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# Psychosocial Problems in Primary Care Pilot Study of a New Taxonomy

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**Background.** In this study, the Massachusetts Academy of Family Practice Research Network (MAFP ReNet) was used to test a new taxonomy of psychosocial problems presenting to family physicians and to examine physician variability in determining when a psychosocial problem plays a role in a patient's visit.

**Methods.** Thirty physicians completed a form listing the taxonomy of psychosocial issues for 19 standard case vignettes. These physicians then completed the same form for every patient seen in their practices over a 2-week period.

**Results.** The proposed taxonomy was well received by practicing physicians as appropriate for how they think about their patients and practices. The case vignettes demonstrated a large variability in physician identification of psychosocial problems. The 30 physicians who

participated in all phases of the study completed evaluations of 2876 patient visits, identifying 43% of these as involving one or more psychosocial problems. The frequency of psychosocial problem identification among the physicians ranged from 23% to 81%, with a standard deviation of 15%.

**Conclusions.** The proposed new taxonomy may be helpful in both future research and teaching. The high degree of variation in physician responses both to the same clinical vignettes and to patients in their practices suggests that physicians vary widely in their identification of psychosocial issues.

**Key words.** Family practice; primary health care; psychology, social; social problems; outcome and process assessment (health care); practice-based research.  
(*J Fam Pract* 1994; 38:393-399)

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Primary care physicians frequently confront psychosocial problems in practice.<sup>1-14</sup> Accurately identifying and skillfully treating these problems are among the greatest challenges to practicing physicians. This study represents the beginning of a line of research designed to address these challenges. The goal of this line of research is to determine whether clinical outcomes are significantly improved by skillful identification and management of psychosocial problems and to identify successful approaches to these problems.

At first, it may seem obvious that outcomes would be better if psychosocial problems were identified and

treated effectively than if they were not. Posing this hypothesis as a research question, however, brings to light several important issues. How is a psychosocial problem defined and how can it be practically assessed? How can it be determined whether a psychosocial problem has been properly identified or whether it has been missed by the treating physician? What measurable outcomes would improve if psychosocial problems were identified and managed well?

Defining what constitutes a psychosocial problem in a physician visit is a surprisingly complex task. Most prevalence studies of psychosocial problems have addressed only psychiatric disorders, yet have documented very high rates, some as high as 50% to 75% of all primary care visits.<sup>1-14</sup> However, these studies capture only a subset of the full range of psychosocial problems seen by primary care physicians. Some researchers are addressing this problem by creating DSM-PC (*Diagnostic and Statistical Manual of Mental Disorders—Primary Care*), a revision of the *Diagnostic and Statistical Manual*

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Submitted, revised, December 17, 1993.

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of *Mental Disorders*, Third Edition (*DSM-III*), that will include syndromes of psychological distress seen in primary care that do not meet the strict diagnostic criteria in the *DSM-III*.<sup>15,16</sup>

Even this approach will miss a large portion of the psychosocial problems seen in primary care. Several other classification schemes have been developed to capture the full spectrum of these problems, including the International Classification of Primary Care (ICPC) and others.<sup>17-21</sup> Although these classification schemes are excellent, they have several limitations. They are not consistently applicable to the clinical process of evaluation, diagnosis, and treatment that occurs rapidly in the primary care setting. They do not address the rich, simultaneous interrelationships among numerous psychosocial variables, particularly with respect to causality, which is so critical to clinical assessment. Finally, they are not readily reducible to brief measurement tools that can be completed easily by busy physicians during office visits.

In response to these limitations, a new taxonomy of psychosocial problems in primary care was developed for this study. Given the above critique of other taxonomies, we elected to use broad categories rather than an extensive list. Based on the biopsychosocial model,<sup>22,23</sup> 12 categories that reflect the clinical processes of evaluation, diagnosis, and treatment as well as management of interpersonal aspects of the physician-patient encounter were chosen for this study. The taxonomy was reduced to a single-page checklist that could be completed rapidly without disrupting the physician's work flow.

A "gold standard" for identifying psychosocial problems is needed to determine whether a psychosocial problem has been properly identified or missed by the treating physician. No such standard exists at this time, particularly for the full spectrum of primary care problems. Previous studies, addressing primarily psychiatric problems, have shown that physicians miss a high proportion of psychosocial problems.<sup>24-26</sup> A corollary of this, supported by previous work, is that physicians differ significantly in the frequency with which they identify psychosocial problems in practice.<sup>27-30</sup>

Therefore, this study was designed to measure physician bias in determining whether a psychosocial problem plays a role in physician-patient encounters. To do so, participating physicians were asked to complete a checklist on clinical vignettes drawn from actual clinical practice. Because all physicians were responding to the same clinical material, the study provided a potential means of measuring physician bias.

Measuring outcomes based upon whether physicians skillfully identify and treat psychosocial problems is another challenging problem. Previous research has demonstrated that patient satisfaction is higher if the physi-

cian demonstrated concern and provided process-oriented responses, such as education, negotiation, and counseling.<sup>31-33</sup>

Cost is another outcome of increasing importance in health care today. Because studies have shown that the cost of caring for patients with psychological distress is higher than that for patients without distress,<sup>34,35</sup> it is reasonable to hypothesize that accurate identification and skillful management of psychosocial problems will significantly decrease the cost and increase the quality of care provided to these patients.

Given the importance of these issues for practicing physicians, the taxonomy and case vignette instruments were tested in a practice-based research network. The Massachusetts Academy of Family Practice had recently created a practice-based research network entitled MAFP ReNet. The steering committee of MAFP ReNet selected this as the inaugural study for the network because it addresses a critically important aspect of family medicine. A practice-based research network is an ideal laboratory for this methodologically challenging area of research because it provides a large and diverse physician group with a high volume of patient visits, allowing compilation of a large amount of data on both physicians and patients in a remarkably short time.

## Methods

### *Taxonomy*

The new taxonomy of psychosocial problems was developed through an application of the biopsychosocial model, review of the literature, and the clinical experience of the authors. The categories were selected for their consistency with the patterns of diagnosis and treatment followed in clinical encounters with patients. The taxonomy was in a single-page format to ensure its usefulness as an effective teaching and research tool. It was structured as a checklist so that physicians could complete it quickly in the course of clinical practice. Case examples were incorporated into the form to clarify the categories (Figure).

Many of the terms in the taxonomy are intentionally broad. To capture the thinking of individual physicians rather than to dictate a uniform set of definitions foreign to the clinical practice patterns of study physicians, terms were not specifically defined.

The taxonomy begins with standard clinical diagnoses of psychopathology. A category for addictions was included because they are a surprisingly common underlying cause of illness and reason for seeking treatment, yet many clinicians do not readily identify addictive behavior (eg, cigarette smoking) as such. In practice, this

Date of visit: \_\_\_\_\_ Gender: \_\_\_\_\_ Age: \_\_\_\_\_ Is this a new patient? Y N

Please check all answers that apply.

One of the problems playing a role in the visit:

_____ 1.	Was psychiatric.	Example: Depression, anxiety, eating disorder.
_____ 2.	Was an addiction.	Example: Alcohol, tobacco or drug abuse.
_____ 3.	Was physical secondary to an underlying psychiatric or addictive disorder.	Example: Patient with headaches and back pain caused by depression, patient with chest pain and shortness of breath secondary to anxiety, patient with GI bleed secondary to alcoholism.
_____ 4.	Was physical with a psychosocial problem contributing to its etiology.	Example: Child with stomach pain whose parents have recently divorced, child with bruises who is being physically abused, patient with an ulcer whose spouse has just died.
_____ 5.	Was physical and psychosocial problem was addressed in the treatment.	Example: Lack of money to buy prescribed medication, managing care in home for incontinent patient, depression causing poor compliance.
_____ 6.	Was physical which in turn caused a psychosocial problem.	Example: Child with cerebral palsy causing marital stress for his parents.
_____ 7.	Was physical with the patient seeking care due to the concern of others.	Example: Patient with four month cough whose wife wants him to get a chest X-ray, patient with persistent headache whose co-worker suggested she get it evaluated.
_____ 8.	Was physical with the physician serving as a societal agent.	Example: Pre-marital testing, disability assessment, school physical, return to work clearance.
_____ 9.	Resulted in the need for counseling by the physician.	Example: Patient for diabetes follow up is grieving the death of his child, well child care for child whose parents have recently separated.
_____ 10.	Was for birth control, STD evaluation or sexual dysfunction.	
_____ 11.	Required physician to address cross-cultural, cross-class or religious issues.	Example: Indian woman reluctant to discuss sexual concerns, Jehovah's Witness refusing blood transfusion.
_____ 12.	Was related to other psychosocial issues not listed above. Identify: _____	
_____ 13.	None of the above apply.	Example: Routine physical, well child care in the absence of psychosocial issues, sprained ankle.

Figure. Physician checklist of the taxonomy of psychosocial issues in primary care.

taxonomy may be used to train physicians to identify addictions more successfully, and as a research tool, it may clarify the complex role addictive behavior plays in illness.

Categories 3, 4, and 6 address the multiple roles psychosocial problems play in physician understanding of the causes of clinical problems encountered. Categories 7 and 8 identify the most common psychosocial

"hidden agendas" present in the physician-patient encounter. Categories 5 and 9 address psychosocial issues in treatment. Issues related to sexuality were placed in a separate category because of their psychosocial implications. Category 11 was based on the biopsychosocial model to address the interrelation of culture, race, and religion with health care. Category 12 provides space for physicians to note other ways in which they conceptualize psychosocial problems presented in patient encounters. No attempt was made to quantify how significant a role any psychosocial problem played in the visits. Physicians were allowed to select one or more categories for each case, allowing for expression of the full range of psychosocial problems encountered in practice.

Once the taxonomy was created, it was field-tested with six practicing physicians, each of whom completed a checklist using the taxonomy on each patient seen during a 3-day period. At the conclusion, the participating physicians recommended only minor revisions to the taxonomy and checklist form. They all agreed that the taxonomy was appropriate for clinical encounters with their patients. The revised taxonomy was then used for the rest of the study.

### *Clinical Vignettes*

Nineteen clinical vignettes were extracted from the practice of one of the authors. Each was chosen to represent one or more categories within the taxonomy, and the authors reached consensus on which categories applied to each vignette. This tool was originally designed to validate the taxonomy, but when field-tested with the original six physicians, a surprisingly high degree of variation was identified. Although this suggested some lack of clarity in the definitions and the applications of these definitions regarding taxonomy categories, the authors hypothesized that a significant proportion of the variation was a result of differences among physicians participating in the study. Despite these methodological problems, the authors elected to use both the taxonomy and the vignettes in this pilot study to develop a "first approximation" measure of variations in physician practice patterns concerning psychosocial problems. The vignettes, which were evaluated before the use of the taxonomy in clinical practice, helped educate physicians in the use of the checklist so that it was much more efficient when applied in a busy office practice.

### *MAFP ReNet*

To develop MAFP ReNet, all 560 practicing members of the Massachusetts Academy of Family Physicians received a written invitation to join this new practice-based

research network. Fifty physicians expressed an interest in joining the network. A description of this study was sent to all 50 physicians, 34 of whom agreed to participate during the established period. Thirty of these physicians completed all steps of the study. This represents approximately 5% of all MAFP members invited to participate. The 30 physicians who participated were all practicing family physicians in Massachusetts. The group included 22 men and 8 women and had a median age of 39 years, ranging from 29 to 75. Practice sites varied from urban to rural.

### *Patient Visits*

Each participating physician completed a checklist on every patient seen in practice over a 2-week period during the summer of 1992, producing a total of 2876 patient visits for the study.

### *Data Management and Analysis*

The checklist for both the vignettes and the patients seen by each physician were entered into Paradox,<sup>36</sup> a database management program, and then transferred for tabulation and analysis to the Number Cruncher Statistical System,<sup>37</sup> a statistical program. For each category, the percentage of times each physician chose a particular category for the vignettes was correlated with the percentage of times the same physician chose that category for patients seen. *P* and *r* values were calculated to determine how well the physician's categorization of patients seen correlated with the physician's categorization of the vignettes.  $R^2$  values were calculated to measure the fraction of variability in the correlation between the physician's practice patterns and the physician's responses to the vignettes.

## Results

### *The Taxonomy*

The new taxonomy was determined by participating physicians to be appropriate for their patient encounters. Many physicians spontaneously reported that the taxonomy reflected how they approach clinical encounters. In judging the vignettes, 23 of the physicians never selected category 12 ("other"), 6 selected it once, and 1 chose it four times. Of the 2876 patient visits, only 51 (1.8%) were classified as involving psychosocial problems beyond those proposed in the taxonomy ("other"). Of these, one half were classified as such by a single physician.

As a research tool, the single page checklist worked well. Physicians reported completing the forms in approximately 30 seconds without disruption of patient care. The case examples on the form served to rapidly educate physicians about the categories and the form. Using the form first with the case vignettes helped the physicians be more efficient using it during patient encounters.

### Case Vignettes

Use of the case vignette tool produced a number of interesting findings. Although the authors had reached consensus concerning which categories applied to each case, the participating physicians demonstrated a surprising degree of variability in their responses to the same clinical material. For all the vignettes evaluated, the participating physicians completely agreed with the authors' category choices only 23% of the time. The study physicians chose at least one category overlapping with the authors' choices in an additional 63% of the vignettes. No overlap occurred between the authors and the study physicians in 15% of the vignettes. This suggests some consistency among the physicians concerning the major categories for each vignette but a significant lack of consensus concerning all the categories appropriate to each case. Among the 30 physicians in the study, the average number of different combinations of categories selected per vignette was 9.

Further analysis of this data revealed that some of the vignettes demonstrated a high degree of interphysician concordance, whereas others showed high variability and little concordance.

### Physician Practice Patterns

The study physicians demonstrated a wide variation in identifying psychosocial problems among patients seen in their practices. The physicians identified one or more psychosocial problems as playing a role in 43% of the 2876 office visits evaluated during the study. This percentage is an average of all patients. It does not take into account that some physicians in the study were in full-time practice whereas others were in an academic practice at far less than full time. It is, therefore, more representative of the practice patterns of the busiest physicians than of part-time physicians. To correct for this, each physician's percentage of cases identified was calculated. An average of these percentages was then calculated so that the practice patterns of each physician would be equally represented. With this adjustment, the rate of identifying psychosocial problems playing a role in a visit was 47%. The range among the physicians, however,

Table 1. Psychosocial Problems Identified in Case Vignettes Compared with Those Identified in the Patient Population.

Psychosocial Problem Category (See Figure)	Correlation Between Vignette Responses and Patient Responses by Physician		The Fraction of Variability Explained by Responses to Vignettes
	<i>r</i>	<i>P</i>	
1	.28	.13	NS
2	.08	.08	NS
3	.23	.22	NS
4	.08	.66	NS
5	.48	.007	.23
6	.04	.8	NS
7	.38	.04	.14
8	.13	.48	NS
9	.50	.005	.25
10	.34	.07	NS
11	.33	.07	NS
12	.14	.48	NS
13	.30	.11	NS

NS denotes not significant.

extended from 23% to 81%, with a standard deviation of 15%.

The variation among physicians in the evaluation of case vignettes was compared with the variation in rates of their identification of the same psychosocial problems in practice (Table 1). Physicians identified fewer psychosocial problems in their patient population (average, 1.1 per patient) than they did in the vignettes (average, 1.7 per patient). Those who identified more problems in their patients also identified more problems in the vignettes ( $r = .425, P = .019$ ).

### The Patient Population

This study measures the rate at which physicians identified psychosocial problems in the patients studied rather than measuring the true rate of occurrence. Based on the physicians' evaluations, 43% of all patients seen had one or more psychosocial problems identified as playing a role in an office visit. Although this number is close to the 50% figure often quoted in the literature, the wide variation among physicians in identifying these problems suggests that the true characteristics of the study population are difficult to measure. Given that other studies have demonstrated that physicians miss a high percentage of psychosocial problems, it is likely that significantly more than 43% of patients had at least one psychosocial problem playing a role in their visits.

In this study, physicians identified a wide range of psychosocial problems in their patients, and a high degree of variation is evident for each category. These data are summarized in Table 2.

Table 2. Physicians' Identification of Psychosocial Problems in Their Practices

Psychosocial Problem Category (See Figure)	Average Percentage of Patients Identified with Problems	Minimum Percentage Identified by a Physician	Maximum Percentage Identified by a Physician
1	7.8	0	30.6
2	4.4	0	16.0
3	3.6	0	11.7
4	6.0	7	14.8
5	8.9	0	33.3
6	3.3	0	22.0
7	2.6	0	11.7
8	6.3	0	20.5
9	6.2	0	25.0
10	3.7	0	23.3
11	1.4	0	20.0
12	1.7	0	20.8
13	57.1	19.2	77.4

## Discussion

The taxonomy of psychosocial problems was well received by the participating physicians as representative of how they think about patients during an office visit. It is unclear whether the physician variability was truly reflective of different practice patterns or caused by a lack of clarity and definitions in the taxonomy and checklist. Based on feedback from the study physicians and the low selection rate of the category "other," the taxonomy appears to be a good "first approximation" for a complete new taxonomy.

If so, a significant part of the measured physician variability in identifying psychosocial problems (23% to 81%) represents true variation in physician practice patterns. It is possible that physicians in the high range were more sensitive to or skilled in identifying these problems and that the physicians in the low range may have missed many psychosocial problems. It is also possible that the high-range physicians overdiagnosed problems. Another possible explanation is that patients select physicians whose sensitivity and skill in managing psychosocial problems most closely match their needs. Further study is needed to identify the true cause of this variability.

The vignettes provided a new way to identify some of the individual biases of the study physicians. For each vignette and for each patient, the physicians chose one or more of the categories of the taxonomy. To some extent, the percentage of times a specific category was chosen by a given physician characterizes that physician's psychosocial view of the world. This may be approached by asking whether physicians who saw a particular psychosocial problem more or less often in the controlled world of vignettes also saw this problem at a similar rate in their patient populations (Table 1). To a limited extent, the

answer is yes, but only for three types of psychosocial problems: categories 5, 7, and 9.

Because the taxonomy and vignettes are both in pilot stages, the correlations measured between categories identified by a physician for the vignettes and those identified by the same physician in practice must be interpreted cautiously. These findings will require further validation as the taxonomy and vignettes are refined.

Some of the vignettes demonstrated a significant degree of congruence in physician evaluation, whereas others produced an extraordinarily wide array of different responses. These results suggest the need for new case vignettes with better predictive power for physician practice patterns. Some of the revised vignettes should be simple and provide a means to validate the taxonomy as well as teach the participating physicians how to use the checklist. Others should be purposely complex and ambiguous, providing fertile ground for physicians to demonstrate true variations in practice patterns.

As a research tool, the single page checklist allowed busy physicians to incorporate it easily into the flow of their practice. MAFP ReNet, the practice-based research network used in this study, provided an excellent laboratory for measuring practice patterns of a relatively large number of family physicians and facilitated the collection of information on over 2800 patient visits in just 2 weeks.

One of the sources of potential bias in this study is the mechanism for obtaining physician participation. Physicians volunteered and were willing to sacrifice time from their clinical practices in support of this research study. The study was also carried out in the summer, a time during which some physicians were either on vacation or covering for other physicians on vacation and, therefore, seeing many patients with whom they did not have ongoing relationships. Furthermore, there may be significant seasonal variation in the frequency with which patients present with psychosocial problems. During the summer, there may be a lower level of stress and higher frequency of routine health care, including school and camp physical examinations, than would be seen during other times of the year.

An additional source of potential bias is that physicians opting to join the study may have done so because they have a higher interest in psychosocial problems, inflating the frequency of psychosocial problems identified. Furthermore, physicians involved in a study of psychosocial problems are likely to pay more attention to psychosocial problems than they would otherwise. Additional bias may be attributable to the selection of family physicians as the sole primary care physicians studied. Pediatricians and internists may see patients with different types of problems or have different practice patterns.

### Implications for Future Research and Training

If validated by further work, the proposed taxonomy of psychosocial problems will represent a significant heuristic advance with applications for both research and training. It is a tool simultaneously complex enough to encompass the full spectrum of psychosocial problems encountered and concise enough to be completed in less than 1 minute by busy practicing physicians. It can serve as a teaching tool for physicians in a wide variety of fields. It is hoped that future research will refine the taxonomy, perhaps including the development of consensus about definitions and diagnostic criteria for the categories.

### Conclusions

This study addresses psychosocial problems as they present to primary care physicians. Because of the complexity of studying these phenomena, several methodological challenges were addressed. A taxonomy of all psychosocial problems seen in practice was developed and reduced to a 1-page checklist that can be completed easily by busy physicians in practice. Clinical vignettes were used to predict physician variability in identifying psychosocial problems in practice. The newly developed MAFP ReNet was used to obtain a physician and patient population for this study. Future research is recommended to refine the taxonomy, the vignette tool, and definitions and diagnostic criteria for psychosocial problems encountered in primary care.

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