The Spectrum of Quality-of-Life Impairments in Recurrent Geriatric Depression

P. Murali Doraiswamy, Zeba M. Khan, Rafe M.J. Donahue, and Nathalie E. Richard

1Department of Psychiatry, Duke University Medical Center, Durham, North Carolina.
2Health Outcomes and 3Medical Data Sciences, North America Medical Affairs, GlaxoSmithKline, Research Triangle Park, North Carolina.

Background. Although recurrent major depression in elderly individuals is a disabling condition, only a few studies have systematically examined the magnitude and specificity of quality-of-life (QOL) impairments in such patients in comparison with matched controls or the elderly population.

Methods. We examined the variations in QOL scores of 100 elderly (age range 60–88 years) patients with moderate to severe recurrent major depression and compared them with published elderly population norms. Disease-specific Quality of Life in Depression Scale (QLDS) and generic Medical Outcomes Short Form-36 Health Survey (SF-36) QOL ratings obtained at baseline were analyzed.

Results. Compared with published elderly population norms, depressed subjects showed significant QOL impairments in five of eight baseline SF-36 items (p < .01). Women rated their QOL as worse than men on physical functioning and role physical (p < .01) and showed similar trends on all other QOL items. Compared with younger subjects, subjects aged older than 70 years reported lower QOL on the summary physical component (p < .01) and a trend for higher QOL on the summary mental component (p < .05) of the SF-36. Depression symptom ratings were correlated with some QOL measures, but accounted for less than 10% of the variance.

Conclusions. Despite limitations, such as a cross-sectional design and indirect comparisons with norms generated from another study, our findings confirm the disabling nature of recurrent late-life depression and the importance of targeting both depressive symptoms and broader QOL outcomes in intervention trials.

Major depression in elderly individuals is a common, serious, and potentially life-threatening disorder (1,2). For a variety of reasons, major depression in elderly persons may be underdiagnosed and/or undertreated (2). The failure to treat depression increases the risk for symptomatic worsening, relapse, and recurrence, and may potentially decrease patients’ overall quality of life (QOL).

QOL can be assessed using generic and/or disease-specific instruments. Generic instruments measure the complete spectrum of functional status and well-being and therefore allow comparisons across a variety of conditions. Disease-specific instruments can measure unique elements of a given disease. Generic and disease-specific instruments are frequently used together to provide a comprehensive assessment of QOL.

In elderly subjects with a lifetime history of depression, a recurrent episode is usually a bad prognostic sign. This may herald chronicity and may potentially adversely impact social functioning as well as increase morbidity and mortality. Hence, QOL may be a particularly valuable marker of well-being in this population. Although previous studies have assessed QOL in late-life depression (3–11), only two have focused specifically on chronic or recurrent late-life depression. Mazumdar and colleagues (6) used a generic QOL instrument (General Life-Functioning Scale) in 110 elderly (aged 60–88 years) patients with recurrent major depression. They found that QOL improved with treatment of depression and that such improvements were greater in those with full recovery, even after controlling for changes in depression rating scores. Thus, they concluded the QOL measures more than the change in level of depression. Lavretsky and colleagues (5) reported that chronicity of late-life depression was linked to more severe cerebrovascular risk factors, apathy, and poor QOL. None of the previously cited studies reported data from a nondepressed control group.

Although there is evidence to suggest that depressed patients function at lower levels than patients with many other chronic disorders (1), several questions remain unanswered. In this study, we address the following three questions: (a) What is the magnitude of QOL impairments in elderly subjects with recurrent depression? (b) What are the domains in which such impairments occur? (c) What is the shared variance between depression symptoms, generic QOL measures, and disease-specific QOL measures in recurrent late-life depression? To address these questions, we analyzed baseline data from 100 elderly patients with moderate to severe recurrent major depression. In the absence of a nondepressed control group, we made comparisons with elderly population norms.

Methods

Study Design

Subjects were 100 outpatients recruited at five sites for a multicenter trial comparing two antidepressants: bupropion-sustained release and paroxetine. Written informed consent was obtained from all subjects, and the study was approved by the institutional review boards of all the sites. Key inclusion criteria were as follows: men or women aged 60 years and older; minimum baseline score of 18 on the 21-item...
Hamilton Rating Scale for Depression (HAMD) (12); and diagnosis of recurrent episode of nonpsychotic major depression (according to the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition) (13). Patients whose total score on the HAMD decreased by more than 20% or fell below 18 between screening and study entry were excluded. Stratified randomization was utilized to select comparable numbers of subjects in the 60-to-69 and 70-to-80 year age range. Other key exclusion criteria included active suicidality; history or current diagnosis of eating disorders; seizure disorder; previous treatment with bupropion or paroxetine; and unstable medical disorders. A more detailed description of the trial selection criteria as well as the effects of bupropion versus paroxetine treatment on depression and QOL outcomes has been reported elsewhere (14,15).

Health-related QOL Assessments

QOL was measured using the Medical Outcomes Short Form-36 Health Survey (SF-36) and the Quality of Life in Depression Scale (QLDS). The SF-36, a generic QOL questionnaire, consists of 36 items that assess health concepts relevant to patients' functional status and well-being (16). The SF-36 includes eight multi-item dimensions measuring the following health concepts: physical functioning, role physical, bodily pain, general health, vitality, social functioning, role emotional, and mental health. These eight dimensions can be further summarized into mental and physical health summary scores. On the SF-36, numerically lower scores depict worse QOL.

The QLDS, consisting of 34 items related to depression, has demonstrated reliability and validity (17,18). It is a self-rating measure of the impact of the symptoms associated with depression and any treatment effects on the life of the patients. On this scale, numerically higher scores depict worse QOL.

Statistical Analyses

We analyzed baseline data for the patients. Summary scores for QLDS were calculated. For the SF-36, the mental and the physical component summary scores were also calculated, in addition to the scores for each of the eight dimensions. The SF-36 values were missing for 2 subjects (1 man and 1 woman, both in the older age group). Summary statistics were computed for baseline demographic, clinical, and QOL measures. We compared QOL in our sample with those of published population norms (16). Gender and age effects on baseline QOL were examined individually using analysis of variance. Age was defined categorically because the recruitment in this study was stratified by age 70. Pearson correlation coefficients were calculated between the 17-item HAMD and QOL measures.

In the absence of a control group, we hypothesized that the depressed sample would show lower QOL than norms on mental health, social functioning, and vitality QOL measures. We also hypothesized that, despite similar levels of physical functioning, depressed subjects would rate themselves lower on their general health perception. Based on the literature, we hypothesized that women would rate themselves lower on QOL. We also predicted that older subjects would rate themselves lower on physical QOL measures. Because of multiplicity, a more conservative alpha of 0.01 was used to test significance for all analyses pertaining to QOL. Significance levels between .05 and .01 were viewed as a trend. All statistics reported are two-tailed.

**Results**

The sample included 100 subjects (57% women; mean age, 70.2 ± 7.8 years) with an age range of 60 to 88 years. Forty-nine subjects were aged younger than 70 years, and 51 subjects were aged older than 70 years. The mean (SD) 17-item HAMD score was 25 (4). Of the subjects, 88% had moderate depression, and 12% had severe depression; 32% of the subjects had had one prior depressive episode, and 68% of subjects had at least two prior episodes. Thirty-two percent of the subjects had had at least four prior episodes. The duration of the present episode was at least 7 months in two thirds of the subjects.

Depressed subjects showed significantly (p < .01) worse QOL scores, compared with norms for elderly inviduals, on five of eight subscales of the SF-36 (general health perception, mental health index, role emotional, social functioning, and vitality; Table 1). Pain index and physical functioning ratings did not differ between the groups.

Significant (p < .01) differences between men and women at baseline were seen for the SF-36 physical component score

| Table 1. Quality of Life in Recurrent Geriatric Depression Compared With Population Norms |
|---------------------------------|------------------------|------------------------|------------------------|
| SF-36 Measures                  | Elderly Norms (n = 442)| Study Baseline (n = 100)| Norms vs Baseline       |
|                                | Mean (SD)              | Mean (SD)              | t-Test Value (df) p Value |
| Pain index                      | 68.49 (26.42)          | 68.21 (26.62)          | -0.09 (142.5) NS         |
| General health perception       | 62.56 (22.42)          | 58.27 (11.19)          | -2.76 (294.9) .003      |
| Mental health index             | 76.87 (18.08)          | 47.67 (21.15)          | -12.68 (130.2) .0001    |
| Physical functioning            | 69.38 (26.26)          | 68.21 (26.38)          | -0.40 (142.8) NS         |
| Role emotional                  | 81.44 (34.56)          | 31.97 (36.43)          | -12.3 (138.4) .0001     |
| Role physical                   | 64.54 (41.30)          | 58.67 (42.79)          | -1.24 (139.9) NS         |
| Social functioning              | 80.61 (25.63)          | 55.99 (28.84)          | -7.79 (133.0) .0001     |
| Vitality                        | 59.94 (22.12)          | 33.62 (21.15)          | -11.1 (147.8) .0001     |

Notes: SF-36 = Medical Outcomes Short Form-36 Health Survey; NS = not significant. Higher scores on the SF-36 and lower scores on the Quality of Life in Depression Scale are indicative of better quality of life. SF-36 scores were missing for one woman and one man. P values and dfs are produced from a one-sided two-sample t test. NS = p > .01.
as well as for the physical functioning and role physical items, with women showing worse QOL than men for each measure (Table 2). A trend (p < .05) was also seen for women, who had lower QOL on the QLDS (higher numbers reflect lower QOL), role emotional, and vitality measures. Women did not differ from men on the other measures, even though their mean scores were numerically lower than that of men.

As expected, patients aged younger than 70 years had significantly (p < .01) higher SF-36 physical component and physical functioning scores. General health perception and social functioning scores did not differ between younger and older subjects. In contrast, there was a trend (p < .05) for the SF-36 mental component QOL score to be higher in older subjects than in younger subjects. Similarly, QOL scores on the QLDS and SF-36 vitality items were numerically superior in older subjects, although these differences did not reach statistical significance (Table 3).

The HAMD total score was significantly correlated with SF-36 physical functioning (R = -.32, p < .001) and role physical (R = -.26, p < .01) scores. The correlations between HAMD and the SF-36 mental health index (R = -.20, p < .05), as well as between HAMD and QLDS (R = .23, p < .02), showed a weak trend to significance. Higher HAMD scores were associated with worse QOL in each of these correlations. Other SF-36 items were not correlated with the HAMD. The SF-36 mental component score correlated significantly with the QLDS (R = -.69, p < .0001). The SF-36 physical component score did not correlate with the QLDS (R = -.14, p < .18).

**Discussion**

This study offers some insights into patterns of QOL in recurrent geriatric depression as well as the links between QOL and depression ratings. Our findings suggest that elderly depressed subjects report specific QOL impairments at baseline, compared with the population, most notably in vitality, role emotional, social functioning, mental health perception, and general health perception. This confirms the disabling effect of recurrent depression in elderly individuals and highlights the need for early recognition and intervention.

We also confirm previous reports from other samples, such as elderly patients with Parkinson’s disease (19), that women report lower physical and mental QOL than men. Some of these differences persisted after adjusting for depression severity and age (data not shown). The reasons that women have lower QOL, despite comparable levels of depression, is not known, but could reflect differences in perception, reporting bias, and/or true differences in impairment. This could also reflect the psychometric property of the scales. Further studies are needed to address this issue. In contrast to gender, age was not uniformly associated with lower QOL. Older depressed subjects tended to report relatively higher mental health QOL despite having lower physical functioning–related QOL. Similar findings have been reported previously in an adult sample of depressed inpatients (4), although the reasons for this apparent dichotomy is also not well known.

Depression severity (measured by the HAMD) was correlated with the SF-36 physical component score and only weakly with the SF-36 mental health index. However, depression ratings explained less than 10% of the variance in baseline QOL measures in this sample. Consistent with our findings, Small and colleagues (3) have previously reported that medical comorbidity influences QOL ratings in geriatric depression. The prognostic value of QOL was shown by Miller and colleagues (7), who reported that lower baseline QOL was associated with lower depression symptom recovery after acute treatment. Likewise, Mazumdar and colleagues (6) reported that patients who do not recover after acute treatment continue to show lower QOL scores than those who do recover. We have also previously reported that depressed patients who achieve remission have
higher QOL levels at baseline than nonremitters (15), and patients who do not recover after acute treatment continue to show lower QOL scores. Thus, our results, along with previous studies, suggest that QOL in elderly depressed patients is a complex outcome that is influenced not only by depression but also by a variety of factors, such as age, gender, medical comorbidity, and others. These data also provide evidence to highlight the need to treat depression to full remission in order to fully optimize patients’ QOL. The SF-36 and QLDS data provided here may also help design appropriate outcomes for future studies.

There are some limitations of this report. We did not have a nondepressed control group and chose to make comparisons with population norms. Indirect comparisons with values derived from another study are subject to biases, such as rater bias, and differences in medical comorbidity. For example, the elderly population norms were derived from a sample with a slightly more restricted age range than our sample. However, there are also advantages of comparing with a population norm. By definition, such norms come from large community samples and are more likely to be representative of the population than any small control group recruited at an academic center. A prospective study with a nondepressed control group would have allowed for more careful matching on all variables. A second limitation is that this was a sample of subjects selected for a clinical trial and, hence, may not be representative of all elderly patients with depression. We suspect, but cannot prove, that the differences in physical functioning QOL measures between younger and older subjects in this study were due to differences in medical comorbidity. We did not have a quantitative measure of cumulative medical comorbidity. Last, because of the interrelated nature of the variables, we did not formally adjust for multiple comparisons but chose to use a more cautious significance level of .01. Hence, the p values reported are not definitive statements of scientific authority but must be viewed as “flags” for hypotheses that might be worthwhile to investigate in future studies. Thus, our findings must be interpreted in this context.

There are also some obvious strengths to this study. The study sample represents a well-characterized and carefully selected cohort of elderly patients with moderate to severe, recurrent major depression. Given the relative paucity of such data in elderly patients with recurrent major depression (e.g., 5,6), our findings may be useful both for evaluating patients and for planning future QOL outcomes-based clinical trials in the elderly population. The comparison with population norms, as well as the breakdown by age and gender, provides a context for the interpretation of these findings. QOL outcomes may be particularly appropriate for effectiveness trials of antidepressants in medically ill populations, such as those with cancer or heart disease. Prospective studies to assess the impact of QOL on the long-term well-being of elderly depressed patients are warranted.

Acknowledgments
This research was supported by a grant from Glaxo Wellcome. Dr. Doraiswamy has received research grants and/or honoraria from Glaxo Wellcome, Pfizer, Lilly, Forest, Wyeth, and SmithKline, but does not own stock in any of these companies.

Address correspondence to P. Murali Doraiswamy, MD, Director of ClinicalTrials, Department of Psychiatry, Box 3018, Duke University Medical Center, Durham, NC 27710. E-mail: dorai001@mc.duke.edu

Received May 17, 2001
Accepted June 15, 2001

References