Published in final edited form as:

Depress Anxiety. 2010 September ; 27(9): . doi:10.1002/da.20676.

Characteristics and Predictors of Social Phobia Course in a Longitudinal Study of Primary Care Patients

Courtney Beard^a, Ethan Moitra, Risa B. Weisberg, and Martin B. Keller

Department of Psychiatry and Human Behavior, Alpert Medical School of Brown University

Abstract

Background—Social Phobia (SP) is a prevalent disorder in primary care settings. To date, few researchers have examined the natural course of SP in primary care. We examined the natural course and predictors of recovery in a large sample of primary care patients.

Methods—Data are obtained from the Primary Care Anxiety Project (PCAP), a naturalistic, longitudinal study of anxiety disorders in primary care patients. The current report pertains to 182 patients with SP at intake. We examined intake demographic and clinical variables as predictors of recovery within the five years of follow-up.

Results—The probability of recovery from SP during the 5 year follow-up period was .40. At intake, a longer duration of SP episode, co-morbid Panic Disorder with Agoraphobia, lower psychosocial functioning, and the presence of a medical condition predicted lower rates of recovery.

Conclusions—These findings highlight the chronicity of SP, as well as factors that may affect its naturalistic course. It is imperative that primary care physicians and mental health specialists assess for and treat SP in their practices. Future research is warranted to further examine the effect of medical and psychiatric comorbidity on SP course.

Keywords

Social Phobia; Social Anxiety Disorder; Primary Care; Course; Prospective

Introduction

Social Phobia (SP) is characterized by an excessive fear of negative evaluation and embarrassment in social situations¹. It is extremely common, ranking second in prevalence among all psychiatric disorders². SP is associated with impairment in work productivity, income, and position level³. Individuals with SP are less educated and less likely to be married compared to the general population⁴. Furthermore, SP is associated with similar lifetime rates of suicide attempts as Major Depressive Disorder³.

Most existing data regarding the naturalistic course of SP comes from retrospective reports of community samples. These studies generally reveal a chronic course, with a long duration of illness (e.g., 25 years)^{5, 6} and low rates of recovery (e.g., 38%)⁷. Retrospective reports have identified several predictors of chronicity, such as a younger age of onset, psychiatric comorbidity, and medical comorbidity^{5, 8}. Although these studies provide some insight, prospective studies are necessary to corroborate the findings because retrospective reports may be biased (e.g., recall bias).

^aCorresponding Author: Brown University, Box G-BH, Providence, RI 02912, Phone: 401.444.1964, Fax: 401.455.0516, Courtney_Beard@brown.edu.

The few existing prospective studies provide mixed support for the chronicity reported in retrospective studies. For example, the Harvard Brown Anxiety Research Project (HARP), the longest prospective study of SP course, corroborated findings of severe chronicity. In that sample of 711 individuals with anxiety disorders, the probability of recovery from SP in 12 years of follow-up was .37⁹, which was lower than Generalized Anxiety Disorder (GAD), Panic Disorder (PD), or Panic Disorder with Agoraphobia (PDA). However, other naturalistic, prospective studies reveal a less chronic course^{10, 11, 12}. For example, in Müller¹¹ 89% of individuals no longer met diagnostic criteria at a four year follow-up. Similarly, Vriends et al.¹² reported that most individuals with SP no longer met diagnostic criteria at follow-up. However, in both those studies, few participants achieved a full recovery, with one-half to two-thirds of participants continuing to endorse social anxiety symptoms at follow-up.

Prospective reports have also been inconsistent in confirming predictors of SP course found in retrospective studies. Vriends et al.¹² prospective study identified a number of predictors of recovery, such as full-time employment, no lifetime depression, less daily stress, and better mental health. However, none of the SP-related variables (e.g., age of onset, number of feared social situations) identified in retrospective reports predicted recovery. Similarly, no SP-related variables predicted recovery in the HARP sample, including age of onset and duration of illness. Of the many variables examined in HARP, only the presence of comorbid GAD and Avoidant Personality Disorder predicted worse course in SP^{9, 13, 14}. Additionally, a history of suicide attempts and lower psychosocial functioning at baseline negatively affected course, but only in women¹⁵. Inconsistent findings may be due in part to researchers using different definitions of recovery (e.g., partial vs full), and follow-up durations (1.5 years¹² vs 12 years⁹). Differences across studies are also likely due to different types of samples (e.g., initially treatment seeking in mental health settings vs women ages 18 to 24). The HARP findings may represent the most severe SP cases, as that study included only individuals who had sought psychiatric treatment in specialty mental health settings. It is possible that treatment samples overestimate chronicity and severity because individuals who seek treatment often have more severe symptoms¹⁶.

Retrospective and prospective studies reveal that relatively few individuals with SP fully recover. However, our understanding of what variables affect the natural course of SP is less clear. Primary care may be a particularly relevant setting in which to further examine predictors of course because SP is highly prevalent (e.g., 1-month prevalence of 7%) and burdensome in this setting¹⁷. Moreover, anxiety disorder patients are more likely to seek treatment from primary care physicians than mental health specialists¹⁸. However, primary care physicians diagnose few individuals with SP as having an anxiety disorder, and primary care patients with SP may not receive adequate treatment^{3, 19, 20, 21}. For example, studies have found that only one-half of anxiety disorder patients were receiving any treatment,²² and only one-third of patients received adequate treatment²³. Primary care settings may be especially relevant because SP has been associated with increased medical comorbidity^{24, 25, 26}. Moreover, a retrospective study found that medical comorbidity negatively affected SP outcome; this finding needs confirmation by prospective studies.

In sum, research has established that primary care patients with SP are prevalent, utilize health care frequently, and lack adequate treatment. However, we know relatively little about SP's natural course in this setting. For example, it is unclear whether the course of SP in primary care is as chronic as has been observed in mental health settings⁹. A better understanding of SP's natural course in primary care may help in determining the amount of effort that should be devoted to improving identification and treatment. Moreover, identifying predictors of recovery may inform etiology and prognosis.

The current study aimed to expand previous research by prospectively examining the course of SP in a large sample of primary care patients. Data are obtained from the Primary Care Anxiety Project (PCAP), a naturalistic study of anxiety disorders in primary care patients. We expected SP to have a chronic course with low rates of recovery and a long duration of illness. We examined a number of intake variables as potential predictors of recovery over five years of follow-up. Based on previous studies^{5, 9, 12}, we expected that the absence of psychiatric and medical comorbidity, and better psychosocial functioning would predict a better course. Given the inconsistent evidence for demographic variables (e.g., education) and SP-related variables (e.g., age of onset) as predictors of course, we did not make specific hypotheses regarding these variables.

Method

Study Design

Participants in this study are part of the Primary Care Anxiety Project (PCAP), a naturalistic, longitudinal study of anxiety disorders in primary care settings. PCAP was conducted in five rural and 10 urban/suburban internal medicine and family medicine practices throughout New England. Four of the sites were small, private practices; four were free-standing clinics with a university affiliation; and seven were large university teaching hospital-based clinics. Descriptions of participant recruitment and screening procedures are found in other published reports^{27, 28}. In brief, a research assistant asked all participants in the primary care waiting room if they were interested in participating in a study of stress or nervousness. Interested patients who screened positive for anxiety symptoms were offered a full diagnostic interview (see Intake Measures). PCAP was approved by the institutional review board of Brown University and participating hospitals. All participants provided written informed consent prior to enrollment in the study. Once enrolled, participants were contacted for an in-person or telephone follow-up interview at 6 and 12 months, and annually thereafter for five years. This report focuses on variables measured at intake which predicted the occurrence of recovery of SP at any time during the five years of follow-up.

Participants

Criteria to be enrolled in PCAP included being diagnosed with at least one of the following anxiety disorders, according to the Structured Clinical Interview for the DSM-IV (SCID-IV): Post-traumatic Stress Disorder (PTSD), SP, PD, PDA, GAD, and Agoraphobia without a history of PD (AWOPD). There was also a small sample of patients with mixed anxiety-depressive disorder, and a small number who met all inclusion criteria for GAD, but the symptoms occurred exclusively during the course of MDD. To be eligible for the study, participants needed to be at least 18 years of age, English-speaking, and scheduled for a general medical appointment on the day of recruitment. Participants were excluded from the study if they were suffering from active psychosis, had no current address and phone number, or were pregnant. A total of 539 patients who met DSM-IV criteria for one or more index anxiety disorder were included in the full PCAP sample. This report focuses on the 182 patients who met criteria for SP at intake.

Intake Measures

Diagnostic Clinical Interview—All clinical diagnoses and onset ages were established by in-person diagnostic interviews that employed the SCID-IV²⁹. The psychotic screen, mood, anxiety, substance use, and eating disorders modules of the SCID-IV were administered. Interviewers completed a rigorous training program, and PCAP clinical staff reviewed each diagnosis. Training and diagnostic review procedures are detailed in previous reports²⁷.

Non-Psychiatric Medical Problems—A Medical History Form designed for the study²⁸ was used to assess medical problems. Participants were asked whether or not they currently had any of the following medical problems: asthma, cancer, diabetes, epilepsy, heart disease, kidney disease, liver disease, lung or respiratory illness, stroke, thyroid disease. For the present study, medical illness was coded as a dichotomous yes/no response for the presence of at least one current medical illness.

Global Assessment of Functioning (GAF)—Psychosocial functioning and severity of symptoms were assessed using the GAF obtained through the LIFE interview (see below). The GAF was rated on a 0 to 100 scale, with higher scores indicating better functioning.

Psychosocial Treatment Status—Psychosocial treatment status at intake was measured on the Types of Treatment Form, an interviewer-administered form designed for the present study, and on the Psychosocial Treatment Inventory-Revised³⁰.

Psychopharmacological Treatment Status—Information on psychotropic medication usage at intake and prior to recovery was obtained using the *Psychotropic/Auxiliary Drug Treatment Schedule*, administered as part of the LIFE interview (see below). Participants were asked what psychotropic medications they were currently taking and the dosages, with the data recorded on a weekly basis.

Follow-up Measures

Longitudinal Interval Follow-Up Evaluation (LIFE)³¹—The LIFE is an interviewer-administered assessment that collects detailed information on anxiety disorder symptoms, psychosocial functioning, and treatment status. The LIFE employs a 6-point psychiatric status rating (PSR) scale to indicate the severity of psychiatric pathology. A PSR of 5 or 6 indicates the participant meets full DSM-IV diagnostic criteria for a disorder with low/moderate and severe functional impairment, respectively (i.e., in episode). A PSR of 3 or 4 indicates the participant does not meet full DSM-IV diagnostic criteria for the disorder, but still exhibits notable residual symptoms and impairment to a mild or moderate degree, respectively. A PSR of 1 or 2 indicates the participant is either completely without symptoms of the disorder, or experiences a negligible number of symptoms on an occasional and transient basis (i.e., full recovery). In this study, a period of full recovery was defined as minimal or no symptoms of SP (PSR of 1 or 2) for at least 8 consecutive weeks. Patients were considered unrecovered for SP if they never experienced a period of full recovery from SP during the 5-year period of observation.

The LIFE employs a change point method to anchor participant reports of symptom levels to relevant life events such as birthdays, holidays, etc., resulting in weekly ratings of psychiatric symptom severity. Interrater reliability and long-term test-retest reliability for the LIFE diagnostic ratings had been found to be good to excellent for all anxiety disorders and MDD³².

Statistical Analyses

Course data were examined using standard survival analysis techniques. Cox regressions were used to examine individual predictors of course. A series of individual proportional hazards regression analyses were conducted to examine intake variables that may be predictive of recovery. We examined the following variables as univariate predictors of recovery during the 5-year follow-up period: demographic variables [age, gender, race, marital status, education, full-time employment, insurance status], clinical variables [age of onset (<7, 7-12, >12), duration of SP (number of years in episode at intake), presence of comorbid psychiatric disorders (PTSD, GAD, PD, PDA, Obsessive Compulsive Disorder

(OCD), AWOPD, Specific Phobia, MDD, Substance Use Disorders (SUD)), current medical condition, number of comorbid Axis I disorders, GAF], and treatment variables [receiving psychosocial or psychopharmacological treatment at intake]. We then included any significant univariate predictors simultaneously in a multivariate regression model to examine unique predictors of recovery. We did not examine predictors of recurrence in those participants who recovered because there were too few cases. Statistical significance was set at $p < .05$. Analyses were conducted using SAS software, version 9.1. The procedures used were: means, t test, freq, lifetest, and phreg.

Results

Characteristics of Sample

Sociodemographic characteristics of the participants are presented in Table 1. The 182 participants with SP at intake ranged in age from 18 to 65 years ($M = 39$ years, $SD = 10.98$) and were mostly female and white. Almost half of participants were currently married or living with partners. Almost two thirds of patients had completed some college; however, less than 40% of patients were employed full-time; and 60% of patients earned less than \$19,999 annually.

Table 2 displays the number of participants meeting DSM-IV criteria for additional Axis I disorders at intake. PTSD was the most common comorbid anxiety disorder, and MDD was the most common comorbid disorder overall. Patterns of comorbidity in the total PCAP sample are described in detail elsewhere²⁷. At intake, 68% of participants were receiving some form of treatment, with the majority receiving psychotropic medication (psychotherapy alone: $n=7$, medication alone: $n=39$, combination psychotherapy and medication: $n=59$; no treatment, $n=78$).

Naturalistic Course

As expected, SP exhibited a chronic course with a mean duration of SP episode prior to intake of 25 years. Figure 1 presents the cumulative probability of recovery from SP over the 5 year period. The cumulative probability of recovery by the end of 5 years was .40. Over the entire follow-up period, only 62 participants achieved a recovery period. Of those 62 participants who achieved recovery, 15 subsequently experienced a recurrence of SP, defined as a 4 week period of a PSR rating of 5 or 6.

Predictors of Recovery

The following variables, measured at intake, were each associated with recovery during the 5-year period: shorter duration of SP episode prior to intake, higher GAF score, absence of comorbid PDA, and the absence of a current medical condition. When these univariate factors were included in a multivariate model controlling for demographic variables (age, gender, race), each variable remained a significant predictor with the exception of GAF score, which fell to a non-significant trend ($p = .09$) (see Table 3).

As in similar reports^{33,34}, we explored medication usage in the three weeks prior to recovery. Seven recovered participants had missing medication data, leaving a sample of 55 participants. Among these 55 participants who experienced a recovery from SP, 15 (27%) were taking a selective serotonin reuptake inhibitor (SSRI) or a selective serotonin norepinephrine uptake inhibitor (SNRI) only; 4 (7%) were taking a benzodiazepine only; and 6 (11%) were taking both an SSRI/SNRI and a benzodiazepine in the three weeks prior to their recovery period. In the group of participants who never achieved a recovery period and had complete medication data ($n = 92$), 44 (48%) took an SSRI/SNRI only; 4 (4%) took

a benzodiazepine only; and 33 (36%) took both an SSRI/SNRI and a benzodiazepine at some point during the follow-up period.

Discussion

SP Chronicity

This is the first study to examine the naturalistic course of SP in primary care patients. We hypothesized that SP would have a chronic course with low recovery rates and long duration. Our main hypotheses were supported as SP patients had been in episode for an average of 25 years prior to intake, a duration that parallels retrospective reports (e.g., 23 years)⁶. Furthermore, our sample of primary care patients showed a recovery rate of .40 after 5 years. Thus, most patients with SP did not recover after five years. This recovery rate is similar to other anxiety disorders in the PCAP sample (3-year follow-up of PD = .75; 3-year follow-up of PDA = .22; 2 year follow-up of GAD = .39). However, it is difficult to make direct comparisons with these previous studies because one might expect the recovery rates for those other disorders to be greater had those studies also examined their 5-year course.

Predictors of Recovery

We examined a number of intake variables as potential predictors of recovery. We predicted better outcome would be associated with absence of psychological and medical comorbidities, as well as better psychosocial functioning. These hypotheses were supported as worse psychosocial functioning, the presence of a current medical condition, and comorbid PDA predicted lack of recovery. Several studies have also found that psychiatric comorbidity predicts worse outcome in SP, specifically comorbid MDD^{5,12}, and GAD⁹.

These results confirm the relationship between SP and medical comorbidity established in previous reports. For example, in another study of primary care patients, individuals with SP reported poorer overall health compared to controls¹⁹. This relationship was also observed in the Epidemiological Catchment Area Study⁸ and a nationally representative sample²⁵. The current prospective study confirms retrospective reports that suggested that the presence of a health problem predicts worse outcome in SP⁵.

Lastly, because of inconsistent findings regarding the effect of demographic variables (e.g., education, employment) and SP-related variables (i.e., age of onset, duration) on course, we did not make specific predictions about how these variables would affect recovery in our sample. None of the demographic variables predicted SP recovery. Neither psychotropic, nor psychological treatment status at intake was associated with SP recovery. Additionally, the majority of patients who did not recover reported receiving medication at some point during the five years of observation, suggesting medication usage alone may not be predictive of recovery. A lack of association between treatment and outcome is not uncommon in naturalistic studies. This “treatment bias effect” occurs in naturalistic research because participants are not randomly assigned to receive treatment. Thus, patients who are initially more severely and/or chronically ill are often those who are identified and treated.

Duration of illness was associated with course in the current study, while age of onset was not. Age of onset appears to be an inconsistent predictor, with some studies showing that an early age of onset predicts lower rates of recovery^{5,8} and others finding no relationship^{12,14}. Given the mixed support for age of onset, the current findings suggest that duration of illness warrants further study as an independent variable. To date, most previous studies have not specifically examined duration of illness as a predictor of course. Age of onset and duration of illness, though correlated, are distinct constructs that may have different effects on course. The current finding that a longer duration of illness impeded

recovery is notable because it suggests that SP will not only be unlikely to spontaneously remit, but that the longer it persists, the more intractable it is. This implies early intervention may be crucial to aiding recovery from SP. However, one cannot be sure that early intervention will improve outcome, as a long duration of illness may be a marker of severity itself rather than a sign that the longer the illness goes unrecognized the worse it is.^a

General Discussion

The current study illustrates the chronic course of SP in primary care and highlights variables that uniquely inhibit its recovery, including duration of SP, medical comorbidity, and comorbid PDA. These results have a number of implications for primary care providers. The high chronicity found in this primary care sample highlights the need for primary care providers to identify patients with SP. Identification and treatment are crucial because SP may be a risk factor for other serious mental health problems, such as MDD and alcohol disorders¹⁹. Identification may prove a difficult task for several reasons though. Because the core fear in SP involves fear of negative evaluation and embarrassment, it is unlikely that patients will disclose their symptoms to their providers⁸. Additionally, the chronic nature of SP itself may prevent individuals from seeking treatment, as they may lose perspective of normalcy³⁵.

Despite these barriers, identification of SP may be uniquely relevant in primary care given that medical conditions negatively affected its course. These findings add to the growing evidence that medical comorbidity is important in SP. For example, DeWitt and colleagues'⁵ retrospective results showed medical comorbidity impeded SP recovery, and Sareen and colleagues²⁵ found that metabolic/autoimmune disorders, such as diabetes and thyroid disease, were associated with SP in a cross-sectional sample. It may be that specific medical conditions particularly affect the course of SP because of their associated symptoms. For instance, medical conditions with observable symptoms (e.g., seizures associated with epilepsy) may lead to increased avoidance and isolation in individuals with SP because of potential embarrassment. Further research examining SP's relationship with specific medical conditions, as well as the chronicity of these conditions, is needed.

This is the first study to implicate PDA in the recovery of SP. Vriends et al.¹² did not examine PDA specifically as a predictor, but they did find that more behavioral avoidance predicted worse outcome in SP. Behavioral avoidance has been found to mediate the relationship between SP and depressive symptoms³⁶. Perhaps behavioral avoidance is also a mediator of the relationship observed in the current study between PDA and SP course, though future studies are needed to test this specific hypothesis.

Limitations and Directions for Future Research

Strengths of the current study include its longitudinal, prospective design; the large sample; and the range of comorbid disorders. However, the current study also has limitations. First, one of the predictors of recovery in this prospective study, i.e., duration of illness, is in fact a retrospective variable. This variable is therefore susceptible to biases associated with retrospective report (i.e., patients who do not recover may believe that they have been sicker for longer). Additionally, we did not distinguish between chronic and non-chronic medical conditions. Chronicity of medical illness could adversely affect course, although patients with chronic comorbid medical conditions would be more likely to seek medical attention³⁷ and perhaps have a higher likelihood of being diagnosed and treated for psychological illness compared to an individual not seeking medical attention as frequently. Finally, the

^aWe thank an anonymous reviewer for raising this point.

current study is not an epidemiological study, as we did not systematically interview all members of the available population.

The main implication of these findings is that improved recognition and treatment of SP in primary care is needed. Future research should examine ways to increase awareness of SP in primary care, as well as means to streamline recognition for primary care providers, who are under enormous demands. The current finding of a unique relationship between physical conditions and the course of SP suggests that medical comorbidity may be an important area for future research. Lastly, future prospective studies should assess other potential variables that could affect course, such as developmental variables (e.g., behavioral inhibition) or psychopathology variables (e.g., anxiety sensitivity) as this information may guide treatment planning.

Acknowledgments

The Primary Care Anxiety Project is supported by an unrestricted grant from Pfizer Inc. Dr. Beard's time and effort are supported by a post-doctoral training award from the National Institute of Mental Health (F32 MH083330). Dr. Weisberg's time and effort are supported in part by a Career Development Award from the National Institute of Mental Health (K23 MH069595).

References

1. Association, AP. Diagnostic and Statistical Manual of Mental Disorders- DSM IV-TR. Washington, DC: Author; 1994.
2. Kessler RC, Chia WT, Demler O, Walters EE. Prevalence, Severity, and Comorbidity of 12-month DSM-IV Disorders in the National Comorbidity Survey Replication. *Archives of General Psychiatry*. 2005; 62:617–627. [PubMed: 15939839]
3. Katzelnick DJ, Greist JH. Social anxiety disorder: An unrecognized problem in primary care. *Journal of Clinical Psychiatry*. 2001; 62(1):11–16. [PubMed: 11206029]
4. Wells JC, Tien AY, Garrison R, Eaton WW. Risk factors for the incidence of social phobia as determined by the Diagnostic Interview Schedule in a population-based study. *Acta Psychiatrica Scandinavica*. 1994; 90(2):84–90. [PubMed: 7976463]
5. DeWit DJ, Ogborne A, Offord DR, MacDonald K. Antecedents of the risk of recovery from DSM-III-R social phobia. *Psychological Medicine*. 1999; 29(3):569–582. [PubMed: 10405078]
6. Wittchen HU, Fuetsch M, Sonntag H, Mållner N, Liebowitz M. Disability and quality of life in pure and comorbid social phobia: Findings from a controlled study. *European Psychiatry*. 2000; 15(1):46–58. [PubMed: 10713802]
7. Chartier MJ, Hazen AL, Stein MB. Lifetime Patterns of Social Phobia: A Retrospective Study of the Course of Social Phobia in a Nonclinical Population. *Depression and Anxiety*. 1998; 7:113–121. [PubMed: 9656091]
8. Davidson JR, Hughes DL, George LK, Blazer DG. The epidemiology of social phobia: findings from the Duke Epidemiological Catchment Area Study. *Psychological Medicine*. 1993; 23:709–718. [PubMed: 8234577]
9. Bruce SE, Yonkers KA, Otto M, Eisen J, Weisberg RB, Pagano ME, Shea MT, Keller MB. Influence of Psychiatric Comorbidity on Recovery and Recurrence in Generalized Anxiety Disorder, Social Phobia, and Panic Disorder: A 12-Year Prospective Study. *American Journal of Psychiatry*. 2005; 162:1179–1187. [PubMed: 15930067]
10. Degonda M, Angst J. *European Archives of Psychiatry and Clinical Neuroscience*. 1993; 243:95–102. [PubMed: 8218433]
11. Muller, N. *Social Anxiety Disorder in adolescents and young adults: characteristics, course, and consequences*. New York: Munster: 2002.
12. Vriends N, Becker ES, Meyer A, Lutz R, Margraf, Williams SL. Recovery from social phobia in the community and its predictors: Data from a longitudinal epidemiological study. *Journal of Anxiety Disorders*. 2007; 21(3):320–337. [PubMed: 16919416]

13. Massion AO, Dyck IR, Shea MT, Warshaw MG, Keller MB, Phillips KA. Personality disorders and time to remission in generalized anxiety disorder, social phobia and panic disorder. *Archives of General Psychiatry*. 2002; 59(5):434–440. [PubMed: 11982447]
14. Reich J, Goldenberg I, Goisman R, Vasile R. A prospective, follow-along study of the course of social phobia: II. Testing for basic predictors of course. *Journal of Nervous and Mental Disease*. 1994; 182(5):297–301. [PubMed: 10678312]
15. Yonkers KA, Dyck IR, Keller MB. An eight-year longitudinal comparison of clinical course and characteristics of social phobia among men and women. *Psychiatric Services*. 2001; 52(5):637–643. [PubMed: 11331798]
16. Berkson J. Limitations of the application of fourfold table analysis to hospital data. *Biometrics*. 1946; 2:47–53. [PubMed: 21001024]
17. Stein MB, McQuaid JR, Laffaye C, McCahill ME. Social phobia in the primary care medical setting. *The Journal of Family Practice*. 1999; 48(7):514–519. [PubMed: 10428248]
18. Harman JS, Rollman BL, Hanusa BH, Lenze EJ, Shear MK. Physician Office Visits of Adults for Anxiety Disorders in the United States, 1985 to 1998. *Journal of Gen Intern Med*. 2002; 17:165–172. [PubMed: 11929501]
19. Weiller E, Bisserte JC, Boyer P, Lepine JP. Social phobia in general health care: An unrecognised undertreated disabling disorder. *British Journal of Psychiatry*. 1996; 168(2):169–174. [PubMed: 8837906]
20. Wagner R, Silove D, Marnane C, Rouen D. Delays in referral of patients with social phobia, panic disorder and generalized anxiety disorder attending a specialist anxiety clinic. *Journal of Anxiety Disorders*. 2006; 20(3):363–371. [PubMed: 16564438]
21. Wiltink J, Haselbacher A, Knebel A, Tschann R, Zwerenz R, Michal M, Subic-Wrana C, Beutel M. Social Phobia - An Anxiety Disorder Underdiagnosed in Outpatient and Consultation-Liaison Service? *Psychother Psychosom Med Psychol*. 2009 Epub ahead of print.
22. Weisberg RB, Dyck I, Culpepper L, Keller MB. Psychiatric Treatment in Primary Care Patients With Anxiety Disorders: A Comparison of Care Received From Primary Care Providers and Psychiatrists. *American Journal of Psychiatry*. 2007; 164:276–282. [PubMed: 17267791]
23. Stein MB, Sherbourne CD, Craske MG. Quality of Care for Primary Care Patients With Anxiety Disorders. *American Journal of Psychiatry*. 2004; 161:2230–2237. [PubMed: 15569894]
24. Zhang W, Ross J, Davidson JRT. Social Anxiety Disorder in Callers to the Anxiety Disorders Association of America. *Depression and Anxiety*. 2004; 20(3):101–106. [PubMed: 15484222]
25. Sareen J, Cox BJ, Clara I, Asmundson GJG. The Relationship Between Anxiety Disorders and Physical Disorders in The U.S. National Comorbidity Survey. *Depression and Anxiety*. 2005; 21(4):193–202. [PubMed: 16075453]
26. Patten SB, Williams JVA, Esposito E, Beck CA. Self-reported thyroid disease and mental disorder prevalence in the general population. *General Hospital Psychiatry*. 2006; 28(6):503–508. [PubMed: 17088166]
27. Rodriguez BF, Weisberg RB, Pagano ME, Culpepper L, Keller MB, Machan JT. Frequency and patterns of psychiatric comorbidity in a sample of primary care patients with anxiety disorders. *Comprehensive Psychiatry*. 2004; 45(2):129–137. [PubMed: 14999664]
28. Weisberg RB, Bruce SE, Machan JT, Culpepper L, Keller MB, Kessler RC. Nonpsychiatric illness among primary care patients with trauma histories and posttraumatic stress disorder. *Psychiatric Services*. 2002; 53(7):848–854. [PubMed: 12096168]
29. First, MB.; Spitzer, RL.; Gibbon, M.; Williams, JBW. Structured clinical interview for DSM-IV axis I disorders - patient edition (SCID-I/PI, version 2.0). New York: Biometrics Research Department; 1996.
30. Steketee G, Perry JC, Goisman RM, Warshaw MG, Massion AO, Peterson LG, Langford L, Weinshenker N, Farreras IG, Keller MB. The Psychosocial Treatments Interview for anxiety disorders: A method for assessing psychotherapeutic procedures in anxiety disorders. *Journal of Psychotherapy Practice & Research*. 1997; 6(3):194–210. [PubMed: 9185065]
31. Keller MB, Lavori PW, Friedman B, Nielsen E. The longitudinal interval follow-up evaluation: A comprehensive method for assessing outcome in prospective longitudinal studies. *Archives of General Psychiatry*. 1987; 44(6):540–548. [PubMed: 3579500]

32. Warshaw MG, Keller MB, Stout RL. Reliability and validity of the longitudinal interval follow-up evaluation for assessing outcome of anxiety disorders. *Journal of Psychiatric Research*. 1994; 28(6):531–545. [PubMed: 7699612]
33. Rodriguez BF, Weisberg RB, Pagano ME, Bruce SE, Spencer MA, Culppepper L, Keller MB. Characteristics and Predictors of Full and Partial Recovery from Generalized Anxiety Disorder in Primary Care Patients. *The Journal of Nervous and Mental Disease*. 2006; 194:91–97.
34. Francis JL, Weisberg RB, Dyck IR, Culppepper L, Smith K, Edelen MO, Keller MB. Characteristics and Course of Panic Disorder and Panic Disorder with Agoraphobia in Primary Care Patients. *Primary Care Companion to the Journal of Clinical Psychiatry*. 2007; 9:173–179.
35. Rapaport MH, Clary C, Fayyad R, Endicott J. Quality-of-Life Impairment in Depressive and Anxiety Disorders. *American Journal of Psychiatry*. 2005; 162(6):1171–1178. [PubMed: 15930066]
36. Moitra E, Herbert JD, Forman EM. Behavioral avoidance mediates the relationship between anxiety and depressive symptoms among social anxiety disorder patients. *Journal of Anxiety Disorders*. 2008; 22(7):1205–1213. [PubMed: 18282686]
37. Hoffman C, Rice D, Sung H. Persons with Chronic Conditions. *Journal of the American Medical Association*. 1996; 276:1473–1479. [PubMed: 8903258]

Figure 1. Cumulative Probability of Recovery from SP

Table 1
Sociodemographic Characteristics (N = 182)

Characteristic	N	(%)
Female	134	(74)
Age in years (M, <i>SD</i>)	39.1	(10.98)
Race/ethnicity		
White	147	(81)
Black	13	(7)
Hispanic	11	(6)
Asian	3	(2)
Native American	2	(1)
Other	6	(3)
Marital Status		
Never Married	51	(28)
Married ^a	82	(45)
Divorced/separated/widowed	49	(27)
Education		
< High school graduate	20	(11)
High school graduate	46	(25)
Some college	78	(43)
College graduate	38	(21)
Income (\$ per year)		
< 5,000	41	(24)
5,000 – 19,999	66	(38)
20,000 – 34,999	35	(20)
35,000 – 49,999	16	(9)
> 50,000	16	(9)
Employed Full-Time	65	(36)
Health Insurance ^b		
None	18	(10)
Medicare or public assistance only	51	(28)
Private only	99	(55)
Medicare and private	9	(5)
Military	2	(1)

^aIncludes persons living with someone as though married.

Table 2
Clinical Characteristics at Intake (N = 182)

	N	(%)
Age of SP Onset		
< 7 y	54	(30)
7 to 12	42	(23)
> 12 y	86	(47)
Comorbid Disorders		
Posttraumatic Stress Disorder	68	(37)
Panic Disorder	16	(9)
Panic Disorder with Agoraphobia	49	(27)
Generalized Anxiety Disorder	29	(16)
Obsessive-compulsive Disorder	14	(8)
Specific Phobia	38	(21)
Agoraphobia without Hx of Panic Disorder	7	(4)
Major Depressive Disorder	81	(45)
Alcohol/Substance Use Disorder	17	(9)
At least 1 medical condition	162	(89)
Treatment Received		
Psychosocial treatment	66	(36)
Psychiatric medication	97	(53)
Any treatment	123	(68)
	M	(SD)
Duration of SP (in years)	25	(14)
Number of Comorbid Disorders (range: 0-6)	1.8	(1.31)
GAF score	54.3	(9.13)

Table 3**Multivariate Regression Model Predicting Recovery**

Predictor (N = 175; df = 1)	(SE)	χ^2	P Value	Hazard Ratio	95% CI
Age	.03 (.02)	3.32	.07	1.03	1.00-1.06
Female	-.53 (.34)	2.51	.11	0.59	.31-1.34
Caucasian	.26 (.35)	0.55	.46	1.30	.65-2.57
GAF score	.03 (.02)	2.86	.09	1.03	1.00-1.06
Duration of SP	-.04 (.01)	10.48	.00	0.96	.94-.99
Any comorbid medical condition	-.80 (.35)	5.19	.02	0.45	.23-.90
Comorbid PDA	-.77 (.36)	4.66	.03	0.46	.23-.93