Limited evidence for the effectiveness of educational interventions for renal transplant recipients. Results from a systematic review of controlled clinical trials

Urstad KH, Wahl AK, Andersen MH, Oyen O, Hagen KB

CRD summary
There was limited evidence for the effectiveness of patient education programmes for renal transplant recipients, but there were significant positive results, especially for knowledge interventions. Given the low overall number of patients investigated, and the limited and generally poor quality evidence (acknowledged by the authors), the conclusions on any evidence of effect cannot be considered reliable.

Authors’ objectives
To evaluate the effectiveness of patient education programmes for renal transplant recipients.

Searching
MEDLINE, EMBASE, CINAHL, ERIC, PsycINFO and The Cochrane Library were searched up to May 2011 for studies published in English; search terms were reported. Reviews and bibliographies were scanned.

Study selection
Randomised controlled trials (RCTs) and non-RCTs of educational and counselling programmes for renal transplant patients were eligible for inclusion. Relevant outcomes were categorised according to Osborn’s Program Logic Model into three levels: proximal outcomes (knowledge, compliance); intermediate outcomes (decreased symptoms, self-confidence, health-related quality of life); and distal outcomes (use of acute health care). One abstract was excluded since insufficient relevant information was provided.

Most of the included studies were in the USA with some in Europe and one in Asia; they were conducted from 1985 to 2010. Interventions included the use of verbal, written, video and computer methods. Most interventions focused on education/cognitive strategies; some combined these with counselling/behavioural strategies. Interventions varied in timing, focus and intensity. Intervention length varied from 30 to 60 minutes to one year. Half of the studies had structured individual or group educational sessions. Interventions were mostly implemented either in-hospital and/or in the outpatient clinic, with one study in the home. Interventions were given by nurses, assistants, or clinical pharmacists (where reported). Control groups generally received standard or usual care. Most studies were in adult patients (mean age range from 40 to 46 years). One study was in patients over 15 years, one study was in adolescents (mean age 17 years), and one study was in children and adolescents, and their parents. One adult study focused on non-compliant to medication patients. Outcomes were measured using pharmacist records and questionnaires; most of the outcomes measured were proximal, with a few studies also measuring distal outcomes.

Two independent reviewers performed the study selection.

Assessment of study quality
Study quality was assessed by two independent reviewers using the guidelines of the Cochrane Musculoskeletal Group with seven criteria: random generation of allocation; allocation concealment; outcome assessment; co-intervention; loss to follow-up; blinding of provider and patient; and intention-to-treat analysis. Each criterion was graded as either ‘met’, ‘unclear’ or ‘unmet’. Studies were grouped into low (six or seven criteria ‘met’), moderate (three to five criteria ‘met’); or high risk of bias (fewer than three criteria ‘met’).

Data extraction
For most results only significance with p values was extracted.

Data extraction was performed by two independent reviewers with any discrepancies resolved by discussion.

Methods of synthesis
A narrative synthesis was provided as the interventions, populations and outcomes measured varied in between studies.
Results of the review

Nine studies (311 patients, range 18 to 59 patients) included in the review comprising three RCTs (24, 18 and 59 patients) and six non-RCTs with an experimental group and a control group (210 patients). The RCTs had a moderate risk of bias, whereas all the non-RCTs had a high risk of bias. The average quality score was 1.5 criteria met of 7.

Knowledge (six studies): Four studies, including one RCT, found a significant positive effect for intervention groups after renal transplant using various tools compared with control groups (p<0.001 at 24 or 72 hour postoperatively; p=0.0001 at seven days after admission, RCT; p<0.02 at eight to 12 weeks after intervention; p<0.003 at three months after the intervention; p=0.045 at six months after intervention); with no significant effects for two studies (48 hours before hospital discharge; and after discharge).

Compliance (three studies including two RCTs): One RCT found significant better medication compliance of renal recipients in the intervention groups versus control groups (p<0.001; 96.1 versus 81.6% after one year). The other two studies found no significant effects for adherence/compliance at six or nine months (RCT) or at 8-12 weeks follow-up.

Other outcomes (only measured in one study): No significant effect was found in renal recipients for intervention versus control groups for: number of contacts with the health service after discharge (RCT); coping at eight to 12 weeks follow-up; and self-management, and number and type of questions asked to nurse, at one month post discharge. Significant effects were found for in intervention groups for: renal function (stability of glomerular filtration rate; p<0.001) at six months follow-up; less time spent by nurses giving one-to-one information (p=0.05) one month after discharge; lower weight gain for intervention group at four months (p<0.01) and 12 months (p=0.01) after transplant; lower body mass index at four months (p<0.003) and 12 months (p=0.006); and shorter hospital stay (p<0.001).

Authors' conclusions

There was limited evidence for the effectiveness of educational interventions in renal transplant recipients. Only two studies (with a moderate risk of bias) reported beneficial events. The strongest evidence was found for video-assisted teaching prior to discharge and for monthly pharmaceutical counselling.

CRD commentary

The review addressed a well-defined question for study design, participants, interventions, and relevant outcomes. The search was adequate but was not extensive for unpublished studies. As only studies published in English were included, relevant studies may have been missed. Suitable efforts were made to reduce reviewer error and bias in the review processes.

Study quality was assessed using suitable criteria and was generally low with few RCTs identified. Some relevant study details were provided, but minimal study result details, with some inconsistencies between the text and tables. The authors reported in the text that the largest sample size was 110, but the largest sample size given in Table 1 was 59. The authors acknowledged the general lack of reliable, reproducible tools to measure outcomes. Performing a narrative synthesis may have been appropriate in view of the heterogeneity between studies for interventions, populations and outcomes, but the synthesis provided was not comprehensive.

Given the low overall number of patients investigated, and the limited and generally poor quality evidence (acknowledged by the authors), conclusions on any evidence of effect cannot not be considered reliable.

Implications of the review for practice and research

Practice: The authors recommended that the educational content of interventions should have a holistic approach to life post-transplant, emphasise medication adherence but also include lifestyle aspects and signs of graft rejection. Education should start early post-operation and continue for a longer period.

Research: The authors suggested that more RCTs were required, with clear details of the interventions including co-interventions, reproducible interventions, details of losses to follow-up, an intention-to-treat analysis, and short- and long-term follow-up.

Funding

Oslo University College, Norway.
Bibliographic details

PubMedID
23199794

DOI
10.1016/j.pec.2012.10.020

Original Paper URL

Indexing Status
Subject indexing assigned by NLM

MeSH
Controlled Clinical Trials as Topic; Humans; Kidney Diseases /surgery; Kidney Transplantation; Outcome Assessment (Health Care); Patient Education as Topic

AccessionNumber
12012056711

Date bibliographic record published
02/01/2013

Date abstract record published
15/04/2013

Record Status
This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.