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COST-EFFECTIVENESS OF INVOLVING NURSE SPECIALISTS FOR ADULT PATIENTS WITH URINARY INCONTINENCE IN PRIMARY CARE: AN ECONOMIC EVALUATION ALONGSIDE A PRAGMATIC RANDOMIZED CONTROLLED TRIAL BASED ON GENERIC HEALTH RELATED QUALITY OF LIFE AND URINARY INCONTINENCE SPECIFIC OUTCOMES

Hypothesis / aims of study

Economic evaluations of interventions for urinary incontinence (UI) in primary care are scarce.[1] Therefore we determined cost-effectiveness of involving nurse specialists for adult patients with UI as compared to care-as-usual provided by the Family Physician (FP).[2]

Study design, materials and methods

From 2005 until 2008 an economic evaluation from the societal perspective was performed alongside a pragmatic multicenter randomized controlled trial comparing patients with UI receiving nurse specialist care with patients receiving care-as-usual from their FP. 186 patients of 18 years and above with stress, urgency or mixed UI were randomly allocated to the intervention and 198 to care-as-usual. Follow-up was one year with measurements at baseline, 3, 6, 9 and 12 months. Three effect measures were used: a Quality Adjusted Life Year ($QALY_{societal}$) based on societal preferences for health outcomes (EuroQol-5D), $QALY_{patient}$ based on patient's preferences for health outcomes (EuroQol VAS), and an Incontinence Severity weighted Life Year (ISLY) based on patient-reported severity and impact of UI (ICIQ-UI SF). In addition, health care resource use, patient and family costs, and productivity costs were collected. Data were collected by self-administered questionnaires. Incremental cost-effectiveness ratios were calculated and regarded as cost-effective if below a threshold (maximum willingness to pay for an extra unit effect) of € 40.000. Uncertainty was assessed by bootstrapping, a non-parametric method in which a sample of equal size of the original sample was selected 1000 times at random with replacement, and presented on the cost-effectiveness plane. Cost-effectiveness acceptability curves were used to present the probability the intervention is cost-effective given a range of threshold values. A subgroup analysis was performed in patients without complaints of anxiety/depression at baseline.

Results

The gain in $QALY_{societal}$ in the intervention group was 0.01 (an equal of 4.2 days in perfect health) and the gain in $QALY_{patient}$ was 0.02 (6.5 days in perfect health). The difference in ISLY was 0.02 (6.7 days without UI). Total societal costs amount to € 677 in the intervention group, and € 453 in the control group (incremental costs € 224; 95% CI € 80 to € 422). The difference in costs was mainly due to the intervention costs. Compared to care-as-usual involving nurse specialists has an acceptable but uncertain cost-effectiveness ratio of € 16.742/$QALY_{societal}$ gained. Based on this result, at a threshold of € 40.000 the probability that the intervention is cost-effective is 58%. See figure 1 and 2. Using $QALY_{patient}$ and the ISLY as measure of effect results in slightly lower cost-effectiveness ratios with less uncertainty: € 11.368/$QALY_{patient}$ (77%) and € 11.536/ISLY (72%), respectively. The subgroup analysis shows that in the subgroup of patients who do not report anxiety/ depression, the probability that the intervention of the nurse specialist is cost-effective as compared to care-as-usual increased from 58% to 69% when using $QALY_{societal}$ as outcome.

Interpretation of results

The intervention is more expensive and more effective than care-as-usual. The cost-effectiveness analyses indicate that the intervention is cost-effective. This result is highly uncertain when based on societal preferences for health outcomes ($QALY_{societal}$) but less uncertain when based on patient's preferences ($QALY_{patient}$) or the newly developed ISLY based on the ICIQ-UI SF. The results of the subgroup analysis suggest it is important to take into account feelings of anxiety and depression when offering an intervention on UI to improve effectiveness and efficiency of care.

Concluding message

Based on these study results we recommend to adopt the intervention together with conducting more research through careful monitoring of the performance of the intervention in daily practice and prospective data collection alongside its use.[3]

Figure 1 Societal costs: incremental cost-effectiveness plane $QALY_{societal}$, $QALY_{patient}$, ISLY adjusted for baseline differences (Bootstrap results).

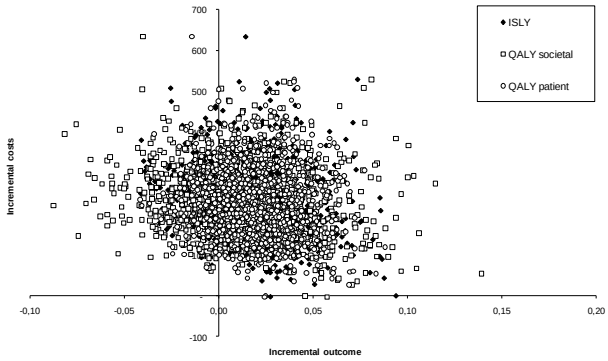
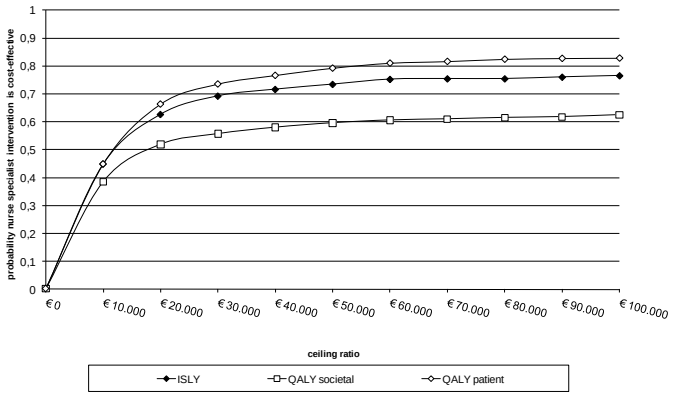


Figure 2 Cost-effectiveness acceptability curves with $QALY_{societal}$, $QALY_{patient}$ and ISLY as effect measures.



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Is this a clinical trial?	**Yes**
Is this study registered in a public clinical trials registry?	**Yes**
Specify Name of Public Registry, Registration Number	**Current Controlled Trials ISRCTN62722772.**
Is this a Randomised Controlled Trial (RCT)?	**Yes**
What were the subjects in the study?	**HUMAN**
Was this study approved by an ethics committee?	**Yes**
Specify Name of Ethics Committee	**The study protocol was approved by the Medical Ethical Committees of all the involved medical centres and hospitals. All included patients gave their written informed consent.**
Was the Declaration of Helsinki followed?	**Yes**
Was informed consent obtained from the patients?	**Yes**