

## THE PSYCHOMETRIC PROPERTIES OF A SCALE FOR ASSESSING QUALITY OF LIFE OF PEOPLE WITH LEARNING DISABILITIES IN RESIDENTIAL CARE

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### Introduction

Quality of life is an important outcome for a variety of health and social services (McDowell and Newell, 1987; Bowling, 1991; Schalock *et al.*, 1989). The definition of quality of life generally has been in terms of objective social indicators or subjective responses to life experiences and conditions (Schalock *et al.*, 1989; Schalock, 1990). It has been suggested that the development of clear subjective and objective standards for measuring quality of life of people with learning disabilities would enable services to be evaluated and provided more effectively (Landesman, 1986). There are a small number of quality of life measures that are specifically designed for people with learning disabilities. There

are those that measure satisfaction with various aspects of services (e.g., Schalock *et al.*, 1990; Heal and Chadsey-Rusch, 1985) and those that measure the degree to which services comply with ideological standards such as normalisation (e.g., Wolfensberger and Glenn, 1975).

Studies have reported the psychometric properties of some of these scales. They generally report inter-rater and internal reliabilities of scales which are important features of the data provided. Some studies also report the factor structure of these scales. This is of particular interest as it demonstrates the underlying structure of the different approaches to operationalization of a concept such as quality of life for people with learning disabilities. For example the Program Analysis of Service

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Systems (PASS) (Wolfensberger and Glenn, 1975) is a widely used assessment of the degree to which services comply with Normalisation principles. The factor structure of PASS has been presented based on its application in 256 services for people with learning disabilities (Flynn, 1980). The analysis found a four factor solution accounting for 41% of the total variance; the factors were labelled Program Normalisation, Proximity and Access, Setting Normalisation and Administration. The Quality of Life Questionnaire is an American questionnaire for people with learning disabilities. The psychometric properties of this questionnaire have been described based on a sample of 562 people with learning disabilities (Schalock *et al.*, 1990). This analysis also found a four factor solution. The factors are: Empowerment/ Independence, Competence/ Productivity, Satisfaction, Social Belonging/Community Integration. The factors account for 33.7% of the total variance.

*Living in a supervised home: A Questionnaire on Quality of Life* (Cragg and Harrison, 1986) is a British scale including both subjective and objective indicators of quality of life, based upon the principles of normalisation. The questionnaire is made up of seventy questions in three parts. Part one consists of fifty-three questions that are completed by interviewing staff and residents; part two consists of nine questions that are completed by raters recording their objective observations; part three consists of eight questions that are completed by the rater recording their subjective

impressions of the home. Each question is scored on a three- or four-point ordinal scale, the scoring of which is carefully operationalized. The questionnaire divides into eight independent subscales; 1) the physical details of the homes, 2) the access to the community afforded by the home, 3) the leisure opportunities available, 4) the community integration achieved by the residents, 5) the routines within the home, 6) resident education and training, 7) staff behaviour, 8) opportunities for residents to express choices and make decisions. The scale has been used in evaluation studies of British services for people with learning disabilities (e.g., Fleming and Sternfert-Kroese, 1990; Donnegan and Potts, 1988) and is widely known but its psychometric properties have not previously been reported.

This paper presents an analysis of the psychometric properties of the *Questionnaire on Quality of Life* (Cragg and Harrison, 1986) using data obtained as part of a service evaluation. We present the factor structure, inter-rater reliability and internal reliability. The importance of having quality of life scales with known psychometric properties is discussed.

## Method

### *Subjects*

As part of a larger study the *Questionnaire on Quality of Life* (Cragg and Harrison, 1986) was administered to 65 people with learning disabilities who

lived in 18 houses for three or four people in the community. The group consisted of 52 (80%) men and 13 (20%) women; they had a mean age of 62.4 years ( $SD = 13.5$ ). Wessex scales (Kushlick *et al.*, 1973) were available for all residents, of whom 17 (26%) had no disability in the areas of mobility, self-help, continence or challenging behaviour.

### Procedure

The questionnaires were administered by seven members of the Solihull Healthcare Community Psychology Service between September 1992 and April 1993. Where possible the questionnaire was completed in one 3 hour session in the home. Key residential and day service staff were present as were the residents of the home.

For the purpose of inter-rater reliability assessment, the questionnaire was completed with the first 28 people with learning disabilities by two raters independently. In these cases one rater interviewed the staff members and residents and the

second rater observed the interview and made ratings based on the answers.

## Results

### Factor Analysis

Data for individuals from the same home tend to be similar as many of the features of quality of life are dependent on the environment. For the purpose of the factor analysis we have taken one person at random from each of the 18 homes. Thus, statistical problems caused by data not being independent were avoided. The scores for the 8 subscales were subjected to a principle components factor analysis using an orthogonal varimax rotation. The analysis indicated two factors which accounted for 56% and 14% of the total variance respectively. TABLE I shows the factor loadings.

The two factors suggested from the present analysis are:

**Factor 1:** The items loading on this factor are Community Access, Leisure, Social Integration, Education and Training and

TABLE I  
Factor structure of the Questionnaire on Quality of Life

Scales	Factor 1	Factor 2
Physical Details	-0.01	<b>0.88</b>
Community Access	<b>0.67</b>	0.40
Leisure	<b>0.64</b>	<b>0.61</b>
Integration	<b>0.65</b>	<b>0.51</b>
Routines	0.30	<b>0.67</b>
Education and Training	<b>0.78</b>	0.36
Staff Behaviour	<b>0.89</b>	-0.07
Decision Making	0.40	<b>0.69</b>

Staff Behaviour. The items included in community access, education and training and staff behaviour are largely under the control of staff and external agencies. This factor has been labelled 'service centred quality of life'.

**Factor 2:** Physical details, leisure, social integration, routines, and decision making. The items included in physical details, routines and decision making are areas into which residents have a systematic input. This factor has been labelled 'resident centred quality of life'.

Leisure and social integration load on both factors. Items in these sub-scales are those that are under the control of both staff and residents.

#### *Inter-rater Reliability*

Kendall's Tau was calculated for all questions. The mean value for this data was 0.64 (SD = 0.31). However, there

was little variability in the data for some items and in these cases Kendall's Tau is not appropriate. In order to overcome this a simple percentage agreement was also calculated. The mean percentage agreement for these data is 78% (SD = 15). The inter-reliability of the eight sub-scales was calculated using Pearson's *r*; results are shown in TABLE II.

#### *Internal Reliability*

Cronbach's Alpha for the eight sub-scales and the total score is shown in TABLE II. Item-total point biserial correlations for the sub-scales and the total scale are also shown in this table.

## Discussion

The factor structure of the scale reflects a distinction between control retained by staff and that available to

**TABLE II**  
Cronbach's alpha, item-total correlations (point biserial correlation) and inter-rater reliability (Pearson's *r*) for each of the 8 sub-scales and the total scale for the *Questionnaire on Quality of Life*

Scale	Number of items	Alpha	Item-total correlations		Inter-rater Reliability (Pearson's <i>r</i> )
			Mean	SD	
Physical Details	10	0.77	0.52	0.35	0.96
Community Access	5	0.66	0.42	0.16	0.79
Leisure	9	0.82	0.52	0.26	0.74
Integration	3	0.53	0.35	0.11	0.84
Routines	6	0.73	0.51	0.08	0.31
Education and Training	10	0.76	0.44	0.14	0.68
Staff Behaviour	11	0.43	0.19	0.22	0.80
Decision Making	16	0.87	0.52	0.17	0.86
Total Scale	70	0.94	0.43	0.25	0.90

people with learning disabilities. The sub-scales over which staff have the greatest amount of control are Access to the Community, Staff Behaviour and Education and Training. The items that people with learning disabilities have most control over are the Physical Details of the home, Routines and Decision making. Two sub-scales load on both factors. These contain some items in which staff have retained control, some in which control has been offered to people with learning disabilities. The factor structure found here has a level of simplicity that makes it useful in reporting findings to carers and in helping them use the information within their quality processes. However, the analysis needs to be replicated in studies of other groups of people with learning disabilities in other environments.

Quality of life is an increasingly important variable in the evaluation of residential services for people with learning disabilities. Although the concept has been defined in a variety of ways it is important, not only that quality of life measures have face validity and are theoretically grounded but also that they are psychometrically sound. The *Questionnaire on Quality of Life* (Cragg and Harrison, 1986) is based on the principles of Normalization, which is a widely accepted ideological base for the provision of services to people with learning disabilities. This paper has described the psychometric properties of the scale. It has good inter-rater and internal reliability and a factor structure that will be easily interpretable within services.

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