Authors' objectives
The authors' objective appeared to be to determine the best treatment modality for treatment programme retention and related outcomes in adolescent heroin users.

Searching
MEDLINE and PsycINFO were searched. The keywords were given, but the dates of the searches were not. The searches were restricted to English language articles.

Study selection
Study designs of evaluations included in the review
The inclusion criteria were not explicitly stated. The study designs included in the review were controlled and uncontrolled treatment programmes.

Specific interventions included in the review
The inclusion criteria were not explicitly stated. The interventions included in the review were: methadone maintenance, therapeutic communities, out-patient drug-free programmes, both short and long-term detoxification treatments, naloxone treatment, acupuncture, herbal therapy, counselling, family support groups, milieu therapy, group therapy and individual therapy.

Participants included in the review
The inclusion criteria specified adolescents or young adults who were users of opiates or heroin. Studies of groups of 20 or more participants with a mean age of 21 years or less were eligible. The studies included in the review were conducted in the UK, USA and Mexico.

Outcomes assessed in the review
The inclusion criteria were not explicitly stated. The outcomes assessed in the review included: methadone maintenance, achievement of abstinence, duration of abstinence, frequency of drug use, recent use of drugs, retention within a programme, productive activities, employment and the use of nonopioids.

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 did not state how the data were extracted for the review, or how many reviewers performed the data extraction. He data extracted included the main variables considered and the main results reported in each study.

Methods of synthesis
How were the studies combined?
A narrative synthesis of the studies was undertaken. However, this dealt only with the results of five studies.

How were differences between studies investigated?
The results of the largest treatment study (5,407 participants) were reported separately (in the narrative) from the other
studies, four of which were summarised briefly. A summary table of included studies was provided.

**Results of the review**
Nine studies with 6,263 participants were included in the review; 5,407 of the participants came from the largest study. There were two controlled studies with 5,560 participants and seven uncontrolled studies with 703 participants.

The results of the largest study showed that retention in the treatment programme was highest for methadone maintenance in participants who were daily opiate users. It also found that methadone maintenance, therapeutic communities, out-patient drug-free and detoxification treatments all resulted in large reductions in opiate use, and that time spent in treatment was the best predictor for reduction in opiate use. A follow-up study at 4 to 6 years showed that methadone maintenance was associated with reduced opiate use, but with poor performance on measures of employment, alcohol use and productive activity. Therapeutic communities and abstinence programmes produced better outcomes on measures of employment, opioid use and use of other illicit substances.

The other studies reported a variety of results: an 80% retention rate on a methadone maintenance programme; a high proportion of drug-free participants on oral naloxone; a 60% return to opioid use after in-patient therapies; and a general decline in substance use with a combination of acupuncture, herbal therapy and counselling.

**Authors' conclusions**
The authors' conclusion appeared to be that there is a lack of robust evidence on which to base treatment recommendations, but that greater consideration should be given to methadone maintenance for appropriate patients.

**CRD commentary**
The lack of clear inclusion criteria for the review may have contributed to the heterogeneous nature of the included studies, and may also have led to the introduction of selection bias. Two relevant databases were searched, although the dates of the searches were not given. Seven of the included studies were conducted in the 1970s and two were conducted in 1998. There was no attempt to identify unpublished studies and the search was restricted to English language articles; this may have led to publication bias and language bias. The authors did not report using methods to minimise bias and errors in the study selection or data extraction processes; this may have led to selection or reporting bias. They also did not report that they assessed the validity of the included studies. Since a large number of different interventions and outcome measures were considered in the review, it is difficult to combine the studies statistically. The decision to use a narrative synthesis was, therefore, appropriate. However, its brevity makes it difficult to draw conclusions about studies other than the largest study, as does the fact that it included only five of the nine studies.

The authors' conclusions and the caveats they applied to them seem to have been appropriately cautious. However, this review should be considered useful only as a precursor to a more robust evaluation of the evidence.

**Implications of the review for practice and research**
Practice: The authors stated that methadone maintenance should be given serious consideration in the treatment of adolescents who are dependent on heroin and meet the adult criteria for this treatment.

Research: The authors stated that there is a need for more research into treatment for heroin dependent youths, and that clinical trials of methadone and other agonist therapies are required.

**Bibliographic details**

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Indexing Status
Subject indexing assigned by NLM

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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.