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The Value of Adding Quality of Life Measures to Assessments of Outcomes in Mental Health

Abstract

Objectives: In the domain of mental health outcomes, increasing interest has been shown in complementing traditional symptom measures with measures of a patient’s quality of life. The present study aimed to evaluate the value of including the Quality of Life Enjoyment and Satisfaction Questionnaire (Q-LES-Q; Endicott et al. 1993) into the routine assessment battery used at a private psychiatric hospital.

Method: The sample consisted of 1276 consecutive inpatients treated at a private psychiatric hospital over a two year period. Admission and discharge data were collected for the Q-LES-Q, the mental health subscales of the Medical Outcomes Short Form Questionnaire (SF-36), the Depression Anxiety Stress Scale, and the Health of the Nation Outcome Scale.

Results: Patient improvements from admission to discharge were seen across all instruments, including the Q-LES-Q. The Q-LES-Q was correlated with existing symptom measures, and regression analyses revealed predictive relationships between length of stay and quality of life even after symptoms of depression and anxiety were taken into account.

Conclusions: Although the Q-LES-Q was correlated with symptom measures already in use, it added to the ability to predict patient length of stay, and showed some divergence from measures of clinical outcomes. This pattern was seen despite intentionally restricting the sample to patients with mood and affective disorder diagnoses. The value of considering quality of life in a comprehensive assessment of mental health outcomes is discussed.
In the past the objective of medical research was to assess the status of physical health and functioning in patients. More recently a greater emphasis has been placed on maintaining ‘quality of life.’ The shift in focus has arisen because a cure is not always possible and patients must often come to terms with longer-lasting changes in lifestyle. Furthermore, it has been realised that a healthy state does not only involve the absence of symptoms, but also the presence of positive well-being. A similar shift in reasoning has become apparent in the domain of mental health, as psychiatric settings look to patients for a consumer’s perspective of their experience (Masthoff et al. 2006).

In a psychiatric setting, quality of life has been defined as a patient’s personal evaluation of their own functioning and life circumstances (Ritsner et al. 2002). This definition of quality of life involves a subjective construct, offering a ‘patient-centred’ focus which potentially provides important information that may be missed in traditional measures of symptom severity or outcome assessments. It does not rely on an external clinical judgement of a patient’s symptoms and wellbeing (Basu 2004). The value of assessing quality of life in psychiatric settings is supported by research which suggests that patients with a mental health diagnosis report a consistently lower quality of life than those without (Rapaport et al. 2005; Masthoff et al. 2006).

Despite the trend to include quality of life assessments in mental health, it has been suggested that measures of quality of life may be redundant in acute psychiatric settings. Arguably a close relationship with some symptom measures (in particular those measuring mood state) has been cited as evidence that quality of life measures add little value to understanding variables of interest to major stakeholders in psychiatric care (Endicott et al. 1993). Therefore, if measures of quality of life and measures of symptoms (e.g., depression) assess identical or overlapping constructs, then there will be little value in adding quality of life assessments to psychiatric test batteries.

The present study investigated the value of adding the Quality of Life Enjoyment and Satisfaction Questionnaire (Q-LES-Q; Endicott et al. 1993) to outcomes assessment at Perth Clinic, a private psychiatric hospital in Western Australia. The value of the Q-LES-Q in this setting was evaluated by examining the following: (i) the measure’s sensitivity to change from admission to discharge; (ii) the nature of relationships with other measures in use; and (iii) the incremental ability to predict variables of interest to stakeholders (namely patient outcomes, length of stay, and readmission within one month).

Method

Participants

The potential sample consisted of 1,884 consecutive inpatient admissions treated at Perth Clinic over a two year period for whom Q-LES-Q data were available at both admission and discharge. Each patient was given a diagnosis at admission by their treating psychiatrist based on ICD-10-AM criteria (National Centre for Classification in Health Publications 2002), and the sample consisted predominantly of patients who met diagnostic criteria for mood or affective disorders (68%). To provide a clearer picture of the incremental validity of the quality of life measure, the sample was restricted to patients within this diagnostic domain (n = 1276). Of this sample 949 patients were female, and ages ranged from 14 to 92 years (M = 41.1, SD = 14.8). Forty-eight percent of these patients reported being married or in a de facto relationship, with the remainder being single, separated, or widowed. Written informed consent for use of the data was obtained from patients upon admission to the hospital.
Programmes

In accordance with hospital policy, all patients in the study were encouraged to participate in group therapy programmes to complement their ongoing psychiatric care. Therapy streams at Perth Clinic accommodate a range of patient functioning and needs by offering a variety of treatment approaches, including Cognitive Behavioural Therapy, Interpersonal Therapy, Brief Solution-focussed Therapy, and Structured Activity-based Therapy. Patients are allocated to therapy streams based on the recommendations of their treating Psychiatrist, but these differences were not a focus of the present analyses.

Design

A within-subjects, repeated measures design allowed patient outcomes and instrument sensitivity to be examined. All measures listed below were routinely administered at admission and discharge from the hospital. Mean length of stay for the sample (and hence mean time between test and retest) was 15.62 days ($SD = 9.77$). The relationships between measures at admission and discharge were examined through correlation and multiple regression analyses.

Measures

The Medical Outcomes Short Form Questionnaire (SF-36) is a patient self-report measure of health status that has been used widely across different patient groups and diagnostic categories (Ware et al. 1993). Perth Clinic uses the four subscales which address mental health outcomes, consisting of 14 items assessing vitality, role functioning, social functioning and mental psychological distress (over the past few days). As the Social and Role Functioning domain scores are determined by single items, the present analyses involved only the Mental Health and Vitality subscales. Internal consistency has been reported as good for both subscales (Scott et al. 1991), and the SF-36 has been shown to demonstrate good construct validity (Ware et al. 1993).

The Depression Anxiety Stress Scale (DASS; Lovibond & Lovibond 1995) has been designed to assess levels of depression, anxiety and stress experienced by patients over the past few days. Perth Clinic uses the 21-item self-report version. The internal consistency has been reported as high, and the construct validity as sound (Lovibond & Lovibond 1995). While the subscale scores are considered individually for most analyses reported here, a combined DASS score was also used as a gauge of patient outcome at discharge (derived by summing the z-scores of the subscales to provide a composite measure of negative emotional symptoms at discharge, as suggested by Lovibond & Lovibond, 1995).

The Health of the Nation Outcome Scale (HoNOS: Wing et al. 1998) is a clinician-rated scale which assesses patient functioning over the past two weeks in 12 domains. It demonstrates good construct validity (Wing et al. 1998), and moderate internal consistency (a product of the diverse range of the scale items; Page, Hooke & Rutherford 2001). Staff received regular training in administering the HoNOS during the study period to ensure inter-rater reliability.

The Quality of Life Enjoyment and Satisfaction Questionnaire (Q-LES-Q; Endicott et al. 1993) is a self-report measure designed to assess the degree of enjoyment and satisfaction experienced in daily functioning by patients over the past week. The shortened form of the Q-LES-Q was adopted by the hospital for this evaluation. This version consists of 16 items assessing three domains of subjective well-being (general activities, satisfaction with medication and life satisfaction), and the present analyses were based on the 14 items of the General Activities subscale. The Q-LES-Q has been shown to have high internal consistency, and good construct validity (Endicott et al. 1993; Ritsner et al. 2002).
Results

Sensitivity to change

Statistically significant patient improvements from admission to discharge were seen across all instruments (see Table 1 for means and effect sizes). This confirms that even in the relatively short period of an acute inpatient admission, improvements could be demonstrated in both symptomatology and subjective well-being.

Scores on the Q-LES-Q showed a 1.31 standard deviation improvement, which was comparable in magnitude to improvements in symptom measures. Therefore in comparison, the Q-LES-Q demonstrated appropriate sensitivity to change.

Table 1 Summary of change in measures from admission to discharge.

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Admission Mean (SD)</th>
<th>Discharge Mean (SD)</th>
<th>d'</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DASS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depression</td>
<td>1262</td>
<td>33.35 (10.68)</td>
<td>17.63 (13.10)</td>
<td>-1.47</td>
</tr>
<tr>
<td>Anxiety</td>
<td>1262</td>
<td>23.16 (11.88)</td>
<td>14.00 (11.10)</td>
<td>-0.77</td>
</tr>
<tr>
<td>Stress</td>
<td>1262</td>
<td>30.55 (10.45)</td>
<td>17.83 (11.73)</td>
<td>-1.22</td>
</tr>
<tr>
<td><strong>SF-36</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mental Health</td>
<td>1264</td>
<td>29.87 (19.17)</td>
<td>55.22 (22.49)</td>
<td>1.32</td>
</tr>
<tr>
<td>Vitality</td>
<td>1264</td>
<td>22.13 (20.00)</td>
<td>45.14 (23.07)</td>
<td>1.15</td>
</tr>
<tr>
<td><strong>HoNOS</strong></td>
<td>1256</td>
<td>11.18 (4.87)</td>
<td>4.60 (3.43)</td>
<td>-1.35</td>
</tr>
<tr>
<td><strong>Q-LES-Q</strong></td>
<td>1276</td>
<td>32.29 (16.13)</td>
<td>53.41 (19.25)</td>
<td>1.31</td>
</tr>
</tbody>
</table>

d' = (discharge mean – admission mean)/admission standard deviation.

Relationship with other measures

The relationships between the Q-LES-Q and other measures in the hospital’s assessment battery were examined via correlation analyses (see Table 2 for Spearman correlation coefficients between measures at admission and measures at discharge). Unsurprisingly, scores on the Q-LES-Q appear to be closely related to clinical measures over the same period. At admission, correlations with the Q-LES-Q ranged from - .22 (with the HoNOS) to - .58 (with the depression subscale of the DASS). At discharge the Mental Health (r = .74) and Vitality (r = .73) subscales of the SF-36 demonstrated the strongest relationship with the Q-LES-Q. All relationships between the Q-LES-Q and symptom measures increased from admission to discharge.

The comparatively weaker relationship between the HoNOS scale and other measures has been reported elsewhere, and can be attributed to the restricted range of the HoNOS scale (Page, Hooke & Rutherford 2001). The general pattern of results imply that improvements in quality of life are associated with a reduction in depressive symptoms (as measured by the DASS) and improvements in overall mental health and vitality (as measured by the SF-36), but are not equivalent to them. That is, the Q-LES-Q is measuring something in addition to what is currently being captured by the hospital’s measures. The increase in the strength of the relationships from admission to discharge might reflect that quality of life could be more accurately reflected at admission (when the patient considers their functioning over the past two weeks within their normal home, work and relationship environments) than at discharge (when their quality of life becomes increasingly synonymous with symptomatology within the more ‘artificial’ environment of the hospital).
Table 2 Spearman correlation coefficients for assessment measures at admission (top right diagonal) and at discharge (bottom left diagonal).

<table>
<thead>
<tr>
<th></th>
<th>Admission Measures</th>
<th>Discharge Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DASS Depression</td>
<td>DASS Anxiety</td>
</tr>
<tr>
<td><strong>Depression</strong></td>
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<td></td>
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<tr>
<td>Depression</td>
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<tr>
<td>Anxiety</td>
<td>.65**</td>
<td>.65**</td>
</tr>
<tr>
<td>Stress</td>
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<td>.76**</td>
</tr>
<tr>
<td><strong>SF-36</strong></td>
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<td></td>
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<tr>
<td>Mental Health</td>
<td>-.76**</td>
<td>-.57**</td>
</tr>
<tr>
<td>Vitality</td>
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<tr>
<td>HoNOS</td>
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<td>.23**</td>
</tr>
<tr>
<td><strong>Q-LES-Q</strong></td>
<td>-.68**</td>
<td>-.51**</td>
</tr>
</tbody>
</table>

*p < .05, ** p < .01

**Predictive ability**

Multiple regression analyses were conducted to determine the ability of the hospital’s measures to predict patient outcomes at discharge, length of stay in hospital, and number days to next readmission. Incremental predictive ability was compared across three sets of predictors: (i) demographic information (patient sex, age at admission, and marital status); (ii) traditional assessment measures (DASS Depression, Anxiety and Stress subscales; the SF-36 Mental Health and Vitality subscales; and total HoNOS score); and (iii) the Q-LES-Q scores (admission and discharge).

A preliminary regression analysis suggested that all three sets of predictors combined could account 20% of the variance in patient outcome at discharge (as gauged by a square-root transformation of the combined DASS score at discharge; \( F(8, 1236) = 37.5, p < .01 \)). A subsequent evaluation of the incremental predictive ability of each set indicated that demographic information accounted for 3.4% of the variance in discharge outcome (age: \( \beta = -.09 \); marital status: \( \beta = .06 \)), and admission measures an additional 16.2% of variance in discharge outcome (combined DASS at admission: \( \beta = .33 \); general mental health at admission: \( \beta = .09 \); HoNOS at admission: \( \beta = .07 \)). The inclusion of the Q-LES-Q admission scores added no statistical value to this model. Not surprisingly this confirmed that the greatest predictor of negative emotional symptoms at discharge was the same construct measured at admission to the hospital.

The same three sets of predictors were applied to predicting length of stay (gauged by a logarithmic transformation of admission length in days). A small but significant amount of variance in length of stay was accounted for by the combined regression model \( [R^2 = .07; F(17, 1206) = 5.32, p < .01] \). A secondary analysis was conducted to evaluate incremental predictive ability. All three sets of predictors yielded significant regression equations \( (p < .01) \). Demographic information alone accounted for 1.2% of the variance in length of stay (sex: \( \beta = -.06 \); age: \( \beta = .10 \)), while the inclusion of symptom measures accounted for an additional 4.2% of the variance (depression at admission: \( \beta = .09 \); anxiety at discharge: \( \beta = .14 \); general mental health at discharge: \( \beta = -.14 \)). The addition of Q-LES-Q data accounted for a further 1.6% of variance in length of stay (quality of life at admission: \( \beta = -.15 \); at discharge: \( \beta = -.17 \)).
This was significant even after taking into account the contribution made by demographic information and all symptom measures at admission and at discharge. It could be that a poor evaluation of quality of life is associated with an increase in anxiety as the possibility of discharge approaches (related to a patient’s negative appraisal of their own ability to function in day-to-day life). This could reduce a patient’s perceived readiness for discharge, potentially extending their length of stay.

Finally, the ability to predict the number of days passing before readmission to the hospital was explored. The inclusion of all three sets of predictors yielded poor and non-significant predictive ability \( R^2 = .005, p = 0.38 \). This could simply be a reflection of the wide range of variables that might influence readmission (including community support issues, severity or chronicity of disorder, clinician or hospital admission policies; Lyons et al. 1997).

**Discussion**

Analyses revealed that all outcome measures in the hospital’s assessment battery, including the Q-LES-Q, were sensitive to change and showed substantial improvement in the relatively short period from admission to discharge. In a quality assurance sense, this is valuable information for a psychiatric service provider. It is also reassuring to note that subjective improvements in well-being and functioning (as measured by the Q-LES-Q) were perceived by patients in addition to the desired improvements in traditional symptom measures, despite perhaps not being the overt focus of treatment during an acute psychiatric admission.

Whilst the Q-LES-Q was significantly correlated with clinical outcome measures, it was not totally redundant with them, suggesting that the measure brings some unique information to the assessment battery. It is also of note that the divergence from clinical measures was seen despite the stringent test provided by the restricted sample of mood and affective disorder diagnoses, and within the somewhat ‘artificial’ environment of an acute psychiatric hospital, where quality of life might be expected to mirror symptomatology more closely. Skevington and Wright (2001) suggested that mood state was only one of several important factors influencing a perceived quality of life, including environment, current situation and recent events. In light of this and the present findings, it could be hypothesised that quality of life would diverge further from clinical outcome measures in the period following discharge, when the construct might be more accurately reflected.

In terms of predictive ability, the Q-LES-Q unsurprisingly added little to the ability to predict clinical outcomes, while none of the outcome measures contributed to accurately predict readmission. A small but significant predictive relationship with length of stay was again seen despite intentionally restricting the sample, but the implications for wider service improvement are minimal.

If however we consider the association between quality of life, discharge anxiety, and length of stay, and the notion that quality of life might have increasing relevance post-discharge, there may be a role for applying the Q-LES-Q at a more individualised, clinical level. The content of the scale has potential for informing treatment and discharge planning, and may facilitate suitable referrals for support within the community or identify areas of concern for the patient which could be delaying their discharge.

These options warrant further exploration before the inclusion of the Q-LES-Q could be unconditionally recommended to an acute inpatient facility. While it is encouraging to identify improvements in quality of life over the short period of an admission, it is still unclear if the construct is being accurately reflected within the hospital setting.
References


