Improvement in quality of life of dialysis patients during six months of exercise

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Introduction

Quality of life (QOL) assessment has rapidly become an integral variable of outcome in clinical research; over 1,000 new articles each year are indexed under "quality of life" (1). Despite the proliferation of instruments and the burgeoning theoretical literature devoted to QOL evaluation, no unified approach has been derived for its measurement, and little agreement has been attained on what it means (2). Lack of clarity regarding the definition of QOL has led to several related concepts, namely functional status, life-satisfaction, well-being, and health status, being used interchangeably with QOL (3), further contributing to ambiguity.

Compared to the general population, patients with end-stage renal disease (ESRD) experience a poorer QOL (4). Questionnaire-based QOL measurement in ESRD has demonstrated that QOL is best in renal transplantation and worst in unit-based haemodialysis. The main determinants of difference are the physical function domains.

QOL in ESRD has traditionally been measured by a number of disease-specific, domain-specific and generic instruments, all exhibiting a fixed design. However, the fixed nature of the aforementioned instruments, is problematic in that what is measured is predetermined and hence may not represent the free choice of the individual whose QOL is assessed (5). Questionnaire-based instruments may not reflect individual priorities.

Key words

- Quality of life
- Exercise
- Intervention

THE AIMS OF THE PRESENT STUDY were to evaluate the impact on QOL of a six-month exercise training intervention, using a non-questionnaire based instrument, the Schedule for the Evaluation of individual Quality of Life (SEIQoL).

The study

The SEIQoL (6) is a patient-centred structured interview technique in which the subject is asked to: identify five themes that impinge on subjective QOL; rate each theme on a scale ranging from 'as bad as could possibly be' to 'as good as could possibly be', and finally, rank each theme in order of importance, to generate a final global score out of 100.

The exercise intervention was of six months duration, and comprised three sessions per week of forty minutes of accumulated moderate-intensity aerobic cycle ergometer exercise. Haemodialysis (HD) patients exercised on the dialysis unit, thirty minutes into dialysis. Continuous ambulatory peritoneal dialysis (CAPD) patients exercised in a supervised gym,

Patients' SEIQoL was measured at the start and at three and six months of exercise, and compared with that of twenty-two



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	Dialysis	Controls
Number	10 HD; 8 CAPD (18)	19
Gender	14 male; 4 female	13 male; 6 female
Age (years)	58.3 ± 15.2	53.9 ± 16.5
Time on dialysis (months)	42.2 ± 44.1	N/A
Haemoglobin (gdl)	12.0 ± 1.41	N/A

Table 1: Patient and normal subject characteristics

age-, gender- and activity-matched normal subjects. The patients' and normal subjects' characteristics are depicted in Table 1.

Results 1: Global SEIQoL score

The results of the study demonstrated that patients' SEIQoL was significantly lower than the normal subjects' before the exercise intervention (65.5 \pm 21.8 versus 77.2 \pm 15.3, p < 0.0S independent t-test).

Repeated measures ANOVA showed an overall significant improvement in SEIQoL over the exercise period (67.3 ± 19.7 at three months, and 80.5 ± 15.2 at six months, p < 0.01).

Post-hoc analysis showed significant differences (p < 0.05) between nought and six months and three and six months, but

Rank order	Themes identified prior to exercise	Themes identified at three months of exercise	Themes identified at six months of exercise
1.	Family	Family	Family
2.	Health	Health	Health
3.	Partner/relationship	Partner/relationship	Partner/relationship
4.	Friends	Mobility	Friends
5.	Social life	Fitness	Hobbies
6.	Home	Home	Mobility
7.	Being alive	Social life	Fitness
8.	Getting around	Friends	Pets
9.	Hobbies	Nutrition	Social life
10.	Holidays	Well being	Home

Table 2: The ten most frequently elicited themes for the combined dialysis population.

not between nought and three months. Patients' SEIQoL score was insignificantly different to normal subjects' after six months of training.

Results 2: SEIQoL themes

Table 2 depicts the ten most frequently identified themes at the start, at three months, and at six months of exercise, for the combined dialysis population.

No significant differences existed in the rank ordering of SFIQoL themes at the start, at three months, and at six months of exercise. However, although 'mobility' and 'fitness' were not in the top ten themes at the pre-intervention stage, they were ranked forth and fifth, and sixth and seventh at the threemonth and six-month stages respectively. This may suggest that participation in the exercise programme enhanced patients' awareness of their functional status, which may have deteriorated during the course of their renal disease. By increasing patient confidence regarding the ability to partake of exercise,

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deconditioning, as a consequence of the illness trajectory of renal disease may be reversed.

Conclusion

In summary, the six-month exercise intervention resulted in an improvement in patient-centred QOL, which was most marked in the latter three-month phase. SEIQoL, a non-questionnaire based patient-centred measure of QOL is sensitive to changes brought about by an exercise intervention. The improvement was not dependent on mandatory consideration of physical functioning. Since changes occurred during the latter half of the programme, it may suggest that exercise interventions need to be long-term in order to secure QOL benefits.

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