Self-managed versus agency-provided personal assistance care for individuals with high level tetraplegia

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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
Care for patients with tetraplegia: self-managed versus agency-provided assistance models.

Type of intervention
Rehabilitation.

Economic study type
Cost-effectiveness analysis.

Study population
A cohort of individuals with high level tetraplegia (spinal cord lesions between C1 and C4). Individuals were at least one year post-injury. The average age was 35.3 years in the agency group and 37.1 years in the self-managed group.

Setting
Community. The economic study was carried out in Colorado, USA.

Dates to which data relate
Effectiveness and resource data were collected in 1993. It seems that 1993 prices were used.

Source of effectiveness data
Single study.

Link between effectiveness and cost data
Costing was undertaken on the same study sample used in the effectiveness analysis. It seems that the cost analysis was done prospectively.

Study sample
Ninety individuals, who were identified through the national database of the Model Spinal Injury Systems and related to injuries sustained between 1973 to 1992, were considered eligible. Seventy-one individuals constituted the sample size. Of these, twenty-nine were in the agency provided assistance group, and forty-two were in the group in which the caregivers were hired, trained and paid by the patients directly. There were no power calculations.

Study design
Retrospective, quasi-experimental, nonrandomised design. There was no loss to follow-up. Duration of follow-up was
Analysis of effectiveness
The analysis was based on intention to treat. Health outcomes were given by the patients' scores regarding their life satisfaction, as well as rehospitalisations and health complications. The following instruments were used in the survey in order to measure the outcomes: the Rand 36, the Life Satisfaction Index-A (LSI-A), the Craig Handicap Assessment and Reporting Technique (CHART), the Personal Assistance Satisfaction Index (PASI), and the Personal Independence Profile (PIP). The groups were comparable, except for income, duration of disability, the amount of paid and unpaid personal care received, type of insurance and employment status. Confounding variables were included in a regression analysis in order to verify their impact on the final results.

Effectiveness results
Statistically significant differences (p<0.01) between the two groups were found as follows: the self-managed care group reported higher mean scores on:

- RAND-36 (regarding a perception of better health): 1898.9 (SD 246.5) vs. 1759.7 (SD 337.2);
- PIP :164.2 (SD 13) vs. 157.2 (SD 12.6);
- PASI: 70 (SD 6.7) vs. 50.7 (SD 10.9).

Moreover, the individuals in the self-managed group did not report higher rehospitalisation rates or health complications with respect to the other group.

Clinical conclusions
The use of self-managed care, which is considered a nonmedical care model, showed favourable results for individuals affected by high level tetraplegia.

Measure of benefits used in the economic analysis
Health outcomes were given by the patients' scores regarding their life satisfaction, as well as rehospitalisations and health complications. The following instruments were used in the survey in order to measure the outcomes: the Rand 36, the Life Satisfaction Index-A (LSI-A), the Craig Handicap Assessment and Reporting Technique (CHART), the Personal Assistance Satisfaction Index (PASI), and the Personal Independence Profile (PIP).

Direct costs
Costs and quantities were reported separately. A societal perspective was used. Costs related to the bills and the actual hours charged by the skilled caregivers. Estimates based on the authors' experience were used when the exact charges were not known by the participants in the study. Unpaid care was valued on the average of the reimbursed personal service assistants' rate. Price date could be 1993. Differences in the duration of disability can be important, as better health outcomes of patients in the self-managed group might partly be due to the 3.6 (on average) years longer duration of disability rather than to the more effective care type. In addition, patients in the self-managed group typically used agency services at an earlier stage of their disability which also limits the comparability of the groups. Finally, the causes of tetraplegia could have been discussed as the disease process (and therefore costs and health outcomes) can depend on the cause of tetraplegia.

Currency
US dollars ($)
Sensitivity analysis
No sensitivity analysis was carried out.

Estimated benefits used in the economic analysis
Statistically significant differences (p<0.01) between the two groups were found as follows.

The self-managed care group reported higher mean scores on:

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Moreover, the individuals in the self-managed group did not report higher rehospitalisation rates or health complications with respect to the other group.

Cost results
The average annual costs were $76,285 in the agency-provided model, and $58,765 in the self-managed model.

Synthesis of costs and benefits
Self-managed care was the dominant strategy.

Authors’ conclusions
The authors concluded that with the self-managed model, the societal and individual financial burdens as well as the emotional burden borne by families and friends were lessened. The (perceived) health status of the patients improved.

CRD Commentary
The authors themselves pointed out a few limitations of this study, such as the limited sample size and non-randomised allocation of the patients. We add that given the authors' subjective estimates of some costs of care, a sensitivity analysis would have been useful to validate the study results over a range of different fees. Moreover, the overall study results are, in part, dependent on the structure of the American health system, where the presence of private health insurance plans or the Medicaid reimbursement, may have influenced the patients' choice about the model of care. Differences in the duration of disability can be important as better health outcomes of patients in the self-managed group might partly be due to the 3.6 (on average) years longer duration of disability, rather than to the more effective care type. In addition, patients in the self-managed group typically used agency services at an earlier stage of their disability, which also limits the comparability of the groups. Finally, the causes of tetraplegia could have been discussed as the disease process (and therefore costs and health outcomes) can depend on the cause of tetraplegia.

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