Subsyndromal Depressive Symptoms Are Associated With Functional Impairment in Patients With Bipolar Disorder: Results of a Large, Multisite Study

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Objective: Studies of patients with unipolar depression have demonstrated a relationship between subthreshold depressive symptoms and impairment in role functioning. Research examining this relationship in persons with bipolar disorder is rare. This study sought to evaluate the association between subsyndromal depressive symptoms and role functioning in subjects with bipolar disorder.

Method: 759 adult outpatients with a DSM-IV diagnosis of bipolar disorder were entered into this study at 7 different sites in the Stanley Foundation Bipolar Network (SFBN) beginning in March 1996 and ending in November 2002 and were followed longitudinally for assessment of their course of illness. Subsyndromal depression was operationalized using cutoff scores on the Inventory for Depressive Symptomatology–Clinician Rated (IDS-C), and patients were divided into 3 groups: not depressed (IDS-C score < 13), subsyndromally depressed (IDS-C score 13 to 27), and syndromally depressed (IDS-C score ≥ 28). Groups were compared using a series of χ^2 analyses on degree of role function impairment across 4 role domains (work, home duties, family life, and friendships) from the Life Functioning Questionnaire. Logistic regression was used to estimate the probability of any impairment in life functioning based on severity of depressive symptoms.

Results: Subsyndromally depressed patients were significantly more likely than those not depressed to report impairment in their work and home functioning roles, as well as impairment in relations with family and friends ($p < .001$). Across all domains of role function, the proportion of patients impaired in the subsyndromally depressed group was more similar to the syndromally depressed group than to the not depressed group.

Conclusions: These findings clearly demonstrate the public health significance of subsyndromal depression in the bipolar population. The most appropriate interventions for subsyndromal depressive symptoms in patients with bipolar disorder remain to be determined.

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Bipolar disorder is an illness marked by recurrent episodes of hypomania, mania, and depression and affects up to 3% of the population.[1–5] Traditionally, studies have equated "recovery" with resolution of episodes of mania or depression, while largely ignoring role functioning. It has been documented, however, that for many patients with bipolar disorder, syndromal recovery occurs, but functional recovery does not, or often lags behind syndromal recovery. Functional recovery is defined as the restoration of normal role function at work, at home, with family, and with friends.[6] A series of studies has documented poor role function adjustment in bipolar patients despite prophylactic mood stabilization.[7–20] One follow-up study found that, 6 months after an admission for mania, 80% of bipolar patients were without syndromal mania or depression, but only 43% were employed and only 21% were working at their expected level of employment (functionally recovered).[7] Other studies following bipolar patients from 6 months to 1.7 years after an index admission for mania have documented

syndromal recovery but persistent functional disability in up to 60% of patients.[9–17,19,20]

Functional disabilities in patients with bipolar illness constitute a major public health problem[17,18] and have a profound economic impact on society. An annual estimate of the cost to society totaled $45 billion,[21] with direct treatment costs (hospitalizations, medications) of episodes of bipolar illness accounting for only $7 billion.[21] The indirect costs of the illness (e.g., missed days from work, impaired work performance, work disability) accounted for the remaining $38 billion.[21] Diminished productivity due to impaired work performance and absenteeism (lost work) are major factors in the economic cost to society of depressive symptoms.[21,22] Despite their prevalence, cost to society, and cause for human suffering, there is a paucity of information about the variables that contribute to work disability and social dysfunction in the bipolar population, particularly the incapacities that persist after a mood episode (syndrome) resolves. Thus, reasons for poor work functioning remain to be understood.

In patients with a history of unipolar depression and in the general medical population,[6,23–30] an association between the presence of subthreshold depressive symptoms (subsyndromal depression) and deficits in occupational and psychosocial functioning has been observed. Subsyndromal depression has been defined as the presence of 2 or more symptoms of depression, for most or all of the time in a 2-week period, in persons who do not otherwise meet DSM-IV criteria for a current major depressive disorder or dysthymia.[23,31–33] Previous research[34] by the first author found that in a sample of 25 subjects with bipolar disorder, subsyndromal scores on the Hamilton Rating Scale for Depression (HAM-D) were significantly negatively correlated with Global Assessment of Functioning (GAF) scores, suggesting that subsyndromal depressive symptoms in bipolar patients also significantly impair functioning. This study was limited in that it had a small sample, consisted exclusively of male veterans (raising questions about the generalizability of those findings), and used the GAF,[35] a relatively nonspecific indicator of functioning.

In the present study, we sought to evaluate the association between the presence of subsyndromal depressive symptoms and impairment in role function, but improve on our previous study by utilizing (1) a larger, more heterogeneous and representative sample and (2) a more sophisticated and detailed assessment of life functioning that assessed role function in the domains of work, duties at home, leisure time with family, and leisure time with friends.

METHOD

Subjects

The Stanley Foundation Bipolar Network. Subjects were drawn from an adult sample with bipolar disorder who were enrolled in the Stanley Foundation Bipolar Network (SFBN), as previously described by Leverich et al.[36] and Post et al.[37] All subjects in the SFBN were recruited from network sites located in Bethesda, Md.; Cincinnati, Ohio; Dallas, Tex.; Los Angeles, Calif.; Munich, Germany; and Utrecht, The Netherlands, beginning in March 1996 and ending in November of 2002. The study protocol was approved by the institutional review boards at University of California, Los Angeles, and at the VA Greater Los Angeles Healthcare System. Upon enrollment into the network, subjects provided written informed consent to participate in the network evaluations, including a naturalistic longitudinal follow-up study of the course and treatment of their illness. Subjects underwent Structured Clinical Interviews for DSM-IV (SCID) and psychiatric interviews completed by a highly trained clinician in order to receive a diagnosis of bipolar disorder, including bipolar I, bipolar II, bipolar not otherwise specified, and schizoaffective disorder. Subjects provided information about their illness history (e.g., age at onset of symptoms), the presence of comorbid disorders, their current and past level of functioning, and family history of psychiatric disorders. As part of the network, subjects were engaged in routine clinical care and prospective clinical assessment every 2 to 4 weeks. During these visits a number of clinical instruments were completed to assess patient functioning over the prior 2 weeks. Instruments included the Inventory of Depressive Symptomatology-Clinician Rated (IDS-C),[38,39] the Clinical Global Impressions Scale for Bipolar Disorder (CGI-BP),[40] and the Life Functioning Questionnaire (LFQ).[41]

Inclusion criteria. For the current report, data were reviewed to identify the first study visit at which subjects met criteria for assignment into 1 of 3 groups based on IDS-C score: not currently depressed, subsyndromally depressed, syndromally depressed. Because subjects frequently had more than 1 clinician visit that met study criteria, only the first qualified visit was included in this study. Subjects with an IDS-C score of less than 13 (normal range) for the prior 2 weeks were included in the "not currently depressed" group. Subjects with IDS-C scores ranging from 13 to 27 (considered subsyndromal depressive symptoms) for the prior 2 weeks were included in the "subsyndromally depressed" group. Subjects with IDS-C scores greater than or equal to 28 were considered to fall into the "syndromally depressed" category.[39,42] As this study was aimed at better understanding impairment that occurs in depression, we excluded any patients who might have had depressive symptoms as part of a hypomania or mania (mixed hypomania or mixed mania). Patients were thus included in the study only if they had a score of 1 (not ill) on the CGI-BP severity of mania item.

Patient characteristics. The above criteria resulted in a total sample of 759 patients: 292 subjects in the not depressed group, 291 subjects in the subsyndromally

Table 1. Demographic Characteristics of Subjects by Group[a]

Characteristic	Not Depressed (N = 292)	Subsyndromally Depressed (N = 291)	Syndromally Depressed (N = 176)	Statistic	df	p
Age, mean (SD)	42 (11.9)	42 (12.2)	44 (11.8)	F = 1.8	2,759	.16
Gender, female, %	55	56	60	$\chi^2 = 0.53$	2	NS
Race, white, %	91	92	94	$\chi^2 = 0.57$	2	NS
Diagnoses, N (%)				$\chi^2 = 0.42$[b]	2	NS
Bipolar I	220 (75)	213 (73)	127 (72)			
Bipolar II	60 (21)	61 (21)	46 (26)			
Bipolar NOS	2 (1)	7 (2)	1 (1)			
Schizoaffective	6 (2)	3 (1)	2 (1)			
Unspecified	4 (1)	7 (2)	0 (0)			
Education, college, %	56	51	56	$\chi^2 = 0.44$	2	NS
Marital status, married, %	48	45	41	$\chi^2 = 0.39$	2	NS
Age at onset, mean (SD), y						
Mania	24 (10.7)	24 (12.0)	23 (12.0)	F = 1.30	2,635	NS
Depression	22 (10.1)*	20 (10.9)†	19 (10.6)†	F = 3.64	2,636	.03
Duration of illness, mean (SD), y						
Mania	17 (11.7)*	18 (11.6)*	21 (14.5)†	F = 4.80	2,633	< .01
Depression	20 (12.0)*[c]	22 (12.4)*[c]	25 (13.2)†	F = 7.04	2,634	.001
Alcohol use disorder,[d] N (%)	51 (20)	53 (23)	35 (24)	$\chi^2 = 1.0$	2	NS
Drug use disorder,[d] N (%)	36 (14)	49 (20)	24 (17)	$\chi^2 = 2.8$	2	NS
CGI-BP dep,[e] mean (SD)	1.4 (0.71)*	2.9 (1.04)†	4.5 (0.93)‡	F = 666.8	2,761	< .001
CGI-BP overall,[f] mean (SD)	1.4 (0.72)*	2.9 (1.05)†	4.4 (1.06)‡	F = 564.8	2,761	< .001
IDS-C, mean (SD)	5.4 (3.28)	18.6 (4.44)	36.9 (7.21)	…	…	…

[a]Within row, numbers with differing symbols (*, †, ‡) significantly differ from one another at p < .05. Follow-up comparisons were not corrected for multiple comparisons to increase the likelihood of detecting any differences.
[b]Because of cell sizes < N = 5, just bipolar I and bipolar II were included in the χ^2 analysis.
[c]p = .051 between these 2 means.
[d]Data available for 86% of the population (250 subjects in the not depressed group, 233 subjects in the subsyndromally depressed group, and 143 in the syndromally depressed group). Percentages relate to these Ns.
[e]CGI-BP–Severity of Illness-Depression subscale.
[f]CGI-BP–Severity of Illness-Overall Bipolar Illness subscale.
Abbreviations: CGI-BP = Clinical Global Impressions Scale for Bipolar Disorder, IDS-C = Inventory of Depressive Symptomatology–Clinician Rated, NOS = not otherwise specified.

depressed group, and 176 in the syndromally depressed group. As shown in Table 1, the 3 groups did not differ significantly on any major demographic variable including age, gender, education, and marital status. The 3 groups also did not differ in the diagnosis or age at onset of manic symptoms. The syndromally depressed group had a significantly longer duration of having been ill with both manias and depressions than either the subsyndromal or not depressed group, which did not differ significantly from each other. The not depressed group had a significantly later age at onset of depression symptoms than the subsyndromal and syndromal groups, which did not differ from each other. The 3 groups did not differ in their incidence of alcohol disorders or other drug disorders. The groups showed a significant difference in rates of lifetime anxiety disorders ($\chi^2 = 16.8$, df = 2, p < .01). The percentage of euthymic patients exhibiting a lifetime anxiety disorder (22%) was significantly smaller than the percentage of subsyndromal patients (31%, $\chi^2 = 4.8$, df = 1, p = .03), and the incidence of a lifetime anxiety disorder among syndromally depressed patients (42%) was significantly higher than among both subsyndromally depressed and euthymic patients ($\chi^2 = 4.6$, df = 1, p = .03 and $\chi^2 = 16.6$, df = 1, p < .01, respectively).

Assessment of Life Functioning

Life functioning was assessed using the Life Functioning Questionnaire (LFQ), a gender-neutral self-report measure of role function in 4 domains over the prior month: duties at work/school, duties at home, leisure time with family, and leisure time with friends.[41] Using a 4-point scale (no problems, mild problems, moderate problems, severe problems), a score of 1 (no problems) on each item is indicative of no role impairment; a score of 2 or more on any item demonstrates impairment. The items to assess role function are behaviorally anchored: Subjects are asked to specifically rate the time spent in each role domain, interpersonal conflict occurring within each domain, enjoyment associated with the activity, and their assessment of the quality of their performance. In relation to work or school, subjects are asked to state the number of days, if any, missed due to their mental illness and to identify from a behaviorally based list the factors they feel have contributed to any role difficulties (e.g., too manic or depressed) (see Appendix 1 for scale). Each of the 4 domains of the LFQ demonstrate excellent test-retest reliability and high internal consistency and have been well-validated against comparable clusters in the Social Adjustment Scale–Self Report (SAS-SR).[41,43]

Table 2. Association Between Impairment in Role Function Domains (based on LFQ responses) and Depression Severity Group Among Bipolar Disorder Patients[a]

Role Function	Not Depressed (N = 292)	Subsyndromally Depressed (N = 291)	Syndromally Depressed (N = 176)	Overall χ^2	
				χ^2	p
Duties at work/school	64 (31)	108 (64)	61 (87)	79.03	< .0001
Duties at home	107 (38)	209 (75)	142 (93)	155.72	< .0001
With family	90 (34)	151 (59)	112 (77)	77.42	< .0001
With friends	48 (18)	144 (56)	116 (81)	168.92	< .0001
Total—all domains	91 (32)	205 (70)	157 (92)	185.17	< .0001

[a]Data presented as N (%) of patients who were impaired. The total N for each sample for each domain in this table varies according to the number of patients who completed the item.
Abbreviation: LFQ = Life Functioning Questionnaire.

LFQ scores were obtained at the same study visit as the IDS scores that were used to assign subjects to the appropriate depression group. Level of impairment from LFQ scores was dichotomized into no impairment in life functioning (mean score of 1 across all questions within a domain) and impaired life functioning (mean score of 2 or more) for each domain and aggregated for an overall estimate of life functioning.

Analysis

Data analytic plan. To assess the relationship between subsyndromal depressive symptoms and overall functioning in bipolar subjects, the 3 depression groups (defined above) were compared with each other on severity of problems in life functioning across 4 domains (duties at work/school, duties at home, leisure time with family, and leisure time with friends) based on the dichotomous categories described above. IDS-C scores were then used to predict classification into non-impaired and impaired life functioning categories.

Statistical analyses. Chi-square tests were used to test for overall differences among the 3 groups in overall impairment and within each domain of functioning from the Life Functioning Questionnaire, followed by pairwise comparisons between the 3 groups. Logistic regression was used to estimate the probability of any impairment in life functioning (LFQ) based on IDS-C scores.

RESULTS

Overall χ^2 results revealed that the 3 depression groups were significantly different from one another in the proportion of subjects that reported impairment in each domain of life functioning (overall χ^2 values = 77.42–185.17, df = 2 for all, all p values < .0001) (Table 2). Table 3 reports follow-up 2-group χ^2 analyses between the groups. The subsyndromally depressed group was significantly more likely than the not depressed group to report impairment at work (64% vs. 31%), with duties at home (75% vs. 38%), in their relationships with family (59% vs. 34%) and friends (56% vs. 18%), and in life functioning overall (70% vs. 32%). Additionally, a significantly greater proportion of the syndromally depressed group compared with the subsyndromally depressed group reported impairment at work (87% vs. 64%), in performing their duties at home (93% vs. 75%), in their relationships with family (77% vs. 59%) and friends (81% vs. 56%), and impaired life functioning overall (92% vs. 70%) (see Table 3). However, the proportion of subjects with impairment in the subsyndromal group was closer to the proportion in the syndromal group than to the nondepressed group. As expected, the syndromal group reported far greater levels of impairment than the nondepressed group (see Table 3).

Results of the logistic regression revealed that IDS-C scores were a significant predictor of impaired life functioning, accounting for 35.5% of the variance (WALD = 144.12, df = 1, p < .0001, Nagelkerke R^2 = .355). Figure 1 demonstrates this relationship. The risk of impaired overall life functioning increased as low-level depressive symptoms increased. The curve plateaued (indicating that the risk of impaired life functioning is no longer increasing) as depression symptom severity was in the clinically impaired range (e.g., IDS-C score = 32). (At the point where the curve plateaus, the risk of impairment is approaching 100%, indicating that nearly all subjects with depressive symptoms at or above that level of "clinical depression" are reporting impairment in life functioning.)

DISCUSSION

To our knowledge, these findings represent the largest study to date assessing subsyndromal depression in subjects with bipolar disorder. The results are consistent with earlier studies of the impact of subsyndromal symptoms in the unipolar population[6,23–29] as well as 2 small studies in the bipolar population.[34,44] Our results indicate that subsyndromal depressive symptoms in subjects with bipolar disorder are significantly associated with functional role impairment in multiple domains. This finding was evident in each of 4 distinct areas of functioning (duties at

Table 3. Two-Group Comparisons of Role Function in Depression Groups[a]

	Impaired, N (%)			Subsyndromally vs Not Depressed			Subsyndromally vs Syndromally Depressed			Not Depressed vs Syndromally Depressed		
Role Function	Not Depressed (N = 292)	Subsyndromally Depressed (N = 291)	Syndromally Depressed (N = 176)	χ^2 (df = 1)	Odds Ratio	95% Confidence Interval	χ^2 (df = 1)	Odds Ratio	95% Confidence Interval	χ^2 (df = 1)	Odds Ratio	95% Confidence Interval
Duties at work/school	64 (31)	108 (64)	61 (87)	39.37**	3.87	2.52 to 5.96	12.91*	3.83	1.78 to 8.24	65.34***	14.83	6.94 to 31.70
Duties at home	107 (38)	209 (75)	142 (93)	80.24**	5.01	3.49 to 7.20	20.29***	4.26	2.18 to 8.34	123.31***	21.35	11.05 to 41.26
With family	90 (34)	151 (59)	112 (77)	34.56**	2.87	2.01 to 4.10	12.59*	2.27	1.44 to 3.59	70.37***	6.52	4.11 to 10.32
With friends	48 (18)	144 (56)	116 (81)	85.43**	6.03	4.05 to 8.97	23.93***	3.22	1.99 to 5.21	156.68***	19.4	11.58 to 32.57
Total—all domains	91 (32)	205 (70)	157 (92)	87.12**	5.13	3.60 to 7.30	31.07***	5.13	2.76 to 9.52	159.65***	26.28	14.17 to 48.74

[a]Data presented as N (%) of patients who were impaired. The total N for each sample for each domain in this table varies according to the number of patients who completed the item.
*p = .001.
**p < .001.
***p < .0001.

Figure 1. High Risk of Impaired Life Functioning in Subsyndromal Depression[a]

[a]Each triangle represents the actual proportion of patients who are impaired in any domain of life functioning within a certain range of IDS-C scores.The triangle is placed at the midpoint of the range of scores it represents. The not depressed group (△) was divided into 2 subgroups based on IDS-C scores (0–6; 7–12). The subsyndromal group (▲) was divided into 3 subgroups to better represent the rapid changes in risk among these patients (IDS-C scores 13–17; 18–22; 23–27). The syndromal group (▲) was dichotomized into 2 subgroups (IDS-C scores 28–35; 36–62).

work/school, duties at home, and relationships with family and friends). The odds of having significant impairment in role functioning among those with subsyndromal depression were nearly 3 to 6 times greater than for those not depressed.

In our study there was also a significantly positive correlation between severity of subsyndromal symptoms and degree of role impairment. This result is consistent with a recent study of persons with bipolar I depression that demonstrated an inverse correlation between severity of depression (measured by HAM-D scores) and quality of life (measured by the Medical Outcome Study–Short Form [SF-36]).[45] Our findings expand these results to show that a strong relationship with functional impairment exists even in bipolar patients with milder depressive symptoms and that subsyndromal depressive symptoms may be a predictor of functional impairment. In one study[46] that assessed the relationship of subsyndromal depressive symptoms to work or role function in persons with bipolar illness, the average severity of depressive symptoms (both syndromal and subsyndromal) was a better predictor of occupational outcome than the total number of threshold (e.g., syndromal) relapses. Similarly, in a report[47] of a 48-week longitudinal study of 43 outpatients with bipolar disorder that included an analysis of 15 prior studies investigating a wide range of possible predictors of functional outcome, among all studies it was found that the most consistent correlate of worse functional outcome was depressive symptoms during the follow-up period.

Some studies have concluded that the deficits experienced in both occupational and psychosocial functioning in persons with subsyndromal depressive symptoms are

nearly as severe as in those who suffer from major depression.[6,23–25,32] Subsyndromal depressive symptoms are associated with absenteeism,[28] increased health service utilization and need for public assistance,[28] and significantly worse social functioning in patients with versus those without these subsyndromal symptoms.[23] Subsyndromal depressive symptoms are common in patients with bipolar disorder,[46,48–51] but in clinical practice, the impact of these symptoms on function may be underestimated.[34] Furthermore, it has been documented that subsyndromal depressive symptoms in patients with bipolar disorder have been associated with an increased risk for syndromal relapse.[10,11,44,52,53] Despite their impact, subthreshold depressive symptoms are often not viewed as cause for a treatment intervention. Using current bipolar depression treatment guidelines, clinicians often conceptualize patients as "depressed" or "not depressed" and classify into the latter group patients with subsyndromal depressive symptoms. However, when comparing these 3 patient groups, we found that the subsyndromally depressed group was more similar to the syndromally depressed in terms of functional outcomes (both associated with more than two thirds showing impairment) than to the not depressed group. (Interestingly, even in the group of not depressed subjects, 31% viewed themselves as impaired in the work/school domains. The etiology of this persistent dysfunction in relatively euthymic bipolar patients remains to be elucidated.)

Several limitations exist with the current study. First, the Life Functioning Questionnaire is a self-report measure. While the LFQ is well-validated against the SAS-SR, a future study using a clinician interview measure along with a self-report measure would help to corroborate the strength of the relationship between life function and subsyndromal depression. Second, as the current study is cross-sectional, the exact causal relationships between subsyndromal depressive symptoms and difficulties in role function cannot be known. For example, while our data could support the possibility that subsyndromal depressive symptoms could result in (cause) the development of impairment in role function, an alternate possibility is that poor social/occupational functioning primarily contributes to the development of subsyndromal depression. While our clinical experience leads us to believe that the subsyndromal depressive symptoms are primary and impaired role function occurs as a consequence of these symptoms, other methods in longitudinal studies would be necessary to assess the temporal relationships and causal path of the association between subsyndromal depression and impairment in role functioning. Additional longitudinal studies by our group and others are currently underway. One such large longitudinal study[54] demonstrated that with every increase in depressive symptom severity in bipolar subjects, a corresponding increase in psychosocial impairment exists. When depressive symptoms decrease, psychosocial impairment decreases, and when a person has no mood symptoms, psychosocial function normalizes.

Our study nonetheless demonstrates that there is substantial morbidity associated with subsyndromal and syndromal bipolar depression across occupational, domestic, family, and social domains. Our data support the work of other investigators who have reported high prevalence rates of functional impairment in many bipolar patients who are not in an acute episode of mania or major depression.[7,55–59] Finding ways to improve persistent functional impairment that impacts quality of life is, in the long term, as important to patients and their families as remission of affective episodes. Yet, few studies have explored possible etiologies of residual functional impairment by systematically examining the subset of patients in whom it occurs. Such attempts would provide a basis for intelligent intervention and rehabilitation. Our study suggests that subsyndromal depressive symptoms are one explanation for the continued less-than-optimal role function. The dramatic increase seen in impairment even with mild depressive symptoms suggests that this phenomenon may be underrecognized in community clinical practice and may deserve more attention.

As patients with bipolar disorder are 2 to 3 times as likely to develop depressive than hypomanic symptoms between acute episodes of illness,[52,60–62] and as subsyndromal depressive symptoms predict relapse into syndromal depression,[10,11,44,52,53] there is a need to consider treating subsyndromal depressive symptoms. No data, to our knowledge, are available on whether subsyndromal depressive symptoms in patients with bipolar disorder respond to treatment, and if so, what the best type of treatment intervention would be.[63] Developing and studying interventions for treating patients with subsyndromal depression may markedly impact their overall functioning. Currently, many clinicians hesitate to intervene in treating bipolar patients with subsyndromal depressive symptoms pharmacologically as there may be a fear of precipitating mania or cycle acceleration.[64,65] Thus, the need for finding safe interventions is great. One recent review[66] of psychosocial interventions suggests that persons with bipolar disorder who received treatment with cognitive behavior therapy had fewer subsyndromal mood symptoms and syndromal episodes. Another study[67] found significant positive correlations between social functioning and HAM-D scores and a significant impact of cognitive therapy (in conjunction with medication) on reducing risk of depression relapse over 30 months in subjects with bipolar disorder. The effect of relapse prevention was mainly in the first year. Risk for subsyndromal depressive relapse was not specifically assessed.[67] Additional intervention studies are needed to discover the efficacy of techniques that might markedly reduce the morbidity associated with subsyndromal bipolar depression.

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Appendix 1. Life Functioning Questionnaire (LFQ): Part I[a,b]

Assessment of Work and Social Functioning: Monthly Self Report
(Patient/Self Rated)

PART I

How much difficulty have you had in the following areas over the past month? *(Please indicate by marking the box that best describes your **degree of difficulty functioning**, if any, over the past month.)*

LEISURE TIME — DEGREE OF DIFFICULTY FUNCTIONING

A. Leisure activities with friends
(If you never spend time with your friends, or if you have no friends, indicate by placing a checkmark in this box ❑, and go to "**B**")

	No Problems 1	Mild Problems 2	Moderate Problems 3	Severe Problems 4
1. Time: amount of time spent with friends	❑	❑	❑	❑
2. Conflict: getting along with friends	❑	❑	❑	❑
3. Enjoyment: enjoying time spent together	❑	❑	❑	❑

If you are having ANY difficulty, what do you think is the cause? _____

_____

_____

B. Leisure activities with family
(If you never spend time with your family, or if you have no family, indicate by placing a checkmark in this box ❑, and go to "**C**")

	No Problems 1	Mild Problems 2	Moderate Problems 3	Severe Problems 4
1. Time: amount of time spent with family	❑	❑	❑	❑
2. Conflict: getting along with family	❑	❑	❑	❑
3. Enjoyment: enjoying and having an interest in family activities	❑	❑	❑	❑

If you are having ANY difficulty, what do you think is the cause? _____

_____

_____

DUTIES/RESPONSIBILITIES — DEGREE OF DIFFICULTY FUNCTIONING

C. Duties at home
(eg, housework, paying bills, grocery shopping, mowing lawn, childcare tasks, car repairs, etc)
(If you have no duties at home, or are homeless, indicate this by placing a checkmark in this box ❑, and go to "**D**")

	No Problems 1	Mild Problems 2	Moderate Problems 3	Severe Problems 4
1. Time: amount of time spent performing duties	❑	❑	❑	❑
2. Conflict: can you perform these duties without undue friction with others?	❑	❑	❑	❑
3. Enjoyment: enjoying and having an interest in home duties	❑	❑	❑	❑
4. Performance: quality of work (doing a good job; getting the job done)	❑	❑	❑	❑

If you are having ANY difficulty, what do you think is the cause? _____

_____

_____

D. Duties at work, school or activity center
(If you are not working or not in school, indicate this by placing a checkmark in this box ❑, and go to the next page.)

	No Problems 1	Mild Problems 2	Moderate Problems 3	Severe Problems 4
1. Time: amount of time spent at work, school, etc	❑	❑	❑	❑
2. Conflict: getting along with co-workers and supervisors	❑	❑	❑	❑
3. Enjoyment: enjoyment/satisfaction and interest from work	❑	❑	❑	❑
4. Performance: quality of work	❑	❑	❑	❑

If you are having ANY difficulty, what do you think is the cause? _____

_____

_____

continued

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Appendix 1. Life Functioning Questionnaire (LFQ)—Part I (cont.)

How many days did you miss over this last month at work or school due to your mental illness?

A. Work	B. School
❑ 1. not applicable	❑ 1. not applicable
❑ 2. 0–5 days	❑ 2. 0–5 days
❑ 3. 6–10 days	❑ 3. 6–10 days
❑ 4. 11–20 days	❑ 4. 11–20 days
❑ 5. over 20 days	❑ 5. over 20 days

Reasons Causing Difficulties in Role Functioning

Did any of the factors below cause you difficulties at work this month, or cause you to work less than full-time, or not at all?
(Please mark all that apply for this month.)

❑ 1. Too depressed most of the time
❑ 2. Too manic most of the time
❑ 3. Couldn't get my mood stable long enough to work—too up and down
❑ 4. Afraid to work at usual level because afraid of precipitating another episode
❑ 5. Wanted to work but the kind of job that I could get due to my broken resume (ie, gaps in work history) was too demeaning for my educational level
❑ 6. Mood OK and wanted to work but couldn't get a job due to my broken resume (ie, gaps in work history)
❑ 7. Couldn't get along with others
❑ 8. Wanted my old job but couldn't get it
❑ 9. Could get my old job but felt embarrassed to go back
❑ 10. Disability check was greater than could have made otherwise
❑ 11. Didn't have a job for a long time prior to this most recent episode
❑ 12. Physical symptoms (eg, difficulty concentrating, blurred vision, fatigue/sedation) interfered with my functioning
❑ 13. Didn't need to work (retired, supported by someone else, etc.), but I could if need be
❑ 14. Medication side effects interfered with functioning
❑ 15. Other *(Please explain)*: _____

_____

[a]Reprinted with permission from Altshuler et al.[41]
[b]Only part 1 of the questionnaire is quantitative and was thus used in the analysis.