Generic and health-related quality of life in patients with seasonal and nonseasonal depression

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Abstract

Although a relatively large body of research has now accumulated concerning the relationship between quality of life (QoL) and nonseasonal depression, there is a dearth of information about QoL in seasonal affective disorder (SAD). The aim of this study was to compare perceived levels of broad (‘generic’) and health-related QoL in patients with seasonal and nonseasonal depression. Participants were 72 patients with SAD enrolled in an on-going multicentre study in Canada, and 72 patients with nonseasonal major depressive disorder (MDD) matched for severity of depression attending an outpatient psychiatric clinic in Vancouver, British Columbia. All participants completed two measures of QoL (the 20-item Medical Outcomes Study [MOS] Short-Form General Health Survey [SF-20] and the Quality of Life Enjoyment and Satisfaction Questionnaire [Q-LES-Q]) at baseline prior to treatment. The results of the study indicated that both generic and health-related QoL were compromised in patients with SAD compared with general population norms. For example, mean Q-LES-Q scores (range 0–100 where higher scores indicate better QoL) were 44%, compared with scores of 83% reported for the general population. Patients with nonseasonal depression showed significantly poorer functioning in several domains on the SF-20, but no significant differences in Q-LES-Q scores emerged. Perceived QoL is impaired in patients with SAD. Degree of impairment between seasonal and nonseasonal depressives is equivalent when assessed using the Q-LES-Q, but significant inter-group differences are apparent in SF-20 domain scores. Future research is required to determine whether perceived QoL is improved by treatment interventions for seasonal depression such as light therapy or antidepressant medication.

Keywords: Seasonal affective disorder; Quality of life

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1. Introduction

Over recent years, growing emphasis has been placed upon patient-centered assessment of health status. In part, this has been the result of increasing appreciation of the impact of psychosocial factors upon health. It has also been due to a philosophical shift towards empowering individuals to play an active role in maintaining their own health, in particular their mental health (Wilson, 1996). One burgeoning area of research that has resulted from this shift concerns the assessment of quality of life (QoL).

Quality of life is a highly individual and personal concept. Its assessment has been likened to assessing the beauty of a rose; irrespective of how many measurements are taken (such as colour, form, height and smell), the beauty of the flower is never fully captured (Mount and Scott, 1983). Quality of life measures can be classified as those with a broad focus (referred to hereafter as ‘generic’ measures), and those that specifically focus upon health-related quality of life (HRQOL). A plethora of both generic and HRQOL measures are now available (Health Canada, 1996; Coons et al., 2000). These range from popular non-disease-specific tools that measure HRQOL such as the Medical Outcomes Study Short Form 36 (MOS SF-36) (Stewart et al., 1988) to disease-specific instruments intended for use in particular patient populations. Some QoL instruments, such as the Schedule for the Evaluation of Individualized Quality of Life (SEIQoL) (O’Boyle et al., 1992) and the Patient Generated Index (Ruta et al., 1994), allow patients to specify the life domains most important to them. Whilst this approach maximizes the personal relevance of the measure, the use of individualized QoL tools in research has been limited by difficulties in administering and interpreting them.

A relatively large body of research has now accumulated concerning the relationship between QoL and a variety of psychiatric conditions, including nonseasonal depression and bipolar disorder (Namjoshi and Buesching, 2001; Kennedy et al., 2001). However, little previous research has examined levels of QoL in patients with major depressive disorder (MDD) with a seasonal pattern (American Psychiatric Association, 1994) or ‘seasonal affective disorder’ (SAD) (Rosenthal et al., 1984). To our knowledge, only one study has explicitly assessed QoL in patients with diagnosed SAD. Partonen and Lonnqvist (1996) examined the effects of antidepressant treatment in patients with seasonal (N=32) and nonseasonal (N=151) depression, in which QoL was assessed by both the Medical Outcomes Study (MOS) Short-Form General Health Survey (SF-20) (Stewart et al., 1988) and the 15-Dimensional Measure of Health-Related Quality of Life (15D, Sintonen and Pekurinen, 1989). The 15D provides an overall score between 0 and 1 (where higher scores are indicative of better QoL) in addition to separate scores for each of the questionnaire’s 15 dimensions. We extracted baseline QoL scores for the group of patients with SAD from data provided by the authors. Our examination of these data indicated that levels of physical functioning (as measured by the SF-20) were reasonable (73.9 ± 29.7, range 0–100, where higher scores indicate better health), but mental health functioning appeared to be markedly impaired (38.7 ± 14.6) compared with general population norms (for example, Linzer et al., 1996). Patients with SAD showed mean scores of 0.75 (S.E. 0.03) on the 15D quality of life measure. In comparison, mean 15D scores in a Finnish general population sample (age 35–54) have been reported to be 0.94 (Sintonen, 1998).

It is important to further our understanding of how patients with SAD perceive their QoL for two main reasons. First, it will allow us to compare impairment in the QoL of patients with SAD with that of other psychiatric disorders. Second, there is increasing recognition that improved QoL should be a goal of treatment in this patient population. In order to achieve this goal, we must first understand the degree to which QoL is impaired in patients diagnosed with SAD. The aim of the present study was to characterize perceived levels of generic and health-related quality of life in two samples of patients, one with seasonal depression and the other with nonseasonal MDD.

2. Methods

2.1. Participants

Two groups of participants were examined: 72 patients with seasonal depression and 72 patients with nonseasonal depression.
2.1.1. Seasonal depression sample

This sample consisted of 72 patients (see Table 1 for demographic details) enrolled in an ongoing multicentre study of treatment for SAD in Canada. Patients were recruited from four geographical regions: Vancouver in British Columbia, Toronto in Ontario, Manitoba in Winnipeg and Dalhousie in New Brunswick. Participants were recruited via regional advertising campaigns and from referrals made by family physicians or psychiatrists to outpatient clinics.

Patients were aged between 18 and 65, met criteria for MDD with a seasonal (winter) pattern as determined by structured interview (Structured Clinical Interview for DSM-IV, SCID-IV, Spitzer et al., 1995b) modified with criteria for a seasonal pattern. Inclusion criteria also required a score of 20 or greater on the Hamilton Depression Rating Scale 17 (Ham-D) (Hamilton, 1967) or a score of 14 or greater on the Ham17 if the Ham17 + 7 was 23 or greater. Exclusion criteria included pregnancy, suicidal risk, a range of DSM-IV diagnoses (organic mental disorders, substance misuse, schizophrenia, panic disorder, bulimia/anorexia, post-traumatic stress disorder and bipolar type I), serious illness/contraindicated medical conditions (such as retinal disease) or contraindicated drug use.

2.1.2. Nonseasonal depression sample

This sample consisted of 72 patients (matched to the seasonal sample for gender and severity of depression) with nonseasonal unipolar depression seen in the Mood Disorders Clinic of the University of British Columbia Hospital in Vancouver, Canada (see Table 1 for demographic details). The UBC Hospital is a tertiary teaching hospital located on a university campus. All nonseasonal patients were referred to the mood disorders unit from family physicians or psychiatrists, with clinical diagnoses being assigned by board-certified psychiatrists using DSM-IV criteria based on a structured clinical interview.

The study was approved by the University of British Columbia Clinical Ethical Review Board. After complete description of the study to all participants, written informed consent was obtained.

2.2. Instruments

For the seasonal group, all instruments were completed at baseline assessment (typically early winter) following enrollment into the study but prior to the onset of treatment. For the nonseasonal group, instruments were completed at baseline assessment following referral to the clinic, prior to initiation of or changes to treatment.

HRQOL was assessed using the 20-item MOS SF-20 (Stewart et al., 1988). The self-rated SF-20 was designed to assess perceived health status and provides a score from 0 to 100 in six dimensions (physical, social and role functioning, mental health status, health perceptions and bodily pain) where 0 represents worst possible health and 100 best possible health. Previous research has shown that reliability estimates for the dimensions range from 0.81 to 0.88 (Stewart et al., 1988).

Generic QoL was assessed with the Quality of Life Enjoyment and Satisfaction Questionnaire (Q-LES-Q) (Endicott et al., 1993), a 93-item self-report measure of the degree of enjoyment and satisfaction in various areas of daily living. The Q-LES-Q was developed and validated for use in depressed outpatients and has eight summary scales derived from 91 items that reflect major domains: physical health, mood, leisure time activities, social relationships, general activities, work (if applicable), household
duties (if applicable) and school/course work (if applicable). The raw summary scales of the questionnaire are summed to produce a mean QoL score ranging from 0–100, where higher scores indicate better QoL. The questionnaire also possesses single items that rate “overall life satisfaction and contentment” and “satisfaction with medications (if any are taken)”. The Q-LES-Q has acceptable test–retest reliability and is sensitive to change in clinical populations (Endicott et al., 1993).

The Beck Depression Inventory II (BDI II) (Beck et al., 1996) is a self-rated inventory that is widely used in depression studies. The revised version of the BDI contains items for rating the atypical depression symptoms frequently seen in SAD.

### 2.3. Statistics

Demographic data were analyzed using Student’s *t*-tests for normally distributed continuous data, and $\chi^2$ for categorical data. Summary scores for both the SF-20 and Q-LES-Q domains were derived and transformed linearly to a 0–100 scale. Between-group differences in mean scores for domains were examined using Student’s *t*-tests with Bonferroni corrections where multiple comparisons were made. Multiple regression analyses were performed separately for the two patient groups to explore the effect of baseline characteristics on QoL (mean Q-LES-Q and SF-20 scores). All calculations were undertaken with SPSS version 10 (SPSS, 2000).

### 3. Results

Baseline characteristics for the two groups of participants are summarized in Table 1. There were no significant differences in gender distribution, employment status or BDI scores, but patients with nonseasonal depression were significantly younger (an average of 5 years). Domain scores for the SF-20 are shown in Table 2. Patients with seasonal depression showed significantly better functioning in three of six of the questionnaire’s domains, including physical, health perceptions and social functioning. However, no significant between-group differences were apparent in Q-LES-Q scores (see Table 3). No significant differences by gender were apparent in either Q-LES-Q or SF-20 scores.

A multiple regression analysis was performed to help identify the characteristics that contributed most to perceived QoL. The variables gender, age, employment status, presence of a co-morbid diagnosis and mean baseline BDI score were entered into the analysis in a stepwise fashion. For the seasonal depression group, a significant model emerged ($R_{adj}^2 = 48\%$, $F_{2,61} = 30.3$, $P < 0.001$), with both higher BDI scores ($b = -0.55$, $P < 0.001$) and older age ($b = 0.30$, $P < 0.001$).

#### Table 2
SF-20 domain scores in patients with seasonal ($N = 72$) and nonseasonal depression ($N = 72$)

<table>
<thead>
<tr>
<th>MOS SF-20 domain</th>
<th>Seasonal depression</th>
<th>Nonseasonal depression</th>
<th><em>P</em>-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>S.D.</td>
<td>Mean</td>
</tr>
<tr>
<td>Physical functioning</td>
<td>82.6</td>
<td>19.1</td>
<td>65.8</td>
</tr>
<tr>
<td>Role functioning</td>
<td>79.6</td>
<td>29.1</td>
<td>63.0</td>
</tr>
<tr>
<td>Mental health</td>
<td>41.1</td>
<td>17.1</td>
<td>38.7</td>
</tr>
<tr>
<td>Health perceptions</td>
<td>50.1</td>
<td>22.0</td>
<td>36.1</td>
</tr>
<tr>
<td>Pain</td>
<td>51.8</td>
<td>26.8</td>
<td>45.7</td>
</tr>
<tr>
<td>Social functioning</td>
<td>70.7</td>
<td>31.3</td>
<td>55.7</td>
</tr>
<tr>
<td>Mean SF-20 score</td>
<td>62.6</td>
<td>14.7</td>
<td>50.5</td>
</tr>
</tbody>
</table>

* Scale 0–100 where 100 = best health.

#### Table 3
Q-LES-Q domain scores in patients with seasonal ($N = 72$) and nonseasonal depression ($N = 72$)

<table>
<thead>
<tr>
<th>Q-LES-Q domain</th>
<th>Seasonal depression</th>
<th>Nonseasonal depression</th>
<th><em>P</em>-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical health</td>
<td>47.7</td>
<td>14.6</td>
<td>45.2</td>
</tr>
<tr>
<td>Leisure activities</td>
<td>52.6</td>
<td>15.0</td>
<td>48.2</td>
</tr>
<tr>
<td>Social relationships</td>
<td>53.9</td>
<td>18.4</td>
<td>53.5</td>
</tr>
<tr>
<td>Household duties</td>
<td>47.3</td>
<td>14.1</td>
<td>52.9</td>
</tr>
<tr>
<td>Work activities</td>
<td>49.9</td>
<td>16.9</td>
<td>48.1</td>
</tr>
<tr>
<td>School/course work</td>
<td>52.7</td>
<td>16.0</td>
<td>59.4</td>
</tr>
<tr>
<td>General satisfaction</td>
<td>36.9</td>
<td>22.7</td>
<td>32.4</td>
</tr>
<tr>
<td>Overall life satisfaction</td>
<td>46.8</td>
<td>12.9</td>
<td>45.2</td>
</tr>
<tr>
<td>Mean Q-LES-Q score</td>
<td>44.2</td>
<td>10.3</td>
<td>45.4</td>
</tr>
</tbody>
</table>

* Scale 0–100, where 100 = best health.
$P = 0.003$) significantly predicting lower mean Q-LES-Q scores, although only higher BDI scores predicted lower SF-20 scores ($R^2_{adj} = 16\%$, $F_{1,62} = 13.4$, $P = 0.001$). For the nonseasonal depression group, higher BDI scores predicted lower Q-LES-Q scores ($R^2_{adj} = 42\%$, $F_{1,68} = 51.1$, $P < 0.001$) and lower mean SF-20 scores ($R^2_{adj} = 30\%$, $F_{1,68} = 30.4$, $P < 0.001$).

4. Discussion

Although a relatively large body of research has now accumulated concerning the relationship between QoL and nonseasonal depression, little research has explicitly examined perceived QoL in seasonal depression. The results of the present study, which found that patients with SAD showed good levels of physical functioning according to the SF-20 (82 ± 19) but impaired mental health functioning (41 ± 17), are consistent with previous research examining QoL in patients with SAD (Partonen and Lonnqvist, 1996). To put the findings in perspective, SF-20 mental health scores in the PRIME-MD 1000 study were observed to be 73 ± 19 in primary care patients attending health centers in the United States (Linzer et al., 1996). Patients with nonseasonal depression showed significantly poorer scores in several of the SF-20 domains, including physical, health perceptions and social functioning, but not in mental health functioning.

Generic QoL in the present study was assessed via the Q-LES-Q. Participants with seasonal depression showed mean overall scores on this questionnaire of 44% of total possible score, equivalent to the percentage observed in the nonseasonal depression sample (45%). In previous studies, mean Q-LES-Q scores have been reported to be 42% in hospitalized psychiatric inpatients (Rapaport et al., 2001), 53% in patients with chronic MDD (Miller et al., 1998), 60% in obsessive-compulsive disorder (Koran et al., 2002), 67% in panic disorder (Rapaport et al., 2000), 56% in posttraumatic stress disorder (Rapaport et al., 2002) and 83% in the general population (Rapaport, personal communication). Thus, in the present study, patients with SAD exhibited greater impairment in generic QoL than previously reported for patients with chronic depression and a number of other disabling psychiatric conditions.

A number of difficulties exist in QoL assessment. Comparing QoL in various psychiatric conditions is problematic when so many different tools are available, and where no gold standard for measuring the concept exists. In the present study, for example, a greater between-group divergence in perceived QoL was apparent in the SF-20 than in the Q-LES-Q. In part, this may have been due to the more limited nature of the SF-20. Whilst the instrument provides a relatively useful, concise measure of HRQOL, it is probably a less robust measure than the Q-LES-Q. For example, whereas the SF-20 measures levels of social support via a single question, the Q-LES-Q assesses the same domain via 11 questions. Another problem associated with assessing QoL in psychiatric conditions occurs in that self-report measures are likely to be affected by aspects of the mental illness such as impaired judgment, cognitive bias and diminished expectations.

As with other measures of health outcome, responses to QoL measures have been shown to vary with marital status, education, income, race, geography and a variety of extraneous psychological factors. We attempted to assess the influence of some of these variables on QoL in the present study by using multiple regression analysis. Depressive symptomatology (as measured by the BDI) was found to be the strongest predictor of both Q-LES-Q and SF-20 mean scores, replicating the findings of several other studies in patients with nonseasonal depression.

The influence of psychological factors upon QoL may be particularly pertinent here. Research has indicated that subjective reports of QoL may be affected by a variety of personality factors. For example, a single item rating such as “rate your QoL as poor, fair, good or excellent” may inadvertently measure personality characteristics such as the propensity to report negative affect, as well as hypochondriasis or somatization. Primary care patients with mood or psychosomatic disorders have previously been reported to rate their general health more poorly than patients with diabetes or pulmonary problems (Spitzer et al., 1995a). Other research in a community sample has shown that eight out of nine of the SF-36 domains are significantly correlated with the neuroticism scale of the NEO (Muldoon et al., 1998). Neuroticism scores are known to be elevated in patients with seasonal and nonseasonal depression.


Acknowledgments

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