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Knee surgery may have minimal quality of life effects in those with less severe symptoms

*Effectiveness may rise if surgery is restricted to most severe cases*

Current use of knee replacement surgery for patients with osteoarthritis may have minimal effects on quality of life and is economically unattractive, concludes a study from the United States in *The BMJ*today.

But if the procedure were restricted to patients with more severe symptoms, its effectiveness would rise, with practice becoming economically more attractive than its current use, say the researchers.

About 12% of adults in the US are affected by osteoarthritis of the knee. The annual rate of total knee replacement has doubled since 2000, mainly due to expanding eligibility to patients with less severe physical symptoms.

The number of procedures performed each year now exceeds 640,000 at a total annual cost of about $10.2bn (£8.3bn, €9.6bn). Yet health benefits are assumed to be higher in those with more severe symptoms before surgery.

So a team of researchers based in the US and the Netherlands set out to evaluate the potential impact of total knee replacement on quality of life in people with knee osteoarthritis.

They also wanted to estimate differences in lifetime costs and quality adjusted life years or QALYs (a measure of years lived and health during these years) according to level of symptoms.

They analysed data from two US studies - 4,498 participants aged 45-79 with or at high risk for knee osteoarthritis from the Osteoarthritis Initiative (OAI) and 2,907 patients from the Multicenter Osteoarthritis Study (MOST).

OAI participants were followed up for nine years and MOST patients were followed up for two years. Quality of life was measured using a recognised score of physical and mental function, known as SF-12, and using some osteoarthritis specific quality of life scores.

They found that quality of life outcomes generally improved after knee replacement surgery, although the change was small. The improvements in quality of life outcomes were higher when patients with lower physical scores before surgery were operated on.

In a cost effectiveness analysis, current practice was more expensive and in some cases seemed even less effective compared with scenarios in which total knee replacement was performed only in patients with lower physical function.

"Given its limited effectiveness in individuals with less severely affected physical function, performance of total knee replacement in these patients seems to be economically unjustifiable," write the authors.

"Considerable cost savings could be made by limiting eligibility to patients with more symptomatic knee osteoarthritis," they add.

"Our findings emphasize the need for more research comparing total knee replacement with less expensive, more conservative interventions, particularly in patients with less severe symptoms," they conclude.

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