

Managements for people with disorders of sexual preference and for convicted sexual offenders (Review)

White P, Bradley C, Ferriter M, Hatzipetrou L



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[Intervention Review]

Managements for people with disorders of sexual preference and for convicted sexual offenders

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Editorial group: Cochrane Developmental, Psychosocial and Learning Problems Group.

Publication status and date: Edited (no change to conclusions), published in Issue 1, 2009.

Review content assessed as up-to-date: 23 August 1998.

Citation: White P, Bradley C, Ferriter M, Hatzipetrou L. Managements for people with disorders of sexual preference and for convicted sexual offenders. *Cochrane Database of Systematic Reviews* 1998, Issue 4. Art. No.: CD000251. DOI: 10.1002/14651858.CD000251.

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ABSTRACT

Background

The reviewers recognise that it may be thought that convicted sex offenders and those with disorders of sexual preference are quite different groups. In combining them within this review we have taken the view that legal process alone should not define the population. Illegal behaviours in one jurisdiction may not be considered so in others.

Studies of those who are convicted of sexual offending describe reconviction rates for sexual offences of up to 40-60%. It would seem important to know if there are interventions that might reduce this high rate of re-offending. This review examines antilibidinal management of those who have been convicted of sexual offences or who have disorders of sexual preference.

Objectives

To determine the effectiveness of a range of management techniques to assist people who have disorders of sexual preference and those who have been convicted of sexual offences.

Search strategy

Biological Abstracts, the Cochrane Schizophrenia Group Register of Trials, The Cochrane Library, EMBASE, MEDLINE, and PsychLIT were searched. Further references were sought from published trials and their authors. Relevant pharmaceutical manufacturers were contacted.

Selection criteria

All relevant randomised controlled trials.

Data collection and analysis

Reviewers evaluated data independently and analysed on an intention-to-treat basis. Data were extracted for short and medium term outcomes.

Main results

A single trial (McConaghy 1988) found the effect of antilibidinal medication (medroxyprogesterone acetate) plus imaginal desensitisation was no better than imaginal desensitisation for problematic/anomalous sexual behaviour and desire.

A relapse prevention programme was trialed by Marques (Marques 1994) and participants were followed up for an average of 3 years. What data there are suggest that although there is no discernable effect on the outcome of sex offending (OR 0.76 CI 0.26-2.28) those treated with response prevention do have less non-sexual violent offences (OR 0.3, CI 0.1-0.89, NNT 10 CI 5-85). In addition those committing both sexual and violent offences also declined in the response prevention group (OR 0.14 CI 0.02-0.98, NNT 20 CI 10-437).

A large pragmatic trial investigated the value of group therapy for sex offenders (Romero 1983). This study finds no effect on recidivism at ten years.

Authors' conclusions

This review identified only two eligible studies. It is disappointing to find that this area lacks a strong evidence base, particularly in light of the controversial nature of the treatment and the high levels of interest in the area. A single trial found the effect of antilibidinal medication (medroxyprogesterone acetate) plus imaginal desensitisation was no better than imaginal desensitisation. The second study, a relapse prevention programme, did seem to have some effect on violent reoffending but large, well-conducted randomised trials of long duration are essential if the effectiveness or otherwise of these treatments are to be established.

PLAIN LANGUAGE SUMMARY

Managements for people with disorders of sexual preference and for convicted sexual offenders

It is disappointing to find that this area lacks a strong evidence base, particularly in light of the controversial nature of the treatment and the high levels of interest in the area. The relapse prevention programme did seem to have some effect on violent reoffending but large, well-conducted randomised trials of long duration are essential if the effectiveness or otherwise of these treatments are to be established.

BACKGROUND

Sex offences and disorders of sexual preference are probably common, although there is little reliable prevalence data on many of these problems. Surveys have found rates of incest of 12-28% of women and 3-8% of men. Possibly up to one third of women will suffer some form of sexual assault during their lives (Finkelhor 1979, Finkelhor 1984, Baker 1985, Furby 1989, Mullen 1994). The victims of sexual offending may suffer a range of symptoms following the assault(s). Higher rates of depression, poor self esteem, anxiety disorders and post traumatic stress disorders, alcohol and drug addiction, eating disorders, deliberate self harm and revictimisation, dissociative disorders and sexual dysfunction have all been reported (Mullen 1994, Hilton 1996).

The reviewers recognise that it may be thought that convicted sex offenders and those with disorders of sexual preference are quite different groups. In combining them within this review we

have taken the view that legal process alone should not define the population. Illegal behaviours in one jurisdiction may not be considered so in others (Furby 1989, Hall 1995).

On a given day in 1994, in the United States of America, there were approximately 234,000 offenders convicted of rape or sexual assault under the care, custody, or control of correction agencies. Nearly 60% of these sex offenders are under conditional supervision in the community. The median age of the victims of imprisoned sexual assaults was less than 13 years old and the median age of rape victims was about 22 years. An estimated 24% of those serving a custodial sentence for rape and 19% of those in prison for sexual assault had been on probation or parole at the time of the offense (see Bureau of Justice Statistics [Bur. of Justice 1998]). Offenders who had victimised a child were, on average, 5 years older than the violent offenders who had committed their crimes against adults. Nearly 25% of child victimisers were age 40 or older, but about 10% of the inmates with adult victims fell in that

age range.

Soothill (Soothill 1976) showed that a long follow up period is particularly crucial with sex offenders. He founded nearly one quarter of the rapists studied were not convicted of a new offence until ten years into the follow up period. His recommendation was that the follow-up period be long enough to allow the individual to return to crime - a minimum of five years.

Studies of those who are convicted of sexual offending describe reconviction rates for sexual offences of up to 40-60%. It would seem important to know if there are interventions that might reduce this high rate of re-offending. This review examines antilibidinal management of those who have been convicted of sexual offences or who have disorders of sexual preference.

Anti-libidinal managements are intended to reduce the sex drive. In the treatment of sex offenders the hypothesis is that such a reduction in libido will result in a reduced rate of sexual offending. In the treatment of those with disorders of sexual preference, the hypothesis is that the reduced libido will result in lower frequency of deviant fantasy and/or behaviour. Thus for both groups a reduction in libido is engineered in order to effect a reduced frequency of the sexually deviant behaviour. The management does not concern itself with the direction of sexual interest (Faulk 1994). Antilibidinal treatment may be used as an interim measure while other psychosocial interventions are introduced.

There are a number of different antilibidinal management techniques that have been reported:

1. Drugs

i. Sex hormones: sex drive is said to be lowered, in men, by increasing the levels of female sex hormones (such as oestrogen) or lowering testosterone levels. Drugs affecting sex hormones are stilboestrol, oestrogen, medroxyprogesterone acetate and cyproterone acetate.

ii. Antipsychotic drugs: in the normal use of these drugs they have been noted to markedly lower the sex drive as an unwanted side effect. This observation is the rationale for their use in people with disorders of sexual preference.

iii. Bromides: these central nervous system depressants are now rarely, if ever, used.

2. Surgery

Surgical castration: here the testicles (the principle source of testosterone) are removed and replaced with prostheses. There is debate as to the ethics of the procedure. The operation is irreversible and there are concerns as to the quality of informed consent.

3. Psychological interventions

These have been offered to people with disorders of sexual preference and those who have been convicted of sexual offences to

assist them in controlling their target behaviours. These are often seen as representing part of a rehabilitating process.

i. Behaviour therapy: this is a method of patients acquiring skills to improve their management of target symptoms that is based on the principles of learning theory. This body of knowledge holds that maladaptive behaviour is learnt and can be unlearned or more appropriate responses to stimuli (such as sexual stimuli). These stimuli are of two sorts - aversive and rewarding.

a. aversive stimuli: here unwanted patterns of behaviour are linked with unpleasant stimuli.

- using smelling salts (ammonium nitrate) or valeric acid. These substances have noxious smells. They are carried by the person and held under their nose until any unwanted thoughts or fantasies or behaviours are eliminated. They are then removed.

- electric shocks in response to the target thoughts, fantasies or behaviours; or

- other practices which may be experienced as unpleasant by the patient disorders of sexual preference such as covert sensitisation (patient is taught to pair thoughts of unpleasant consequences with the chain of events preceding their deviant behaviour).

b. reward: here, if the person has a reduced level of target thoughts, fantasies or behaviours they receive some form of positive outcome.

- sentence reduction; or

- tokens such as receiving tangible rewards for appropriate behaviour differential reinforcement.

ii. Relapse prevention: this is a form of cognitive behavioural intervention. Marques (Marques 1994) postulated that it might reduce the risk of reoffending, particularly among child molesters. These programs are aimed to be comprehensive and focus on a variety of offence-relevant goals such as reducing deviant sexual arousal, and enhancing non-deviant sexual interest, improving social skills and modifying distorted cognition and beliefs.

iii. Other psychological approaches

a. satiation (deviant fantasies are eliminated by the person saturating themselves with their most erogenous fantasies);

b. imaginal desensitisation; and

c. modelling orgasmic reconditioning (patients are taught to think of appropriate sexual fantasies prior to orgasm).

Research about the management of those who sexually offend or have disorders of sexual preference has many methodological problems and some authors have argued that it is unethical to attempt randomised trials in this area. There are also difficulties with definition; a large number of different terms are used to describe the participant group and their fantasies and acts. The

reviewers would welcome constructive input into any aspect of this review.

OBJECTIVES

To evaluate the effectiveness of antilibidinal drugs and psychological treatments in reducing the target sexual acts, urges and thoughts by those who have been convicted of sexual offences or who exhibit disorders of sexual preference.

METHODS

Criteria for considering studies for this review

Types of studies

All relevant randomised controlled trials.

Types of participants

Those who have been treated for:

1. Sexual behaviours which have resulted in conviction for sexual offences; and/or
2. Disorders of sexual preference. For the purposes of this review the authors consider that sexually arousing fantasies, urges or behaviours in the following categories represent disorders of sexual preference:
 - a. bestiality (involving animals);
 - b. child sexual abuse and incest (intrafamilial child sexual abuse);
 - c. exhibitionism or indecent exposure (exposing one's genitals to a stranger);
 - d. fetishism (using non-living objects);
 - e. frottage or frotteurism (touching or rubbing a non-consenting person);
 - f. sado-masochism and bondage and discipline (being humiliated, beaten, bound or otherwise made to suffer or causing psychological or physical suffering to another which is sexually exciting to the perpetrator);
 - g. transvestitism and crossdressing (wearing clothing belonging to the opposite sex);
 - h. voyeurism (observing an unsuspecting person, usually a stranger in an intimate circumstance, for example, undressing or engaged in sexual intercourse); and
 - i. rape (often seen as a crime of violence rather than a sexual disorder but included in this review).

Types of interventions

1. Drug treatment
 - a. Testosterone lowering drugs (any dose):
 - i. stilboestrol (an oral synthetic non-steroidal oestrogen);
 - ii. oestrogen pellets (pellets are planted subcutaneously);
 - iii. medroxyprogesterone acetate (an oral or intramuscular injection synthetic progestogen that lowers testosterone levels);
 - iv. cyproterone acetate (an oral antiandrogen that blocks the production of and opposes the action of testosterone).
 - b. Antipsychotics: any drug usually given for the purposes of management of psychotic illnesses such as schizophrenia, irrespective of dose or means of delivery.
 - c. Bromides: any bromide-based compound irrespective of dose; and,
 2. Surgical castration.
 3. Psychological interventions
 - i. Behaviour therapy: of any type.
 - ii. Relapse prevention: this involves a comprehensive multimodal group of interventions aimed at preventing relapse by developing skills to avoid reoffence in the future. These include identifying high risk situations and include cognitive behavioral training, decision matrices, relaxation training and stress and anger management, attendance at therapeutic community meetings and leisure/recreational activity. Individuals also receive treatment for drug or alcohol problems, and behaviour therapy for sexual deviation (olfactory aversion, masturbatory satiation or orgasmic reconditioning).
 - iii. Any other psychological approaches.
- All interventions were compared to placebo or 'standard care'.

Types of outcome measures

The primary outcome measures were:

- a. recidivism (the occurrence of additional thoughts, urges or acts relevant to the disorders of sexual preference during the period of treatment); and
 - b. people lost to follow up.
- Other outcomes examined were:
- a. death (suicide, all causes);
 - b. other forms of criminal offence;
 - c. measures of mental state;
 - d. patient satisfaction;
 - e. penile plethysmography (this technique measures erections in response to fantasies or photographs and videos);
 - f. measures of resource utilisation or cost benefit; and
 - g. side-effects.

If data permits, all outcomes will be divided into short term (0-6 months), medium term (up to five years) and long term (greater than five years) periods. We present an argument in the background that only trials of in excess of 5 years are truly representative of rearrest/reconviction rates.

Search methods for identification of studies

1. Electronic Searching

a. Biological Abstracts was searched using the phrase:

[(sex offenses) or (sexual deviations) or fetish* or exhibition* or public masturbat* or voyeur* or paedoph* or pedoph* or child* molest* or child* sex* abus* or pederast* or sadis* or masoch* or bondag* or frotteur* or necrophil*]

b. The Cochrane Schizophrenia Group's Register of Trials (July 1997) was searched using the phrase:

[(sex offenses) or (sexual deviations) or fetish* or exhibition* or public masturbat* or voyeur* or paedoph* or pedoph* or child* molest* or child* sex* abus* or pederast* or sadis* or masoch* or bondag* or frotteur* or necrophil*]

c. The Cochrane Library (April 1998) was searched using the phrase:

[(sex offenses) or (sexual deviations) or fetish* or exhibition* or public masturbat* or voyeur* or paedoph* or pedoph* or child* molest* or child* sex* abus* or pederast* or sadis* or masoch* or bondag* or frotteur* or necrophil*]

d. EMBASE (January 1980 to May 1996) was searched using the CSG's phrase for randomised controlled trials (see Group search strategy) combined with:

[and ((explode sex offenses in MeSH/ all subheadings) or (explode paraphilias in MeSH/ all subheadings) or (explode child abuse, sexual in MeSH/ all subheadings) or (sex near2 (offen* or deviat*))) or fetish* or exhibition* or (public near2 masturbat*) or voyeur* or paedoph* or pedoph* or (child* near2 molest*) or (child* near2 sex* near2 abus*) or pederast* or sadis* or masoch* or bondag* or frotteur* or necrophil* or pornograph*)]

e. MEDLINE (January 1966 to July 1996) was searched using the CSG's phrase for randomised controlled trials (see Group search strategy) combined with:

[and ((explode sex offenses in MeSH/ all subheadings) or (explode paraphilias in MeSH/ all subheadings) or (explode child abuse, sexual in MeSH/ all subheadings) or (sex near2 (offen* or deviat*))) or fetish* or exhibition* or (public near2 masturbat*) or voyeur* or paedoph* or pedoph* or (child* near2 molest*) or (child* near2 sex* near2 abus*) or pederast* or sadis* or masoch* or bondag* or frotteur* or necrophil* or pornograph*)]

f. PsycLIT (January 1974 to July 1996) was searched using the CSG's phrase for randomised trials (see Group search strategy) combined with:

[and ((explode sex offenses in DE) or (explode sexual deviations in DE) or (sex near2 (offen* or deviat*))) or fetish* or exhibition* or (public near2 masturbat*) or voyeur* or paedoph* or pedoph* or (child* near2 molest*) or (child* near2 sex* near2 abus*) or pederast* or sadis* or masoch* or bondag* or frotteur* or necrophil*)]

2. Reference Searching

a. SCISEARCH - Science Citation Index

Each included study was sought as a citation on the SCISEARCH database. Reports of articles that had cited these studies were inspected in order to identify further trials.

b. The references of all identified studies were also inspected for more studies.

3. Personal Contact

The first author of each included study was contacted for information regarding unpublished trials.

4. Pharmaceutical manufacturer

The manufacturers of the medications listed above were contacted for information regarding unpublished trials.

Data collection and analysis

[For definitions of terms used in this and other sections, please refer to the Glossary.]

Selection of trials

All abstracts of references identified in the searches described above were independently inspected by MF and CB. Differences were resolved either by discussion between all reviewers and the full article obtained. All potentially relevant articles were retrieved by MF, and distributed equally (a third to each) to the three reviewers. Each reviewer then inspected the articles and, using standard data sheets, graded the studies for exclusion, inclusion, and methodological quality. Each reviewer's sample of articles was then re-inspected by one or both of the other two reviewers to ensure reliability. Disagreement was resolved by discussion or by allocating the article to 'Studies Awaiting Assessment' and requesting further information from authors.

Quality assessment

Trials were allocated to three quality categories. Where randomisation was described, this would be classed as category A. Where it was stated but not described, this would be classed as category B. Where no mention was made of randomisation, this would be described as category C and excluded. This follows the guidelines in the Cochrane Collaboration Handbook (Mulrow 1997). When disputes arose as to which category a trial was allocated, again, resolution was attempted by discussion. When this was not possible and further information was necessary to clarify into which category to allocate the trial, data was not entered and the trial was allocated to 'Studies Awaiting Assessment'. Only trials in Category A or B were included in the review.

Data management

Data from selected trials were independently extracted by CB, PW and MF. When disputes arose, resolution was attempted by discussion. When this was not possible and further information was necessary to resolve the dilemma, data were not entered and the study authors were contacted.

For both dichotomous (yes/no, binary) and continuous (averages) data where there was greater than 50% losses to follow up data were not utilised and the threat to validity from selection bias was felt to be too great.

Dichotomous data, such as re-offence or no re-offence, were analysed on an intention-to-treat basis. Everyone allocated to the treatments was counted irrespective of whether they completed follow

up. In the absence of specific details, the reviewers assumed that people who left the study early did so because they had no improvement in their target problem(s). The intention, given sufficient data, was to test sensitivity of the final results of this assumption by calculating the primary outcomes with and without the assumption (that is, completer analysis versus intention-to-treat analysis).

For binary outcomes a standard estimation of the Mantel-Haenszel 'Odds Ratio' (OR) with the 95% confidence interval (CI) around this was estimated. The number needed to treat (NNT) was also calculated.

Continuous outcomes were analysed according to their difference in mean treatment effects and their standard deviations. Meta-analytical methods for continuous data assume that there is a normal distribution of the measurements. Where appropriate and possible, the raw data were log transformed in order to improve the distribution of the data and for scales that had similar psychometric properties (for example range and scoring direction) these scores were then utilised.

A wide range of rating scales is available to measure outcomes in mental health trials. These scales vary in quality and many are questionably validated, or even ad hoc. It is generally accepted that measuring instruments should have the properties of reliability (the extent to which a test effectively measures anything at all) and validity (the extent to which a test measures that which it is supposed to measure). Before publication of an instrument, most scientific journals insist that reliability and validity be demonstrated to the satisfaction of referees. It was therefore decided, as a minimum standard, not to include any data from a rating scale in this review unless its properties had been published in a peer-reviewed journal. In addition, the following minimum standards for rating scales were set: the rating scale should either be; i. a self-report; or ii. completed by an independent rater or relative. More stringent standards for instruments may be set in future editions of this review.

Whenever possible we took the opportunity to make direct comparisons between trials that used the same measurement instrument to quantify specific outcomes. Where continuous data was presented from different scales rating the same effect, both sets of data were presented and the general direction of effect inspected. Continuous data on outcomes in trials relevant to mental health issues are often not normally distributed. To avoid the pitfall of applying parametric tests to non-parametric data the following standards were applied to data derived from continuous measures of endpoint ('state' data).

The criteria were used before inclusion:

i. standard deviations and means were reported in the paper or were obtainable from the authors; and ii. the standard deviation (SD), when multiplied by 2 was less than the mean (as otherwise the mean was unlikely to be an appropriate measure of the centre of the distribution) (Altman 1996). Data that did not meet the first or second standard were not entered into RevMan software

for analysis, but were reported in the text of the results section.

For continuous mean change data (endpoint minus baseline) the situation is even more problematic. In the absence of individual patient data it is impossible to know if change data is skewed. The RevMan meta-analyses of continuous data are based on the assumption that the data are, at least to a reasonable degree, normally distributed. It is quite feasible that change data is skewed but, after consulting the ALLSTAT electronic statistics mailing list, it was entered into RevMan in order to summarise the available information. In doing this it is assumed that either data were not skewed or that the analyses within RevMan could cope with the unknown degree of skewness. Without individual trial data it is not possible to formally check this assumption.

Heterogeneity

This was assessed by graphical representation and by calculation. Two possible reasons for heterogeneity were pre-specified: (i) that recidivism rates differ according to different lengths of follow-up; (ii) that response differs according to the location or legal status of the patient.

General

In all cases, where possible, data were entered into RevMan in such a way that the area to the left of the 'line of no effect' indicates a 'favourable' outcome for the antidepressant.

Assessing the presence of publication bias

Data from all included trials were entered into a funnel graph (trial effect versus trial size or 'precision') in an attempt to investigate the likelihood of overt publication bias. A formal test of funnel plot asymmetry (suggesting potential publication bias) was undertaken, where appropriate, according to the methods of Egger (Egger 1997). Significance levels of $p < 0.1$ were set a priori to accept the presence of asymmetry. Where only 3-4 studies reported an outcome or there was little variety in sample size (or precision estimate) between studies - tests of asymmetry were not appropriate.

RESULTS

Description of studies

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

Excluded studies

Of the 58 studies not included, 53 were excluded because, on examination of the papers, they were not randomised trials. Most were case reports or case series. Three others were excluded because the interventions were not compatible with the review protocol (McConaghy 1985, Buresova 1990, Kruesi 1992).

The remaining three studies were from one research programme conducted at an English special hospital. Tennent (1974) and Bancroft (Bancroft 1974) describe trials in the same group of people. The former uses benperidol, chlorpromazine and placebo in

12 paedophilic sexual offenders and the latter ethinyloestradiol and cyproterone acetate in the same group of men. The allocation within the study design is described as “a replicated William’s square”. Murray (1975) reports further on these two groups of 12 male sexual offenders. In this last paper it is reported that the participants were divided into one of two groups in a manner which was non-random. One group was predominately homosexual and the second predominately heterosexual in orientation. The order of treatment within these studies was not randomised.

Studies awaiting assessment

Nine studies are awaiting assessment. Langevin (Langevin 1979), Cooper (Cooper 1992b), Bradford (Bradford 1993) and Brown (Brown 1996) are crossover trials. They all state that allocation was randomised although the method is not made clear. Letters have been sent to the first authors to seek data for the first arm of the studies. Hucker (Hucker 1988) is a double-blind placebo controlled trial of medroxyprogesterone acetate. The authors have been contacted to establish details of allocation. Cooper (Cooper 1981) is a placebo controlled, randomised crossover trial of cyproterone acetate in 9 men with sexual deviance. The reviewers have attempted to contact the first author from the first leg of the crossover. Schewe (Schewe 1993) and O’Donoghue (1996) are reported in a form that, at present, does not permit data entry into the meta analysis. Another study has, as yet, to be assessed by the reviewers (Ortmann 1980).

Included studies

1. Anti-libidinal management

Only one study was suitable for inclusion. McConaghy (McConaghy 1988) described how 31 men consecutively seeking treatment for anomalous sexual urges or behaviours were randomly allocated (method of concealment not stated) to receive medroxyprogesterone or imaginal desensitisation or both. One person dropped out of the combined treatment group because he was concerned about his low level of sexual interest.

Interventions: Imaginal desensitisation involves relaxation training followed by visualising being in situations where they have carried out the anomalous sexual behaviour in the past but visualise not completing the behaviour, while remaining relaxed. Within this review this is treated as ‘standard care’ although the reviewers do recognise that this may be far from the case in everyday practice. Future versions of this review will include different comparisons where one intervention, said to be effective for this participant group, will be compared to another. At this point, however, it was hoped to compare antilibidinal drugs with a placebo or ‘standard care’ (see Types of Interventions). In the position of having very limited data imaginal desensitisation acts as a ‘standard care’ as all participants (N=21) included in this review had this as baseline and 11 of these were randomly allocated to also have medroxyprogesterone. This drug should lower sex drive in men by increasing the levels of female sex hormones.

Outcomes: This study recorded levels of anxiety (Spielberger State

Trait Anxiety Scale) and degree of reduction in anomalous sexual thoughts or behaviour (visual analogue scales). There was also an interviewer assessment of strength of heterosexual and anomalous desire. Hormone levels (plasma testosterone, dihydro testosterone, leutenising hormone, follicular stimulating hormone and prolactin) were obtained prior to the experiment beginning and repeated one month later. Finally, reconviction rates were also recorded. The authors state “though some may have re-offended without the authors knowledge, if any had been arrested and charged again the authors would have been informed”.

2. Relapse prevention

Currently Marques (Marques 1994) is the only study included. This is a randomised controlled trial of relapse prevention program. All participants were men - volunteers to SOTEP (Sex Offender Treatment and Evaluation Project, California). They were matched in pairs by age, type of offense and previous criminal history. Pair members were then randomly allocated to treatment/no treatment condition. There is no information on how randomisation was carried out or if allocation was concealed.

Interventions: All those in the treatment group received a relapse prevention programme. This included cognitive behavioural training, decision matrices, relaxation training and stress and anger management, attendance at therapeutic community meetings and leisure/recreational activity. Individuals could also receive treatment for drug or alcohol problems, and behaviour therapy for sexual deviation (olfactory aversion, masturbatory satiation or orgasmic reconditioning). All those in the treatment group also attended and aftercare programme for one year after release.

Outcomes: Re-offending was measured by automated records (rapsheets) and reports from parole system. The participants were deemed to have re-offended if either data source recorded a new sex crime or non-sex violent crime. Personal responsibility was measured by the Multiphasic Sex Inventory (MSI), a questionnaire specifically designed for, and standardised on, sex offenders (Nichols 1984). Two sub-scales of this inventory were used as measures of the degree to which participants felt a personal responsibility for their sex crimes. One of these scales, the Justification scale, measures a persons readiness to externalise the blame for his sex offences, while the Cognitive Distortion and Immaturity (CDI) Scale measures the tendency towards more general self serving ideas about ones self in relation to others.

3. Group therapy

The Romero (Romero 1983) study reports a ten year follow up of a randomised control trial of intensive probation plus group therapy versus intensive probation alone. In all of the studies reviewed as part of this work this was the sole study to identify that “basically the two year follow up period was too short. The use of a comparisons group instead of a control group further limited the validity of these studies.” This was a large - participant group were 231 mixed convicted sex offenders - simple study.

Outcome: Recidivism was measured by reconviction.

Risk of bias in included studies

Randomisation

In all reports of the 3 studies this was stated but not described. The trials therefore were allocated category B. In McConaghy (McConaghy 1988) the three groups had equal numbers (10) and a description of how this was achieved would have been instructive.

Blinding

The studies were not blind. In McConaghy (McConaghy 1988) one intervention involved an imaginal desensitisation programme, and the other intra-muscular injections. No placebo was employed. Some outcomes were self-report and certainly were not blind and others were based on interviews by researchers. It is not stated whether these assessors were blind to the treatment received by the participants. Marques (Marques 1994) describes a comprehensive group of interventions that could not have been blinded.

Follow-up

McConaghy (McConaghy 1988) described how 31 men were initially entered. One person allocated to combined treatment dropped out when he discovered he had low testosterone. He was then treated with imaginal desensitisation alone and was excluded from the analysis within the paper. Of the 20 people receiving injections of meproxyprogesterone (with or without imaginal desensitisation), 5 dropped out of the treatment; four after 3-5 injections due to side effects but continued to report to the study; and one stopped after 5 injections and was lost to follow-up. It is not clear how this was dealt with in the data analysis. This review reports only dichotomous data (see Outcomes, below) and assumes that all those who left the study early did so because they did not improve (see Methods section).

Outcomes

In the three studies the reporting of the data was poor and only averages/means and 'p' values or "change data" are recorded. There was no indication as regards the degree of variance around the mean. For these reasons data from continuous outcomes are not reported within this review.

Effects of interventions

The search

The search strategy identified 431 citations and 46 had to be inspected carefully in order to decide if they were to be included or not. Only three studies were included (reasons for exclusion reported in 'Description of Studies section').

Antilibidinal management

McConaghy (McConaghy 1988) was a very small study (N=21). Antilibidinal treatment (meproxyprogesterone) combined with imaginal desensitisation was no better than imaginal desensitisation alone for problematic/anomalous and non-problematic sexual behaviour or desire/libido. There was also no effect as regards the acceptability of treatment as expressed by leaving the study early.

Relapse prevention programme

Marques (Marques 1994) compared a relapse prevention programme to no intervention with a mean duration of follow-up of about 3 years. The authors warn that comparisons of offence rates for the groups are premature at this time. Nevertheless this is a larger study (N=155) and although there is no difference between groups for the outcome of sex offending (OR 0.76 CI 0.26-2.28), those treated with response prevention do have less non-sexual violent offences (OR 0.3, CI 0.1-0.89, NNT 10 CI 5-85). In addition those committing both sexual and violent offences also declined in the response prevention group (OR 0.14 CI 0.02-0.98, NNT 20 CI 10-437).

Group therapy

Romero (Romero 1983) reports the major finding that emerged from an earlier study (Peters JJ 1966 - as yet untraced) - that there was no significant difference in rearrest rate for those allocated to group therapy and those receiving the standard care (OR 1.87 CI 0.8-4.37). Approximately ten percent of those groups had subsequent sex offence arrest in the two to three years following treatment. This group included recidivism of homosexuals, which is the group with a higher sex recidivism rate at 32%. This group was excluded from analysis in the 1983 follow up.

DISCUSSION

Lack of data

As far as we can establish, this review is the first attempt at meta-analyses of randomised controlled trials relevant to the management of sex offenders. Hall (Hall 1995) performed a meta-analysis in this area and found a "small but robust effect size for treatment versus comparison conditions". Hall's study, however, included many studies excluded by this review because they had insufficient methodological rigor to give assurance of minimisation of bias. In addition, Hall used a statistical analysis more prone to biases than Cochrane Collaboration methodology.

Antilibidinal management

At present there is so few data to either support or refute the use of antilibidinal drugs, such as meproxyprogesterone, that it is difficult to justify their use outside of a well-conducted trial.

Relapse prevention programme

The results concerning the relapse prevention programme are intriguing and it is this approach that seems to have most promise. Although there is no clear effect for preventing sexual reoffending, the number needed to treat of 10 (CI 5-85) for prevention of non-sexual violence and even 20 (CI 10-437) for prevention of reoffending of both sexual and non-sexually violent types must be seen as, at least, encouraging. Again, even with these findings, there must be caution and a debate as to the necessity of further research to reaffirm or refute these findings.

Group therapy

Considering the widespread use of group therapy the findings of the largest and longest study in this review (Romero 1983) must be considered disturbing. That it reports no effects on recidivism over a long period of time may suggest that nondescript group therapy may have to give way to a more focused treatment such as response prevention.

Certainly the treatment of sex offenders requires fresh investigation and this should be done before subjecting numerous sex offenders to unproven and possibly harmful interventions, and before coaxing the public into unrealistic expectations of what can currently be achieved with people who repeatedly sexually offend.

AUTHORS' CONCLUSIONS

Implications for practice

At this stage the review is limited in its conclusions as only three studies are included. It is hoped that soon the situation may be clarified by the inclusion of at least some of the studies awaiting assessment.

Clinicians

Anti-libidinal drug treatments should be used with caution. There is no trial-derived data to support or refute their use. Implementation within the context of a simple, well-conducted randomised trial would be justified.

Researchers and funders of research

At this stage there is no trial-based evidence to strongly support the use of any treatment of sex offenders or those with disorders of sexual preference. This would seem a most fruitful area for trial research and should be attractive to farsighted funders. Trials should be simple and long, stretching over years if not decades.

Policy makers

Until those willing to undertake important research provide robust evidence, policy must be based on a combination of opinion, the limited research summarised in this review and judgement, with all the inherent biases attendant on these. Such a situation leaves policy makers in a difficult position. Fired by public and

media concern, they may well be considering or implementing widespread and expensive measures to treat convicted sex offenders in an attempt to reduce recidivism rates and the attendant public outcry. The UK, for example, has introduced legislation in the Criminal Justice Act of 1991 (HMSO 1991) to facilitate extended supervision of some sex offenders released from prison, and within the Prison Service the Sex Offender Treatment Programme is up and running. Now that such a structure is in place it would seem unethical not to randomise.

Recipients of care

People who have sexually offended or those with disorders of sexual preference should be informed that these treatments exist and should still be considered experimental. However, currently, for those motivated not to reoffend, relapse prevention programmes would seem preferable as they may have some effect, even in the long term.

Implications for research

Well-conducted and reported randomised controlled trials are essential if the effectiveness or otherwise of antilibidinal treatment, response prevention and group therapy are to be established.

Well-conducted and reported (Begg 1996) non-crossover randomised controlled trials with sufficient participants followed over a long period of time could establish which treatments work, which make no difference, and which make things worse. Along with Quinsey (Quinsey 1993) and McConaghy (McConaghy 1995) we reject the arguments of Marshall (Marshall 1991), Pithers (Pithers 1993) and Marshall (Marshall 1994) that suggest those studies of less methodological rigour than randomised controlled trials are sufficient in this area. We agree with one investigator who stated "...there would appear to be no ethical objection to random allocation of offenders to different treatments when there is no acceptable evidence that one is superior to another" (McConaghy 1995).

ACKNOWLEDGEMENTS

The authors wish to acknowledge the invaluable input of Clive Adams, John McGrath and Leanne Roberts. Much administrative support was provided by Geoffrey Davies.

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* Indicates the major publication for the study

CHARACTERISTICS OF STUDIES

Characteristics of included studies [ordered by study ID]

Barkley 1996

Methods	Allocation: randomised - matched by age, type of offense & criminal history - no further details. Duration: mean 38.4 months.
Participants	Problems: 96 molesters of female children, 43 of male children & 16 of children of both sexes. Inclusion criteria: volunteers to Sex Offender Treatment and Evaluation Project, California, within 18-30 months of release, <3 felonies, IQ 80+, spoke English, admitted offense, no psychotic or organic disorder, not medically debilitated, not severe management problem in prison. N=155. Age: between 18-60 years.
Interventions	1. Relapse prevention programme: cognitive behavioral training, decision matrices, relaxation training, stress & anger management, attendance at community meetings & leisure/recreational activity. N=76.* 2. Control. N=79.
Outcomes	Re-offending (measured by new sex crime or non sex violent interpersonal crime recored on automated records (rapsheets) and reports from parole system. Unable to use - Personal responsibility (CDI, J scale, MSI - no SD).
Notes	*Individuals may have also received treatment for drug/alcohol problems & behaviour therapy for sexual deviation (olfactory aversion, masturbatory satiation or orgasmic reconditioning). All participants also attended and aftercare programme for 1 year after release

Risk of bias

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

McConaghy 1988

Methods	Allocation: randomly allocated, no further details. Blindness: not blind. Duration: treatment drug - 5 days, ID 6 months, follow up 1 year
Participants	Problem: anonymolous sexual urges and behaviours (DSM-III), 1+ paraphilia, 2+ low IQ. N=31. Age: mean 30 years; range 16-50. Sex: male. History: 19 had been convicted.

McConaghy 1988 (Continued)

Interventions	1. Meproxyprogesterone: dose 150mg IM fortnightly x 4 followed by monthly injection x 4 and imaginal desensitisation. N=11. 2. Imaginal desensitisation. N=10. 3. Meproxyprogesterone: dose 150mg IM fortnightly x 4 followed by monthly injection x 4. N=10
Outcomes	Anomalous desire & behaviour. Unable to use - Mental state (Spielberger State Trait Anxiety - no SD). Tension and abnormal sexual urges (visual analogue scales - no usable data)
Notes	10 people also given meproxyprogesterone alone; unclear if randomized to separate group (not included in review as did not receive what is being defined as 'standard')

Risk of bias

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

Romero 1983

Methods	Allocation: randomly allocated, no further details. Blindness: not blind. Duration: ten years.
Participants	Problem: 'mixed' sex offenders. N=231.
Interventions	1. Group therapy plus probation (standard care) 2. Probation.
Outcomes	Recidivism - as measured by rearrest.
Notes	

Risk of bias

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

DSM-III - Diagnostic Statistical Manual (3rd edition)

ID - imaginal desensitisation

IM - intramuscular

SD - Standard deviation

CDI - Cognitive Distortion and Immaturity Scale

J scale - Justification scale

Characteristics of excluded studies *[ordered by study ID]*

Study	Reason for exclusion
Abel 1970	Allocation: unclear - 1 person “randomly” selected for control condition. Participants: 3 cases of exhibitionism, 2 of transvestism and 1 of masochism. Interventions: contingent electric shocks to tape recordings of deviant sexual behaviour vs non-contingent shock control. Outcomes: MMPI, PPG, self report of deviant and non deviant sexual behaviour. Up to eighteen week follow up
Appelt 1974	Allocation: not randomized, case series.
Bancroft 1974	Allocation: quasi randomization, “Williams Square crossover design”. Participants: 12 male sexual offenders. Interventions: ethinyl oestradiol vs cyproterone acetate vs no treatment. Outcomes: hormone levels, sexual interest, activity and responses. Data not recorded for first branch of the crossover. Authors are being contacted for further information about results at the end of the first leg of crossover, and details of the randomization procedure
Baron 1977	Allocation: not randomized, case series.
Berlin 1981	Allocation: not randomized, case series.
Berner 1983	Allocation: not randomized, case series.
Bradford 1987	Allocation: not randomized, single case study.
Buresova 1990	Allocation: not randomized, double blind case control study.
Cooper 1972	Allocation: not randomized, case series.
Cooper 1978	Allocation: not randomized, case series.
Cooper 1986	Allocation: not randomized, literature review.
Cooper 1992a	Allocation: not randomized, case series.
Cooper 1994	Allocation: not randomized.
Craft 1980	Allocation: not randomized, case series.
Davies 1975	Allocation: not randomized, case series.
Fahndrich 1974	Allocation: not randomized, case series.

(Continued)

Federoff 1992	Allocation: not randomized, retrospective case review.
Furby 1989	Allocation: not randomized, literature review.
Glander 1981	Allocation: not randomized, case series.
Gottesman 1993	Allocation: not randomized, case series.
Grunfeld 1986	Allocation: not randomized, case series.
Haines 1986	Allocation: not randomized - allocation off waiting list. Participants: 17 male adolescent sex offenders. Interventions: psycho-educational vs standard care. Outcomes: Sexual Knowledge Questionnaire, Psychological Inventory and the Adolescent Problems Inventory
Hall 1995	Allocation: not randomized, case series.
Hallam 1972a	Allocation: not randomized, case series.
Hallam 1972b	Allocation: not randomized, case series.
Jost 1975	Allocation: not randomized, case series.
Kafka 1992	Allocation: not randomized.
Kiersch 1990	Allocation: not randomized.
Kilman 1982	Allocation: not randomized, literature review.
Kockott 1983	Allocation: not randomized.
Kravitz 1995	Allocation: not randomized.
Kruesi 1992	Allocation: not stated Interventions: clomipramine vs desipramine: not antilibidinal / antipsychotic / bromide based or surgical treatments
Lab 1993	Allocation: not randomized, retrospective case series.
Laschet 1975	Allocation: not randomized, case series and review - often cited as the “original” work on the use of antiandrogens
Leonard 1983	Allocation: not randomized, case series.
Maletzky 1991	Allocation: not randomized, retrospective case series with controls
Marshall 1991	Allocation: not randomized, case control study.

(Continued)

McConaghy 1985	Allocation: randomized. Participants: 20 males who requested behavioral treatment for various forms of compulsive sexual behaviour (8 exhibitionists, 5 compulsive homosexuals, 4 homosexual paedophiles, 1 exhibitionist and voyeur, 1 heterosexual paedophile and 1 clothes fetishist). Interventions: imaginal desensitization vs covert sensitization - no placebo group. Outcomes: Change in heterosexual desire or intercourse, change in anomalous desire or behaviour
McConaghy 1989	Allocation: not randomized, literature review.
Meyer 1992	Allocation: not randomized, case control study in which controls were treatment refusers
Money 1975	Allocation: not randomized, case series.
Mothes 1973	Allocation: not randomized, case series kindly made available by Schering Pharmaceuticals
Neuman 1991	Allocation: not randomized, literature review.
Quinsey 1980	Allocation: two studies, neither randomized, case series.
Rice 1991	Allocation: not randomized, case series.
Richer 1993	Allocation: not randomized.
Servais 1968	Allocation: not randomized.
Tancredi 1986	Allocation: not randomized, literature review.
Thibaut 1996	Allocation: not randomized, case series.
van Moffaert 1966	Allocation: not randomized.
Wincze 1986	Allocation: not randomized.
Zohar 1994	Allocation: not randomized.

MMPI
PPG,

DATA AND ANALYSES

Comparison 1. ANTILIBIDINAL MEDICATION + IMAGINAL DESENSITISATION vs IMAGINAL DESENSITISATION (STANDARD CARE)

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Sexual behaviour: 1. No important change in problematic/anomalous behaviour (including recidivism)	1		Peto Odds Ratio (Peto, Fixed, 95% CI)	Subtotals only
1.1 by 6 months	1	21	Peto Odds Ratio (Peto, Fixed, 95% CI)	1.89 [0.17, 20.59]
1.2 by 1 year	1	21	Peto Odds Ratio (Peto, Fixed, 95% CI)	0.89 [0.11, 7.51]
2 Sexual behaviour: 2. Reduction in non-problematic behaviour	1		Peto Odds Ratio (Peto, Fixed, 95% CI)	Subtotals only
2.1 by 6 months	1	21	Peto Odds Ratio (Peto, Fixed, 95% CI)	1.89 [0.17, 20.59]
2.3 by 1 year	1	21	Peto Odds Ratio (Peto, Fixed, 95% CI)	6.75 [0.13, 341.54]
3 Sexual desire: 1. No important change in problematic/anomalous desire/libido	1		Peto Odds Ratio (Peto, Fixed, 95% CI)	Subtotals only
3.1 by 6 months	1	21	Peto Odds Ratio (Peto, Fixed, 95% CI)	1.89 [0.17, 20.59]
3.2 by 1 year	1	21	Peto Odds Ratio (Peto, Fixed, 95% CI)	7.46 [0.43, 128.59]
4 Sexual desire: 2. Reduction in non-problematic libido	1		Peto Odds Ratio (Peto, Fixed, 95% CI)	Subtotals only
4.1 by 6 months	1	21	Peto Odds Ratio (Peto, Fixed, 95% CI)	9.45 [1.12, 79.38]
4.2 by 1 year	1	21	Peto Odds Ratio (Peto, Fixed, 95% CI)	6.75 [0.13, 341.54]
5 Leaving the study early (by 1 year)	1	21	Peto Odds Ratio (Peto, Fixed, 95% CI)	6.75 [0.13, 341.54]

Comparison 2. RELAPSE PREVENTION vs NO TREATMENT

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Recidivism: 1. Sex offence - by > 1 year	1		Peto Odds Ratio (Peto, Fixed, 95% CI)	Subtotals only
2 Recidivism: 2. Non-sexual violent offence - by > 1 year	1	155	Peto Odds Ratio (Peto, Fixed, 95% CI)	0.30 [0.10, 0.89]
3 Recidivism: 3. Both sexual and non-sexual offences - by > 1 year	1	155	Peto Odds Ratio (Peto, Fixed, 95% CI)	0.14 [0.02, 0.98]

Comparison 3. GROUP PSYCHOTHERAPY + PROBATION vs PROBATION (STANDARD CARE)

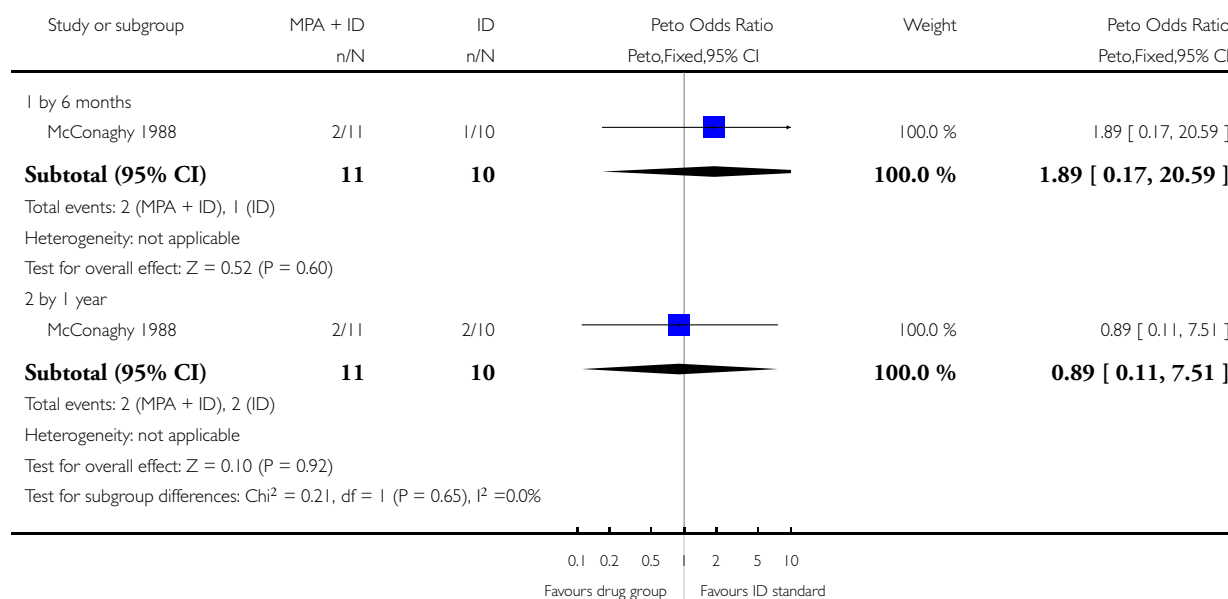
Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Recidivism: sex offence - at 10 years	1	231	Peto Odds Ratio (Peto, Fixed, 95% CI)	1.87 [0.80, 4.37]

Analysis 1.1. Comparison 1 ANTILIBIDINAL MEDICATION + IMAGINAL DESENSITISATION vs IMAGINAL DESENSITISATION (STANDARD CARE), Outcome 1 Sexual behaviour: 1. No important change in problematic/anomalous behaviour (including recidivism).

Review: Managements for people with disorders of sexual preference and for convicted sexual offenders

Comparison: 1 ANTILIBIDINAL MEDICATION + IMAGINAL DESENSITISATION vs IMAGINAL DESENSITISATION (STANDARD CARE)

Outcome: 1 Sexual behaviour: 1. No important change in problematic/anomalous behaviour (including recidivism)

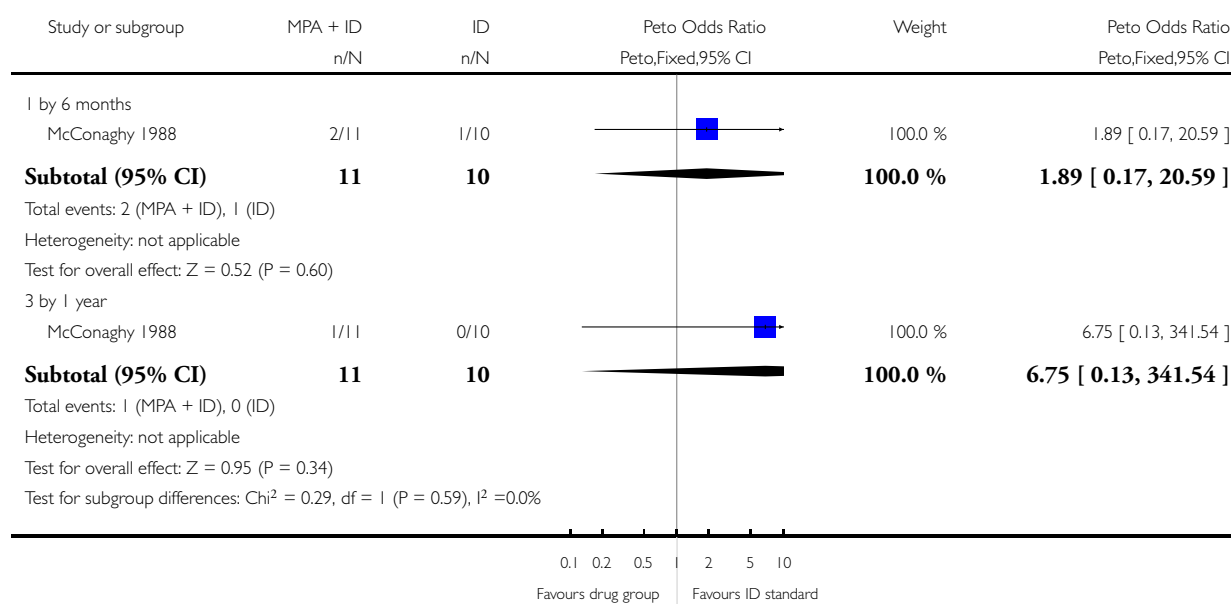


Analysis 1.2. Comparison 1 ANTILIBIDINAL MEDICATION + IMAGINAL DESENSITISATION vs IMAGINAL DESENSITISATION (STANDARD CARE), Outcome 2 Sexual behaviour: 2. Reduction in non-problematic behaviour.

Review: Managements for people with disorders of sexual preference and for convicted sexual offenders

Comparison: 1 ANTILIBIDINAL MEDICATION + IMAGINAL DESENSITISATION vs IMAGINAL DESENSITISATION (STANDARD CARE)

Outcome: 2 Sexual behaviour: 2. Reduction in non-problematic behaviour

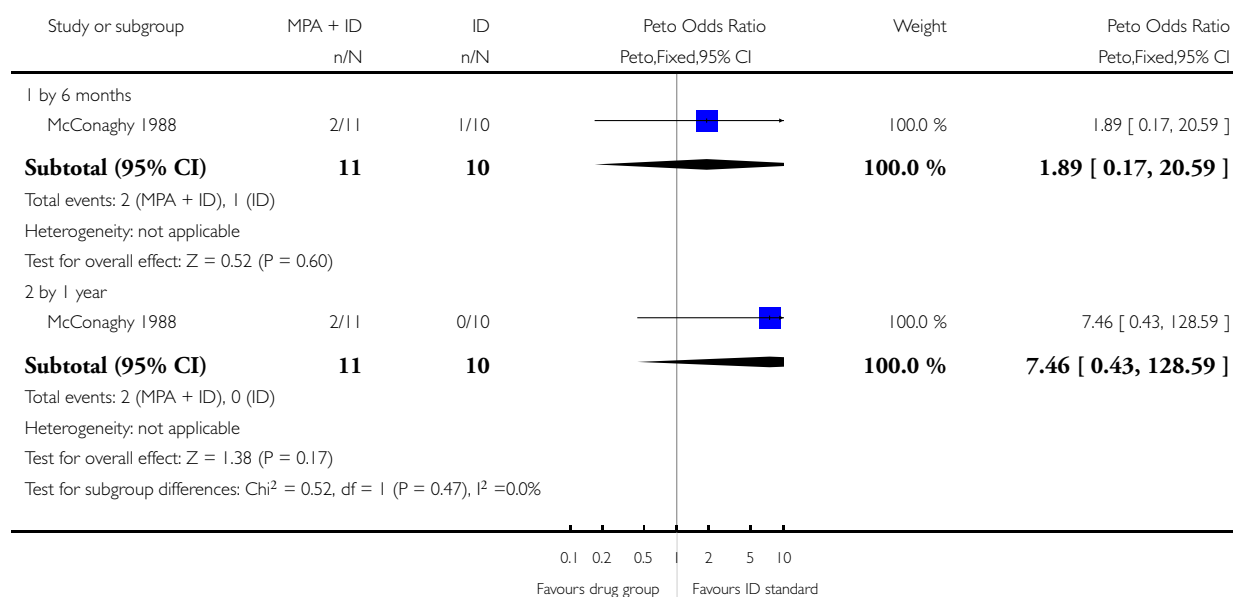


Analysis 1.3. Comparison 1 ANTILIBIDINAL MEDICATION + IMAGINAL DESENSITISATION vs IMAGINAL DESENSITISATION (STANDARD CARE), Outcome 3 Sexual desire: 1. No important change in problematic/anomalous desire/libido.

Review: Managements for people with disorders of sexual preference and for convicted sexual offenders

Comparison: 1 ANTILIBIDINAL MEDICATION + IMAGINAL DESENSITISATION vs IMAGINAL DESENSITISATION (STANDARD CARE)

Outcome: 3 Sexual desire: 1. No important change in problematic/anomalous desire/libido

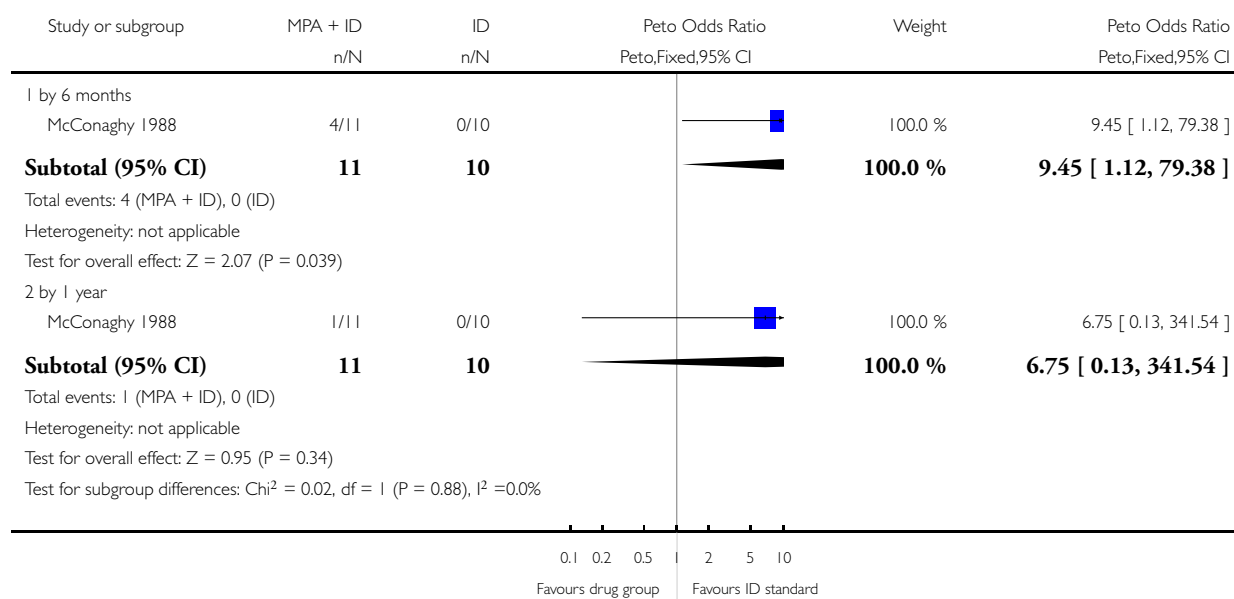


Analysis 1.4. Comparison 1 ANTILIBIDINAL MEDICATION + IMAGINAL DESENSITISATION vs IMAGINAL DESENSITISATION (STANDARD CARE), Outcome 4 Sexual desire: 2. Reduction in non-problematic libido.

Review: Managements for people with disorders of sexual preference and for convicted sexual offenders

Comparison: 1 ANTILIBIDINAL MEDICATION + IMAGINAL DESENSITISATION vs IMAGINAL DESENSITISATION (STANDARD CARE)

Outcome: 4 Sexual desire: 2. Reduction in non-problematic libido

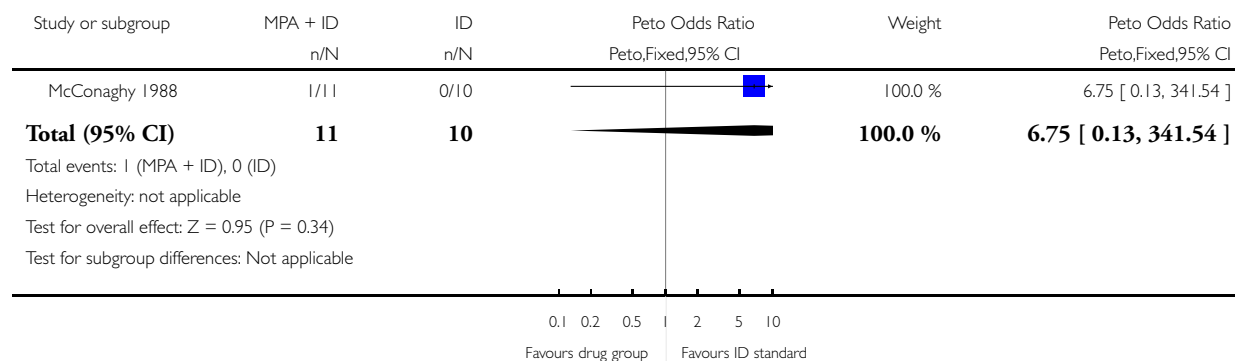


Analysis 1.5. Comparison 1 ANTILIBIDINAL MEDICATION + IMAGINAL DESENSITISATION vs IMAGINAL DESENSITISATION (STANDARD CARE), Outcome 5 Leaving the study early (by 1 year).

Review: Managements for people with disorders of sexual preference and for convicted sexual offenders

Comparison: 1 ANTILIBIDINAL MEDICATION + IMAGINAL DESENSITISATION vs IMAGINAL DESENSITISATION (STANDARD CARE)

Outcome: 5 Leaving the study early (by 1 year)

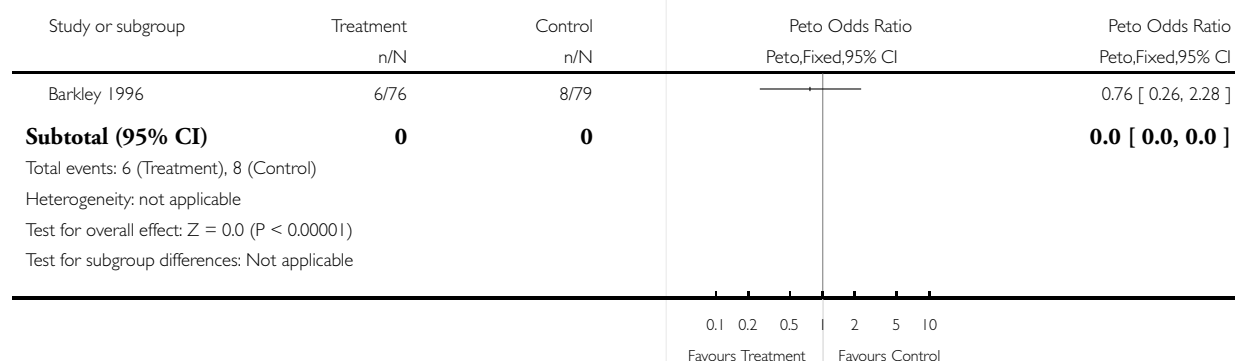


Analysis 2.1. Comparison 2 RELAPSE PREVENTION vs NO TREATMENT, Outcome 1 Recidivism: 1. Sex offence - by > 1 year.

Review: Managements for people with disorders of sexual preference and for convicted sexual offenders

Comparison: 2 RELAPSE PREVENTION vs NO TREATMENT

Outcome: 1 Recidivism: 1. Sex offence - by > 1 year

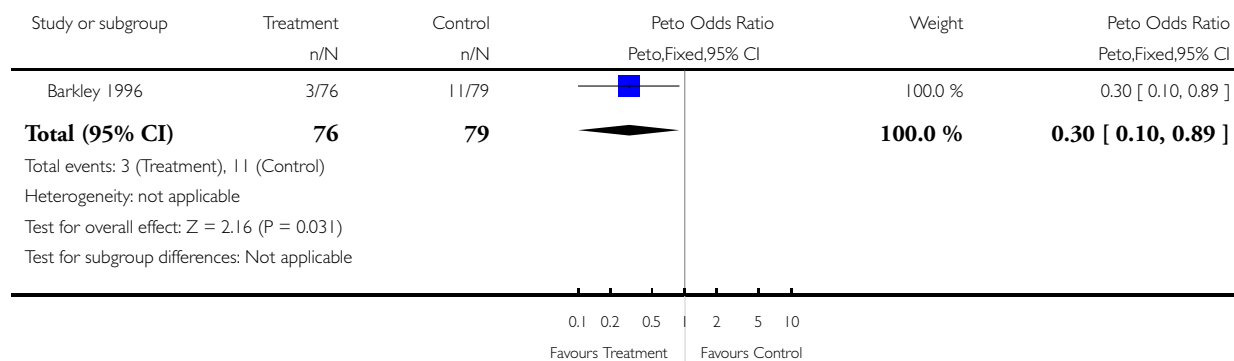


Analysis 2.2. Comparison 2 RELAPSE PREVENTION vs NO TREATMENT, Outcome 2 Recidivism: 2. Non-sexual violent offence - by > 1 year.

Review: Managements for people with disorders of sexual preference and for convicted sexual offenders

Comparison: 2 RELAPSE PREVENTION vs NO TREATMENT

Outcome: 2 Recidivism: 2. Non-sexual violent offence - by > 1 year

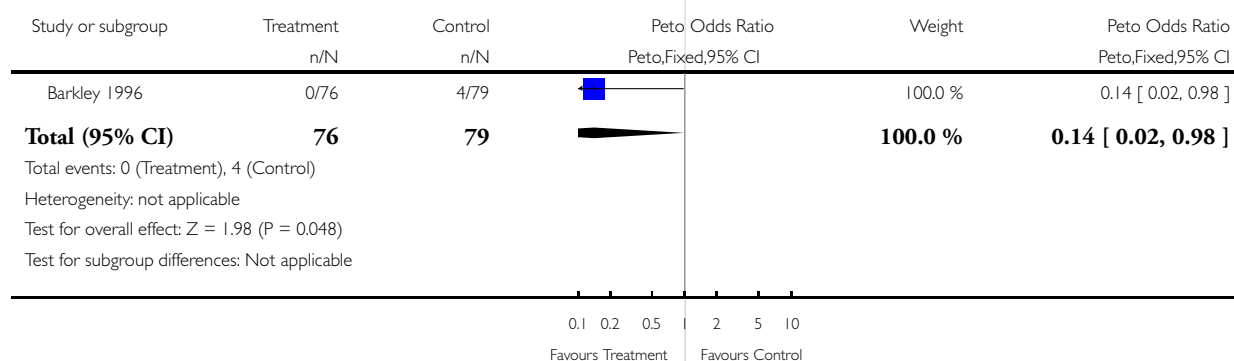


Analysis 2.3. Comparison 2 RELAPSE PREVENTION vs NO TREATMENT, Outcome 3 Recidivism: 3. Both sexual and non-sexual offences - by > 1 year.

Review: Managements for people with disorders of sexual preference and for convicted sexual offenders

Comparison: 2 RELAPSE PREVENTION vs NO TREATMENT

Outcome: 3 Recidivism: 3. Both sexual and non-sexual offences - by > 1 year

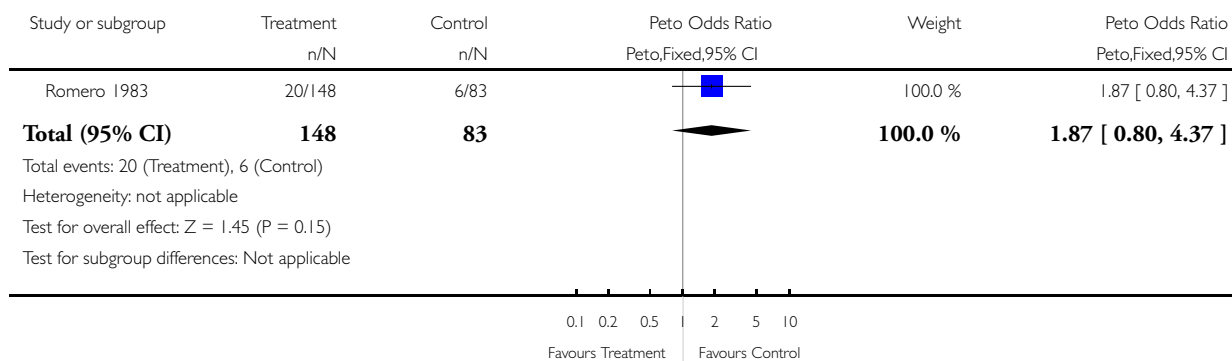


Analysis 3.1. Comparison 3 GROUP PSYCHOTHERAPY + PROBATION vs PROBATION (STANDARD CARE), Outcome 1 Recidivism: sex offence - at 10 years.

Review: Managements for people with disorders of sexual preference and for convicted sexual offenders

Comparison: 3 GROUP PSYCHOTHERAPY + PROBATION vs PROBATION (STANDARD CARE)

Outcome: 1 Recidivism: sex offence - at 10 years



WHAT'S NEW

Last assessed as up-to-date: 23 August 1998.

Date	Event	Description
10 November 2008	Amended	Converted to new review format.

HISTORY

Protocol first published: Issue 1, 1997

Review first published: Issue 2, 1998

Date	Event	Description
25 October 1999	New citation required but conclusions have not changed	Minor update. Searches are currently being run prior to an update of this review. A new study is known to exist
24 August 1998	New citation required and conclusions have changed	Substantive amendment

CONTRIBUTIONS OF AUTHORS

Paul White - protocol formulation, searching, trial acquisition and selection, data extraction, report writing.

Caroline Bradley - protocol formulation, searching, trial acquisition and selection, data extraction, report writing.

Mike Ferriter - acquisition of funds, protocol formulation, searching, trial acquisition and selection, data extraction, report writing.

DECLARATIONS OF INTEREST

The reviewers all work in forensic psychiatric units but have no known conflicts of interest.

SOURCES OF SUPPORT

Internal sources

- Mental Health Unit, Queensland Health, Australia.
- Oxford University Department of Psychiatry, UK.

External sources

- High Security Psychiatric Services Commission Board, UK.

INDEX TERMS

Medical Subject Headings (MeSH)

*Sexual Behavior; Sex Offenses [*prevention & control]; Sexual and Gender Disorders [*prevention & control]

MeSH check words

Humans