THE QUALITY OF WELL-BEING SCALE: COMPARISON OF THE INTERVIEWER-ADMINISTERED VERSION WITH A SELF-ADMINISTERED QUESTIONNAIRE

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The Quality of Well-being Scale (QWB) is a general measure of health-related quality of life that has been used in a wide variety of population and clinical studies. One of the major disadvantages of the QWB is that it requires a trained interviewer. Recently, a self-administered version of the QWB was developed. The purpose of this study was to compare the self-administered QWB with the established interviewer-administered form. The respondents were 218 English speaking adults who attended primary care clinics. Each respondent was evaluated twice with an interval of one month in-between. At each session respondents were randomly assigned to complete either the interviewer-administered or self-administered QWB, resulting in a 2 x 2 factorial design. Data from the study demonstrated that the self-administered QWB yields scores equivalent to the interviewer-administered form. Further, QWB scores remain stable over the course of a one month interval. The results suggest that an inexpensive self-administered QWB may produce data comparable to the more difficult and expensive interviewer-administered version. Disadvantages of self-administered forms are also discussed.

KEY WORDS: Quality of Well-being Scale (QWB), Quality of Life Measurement, assessment method, interviewer.

INTRODUCTION

The assessment of quality of life has developed dramatically over the past two decades. Among the many instruments now available, only a few have been validated in different populations. Further, there are a limited number of measures that can used for cost-utility comparisons. One of these instruments is the Quality of Well-being Scale (QWB). The Quality of Well-being scale is a preference-weighted measure combining three scales of functioning with a measure of symptoms and problems to produce a point-in-time expression of well-being that runs from 0 (for death) to 1.0 (for asymptomatic full function). The QWB is used as one component in a General Health Policy Model (GHPM) (Kaplan, 1993a, 1993b; Kaplan and Anderson, 1996; Kaplan, Anderson and Ganiats, 1993). This model includes several components. The major aspects of the model include mortality (death) and morbidity (health-related quality of life). In several papers, we have suggested that diseases and disabilities are important for two reasons. First, illness may cause the life expectancy to be shortened. Second, illness may make life less desirable at times prior to death (health-related quality of life) (Kaplan and Anderson, 1996; Kaplan et al., 1993).

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was associated with several events, ultimately resulting in underestimation of population

breast awareness. Results from these studies suggested that self-assessment seems

unreliable at best and may even overestimate the actual number of cases. Populations have

been classified into high-risk and low-risk groups based on the annual self-assessment

rate. However, these classifications are not always accurate, as the majority of women

appear to have a positive assessment even when they have not had a mammogram.

The quality of self-assessment is difficult to assess, and the results may vary widely.

The OAVT scale is designed to measure the quality of self-assessment and to identify

women who are at risk of developing breast cancer. The scale consists of 10 questions,

which are answered on a 5-point scale ranging from strongly disagree to strongly agree.

A score of 4 or less indicates a high risk of breast cancer, while a score of 5 indicates a

low risk. The scale is intended to be used as a screening tool for high-risk women,

and it is important to note that a score of 4 or less does not necessarily mean that

a woman is at high risk.

The OAVT scale is used in conjunction with other screening methods, such as mammograms

and clinical examinations. It is recommended that women who score high on the OAVT

scale undergo further testing, such as mammograms or biopsy, to confirm the presence

of breast cancer.

The OAVT scale is not a replacement for mammograms or other screening methods,

but it is a useful tool in identifying women who may be at risk of developing breast cancer.

The use of the OAVT scale can help to identify women who may benefit from additional

testing and early intervention, which can improve outcomes for women with breast cancer.
health status. We believe that these problems are not unique to the QWB, but are associated with all self-administered questionnaires (Anderson et al., 1986, 1988; Anderson, Kaplan and DeBon, 1989). Refinements in the questionnaire may circumvent these problems. There would be widespread application of a utility-based, self-administered instrument if such refinements could be incorporated into a measure that produces QALYs. The demand for rapid health status assessment is exemplified by the current widespread use of the SF-36. In response to this demand, we are in the process of developing a self-administered version of the QWB, known as the QWB-SA. The current version of the QWB-SA can be printed on two sides of a single page and takes about 10 minutes to complete.

The development of new forms of the QWB has gone through several stages. First, a new list of symptoms and problems was developed. The current version of the QWB uses a list of 26 symptoms or problems. The QWB-SA has 58 symptoms. The improved symptoms assessment not only better reflects health status, it more closely resembles a clinical review of symptoms, thus increasing the clinical utility of the QWB-SA.

The format for the QWB-SA includes five sections. The first section asks about acute and chronic symptoms. Respondents are asked, in a yes–no format if they have each of 19 chronic symptoms or problems. Examples are blindness or severely impaired vision in both eyes (a separate item asks about one eye), speech problems, and so on. Part 1 also asks about 25 acute physical symptoms (i.e. headache, coughing or wheezing, shortness of breath or difficulty breathing) and 14 mental health symptoms (trouble falling asleep or staying asleep, spells of feeling upset, downhearted or blue, feelings of being lonely or isolated). The format for these items requests respondents to think back over the last three days and indicate if the symptom was present on no days, yesterday, two days ago, or three days ago (multiple responses are allowed). Part II uses a similar format and asks about self care. It includes two items asking if the respondent had been in an institution (hospital) and whether they needed help with self care such as eating, dressing, bathing, or getting around the home. Part III asks about mobility, use of public transportation or driving or confinement to a home or hospital. Part IV considers physical activity and asks about performance of physical functioning, such as walking, confinement to a bed or chair or movement of a wheelchair. Performance of usual activity, such as work, school, or housework is evaluated in Part V.

The purpose of this study was to evaluate the reliability and validity of the questionnaire as well as compare its psychometric properties to the interviewer-administered version of the QWB.

METHOD

Sample

A total of 375 English-speaking adults were approached at primary care clinics within the University of California, San Diego (UCSD) Healthcare Network in San Diego, California. Of these, 94 people refused to participate or did not provide enough information to be contacted for interview. Of the remaining 281 respondents, 63 were dropped from the analyses because they did not complete an assessment at either baseline or one month. Thus, a total of 218 respondents completed assessments at both timepoints. The sample included 123 females (56%) and 95 males (46%) between the ages of 18 and 85 (mean age = 48 years).
The data were analyzed by comparing OVP scores at both the baseline and one-month assessment. The ANOVA was calculated separately for first administers and second administration. The ANOVA was calculated separately for first administers and second administration. The ANOVA was calculated separately for first administers and second administration.

RESULTS

A second condition of the design is that it allows for within-subjects comparisons. The between and within-subjects components of the design allow cross-comparisons, which could have implications for the course of time. Dependent measures were taken after each administration. The ANOVA was calculated separately for first administers and second administration. The ANOVA was calculated separately for first administers and second administration.

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Table 1  Means and standard deviations for QWB by mode of administration

<table>
<thead>
<tr>
<th>Mode</th>
<th>Baseline</th>
<th></th>
<th>One month</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>Interviewer</td>
<td>0.704</td>
<td>0.105</td>
<td>0.718</td>
<td>0.106</td>
</tr>
<tr>
<td>SA</td>
<td>0.706</td>
<td>0.108</td>
<td>0.709</td>
<td>0.120</td>
</tr>
</tbody>
</table>

Table 2  Summary of 2 × 2 ANOVA outcome of QWB scores at baseline and 1 month

<table>
<thead>
<tr>
<th>Factor</th>
<th>Baseline</th>
<th></th>
<th>One month</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>df</td>
<td>Ms</td>
<td>F</td>
<td>df</td>
</tr>
<tr>
<td>Method (baseline)</td>
<td>1</td>
<td>0.008</td>
<td>0.68</td>
<td>1</td>
</tr>
<tr>
<td>Method (One Month one month)</td>
<td>1</td>
<td>0.004</td>
<td>0.361</td>
<td>1</td>
</tr>
<tr>
<td>Interaction</td>
<td>1</td>
<td>0.001</td>
<td>0.100</td>
<td>1</td>
</tr>
<tr>
<td>Residual</td>
<td>241</td>
<td>0.012</td>
<td>0.012</td>
<td>240</td>
</tr>
</tbody>
</table>

Figure 1  Scatterplots of baseline versus one month scores for interviewer–interviewer, \( r = 0.60 \) (upper left), self–interviewer, \( r = 0.61 \) (upper right), interviewer–self, \( r = 0.65 \) (lower left) and self–self, \( r = 0.77 \) (lower right) conditions.
Improvements in OWP scores for patients with gynecologic tumors (Carcinoma, N.L. Ross Hypothesis) are less likely to occur if the patient is not responsive to chemotherapy. The administration of the OWP-SVA has been associated with a variety of patient organismic, metabolic, and emotional changes. The results of the OWP-SVA in patients who are not responsive to chemotherapy may be due to changes in the patient's psychological and emotional state. The OWP-SVA is effective in patients who are not responsive to chemotherapy. The results of the OWP-SVA in patients who are responsive to chemotherapy may be due to changes in the patient's physical state.

In the present study, OWP scores were relatively stable over time, with no evidence of change in the self-administered form. However, the risk of more serious data was observed. Despite these disadvantages, we feel that the self-administered form is useful in the assessment of self-administered interactions. This is the case for self-administered interactions, which is a measure of self-administered interactions.

In other studies, we have found that self-administered forms are significantly higher for scores expected to show improvement in OWP scores. These are expected to show improvement in OWP scores. This is the case for self-administered interactions, which is a measure of self-administered interactions.

One important component of the OWP is the preference for self-administered forms. We are currently developing a new preference for self-administered forms. This allows a zero effect of the condition. These methods differ in more ways from the self-administered form. The self-administered form was applied to the study of the standardized versions of the self-administered form. This allows a zero effect of the condition. These methods differ in more ways from the self-administered form. The self-administered form was applied to the study of the standardized versions of the self-administered form. This allows a zero effect of the condition.

DISCUSSION

The correlations described from 0.00 (intercept-only) to 0.77 (self-SVA) represent a unique combination. All the patients were selected to be in stable health. Scores for the two forms of administration were nearly identical. This finding was consistent with the hypothesis that the self-administered form was more effective in reducing symptoms than the self-administered form. OWP-SVA has no training on gynecologic and records more symptoms than the self-administered form. These methods differ in more ways from the self-administered form. The self-administered form was applied to the study of the standardized versions of the self-administered form. This allows a zero effect of the condition. These methods differ in more ways from the self-administered form. The self-administered form was applied to the study of the standardized versions of the self-administered form. This allows a zero effect of the condition.
and Kaplan, 1989) and the method has been responsive to a variety of different surgeries including surgery for chronic sinusitis (Hodgkin, 1994) and cochlear implant (Harris, Anderson and Novak, 1995). In addition, the QWB is responsive to medications expected to have a minor effect, such as oral gold treatment for patients with arthritis (Bombardier, Ware, Russell, Larson, Chalmers and Read, 1986) or medications that have a larger effect such as AZT for patients with HIV infection (Kaplan, Anderson, Wu, Mathews, Kozin and Orenstein 1989).

It might be argued that the failure to find differences between the two forms of administration is the result of low statistical power. In order to consider this issue, we conducted a post-hoc power analysis assuming a power of 0.90 with the probability of a type one error of 0.95. Given the variability seen in these samples, we should have been able to detect a difference of 0.02 (on the 0 to 1.0 scale). Differences less than 0.02 are usually regarded as so small that they are not clinically meaningful.

The validity of the QWB-SA remains unestablished. However, these findings are encouraging because they suggest that the QWB-SA may serve as a simple and inexpensive proxy for the traditional interviewer-administered QWB. The QWB has now been used in a wide variety of different studies. The measure has been used in both population and clinical studies. For example, estimates from the U.S. National Health Interview Survey compared three problems: sinusitis, diabetes, and chronic lung disease. In each of three age groups, sinus disease is shown to be a less serious problem than diabetes which, in turn, has less impact than emphysema (Erickson et al., 1989).

The QWB has also been compared to measures of cognitive impairment for patients with Alzheimer’s Disease. Those with disease are significantly lower on the QWB and the degree of illness is systematically related to QWB score (Kerner, Patterson and Kaplan, 1997). A variety of studies have evaluated the relationship between QWB and HIV disease. These studies, which were conducted at the UCSD HIV Neurobehavioral Research Center (HNRC), evaluated the relationship between neurocognitive impairment, disability, and the QWB. Those with less than 200 CD4+ cells (full AIDS) had significantly lower QWB scores than those with 200–500 and those with over 500 cells. The differences between those with less than 200 CD4+ cells and those with greater than 500 cells was about 0.13 units of well being, suggesting that individuals lose 13/100 QALYs for each year they are in the AIDS category in comparison to the asymptomatic groups. In comparison to the uninfected controls, this would equal a one year of life loss for each 7.69 infected individuals. The QWB was shown to be significantly associated with Beta-2 Micro-globulin quartile ($p<0.03$), neurologists’ ratings of dysfunction ($p<0.01$), clinician ratings of neuropsychological impairment ($p<0.04$), future vital status ($p<0.05$) and several psychiatric variables including Profile of Mood States (POMS) scores for vigor ($p<0.001$) and dejection ($p<0.001$). Multivariate models demonstrated high covariation between predictors of QWB. These results suggest that the QWB is a significant correlate of biological, neuropsychological, neurological psychiatric, and mortality outcomes for male HIV-infected patients (Kaplan, Anderson, Patterson et al., 1995).

Other applications of the QWB include chronic obstructive pulmonary disease (Kaplan, Atkins and Timms, 1984), AIDS (Kaplan et al., 1989), cystic fibrosis (Orenstein et al., 1989), diabetes mellitus (Kaplan, Hartwell, Wilson and Wallace, 1987), atrial fibrillation (Ganiats, Palinkas and Kaplan, 1992), lung transplantation (Squier, Ries, Kaplan et al., 1995), arthritis (Kaplan, Kozin and Anderson, 1988), cancer (Kaplan, 1993c) depression (Kaplan, 1997) schizophrenia (Patterson, Kaplan, Grant et al., 1996) and several other conditions (Kaplan, 1993a). Further, the method has been used for
References

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to evaluate the self-administered version.

In summary, the OWB is a general measure of health-related quality of life with some
health resource allocation modeling and thus serves as the basis for an innovative exper-

R. Kaplan ET AL.


