Living well with a disability health promotion intervention: improved health status for consumers and lower costs for health care policymakers

Ravesloot C, Seekins T, White G

Record Status
This is a critical abstract of an economic evaluation that meets the criteria for inclusion on NHS EED. Each abstract contains a brief summary of the methods, the results and conclusions followed by a detailed critical assessment on the reliability of the study and the conclusions drawn.

Health technology
Patients with a disability resulting in mobility impairment were enrolled in the Living Well With a Disability programme organised by Centers for Independent Living (CIL). Living Well With a Disability is a consumer-directed, goal-focused, health-promotion programme that helps individuals develop foundations for lifestyle change. This programme lasted for 8 consecutive weeks and consisted of weekly sessions each lasting 2 hours. During the group sessions, participants worked through a workbook (written at an eighth grade reading level) and completed exercises at the end of each chapter. The comparator treatment was to continue with existing treatments.

Type of intervention
Treatment and secondary prevention.

Economic study type
Cost-effectiveness analysis.

Study population
The study population comprised adults with mobility impairments who were living independently. The exclusion and inclusion criteria were not given.

Setting
The setting was the community. The economic study was carried out in the USA.

Dates to which data relate
The dates to which the effectiveness and resource evidence referred were not given. The price year was 1998.

Source of effectiveness data
The effectiveness data were derived from a single study.

Link between effectiveness and cost data
The same patients provided both the cost data and the effectiveness data. The costing was carried out retrospectively.

Study sample
Power calculations were not reported. All of the patients in the study were given the treatment, but at different time periods so that the effect of the treatment could be assessed. Initially, 246 individuals were recruited to begin the Living Well With a Disability programme. Of these, 126 patients were allocated to the group that had the treatment immediately and 118 to the group that waited 2 months before treatment. Ninety-eight patients in this latter group
Study design
The study was a multi-centre trial in which nine CILs from 8 states were randomly assigned to give the treatment either in April and June or August and October. Each CIL randomly assigned 24 patients to either begin the intervention immediately or 2 months later. The follow-up lasted 12 months. At 12 months, there were 58 patients (from an initial 118) in the category that had to wait 2 months for treatment and 83 (from an initial 126) who received treatment immediately.

Analysis of effectiveness
The analysis was conducted on an intention to treat basis. The primary health outcomes were:

- the amount of time people were limited because of secondary conditions, as measured by the Secondary Condition Surveillance Instrument (SCSI);
- depressive symptoms, as measured by the Center for Epidemiological Studies-Depression Scale (CES-D);
- the six dimensions of life style (health responsibility, physical activity, nutrition, spiritual growth, interpersonal relations, and stress management), as measured by the Health-Promoting Lifestyle Profile II (HPLP); and
- the single item for assessing life satisfaction in the quality of life module of the Centers for Disease Control Behaviour Risk Factor Surveillance System (BRFSS; Centers for Disease Control and Prevention, 1997).

There was no information on the comparability of the groups at baseline.

Effectiveness results
Paired sample analysis from just before the intervention to just after the intervention showed the mean SCSI going from 29.7 to 27.0, (t(187)=3.60; p<0.001). The mean SCSI score changed significantly between the immediate pre- and immediate post-test (least significant difference 5.70; p<0.000), indicating that the intervention was effective in decreasing limitation due to secondary conditions for intervention participants.

In terms of the HPLP score, individuals reported engaging in more health-promoting behaviour after the intervention than they had before the intervention (F(4, 105)=4.27; p<0.01). This was largely due to increases in physical activity. The mean activity scores rose from 1.71 to 1.79 over the intervention period (paired-sample t(158)= -2.05; p<0.05).

The BRFSS score showed a significant decline in the average number of days of reported limitation due to physical and mental health problems, although the effect was reduced at 12 months. The pre-intervention scores were significantly different from the immediate, post 2 months' and post 4 months' scores.

The single life satisfaction item from the quality of life module of the BRFSS showed a pre-intervention average response of 2.8, indicating a slight dissatisfaction with life overall. The mean score was more than 3 at all post-intervention measures, indicating average satisfaction with life (F(4, 114)=4.74; p=0.001).

The CES-D did not show a significant change over time.

Clinical conclusions
The authors concluded that the Living Well With a Disability programme reduces the average degree of limitation people experience due to secondary conditions and the number of days they experience symptoms. It also increases their overall life satisfaction and improves their behaviour towards improving their health.

Measure of benefits used in the economic analysis
No summary measure of benefits was used. In effect, the authors carried out a cost-consequences analysis.

**Direct costs**
Discounting was not carried out as the costs were incurred during less than 2 years. The quantities and the costs were not analysed separately. The costs were estimated using actual data obtained from patient questionnaires that asked about their use of health care resources. Thus, the costs of physician visits, emergency room visits, outpatient surgery visits and days in hospital were included. The price year was 1998.

**Statistical analysis of costs**
No statistical analysis of the costs was carried out.

**Indirect Costs**
No indirect costs were calculated.

**Currency**
US dollars ($).

**Sensitivity analysis**
No sensitivity analysis was carried out.

**Estimated benefits used in the economic analysis**
See the 'Effectiveness Results' section.

**Cost results**
The mean health care costs (time period not specified) were $1,507.90 before the intervention, $724.20 just after the intervention, $895.90 at 2 months, $1,306.20 at 4 months and $1,296.40 at 12 months.

The cost of the intervention per person was $596, including programme implementation and travel costs.

If mean costs were aggregated over the 12-month period, the net savings for 188 people participating were $341,946.

The costs of adverse effects were dealt with in the costing.

**Synthesis of costs and benefits**
The costs and benefits were not combined as the study was, in effect, a cost-consequences analysis.

**Authors' conclusions**
The Living Well With a Disability programme reduces health costs and improves health outcomes for adults with mobility impairment.

**CRD COMMENTARY - Selection of comparators**
The choice of the comparator, carrying on with standard treatment without a health promotion programme, was justified by it being current practice in the authors' setting. You should decide if it is current practice in your own setting.
Validity of estimate of measure of effectiveness
The source of the effectiveness data was a single study. The study design was not ideal for the hypothesis since all the patients received the treatment at some time. The authors knew that this was a drawback of the study, but said that it would not have been possible to get cooperation from the CILs if some patients had been randomised to "no treatment". The patients who had their treatment postponed were not shown to be comparable with those who received their treatment immediately. The authors acknowledged that the 23% attrition from the immediate pre- to the immediate post-measure raises some concern about the external validity of the results to the population of individuals who intend to engage in health promotion. Another drawback to the internal validity of any longitudinal design is reactivity to the measures. The authors emphasised that these threats to the internal validity of the study would be better controlled with a true experimental design with random assignment to treatment.

Validity of estimate of measure of benefit
The authors did not derive a summary measure of health benefit. The health benefits are therefore those associated with the effectiveness outcomes.

Validity of estimate of costs
From the perspective adopted in the study (i.e. that of the health system), all the relevant categories of costs were included. However, as the authors stated, relying on patients' recall of their use of health care resources is not the best way of calculating costs. The costs were not reported separately from the quantities, which makes generalisability to other settings difficult. The resource use quantities were taken from a single study, while the prices were taken from published sources. No statistical, sensitivity or any other kind of analysis of the quantities or prices was carried out. The price year was reported, which will aid any future reflation exercises. Since all costs were incurred during one year, discounting was unnecessary and was therefore not performed.

Other issues
The authors made appropriate comparisons of their results with those from other studies. The issue of generalisability to other settings was addressed in one respect: the authors were concerned that the results might only apply to the type of patient who stays in the programme and not to the 23% of patients who do not stay with the programme. The authors did not present their results selectively. Their conclusions reflected the scope of the analysis. The authors thought that relying on patients' self-reporting of health outcomes might have induced a Hawthorne effect, and that the written curriculum might have excluded patients with lower educational levels.

Implications of the study
The authors recommended a larger scale study to try and replicate these results, also a way to randomly allocate patients to no treatment that would make the results more reliable. A study with a lower drop-out rate would also improve the reliability of the results.

Source of funding
Supported by the Centers for Disease Control and Prevention.

Bibliographic details

Indexing Status
Subject indexing assigned by CRD

MeSH
Cost Control; Costs and Cost Analysis; Disabled Persons; Health Care Costs; Health Policy; Health Promotion; Health
Status; Quality of Life

AccessionNumber
22005001564

Date bibliographic record published
31/05/2006

Date abstract record published
31/05/2006