housewife with increasing marital discord (objective stress). She suffers from sexual dissatisfaction, crying spells, feelings of helplessness, hopelessness, indecisiveness and lacks self-confidence. She has migraine and insomnia. Needs marriage counseling and assertiveness training.
- #2 is a 62-year-old widow in financial distress who suffers from insomnia, loneliness, low self-esteem, lack of affection. She chronically worries, and pities herself. A typical case of mixed anxiety and depression. Manages to work. Needs assertiveness training and companionship.
- #3 is a 67-year-old widow, recovered with single episode of anxiety October 1975, has moderate hypertension controlled by diuretics. No signs of anxiety, sadness, or somatic distress. Is in harmony with self and others. Appropriately concerned over future welfare of grandchildren.
- #4 is a 38-year-old housewife, who is coping with stresses of fulltime work as teacher, raising two small children, caring for her grandmother in the household, manages to find time to play and have fun, gives and receives affection. Mild obesity; needs diet.

*For definitions of each term, see Glossary

**1977 diagnosis shown here for the reader; not available for panel review until after consensus diagnosis was decided and recorded

using a flow sheet to chart the data from each assessment (Table 3). In each instance, conflicting or ambiguous data were reviewed until a reasonable consensus diagnosis could be determined. Case-compeer status was not mentioned or revealed until after the final diagnosis was recorded. Once recorded, the diagnosis was not changed. (In one instance, a patient and his compeer were excluded from the study because the patient was unable to comprehend the questions.)

Results*Psychiatric Assessment*

Eight major variables are listed in Table 4 for comparison between the major groups (47 cases and 47 compeers) and between the minor groups (14 case-spouses and 18 compeer-spouses). Cases were defined as of August 1977, as having had at least one episode of anxiety, depression, or both; compeers were drawn from a non-case list as of August 1977. For each variable (1 through 8) it

Table 4. Frequencies of Eight Major Variables for Four Study Groups with Chi-Square Values* and Overall Frequencies, N= 126 Assessments

Overall Frequency Number %	Psychiatric Assessment No. & Variable	Frequency Among Cases/Compeers N=47/N=47	Chi-Square df= 1	Frequency Among Spouses of Cases/Compeers N=14/N=18	Chi-Square df= 1
59/126=46.8	1. Diagnosis of anxiety, depression, or both	26/23	.1705	4/6	.0092
41/126=32.5	2. Sadness	16/17	.0000	5/3	.6772
48/126=38.1	3. Anomie	20/17	.1783	6/5	.2661
47/126=37.3	4. Personality deficiency	20/15	.7283	6/6	.0339
32/126=25.4	5. Unable to cope	17/10	.8706	4/1	1.6593
37/126=29.4	6. Anxiety only	14/17	.1925	2/4	.0130
7/126= 5.6	7. Depression only	3/3	.1780	0/1	.0164
15/126=11.9	8. Both anxiety and depression	9/3	2.3882	2/1	.0525

*Chi-square statistic, one degree of freedom, Yates corrected for continuity; none are significant

may be asked, how do cases and compeers differ, and is the difference statistically significant?

For the first variable (signs and symptoms of anxiety, depression, or both), there are almost equal numbers of cases (26/23), yielding a chi-square value of .1705, not significant. Similarly, as many spouses of cases (4) as spouses of compeers (6) showed definite signs and symptoms during the home visit. The overall frequency, 46.8 percent, is derived by adding the variables 6 (anxiety only), 7 (depression only), and 8 (both anxiety and depression).

The other variables in Table 4 (2, 3, 4, and 5) were each assessed independently during the flow-sheet analysis shown in Table 3 (see Glossary). Thus 41 persons (32.5 percent) were rated as having sadness, as distinct from depression (7 + 15 = 22/126 = 17.5 percent). Anomie was frequent (38.1 percent) and so was personality deficiency (37.3 percent). Again, there is no detectable difference between cases and compeers, or between the spouse groups on variables 2, 3, or 4.

In order to obtain data for variable 5, "unable to

cope," an overall assessment of each person's level of adaptation to his or her environment was required (Glossary). Here the value of observations in the home setting can be appreciated, as each person and each couple could be viewed in the context of the household and the neighborhood. After sifting all of the available observations and notes at the weekly panel session, the general question was asked: "Given this kind of person, with his/her strengths and weaknesses, stresses, signs, and symptoms, and given this kind of environment and social network, can it be said that this person is, on the whole, coping reasonably well?" Once assessed and recorded, the impression was not changed. Table 4 shows that, despite a fairly large burden of signs and symptoms in this population (variables 1, 2, 3, and 4), a distinct majority of the group (94/126 = 74.6 percent) were coping fairly well. In terms of confirming the 1977 classification of cases as distinct from compeers, the information in variable 5 is suggestive but does not attain statistical significance: 17 to 10 and 4 to 1, for index group and spouses, respectively.

Table 5. Frequencies of Three Self-Rating Scales for Four Study Groups, with Chi-Square Values^a and Overall Frequencies
Scores are shown for two points in time, 1975 (N=105 and 97^b) and 1978-1979 (N=126)

Overall Frequency	Self-Rating Test	Frequency Among Cases/Compeers	Chi-Square	Frequency Among Spouses of Cases/Compeers	Chi-Square
Number/%	Year/Upper Limit	N=47/N=47	df=1	N=14/N=18	df=1
31/105=29.5	Depression: Zung ^c 1975/score \geq 50	19/11	.1685	1/0	.0886
20/126=15.9	1978-1979/score \geq 50	10/9	.0000	1/0	.0164
35/105=33.3	Religiosity:Keller ^d 1975/score \geq 13	14/13	.4282	3/5	.1152
71/126=56.3	1978-1979/score \geq 13	28/27	.0000	6/10	.1270
17/97 ^b =17.5	Anxiety:Reeder ^e 1975/score \geq 12	15/2	6.7440*	0/0	—
14/126=11.1	1978-1979/score \geq 12	7/6	.0000	1/0	.0164

*P=.0094 (less than one percent)

^aChi-square statistic, one degree of freedom, Yates corrected for continuity

^bReeder scale was computer administered in 1975 so that several tests (8) were missed when the computer was not operating, accounting for only 97 scores instead of 105 scores

^cTwenty-item questionnaire, results from 333 adults (195 women/138 men) in 1975: range 25-78, mean=43.4, standard deviation=10.0, mode=34, median=41; higher value=more depression

^dFour-item questionnaire, results in 1975: range 4-16, mean=8.7, standard deviation=3.6, mode=4, median=8; higher value=more religious

^eFour-item questionnaire, results in 1975: range 4-16, mean=8.2, standard deviation=3.0, mode=8, median=8; higher value=more anxious

Self-Rating Scales

Although the self-rating scales performed rather poorly in the 1977 follow-up study, they represent another distinct dimension of patient assessment in this survey: (a) they were simple checklists, free from subjective interpretation, (b) they were administered by a non-psychiatrist, the research assistant, and (c) results of this survey can be compared with self-rating scales obtained in 1975 from the same persons, and from the entire 1975 cohort of 333 adults (footnote in Table 5).

The results, shown in Table 5, provide one positive finding: a statistically significant ($P<.01$) difference between 15 cases and 2 compeers, who took the Reeder test for anxiety in 1975. If the findings only held true in 1978-1979, one would be impressed with the ability of this simple 4-question instrument to "succeed" (where the 61-question interview did not), at discriminating cases from

compeers. However, in 1978-1979, 7 cases and 6 compeers scored 12 points or more on the Reeder scale, rendering the 1975 finding less plausible. (It should be noted that in 1975, the Reeder scale was administered at a computer console, along with a computerized life-event interview. Is the electronic console capable of discriminating cases from compeers in some special way? Not very likely.) In fact, these results in Table 5 and in Table 4 suggest that no single variable can describe more than a small part of the total picture of affective disability.

Having self-rating data at two points in time does suggest that there may be a three- to four-year trend among these 100 or so adults. It appears that (based on the population data norms for 333 adults in 1975) there is a decrease in Zung scores for depression (29.5 percent to 15.9 percent), an increase in religiosity (33.3 percent to 56.3 percent), and a slight decrease in anxiety (17.5 per-

Table 6. Spouse-Pair Analysis: Comparison of Ten Age Matched Homologous^a Couples (Five Sick and Five Well), by Self-Rating Scales (Average Scores) and Psychiatric Interview Results (Counts)

	Age Matched Couples			
	Well Husband	Well Wife	Sick Husband	Sick Wife
Self-Rating Average Scores ^b				
Zung for depression	31.4	46.8	52.4	41.2
Keller for religiosity	12.4	12.2	7.8	10.4
Reeder for anxiety	7.0	9.2	8.4	6.4
Psychiatric Interview Results				
Number at-risk persons	5	5	5	5
Number with clinical anxiety, depression, or both	1	2	4	3
Number with poor level of coping ^c	2 ^c	2 ^c	4	1

^aHomologous couples: refers to the fact that each couple consisted of a sick husband and a sick wife, or a well husband and well wife, according to 1977 criteria (problem list and drug list) for anxiety and/or depression

^b1978-1979 home visit data

^cFour persons coping very poorly were missed by resident physicians: two are from one couple who took their marital problems to a counselor outside the practice without informing the resident. One wife was unhappy in her marriage to a man 19 years her senior. The fourth case is a husband who is anxious because he is not receiving the disability pension he believes he deserves and is not getting the resident's support for his claim (impaired physician-patient communication)

cent to 11.1 percent). Possible explanations include: (a) patients are learning how to take questionnaires, (b) they are benefiting from family practice care, and (c) other factors including chance. Here the results of a third survey (in another two years) might demonstrate the importance of such trends in a cohort followed over time.

Spouse-Pair Analysis of Homologous Couples

The information in Table 6 offers a special opportunity to take a close look at all of the age matched homologous couples who participated in the survey (n=10). Keeping in mind that the five sick couples represent five sick husbands and five

sick wives, defined by the 1977 criteria, and that the five well couples were similarly defined by the 1977 criteria, what can one see in self-rating scores and in psychiatric interview results? One is not surprised to see well husbands less depressed (Zung) than sick husbands (31.4 vs 52.4). The healthy couples seem more religious than the sick couples (average of 12.3 vs 9.1).

Anxiety scores seem to differ but in an unexpected way: well wives average 9.2, more anxious than sick wives with a score of 6.4! Perhaps the wives who keep their husbands less depressed have symptoms of anxiety?

The psychiatric interview results are especially interesting. Only three of ten well spouses were rated as having signs and symptoms of anxiety, depression, or both; this contrasts with seven of

Table 7. Fluctuation of Affective Disorders in a Family Practice as Observed at Two Points in Time			
At time "t"	At time "t+1"		Total
	Sick	Well	
Sick	a	b	a+b
Well	c	d	c+d
Total	a+c	b+d	a+b+c+d

Stable:
a=patients who remain sick
d=patients who remain well

Changing:
c=well patients who become sick
b=sick patients who recover

t=August 1977
t+1=1978-1979

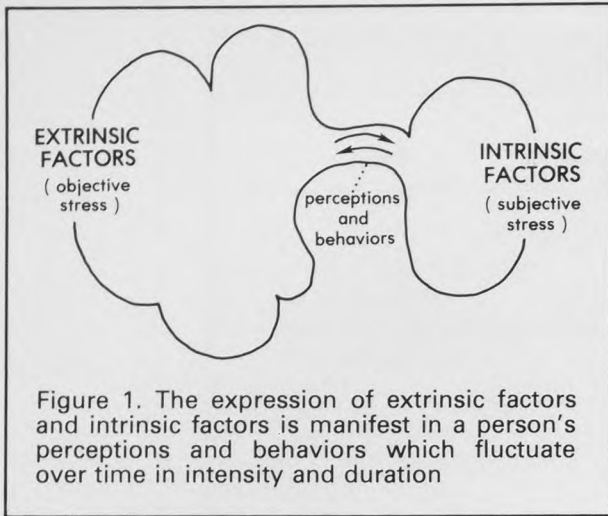
ten sick spouses. The numbers are small but in the expected direction. The functional assessment of poor coping tends to show little differential: five of ten sick spouses cope poorly, as compared to four of ten well spouses. When one takes a closer look, one discovers (see footnote c in Table 6) that according to the 1978-1979 survey, four persons were probably missed (and misclassified) by the attending resident physician. These discrepancies are understandable for a variety of reasons, but all are related to impaired patient-physician communication.

Discussion

The findings of this study reinforce the findings of an earlier Charleston study, that no single approach at definition gives a true picture.¹ For these disorders representing a mixture of objective and subjective data, discrepancies in diagnosis and classification are predictable. Secondly, there is the problem of fluctuation over time shown in Table 7. In this cohort of patients followed from time "t" (August 1977) to time "t + 1" (1978-1979), attention was focused on Group c, consisting of 47 compeers and 32 (less one inactive patient = 31) spouses, a total of 78 well persons. Both their drug lists and problem lists were

searched, and a total of seven new cases of affective disorder were found, in five women and two men (sex ratio = female/male = 2.5). The incidence rates for anxiety alone, depression alone, and combined anxiety-and-depression are remarkably similar to the incidence rates of the 1977 study (3.1, 0.8, and 1.5 episodes per 100 persons per year, respectively). The overall incidence rate of 5.4 cases per 100 of affective disorder is only slightly less than the 1977 rate of 6.0 cases per 100 population per year.

A third problem brought into focus by the findings is the issue of the level of severity, which was reviewed with the items in Table 4. There is a level of great severity (functional disability) represented by 25 percent of adults who are coping quite poorly (variable 5). Sooner or later they will develop symptoms of such intensity that they will seek clinical and other help. On the other hand, signs and symptoms recorded in variables 2 (sadness), 3 (anomie), 4 (personality deficiency), 6 (episodes of anxiety alone), and 7 (depression alone) may or may not reach a clinical level of expression. The adults most likely to fit the "medical model" and most likely to meet clinical criteria are those (15/126 = 11.9 percent) who manifest both anxiety and depression (variable 8).



Synthesis: A Unifying Concept

In trying to track a moving target longitudinally, such as affective disorders, in a family practice, it is helpful to consider diseases with a similar natural history of remissions, plateaus, and exacerbations. Rheumatoid arthritis is so variable in expression, severity, and levels of disability that a mathematical model was devised by Cobb and Beall in 1961 (protep model) to take into account the *proportion of time in episode* for any given case being followed. Thus, a true case of rheumatoid arthritis is defined as having more episodes of the specified signs and symptoms than a non-case.⁸ Similarly, neoplastic and non-neoplastic changes in the cervix are notorious for their unpredictable course and outcome.⁹ Both cases and non-cases may have stages of dysplasia, and the cervical epithelium may regress to normal, or progress to neoplasia.

Is there a unifying concept for affective disorders? In Figure 1 is a model which was found most useful. The diagram illustrates the continuing exchanges which occur between extrinsic factors and intrinsic factors for any given person. These exchanges are detectable in any person's perceptions and behaviors. They may be recognized at either a subclinical level (signs and symptoms) or at a clinical level (sick-role behavior). If followed over time, there will be fluctuations in clinical expression.

At the present time, in the absence of specific biochemical markers, one must rely upon clinical assessments of behavior. The level of severity will influence the level of detection. One can observe the intensity and duration of symptoms in a behavior such as grief following a personal loss, which can range from "normal grief reaction" to "pathological grief reaction." A unifying concept can help the clinician chart the various behaviors and illnesses as they occur in the natural history of these episodes.

Finally, no model for affective disorders in family practice will work without a high level of physician-patient communication.^{10,11} In several instances in this study, diagnoses would have been easily made if the patient had not withheld information or if the physician had asked the right questions. Time, trust, and a tenured relationship can bridge such communication gaps, improving both diagnosis and therapy.

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