The effects of social support and education interventions on health care costs  
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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**  
Three strategies for elderly patients with symptoms of osteoarthritis (OA), focusing on when to use the health care system, were investigated: (1) educational programme, (2) social support programme, and (3) combination of educational and social support programmes.

**Type of intervention**  
Educational programmes for patients.

**Economic study type**  
Cost-utility analysis.

**Study population**  
Patients aged 60 years of age or older who were members of a large HMO, with symptoms of osteoarthritis and no or little prior instruction on osteoarthritis.

**Setting**  
Primary care. The economic study was carried out in San Diego, California, USA.

**Dates to which data relate**  
Not reported.

**Source of effectiveness data**  
Effectiveness data were derived from a single study.

**Link between effectiveness and cost data**  
The costing was undertaken retrospectively on the same patient sample as that used in the effectiveness analysis.

**Study sample**  
No power calculations were reported. A total of 363 individuals participated voluntarily in the study (out of about 1,500 patients who were sent an invitation to participate, and who were randomly chosen from a large HMO membership of 52,450 people). Of the 363, 87 patients (average (SD) age of 69.14 (5.54)) were randomly allocated to the social support group, 97 (average (SD) age of 69.68 (5.79)) were allocated to the education group, 89 (average (SD) age of 68.77 (5.70)) were allocated to the combination group, and 86 (average (SD) age of 69.21 (5.51)) were allocated to the control group.
Study design
This was a randomised controlled trial. The duration of follow-up was 2 years after the initiation of the interventions. The attrition rate (failure to complete the follow-up assessments) at year 2 of follow-up assessment was 36.8% (social support), 17.5% (education), 29.2% (combination), and 21.1% (control groups).

Analysis of effectiveness
The analysis was based on treatment completers only. The primary health outcome used in the analysis was improvement in health status as measured by the QWB (Quality of Well-Being) scale. This was measured at baseline, one year before the intervention was set up, and one and two years after the start of the intervention. The patient groups were comparable in terms of age, years of HMO membership (n=357), years since arthritis diagnosis (n=317), gender, level of education, ethnicity, income (n=322), and presence of other serious comorbidity (n=361). The groups were almost significantly different in terms of presence of other medical conditions, (p=0.052), with the control group having a lower proportion of patients reporting other medical conditions than the intervention.

Effectiveness results
For each group, the percentage change in the QWB scores at one and two years after the intervention was initiated, were as follows (relative to one year before the intervention started):

social support, 4.8% and 4.5%;
education, 2.1% and 1.1%;
combination, 4.8% and 3.0%;
and control, 2.0% and 1.4%.

All changes had p values above 0.05. The intervention groups combined had changes of 3.8% (1 year) and 2.6% (2 years), (p>0.05). The corresponding figures for all the patients together were 3.2% and 2.3%, (p<0.05). The rates of intervention attendance and mortality between groups did not differ significantly in statistical terms.

Clinical conclusions
The fact that low attenders did nearly as well as high attenders could be taken as an indication that fewer monthly sessions might be sufficient to produce benefits similar to those in the present study. However, the conclusion may not be justified, given that participants self-selected themselves as high or low attenders, rather than being randomly assigned to high or low attendance groups.

Measure of benefits used in the economic analysis
The benefit measure was the improvement in health status as measured by the Quality of Well-Being (QWB) scale.

Direct costs
Costs were discounted. The quantities of resource use were reported separately from the costs. The cost items were reported separately. Two major categories of costs were production costs and cost savings due to the interventions. These included the costs associated with labour, equipment, materials and overheads. The cost estimates were based on actual data. No date was reported for the collection of data nor was the price year used in the analysis. The source of prices was the US Health Care Financing Administration. The costs associated with medications, devices, and out-of-plan services were omitted from the analysis since the corresponding data were not completely collected. The costs associated with services outside the HMO were not included (8% of patients reported themselves as receiving those services).
Indirect Costs
Not included.

Currency
US dollars ($).

Sensitivity analysis
A two-way sensitivity analysis (threshold analysis) was carried out by varying the production (implementing the intervention) and health care costs.

Estimated benefits used in the economic analysis
The benefits are as in the effectiveness results above.

Cost results
The total production costs of the intervention programmes were $9,450 (social support), $18,675 (education), and $14,175 (combination), which together totalled $42,300. The total cost saving due to the interventions were $315,588 for the first year and $300,560 for the second year. The ratio of cost saving over two years of follow-up to the total costs of the intervention was $616,148/$42,300. If the least costly intervention (social support programme) had been implemented for all the patients in the intervention group, then, the ratio would have been 22.08.

Synthesis of costs and benefits
A synthesis of costs and benefits was not required since the educational programmes were the dominant strategies. The threshold analysis showed that health care costs could decrease by up to 87%, with all the rest remaining equal, without the results changing in qualitative terms, whereas the production costs had a corresponding threshold value of 646% (increase). The authors calculated the production cost per QALY as an extra measure of cost-utility of the educational programme.

Authors' conclusions
The present study provides evidence that health care costs can be reduced in older people with OA. Social support interventions appear to be the most cost-effective, although it may be desirable to supplement the social support with a limited educational component in some settings.

CRD COMMENTARY - Selection of comparators
The reason for the choice of the comparator is clear.

Validity of estimate of measure of benefit
The estimate of measure of benefit is likely to be internally valid due to the nature of the study design employed in the investigation, the analysis of potential reasons for non-participation and possible effects on the results, the control for differences between groups, and the tool used to measure benefits in terms of health status.

Validity of estimate of costs
The cost analysis was adequately performed, with sufficient details of the estimation method being provided, and quantities of resource use, and the most relevant cost, being included. The only costs omitted from the analysis were those associated with medications, devices, out-of-plan services, and those services obtained outside the HMO (for 8% of the patient sample).
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