Authors' objectives
To review all publications on the use of electroconvulsive therapy (ECT) for psychiatric disorders in mental retardation, and to examine the characteristics of the patients, illness and treatment variables, and outcomes of ECT.

Searching
MEDLINE (from 1966 to April 2000), the Cochrane Library (from January 1987 to March 2000) and EMBASE (Psychiatry) (from January 1987 to March 2000) were searched; the MeSH terms used were 'mental retardation', 'developmental disabilities', 'ECT' and 'electroconvulsive therapy'. No language restrictions were reported. The references in the identified articles were checked and standard works on psychiatry in mental retardation were examined. The authors also contacted experts in the field for reports about the use of ECT in mentally retarded patients.

Study selection
Study designs of evaluations included in the review
The authors did not state any specific inclusion criteria in relation to the study design. Forty-four case studies were included. The length of follow-up varied considerably between the studies, with the longest follow-up being reported at 12 years post-treatment.

Specific interventions included in the review
ECT administered either unilaterally or bilaterally was the primary intervention of interest. The authors included studies in which ECT was administered in a number of sessions (range: 3 to 21) and with a variety of other concomitant interventions. These included both behavioural modification and pharmacotherapeutic interventions that were given either prior to, or following, the index ECT session and whilst further ECT sessions were administered. The specific pharmacotherapeutic drugs that were used concomitantly were nomifensine, lithium, fluoxetine, carbamazepine, lorazepam, clozapine, risperidone, phenytoin, lorazepam and venlafaxine. These were either used alone or in combination, with dosages varying between the different case studies.

Participants included in the review
The inclusion criterion was not explicitly stated, though it appears to have been mental retardation (patients with an IQ of less than 70). Forty-four participants with a various levels of mental retardation and a concomitant psychiatric disorder were included in the review. The participants were aged from 14 to 69 years. There were 27 males and 17 females. The concomitant psychiatric diagnoses were psychotic depression (n=14), severe depression (n=9), bipolar disorder (n=7), schizophrenic illness (n=7), catatonic psychosis (n=3), psychosis (n=2) and no reported diagnosis (n=2).

Outcomes assessed in the review
The main outcomes of interest were the treatment efficacy, time to relapse, and the occurrence of adverse events. In the majority of the studies, treatment efficacy was based upon observation and clinical judgement of the patients' behaviour (e.g. the return of skills, improvement in sleep patterns, reduction of self-injurious behaviour), as well as some objective parameters (e.g. weight, pulse and blood-pressure). In only five of the studies did the authors assess efficacy and/or cognitive side-effects of ECT in a standardised manner. The scales used were the Hamilton Rating Scale for Depression, the Adaptive Behaviour Scale, the Brief Psychiatric Rating Scale, the Global Assessment of Functioning Scale and the Mini-Mental State Examination.

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

Assessment of study quality
The authors did not state that they assessed validity.
Data extraction
The authors stated that all the reports were scrutinised in a standardised manner, but it was unclear how the data were extracted for the review, or how many reviewers performed the data extraction. Data were extracted on the participants' age, gender, level of mental retardation (IQ level where reported), psychiatric diagnosis and noted co-morbidity, prior treatment, number of ECT sessions, outcome of treatment, and their after care and follow-up.

Methods of synthesis
How were the studies combined?
A narrative synthesis of the studies was undertaken, with the results of specific cases being used to highlight the difference responses to ECT and adverse events that occurred. Whilst the authors did not formally assess publication bias, they did state that publication bias is to be expected and, therefore, the presented data must be interpreted with caution.

How were differences between studies investigated?
Differences between the outcomes from ECT were highlighted through recourse to specific case studies. However, there was no attempt to relate the outcome to patient variables such as psychiatric diagnosis or level of retardation, or to examine the outcome in relation to the number of ECT sessions or the use of concomitant interventions.

Results of the review
Forty-four case studies were included.

ECT was an effective treatment without important side-effects in 37 of the 44 patients (84%). Relapse or recurrence of illness was reported in 21 (48%) of the 44 patients within a range from 1 week to several years after effective ECT. Severe side-effects and/or little or no improvement was described in 7 patients (16%).

Authors' conclusions
The case studies suggested that ECT may be of value in treating severe psychiatric disorders in mentally retarded patients, with similar indications as in general psychiatry. However, the lack of strong scientific evidence, besides complicated psychiatric assessment as well as ethical and legal issues, probably causes an unnecessarily limited use of ECT in these patients.

CRD commentary
The authors addressed a clear review question in terms of the interventions, participants and outcome measures that were to be addressed in the review. The literature search was adequate, but only included published studies. It is therefore possible that relevant studies have been missed. The authors did not report how the papers were assessed for inclusion in the review, and it is possible that selection bias may have been introduced into the process. No method or process of undertaking a validity assessment was reported in the paper, but this is a reflection of the included case study designs rather than a flaw in the review process itself. The authors stated that all the reports were scrutinised in a standardised manner, but it was unclear as to how the data were extracted for the review. It is therefore possible that any errors in this process may have gone undetected and could influence the results of the review.

Adequate details on the characteristics of the primary case studies were tabulated, thereby allowing the reader to assess whether the authors' results and conclusions are consistent with the evidence base reviewed. The narrative discussion of the results of the case studies was appropriate, with differences highlighted through recourse to specific cases. However, overall, there are a large number of biases that could have been introduced into the review process, not least through the use of case studies. Therefore, the results of the review should be interpreted with caution.

Implications of the review for practice and research
Practice: The authors did not state any implications for practice.
Research: The authors stated that further controlled studies are needed to firmly establish the efficacy, safety and (dis)advantages of ECT in mentally retarded patients with severe psychiatric disorders.

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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.