

Diagnostic Perceptions and Diagnostic Behavior in a Family Practice Unit

Bonnie Markham, PhD, and Peter Kassen
Piscataway, New Jersey

Results of a pilot study with nine physicians in a model Family Practice Unit are described in this report. It was hypothesized that decisions regarding treatment priorities would lead to the "undertreatment" of ailments for which the physicians felt relatively ineffective and that feelings of efficacy would be greater for primarily organic than for primarily psychological ailments. Physician interviews and examination of the Unit's diagnostic file provided the data for this study. A treatment bias as a function of the degree to which an ailment had a psychological component was not demonstrated. However, the physicians did feel less effective (less comfortable) in treating problems that were significantly psychological and also felt that methods of intervention for such ailments were less clear-cut. Physician comfort level was greater when there were few alternative treatment methods generally used for the ailment and when the ailment was recorded frequently. A suggestion is made that medical curricula include more practical experience in treating ailments which have notable psychological components in order to increase physician comfort and probably physician effectiveness.

The orientation of family practice as a specialty and the nature of training in family medicine emphasize the complex and multiple factors that affect health and illness and focus on the provision of comprehensive and continuing care.¹ The work of Michael Balint² in England demonstrates how difficult (although occasionally possible) it is to maintain such an orientation to health care in the context of a typically busy practice.

The pressures of practice are such that it is not feasible to respond to all relevant aspects of the patient's situation at every visit. Consequently, the physician must establish a set of priorities for each patient contact. It was our hypothesis that physicians are likely to resolve the dilemma of com-

prehensive care by relegating those problems for which they feel ineffective to a low priority. The authors further hypothesized that as the psychological component of a patient's problem becomes more prominent, the likelihood of the problem being noted and treated by the physician would decrease due to the physician's expectation that his intervention would be relatively unsuccessful.

These hypotheses were explored in a pilot study conducted in a model Family Practice Unit in western New Jersey. The unit has three family physicians and nine family practice residents.

Methodology

The Family Practice Unit maintains a diagnostic file for all patients treated. Diagnoses are recorded after each visit on a medical records voucher and are later tabulated by category, date of visit, and physician. At regular intervals diagnoses are also ranked by frequency for each physician. This diagnostic information provided the base-line data for our study. Diag-

nostic data is reviewed periodically by the physicians at the unit; however, the most recent review had been at least six months prior to the study.

Each physician was interviewed regarding his diagnostic perceptions of his practice and his expectations of efficacy in treating 24 selected ailments. Each ailment was typed on a 3 × 5 card. The physician first arranged the cards to represent his/her perception of the relative frequency of occurrence of each ailment in his practice at the unit. He/she also ranked the ailments based on his/her feelings of efficacy in treating them and the extent to which he/she felt that there is a "clear-cut method of intervention which all doctors always use" in treating the ailment. The three staff physicians and six of the nine family practice residents were interviewed. Because of scheduling difficulties, it was impossible to meet with all of the residents.

The ailments were chosen from those listed on the voucher to represent different frequencies of occurrence of problems seen at the unit and to cover a range from predominantly somatic to predominantly psychological. The degree to which each ailment had a psychological component was determined by averaging the rankings by ten numbers of the Department of Psychiatry at the Medical School with which the Family Practice Unit is affiliated.

An assumption of the procedure employed in the study is that indication of a diagnosis in the patient's chart is also indication that some intervention was made; on the other hand, absence of any notation in the chart is evidence for lack of treatment. Support for the assumption comes from a study by Bentsen,³ who investigated the accuracy of patient records for the purposes of medical audit. Based on this assumption, "undertreatment" was defined as an instance in which the physician's subjective impression of the frequency of occurrence of an ailment was greater than the frequency it was recorded in the medical record.

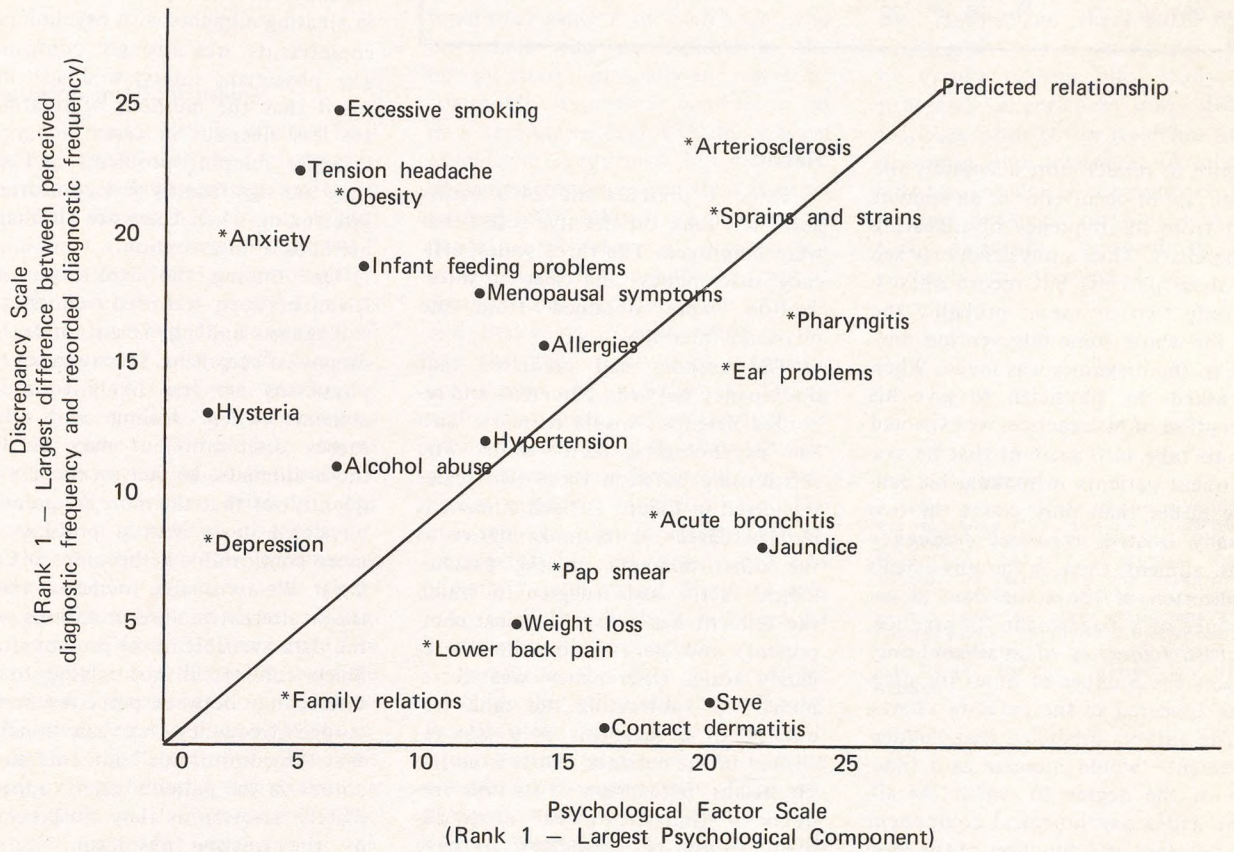
The physician's *recollection* of the relative frequency of a diagnosis occurring in his practice as opposed to the diagnoses which were actually recorded provides the primary data for this study. A physician's perception of diagnostic frequency was chosen as a

From the Department of Psychiatry, College of Medicine and Dentistry of New Jersey, Rutgers Medical School, Piscataway, New Jersey. At the time of this study, Mr. Kassen was a student at Oberlin College doing a special project at Rutgers Medical School. Requests for reprints should be addressed to Dr. Bonnie Markham, Department of Psychiatry, Rutgers Medical School, University Heights, Piscataway, NJ 08854.

Table 1. Ranks of 24 Ailments on the Five Scales

Ailment	Psychological Factor	Efficacy (Comfort)	Recorded Frequency	Perceived Minus Recorded Frequency (Discrepancy)	Clear-cut Intervention
Depression	1	16	8	8.5	19
Anxiety	2	21	7	19	20
Hysteria	3	24	21	13	24
Problems in family relations	4	20	10	3	23
Tension headache	5	14	17	22	17
Abuse of alcohol	6	23	16	11	21
Excessive smoking	7	19	15	24	16
Obesity	8	22	6	21	22
Infant feeding problems	9	12	24	18	10
Lower back pain	10	11	12	5.5	14
Menopausal symptoms	11	17	22.5	17	18
Hypertension	12	5.5	3	12	7
Weight loss	13	18	18	5.5	15
Allergies	14	10	14	15	11
Pap smear	15	2	1	7	1
Cirrhosis of the liver	16	15	20	4	4
Contact dermatitis	17	8	13	1	12
Acute bronchitis	18	3	9	10	3
Arteriosclerosis	19	9	11	23	9
Stye	20	5.5	19	2	6
Sprains and strains	21	7	5	20	8
Ear problems and ailments	22	4	2	14	5
Jaundice	23	13	22.5	8.5	13
Pharyngitis (non-febrile)	24	1	4	16	2

Figure 1. Relationship Between Perceived Minus Recorded Diagnostic Frequency (Discrepancy) and Ailment Psychological Factor



● Rank of ailment on Psychological Factor and Discrepancy Scales

* Ailments recorded 50 times or more during July to December 1975

Table 2. Intercorrelations (Spearman Rank Correlations) of the Five Scales

	Psychological Factor	E	D-RF	D-PF
Efficacy (comfort)	-.85 ^a			
Diagnosis (recorded frequency)	ns	.45 ^b		
Diagnosis (perceived frequency)	ns	ns	ns	
Clear-cut intervention	-.79 ^a	.91 ^a	ns	ns

^a $p < .001, df = 22$ ^b $p < .05, df = 22$

measure to reflect more accurately the actual rate of occurrence of an ailment apart from its frequency of appearing in the chart. Thus a physician may see ten obese patients but record obesity for only two of them, probably the two for whom some intervention relevant to the diagnosis was made. When we asked the physician to give his perception of his practice, we expected him to take into account that he saw ten obese patients in making his estimate rather than only count the two actually treated. *Perceived frequency* of an ailment, then, is the physician's recollection of the actual rate of occurrence of a diagnosis in his practice; *recorded frequency* of an ailment only reflects the number of times the diagnosis appeared in the patients' charts.

The authors predicted that "undertreatment" would increase as a function of the degree to which the ailment had a psychological component and decrease as a function of the level of efficacy the doctor expected if he intervened. The intended meaning of efficacy apparently was not clear to the physicians. The explanation given in the interview was "your personal comfort or discomfort in handling the ailment" rather than "your confidence in bringing about an improved condition." Consequently, the research examines the relationship between "undertreatment" and physician comfort. The question of a doctor's experience of comfort as a factor in treatment is an important one, so the data was analyzed for this item although it was not within the original scope of the study.

Results

Table 1 presents the 24 ailments and their rank on the five scales that were employed. The three scales, efficacy, discrepancy, and clear-cut intervention, were obtained from the physician interview.

The authors had predicted that discrepancy between perceived and recorded diagnosis would correlate with the psychological factor scale. The relationship between these two scales is plotted in Figure 1. Each ailment is plotted based on its rank relative to the other ailments on the psychological factor scale (degree to which the ailment has a psychological component) and its rank on the discrepancy scale. Discrepancy was determined by subtracting the rank frequency of a diagnosis as it was recorded in the patients' charts from the physicians' perception of its rank frequency. "Undertreatment" of an ailment would be considered to have occurred if its perceived frequency was greater than its recorded frequency. A discrepancy of rank 1 is the greatest discrepancy that occurred in the study. It was predicted that as the psychological component of an ailment increased, the discrepancy ("undertreatment") would increase as well. The prediction is indicated in the figure as the line on which all the ailments would fall if the prediction held exactly (a perfect correlation between discrepancy and psychological factor). For example, contact dermatitis had a psychological factor rank of 17. If the prediction were correct its discrepancy rank would also

be 17; however, the actual discrepancy rank was 1. As can be seen in the figure, the prediction does not hold for contact dermatitis or by and large for the other ailments used in the study.

A Spearman Rank Order Correlation⁴ was performed and did not even approach significance.

The five scales in Table 1 were intercorrelated. Spearman Rank Order Correlations were used and evaluated by a two-tailed test. Table 2 presents the data from these analyses. Our original prediction that physicians would feel less effective (comfortable) in treating ailments with psychological components was strongly confirmed. The physicians interviewed also indicated that the methods of treatment are less clear-cut in cases of psychologically relevant problems and that they are significantly less comfortable intervening when there are alternative methods of intervention.

One finding, the significant correlation between recorded frequency of a diagnosis and physician comfort, is somewhat surprising. It may mean that physicians are less likely to record ailments when dealing with them causes discomfort; it may be that those ailments, in fact, occur less frequently; or that the more frequently a physician deals with a problem the more comfortable he becomes in treating it. We are unable to choose among these alternative interpretations with the data available in the present study. Since comfort is not related to the discrepancy between perceived and recorded frequency, we can conclude that "uncomfortable" ailments are recorded in the patients' charts approximately as often as they are perceived by the treating physician. No relationship was demonstrated between the psychological component of an ailment and its recorded frequency.

Recorded diagnostic frequency was a factor in selecting the 24 ailments used in this study. Their recorded occurrence varied from 0 (infant feeding problems) to 337 (Pap smear) during the six-month period July 1975 to December 1975. It is possible that rare ailments stand out and are therefore recalled as occurring more frequently or are forgotten and underestimated. To eliminate this potential bias, the diagnostic discrepancy by psychological factor data was reanalyzed for the twelve ailments that

occurred 50 or more times. For these ailments the correlation is greater ($r_s = .35$, ns, $df = 10$), but still does not reach significance.

It would have been interesting to examine the results in relation to the possible role played by number of years in practice. Unfortunately, there were too few physicians to obtain meaningful results. It was our impression, however, that the more experienced doctors were more comfortable with and more willing to treat ailments with large psychological components.

Discussion and Conclusions

In the model Family Practice Unit studied, there was no relationship demonstrated between the degree to which an ailment had a psychological component and its "undertreatment." Doctors in this practice do not differentially perceive and record ailments on this basis. They do, however, feel less comfortable with psychologically relevant ailments and feel that appropriate interventions for such problems are less clear-cut than for problems with lesser psychological implications. Comfort is, however, related to the frequency of recording a diagnosis.

The findings in this preliminary study contrast in part with those described in a research report on diagnostic recording in family practice.³ In that study the relationship between perceived diagnosis (determined by experts observing the doctor-patient interaction) and recorded diagnosis (written in the chart by the examining physician) was investigated. The author found that problems in the social and emotional area were underperceived and underrecorded by the treating physician. He attributes this underrecording to the fact that until recently medical education on multifactorial causes of disease has been underemphasized. Our study looked at perceived and recorded diagnoses and may, therefore, have decreased the likelihood of demonstrating the predicted relationship. On the other hand, since the model practice studied is primarily a teaching practice oriented toward the latest approaches to comprehensive care, it may be that the care provided does take the total patient into account.

While treatment priority does not seem to be given to the predominantly organic ailments, physicians do feel more comfortable in treating those ailments and that they have more clear-cut interventions. It is often cited that experience in the practice of medicine is the only way to come to grips with the uncertainty inherent in various aspects of health care (eg, Bates⁵). Stephen⁶ disagrees: "Experience in practice is one requisite, but is not a guarantor." Both Stephens and Bentsen³ suggest the importance of medical education in developing physicians who can assess the organic and functional aspects of each case. The physicians who participated in the present study, especially the residents, commonly expressed confidence in their training to deal with the classical psychiatric syndromes, but expressed much less confidence in their training to deal with ailments which have a murky combination of organic and psychological components. The lack of comfort and certainty the doctors indicated may, in part, relate to the fact that they receive less pragmatic instruction and practice in dealing with those murky ailments which are encountered frequently when they begin to have responsibility for the day-to-day provision of health care. The question arises, how effective can an uncomfortable physician be? As Houston⁷ said almost 40 years ago, "the faith that heals is not through argument but by contagion."

Based on the data gathered, we conclude that physicians in the Family Practice Unit studied do treat with equal priority ailments with varying psychological components. They are, however, less certain about appropriate treatment for ailments with psychological implications and are less comfortable in dealing with them. Effectiveness of treatment was not studied, but the question is raised whether uncertain and uncomfortable physicians can be of maximum assistance to their patients. Whether these findings are generalizable to other family physicians and other practice settings has yet to be determined. The research reported here involved only nine physicians in a single model Family Practice Unit and, while it is suggestive, it needs confirmation by further studies with a more representative sample of doctors and practice environments.

Both from informal data in the present study and from other work it is acknowledged that experience in the practice of medicine is a factor in increasing what Stephens⁶ calls "clinical wisdom," however, medical education is an essential ingredient in the development of a "physician. . . [who] is knowledgeable. . . about organ systems and techniques, but. . . [who] never forgets that organs and systems are parts of a whole man, that the whole man lives in a complex social setting, and that diagnosis or treatment of a part, as if it existed in isolation, often overlooks major causative factors and therapeutic opportunities."¹ It is recommended, based on results of this pilot study, that practical experience and didactic teaching, prior to the residency, in the detection and treatment of ailments with psychological components could increase physician certainty and comfort, diagnostic thoroughness, and probably, effectiveness of care.

Acknowledgement

The authors would like to acknowledge the assistance of Dr. Samuel W. Warburton, Assistant Professor, Department of Family Medicine, CMDNJ — Rutgers Medical School, in facilitating the research and would also like to express their appreciation to him and the other physicians at the Phillips-Barber Family Health Center, a satellite health facility of the Hunterdon Medical Center, for their interest and participation.

References

1. Commission on Education of the American Academy of Family Physicians: Education for family practice. Reprint B 1600. American Academy of Family Physicians, January 1972
2. Balint E, Norell JS: Six Minutes for the Patient. London, Tavistock, 1973
3. Bentsen BG: The accuracy of recording patient problems in family practice. *J Med Educ* 51:311-316, 1976
4. Hays WL: Statistics for Psychologists. New York, Holt, Rinehart and Winston, 1965
5. Bates RC: The Fine Art of Understanding Patients. Oradell, NJ, Medical Economics Book Division, 1972
6. Stephens GG: On the teaching and learning of clinical wisdom. *J Fam Pract* 1(1):24-27, 1974
7. Houston WR: The doctor himself as a therapeutic agent. *Ann Intern Med* 11:1412-1425, 1938