Somatic presentations and psychological distress of primary care patients.

SOMATIC PRESENTATIONS AND PSYCHOLOGICAL DISTRESS OF PRIMARY CARE PATIENTS

A Thesis Presented

by

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CONTENTS

LIST OF TABLES

LIST OF FIGURES

Figure

CHAPTER 1

INTRODUCTION

Primary care has become the gateway for medical and mental health services, with non-psychiatric physicians playing the complex role of determining proper diagnosis, treatment, and referral. Although internists and general practitioners predominantly encounter patients seeking medical assistance for physical symptoms, researchers in recent years have found that many patients present with medically unexplained symptoms that seem to be associated with psychosocial distress (Katon, 1998). Moreover, primary care physicians misdiagnose or fail to recognize underlying psychological problems in approximately 50% of patients who report only physical concerns (Bridges & Goldberg, 1985). As for those receiving medical attention, Katon (1998) noted that patients with unexplained somatic symptoms tend to report less satisfaction with their care, utilize more services, and evoke feelings of frustration in their health care providers. The purpose of the present study was to assess the ways in which psychologically distressed patients perceive their somatic symptoms and to examine how physicians respond to these patients. In order to highlight the variables affecting the detection and treatment of psychological distress in primary care, I review the pertinent literature on the following: (1) the prevalence and psychiatric comorbidity of somatization, (2) symptom attribution styles of general medical patients, and (3) physician management of medically unexplained symptoms.

Somatization in Primary Care

Katon, Ries, and Kleinman (1984) described somatization as "an idiom of distress in which patients with psychosocial and emotional problems articulate their distress

primarily through physical symptomatology" (p. 208). According to this broad definition, the prevalence of somatization in primary care depends considerably on the criteria used to measure physical symptomatology. Although medical researchers have operationalized the study of somatization in various ways, three patterns generally appear in primary care practice: functional somatization, hypochondriacal somatization, and presenting somatization (García-Campayo, Lobo, Pérez-Echeverría, & Campos, 1998; Kirmayer & Robbins, 1991).

Functional Somatization. Patients who report numerous medically unexplained symptoms in various physiological systems exemplify functional somatization (Kirmayer & Robbins, 1991). According to the *Diagnostic and Statistical Manual of Mental Disorders-IV (DSM-IV)* (American Psychiatric Association, 1994), somatization is a psychiatric disorder that represents an extreme form of this pattern. Individuals with this diagnosis have at least eight medically unexplained symptoms prior to the age of 30 in four different symptom areas (i.e., pain, gastrointestinal, sexual, and pseudoneurological). Considering the rather strict criteria of the DSM-IV, the official psychiatric disorder is diagnosed in only approximately 2% to 5% of medical patients. Less extreme forms of somatization, however, are commonly reported in primary care settings (Katon, 1998).

Escobar, Burnam, Karno, Forsythe, and Golding (1987) formulated an abbreviated definition of somatization disorder. Also known as the Somatic Symptom Index (SSI) or the Somatization Syndrome, the abridged construct requires only the presence of four to six medically unexplained physical symptoms. According to Escobar and his colleagues (1998), somatization is "part of a continuum of high levels of medically unexplained symptoms with somatization disorder placed at the extreme end of

the severity spectrum.... [and] lowering the threshold to four and six symptoms increases the detection level 100-fold while maintaining a good degree of prognostication" (p. 263). Based on these abridged criteria, the prevalence rates for functional somatization in primary care samples are substantially higher, ranging from 15% to 20%. In addition to capturing greater percentages of somatizing patients, researchers using the broader definition successfully identify individuals who repeatedly utilize medical services and report high levels of functional disability (Escobar et al., 1998; Kirmayer & Robbins, 1991).

In similar medical research, Katon and his colleagues (1991) submit that somatization can be viewed on a continuum of severity. Katon's study of 767 patients attending two primary care clinics in Washington state found that self-reported psychological distress, disability, and medical utilization "increased linearly with the number of somatic symptoms" (1991, p. 39). From their data, the authors argue that the *DSM-IV* should include less extreme classifications of somatization, which are associated with anxiety and depression as well as functional impairment and adjustment to social stress. Kroenke, Spitzer, and associates (1997) developed this idea further by proposing a new diagnosis of "multisomatoform disorder." Designed particularly for primary care patients, the criteria require the presence of three or more current, medically unexplained physical symptoms, a two-year history of chronic somatization, as well as associated social or vocational disability. Researchers examining this less severe form of somatization found that patients with multisomatoform disorder utilize medical services repeatedly and report difficulties with their physical, emotional and social functioning. (Kroenke, Spitzer, et al., 1997; Kroenke, Spitzer, deGruy, & Swindle, 1998).

Hypochondriacal Somatization. Hypochondriacal worry is another distinct pattern of distress observed in general practice (García-Campayo et al., 1998; Kirmayer & Robbins, 1991; Robbins & Kirmayer, 1996). According to Kirmayer and Robbins (1991), hypochondriacal somatization is marked by excessive preoccupation or "illness worry beyond what is expected for demonstrable physical disease" (p. 647). Patients with this condition respond to normal bodily functions with exaggerated health concerns. In recent studies, medical researchers have reported that hypochondriacal somatization occurs in approximately 4% to 8% of primary care patients. Yet, several investigators have found it difficult to determine accurate prevalence rates in patient samples due to the subjective nature of measuring "excessive illness worry (Kirmayer & Robbins, 1991; Robbins & Kirmayer, 1996).

Presenting Somatization. Presenting somatization is a form of illness behavior in which patients exclusively report somatic concerns to their physicians despite having a comorbid psychological condition, such as anxiety or depression (García-Campayo et al., 1998; Kirmayer & Robbins, 1991). Unfortunately, in many of these cases psychological distress is undetected by physicians who are responding to the purely somatic presentations of patients (Katon, 1998). According to Kirmayer and Robbins (1991), this pattern of somatization has a prevalence of 8% in primary care settings.

In studies of presenting somatization, several researchers have demonstrated a strong, positive relationship between the number of reported somatic symptoms in patients and their likelihood of having a co-occurring DSM-IV diagnosis (Katon, 1998). For example, in a cohort study of 500 adults presenting at a general medical walk-in clinic, Kroenke, Jackson, and Chamberlin (1997) examined the relationship between

physical complaints and psychological distress. Using diagnostic interviews and questionnaires, the investigators diagnosed 29% of the patients as having depressive or anxiety disorders. They also determined several independent predictors of psychological distress in these subjects including: recent stress, symptom count of six or more, severity of symptoms, self-rated health, and physician perception of the encounter as difficult.

Simon, Gater, Kisely, and Piccinelli (1996) also studied the relationship between current somatic symptoms and psychological distress, but on a much grander scale. In order to examine cross-national differences, the researchers analyzed data from a World Health Organization (WHO) collaborative study of more than 5,000 patients from 15 primary care sites. Somatic symptom count and psychological distress were strongly associated across all sites, with no significant variation between distinct cultures or disparate levels of economic development. Using the same WHO collaborative study data, Kisely, Goldberg, and Simon (1997) compared patients presenting somatic concerns with and without clear organic cause and found that, regardless of etiology, psychiatric diagnosis was significantly associated with number of reported medical symptoms.

From the research findings on this topic, we can conclude that somatization is a common phenomenon in primary care settings. Specifically, symptom count, illness worry, and comorbid psychiatric conditions are salient factors determining patients' psychological distress. Kirmayer and Robbins (1991) argue that when working with individuals who somatize, clinicians and researchers "must maintain the distinction between somatization as the experience of medically unexplained symptoms, as a state or style of illness worry, and as a process of symptom attribution and clinical presentation" (p. 654).

Symptom Attribution

Kirmayer, Young, and Robbins (1994) define symptom attributions as "cognitive or conceptual links between experiences or events and knowledge structures that function as labels, categorizations, and interpretations of events" (p. 584). These derived interpretations influence the ways in which primary care patients seek assistance for their symptoms, communicate their concerns to providers, and comply with various treatments. Over the last two decades, investigators of symptom attribution styles have focused on the distinction between patients who proffer psychosocial explanations for their somatic distress and those who attribute their bodily complaints only to physical disorders (Bridges & Goldberg, 1985; Bridges, Goldberg, Evans, & Sharpe, 1991; Craig, Drake, Mills, & Boardman, 1994; Kirmayer & Robbins, 1996).

Bridges and Goldberg (1985) were among the first researchers to operationally define the concept of the "somatizer." Employing the criterion of symptom attribution, they recognized that certain patients consider their somatic manifestations of psychological distress to be caused by physical problems. Conversely, they designated the term "psychologizers" to describe patients who present psychological explanations for their medical concerns. These investigators interviewed 500 adults in 13 general medical practices and found that physicians were much more adept at recognizing psychiatric disorders in patients reporting psychological concerns than in those presenting somatic symptoms.

In a follow-up study, Bridges, Goldberg, Evans, and Sharpe (1991) explored possible determinants of somatization and attribution style in primary care. Comparing 47 somatizers to 55 psychologizers, the researchers found that somatizing patients

reported lower levels of depression and social stress than individuals offering psychological explanations for their symptoms. Furthermore, somatizers were less likely than psychologizers to discuss emotional problems with their doctors and had a significantly greater number of medical in-patient admissions during adulthood. While submitting that somatization may provide an adaptive function by deflecting attention away from psychosocial issues, Bridges and associates (1991) concede that chronic somatization can be difficult to treat and lead to iatrogenic or harmful medical interventions.

Building on the work of Bridges and Goldberg, Kirmayer and Robbins (1996) conducted a longitudinal study in which they examined the cognitive and social characteristics of patients who somatize in primary care. They measured patients' symptom attribution style with the Symptom Interpretation Questionnaire, an instrument that identifies three dimensions of causal explanations: emotional distress (psychological), physical illness (somatic), and environmental events (normalizing). Among a sample of 685 Canadian general medical patients, somatizers less frequently endorsed psychological causes for their symptoms and reported lower levels of introspection and worry about emotional concerns than psychologizers. In addition, somatizers utilized fewer mental health services and were more reluctant to discuss personal problems with their general practitioner throughout the year following the initial contact. The authors concluded that "somatization represents a persistent pattern of illness behavior in which mental health care is not sought despite easily elicited evidence of emotional distress" (p. 937).

Several questions regarding somatization still remain. For example: How does life stress affect patients' expression of emotional problems? In what ways do difficult life events influence attribution and coping styles? To study the ways in which social and personal factors affect the expression of emotional and somatic distress, Craig and his colleagues (1994) conducted a 2-year longitudinal study of more than 300 general medical patients. These researchers found that psychologizers and somatizers reported higher levels of recent stress than did patients with a substantiated medical problem. In addition, somatizers evidenced a deficit in coping, using physical illness as a means to manage stressful life events.

Cameron, Leventhal, and Leventhal (1995) developed this research further by analyzing the relationship between life stress and medical help-seeking in a study of 366 primary care patients. These investigators reported that subjects with ambiguous indicators of illness (i.e., medically unexplained symptoms) were less likely to consult a physician during the time period following the experience of a recent life stressor. Attributing their vague symptoms to "stress," patients were more tolerant of their current difficulties. In contrast, when stressors were not recent but rather prolonged or ongoing, patients were more likely to seek medical assistance. Cameron and associates (1994) noted, "This change may occur because individuals find it increasingly difficult to bear the distress caused by the combination of life stressors and symptoms;...they may attempt to reduce the emotional distress by confiding in a health care professional" (p. 45). Whatever the case, the authors argue that more communication between primary care physicians and their patients is needed.

Symptom attribution can also affect whether primary care physicians recognize anxiety or depression in their patients. Using the Symptom Interpretation Questionnaire developed by Robbins and Kirmayer (1991), Kessler, Lloyd, Lewis, and Gray (1999) conducted a study in which they examined how successfully physicians detect psychological distress in patients employing psychological, somatic, or normalizing attribution styles. Collecting data on 305 general medical attenders and eight physicians, the researchers discovered that patients predominantly report normalizing attributions; that is, the patients accredit their symptoms to benign environmental events. Kessler and his colleagues also found that physicians recognize anxiety and depression less often when patients employ a normalizing explanatory style. Consequently, the researchers state that understanding how patients view their symptoms is an essential component in the process of diagnosing and treating psychologically distressed individuals.

Physician Recognition and Management of Psychological Distress

There are numerous barriers to the diagnosis and treatment of depression and anxiety in primary care. In addition to patient somatization and attribution style, several physician barriers may complicate the clinical encounter. For example, Docherty (1997) suggests that attitudes, knowledge and skills of physicians regarding psychological issues affect the ability of doctors to make appropriate mental health diagnoses. Recognition of depression is increased when physicians are confident in their ability to treat mental illness, when they have sufficient time to discuss psychosocial concerns, and when they perceive such treatment as part of their responsibility as health care providers (Docherty, 1997).

Ormel and his colleagues (1990) researched the relationship between physician recognition of psychological distress and the variables of patient management and outcome in general practice. They found that the patients who are recognized as psychologically distressed by their primary care physicians receive more mental health services than non-recognized individuals, and experience better outcomes related to psychopathology and social functioning. In a second general practice study, Ormel, Koeter, van den Brink, and van de Willige (1991) validated previous findings by showing that patients identified by their doctors as psychologically distressed are more likely to obtain mental health interventions. Specifically, they receive psychotropic medication, counseling, and/or a referral to a mental health specialist. Furthermore, individuals diagnosed with anxiety disorders report shorter episodes of illness, suggesting that physicians who appropriately detect their patients' psychological distress manage these cases more effectively.

The extent to which patients use primary care services is another significant indicator of psychological distress. One remedy for the persistent and costly problem of medical over-utilization is to improve physician recognition of psychological distress through screening measures. Reifler, Kessler, Bernhard, Leon, and Martin (1996) conducted a study in which they used the Symptom-Driven Diagnostic System for Primary Care to help physicians identify mental health concerns of their patients. The researchers found that patients who screened positively for psychological disorders used fewer medical services (i.e., outpatient visits, radiographic imaging, and hospitalization) three months following the study.

In addition to using screening instruments to enhance the diagnosis of psychologically distressed patients, many physicians have relied on psychiatric consultation to help with their recognition and treatment of somatizing patients. Katon and his colleagues (1992) conducted a randomized trial to analyze the effect of a psychiatric consultation intervention on distressed, high utilizing patients. Collaborating with 18 physicians from two primary care clinics, board-certified psychiatrists interviewed and surveyed patients for psychological problems. After completing the psychiatric examination, the psychiatrist, the primary care physician, and the patient met to discuss the key aspects of the patient's mental health status. Psychiatrists then provided the physicians with written treatment protocols as well as literature on the management of the particular disorders with which the patients were coping. Compared to control subjects, the researchers found that the intervention patients received more prescriptions for psychotropic medication during the following year. However, there were no significant differences between the patient samples in terms of psychological distress, functional disability, or utilization of medical services.

In a more recent randomized trial of 56 patients, Smith, Rost, and Kashner (1995) reported substantial benefits associated with psychiatric consultation. Specifically, somatizing patients experienced an increase in physical functioning and 34% reduction in their annual health care costs. These improvements in patient outcome remained stable throughout the year following the psychiatric intervention. Based on these findings, the researchers argue that a psychiatric consultation is "cost-effective because it reduces subsequent charges for medical care, while improving health outcomes in a chronically impaired population" (p. 238).

Finally, for patients who are recognized by their primary care physicians as somatizing, Cummings (1991a, 1991b) found that brief, focused psychotherapy can substantially offset medical costs, provide relief from psychological distress, and minimize medical visits. However, as noted earlier, appropriate diagnosis is the first step to improved outcomes for these patients:

> ... through careful evaluation and diagnosis, primary care physicians can stop the cycle of unnecessary testing, reduce the patient's psychological distress and frustration, reduce or eliminate the costs of long-term drug treatment for somatic complaints and surgery, and have a positive effect on the patient's quality of life by relieving somatic complaints" (De Wester, 1996, p. S5).

Research Questions

For this research project, I focused on three key aspects of the primary care encounter between physician and medical care seeker: (1) patient psychological distress, (2) patient symptom attribution style, and (3) physician perception and management of psychosocial issues. The goal of the study was to explore how these variables relate to one another in order to clarify the complex interplay between the somatic presentation of psychologically distressed patients and the response of physicians to these patients. More specifically, I examined the extent to which:

(1) primary care patients are psychologically distressed;

(2) primary care patients employ somatic, psychological, or normalizing symptom attribution styles;

(3) primary care patients consider their presenting symptoms to be medically explained;

(4) primary care physicians consider the presenting symptoms of their patients to be medically explained;

(5) primary care physicians and patients agree on the causal attribution of the presenting symptoms;

(6) primary care physicians discuss the use of psychotropic medication and/or mental health services with their patients; and

(7) primary care physicians and patients agree on the mental health interventions discussed in the clinical encounter.

CHAPTER 2

METHOD

Participants

Patient Sample. The patient sample was recruited from a primary care practice staffed by five physicians located in Springfield, Massachusetts. While approximately 300 individuals were approached, a total of 197 adult patients who were literate in English and between the ages of 18 and 68 years [M = 36.8, SD = 12.3] consented to participate in the study and completed four questionnaires during their medical office visit. The sample included 137 women (69.5%) and 60 men (30.5%). Participants represented diverse ethnic backgrounds, identifying themselves as African-American (13.8%), European-American (69.4%), Hispanic-American (14.8%), or some other ethnic heritage (2.0%). The combined annual family income of the participants also varied considerably, though not all respondents completed items pertaining to this demographic information. Despite the range in income level, the majority of the respondents were well educated, with approximately 70% of the sample having attended some college or more. Demographic characteristics of the sample are presented in Table 1.

Respondents were asked to specify the symptoms for which they were visiting their physician and to rate their overall health on a seven point Likert-type scale, ranging from "poor" (1) to "excellent" (7). While the participants indicated that they were in "good" to "excellent" health on average [M = 4.5, SD = 1.3], they sought assistance from their physicians for a variety of symptoms and concerns. As noted in Table 1, the primary reasons for medical office visits included well care (e.g., physical examinations, vaccinations, etc.); symptoms related to the ear, nose, or throat; and problems with the

cardiovascular system (e.g., high blood pressure). Approximately 5% of the symptoms reported by patients were psychological in nature.

Table 1: Demographic Characteristics

Demographic Item	N (Total = 197)	%
Combined Annual Family Income		
$15,000 or less	34	17.3
$16,000 - $20,000	17	8.6
$21,000 - $30,000	19	9.6
$31,000 - $50,000	51	25.9
$51,000 - $100,000	44	22.3
Over $100,000	8	4.1
Unreported	24	12.2
Highest Level of Education Achieved		
Some high school	17	8.6
High school or trade school	43	21.8
Some college	62	31.5
College graduate	45	22.8
Some graduate school or degree	27	13.7
Unreported	3	1.5
Symptoms (N = 275)		
Cardiovascular	27	9.8
Dermatology	7	2.5
Diabetes	8	2.9
Ear, Nose, and Throat	37	13.5
Faint, Dizzy, or Numbness	6	2.2
Fatigue	5	1.8
Flu Symptoms	6	2.2
Gastrointestinal	14	5.1
Genitourinary	4	1.5
Headache	14	5.1
Insomnia	4	1.5
Miscellaneous	23	8.3
Pain, Back	8	2.9
Pain, Musculoskeletal	19	6.9
Pain, Other	12	4.4
Psychological	13	4.7
Pulmonary	12	4.4
Well Care	51	18.5
Unreported	5	1.8

Table 1 Continued: Demographic Characteristics

Demographic Item	N (Total = 197)	%
Spouse or Partner		
Yes	115	58.4
No	73	37.0
Unreported	9	4.6
Previous Mental Health Counseling		
Yes	97	49.2
No	97	49.2
Unreported	3	1.6
Taken Psychotropic Medication		
Yes	61	31.0
No	132	67.0
Unreported	4	2.0

Physician Sample. Four male physicians and one female physician participated in the study by completing brief, global assessments of each patient immediately following the clinical encounter. These primary care physicians ranged in age from 33 to 46 years and identified themselves as being of European-American descent. Specializing in internal medicine and pediatrics, they each have been practicing for approximately eight years and currently maintain a client base of over 5,000 patients from the local Springfield community. A cross-section of primary care patients was obtained by sampling patients of all five physicians.

Measures

Patients willing to participate in the study completed four questionnaires regarding their demographic information, psychological distress, symptom attribution style, and medical management of their unexplained physical complaints. The demographic questionnaire (see Appendix A) included questions about age, race, sex, education level, and partnership status. Similar to a study conducted by Kroenke, Jackson, and Chamberlin (1997), patients were also asked on this questionnaire to specify

the physical symptoms for which they were consulting a physician, indicate any recent stress, and rate their "overall" health.

Symptom Checklist-90-R (SCL-90-R). Following the demographic information, participants completed the Symptom Checklist-90-R (SCL-90-R) (Derogatis, 1994; Derogatis, Lipman, & Covi, 1973; Derogatis, Rickels, & Rock, 1976; Horowitz, Rosenberg, Baer, Ureno, & Villasenor, 1988), an instrument which many researchers and practitioners use for the purpose of detecting psychological and somatic distress in primary care patients (Katon, 1998). Comprised of nine subscales, the inventory measures psychological distress according to the following symptom dimensions: somatization, obsessive-compulsiveness, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism. In addition, the SCL-90-R includes three global indices of distress, which reflect a participant's psychological status. Among these, the Global Severity Index (GSI) is the primary indicator of a respondent's overall emotional distress.

The SCL-90-R is a self-report measure with excellent psychometric properties, and consists of 90 items that are scored according to a five point Likert-type scale. Internal consistency coefficients for the nine symptom dimensions range from .79 for paranoid ideation to .90 for depression (Horowitz et al., 1988). Demonstrating the convergent validity of the measure, Derogatis, Rickels, and Rock (1976) found that the SCL-90-R correlates highly with other measures of psychological distress.

Symptom Interpretation Questionnaire (SIQ). This self-report instrument surveys respondents' attributions of 13 common somatic symptoms (Robbins & Kirmayer, 1991). Derived from the somatization sub-scale of the SCL-90 (Derogatis, Lipman, & Covi,

1973), the physical symptoms are ambiguous in nature (i.e., medically unexplained). The questionnaire also includes different causal explanations for the somatic symptoms, which correspond to emotional distress (psychological), physical illness (somatic), or external environmental events (normalizing). Respondents are asked to rate the likelihood of the causal explanations for each of the ambiguous symptoms, yielding three scaled scores for psychological attributions, somatic attributions, and normalizing attributions. The following is a sample item from the SIQ:

> If I had a prolonged headache, I would probably think that it was because:
> (1) I am emotionally upset.
> (2) There is something wrong with my muscles, nerves, or brain.
> (3) A loud noise, bright light or something else has irritated me.

While studying clinical samples, the developers of the questionnaire found adequate reliability and validity statistics to support their measure. Cronbach's alpha for the multiple-choice version of the SIQ were .86 for the Psychological Scale, .71 for the Somatic Scale, and .81 for the Normalizing Scale (Robbins & Kirmayer, 1991).

Clinical Encounter Questionnaire-Patient (CEQ) (see Appendix B). This survey was developed for the present study in order to measure patients' perceptions of their medical encounters with the primary care physicians. The questionnaire is comprised of six items, four of which are global ratings of symptom attribution, medical management of psychosocial stress, and the doctor-patient relationship. The global questions are measured on a continuous seven-point Likert scale. The two remaining items, which require a "yes," "no," or "n/a" response, inquire whether the patient has discussed psychotropic medication and/or mental health counseling with his or her physician.

Clinical Encounter Questionnaire-Physician (see Appendix C). The physician version of the survey corresponds to the patient questionnaire, allowing for the

determination of agreement between each patient and his or her doctor. Both versions of the questionnaire possess appropriate face validity.

Procedure

Questionnaires were distributed to the physicians and their patients at the medical office during regular business hours. Individuals who were visiting the medical practice for the first time were not surveyed given that participants were asked to report on the nature of their relationship with their primary care physician. As patients arrived at the practice, a member of the research team approached each potential subject, briefly explained the purpose of the study, and requested his or her participation. Those willing to enroll were asked to sign a consent form and were assured that participation was entirely voluntary, confidential, and anonymous except to the primary researcher. Each participant then received the demographic questionnaire, the SCL-90-R, and the SIQ in the office waiting room, prior to meeting with his or her physician. After the medical visit was finished, the patient completed the Clinical Encounter Questionnaire regarding interactions with his or her primary care doctor. Likewise, the physician filled out his or her version of the CEQ at that time. Once the questionnaires were completed, a member of the research team provided the participant with a debriefing form, which included a description of the purpose of the study. Finally, each subject received either nominal monetary compensation for his or her participation or the opportunity to donate the compensation to a local charity. Participants unable to complete all questionnaires due to time constraints received a self-addressed, stamped envelope in which to return the surveys.

CHAPTER 3

RESULTS

The statistical analyses described in this section pertain to three central aspects of the primary care encounter between physicians and those seeking medical care: (1) psychological distress of patients, (2) symptom attribution styles of patients, and (3) recognition/treatment of psychosocial concerns by doctors and patients. Descriptive statistics, which were presented in the previous chapter, were first calculated to examine the demographic characteristics of the patient sample. In order to explore the ways in which patients differ according to their experience of psychological distress and to their utilization of symptom attribution styles, separate one-way analyses of variance were performed. Furthermore, reliable predictors for recognizing patient psychological distress during the clinical encounter were identified by computing regression equations. Finally, correlational analyses were used primarily for examining the extent to which physicians and patients concur on the etiology of the patients' presenting symptoms and on the mental health interventions discussed during the clinical encounter.

Analyses of Patient Psychological Distress

Of the 197 respondents who participated in the study, 186 completed the SCL-90-R, indicating the extent to which they experience psychological distress. Scaled T-scores were used for all statistical analyses. The average global severity rating (GSI scores) of primary care patients on the SCL-90-R was 58.08 [SD = 12.64, range = 30.00 to 81.00]. Although this finding suggests that the sample in general did not deviate considerably from standardized adult norms, approximately 28.0% of the participants attending the medical office were experiencing clinically significant psychological distress, obtaining

global severity ratings greater than or equal to a score of 65 [N= 52, M = 73.35, SD = 6.28].

Using the demographic characteristics of the patient sample as between-subjects grouping variables, a series of one-way analyses of variance was performed on patients' SCL-90-R (GSI) scores. In order to investigate further the ways that primary care patients differ psychologically, post hoc analyses were conducted on significant findings from the univariate ANOVAs. For this set of tests, Type 1 error rates were controlled with the Tukey Studentized Range Statistic. Table 2 includes the results of the ANOVAs according to patients' gender, ethnicity, income, education, partner status, and previous use of mental health interventions. For a list of mean global severity ratings of respondent psychological distress, see Table 3.

Table 2: Results from ANOVAs on Patient Reported Psychological Distress (SCL-90-R) Grouped by Sample Demographics

Main Effect	df Effect	MS Effect	df Error	MS Error	F	p-level
Gender	1	10.07	184	160.44	.06	.80
Ethnicity	3	546.27	182	153.26	3.56	.02*
Combined Annual Family Income	5	450.67	159	147.38	3.06	.01*
Highest Level of Education	4	710.84	180	145.83	4.88	.001*
Have Spouse or Partner	1	35.47	176	161.17	.22	.64
Previous Mental Health Counseling	1	3188.60	183	141.55	22.53	.000*
Taken Psychotropic Medication	1	2399.77	182	145.99	16.44	.000*

Table 3: Mean Global Severity Ratings (GSI) on SCL-90-R According to Patient Demographics

Demographic Item	N	Mean	Standard Error
Gender			
Male	54	58.44	1.72
Female	132	57.93	1.10
Ethnicity			
African-American	25	59.52	2.48
European-American	128	56.30	1.09
Hispanic/Latin-American	29	63.41	2.30
Other	4	67.50	6.19
Combined Annual Family Income			
$15,000 or less	32	64.13	2.15
$16,000 - $20,000	16	60.38	3.04
$21,000 - $30,000	19	60.90	2.79
$31,000 - $50,000	49	56.10	1.73
$51,000 - $100,000	42	54.90	1.87
Over $100,000	7	52.29	4.59
Highest Level of Education Achieved			
Some high school	14	70.00	3.23
High school or trade school	42	57.31	1.86
Some college	62	59.19	1.53
College graduate	42	54.91	1.86
Some graduate school or degree	25	54.44	2.42
Spouse or Partner			
Yes	110	57.46	1.21
No	68	58.38	1.54
Previous Mental Health Counseling			
Yes	93	62.10	1.23
No	92	53.79	1.24
Taken Psychotropic Medication			
Yes	57	63.30	1.60
No	127	55.49	1.07

As shown in Tables 2 and 3, male and female patients reported on average equivalent levels of psychological distress; likewise, partner status had no effect on respondents' reported symptomatology. Yet, several notable discrepancies emerged when grouping the participants according to other demographic characteristics. Patients who classified themselves as Hispanic-American, for example, indicated significantly

more symptoms on the SCL-90-R in comparison to participants of European-American descent, [$t(182) = 7.12$, $p = .03$]. In addition, analyses of variance revealed main effects for the demographic variables of combined annual family income and education. Participants from the lowest income level ($15,000 or less) reported considerably higher levels of psychological distress than did individuals who noted earning approximately $21,000 to $30,000 or $31,000 to $50,000 per year. Post hoc contrasts yielded significant differences among these patient groups, [$t(159) = -8.02$, $p = .04$] and [$t(159) = -9.22$, $p = .02$] respectively. Patients with little education similarly endorsed relatively more symptoms of psychological distress. More specifically, individuals who had attended only some high school scored considerably higher on the SCL-90-R in comparison to individuals who had completed at least a high school degree or beyond, [$F(1,180) = 16.13$, $p = .000$]. Finally, though not entirely surprising, patients who had sought counseling for emotional problems or had taken psychotropic medication in the past reported significantly greater levels of psychological distress than did participants who had never used such mental health interventions.

Pearson product moment correlations were used to explore the relationship between participants' responses on the continuous demographic items and patient reported psychological distress. According to these analyses, the age of patients did not correlate significantly with the degree of reported psychological symptomatology, [$N = 185$, $r = -.07$, $p = .34$]. However, linear relationships were found between participants' SCL-90-R scores and their self-rated stress level and health status, [stress: $N = 185$, $r = .344$, $p = .000$; health: $N = 184$, $r = -.25$, $p = .001$]. That is, psychologically distressed patients tended to report moderate to severe levels of stress and poorer overall health.

Analyses of Patient Symptom Attribution Style

The data pertaining to the symptom attribution styles of patients were analyzed in two ways. First, patients were categorized according to their highest scaled score on the SIQ, indicating whether they predominantly employ a somatic attribution style, psychological attribution style, or a normalizing attribution style. Such ranks help to minimize method variance due to response bias. Using the three symptom attribution categories as grouping variables, independent analyses of variance (ANOVA) were performed on participants' self-rated stress level and health status as well as on their responses to the Clinical Encounter Questionnaire. Those participants who obtained two or more equivalent scaled scores on the SIQ were not included in these analyses (N = 10). The second method of analysis included examining the responses to the SIQ as three continuous scales, which were entered into linear regression equations for the purpose of identifying factors that predict physician recognition and management of patient psychosocial distress.

Symptom Attribution Style and Patient Distress. Of the 197 participants in the study, 168 individuals completed the SIQ. According to these data, most patients (67.1%) predominantly utilize a normalizing attribution style and attribute ambiguous bodily symptoms to environmental factors. In contrast, only 14 participants (8.9%) obtained a high score on the somatic subscale, indicating that few medical care seekers interpret the cause of such symptoms solely as physical problems. The remaining patients (N = 38, 24.0%) proffered psychological explanations for the ambiguous symptoms on the questionnaire and highlighted stress, anxiety, and other emotional

problems as salient influences in the ways they perceive physical health. These results corroborate the findings of previous research (Kessler, Lloyd, Lewis, & Gray, 1999).

An analysis of variance was first performed to examine the relationship between the ways patients interpret physical symptoms on the SIQ and their reported psychological distress on the SCL-90-R. This test yielded a main effect for symptom attribution style, [$F(2, 151) = 7.81$, $MSE = 145.98$, $p = .000$]. That is, patients who employ a normalizing attribution style reported lower levels of psychological distress on the SCL-90-R than did patients who utilize either a somatic or psychological attribution style, [Normalizing $M = 55.86$, $SE = 1.19$; Somatic $M = 64.57$, $SE = 3.23$; Psychological $M = 64.16$, $SE = 1.99$]. Post hoc contrasts using the Tukey Studentized Range Test confirmed the these group differences, [somatic: $t(151) = -8.71$, $p = .031$; psychological: $t(151) = -8.30$, $p = .001$].

Considering the strong relationship between symptom interpretations and reported psychological distress, a second analysis of variance was performed using only the SCL-90-R scores of the most distressed patients. More specifically, participants who obtained GSI scores greater than or equal to 55 were included in the analysis (Somatic N = 12, Psychological N = 33, Normalizing N = 52). For this sub-sample, no significant relationship was observed between patient symptom attribution style and reported psychological symptomatology, [$F(2,94) = .71$, $MSE = 77.16$, $p = .50$]. Normalizing patients reported on average similar degrees of distress in comparison to respondents who utilize either a somatic or psychological attribution style, [Normalizing $M = 65.10$, $SE = 1.22$; Somatic $M = 67.58$, $SE = 2.54$; Psychological $M = 67.06$, $SE = 1.53$]. All subsequent analyses of variance reported in the section are based on this sub-sample.

Symptom Attribution Style and Clinical Encounter. A series of ANOVAs was conducted to explore the relationships between symptom attribution style and respondents' self-rated stress, general health status, and on the perceptions of both patients and physicians regarding the clinical encounter. As noted previously, only the ratings of participants who reported levels of psychological distress above the standardized norm were used. The results of the tests are presented in Table 4, with relevant means and standard errors displayed in Table 5. Again, the Tukey Studentized Range Statistic was employed to control experiment-wise Type 1 error for all subsequent analyses.

Table 4: Results from ANOVAs on Reported Stress, Health, and Responses to CEQ Grouped by Symptom Attribution Style

Symptom Attribution Style On Dependent Variables:	**df Effect**	**MS Effect**	**df Error**	**MS Error**	**F**	**p-level**
Patient Reported Stress	2	11.53	93	2.37	4.87	.01*
Patient Reported Health Status	2	5.56	92	1.63	3.42	.04*
Perception of Symptom Etiology (Patient CEQ)	2	.66	91	2.98	.22	.80
Benefit of Psychotropic Medication (Patient CEQ)	2	7.32	91	4.68	1.56	.22
Discussion of Psychological Causes for Symptoms (Patient CEQ)	2	9.78	91	3.64	2.69	.07
Perception of Symptom Etiology (Physician CEQ)	2	14.38	91	3.57	4.03	.02*
Benefit of Psychotropic Medication (Physician CEQ)	2	18.80	91	5.52	3.41	.04*
Discussion of Psychological Causes for Symptoms (Physician CEQ)	2	14.70	91	4.16	3.54	.03*

Table 5: Mean Stress, Health, and CEQ Responses According to Symptom Attribution Style

Dependent Variable	Somatic	Psychological	Normalizing
Patient Reported Stress (N)	(12)	(33)	(51)
Mean	3.75	5.33	4.71
Standard Error	.44	.27	.22
Patient Reported Health (N)	(12)	(33)	(50)
Mean	3.33	4.33	4.38
Standard Error	.37	.22	.18
Perception of Symptom Etiology-Patient CEQ (N)	(12)	(32)	(50)
Mean	2.83	2.78	2.56
Standard Error	.50	.31	.24
Benefit of Psychotropic Medication-Patient CEQ (N)	(12)	(32)	(50)
Mean	3.33	4.22	3.40
Standard Error	.63	.38	.31
Discussion of Psychological Causes for Symptoms - Patient CEQ (N)	(12)	(32)	(50)
Mean	3.67	4.28	3.28
Standard Error	.55	.34	.27
Perception of Symptom Etiology-Physician CEQ (N)	(11)	(31)	(52)
Mean	3.91	3.26	2.39
Standard Error	.57	.34	.26
Benefit of Psychotropic Medication-Physician CEQ (N)	(11)	(31)	(52)
Mean	5.55	4.19	3.56
Standard Error	.71	.42	.33
Discussion of Psychological Causes for Symptoms - Physician CEQ (N)	(11)	(31)	(52)
Mean	4.82	3.74	3.10
Standard Error	.62	.37	.28

The reports of stress and self-rated health status among patients were highly related to symptom attribution style. For example, participants who endorsed somatic explanations for the symptoms listed on the SIQ indicated that they experienced significantly less recent stress than did individuals who employed a psychological attribution style, [$t(93) = 1.58$, $p = .008$]. However, post hoc contrasts revealed a

different trend for health status, with both psychologizing and normalizing patients reporting better overall health in comparison to participants with a somatic style of symptom interpretation, [psychological: $t(92) = 1.00$, $p = .06$; normalizing: $t(92) = 1.05$, $p = .03$].

Also noted in Table 4, symptom attribution styles (as measured by the SIQ) did not significantly relate to patients' perceptions of (1) whether their presenting symptoms represent a medical or a psychological problem, (2) whether they would personally benefit from psychotropic medication, or (3) whether they discuss with physicians psychological causes for their symptoms. However, markedly different findings emerged with respect to physicians' responses on the Clinical Encounter Questionnaire.

Participant symptom attribution styles significantly related to the likelihood that physicians recognized psychological causes for the presenting symptoms of their patients. Physicians were more likely to identify patients' presenting symptoms as representing a psychological problem for participants who employ a somatic symptom attribution style than for patients who primarily use a normalizing style, [$t(91) = -1.52$, $p = .04$]. Moreover, doctors believed that they more often discussed psychological causes for presenting symptoms with somatizing participants than with normalizing participants, [$t(91) = -1.72$, $p = .03$]. Finally, there was a main effect of symptom attribution style on the extent to which physicians perceive patients benefiting from medication that treats anxiety, depression, or some other psychological problem. Physicians rated participants with a somatic attribution style as more likely to benefit from psychotropic medication than patients with a normalizing style, [$t(91) = -2.00$, $p = .03$].

To further corroborate the association between symptom attribution style and physician recognition of patient psychological distress, several regression analyses were conducted. For these analyses, the ratings of all participants were used. Simultaneously regressing physicians' responses from the CEQ on the three continuous subscales of the SIQ (i.e., somatic scale, psychological scale, normalizing scale) yielded significant predictors of physician detection and management of patient psychological distress. The results of these regression analyses are summarized in Tables 6, 7, and 8.

Table 6: Regression Summary of Physician CEQ Question 1 Ratings (Symptom Etiology) on Symptom Attribution Style

$R^2 = .13$		N = 161		F(3,157) = 7.93		p = .000
Predictors	**B**	**Std. Error of B**	**β**	**Tolerance**	**t**	**p-level**
Intercept	2.10	.62	.00		3.42	.001
SIQ – Somatic	-.01	.03	-.03	.75	-.30	.77
SIQ – Psychological	.09	.02	.41	.70	4.62	.000*
SIQ – Normalizing	-.06	.02	-.24	.75	-2.82	.005*

Table 7: Regression Summary of Physician CEQ Question 2 Ratings (Benefit from Psychotropic Medication) on Symptom Attribution Style

0001$R^2 = .12$		N = 161		F(3,157) = 7.07		p = .000
Predictors	**B**	**Std. Error of B**	**β**	**Tolerance**	**t**	**p-level**
Intercept	2.24	.81	.00		2.76	.007
SIQ – Somatic	.02	.04	.06	.75	.65	.52
SIQ – Psychological	.10	.03	.36	.70	4.07	.000*
SIQ – Normalizing	-.06	.03	-.22	.75	-2.49	.01*

Table 8: Regression Summary of Physician CEQ Question 4 Ratings (Discussion of Psychological Causes for Symptoms) on Symptom Attribution Style

$R^2 = .11$		N = 160		F(3,156) = 7.93		p = .001
Predictors	**B**	**Std. Error of B**	**β**	**Tolerance**	**t**	**p-level**
Intercept	1.75	.72	.00		2.42	.001
SIQ – Somatic	.03	.03	.09	.76	1.02	.31
SIQ – Psychological	.08	.02	.32	.71	3.57	.000*
SIQ – Normalizing	-.04	.02	-.17	.75	-1.89	.06

As shown in the regression summaries, certain symptom attribution styles significantly predict the reports of physicians on the CEQ. Physicians, in response to participants with elevated scores on the psychological subscale of the SIQ, were more likely to classify presenting symptoms as a psychological problem, to believe that these patients might benefit from psychotropic medications, and to discuss psychological causes for presenting symptoms. The somatic subscale scores of patients did not significantly predict physicians' ratings about the clinical encounter. Finally, a negative correlation was observed between patients' scores on the normalizing subscale and the CEQ data. Specifically, physicians identified fewer symptoms of psychological distress among patients with normalizing attributions, dismissing more often the benefits of psychotropic medication and entertaining fewer discussions about emotional explanations for the presenting complaints.

Analyses of Detection and Treatment of Patient Psychological Distress

In addition to the symptom attribution styles, participants' responses concerning the extent to which the presenting symptoms of patients represent a medical or psychological problem (CEQ Question 1) were regressed on several patient demographic variables. Patient age, gender, education, self-rated health, as well as reported psychological distress (according to SCL-90-R GSI scores) served as independent variables in the analyses.

In order to determine reliable predictors of recognition of psychological distress during the clinical encounter, CEQ responses of *both* physicians and patients were regressed on the demographic characteristics. Since numerous patients did not complete the income item on the demographic questionnaire (see Table 1), participants' responses to the education item were used as a proxy for socioeconomic status and analyzed as a continuous variable. The results of the regression analyses are summarized in Tables 9 and 10.

Table 9: Regression Summary of Physician CEQ Question 1 Ratings (Symptom Etiology) on Demographic Characteristics

$R^2 = .16$		N = 176		F(5,170) = 6.54	p = .000	
Predictors	**B**	**Std. Error of B**	**β**	**Tolerance**	**t**	**p-level**
Intercept	-.82	1.35	.00		-.61	.54
Age	.02	.01	.12	.93	1.70	.09
Gender	.96	.29	.24	.93	3.35	.001*
Education	.07	.12	.05	.92	.64	.53
Reported Health Status	-.20	.11	-.14	.82	-1.82	.07
SCL-90-R (GSI Score)	.03	.01	.20	.85	2.66	.008*

Table 10: Regression Summary of Patient CEQ Question 1 Ratings (Symptom Etiology) on Demographic Characteristics

$R^2 = .15$		N = 173		F(5,167) = 5.74		p = .000
Predictors	**B**	**Std. Error of B**	**β**	**Tolerance**	**t**	**p-level**
Intercept	-1.63	1.16	.00		-1.41	.16
Age	.01	.01	.06	.93	.86	.39
Gender	.17	.26	.05	.95	.68	.50
Education	.13	.11	.09	.93	1.24	.22
Reported Health Status	-.01	.10	-.01	.85	-.09	.93
SCL-90-R (GSI Score)	.05	.01	.39	.88	5.09	.000*

According to the regression summaries, patients' gender and severity of psychological distress significantly predicted the extent to which physicians considered the presenting problems of the participants to represent either a medical or psychological problem. The doctors more often recognized women and patients with higher SCL-90-R (GSI) scores as having psychological problems. Participant age, education, and self-rated health did not predict physician recognition of psychological distress, though the effects of patient age and reported health status did approach statistical significance.

As for the patients' perceptions of their symptoms, only severity of psychological distress significantly related to the CEQ responses. Participants who obtained high scores on the SCL-90-R (GSI) were more likely to consider their presenting complaints to represent a psychological problem in comparison patients with low scores on the scale. Finally, independent analyses of variance also revealed that patient ethnicity did not relate to participants' perceptions of psychological distress during the clinical encounter, [Physician CEQ: $\underline{F}(3,185) = .62$, $\underline{MSE} = 3.20$, $\underline{p} = .60$; Patient CEQ: $\underline{F}(3, 177) = .29$,

MSE = 2.50, p = .83]. See Table 11 for means and standard deviations of participants' CEQ responses according to patient ethnicity.

Table 11: Mean CEQ Ratings (Question 1) according to Patient Ethnicity

Dependent Variable	African-American	European-American	Hispanic-American	Other
Physician CEQ (N)	(25)	(133)	(27)	(4)
Mean	2.24	2.50	2.37	3.50
Standard Error	.36	.16	.34	.89
Patient CEQ (N)	(23)	(125)	(29)	(4)
Mean	2.00	2.17	2.24	2.75
Standard Error	.33	.14	.29	.79

Doctor-Patient Agreement Regarding the Clinical Encounter. Correlational analyses were conducted to determine the extent to which physicians and their patients concur on the etiology of the patients' presenting symptoms (i.e., as measured by the CEQ). Moreover, the relationship between the responses of physicians and patients regarding the potential benefits of psychotropic medication and the mental health interventions discussed during the clinical encounter was examined. All Pearson product- moment correlation probabilities reported in this section were adjusted with the Bonferroni Procedure.

According to the CEQ data, physician and patient ratings of symptom etiology were positively correlated [r(173) =.30, p =.002]. Expressing moderate agreement, physicians and patients varied similarly in their beliefs about the extent to which patients might benefit from medication that treats anxiety, depression, or some other psychological problem, [r(173) = .36, p = .000]. A positive linear relationship was also observed between the responses of physicians and patients regarding the discussion of psychological causes to the patients' presenting symptoms, [r(173) =.49, p = .000].

Lastly, physicians and their patients significantly agreed on the mental health treatments (i.e., psychotropic medication and counseling services) recommended during the clinical encounter, [medication: $\underline{\phi}(176) = .72$, $\underline{p} = .000$; counseling: $\underline{\phi}(175) = .69$, $\underline{p} = .000$].

Correlational analyses were also performed to evaluate whether the agreement between physicians and patients regarding symptom etiology was associated with positive characterizations of the clinical encounter. In examining this hypothesis, patients' ratings on the first question of the CEQ were subtracted from the ratings of physicians; the absolute values of these difference scores were then correlated with subjective characterizations of the clinical relationship (CEQ Item 6 scores). Patients and physicians indicated on a seven point Likert-type scale the extent to which they perceive each other as "cooperative" (1) versus "difficult" (7). As expected, correlation analyses revealed that doctors and patients perceived one another as more cooperative when they agreed on the etiology of the presenting symptoms, [Physician: $\underline{r}(173) = .29$, $\underline{p} = .004$; Patient: $\underline{r}(173) = .28$, $\underline{p} = .008$].

Analysis of Mediation

The final stage of analyses for this study included an exploration of whether symptom attribution styles of patients mediate the relationship between reported psychological distress and physician recognition of that distress. Employing Baron and Kenny's (1986) approach for testing mediated effects, both the normalizing and psychological SIQ scaled scores of the participants first were regressed on patient SCL-90-R (GSI) scores. For these analyses, which are presented in Tables 12 and 13, all three SIQ subscale scores were entered into the regression equations simultaneously, thus identifying the extent to which patient GSI ratings uniquely predict either a normalizing

or psychological symptom attribution style. The somatic subscale scores of participants were not examined for mediated effects since this symptom interpretation style did not significantly relate to physician recognition of patient psychological distress during the clinical encounter, as demonstrated previously (see Table 6).

Table 12: Regression Summary of Normalizing Symptom Attribution Style Scores on Patient Psychological Distress

$R^2 = .30$		N = 164		F(3,160) = 22.38		p = .000
Predictors	**B**	**Std. Error of B**	**β**	**Tolerance**	**t**	**p-level**
Intercept	15.92	2.59	.00		6.16	.000
SCL-90-R (GSI)	-.09	.05	-.15	.72	-2.00	.05*
SIQ – Somatic	.44	.10	.34	.78	4.55	.000*
SIQ – Psychological	.34	.07	.38	.71	4.80	.000*

Table 13: Regression Summary of Psychological Symptom Attribution Style Scores on Patient Psychological Distress

$R^2 = .38$		N = 164		F(3,160) = 33.04		p = .000
Predictors	**B**	**Std. Error of B**	**β**	**Tolerance**	**t**	**p-level**
Intercept	-4.00	3.02	.00		-1.33	.19
SCL-90-R (GSI)	.26	.05	.38	.84	5.59	.000*
SIQ – Somatic	.18	.12	.12	.70	1.64	.10
SIQ – Normalizing	.37	.08	.33	.81	4.80	.000*

The results presented in Tables 12 and 13 reveal significant associations between patient reported psychological distress and symptom attribution style. Building on the between-group analyses reported earlier in the chapter, these regression summaries confirm the trends found when patients were categorized according to their predominant

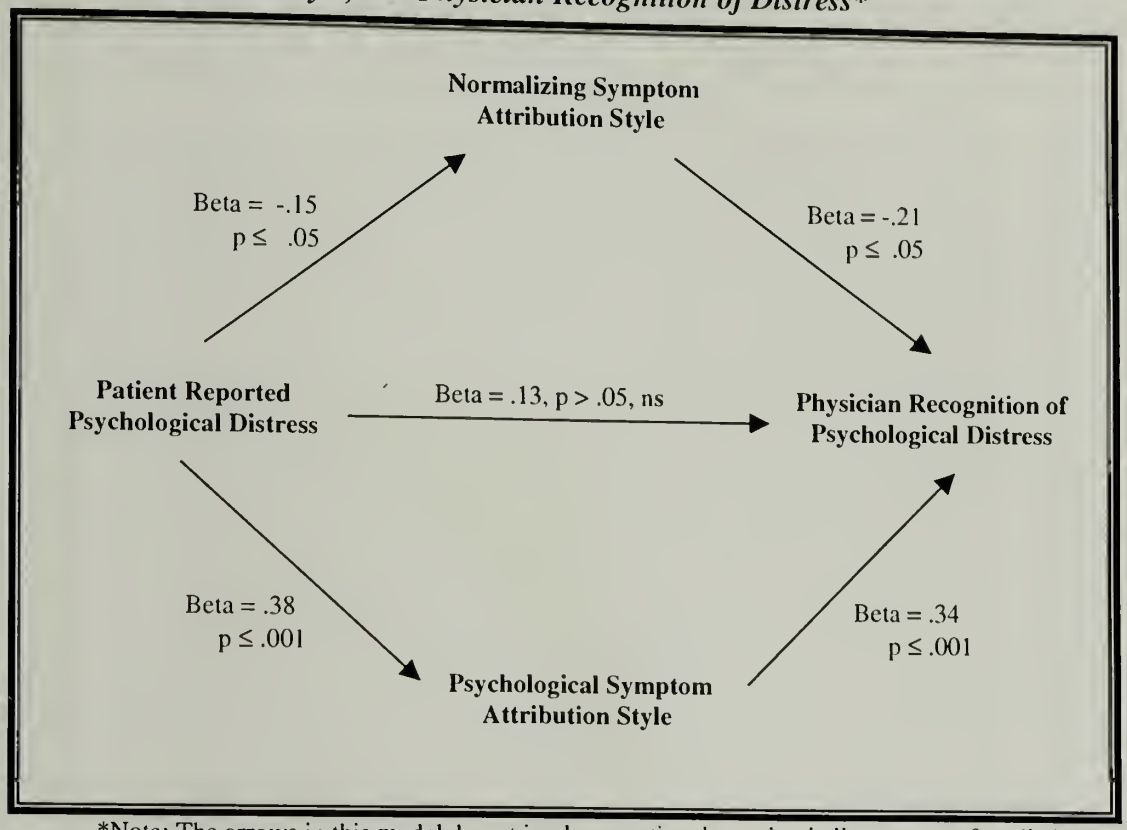
SIQ subscale score. Specifically, patients who reported low levels of psychological distress consistently endorsed normalizing attributions for physical symptoms. In contrast, participants with psychological symptom interpretations often obtained high scores on the SCL-90-R.

An examination of Tables 6 and 9 further indicates that the normalizing and psychological symptom attribution styles, as well as patient reported psychological distress, share strong predictive relationships with physicians' perceptions of distress during the clinical encounter. However, when physician CEQ responses are simultaneously regressed on both patient SCL-90-R scores and SIQ subscale scores, participant reported psychological distress no longer significantly predicts the extent to which physicians consider the presenting problems of patients to represent a psychological problem. Table 14 and Figure 1 display this test of mediation and suggest that the ways patients interpret their symptoms may affect the extent to which patients report and doctors detect psychological concerns.

Table 14: Regression Summary of Physician Recognition of Distress (CEQ Question 1) on Patient Psychological Distress and Symptom Attribution Style

$R^2 = .14$		N = 157		F(3,153) = 8.08		p = .000
Predictors	**B**	**Std. Error of B**	**β**	**Tolerance**	**t**	**p-level**
Intercept	1.11	.77	.00		1.45	.15
SCL-90-R (GSI)	.02	.01	.13	.77	1.50	.14
SIQ – Normalizing	-.05	.02	-.21	.77	-2.43	.016*
SIQ – Psychological	.07	.02	.34	.61	3.48	.001*

*Figure 1: Test for Mediation on Patient Reported Psychological Distress, Symptom Attribution Style, and Physician Recognition of Distress**



*Note: The arrows in this model do not imply causation, but rather indicate a test of mediation. Not all relationships among the variables in the model are represented.

CHAPTER 4

DISCUSSION

Interpretation of Results

The results of this exploratory study demonstrate that primary care patients are likely to experience significant emotional distress, which may go unrecognized by both patients and their physicians. For some medical care seekers, this distress is manifested through the presentation of somatic symptoms, further complicating the ability of physicians to accurately diagnose psychological problems. While numerous researchers have investigated the prevalence rates of psychological distress and proper diagnosis of psychiatric disorders in primary care, this study is an advance over previous research in that it includes an examination of how doctors and patients perceive their interactions during the clinical encounter. In the discussion below, I elaborate on the major findings of the investigation, review limitations and confounds, and highlight potential future directions for research in this field.

Patient Psychological Distress. According to previous studies, approximately 20%-30% of patients presenting to primary care medical practices experience considerable psychological distress (Bridges & Goldberg, 1987; Spitzer et al., 1994). The data of the present study corroborate these findings, with 28% of the patients obtaining elevated scores on the SCL-90-R. Interestingly, fewer than 5% of the sample noted psychological concerns as a reason for their office visit.

Researchers have shown that psychological distress affects medical outcomes for patients, such as utilization of services and satisfaction with care, which underscores the need for doctors to identify those individuals (Ormel et al., 1990; Smith, Rost, &

Kashner, 1995; Reifler et al., 1996). While physicians may generally recognize that a considerable proportion of their patients experience emotional problems, they consistently fail to detect which ones (Bridges & Goldberg, 1985). The results of this study elucidate some of the patient characteristics associated with psychological distress. For example, individuals with less education and lower income as well as those with a history of mental health counseling or previous use of psychotropic medications were more likely to have psychological problems. While the participants in this study also differed according to ethnic heritage, these results must be interpreted cautiously given the interrelationship between race and socioeconomic status. Finally, patients who reported much life stress and poor general health indicated high levels of psychological distress.

Patient Symptom Attribution Style. A notable finding was the relationship between patient symptom attribution style and reported psychological distress. Specifically, when participants were categorized according to their highest SIQ subscale score, the analyses revealed that on average normalizing patients reported levels of distress that were approximately one standard deviation below that of patients who utilize somatic or psychological symptom interpretations. While this finding is compelling, it is limited in generalizability due to the gross discrepancies in the numbers of patients who predominantly utilize each style. Furthermore, Bower and colleagues (2000) note that symptom attributions "do not tend to be of an 'either/or' type but are interrelated" (p. 159). Despite these limitations, however, the results raise the question of whether normalizing attributions are adaptive interpretations of physical symptoms or merely the

cognitive mechanism through which patients minimize their experience of psychological distress.

In order to answer this question and determine the unique effects of symptom attribution style on various medical outcomes, patient psychological distress was held constant in several of the analyses by selecting a sub-sample of the most symptomatic participants. When considering only individuals with elevated scores on SCL-90-R, the results show that physicians were still likely to view the symptoms of normalizing patients to represent a medical problem and to dismiss the benefits of psychotropic medication. Furthermore, the doctors engaged in fewer discussions about psychological causes for patients' presenting concerns. Not surprisingly, opposite trends emerged in the responses of physicians regarding clinical interactions with psychologizing and somatizing patients.

Overall, the analyses of normalizing and psychological symptom attribution styles remained fairly consistent when evaluating the SIQ data as both categorical and as continuous variables. While there is evidence to support the effects of these symptom interpretations on physician perceptions, it is important to note that the predictive power of patients' attribution styles was relatively small, accounting for only 11%-13% of the variance in the outcome measures. Moreover, the somatic subscale of the SIQ proved less stable as a continuous variable and did not significantly relate to the identification and treatment of patient psychological distress by physicians. In general, somatic attributions were uncommon.

The practical implication of these findings for patients and their physicians is to recognize that individuals perceive and report somatic symptoms in distinct ways, which

may either facilitate or hinder the accurate diagnosis and treatment of psychological distress. As Kessler and colleagues (1999) suggest, psychological attributions most likely "elicit questions from the doctor about mental wellbeing [sic] and mood state and would favour a psychological formulation for the problem. In contrast, a normalising attribution...may influence the doctor to join with the patient in minimising and even dismissing...symptoms" (p. 438).

Detection and Treatment of Patient Psychological Distress. Only one demographic characteristic of the participants (i.e., gender) significantly predicted the extent to which physicians considered the presenting symptoms of patients to represent either a medical or psychological problem. Although both male and female participants indicated similar levels of distress on average, the doctors were more likely to view the symptoms of women as having a psychological basis in comparison to male patients. One possible explanation for these results, which was not tested in the present study, may be that more women utilize psychological attribution styles than male patients, assisting physicians in the diagnosis of psychological distress. An alternate hypothesis is that gender bias influences whether doctors overemphasize or underestimate the psychological determinants of patients' presenting symptoms.

Severity of psychological distress was highly correlated with both physician and patient responses on the CEQ. Furthermore, doctors and patients expressed moderate agreement about the etiology of presenting symptoms, the potential benefits of psychotropic medication, and the discussion of psychological causes for symptoms. Interestingly, the highest positive correlations among the CEQ responses of the participants (i.e., between doctors and patients) were for the mental health interventions

discussed during the office visit. Although physicians and patients at times had different subjective interpretations of the underlying cause of the presenting symptoms, they seemed to concur during the clinical encounter about treatments for psychological distress, such as mental health counseling and psychotropic medications. This relatively strong correspondence does not necessarily ensure that patients receive proper diagnosis and treatment for their psychological distress. Doctors and patients may acquiesce to one another in order to establish an effective working alliance and to avoid conflict, which may also result in the discounting or overemphasizing of concomitant psychological problems.

Interpretation of Mediation Analysis. The most striking finding from the present study was the mediated effect of patient symptom attribution style on the relationship between patient reported psychological distress and physician recognition of that distress. As expected, when physicians' CEQ responses were first regressed on patients' SCL-90-R scores, a strong predictive relationship emerged in which the severity of patient distress was related to increased recognition of psychological problems during the clinical encounter. Similarly, the normalizing and psychologizing symptom attribution styles of patients significantly predicted the extent to which physicians considered the presenting symptoms of patients to represent either a medical or psychological problem.

When physicians' CEQ responses were simultaneously regressed on patient SCL-90-R scores and SIQ subscale scores, the predictive relationship between patients' reported psychological distress and physician recognition of that distress fell below significant levels. The beta weights for the variables in the mediation analysis indicate that distressed patients often interpret ambiguous physical symptoms psychologically,

leading physicians to view their presenting complaints as psychological problems. In addition, the results are consistent with the hypothesis that normalizing attributions reduce the likelihood that physicians will consider the primary symptoms of patients to represent a psychological problem. While these causal relationships cannot be proven directly with a cross-sectional design, the data are consistent with the mediation model.

That numerous primary care patients employ normalizing attribution styles and credit the cause of symptoms to environmental factors underscores the difficulties physicians encounter in detecting psychological distress. At the same time, symptom attribution style is but one variable that accounts for a significant portion of the variance in the ways physicians perceive and respond to their patients' symptoms. It is important to acknowledge that although the correlation between the scores of patients on the normalizing attribution subscale and physician CEQ responses was significant, the relatively large sample size may have uncovered associations that have little clinical importance. Noting this point, Bower and colleagues (2000) found that the SIQ scales yield inconsistent effects on physician recognition of patient psychological distress.

Limitations of Study

While the present study helps to clarify the relationship between patient psychological distress, patient symptom attribution style, and physician recognition and management of psychosocial concerns, several limitations of the method warrant cautious interpretation of the results. Specifically, the sampling procedure for recruiting participants, the self-report nature of the questionnaires, and the setting of data collection limit the generalizability of the findings. In addition, the operationalization of certain

constructs, such as symptom attribution style and physician recognition of patient psychological distress, presented some challenges.

Approximately one third of the patients invited to participate in the study declined, raising questions regarding sampling bias. Respondents and non-respondents did not appear to differ according to observable demographic characteristics, such as sex or estimated age. Yet, other important patient factors could not be accounted for among non-respondents, which may have resulted in an inaccurate representation of individuals experiencing psychological distress or employing certain symptom attribution styles. Furthermore, given the small numbers of men and racial minorities in the sample, within group analyses according to gender or ethnicity were not possible. The only evidence against potential sampling bias in this study is that the prevalence rates for these patient variables were consistent with findings from other primary care investigations, as noted in the previous chapters.

In addition to sampling concerns, the exclusive use of self-report questionnaires for measuring the detection, interpretation, and treatment of patient psychological distress possibly introduced response bias among participants. As stated in the introduction, in order to address this problem, some researchers have administered diagnostic interviews by trained clinicians as well as self-report surveys. Such methods, however, require considerable time and incur extensive costs, resources that were not available to the primary investigator of the present study. Also, use of the SCL-90-R as the "gold standard" for patient psychological distress was problematic, especially considering its susceptibility to demand characteristics. As for the SIQ data, patients' scaled scores were ranked in order to minimize problems associated with response bias.

The setting in which the data were collected also may have prompted patients and physicians to consider more deliberately psychological concerns. All patients began completing questionnaires prior to their medical visit with the physicians, perhaps raising their awareness of personal distress and thus influencing the clinical encounter. Similarly, physicians knew which patients were enrolled in the study prior to the office visit.

Bower and colleagues (2000) question the clinical utility of the SIQ, arguing that the three patient attribution styles are not independent of one another but rather conceptually interrelated. When researchers attempt to categorize individuals according to their predominant style of symptom interpretation, most patients are found to use normalizing attributions. Thus, the SIQ may not differentiate patients by attribution style in a clinically meaningful way. Rather than examining *global* attribution styles or tendencies, Bower and colleagues suggest that "measuring *specific* attributions concerning the main presenting problem" may better assist physicians in detecting patient psychological distress (p. 160).

A final concern regarding the study pertains to the operationalization of recognition of distress in primary care patients. That is, rather than asking clinicians and patients to rate the extent to which they consider the presenting symptoms to represent either a medical or psychological problem, researchers might wish to simply ask respondents to indicate the perceived level of psychological distress. The major confound associated with the CEQ items is that respondents may accurately identify psychological distress but still perceive the presenting symptoms as a *medical* problem. For example, if a patient who experiences depression presents to his or her physician with

a fever, the clinician may consider the problem medical while at the same time recognizing that the individual is depressed. The present study does not account for this scenario, a fact that may explain the small, albeit significant, correlation between patient reported psychological distress and the CEQ responses of physicians.

Conclusions and Future Directions

Building upon the research of previous researchers, this investigation corroborates not only the prevalence of psychological problems in primary care but also the predominance of the normalizing symptom attribution style among medical patients. Further, these results expand upon the scholarly work in the field by highlighting both physician and patient perspectives of the clinical encounter and by establishing a mediating effect for symptom attribution style. In the future, researchers might wish to examine the ways in which *individual* doctors and patients interpret and respond to symptoms of distress.

By taking an ipsative approach to studies of primary care, investigators may begin to identify salient physician characteristics that are associated with proper detection and management of psychological distress. That is, rather than studying the ways in which *patients* are difficult to diagnose, clinicians may be better served by learning from those physicians who accurately perceive and competently respond to emotional problems in their patients. Additionally, utilizing longitudinal designs and larger sample sizes, researchers may better establish both the stability of symptom attributions over time and the sociodemographic characteristics common to individuals who employ certain interpretation styles.

APPENDIX A

PATIENT DEMOGRAPHIC QUESTIONNAIRE

1) Gender (Circle one):
   a. male
   b. female

2) Age:_____

3) What is your highest level of education? (Circle one):
   a. Some high school
   b. High school or trade school
   c. Some college
   d. College graduate
   e. Some graduate school or graduate degree

4) Combined annual family income:
   a. $15,000 or less
   b. $16,000-$20,000
   c. $21,000-$30,000
   d. $31,000-$50,000
   e. $51,000-$100,000
   f. Over $100,000

5) What is your racial/ethnic background? (Circle one)
   a. African American
   b. Asian-American
   c. Caucasian
   d. Latino/a
   e. Native American
   f. Other (please specify)_____

6) Do you have a spouse or partner?
   a. Yes
   b. No

7) Please specify the symptoms for which you are visiting your doctor today:

_____

_____

8) To what extent have you been under stress throughout the past week? (Circle number)

1	2	3	4	5	6	7
No Stress			Moderate Stress			Severe Stress

9) How would you rate your overall health (Circle number)?

1	2	3	4	5	6	7
Poor			Good			Excellent

10) Have you ever seen a therapist, counselor, minister, or other professional for emotional problems, your nerves, or the way you were feeling or acting?
   a. Yes
   b. No

11) Have you ever taken medication for psychiatric / emotional reasons?
   a. Yes
   b. No

APPENDIX B

CLINICAL ENCOUNTER QESTIONNAIRE-PATIENT

1) To what extent do you consider your presenting symptom(s) to represent a medical versus psychological problem?

1	2	3	4	5	6	7
Completely Medical			Equally Medical & Psychological			Completely Psychological

2) To what extent do you think you might benefit from medication that treats anxiety, depression, or some other psychological problem?

1	2	3	4	5	6	7
Definitely Not Benefit						Definitely Benefit

3) Has your doctor recommended the use of medication that treats anxiety, depression or some other psychological problem?

NO:
- ❑ No, I would not benefit from medication
- ❑ No, but I would be open to a recommendation from my doctor

YES:
- ❑ Yes, I accepted
- ❑ Yes, I refused
- ❑ Yes, I am still considering

Not Necessary:
- ❑ I am already taking medication prescribed elsewhere

4) To what extent do you and your doctor discuss any psychological causes for your presenting medical symptoms (e.g., stress, anxiety, or depression)?

1	2	3	4	5	6	7
Never						Always

5) Has your doctor recommended that you consult with a mental health provider for counseling regarding your presenting medical symptom(s)?

NO:
- ❑ No, I would not benefit from counseling
- ❑ No, but I would be open to a recommendation from my doctor

YES:
- ❑ Yes, I accepted
- ❑ Yes, I refused
- ❑ Yes, I am still considering

Not Necessary:
- ❑ I am already seeing a mental health provider for counseling

6) How would you characterize your doctor?

1	2	3	4	5	6	7
Extremely Cooperative						Extremely Difficult

APPENDIX C

CLINICAL ENCOUNTER QESTIONNAIRE-PHYSICIAN

1) To what extent do you consider the patient's presenting symptom(s) to represent a medical versus psychological problem?

1	2	3	4	5	6	7
Completely Medical			Equally Medical & Psychological			Completely Psychological

5) To what extent do you think this patient might benefit from medication that treats anxiety, depression, or some other psychological problem?

1	2	3	4	5	6	7
Definitely Not Benefit						Definitely Benefit

6) Have you recommended the use of medication that treats anxiety, depression or some other psychological problem?

NO:
- ❑ No, patient would not benefit
- ❑ No, patient might benefit, but doubt patient receptive
- ❑ No, still evaluating

YES:
- ❑ Yes, patient accepted
- ❑ Yes, patient refused
- ❑ Yes, patient still considering

Not Necessary:
- ❑ Patient is taking meds prescribed elsewhere

7) To what extent do you and this patient discuss any psychological causes for his/her presenting medical symptoms (e.g., stress, anxiety, or depression)?

1	2	3	4	5	6	7
Never						Always

8) Have you recommended that the patient consult with a mental health provider for counseling regarding his/her presenting medical symptom(s)?

NO:
- ❑ No, patient would not benefit
- ❑ No, patient might benefit, but doubt patient receptive
- ❑ No, still evaluating

YES:
- ❑ Yes, patient accepted
- ❑ Yes, patient refused
- ❑ Yes, patient still considering

Not Necessary:
- ❑ Patient already seeing mental health provider for counseling

9) How would you characterize this patient?

1	2	3	4	5	6	7
Extremely Cooperative						Extremely Difficult

BIBLIOGRAPHY

American Psychiatric Association. (1994). Diagnostic and statistical manual of mental disorders-IV. Washington, DC: Author.

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. Journal of Personality and Social Psychology, 51, 1173-1182.

Bower, P., West, R., Andre, T., & Hann, M. (2000). Symptom attribution and the recognition of psychiatric morbidity. Journal of Psychosomatic Research, 48, 157-160.

Bridges, K., Goldberg, D., Evans, B., & Sharpe, T. (1991). Determinants of somatization in primary care. Psychological Medicine, 21, 473-483.

Bridges, K. W. & Goldberg, D. P. (1985). Somatic presentation of DSM-III psychiatric disorders in primary care. Journal of Psychosomatic Research, 29, 563-569.

Bridges, K. W. & Goldberg, D. P. (1987). Somatic presentations of psychiatric disorders in primary care. Journal of Psychosomatic Research, 29, 563-569.

Cameron, L., Leventhal, E. A., & Leventhal, H. (1995). Seeking medical care in response to symptoms and life stress. Psychosomatic Medicine, 57, 37-47.

Craig, T. K. J., Drake, H., Mills, K., & Boardman, A. P. (1995). The South London somatisation study: II. The influence of stressful life events, and secondary gain. British Journal of Psychiatry, 165, 248-258.

Cummings, N. (1991a). Arguments for the financial efficacy of psychological services in health care settings. In J. J. Sweet, R. H. Rozensky, & S. M. Tovian (Eds.), Handbook of clinical psychology in medical settings (pp. 113-126). New York: Plenum Press.

Cummings, N. (1991b). The somatizing patient. In C. S. Austad & W. A. Berman (Eds.), Psychotherapy in managed health care: The optimal use of time and resources (pp. 234-237). Washington, DC: American Psychological Association.

Derogatis, L. R. (1994). Manual for the Symptom Checklist-90, Revised (SCL-90-R). Minneapolis: National Computer Systems.

Derogatis, L. R., Lipman, R. S., & Covi, L. (1973). SCL-90: An outpatient psychiatric rating scale: Preliminary report. Psychopharmacology Bulletin, 9, 13-27.

Derogatis, L. R., Rickels, K., & Rock, A. (1976). The SCL-90 and the MMPI: A step in the validation of a new self-report scale. British Journal of Psychiatry, 128, 280-289.

DeWester, J. N. (1996). Recognizing and treating the patient with somatic manifestations of depression. The Journal of Family Practice, 43 (Suppl.), S3-S15.

Docherty, J. P. (1997). Barriers to the diagnosis and depression in primary care. Journal of Clinical Psychiatry, 58 (Suppl. 1), 5-10.

Escobar, J. I., Burnam, M. A., Karno, M., Forsythe, A., & Golding, J. M. (1987). Somatization in the community. Archives of General Psychiatry, 44, 713-718.

Escobar, J. I, Gara, M., Silver, R. Cohen, Waitzkin, J., Holman, A., &Compton, W. (1998). Somatisation disorder in primary care. The British Journal of Psychiatry, 173, 262-266.

García-Campayo, J., Lobo, A., Pérez-Echeverría, J., & Campos, R. (1998). Three forms of somatization presenting in primary care settings in Spain. Journal of Nervous and Mental Disease, 186, 554-560.

Horowitz, L. M., Rosenberg, S. E., Baer, B. A., Ureno, G., & Villasenor, V. S. (1988). Inventory of interpersonal problems: Psychometric properties and clinical applications. Journal of Consulting & Clinical Psychology, 56, 885-892.

Katon, W., Lin, E., Von Korff, M., Russo, J., Lipscomb, P., & Bush, T. (1991). Somatization: A spectrum of severity. The American Journal of Psychiatry, 148, 34-40.

Katon, W., von Korff, M., Lin, E., Bush, T., Russo, J., Lipscomb, P., & Wagner, E. (1992). A randomized trial of psychiatric consultation with distressed high utilizers. General Hospital Psychiatry, 14, 86-98.

Katon, W. J., Ries, R. K., & Kleinman, A. (1984). The prevalence of somatization in primary care. Comprehensive Psychiatry, 25, 208-215.

Katon, W. J. & Walker, E. A. (1998). Medically unexplained symptoms in primary care. Journal of Clinical Psychiatry, 59 (Suppl. 20), 15-21.

Kessler, D., Lloyd, K., Lewis, G., & Gray, D. P. (1999). Cross sectional study of symptom attribution and recognition of depression and anxiety in primary care. British Medical Journal, 318(7181), 436-439.

Kirmayer, L. J., & Robbins, J. M. (1991). Three forms of somatization in primary care: Prevalence, co-occurrence, and sociodemographic characteristics. Journal of Nervous and Mental Disease, 179, 647-655.

Kirmayer, L. J., & Robbins, J. M., (1996). Patients who somatize in primary care: A longitudinal study of cognitive and social characteristics. Psychological Medicine, 26, 937-951.

Kirmayer, L. J. Young, A., & Robbins, J. M. (1994). Symptom attribution in cultural perspective. Canadian Journal of Psychiatry, 39, 584-595.

Kisely, S., Goldberg, D., & Simon, G. (1997). A comparison between somatic symptoms with and without clear organic cause: Results of an international study. Psychological Medicine, 27, 1011-1019.

Kroenke, K., Jackson, J. L., & Chamberlin, J. (1997). Depressive and anxiety disorders in patients presenting with physical complaints: Clinical predictors and outcome. American Journal of Medicine, 103, 339-347.

Kroenke, K. Spitzer, R. L., deGruy, F. V., et al. (1997). Multisomatoform disorder: An alternative to undifferentiated somatoform disorder for the somatizing patient in primary care. Archives of General Psychiatry, 54, 352-358.

Kreoenke, K., Spitzer, R. L., deGruy, F. V., & Swindle, R. (1998). A symptom checklist to screen for somatoform disorders in primary care. Psychosomatics, 39, 263-272.

Ormel, J., Koeter, W. J., van den Brink, W., & van de Willige, G. (1991). Recognition, management, and course of anxiety and depression in general practice. Archives of General Psychiatry, 48, 700-706.

Ormel, J., van den Brink, W., Koeter, W. J., Giel, R., van der Meer, K., van de Willige, G., & Wilmink, F.W. (1990). Recognition, management and outcome of psychological disorders in primary care: A naturalistic follow-up study. Psychological Medicine, 20, 909-923.

Reifler, D. R., Kessler, H. S., Bernhard, E. J., Leon, A. C., & Martin, G. J. (1996). Impact of screening for mental health concerns on health service utilization and functional status in primary care patients. Archives of Internal Medicine, 156 (22), 2593-2599.

Robbins, J. M., & Kirmayer, L. J. (1991). Attributions of common somatic symptoms. Psychological Medicine, 21, 1029-1045.

Robbins, J. M., & Kirmayer, L. J. (1996). Transient and persistent hypochondriacal worry in primary care. Psychological Medicine, 26, 575-589.

Simon, G., Gater, R., Kisely, S., & Piccinelli, M. (1996). Somatic symptoms of distress: An international primary care study. Psychosomatic Medicine, 58, 481-488.

Smith, R. G., Jr., Rost, K., Kashner, T. M. (1995). A trial of the effect of a standardized psychiatric consultation on health outcomes and costs in somatizing patients. Archives of General Psychiatry, 52, 238-243.

Spitzer, R. L., Willimas, J. B., Kroenke, K., Linzer, M., de Gruy, F. V., Hahn, H. R., Brody, D.,Johnson, J. (1994). Utility of a new procedure for diagnosing mental disorders in primary care: The Prime-MD 1000 study. Journal of the American Medical Association, 272(22), 1749-1756.