Drug abuse treatment as an HIV prevention strategy: a review

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Authors' objectives
To assess the effectiveness of drug abuse treatment in preventing human immunodeficiency virus (HIV) infection.

Searching
MEDLINE and PsycINFO were searched from 1988 to 1998 by pairing the following keywords with 'AIDS' or 'HIV': 'drug abuse treatment', 'methadone', 'therapeutic community', 'detoxification', 'ambulatory care' and 'drug abuse'. Both databases were also searched for articles by ten specific researchers in the field, whilst a colleague conducting a review in a related subject contributed references. Only studies published in English in peer-reviewed journals were eligible.

Study selection
Study designs of evaluations included in the review
Articles describing empirical research were eligible. Policy descriptions, conference proceedings, letters, book chapters and doctoral dissertations were excluded. The included studies were longitudinal before-and-after studies or cross-sectional surveys.

Specific interventions included in the review
Drug abuse treatments were eligible. The actual interventions included the following, either alone or in combination: methadone maintenance treatment (MMT), which was included in most interventions; naltrexone therapy; alcohol treatment; the community reinforcement approach; individual counselling, one to three times per week; detoxification; and experimental supplementary therapies. Treatment programmes were conducted on both an in-patient (short- and long-term) and out-patient basis.

Participants included in the review
The inclusion criteria were not defined in terms of participants. The following groups of actual participants, who were either entering or currently receiving treatment for dependence, were included: intravenous drug users (IDU), the largest group; alcoholics; cocaine-dependent patients; and heroin addicted prostitutes. Both men and women of varying ethnicity (Caucasian, African-American, Hispanic, and Native American) were included.

Outcomes assessed in the review
Studies reporting HIV risk behaviours and HIV seroconversions were eligible.

The actual outcomes assessed were HIV seroconversion rates and self-reports of the following: drug-related risk behaviour including injection frequency and needle-sharing; and sex-related risk behaviour including the number of sexual partners, condom use, involvement in prostitution, and having sex with an IDU.

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

Assessment of study quality
No formal validity assessment was undertaken, though some aspects of validity were addressed, e.g. study design, incomparability of treatment and control groups, and the validity of methods used to assess outcomes.

Data extraction
The authors do not state how the data were extracted for the review, or how many of the reviewers performed the data extraction. Tables in the review reported information on the following: author and year of publication; sample size and
characteristics; treatment modality; and results and conclusions.

Methods of synthesis
How were the studies combined?
The studies were grouped according to study design, intervention and outcome, and a narrative synthesis was undertaken.

How were differences between studies investigated?
Potential causes of differences were discussed in the text.

Results of the review
Thirty-three studies with over 17,000 participants were included.

Methodological problems included: lack of control groups in longitudinal studies; questionable validity of self-reports of risk behaviours; differences in demographics between in-treatment and out-of-treatment IDUs in comparative studies; self-selected treatment samples; highly selected samples; small sample sizes; short follow-up periods in longitudinal studies; and high attrition rates.

Longitudinal studies with in-treatment sample (20 studies with 16,330 participants): drug abuse treatment, especially MMT, was associated with decreased injection and sex-related HIV risk behaviours.

Drug-related HIV risk behaviour (17 studies): 16 studies found that treatment was associated with lower HIV risk behaviour, as measured predominantly by the frequency of injection or needle-sharing.


Seventeen studies included MMT and 11 studies focused solely on MMT. The studies that included other modalities did not analyse the change in HIV risk behaviour according to treatment modality.

Comparative studies of HIV risk behaviours among patients in drug abuse treatment and out-of treatment patients (9 studies with 3,112 participants): 8 studies focusing on MMT in IDUs found that patients in drug abuse treatment programmes engaged in less risk behaviour than out-of-treatment IDUs.

Comparative studies of HIV conversion rates among patients in drug abuse treatment and out-of treatment patients (6 studies with 1,794 participants): 4 studies reported reduced seroconversion rates in those receiving MMT.

Authors’ conclusions
There is clear evidence that MMT reduces HIV risk behaviours, particularly needle use, and strong evidence that MMT prevents HIV infection. There is less definitive evidence that MMT reduces needle-sharing and unsafe sexual behaviour, or that other treatment modalities prevent HIV infection.

CRD commentary
The aims were stated and the inclusion criteria were defined in terms of the intervention and outcomes. By restricting the literature search to articles published in the English language in peer-reviewed journals, other relevant studies may have been omitted. In addition, the possibility of publication bias arises from exclusion of unpublished material. The methods used to select studies were not described and no formal validity assessment was undertaken, although some aspects of validity were discussed in the text. Some relevant information was presented in tables. Quantitative outcomes were generally not reported and the methods used to extract data were not described. It was unclear whether the results reported formed a selected subset of outcomes from the individual studies, or whether all the results were reported. The evidence presented supports the authors’ conclusion, though the inherent limitations of the research reviewed should be taken into account.
Implications of the review for practice and research

Practice: The authors state that, in their opinion, the accumulated evidence provides sufficient evidence to conclude that MMT is a powerful tool to protect IDUs against seroconversion.

Research: The authors state that future research should take patient self-selection processes into account, and should investigate other treatment modalities for heroin and stimulant abuse, in order to determine their effects on HIV risk behaviours and HIV infection.

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