Assessment and effects of Therapeutic Patient Education for patients in hemodialysis: a systematic review

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CRD summary
This review found some positive effects of using Therapeutic Patient Education programmes for patients in haemodialysis. The inclusion of non-randomised and non-controlled studies and a lack of clarity around the clinical and statistical significance of the results make the findings of the review unreliable.

Authors' objectives
To examine the effectiveness of Therapeutic Patient Education programmes for patients in haemodialysis.

Searching
The databases MEDLINE, PsycINFO, PsycARTICLES, and SocINDEX were searched from 1972 to March 2011. A search strategy was presented. A bibliographic search of relevant journals was performed. Reference lists of identified studies were also searched. Only articles written in English were considered.

Study selection
Randomised and non randomised trials and before-and-after studies were eligible for inclusion. Studies had to consider educational programmes or interventions, specifically therapeutic patient education interventions (as defined by the World Health Organisation). Studies had to contain adult patients treated by haemodialysis and had to report patient outcomes before and after the intervention. Studies of patients on peritoneal or home haemodialysis were excluded, as were those with fewer than 10 patients.

A range of physiological and psychological outcomes (or combination of both) were included. Studies of physiological outcomes mostly examined dietary compliance by measuring biological outcomes (such as calcium or potassium levels); other studies considered compliance or knowledge of hygiene, vascular access, physical activity, interdialytic weight gain or medical knowledge. Studies of psychological outcomes investigated adaptation, dealing with stress and developing self-care skills. Most interventions were administered by a nurse or dietician, otherwise they were delivered by a psychologist or multidisciplinary team. There was a mix of purely educational interventions and psycho-educational interventions. Seven studies were conducted in England.

Study selection was performed by one reviewer, with two others assessing undecided cases.

Assessment of study quality
No assessment of study quality was reported.

Data extraction
Data were extracted for the outcomes reported in each study in the form that was reported in the paper. Various outcome data were reported including percentages, direction of effect, and p-values. Three time points were considered: short-term (less than two months), medium-term (two to eleven months), and long-term (twelve months or more).

The authors did not state how many reviewers performed the data extraction.

Methods of synthesis
A narrative synthesis was performed, reporting the characteristics of the studies and the number of studies that identified changes in the various outcomes reported. No statistical synthesis was reported.

Results of the review
The review included 35 studies involving 2,318 patients. Sample sizes ranged from 10 to 316 patients. Eighteen studies were randomised and controlled. Six studies were controlled but not explicitly randomised. Eleven studies were non-controlled.
Physiological outcomes alone (18 studies): Seven (of nine) studies found a decrease in phosphorous levels with Therapeutic Patient Education programmes during haemodialysis. Two (of six) studies found a decrease in calcium levels. Three (of three) studies found an improvement in calcium/phosphorus product levels. Six (of six) studies showed a decrease in interdialytic weight gain. Five (of five) studies showed an improvement in knowledge. Not all of these results were statistically significant.

Psychological outcomes alone (four studies): Three (of three) studies found a decrease in depressive affects. Two (of two) studies reported an improvement in self efficacy. One (of two) studies found an improvement in mental quality of life.

Combined outcomes (13 studies): Two (of four) studies showed a decrease in interdialytic weight gain. One (of two) studies found a decrease in phosphorous in the short term. Five (of six) studies found an improvement in physical quality of life. Patient knowledge improved in five (of five) studies, but only three (of seven) studies noted an improvement in mental quality of life and only two (of four) studies identified reductions in anxiety or depression. Further results were reported.

Authors’ conclusions
Educational programmes in haemodialysis were becoming more numerous and efficient, and had several positive effects.

CRD commentary
A suitable search was performed. Inclusion criteria were specified, although broadly for outcomes. Some steps were taken to minimise error and bias in the study selection process, but the procedure for data extraction was unclear.

There was no assessment of study quality reported, but several non-randomised and non-controlled studies were included, so there was potential for bias in the findings of the individual studies. Most studies were small and most specific outcomes were reported in only a few of the studies. The authors reported only the number of studies with positive findings, therefore the magnitude of the effects along with the clinical and statistical significance of the results were unclear.

For all these reasons, the results of this review cannot be considered to be reliable.

Implications of the review for practice and research
Practice: The authors gave no recommendations for clinical practice.

Research: The authors suggested that rigorous randomised controlled trials were needed in this area, and that these education programmes should be assessed for both physiological and psychological outcomes.

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