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[Intervention Review]

Therapeutic communities for substance related disorder

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ABSTRACT

Background

Therapeutic communities (TCs) are a popular treatment for the rehabilitation of drug users in the USA and Europe.

Objectives

To determine the effectiveness of TC versus other treatments for substance dependents, and to investigate whether effectiveness is modified by client or treatment characteristics.

Search methods

We searched: Cochrane Central Register of Controlled Trials (The Cochrane Library Issue 2, 2005); MEDLINE, EMBASE, Psycinfo, CINAHL, SIGLE from their inception to March 2004. Reference lists of studies were scanned.

Selection criteria

Randomised controlled trials comparing TC with other treatments, no treatment or another TC.

Data collection and analysis

Two authors independently inspected abstracts, the methodological quality was assessed using Drug and Alcohol CRG checklist. When possible, data were summarised using relative risks and differences in means, otherwise results are presented as reported by authors.

Main results

Seven studies were included. Differences between studies precluded any pooling of data, results are summarised for each trial individually: TC versus community residence: no significant differences for treatment completion; Residential versus day TC: attrition (first two weeks), and abstinence rates at six months significantly lower in the residential treatment group; Standard TC versus enhanced abbreviated TC: number of employed higher in standard TC RR 0.78 (95% CI 0.63, 0.96). Three months versus six months programme within modified TC, and six months versus 12 months programme within standard TC: completion rate higher in the three months programme and retention rate (40 days) significantly greater with the 12 months than 6 months programme.

Two trials evaluated TCs within a prison setting: one reported significantly fewer re incarcerated 12 months after release from prison in the TC group compared with no treatment, RR 0.68 (95% CI 0.57, 0.81). In the other, people treated in prison with TC compared with Mental Health Treatment Programmes showed significantly fewer re incarcerations RR 0.28 (95% CI 0.13, 0.63), criminal activity 0.69 (95% CI 0.52, 0.93) and alcohol and drug offences 0.62 (95% CI 0.43, 0.90) 12 months after release from prison.

Therapeutic communities for substance related disorder (Review)

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Authors' conclusions

There is little evidence that TCs offer significant benefits in comparison with other residential treatment, or that one type of TC is better than another. Prison TC may be better than prison on its own or Mental Health Treatment Programmes to prevent re-offending post-release for in-mates. However, methodological limitations of the studies may have introduced bias and firm conclusions cannot be drawn due to limitations of the existing evidence.

PLAIN LANGUAGE SUMMARY

Therapeutic communities for substance related disorder

Therapeutic communities (TCs) are a popular treatment for the rehabilitation of drug users. The results of this review show that there is little evidence that TCs offer significant benefits in comparison with other residential treatment, or that one type of TC is better than another. Prison TC may be better than prison on its own or Mental Health Treatment Programmes to prevent re-offending post-release for in-mates.

BACKGROUND

Drug and alcohol misuse and dependence has become a substantial world-wide public health problem. Drug misuse and addiction can put the individual at increased risk of a variety of illnesses, for example, there is a danger of infections such as HIV and hepatitis amongst injectors. In the UK from 1985 to 1995 there was marked increase in drug related deaths amongst young people 15 to 19 years (Roberts 1997). Heroin addicts have a mortality risk almost 12 times greater than the general population (Oppenheimer 1994), and mortality from self-poisoning with opiates has increased over nine-fold in the past two decades (Needleman 1997). Many drug users support their drug taking with significant criminal activity which is costly and damaging to the individual and society as a whole. The high morbidity and mortality associated with drug misuse makes it important that people have contact with treatment services.

Treatment of drug addiction can roughly be divided into two steps: detoxification from addiction and maintenance of abstinence. One of the most serious limits to long-term maintenance of abstinence is relapse after successful detoxification. Harm reduction treatments, for those who are not yet able to achieve a drug free state, may help to reduce the risks associated with the use of street drugs. Relapse from the drug-free state to re-addiction is a substantial problem in the rehabilitation of dependent drug users. Treatment options for people who are addicted to illicit drugs include: a combination of behavioral therapies and medications such as methadone or buprenorphine, detoxification, intensive outpatient treatment and residential treatment. A number of Cochrane systematic reviews of randomised controlled trials reporting the effectiveness

of treatments for opiate dependence exist: (Clark 2002, Faggiano 2003, Ferri 2005, Minozzi 2006, Mattick 2003a, Mattick 2003b). These reviews highlight that methadone maintenance at proper doses is the most effective treatment in retaining patients in treatment and suppressing heroin use but shows weak evidence of effectiveness towards other relevant outcomes such as mortality, criminal activity and quality of life.

Therapeutic communities (TC) for the treatment of drug misuse and addiction were introduced in the 1960s. TCs are drug-free residential settings that use a hierarchical model of care. Treatment stages reflect increased levels of personal and social responsibility. Peer influence is used to help individuals learn to assimilate social norms and develop more effective social skills. The way they differ from other treatment approaches is through the use of 'the community' as the key agent of change. The community here meaning both staff and others receiving treatment. Another fundamental principle of TCs is 'self-help', meaning that the individuals themselves are the main contributor to the process of change. TCs treat people with a range of substance misuse problems. People referred often have multiple drug addictions, mental health problems, inadequate family and social support and involvement with the criminal justice system.

While TCs are generally considered, particularly in the USA and parts of Europe, to be an effective method of rehabilitating abusers of drugs, the bulk of the research evidence is from poorly controlled studies (De Leon 1995; Etheridge 1995; F-Hermida 2002). In the last decade, a number of randomised controlled trials evaluating the effectiveness of TCs have been conducted. Although there are a number of narrative reviews summarising the therapeutic

tic community literature, they have a number of methodological shortcomings, and to date the evidence from RCTs has not been reviewed systematically.

OBJECTIVES

(1) To summarise the evidence for the effectiveness of therapeutic communities compared with other treatment options for reducing drug use for people with substance dependence

(2) To determine if effectiveness is modified by type of substance misused, reason for treatment attendance (voluntary or court order), prior treatment, treatment setting (in or out-patient) or by the duration of stay in a therapeutic community

METHODS

Criteria for considering studies for this review

Types of studies

Randomised controlled trials with parallel group or cluster design. Studies were eligible for inclusion if they included a comparison of one type of therapeutic community for substance misuse with a different type of therapeutic community, an alternative form of treatment or with placebo or no treatment.

Types of participants

People who sought treatment or were ordered by the court to obtain treatment with any substance misuse or dependency problem. These included people with a range of substance abuse problems, multiple drug addictions, co-morbidities e.g. mental health problems, and people with prior substance misuse treatment experience.

Types of interventions

We included RCTs evaluating the following interventions:

Experimental interventions: therapeutic community

Control intervention: pharmacological maintenance treatments, detoxification treatments, psychosocial treatments, placebo or no treatment group and another therapeutic community that differed in duration of treatment or programme of care offered

We excluded RCTs evaluating the effects of an adjunctive intervention given to one group of clients within a therapeutic community, that weren't evaluating the effects of TC directly.

Types of outcome measures

- (1) Illicit drug use measured by self-report or urinalysis during treatment or follow-up
- (2) Alcohol use measured by self-report or urinalysis during treatment or follow-up
- (3) Retention in treatment
- (4) Reasons for withdrawal from treatment
- (5) Addiction Severity Index (ASI) composite scores during treatment or follow-up
- (6) Imprisonment
- (7) Employment
- (8) Drug use arrests
- (9) Overdoses
- (10) Death due to all causes or drug related

Search methods for identification of studies

We searched (1) Cochrane Central Register of Controlled Trials (CENTRAL - The Cochrane Library issue 1, 2005) which includes the Cochrane Drugs and Alcohol Group Register of Trials; (2) MEDLINE (OVID- January 1966 to October 2004); (3) EMBASE (OVID- January 1988 to October 2004); (4) CINAHL (1982 - July 2004); (5) PsycInfo (1985 to October 2004); (6) SIGLE (1980-October 2004). Search strategies were developed for each database, based on the search strategy developed for MEDLINE, but revised accordingly to take into account differences in controlled vocabulary and syntax rules. For more details *see* [Appendix 1](#); [Appendix 2](#); [Appendix 3](#); [Appendix 4](#); [Appendix 5](#); [Appendix 6](#)

The reference lists of all retrieved studies and reviews were checked for relevant studies.

Data collection and analysis

Study Selection

All study citations found were collated in a single database. Titles and abstracts were screened by one author (LS) and references potentially relevant to the review were selected and obtained. These included reviews and primary studies. Full reports of citations with inadequate information to definitively determine relevance were also obtained. Two authors (LS & SG) independently evaluated whether studies should be included or excluded according to the eligibility criteria. Disagreements were resolved by a third author (DF).

Assessment of the methodological quality

Studies selected for inclusion were appraised for methodological quality using recognised criteria ([Juni 2001](#)), and quality assessments are discussed in the results. Quality assessment included: Allocation concealment

- (1) A. adequate allocation concealment; any procedure ensuring adequate concealment of allocation, such as: central randomiza-

tions(e.g. allocation by a central office unaware of subject characteristics), pre-numbered or coded identical bottles or containers which are administered serially to participants, drug prepared by the pharmacy, serially numbered, opaque, sealed envelopes, on-site computer system combined with allocations kept in a locked unreadable; computer file that can be accessed only after the characteristics of an enrolled participant have been entered or other description that contained elements convincing of concealment;

(2) B. unclear allocation concealment; when the authors either did not report an allocation concealment approach at all or report an approach that did not fall in the category A or C.

(3) C. inadequate allocation concealment; Any procedure not assuring adequate concealment of allocations such as: alternation or reference to case numbers, dates of birth, day of the week. Any procedure that is entirely transparent before allocation, such as an open list of random numbers or other description that contained elements convincing of not concealment

Blinding of outcome assessment

It was decided a priori that it was unlikely that participants and investigators would be blinded to treatment assignment. However, it was possible that the trial would include a blind outcome assessment, therefore, this was the only blinding criterion that was assessed and rated as:

- (1) yes
- (2) no
- (3) unclear

Completeness of follow-up was evaluated by recording the following aspects:

- (1) Method of analysis - Intention to treat or per-protocol
- (2) Method of imputation used for missing data
- (3) Proportion of participants completing the full follow-up period

Data extraction

Data were extracted from included studies, using a ProForma designed for this review, by two authors (ALS & SG) independently. Disparities were resolved by discussion.

Data extracted included:

Details of participants including demographic information (age, sex, ethnicity), primary drug used, duration of abuse and co-morbid conditions

Detailed description of therapy in active and control groups, duration, frequency and compliance

Outcome measures and results

Study design

Numbers randomised and analysed for each outcome

Withdrawals and dropouts

Data for intention-to-treat analyses were extracted if presented. If participants had not been analysed in their randomised groups they would be restored to the correct group for the review if sufficient information was reported to allow this. There were no reports of clients analysed in the wrong group.

The corresponding author of each study were contacted by e-mail for missing information about study methods and outcomes that

were described inadequately in the published report. To date, two authors have responded and provided additional information.

Data synthesis

Meta-analyses and investigations of heterogeneity were not conducted as there were no two studies similar enough to combine. Treatment effects were expressed as relative risks (RR) for dichotomous outcomes and differences in means (MD) for continuous outcomes, and reported with 95% confidence intervals (95% CI) when sufficient data for their calculation were reported. When this was not possible, summary statistics as presented in the individual study reports are reported in this review.

RESULTS

Description of studies

See: [Characteristics of included studies](#); [Characteristics of excluded studies](#).

We identified 31 studies as potentially eligible for the review.

Excluded studies

Twenty-one studies were excluded after further consideration and are listed in [Characteristics of included studies](#). Reasons for exclusion were:

inadequate randomisation or non-random assignment to treatment groups (6 studies)

evaluated treatment strategies within a TC and did not evaluate the effects of the TC directly (6 studies)

subsidiary analyses of an included study investigating predictors of response, not analyses by randomised groups (8 studies)

targeted behaviour other than drug use - motivation and life skills (1 study)

Included studies

We included ten reports of seven RCTs in the review. The types of intervention and comparisons are listed below and detailed in [Characteristics of included studies](#).

[Wexler 1999](#) reported on an evaluation of the Amity prison TC for male inmates that volunteered for substance abuse treatment. Volunteers with at least nine to fourteen months until parole, were selected at random, as beds became available, to enter the prison TC. The waiting list control group consisted of sample in-mates with less than nine months left to serve. Also, about 10% of the control group consisted of in-mates that were ineligible to join the study sample due to technical reasons e.g. less than nine months left to serve. Treatment within the TC followed a three phase process: orientation lasting two to three months; treatment lasting five to six months; and re-entry lasting one to three months. In-mates randomly assigned to the prison TC were invited to join a community-based TC for up to a year following their release from prison. The control group were released directly into the community.

In the study described by [Sacks 2004a](#), male inmates with a comorbid serious mental illness and substance misuse were randomly assigned to a modified therapeutic community (MTC) or Mental Health Treatment Programmes (MH). Treatment in the MTC was attendance of formal activities five days a week for four to five hours a day, the rest of the time was spent on prison work. A cognitive-behavioural programme with a foundation of TC principles was followed. The aim was to change attitudes and lifestyles in relation to, substance abuse, mental illness and criminal behaviour and thinking. Treatment in the MH was based on intensified psychiatric services including medication, individual therapy, and counseling and specialised group sessions. On release from prison, MTC inmates could enter an MTC after-care programme. [Condelli 2000](#) reported on a study conducted on The New Jersey Substance Abuse Treatment Campus, USA. The campus provides services needed by underserved populations, the aim is to reduce costs by centralising services, sharing facilities and therefore serving large numbers of clients. Substance abusers were randomised to therapeutic community (long term 6-12 months) or chemical dependency (short term 28 days) programmes on the campus. Chemical dependency programmes followed 12-step with greater emphasis on discharge planning and aftercare arrangements. The therapeutic communities followed a traditional regimen, modified for women in the women only programmes and for Hispanics in the Spanish speaking programmes. Each client was eligible for treatment in a sub-set of programmes, and as a minimum was eligible for at least two programmes, one short term and one long term. Other programme features affecting eligibility were language spoken (English or Spanish) and whether the programme was for women only or co-gender. [Guydish 1998](#) conducted a study where clients entering a TC-oriented drug treatment programme were randomly assigned to day or residential conditions. The TC was based on the family model. The structure of treatment started with an orientation phase in the first month, followed by a treatment phase lasting three to six months where the emphasis was on treatment of drug abuse and associated social and psychological problems. The re-entry phase, lasting three to six months, was focused on supporting the client in making independent employment and living arrangements. During the final phase, clients were no longer resident but participated in group and individual therapy on an outpatient schedule. The day treatment programme operated from a.m. to p.m., Monday to Friday, with reduced hours on weekends. Clients were required to attend seven days a week in the first month and five days per week thereafter. Whilst drug use while in treatment resulted in expulsion from the residential programme, a temporary relapse was tolerated for clients in the day programme. Following randomisation to treatment groups, there was a two week waiting period before entering the research protocol. [McCusker 1997a](#) reported on two RCTs conducted concurrently in New England, USA. One compared a short planned duration of treatment (six months) with a longer planned duration of treat-

ment (12 months) within a traditional therapeutic community, and the other compared a short planned duration of treatment (three months) with a longer planned duration of treatment (six months) within a modified therapeutic community incorporating a relapse prevention and health education programme. In the study described by [Nemes 1999](#), drug abusing clients were assigned to one of two 12 month therapeutic community programmes which differed in their lengths of inpatient and outpatient treatment. The standard programme offered 10 months inpatient treatment followed by two months outpatient services, and the abbreviated programme offered six months inpatient treatment followed by six months outpatient services. The study was conducted in Washington DC. [Nuttbrok 1998](#) evaluated homeless, mentally ill chemical abusers assigned to a therapeutic community or a community residence (CR). Both treatment settings were enhanced to provide treatment for mental illness and substance abuse, whilst keeping the different treatment philosophies of the two settings intact. The TC was of the traditional type, the CRs were characterised as low demand environments where relapses are tolerated and therefore may be considered as less strict than the TC.

Risk of bias in included studies

• Randomisation and allocation concealment

All included studies were stated as randomised, few gave further details about how the randomisation schedule was generated or if allocation to treatment groups was concealed. There were concerns about the adequacy of the randomisation procedures in several studies. [Condelli 2000](#) used a computer-generated randomisation schedule stratified by native language, gender and pregnancy, but at times some assignments may have been non-random due to limited bed availability. [Guydish 1998](#) used a systematic method to allocate participants to treatment groups by the use of odd/even numbers sealed in envelopes. The use of odd/even numbers means that it is unlikely that the assignments were concealed. The randomisation method was not described by [Nuttbrok 1998](#), however, the treatment facilities had the final say over acceptance of assigned clients post-randomisation. [Wexler 1999](#) selected people at random from a pool of eligible inmates, and assigned them to prison TC as beds became available. Non-randomly selected inmates joined a no treatment control group when they had less than nine months remaining from parole. About 10% of the control group were inmates with less than nine months to parole at the study beginning, therefore were ineligible for TC assignment. [McCusker 1997a](#) in the relapse prevention trial state that they used block sizes of 21 to assign clients to groups or an elapse of 30 days. At the TC site the same procedure was used initially, then a biased coin toss was used due to imbalance and limited bed availability. Authors stated that the assignment schedule was concealed from trial investigators.

- **Blinding**

It is the nature of interventions such as those evaluated in these trials that make blinding of participants and investigators almost impossible. None of the studies described attempts to blind investigators or participants, however, one study did state that outcome assessment was performed by a third party distinct from the clinical staff (McCusker 1997a).

- **Completeness of follow-up**

Attrition of randomised clients was a particular problem in all trials. This occurred at two different stages: one was after randomisation but before actual start of treatment, particularly as there was often a delay before treatment started. Condelli 2000 defined their ITT population as people randomised and accepted for treatment, which excluded people who failed to show up to complete the admission appointment (27%), and people referred elsewhere or not accepted due to medical or legal reasons (3%). The authors justified their definition of this modified ITT population by stating that the losses between randomisation and a bed becoming available should be random, as assignment was concealed, and losses were similar between groups with no baseline imbalances created. Guydish 1998 excluded 5% due to protocol violations, and McCusker 1997a stated that they conducted an ITT analysis, but it was unclear if 61 clients excluded from analyses due to treatment refusal and not completing baseline assessment were originally randomised or were eligible but not randomised. For all three studies the groups to which the excluded clients were randomised was not reported, and these clients were excluded from analyses reported by the authors. Nuttbrok 1998 also reported severe early attrition, almost 50% either were rejected by the facility as being not suitable for treatment or failed to show up for treatment after randomisation. Therefore, clients remaining may be considered to be a select group. Wexler 1999 followed up all clients 12 months after release.

Another stage of attrition was during the duration of the trial, after treatment had started. Most studies didn't conduct ITT analyses, but analysed those completing treatment. Nemes 1999 stated that 93% of their clients were followed up, but analyses are presented for clients able to provide the appropriate outcome data only, i.e. only clients not in prison were analysed for employment outcomes. Sacks 2004a excluded 51 clients from all analyses due treatment crossover, 50 of which were randomised to MTC. They defined their ITT sample as completers and drop-outs minus crossovers, but all clients were not accounted for at follow-up and there were still exclusions. McCusker 1997a- states they conducted an ITT for primary analyses, survival analyses were conducted with losses censored and losses assumed to be treatment failures, but it is unclear how many were randomised to each group, 93% clients were followed up after study completion. Wexler 1999 followed up all clients 12 months post-release.

Effects of interventions

As there was only one study in each of the analyses we conducted, heterogeneity was not applicable; a fixed effect model was, therefore, used. We have also summarised the results for data not suitable for analysis and present these in the text.

- *Therapeutic community versus community residence* (Nuttbrok 1998)

Drug use - urinalysis

Clients assigned to TC were significantly less likely to have a positive urine screen than those assigned to CR, RR 0.14 (0.05, 0.38). However, the analysis is only based on a sub-sample of clients that were tested to detect or verify substance use

Treatment completion

More than half of the randomised clients did not start treatment in their assigned programme. Of the 373 clients assigned to the TC, 84 (23%) were rejected by the facility and 120 (32%) failed to show up for treatment. Of those randomised to the community residences (CR), 73 (23%) were rejected by the facilities, and 127 (40%) failed to show up for treatment. Retaining all randomised clients in the analyses, there was no difference between the number completing two months of treatment in the TC or the CR groups, RR 1.00 (95% CI 0.81 to 1.24). While more clients completed six and twelve months treatment in CRs compared with TC treatment, the differences were not significant, RR 0.92 (95% CI 0.69 to 1.25) and 0.82 (95% CI 0.56 to 1.22), respectively.

- *Therapeutic community versus chemical dependency programme* Condelli 2000

Treatment completion

Condelli 2000 reported results for randomised comparisons between short term (chemical dependency) and long term (therapeutic community) programmes by gender for the outcome, combined treatment refusal and attrition at 25 days for the modified ITT population. Time to event methods were used with people remaining in treatment censored at 26 days, and hazard ratios with 95% confidence intervals (95% CI) reported. Treatment refusal/attrition was significantly greater for men and women randomised to co-gender TCs compared with men and women randomised to co-gender chemical dependency programmes: HR 2.18 (95% CI: 1.64 to 2.90) and 1.88 (95% CI: 1.09 to 3.27) respectively. For women randomised to women only programmes, there was significantly more refusal/attrition in the TC programmes compared with chemical dependency programmes, HR 1.54 (1.09 to 2.18).

- *Residential treatment versus day treatment* (Guydish 1998)

Treatment completion

Attrition during the first two week waiting period prior to treatment proper was significantly lower in the residential treatment group than the day treatment group, RR 0.78 (0.65, 0.93). However, at six, twelve and eighteen months there was little difference in the number of clients completing treatment in either group, RR 1.09 (95% CI 0.74 to 1.63), 0.60 (95% CI 0.27 to 1.34)

and 0.20 (95% CI 0.01 to 4.11), respectively. The authors of the study reported the results of a survival analysis using Kaplan Meier methods. The time to drop out was not significantly different between the two groups (log-rank $\chi^2 = 0.007$, $p = 0.94$).

Addiction Severity Index (ASI)

ASI composite scores at six months, for clients completing the two week waiting period, were little difference between residential and day treatment clients, difference in means (MD) being: 0.03 (-0.04, 0.10) for employment; -0.02 (-0.06, 0.02) for legal; 0.05 (0.01, 0.09) for alcohol and 0.00 (-0.03, 0.03) for drug.

Withdrawal severity

Symptom Check List (SCL-90-R) global symptom severity scores were also similar between groups at six months, MD -0.07 (-0.24, 0.10).

Abstinent at follow-up

Significantly more clients were abstinent at six months in residential treatment compared with day treatment, RR 1.52 (95% CI 1.10 to 2.10); by twelve and eighteen months while more clients remained abstinent in residential treatment, differences were no longer significant, RR 1.16 (95% CI 0.82 to 1.63) and 1.10 (95% CI 0.80 to 1.53), respectively.

- *Standard TC treatment versus enhanced abbreviated TC treatment (Nemes 1999)*

Treatment completion

More clients completed 12 months treatment in the enhanced abbreviated TC group compared with standard treatment, though the difference was not significant, RR 1.15 (95% CI 0.89 to 1.50).

Employment

Significantly more clients were currently employed following standard treatment than abbreviated treatment RR 0.78 (95% CI 0.63 to 0.96).

Drug use - urinalysis

For the evaluation of drug use based on urinalysis, the authors based their analyses on 142 standard TC clients and 159 enhanced abbreviated TC clients that agreed to a urinalysis, which excluded clients in prison, those interviewed only via phone, and one who refused to provide a urine specimen. We restored the number analysed to the number randomised for each group, and imputed positive drug use for missing data, and calculated the RR of producing a positive urine screen for each category of drug used. The RRs were: 1.09 (95% CI 0.83 to 1.43) for opiates; 1.05 (95% CI 0.87 to 1.27) for cocaine/crack; 0.88 (95% CI 0.66 to 1.16) for marijuana; and 0.88 (95% CI 0.66 to 1.66) for alcohol.

Criminal activity

All clients were followed up to evaluate criminal activity by reviewing criminal records. The RR of being in prison, on probation or pre-trial release was little different between groups, RR 0.97 (95% CI 0.80 to 1.16).

- *Modified therapeutic community planned duration three months versus planned duration six months (McCusker 1995, McCusker 1997a)*

Treatment completion

Significantly more clients completed treatment in the three month programme compared with the six month programme, RR 1.83 (95% CI 1.45 to 2.31), however, the 40 day retention rate was no different RR 1.00 (95% CI 0.77 to 1.31).

Time to first drug use (days from admission)

The authors reported that the time from admission to first drug use (excluding alcohol) was significantly longer in the six month planned duration group compared with the three month group, HR 0.74 (95% CI 0.58 to 0.93), however, clients lost to follow-up who were drug free until their last assessment were censored. In a more conservative analysis that assumed losses to follow-up were due to drug use, benefit was still in favour of the six month duration group, but the difference was no longer significant, HR 0.81 (95% CI 0.65 to 1.01). The median time to first drug use was 132 days for short duration and 217 days for long duration, log rank p -value = 0.0051.

Time to first drug use (days from treatment exit)

The median time to first drug use from exit was 60 days and 101 days for short and long duration groups, respectively. The log rank p -value was 0.05.

Addiction Severity Index (ASI)

ASI scores were reported for the most recent free-living 30-day period within the previous 90-days. Differences in mean ASI composite scores were lower, indicating greater improvement, for drug, alcohol, legal and employment domains in the six month group compared with the three month group. Differences in means were: drug: (n=341; -13 (-40, 14)); alcohol: (n=345; -10 (-50, 30)); legal: (n=353; -13 (-68, 43)) and employment: (n=348; -23 (-87, 42)).

- *Traditional therapeutic community planned duration six months versus planned duration 12 months (McCusker 1995, McCusker 1997a)*

Treatment completion

More clients completed treatment in the six month programme compared with the twelve month programme, RR 1.59 (95% CI 0.97 to 2.63) though the difference was not significant. However, the 40 day retention rate was significantly greater with the six month programme compared with the twelve month programme, RR 0.82 (0.70, 0.96).

Time to first drug use (days from admission)

The time from admission to first drug use (excluding alcohol) was longer in the 12 month planned duration group compared with the six month group, though the difference was not significant. HRs were 0.86 (0.61, 1.23) treating losses as drug free, and 0.91 (0.66, 1.27) for analyses treating losses as drug users, respectively.

Addiction Severity Index (ASI)

Reported differences in mean ASI composite scores were lower, though not significantly, indicating greater improvement, for legal and employment domains, and higher in the drug and alcohol domains in the twelve month group compared with the six month group. Differences in means were: drug (n=153; 32 (-7,

71)); alcohol (n=154; (4 (-56, 64)); legal (n=157 (-6 (-79, 67)) and employment (n=158 (-43 (-143, 57)).

Prison TC versus no treatment (Wexler 1999)

Criminal activity

Wexler 1999 reported significantly fewer inmates were reincarcerated 12 months after release from prison, in the prison TC group compared with the no treatment group, RR 0.68 (95% CI 0.57 to 0.81).

- *Modified Prison TC versus Mental Health Treatment Programmes* (Sacks 2004a)

Criminal activity

Sacks 2004a reported that re incarceration, criminal activity and alcohol/drug offences were significantly fewer 12 months after release from prison in the TC group compared with the MH group, RR 0.28 (95% CI 0.13 to 0.63), 0.69 (95% CI 0.52 to 0.93) and 0.62 (95% CI 0.43 to 0.90), respectively. However, this analysis is not based on an ITT analysis but based on clients followed up. These data should be interpreted with caution as there were baseline imbalances between the two groups. The MH group inmates were younger, more likely to be unemployed in the year prior to incarceration, used alcohol at an earlier age, and were less likely to report drugs as the main reason for criminal activity.

DISCUSSION

There is little evidence to show that TCs offer significant benefits in comparison with other residential treatment, or that one type of TC is better than another in terms of drug use related outcomes and retention in treatment. Prison TC may be better than prison on it's own or Mental Health Treatment Programmes to prevent re-offending post-release for male in-mates. However, firm conclusions cannot be drawn due to limitations of the existing evidence.

Overall, few comparisons showed significant differences between one treatment and another. And for each comparison, there was only one study, therefore these results should be interpreted in light of lack of replication. Nonetheless, some differences were shown. Homeless, MICA clients assigned to TC, were significantly more likely to have a negative urine screen than clients assigned to a community residence. There were no significant differences in retention in treatment. Significantly fewer inmates assigned to prison TC were re incarcerated at 12 months post release compared with prison inmates receiving no treatment or assigned to alternative services. One study reported significantly fewer people completing at least 25 days of treatment in a TC compared with chemical dependency. For residential TC versus day TC, attrition during the first two weeks was significantly lower, however there was little difference at longer follow up periods, abstinence at six months was also significantly higher, but no different at longer follow-up periods. There were no significant differences in ASI

scores. The only outcome showing significant benefit for enhanced abbreviated TC versus standard TC was employment. For TCs of different durations of treatment, longer duration of treatment was associated with better outcomes, but few were significant differences.

The data were surprisingly sparse, given the popularity of TCs particularly in the USA. No studies were found that were conducted in Europe. Unfortunately, the one study we found that compared a TC with a methadone maintenance programme, did not meet our eligibility criteria as the randomisation procedure had been seriously compromised Bale 1973; Bale 1980; Bale 1984.

A potential source of bias in the studies was the high level of treatment refusals and drop-outs following randomisation that occurred before treatment started. These clients were lost from further analyses in almost all of the studies which seriously compromise the validity of the results of these trials. Particularly as the rate was often high, and differed between treatment groups. Surprisingly, demographic characteristics of clients at baseline in most studies were balanced. Authors cited the difficult population as the reason for the high drop-out and difficulty with randomisation. Further attrition, that wasn't always fully accounted for in the analyses, occurred during the duration of treatment. Most studies analysed data for treatment completers only.

Only a few studies reported results for follow-up after treatment exit, and this was often compromised by high levels of attrition. The effectiveness of these interventions after treatment completion is of interest. Drug use using a subjective outcome measure, ASI, was evaluated in some studies. A more reliable method of measuring drug use would be an objective measure such as urinalysis, however, this raises logistical problems and may contribute to missing data. Another problem with outcomes that were evaluated using symptom scores was the analysis of data only on treatment completers, and it was not clear how missing data were handled. It wasn't clear how many people were analysed in treatment groups for some measures, and in others only people remaining in the trial were analysed.

Generally, reporting of the included studies was poor and failed to meet the standards recommended in the CONSORT statement (www.consortstatement.org). Few studies reported how important aspects of study design were conducted, such as concealment of treatment allocation and handling of missing data, making it difficult to assess the risk of bias.

AUTHORS' CONCLUSIONS

Implications for practice

The use of therapeutic communities for treatment of drug misuse and dependency is not based on sound evidence of effectiveness.

The evidence is not of high quality and is therefore not conclusive. The cost-effectiveness is unknown.

Implications for research

Further trials are justified as there is insufficient evidence to establish whether TCs are more effective at reducing drug use and health and social outcomes associated with drug use in comparison with an alternative treatment. In particular comparison with methadone maintenance programmes. Future trials should be designed with the aim to minimise attrition at the early stages of trial, following randomisation and before treatment starts. A large pragmatic study would be helpful, evaluating objective outcomes that can be followed up for everyone randomised to minimise missing data. The use of time to event outcomes to retain all participants in the analyses at follow-up should be considered. A pragmatic study that retains everyone in the analysis would help to answer

clinically relevant questions such as: if someone is assigned to a TC, what proportion are for example, drug free or crime free not just during treatment but also after discharge. Given the cost of a specialist treatment such as TC, evaluating cost-effectiveness is essential. Many hypotheses have been generated from the observational research in this area that warrants further exploration using more rigorous methodology. Future trial reports should be fully reported according to CONSORT guidelines.

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CHARACTERISTICS OF STUDIES

Characteristics of included studies [ordered by study ID]

Condelli 2000

Methods	<p>Randomisation: Parallel groups, computer generated, stratified by English/Spanish speaker, gender, pregnancy, some assignments may have been non-random due to bed availability</p> <p>Blinding: No blinding measures taken</p> <p>Completeness of follow-up: Of 2,221 randomised, 1,573 (71%) turned up or accepted for admission and included in the analysis. Time to event methods used, clients remaining in treatment more than 25 days censored</p> <p>Follow-up: 25 days</p>
Participants	<p>Adult substance misusers referred to New Jersey Campus, not solely alcohol users, with no court case pending, no serious medical or psychiatric illness, not on major tranquillisers, not treated on campus in previous 6 months.</p> <p>Age: 54% no more than 30 years</p> <p>Ethnicity: 50% black, 27% Hispanic, 22% Caucasian</p> <p>Primary drug: cocaine/crack 52%, heroin 35%, alcohol 9%</p>
Interventions	<p>Therapeutic communities:</p> <p>6-10 months co-gender programme (n=433),</p> <p>12 month women only programme (n=144),</p> <p>3 month co-gender Spanish speakers programme (n=199),</p> <p>9 month Spanish speakers programme (n=199),</p> <p>Chemical dependency:</p> <p>28 day co-gender programme (322),</p> <p>28 day women only programme (n=276)</p>
Outcomes	<p>Combined treatment refusal and attrition defined as the number of clients refusing treatment when informed of their assignment and those dropped within the first 25 days</p>
Notes	<p>If only a single programme had a bed available, client assigned to that programme</p>

Risk of bias

Risk of bias

Item	Authors' judgement	Description
Allocation concealment?	No	C - Inadequate

Guydish 1998

Methods	<p>Randomisation: Parallel groups, systematic randomisation using odd/even number assignment by sealed envelopes, stratified by sex</p> <p>Blinding: Clients and research staff not blinded</p> <p>Completeness of follow-up: N=534 randomised, N=26 excluded due to protocol violations, but group assignment not given, attrition in first 2 weeks treatment 49% overall and excluded from all analyses, analyses based on clients completing at least 2 weeks treatment</p> <p>Follow-up: 6, 12 and 18 months</p>
Participants	<p>Does not state inclusion criteria, but excluded court mandated to treatment, homeless or based on clinical judgement.</p> <p>Age: mean 33 years</p> <p>Sex: 30% female</p> <p>Ethnicity: 58% Black, 24% Caucasian, 15% Hispanic</p> <p>Primary drug: Cocaine 68%, heroin 14%, alcohol 10%</p>
Interventions	<p>Residential therapeutic community, N=253</p> <p>Non-residential therapeutic community treatment (7 days a week for first month and 5 days a week thereafter 8 am to 8 pm, N=255)</p> <p>Walden House TC based on family model</p>
Outcomes	<p>ASI composite scores employment, legal, alcohol and drug. Symptom Checklist-90-R global severity, relapse, attrition</p>
Notes	<p>Greenwood 2001 6, 12 and 18 month abstinence outcomes, Guydish 1999 12 and 18 month completion data</p>

Risk of bias

Risk of bias

Item	Authors' judgement	Description
Allocation concealment?	No	C - Inadequate

McCusker 1995

Methods	<p>Randomisation: Parallel groups, block size 21, then due to concerns about imbalance and bed availability a biased coin toss was used for assignment</p> <p>Blinding: Outcome assessment by third party distinct from clinical staff</p> <p>Completeness of follow-up: primary analyses by intention-to-treat</p> <p>Follow-up: 87.5% at 18 months</p>
Participants	<p>New England drug abusers without a court specified order</p> <p>Age: 51% <25 years</p> <p>Sex: 75% male</p> <p>Ethnicity: 81% Caucasian, 19% Black or Hispanic</p> <p>Heroin and cocaine use by 11%</p>
Interventions	<p>Traditional therapeutic community programme planned duration 6 months (n=97) versus planned duration 12 months (n=87)</p>

McCusker 1995 (Continued)

Outcomes	Drug-free time; ASI composite scores: drug, alcohol, legal and employment, treatment completion
Notes	Two trials conducted concurrently. Several subsidiary analyses published for the two trials. McCusker 1995 reports treatment completion

Risk of bias *Risk of bias*

Item	Authors' judgement	Description
Allocation concealment?	Unclear	B - Unclear

McCusker 1997a

Methods	Randomisation: Parallel groups, block size 21 Blinding: Outcome assessment by third party distinct from clinical staff Completeness of follow-up: Primary analyses by intention-to-treat Follow-up: 85.1% completed 18 month follow-up
Participants	New England drug abusers without a court specified order for treatment duration Age: 23% <25 years Sex: 68.5% male Ethnicity: 73% Caucasian, 27% Black or Hispanic Heroin and cocaine use by 24%
Interventions	Modified therapeutic community incorporating relapse prevention and health education programme planned duration 3 months (n=223) versus planned duration 6 months (n=221)
Outcomes	Drug-free time; ASI composite scores: drug, alcohol, legal and employment, treatment completion
Notes	Two trials conducted concurrently. Several subsidiary analyses published for the two trials, McCusker 1995 reports treatment completion

Risk of bias *Risk of bias*

Item	Authors' judgement	Description
Allocation concealment?	Unclear	B - Unclear

Nemes 1999

Methods	Randomisation: Parallel groups, randomisation stratified by sex, using random number tables and block sizes of eight Blinding: No information reported, assumed open Completeness of follow-up: 93% of clients followed-up Follow-up: 12 months
Participants	Adults with drug and alcohol addiction seeking treatment at drug addiction services or with a court order to obtain treatment Clients in early 20's, primarily black, about half with antisocial personality disorder, crack most commonly used drug
Interventions	Standard Inpatient Therapeutic community (10 months inpatient treatment followed by 2 months outpatient services) (n=194) Enhanced abbreviated Inpatient therapeutic community programme (6 months inpatient treatment followed by 6 months outpatient services). Enhanced by more clinical staff per client, and services designed to be more readily available (n=218)
Outcomes	Drug-use determined by urinalysis, recidivism (criminal record review), employment status, attrition
Notes	

Risk of bias

Risk of bias

Item	Authors' judgement	Description
Allocation concealment?	Unclear	B - Unclear

Nuttbrok 1998

Methods	Parallel treatment groups in equal ratio unless beds unavailable then assigned 0.75 TC to 0.25 CR. Treatment facilities had final say about acceptance of referred clients. Blinding: No information on blinding, presumed to be open Completeness of follow-up: Only 42% followed up at 12 months, study completers analysed
Participants	Homeless men aged at least 21 years, with major mental illness according to DSM-III-R criteria and history of substance misuse Mean age: 31 Ethnicity: 57.9% Black, 21.3% Hispanic 42% at least 5 previous psychiatric hospitalisations Primary drug: 43.9% crack, 21.2% alcohol, 13.2% cocaine, 87.6% multiple substance use, 48.8% non-affective psychotic disorder, 22.3% depressive disorder
Interventions	Argus therapeutic community, NY, USA Therapeutic community modified to accommodate mental disorders also (TC) (n=373) All treatment was provided in-house therefore residents were insulated from outside world, projected duration of treatment 18 months Two community residences modified to accommodate substance misuse disorders also (CR) (n=321) Residents commuted to day programmes therefore were in daily contact with the outside world, projected duration of treatment 18 months

Nuttbrok 1998 (Continued)

Outcomes	Attrition at 2, 6 and 12 months, drug use determined by urinalysis
Notes	

Risk of bias *Risk of bias*

Item	Authors' judgement	Description
Allocation concealment?	Unclear	B - Unclear

Sacks 2004a

Methods	<p>Randomisation: Parallel groups, unequal group sizes due to different flow rates and capacities, no information on methods of randomisation</p> <p>Blinding: Not stated</p> <p>Completeness of follow-up: N=236 randomised, 51 excluded from all analyses as crossed over from one treatment group to another (50 from TC). Follow-up on 75% of remaining sample overall</p>
Participants	<p>Male inmates with co-occurring serious mental illness and chemical abuse (MICA), 12-18 months remaining before parole, men a danger to themselves or others excluded</p> <p>Mean age: 34.3 years</p> <p>Ethnicity: 30% Black, 49% Caucasian, 16.5% Hispanic</p> <p>Axis diagnoses: Axis I or II disorder 96%, mental illness 78%, serious mental illness 63%, ASP 37%, substance abuse 90%</p>
Interventions	<p>Modified therapeutic community in prison</p> <p>Typical inmate attends formal activities 5 days a week, 4-5 hours a day, then fulfils prison work requirements</p> <p>Cognitive behavioral curriculum within a foundation of TC principles. The programme includes psycho-educational classes, CBT, medication and therapeutic interventions planned duration 12 months (N=142)</p> <p>Mental Health Programme provides intensive psychiatric services consisting of medication, weekly individual therapy and counselling and specialized groups, (N=94)</p>
Outcomes	Reincarceration, criminal activity (new crimes), alcohol or drug offence at 12 months post-prison release
Notes	The authors also conduct several additional analyses based on clients who attended an aftercare programme post-prison release which are not considered here as clients weren't randomised to this treatment but volunteered

Risk of bias *Risk of bias*

Item	Authors' judgement	Description
Allocation concealment?	Unclear	B - Unclear

Wexler 1999

Methods	Randomisation: Parallel groups, stratified by ethnicity, members picked at random from a pool of inmates and assigned to TC as beds became available, inmates with less than 9 months left to serve became control group Blinding: Not stated Completeness of follow-up: All randomised participants followed-up for 12 month post-release endpoint. 24 month outcomes only obtained for a subgroup at risk for 24 months at the time of outcome assessment
Participants	Male inmates who volunteered for substance abuse treatment, 9-14 months left before parole, excluded inmates that had committed arson or sex crimes to minors Mean age: 30.9 years Ethnicity: 22.4% Black, 37.8% Caucasian, 30.1% Hispanic Lifetime arrests: mean 26.7 Psychiatric diagnoses: antisocial personality 51.5%, phobias 17.2%, posttraumatic stress 14.5%, depression 10.1%, dysthymia 6.9% Lifetime arrests: mean 26.7 Psychiatric diagnoses: antisocial personality 51.5%, phobias 17.2%, posttraumatic stress 14.5%, depression 10.1%, dysthymia 6.9%
Interventions	Prison TC (n=425) No treatment (n=290)
Outcomes	Reincarceration defined as parole violation or new arrests not temporary returns of <30 days at 12 months post-release by criminal record review
Notes	About 10% of control group were inmates who met all eligibility criteria, but had less than nine months until parole. Prison TC clients were invited to enter a community TC on release from prison. No treatment group released directly into the community. Other outcomes reported for sub-groups of patients not considered in this review as are non-randomised comparisons

Risk of bias***Risk of bias***

Item	Authors' judgement	Description
Allocation concealment?	No	C - Inadequate

ASI=Addiction Severity Index

Characteristics of excluded studies [ordered by study ID]

Study	Reason for exclusion
Bale 1973	Methadone versus therapeutic communities Reason for exclusion: Inadequate randomisation procedures

(Continued)

Bale 1980	Methadone versus therapeutic communities Reason for exclusion: Randomisation procedures compromised as some groups closed to new participants at times and main analysis makes non-randomised comparisons
Bale 1984	Methadone versus therapeutic communities Reason for exclusion: Inadequate randomisation procedures
Beidler 1991	RCT Reason for exclusion: evaluating different treatment strategies within a modified therapeutic community, did not evaluate the effects of the TC directly, measured effects of treating addicts together with alcoholics and treating them separately
Czuchry 2000	RCT Reason for exclusion: evaluating a treatment readiness training programme versus the standard approach within a therapeutic community in a criminal justice setting, did not evaluate the effects of the TC directly. Treatment readiness programme designed to improve motivation and skills needed for treatment progress
Czuchry 2003	RCT Reason for exclusion: evaluating the effects of a cognitive skills training within a modified therapeutic community in a criminal justice setting, did not evaluate the effects of the TC directly
De Leon 2000a	Two modified therapeutic community groups versus treatment as usual for mentally ill chemical abusers. Reason for exclusion: Sequential assignment to treatment groups, non-random assignment to treatment groups
De Leon 2000b	Subsidiary analyses of Wexler 1999 RCT. Reason for exclusion: Investigates factors affecting retention and outcomes in a prison based therapeutic community. Results for the sample as a whole, not for the randomised groups individually
Fals-Stewart 1992	RCT Reason for exclusion: evaluating treatment aimed at obsessive compulsive disorder co-morbid with substance misuse within a TC, did not evaluate the effects of the TC directly
Hughes 1995	RCT Reason for exclusion: evaluating a child-live in programme versus no child live-in programme within a therapeutic community for cocaine abusing women, did not evaluate the effects of the TC directly
McCusker 1996	Sub-group analyses of McCusker study Reason for exclusion: Reports on a stratified analyses of actual length of stay rather than planned length of stay and outcome within randomised groups
McCusker 1997b	Sub-group analyses of McCusker 1997a study Reason for exclusion: Reports on a stratified analysis of actual length of stay rather than planned length of stay and outcome within randomised groups
Messina 1999	Subsidiary analyses of Nemes 1999 study Reason for exclusion: Reports on a logistic regression analysis of participants with and without antisocial personality disorder and treatment outcome, not analysed in randomised groups

(Continued)

Messina 2000	Subsidiary analyses of Nemes 1999 study Reason for exclusion: Comparing outcomes in men and women, not analysed in randomised groups
Messina 2001	Subsidiary analyses of Nemes 1999 study Reason for exclusion: Reports on a logistic regression analysis of participants that stayed in treatment more than 60 days and treatment outcome, not analysed in randomised groups
Messina 2002	Subsidiary analyses of Nemes 1999 study Reason for exclusion: Reports on a logistic regression analysis of participants with and without antisocial personality disorder and treatment outcome, not analysed in randomised groups
Morral 2004	Reason for exclusion: Not randomised, observational study
Newbern 1999	Cluster RCT, probationers randomised to mapping versus standard counselling within 12 therapeutic communities. Reason for exclusion: did not evaluate the effects of the TC directly, evaluating the effects on motivation and life skills
Nuttbrock 1997b	Subsidiary analyses of Nuttbrock 1998 study Reason for exclusion: Reports on a logistic regression analysis of predictors of attrition
Nuttbrock 1999	Therapeutic community versus community residence Reason for exclusion: No review outcomes, measures perception of treatment environment
Sacks 2004b	Homeless prevention TC (HP-TC) versus standard TC Reason for exclusion: Not randomised, quasi-experimental, propensity analysis used for selection of control group

DATA AND ANALYSES

Comparison 1. Residential treatment versus day treatment

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Attrition at 2 weeks	1	508	Risk Ratio (M-H, Fixed, 95% CI)	0.77 [0.64, 0.92]
2 Completion of 6 months treatment	1	508	Risk Ratio (M-H, Fixed, 95% CI)	1.09 [0.74, 1.63]
3 ASI Employment final score at 6 months	1	216	Mean Difference (IV, Fixed, 95% CI)	0.03 [-0.04, 0.10]
4 ASI Legal final score at 6 months	1	216	Mean Difference (IV, Fixed, 95% CI)	-0.02 [-0.06, 0.02]
5 ASI Alcohol final score at 6 months	1	216	Mean Difference (IV, Fixed, 95% CI)	0.05 [0.01, 0.09]
6 ASI drug final score at 6 months	1	216	Mean Difference (IV, Fixed, 95% CI)	Not estimable
7 SCL-90-R Global severity final score at 6 months	1	216	Mean Difference (IV, Fixed, 95% CI)	-0.07 [-0.24, 0.10]

Comparison 2. Standard TC versus enhanced, abbreviated TC

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Currently employed	1	412	Risk Ratio (M-H, Fixed, 95% CI)	0.78 [0.63, 0.96]
2 Urinalysis positive for cocaine/crack	1	412	Risk Ratio (M-H, Fixed, 95% CI)	1.05 [0.87, 1.27]
3 Urinalysis positive for marijuana	1	412	Risk Ratio (M-H, Fixed, 95% CI)	0.88 [0.66, 1.16]
4 Urinalysis positive for alcohol	1	412	Risk Ratio (M-H, Fixed, 95% CI)	0.88 [0.66, 1.16]
5 Urinalysis positive for opiates	1	412	Risk Ratio (M-H, Fixed, 95% CI)	1.09 [0.83, 1.43]
6 In prison, on probation/parole or on pre-trial release at follow-up: criminal justice records based status	1	412	Risk Ratio (M-H, Fixed, 95% CI)	0.97 [0.80, 1.16]
7 Completed treatment	1	412	Risk Ratio (M-H, Fixed, 95% CI)	1.15 [0.89, 1.50]

Comparison 3. Therapeutic community versus community residences

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Completed 2 months treatment	1	694	Risk Ratio (M-H, Fixed, 95% CI)	1.00 [0.81, 1.24]
2 Completed 6 months treatment	1	694	Risk Ratio (M-H, Fixed, 95% CI)	0.92 [0.69, 1.25]
3 Completed 12 months treatment	1	694	Risk Ratio (M-H, Fixed, 95% CI)	0.82 [0.56, 1.22]
4 Urinalysis positive for substance use	1	185	Risk Ratio (M-H, Fixed, 95% CI)	0.14 [0.05, 0.38]

Comparison 4. Three month modified TC versus six month modified TC

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Treatment completion	1	444	Risk Ratio (M-H, Fixed, 95% CI)	1.83 [1.45, 2.31]
2 Forty day retention	1	444	Risk Ratio (M-H, Fixed, 95% CI)	1.02 [0.91, 1.14]

Comparison 5. Six month traditional TC versus twelve month traditional TC

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Treatment completion	1	184	Risk Ratio (M-H, Fixed, 95% CI)	1.59 [0.97, 2.63]
2 Forty day retention	1	184	Risk Ratio (M-H, Fixed, 95% CI)	0.82 [0.70, 0.96]

Comparison 6. Prison TC versus no treatment

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Reincarceration 12 months post-prison release	1	715	Risk Ratio (M-H, Fixed, 95% CI)	0.68 [0.57, 0.81]

Comparison 7. Modified prison TC versus Mental Health Treatment Programmes

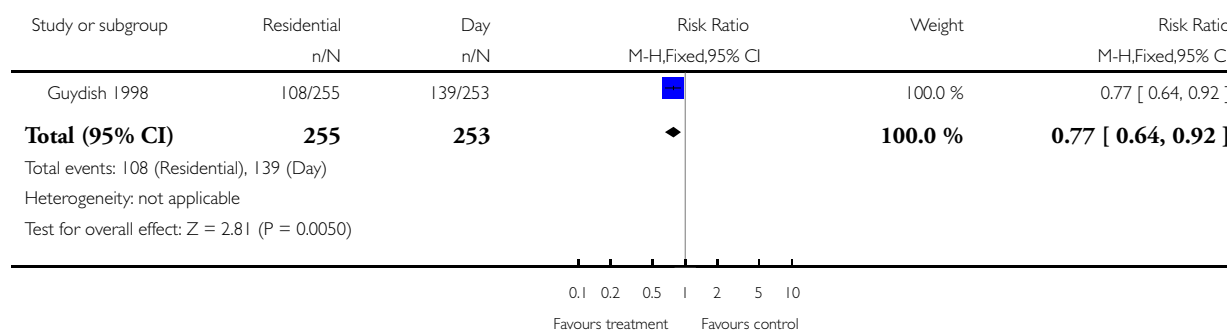
Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Reincarceration 12 months post-prison release	1	139	Risk Ratio (M-H, Fixed, 95% CI)	0.28 [0.13, 0.63]
2 Criminal activity 12 months post-prison release	1	139	Risk Ratio (M-H, Fixed, 95% CI)	0.69 [0.52, 0.93]
3 Alcohol/drug offence 12 months post-prison release	1	139	Risk Ratio (M-H, Fixed, 95% CI)	0.62 [0.43, 0.90]

Analysis 1.1. Comparison 1 Residential treatment versus day treatment, Outcome 1 Attrition at 2 weeks.

Review: Therapeutic communities for substance related disorder

Comparison: 1 Residential treatment versus day treatment

Outcome: 1 Attrition at 2 weeks

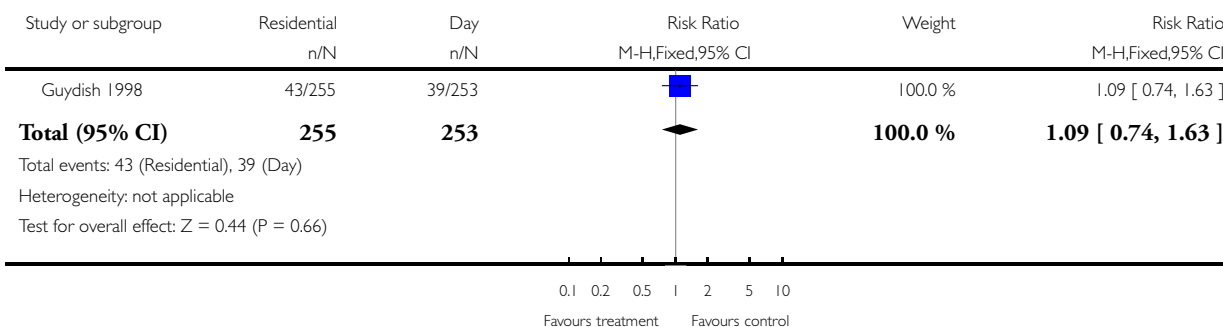


Analysis 1.2. Comparison 1 Residential treatment versus day treatment, Outcome 2 Completion of 6 months treatment.

Review: Therapeutic communities for substance related disorder

Comparison: 1 Residential treatment versus day treatment

Outcome: 2 Completion of 6 months treatment

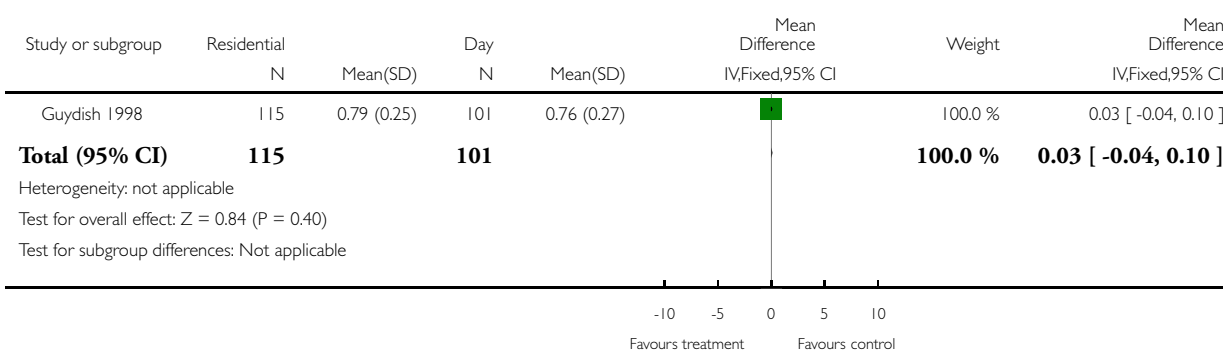


Analysis 1.3. Comparison 1 Residential treatment versus day treatment, Outcome 3 ASI Employment final score at 6 months.

Review: Therapeutic communities for substance related disorder

Comparison: 1 Residential treatment versus day treatment

Outcome: 3 ASI Employment final score at 6 months

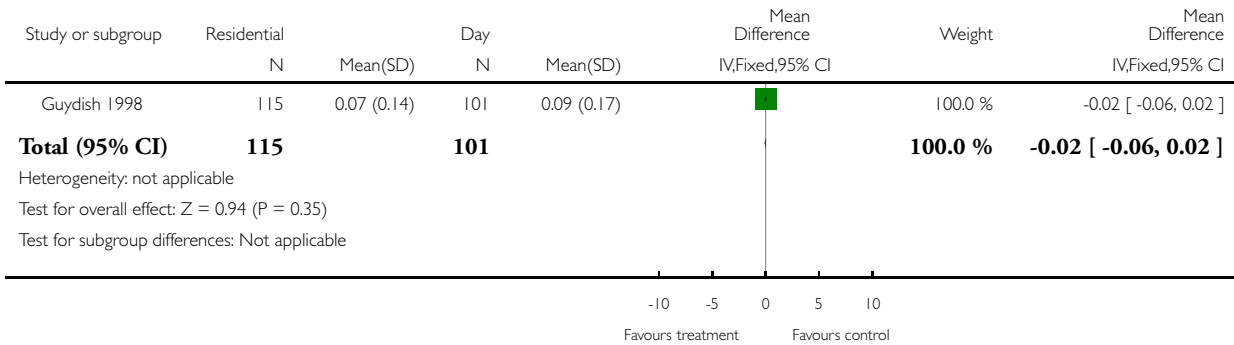


Analysis 1.4. Comparison 1 Residential treatment versus day treatment, Outcome 4 ASI Legal final score at 6 months.

Review: Therapeutic communities for substance related disorder

Comparison: 1 Residential treatment versus day treatment

Outcome: 4 ASI Legal final score at 6 months

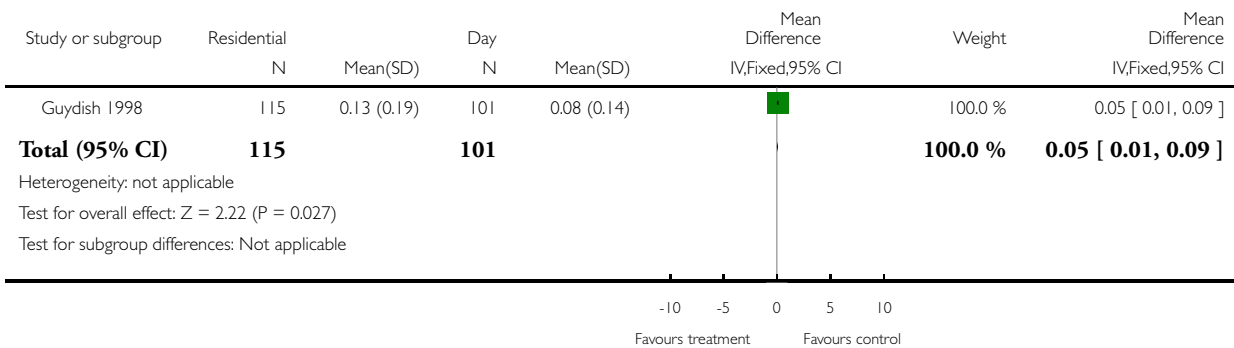


Analysis 1.5. Comparison 1 Residential treatment versus day treatment, Outcome 5 ASI Alcohol final score at 6 months.

Review: Therapeutic communities for substance related disorder

Comparison: 1 Residential treatment versus day treatment

Outcome: 5 ASI Alcohol final score at 6 months

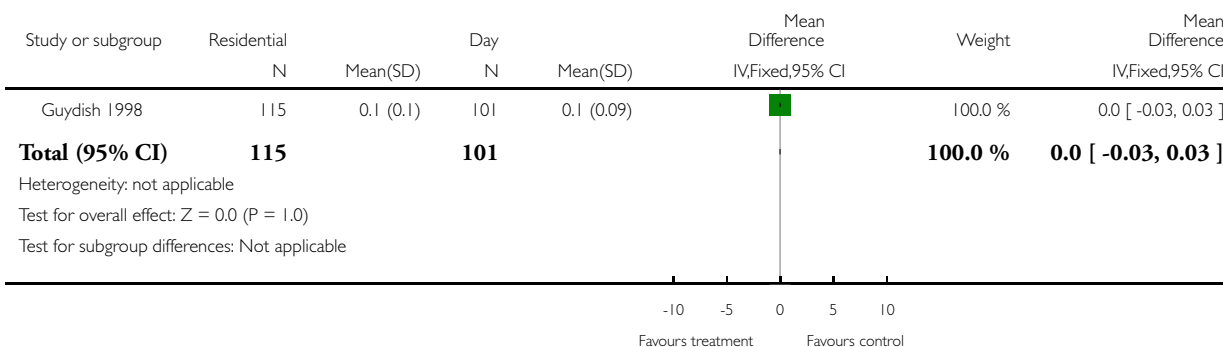


Analysis 1.6. Comparison 1 Residential treatment versus day treatment, Outcome 6 ASI drug final score at 6 months.

Review: Therapeutic communities for substance related disorder

Comparison: 1 Residential treatment versus day treatment

Outcome: 6 ASI drug final score at 6 months

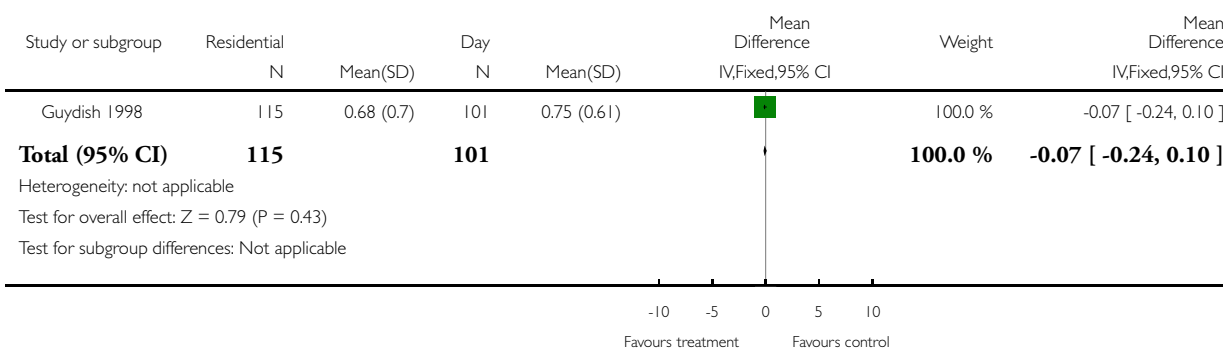


Analysis 1.7. Comparison 1 Residential treatment versus day treatment, Outcome 7 SCL-90-R Global severity final score at 6 months.

Review: Therapeutic communities for substance related disorder

Comparison: 1 Residential treatment versus day treatment

Outcome: 7 SCL-90-R Global severity final score at 6 months

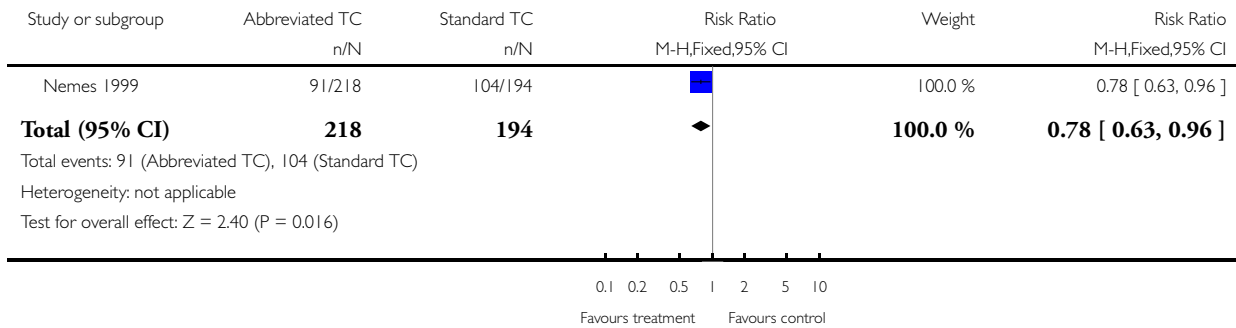


Analysis 2.1. Comparison 2 Standard TC versus enhanced, abbreviated TC, Outcome 1 Currently employed.

Review: Therapeutic communities for substance related disorder

Comparison: 2 Standard TC versus enhanced, abbreviated TC

Outcome: 1 Currently employed

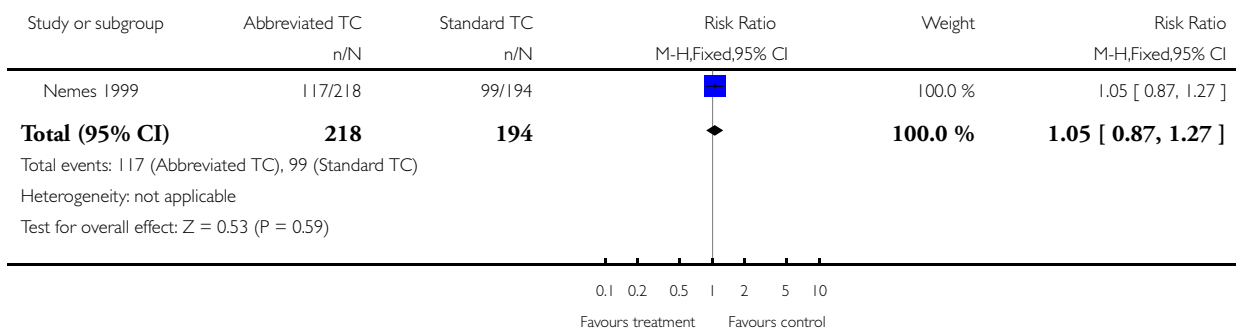


Analysis 2.2. Comparison 2 Standard TC versus enhanced, abbreviated TC, Outcome 2 Urinalysis positive for cocaine/crack.

Review: Therapeutic communities for substance related disorder

Comparison: 2 Standard TC versus enhanced, abbreviated TC

Outcome: 2 Urinalysis positive for cocaine/crack

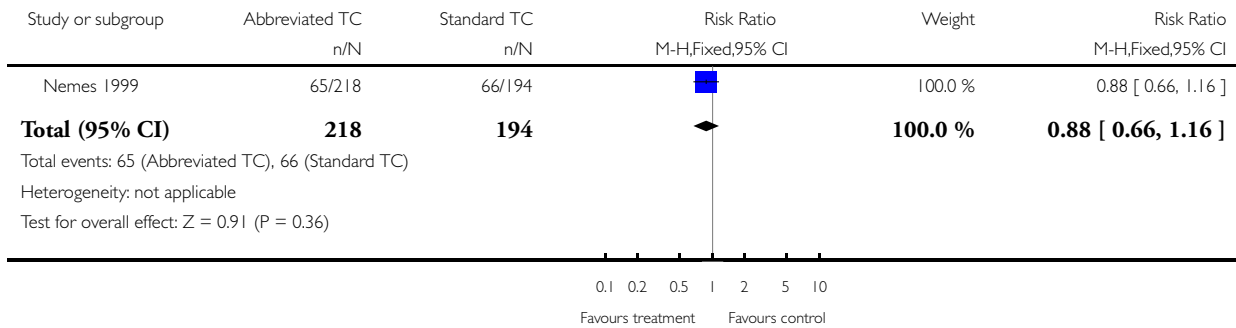


Analysis 2.3. Comparison 2 Standard TC versus enhanced, abbreviated TC, Outcome 3 Urinalysis positive for marijuana.

Review: Therapeutic communities for substance related disorder

Comparison: 2 Standard TC versus enhanced, abbreviated TC

Outcome: 3 Urinalysis positive for marijuana

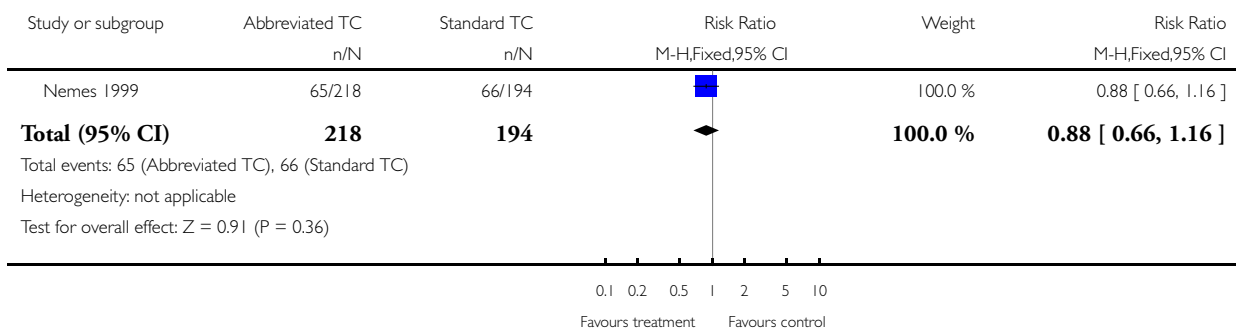


Analysis 2.4. Comparison 2 Standard TC versus enhanced, abbreviated TC, Outcome 4 Urinalysis positive for alcohol.

Review: Therapeutic communities for substance related disorder

Comparison: 2 Standard TC versus enhanced, abbreviated TC

Outcome: 4 Urinalysis positive for alcohol

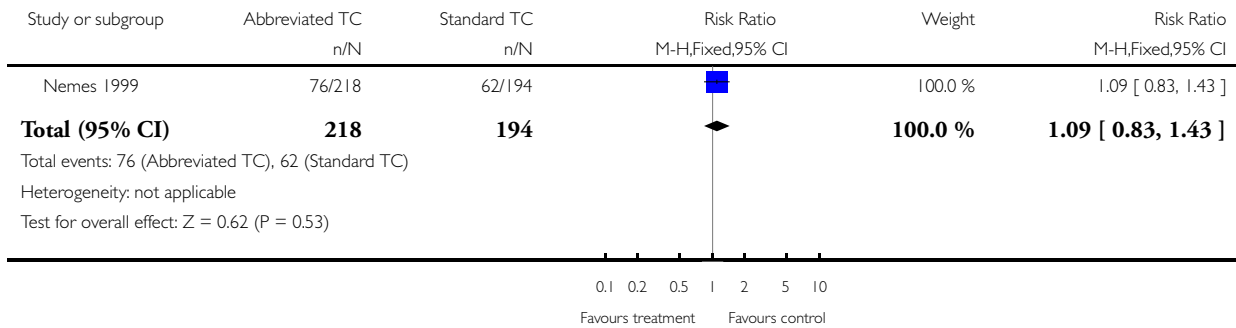


Analysis 2.5. Comparison 2 Standard TC versus enhanced, abbreviated TC, Outcome 5 Urinalysis positive for opiates.

Review: Therapeutic communities for substance related disorder

Comparison: 2 Standard TC versus enhanced, abbreviated TC

Outcome: 5 Urinalysis positive for opiates

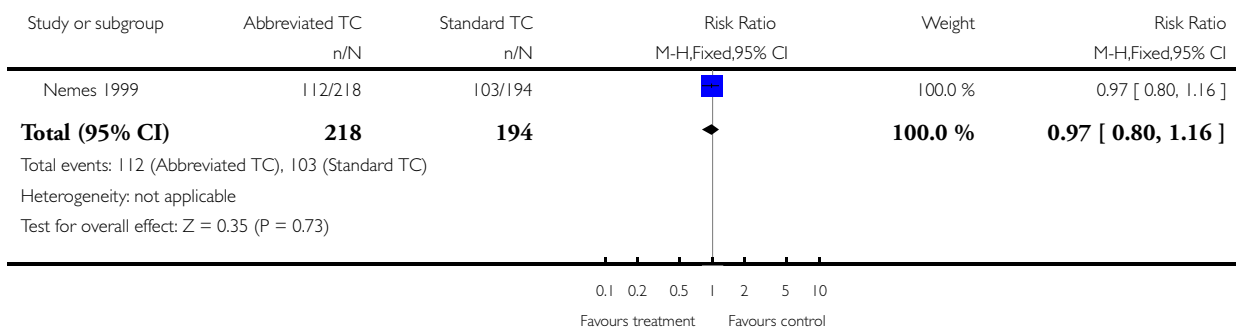


Analysis 2.6. Comparison 2 Standard TC versus enhanced, abbreviated TC, Outcome 6 In prison, on probation/parole or on pre-trial release at follow-up: criminal justice records based status.

Review: Therapeutic communities for substance related disorder

Comparison: 2 Standard TC versus enhanced, abbreviated TC

Outcome: 6 In prison, on probation/parole or on pre-trial release at follow-up: criminal justice records based status

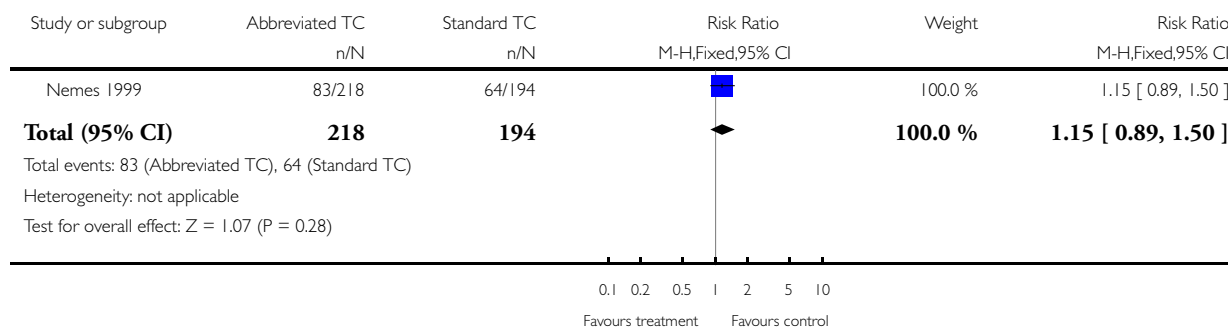


Analysis 2.7. Comparison 2 Standard TC versus enhanced, abbreviated TC, Outcome 7 Completed treatment.

Review: Therapeutic communities for substance related disorder

Comparison: 2 Standard TC versus enhanced, abbreviated TC

Outcome: 7 Completed treatment

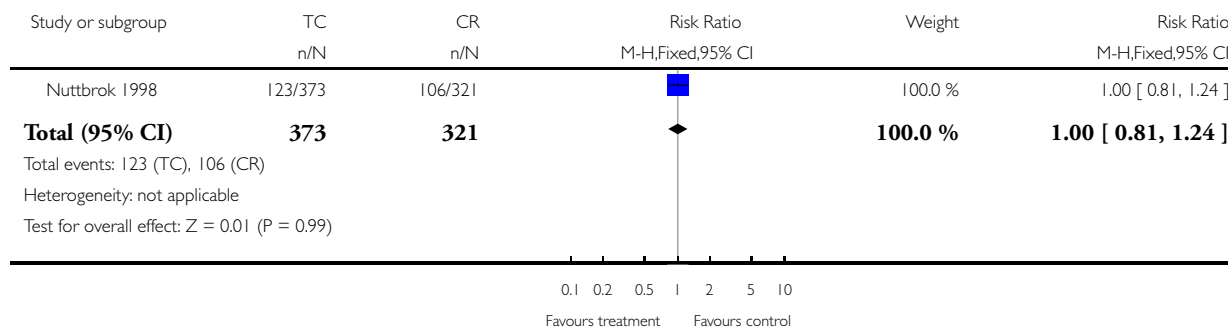


Analysis 3.1. Comparison 3 Therapeutic community versus community residences, Outcome 1 Completed 2 months treatment.

Review: Therapeutic communities for substance related disorder

Comparison: 3 Therapeutic community versus community residences

Outcome: 1 Completed 2 months treatment

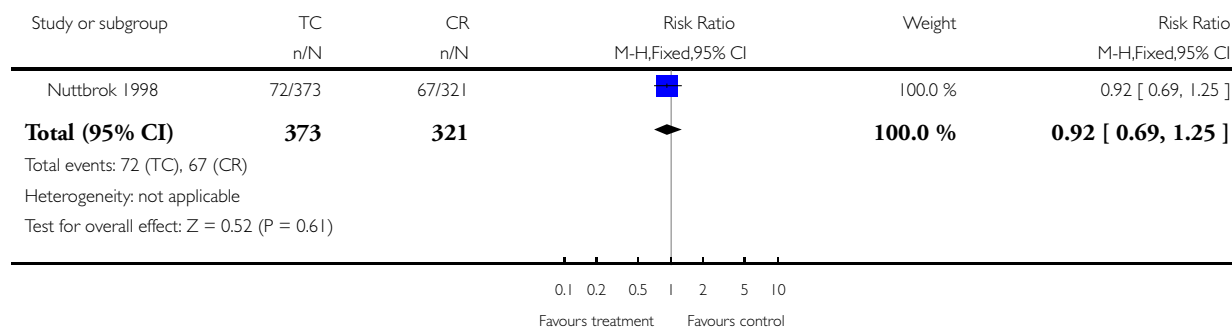


Analysis 3.2. Comparison 3 Therapeutic community versus community residences, Outcome 2 Completed 6 months treatment.

Review: Therapeutic communities for substance related disorder

Comparison: 3 Therapeutic community versus community residences

Outcome: 2 Completed 6 months treatment

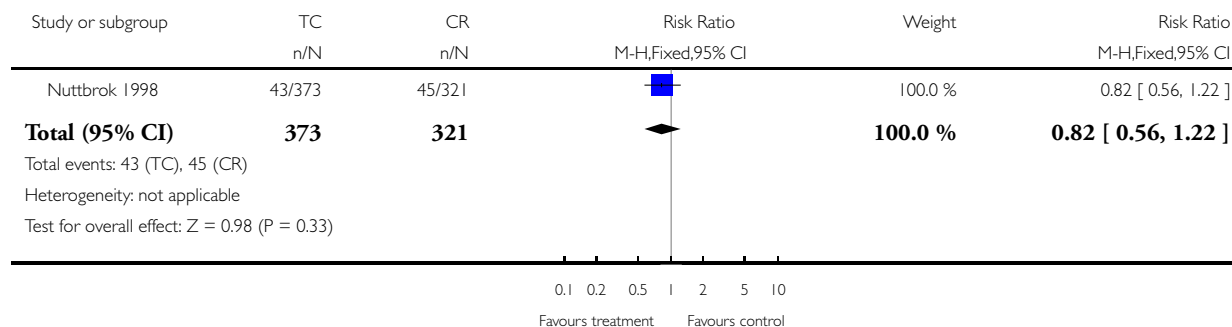


Analysis 3.3. Comparison 3 Therapeutic community versus community residences, Outcome 3 Completed 12 months treatment.

Review: Therapeutic communities for substance related disorder

Comparison: 3 Therapeutic community versus community residences

Outcome: 3 Completed 12 months treatment

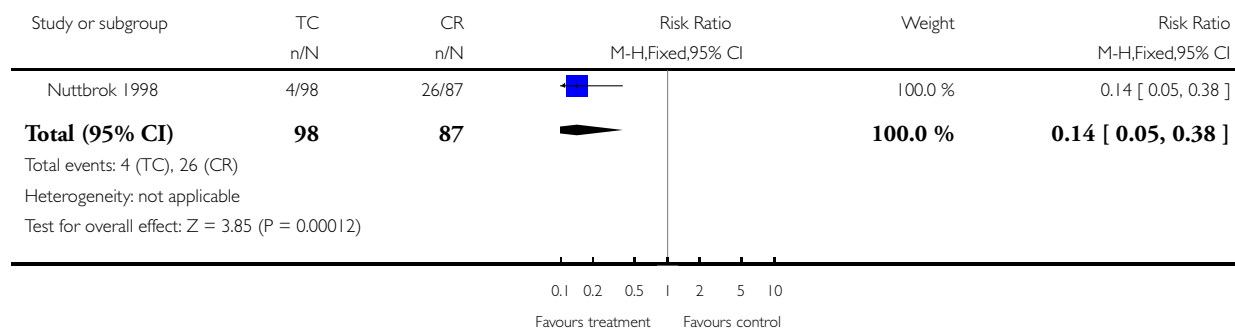


Analysis 3.4. Comparison 3 Therapeutic community versus community residences, Outcome 4 Urinalysis positive for substance use.

Review: Therapeutic communities for substance related disorder

Comparison: 3 Therapeutic community versus community residences

Outcome: 4 Urinalysis positive for substance use

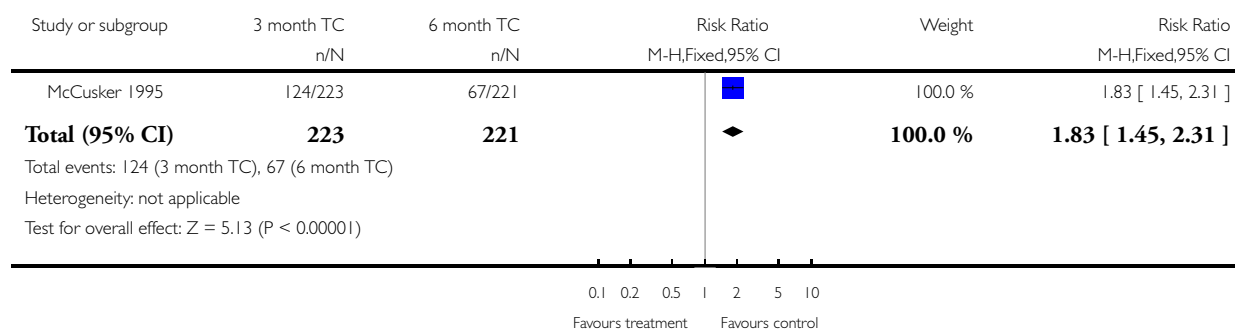


Analysis 4.1. Comparison 4 Three month modified TC versus six month modified TC, Outcome 1 Treatment completion.

Review: Therapeutic communities for substance related disorder

Comparison: 4 Three month modified TC versus six month modified TC

Outcome: 1 Treatment completion

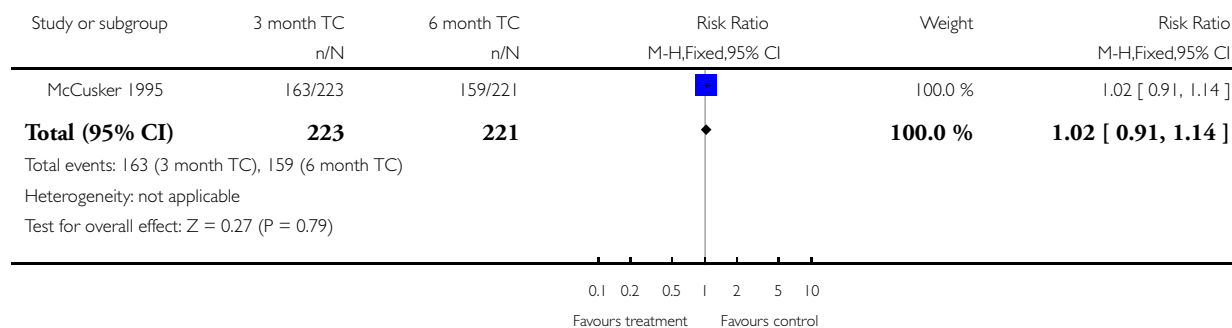


Analysis 4.2. Comparison 4 Three month modified TC versus six month modified TC, Outcome 2 Forty day retention.

Review: Therapeutic communities for substance related disorder

Comparison: 4 Three month modified TC versus six month modified TC

Outcome: 2 Forty day retention

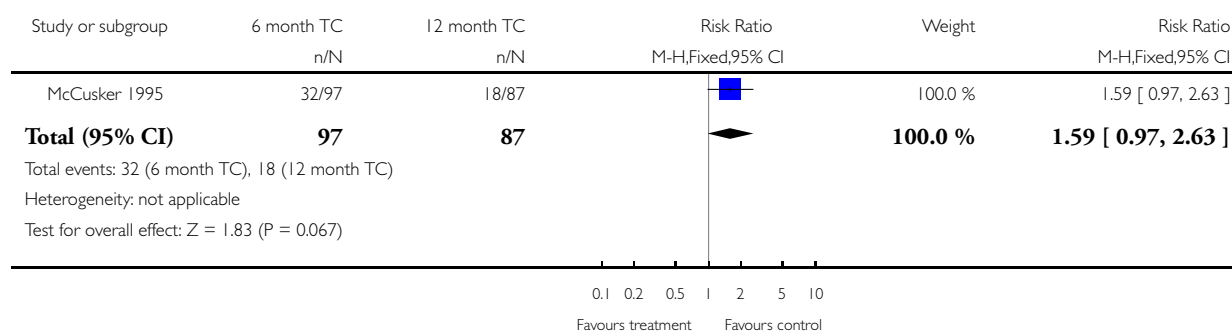


Analysis 5.1. Comparison 5 Six month traditional TC versus twelve month traditional TC, Outcome 1 Treatment completion.

Review: Therapeutic communities for substance related disorder

Comparison: 5 Six month traditional TC versus twelve month traditional TC

Outcome: 1 Treatment completion

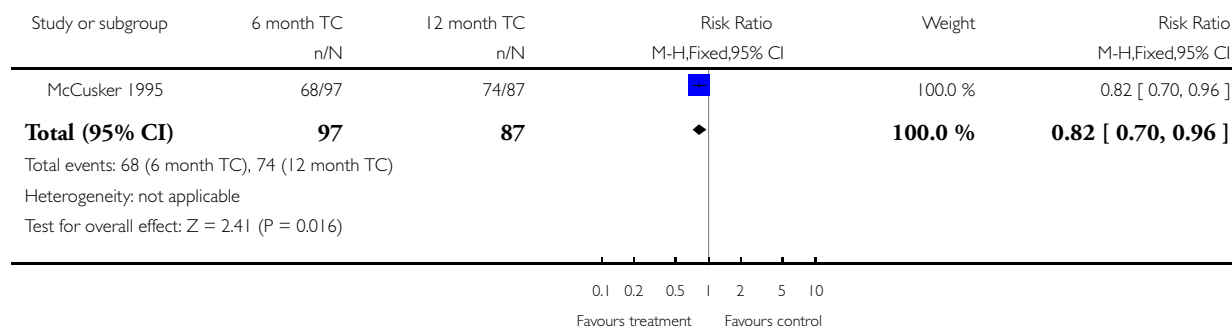


Analysis 5.2. Comparison 5 Six month traditional TC versus twelve month traditional TC, Outcome 2 Forty day retention.

Review: Therapeutic communities for substance related disorder

Comparison: 5 Six month traditional TC versus twelve month traditional TC

Outcome: 2 Forty day retention

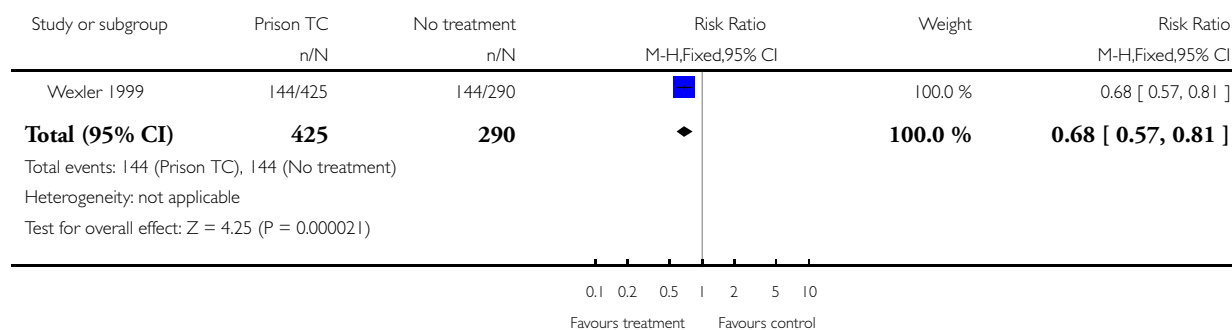


Analysis 6.1. Comparison 6 Prison TC versus no treatment, Outcome 1 Reincarceration 12 months post-prison release.

Review: Therapeutic communities for substance related disorder

Comparison: 6 Prison TC versus no treatment

Outcome: 1 Reincarceration 12 months post-prison release

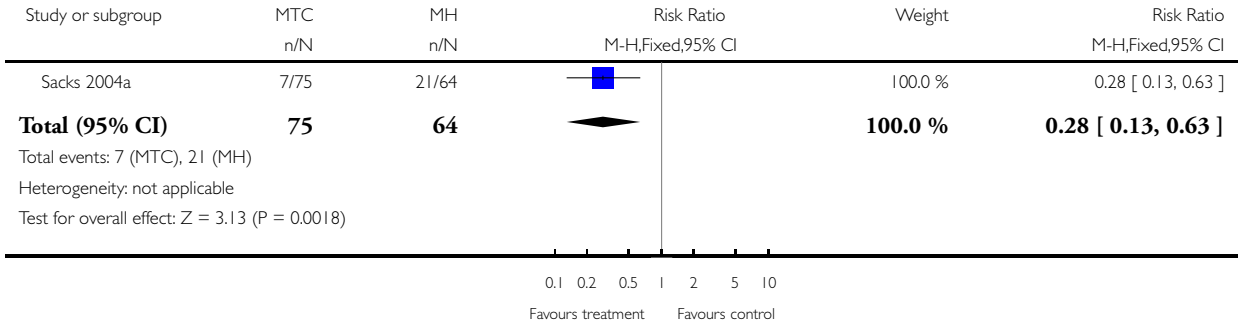


**Analysis 7.1. Comparison 7 Modified prison TC versus Mental Health Treatment Programmes, Outcome 1
Reincarceration 12 months post-prison release.**

Review: Therapeutic communities for substance related disorder

Comparison: 7 Modified prison TC versus Mental Health Treatment Programmes

Outcome: 1 Reincarceration 12 months post-prison release

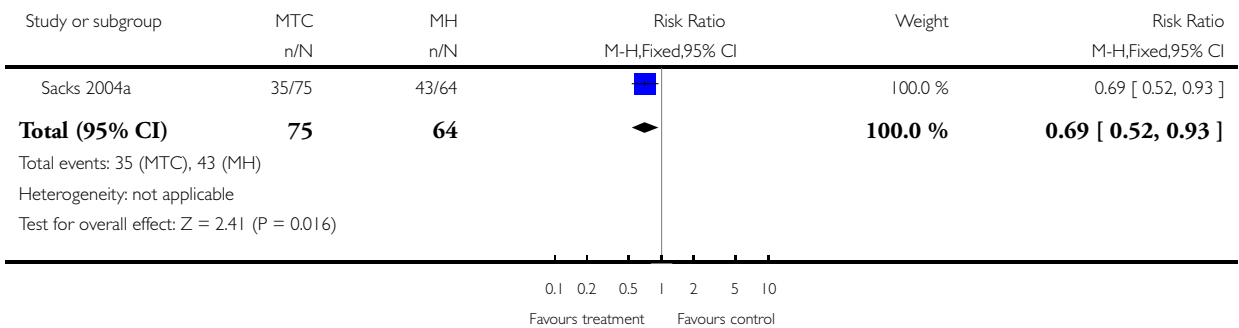


**Analysis 7.2. Comparison 7 Modified prison TC versus Mental Health Treatment Programmes, Outcome 2
Criminal activity 12 months post-prison release.**

Review: Therapeutic communities for substance related disorder

Comparison: 7 Modified prison TC versus Mental Health Treatment Programmes

Outcome: 2 Criminal activity 12 months post-prison release

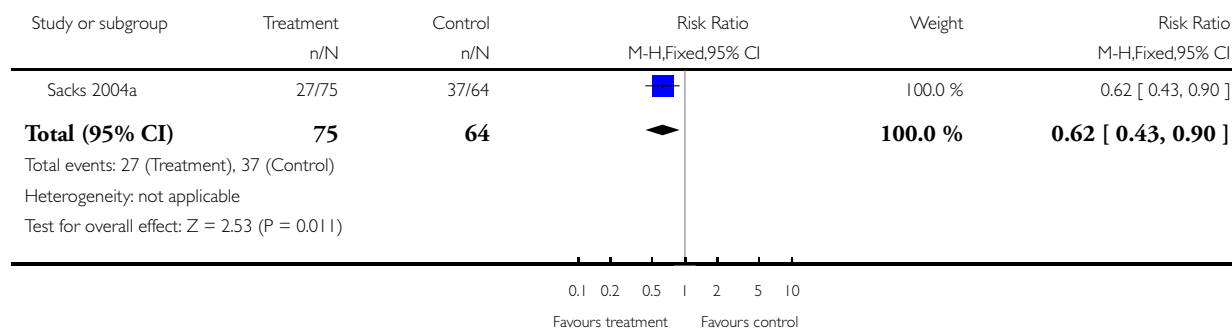


Analysis 7.3. Comparison 7 Modified prison TC versus Mental Health Treatment Programmes, Outcome 3 Alcohol/drug offence 12 months post-prison release.

Review: Therapeutic communities for substance related disorder

Comparison: 7 Modified prison TC versus Mental Health Treatment Programmes

Outcome: 3 Alcohol/drug offence 12 months post-prison release



APPENDICES

Appendix I. CENTRAL search strategy

- 1.SUBSTANCE-RELATED DISORDERS:MESH
- 2.(drug* or substance) NEXT (addict* or misuse* or depend* or addict*)
- 3.#2 OR #3
- 4.THERAPEUTIC COMMUNITY:MESH
- 5.(therapeutic NEXT communit*)
- 6.RESIDENTIAL TREATMENT:MESH
- 7.COMMUNITY HEALTH CENTERS:MESH
- 8.rehabilitat*
- 9.#4 OR #5 OR #6 OR#7 OR #8
10. #3 AND #9

Appendix 2. MEDLINE search strategy

- 1.exp substance-related disorders/
 - 2.(drug or substance\$) adj2 (misuse or abuse\$ or addict\$).tw
 - 3.(abstinent\$ or abstain\$).tw
 - 4.withdraw\$.tw
 - 5.1 or 2 or 3 or 4
 - 6.exp therapeutic community/
 - 7.(therapeutic adj2 communit\$).tw
 - 8.support\$.ti,ab
 - 9.residential.ti,ab
 10. democratic\$.ti,ab
 11. hierarchical\$.ti,ab
 12. (concept adj2 house).ti,ab
 13. 6 or 7 or 8 or 9 or 10 or 11 or 12
 14. 5 and 13
- combined with the phases 1 & 2 of the Cochrane Sensitive Search Strategy for the identification of RCTs as published in Appendix 5b2, Cochrane Handbook for Systematic Reviews of Interventions ([Higgins 2005](#)):
- 15.randomized controlled trial.pt.
 - 16.randomized controlled trials/
 - 17.controlled clinical trial.pt.
 - 18.random allocation/
 19. double blind method/
 20. single blind method/
 21. 15 or 16 or 17 or 18 or 19 or 20
 22. clinical trial.pt.
 23. exp clinical trials/
 24. (clin\$ adj trial\$).ab,ti.
 25. ((singl\$ or doubl\$ or trebl\$ or tripl\$) adj (blind\$ or mask\$)).ab,ti
 26. exp PLACEBOS/
 27. placebo\$.ab,ti
 28. random\$.ab,ti
 29. exp Research Design/
 30. 22 or 23 or 24 or 24 or 26 or 27 or 28 or 29
 31. 21 or 30
 - 32.14 and 31
 33. limit 32 to human

Appendix 3. EMBASE search strategy

- 1.exp substance abuse/
- 2.(drug or substance) adj2 (abuse\$ or use\$ or misuse or depend\$ or addict\$).tw
- 3.exp drug dependence treatment/
- 4.1 or 2 or 3
- 5.exp therapeutic community/
- 6.(therapeuti\$ adj2 communit\$).ti,ab.
- 7.support\$.ti,ab.
- 8.exp RESIDENTIAL CARE/
9. exp Aftercare/
10. residential.ti,ab.
11. democratic\$.ti,ab.
12. hierarchical\$.ti,ab.
13. (concept adj2 house).ti,ab.

14. 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13
15. 4 and 14
16. random\$.ab,ti
17. placebo.ab,ti
18. (singl\$ or doubl\$ or trebl\$ or tripl\$) and (blind\$ or mask\$).mp
- 19.(cross-over\$ or crossover\$).tw
20. randomized controlled trial/
21. phase-2-clinical-trial/
22. phase-3-clinical-trial/
23. double blind procedure/
24. single blind procedure/
25. crossover procedure/
26. Latin square design/
27. exp PLACEBOS/
28. multicenter study/
29. 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28
- 30.15 and 29
31. limit 30 to human

Appendix 4. CINAHL search strategy

- 1.exp drug rehabilitation program/
- 2.exp substance use disorders/
- 3.(drug or substance) adj2 (abuse\$ or misuse or depend\$ or addict\$).tw
- 4.1 or 2 or 3
- 5.exp Socioenvironmental Therapy/
- 6.(therapeuti\$ adj2 communit\$).ti,ab.
- 7.support\$.ti,ab.
- 8.rehabilitation.tw
- 9.residential.ti,ab.
10. democratic\$.ti,ab.
11. hierarchical\$.ti,ab.
- 12.(concept adj2 house).ti,ab.
13. 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12
14. 4 and 13
15. randomi\$.tw.
16. clini\$.tw.
17. trial\$.tw.
18. (clin\$ adj2 trial\$).tw.
19. (singl\$ or doubl\$ or tripl\$ or trebl\$).mp. and (mask\$ or blind\$).tw.
20. crossover.tw.
21. random\$.tw.
22. allocate\$.tw.
23. assign\$.tw.
24. (random\$ adj2 (allocate\$ or assign\$)).tw.
25. exp Random Assignment/
- 26.15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24 or 25
27. 26 and 14

Appendix 5. PsycInfo search strategy

- 1.(drug or substance) adj2 (abuse\$ or misuse or depend\$ or addict\$)
- 2.(therapeuti\$ adj2 communit\$).ti,ab.
- 3.support\$.ti,ab.
- 4.rehabilitation
- 5.residential.ti,ab.
6. democratic\$.ti,ab.
7. hierarchical\$.ti,ab.
- 8.(concept adj2 house).ti,ab.
9. 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8
10. randomi\$
11. clini\$
12. trial\$
13. (clin\$ adj2 trial\$)
14. (singl\$ or doubl\$ or tripl\$ or trebl\$) and (mask\$ or blind\$)
15. crossover
16. random\$
17. allocate\$
18. assign\$
19. (random\$ adj2 (allocate\$ or assign\$))
- 20.10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19
21. 29 and 20

Appendix 6. SIGLE search strategy

#1 therapeutic communit\$

WHAT'S NEW

Last assessed as up-to-date: 1 November 2005.

Date	Event	Description
27 March 2008	Amended	Converted to new review format.

HISTORY

Protocol first published: Issue 3, 2005

Review first published: Issue 1, 2006

Date	Event	Description
2 November 2005	New citation required and conclusions have changed	Substantive amendment

CONTRIBUTIONS OF AUTHORS

Lesley Smith wrote the protocol, conducted searches, was involved with selection of studies, data extraction and data analysis, and drafted the review. Simon Gates reviewed the protocol, was involved with selection of studies, data extraction, data analysis and drafting the review. David Foxcroft reviewed the protocol and made comments on drafts of the review.

DECLARATIONS OF INTEREST

None

SOURCES OF SUPPORT

Internal sources

- No sources of support supplied

External sources

- EDAP Project (Evidence for Drugs and Alcohol Policy) sponsored by the European Community- Directorate Public Health (Grant Agreement SPC.2002454), Not specified.

INDEX TERMS

Medical Subject Headings (MeSH)

*Substance Abuse Treatment Centers; *Therapeutic Community; Patient Compliance; Prisons; Randomized Controlled Trials as Topic; Substance-Related Disorders [*rehabilitation]; Treatment Outcome

MeSH check words

Humans