Authors' objectives
To identify and analyse methodology and results from studies of patient education in schizophrenia.

Searching
Searches were conducted in the following databases: MEDLINE from 1966 to 1997 using the keywords 'health education', 'patient education', 'mental disorders' and 'schizophrenia'; Excerpta Medica from 1987 to 1997 with the keywords 'health education', 'patient education', 'mental disease' and 'schizophrenia'; PsycLIT from 1974 to 1996 with the keywords 'health education', 'patient education', 'client education', 'psycho-education', 'mental disorders' and 'schizophrenia'; and CINAHL with the keywords 'health education', 'patient education', and 'schizophrenia'. Identified articles were cross-referenced.

Study selection
Study designs of evaluations included in the review
Randomised controlled trials (RCTs) in patients with schizophrenia (classified as category A studies) were eligible; supplementary data were taken from naturalistic studies of pre-test, post-test design (category B), and RCTs in mixed-patient populations (category C).

Specific interventions included in the review
Patient education interventions were eligible. Trials with educational interventions ranging from fact sheets used to obtain consent, to intensive education programmes lasting up to a year, were included. Interventions with both didactic and behavioural elements were included. The main elements of didactic interventions were considered to be information and discussion. Interventions using didactic elements combined with role-play, problem-solving, communication training, training in medication management, social skills training, and training in relapse prevention were considered as didactic and behavioural. Trials comparing didactic and behavioural interventions and trials in which relatives participated were included, though family intervention studies with educational programmes were not included. More complex interventions including mainly social skills and psychotherapeutic interventions were excluded.

Participants included in the review
Patients with schizophrenia were eligible.

Outcomes assessed in the review
The inclusion criteria were not defined in terms of the outcome. The following outcomes were assessed in the included studies: knowledge, compliance, relapse, symptoms, social function, insight, quality of life, and satisfaction.

How were decisions on the relevance of primary studies made?
The author does not state how the papers were selected for the review, or how many of the reviewers performed the selection.

Assessment of study quality
Validity was assessed using the following methodological characteristics: diagnostic criteria for schizophrenia; sample size; blind rating; intention to treat analysis; medication control; drop-out rate; drop-out analysis; acceptance to participate; and evaluation of inter-rater reliability. The author does not state how the papers were assessed for validity, or how many of the reviewers performed the validity assessment.

Data extraction
The author does not state how the data were extracted for the review, or how many of the reviewers performed the data
extraction. Tables reported in the review included the following information: author and year of publication; characteristics of sample; intervention details; follow-up; outcomes assessed; and methodological characteristics.

**Methods of synthesis**

**How were the studies combined?**
The studies were grouped according to the assigned category (A, B C) and combined in a narrative review, according to the reported outcome.

**How were differences between studies investigated?**
The influence of the following factors on results was explored: education method (didactic versus didactic behavioural); duration of intervention (less than 10 sessions versus 10 or more sessions); educability (15 or less years of illness versus more than 15 years); and gender.

**Results of the review**

Category A studies: 7 RCTs (576 patients).

Category B studies: 4 pre-test, post-test studies (385 patients).

Category C studies (mixed population): 8 RCTs (757 patients).

Most studies demonstrated that knowledge and compliance could be improved by educational interventions. Compliance seems to be most readily influenced by interventions including behavioural components. A few studies indicated that relapse and symptomatology could be influenced by educational interventions as well. No influence of the duration of interventions was found. Where educability was studied, age, medication and level of symptoms were potential predictors.

Only results from category A studies are reported below.

Knowledge (6 RCTs): 5 out of 6 RCTs reported a statistically-significant benefit from the intervention (P<0.05).

Compliance (5 RCTs): 2 out of 5 RCTs reported a statistically-significant benefit from the intervention (P<0.05).

Relapse (3 RCTs): 1 out of 3 RCTs reported a statistically-significant benefit from the intervention (P<0.05).

Symptoms (5 RCTs): 2 out of 5 RCTs reported a statistically-significant benefit from the intervention (P<0.05).

Social function (4 RCTs): results were inconsistent with 2 out of 4 RCTs reporting a statistically-significant benefit from the intervention (P<0.05).

Insight (2 RCTs): results were inconsistent with 1 out of 2 RCTs reporting a statistically-significant benefit from the intervention (P<0.05).

Quality of life (1 RCT, 114 patients): a statistically-significant benefit from the intervention was reported.

Satisfaction (1 RCT, 46 patients): a statistically-significant benefit from the intervention was reported.

**Methodological problems.**

The main methodological problems in the category A studies related to acceptance to participate (in 34 to 100% of studies), lack of blind rating, attrition (drop-out rate ranged from 4.5 to 35.5%), intention to treat analysis, inter-rater reliability measures, and inclusion of changes in medication as a potential confounder for the impact on outcome measures.

Educational method.
Category A studies: all didactic studies where knowledge was measured reported improved level of knowledge. Only 1 out of 3 RCTs measuring compliance reported benefit. Only 1 out of 2 RCTs of didactic behavioural interventions measuring knowledge reported benefit, and only 1 out of 2 RCTs measuring compliance reported benefit.

All studies: overall, all didactic studies measuring knowledge reported benefit, compared to 2 out of 4 RCTs of didactic and behavioural interventions.

Duration of intervention: 7 out of 9 short programmes had an impact on knowledge, compared to 4 out of 4 studies with long interventions.

Educability: there was no apparent difference in knowledge change between patients with illness of 15 years duration or less (4 RCTs), compared to patients with duration of illness greater than 15 years (2 RCTs).

Gender (2 RCTs): No apparent influence of gender on knowledge gain was found.

Authors' conclusions
Due to methodological limitations and insufficient reporting, the results of available studies on patient education in schizophrenia are far from conclusive. The demonstration of efficacy of patient education in improving knowledge and compliance is most consistent.

CRD commentary
The aims were stated and the inclusion criteria were defined in terms of the study design, participants, and intervention. Eligible outcomes were not specified. The search included several relevant databases, but no mention was made of the application of any language restrictions and no attempt was made to locate unpublished material, thus raising the possibility of publication bias. Validity was systematically assessed and the results of this assessment were reported. Relevant details of included studies were presented in tabular format. However, there was no suggestion of any independent selection of papers, assessment of validity or checking of data extracted, and this omission may indicate potential sources of bias. Given the differences between studies, a narrative review was appropriate. The influence of several potential confounding factors on results was explored.

The evidence as presented in the review supports the author's conclusions.

Implications of the review for practice and research
Practice: The author states that patient education has an impact on knowledge in schizophrenia, and that educational programmes with behavioural elements show efficacy in influencing compliance, but that information on other outcomes is sparse.

Research: The author reports that further, methodologically homogeneous and better reported studies are required to reach conclusive results.

Bibliographic details

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MeSH
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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.