Alcoholics Anonymous and other 12-step programmes for alcohol dependence

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ABSTRACT

Background

Alcoholics Anonymous (AA) is an international organization of recovering alcoholics that offers emotional support through self-help groups and a model of abstinence for people recovering from alcohol dependence, using a 12-step approach. Although it is the most common, AA is not the only 12-step intervention available there are other 12-step approaches (labelled Twelve Step Facilitation (TSF)).

Objectives

To assess the effectiveness of AA or TSF programmes compared to other psychosocial interventions in reducing alcohol intake, achieving abstinence, maintaining abstinence, improving the quality of life of affected people and their families, and reducing alcohol associated accidents and health problems.

Search strategy

We searched the Specialized Register of Trials of the Cochrane Group on Drugs and Alcohol, the Cochrane Central Register of Controlled Trials (CENTRAL), MEDLINE from 1966, EMBASE from 1980, CINAHL from 1982, PsychINFO from 1967. Searches were updated in February 2005. We also inspected lists of references for relevant studies.

Selection criteria

Studies involving adults (>18) of both genders with alcohol dependence attending on a voluntary or coerced basis AA or TSF programmes comparing no treatment, other psychological interventions, 12-step variants.

Data collection and analysis

One reviewer (MF) assessed studies for inclusion and extracted data using a pre-defined data extraction form. Studies were evaluated for methodological quality and discussed by all reviewers.

Main results

Eight trials involving 3417 people were included. AA may help patients to accept treatment and keep patients in treatment more than alternative treatments, though the evidence for this is from one small study that combined AA with other interventions and should not be regarded as conclusive. Other studies reported similar retention rates regardless of treatment group. Three studies compared
AA combined with other interventions against other treatments and found few differences in the amount of drinks and percentage of drinking days. Severity of addiction and drinking consequence did not seem to be differentially influenced by TSF versus comparison treatment interventions, and no conclusive differences in treatment drop out rates were reported. Included studies did not allow a conclusive assessment of the effect of TSF in promoting complete abstinence.

Authors’ conclusions

No experimental studies unequivocally demonstrated the effectiveness of AA or TSF approaches for reducing alcohol dependence or problems. One large study focused on the prognostic factors associated with interventions that were assumed to be successful rather than on the effectiveness of interventions themselves, so more efficacy studies are needed.

PLAIN LANGUAGE SUMMARY

Alcoholics Anonymous (AA) is self-help group, organised through an international organization of recovering alcoholics, that offers emotional support and a model of abstinence for people recovering from alcohol dependence using a 12-step approach.

As well as AA, there are also alternative interventions based on 12-step type programmes, some self-help and some professionally-led. AA and other 12-step approaches are typically based on the assumption that substance dependence is a spiritual and a medical disease. The available experimental studies did not demonstrate the effectiveness of AA or other 12-step approaches in reducing alcohol use and achieving abstinence compared with other treatments, but there were some limitations with these studies. Furthermore, many different interventions were often compared in the same study and too many hypotheses were tested at the same time to identify factors which determine treatment success.
BACKGROUND

Alcohol consumption is rising in many developing countries and in Central and Eastern Europe (WHO 2005). Alcohol's abuse significantly contributes to the global burden of disease and in parts of Central and Eastern Europe alcohol abuse has been linked to an unprecedented decline in male life expectancy (WHO 2001). On average, alcohol dependence one-year prevalence is around 7% and its life-time prevalence rates are 14% in the general population (Regier 1993; Kessler 1994). Alcohol dependence (also called alcoholism) is a condition that involves four main symptoms: craving (a strong need to drink); uncontrollable behaviour (after the first drink it is impossible to stop); physical dependence (if one does not drink enough then withdrawal symptoms such as nausea, sweating, shakiness and anxiety occur); and tolerance (the need to increase the amount of alcohol intake to feel satisfied) (NIAA 2003). Substance dependence is defined (DSMIV 1994) as a "cluster of cognitive, behavioural, and physiological symptoms indicating that the individual continues using a substance despite significant substance-related problems". Dependence on alcohol is characterised by tolerance and withdrawal symptoms. Tolerance is a progressive reduction in the susceptibility to the effects of a substance, resulting from its continued administration. It is present when a person must use an increasing quantity of a given substance, to achieve the same perceived effect as time passes (Gitlow 2001). Tolerance is also experienced when the person notices a decreased sensation with similar doses of a substance over time. Tolerance can be measured objectively, for example when a person with high blood alcohol level can still perform given perceptual and motor tasks such as walking in a straight line. Withdrawal symptoms are physiological and psychological symptoms associated with withdrawal from a substance after prolonged administration or habituation. Withdrawal is present when a characteristic physiological pattern associated with a certain substance is experienced, or when the person uses the substance to avoid or reduce specific symptoms (Gitlow 2001). People compulsively using alcohol may devote substantial time to obtain and consume alcoholic beverages and continue to use alcohol even if they experience severe psychological and physical consequences such as depression, blackouts, liver disease or other sequelae (DSMIV 1994).

There is no unique and known cause of alcohol dependence and several factors may play a role in its development: familiar and genetic factors, psychological attributes such as high anxiety, ongoing depression, unresolved conflicts within a relationship or low self-esteem, and social factors such as availability of alcohol, social acceptance and promotion of the use of alcohol, peer pressure and a demanding lifestyle (A.D.A.M. 2002). Risk factor studies conducted on animals suggest that genetic vulnerability to alcohol dependence is multigenic. In humans, evidence about the genetic vulnerability is typically provided by studies involving monozygotic and dizygotic adult twins, suggesting that alcohol dependence can be attributed in the ratio 2/3 to genetic factors and 1/3 to environmental factors, without gender differences (Heath 1997). Alcoholic dependence syndrome is three to four times higher in the relatives of alcohol dependent people compared with the general population (DSMIV 1994). Stress and emotional problems can also play a role in the development of alcohol abuse (NIAA 2000).

Remission is spontaneous in about 20% of people with alcohol dependence, who achieve long term sobriety without active treatment (DSMIV 1994). Gender and age do not substantially affect prognosis. Positive prognostic factors are good social functioning (employment, family relationship, absence of legal problems) and good health status. Retention in treatment for at least one month increases the likelihood of remaining abstinent for one year (Hales 1999). Psychiatric comorbidity is a negative prognostic factor.

The health, social and economic consequences of alcohol abuse are usually devastating. Although many individuals do achieve long-term sobriety with treatment, others continue to relapse and deteriorate despite multiple courses of treatment. Alcohol dependence contributes to accidents, violent behaviours, suicide, loss of working days, work related accidents and low productivity. Mortality and morbidity are increased in people with alcohol dependence (Hales 1999).

Attendance of self-help groups is often suggested to people with a diagnosis of alcohol dependence. Participation in self-help organization meetings can be an adjunct to professional treatment, or a treatment in itself in particular for long periods. Alcoholics Anonymous (AA) is an international organization composed of recovering alcoholics that offers self-help group emotional support and a model of abstinence for people recovering from alcohol dependence. The practice of AA is the 12-step approach, an intervention based on the assumption that substance dependence is a spiritual and a medical disease (Nowinski 1992). The 12-step approach consists of a brief, structured, manual-driven approach to facilitating recovery from alcohol abuse, and it is intended to be implemented over 12 to 15 sessions. In addition to AA, there are also other, alternative, interventions based on the 12-step approach: some include a spiritual approach and others do not; and some are led by a professional and others are led by former alcohol dependents. AA self-help groups are widely available and are well known in many countries. Although it is the most common, AA is not the only 12-step intervention available: in this review we have considered all 12-step approaches. However, as AA is the most widely available we have distinguished, wherever possible, those that are conventional AA self-help programmes from other 12-step approaches. The latter have been labelled Twelve Step Facilitation (TSF) in one of the most powerful studies recently conducted on this treatment (MATCH 1998).

A meta-analysis by Tonigan (Tonigan 1995) reported that many of the available studies were not focused on AA per se but rather on AA-inspired or AA-focused treatment and on AA involvement.
and outcomes within formal therapeutic interventions. The meta-analysis included 74 studies, 10 of which were randomised. The results were grouped by global study quality, a multidimensional tool considering random allocation as one of several weighting factors. Therefore it was not possible to distinguish results by study design. Another meta-analysis by Kownacki (Kownacki 1999) identified severe selection bias in the available studies, with the randomised studies yielding worse results than non-randomised studies. This meta-analysis is weakened by the heterogeneity of patients and interventions that are pooled together. Emrick 1989 performed a narrative review of studies about characteristics of alcohol-dependent individuals who affiliate with AA and concluded that the effectiveness of AA as compared to other treatments for alcoholism was not clear and therefore needed to be demonstrated.

This systematic review updates previous reviews and meta-analyses and also incorporates the results from Project MATCHMATCH 1997; MATCH 1997b; MATCH 1998b), a large randomised controlled trial conducted in the United States in the late 90’s with the aim of identifying the predictors of success in different non-pharmacological interventions for alcohol dependence.

**OBJECTIVES**

To assess the effectiveness of Alcoholics Anonymous and other Twelve Step Facilitation (TSF) programmes in reducing alcohol intake, achieving abstinence, maintaining abstinence, improving the quality of life of affected people and their families, reducing alcohol associated accidents and health problems.

The following interventions will be compared:

- twelve-step programmes versus no intervention;
- twelve-step programmes versus other interventions (e.g. Motivational Enhancement Therapy (MET), Cognitive-behavioural coping skills training (CBT), Relapse Prevention Therapy (RPT));
- twelve-step programmes versus Twelve-Step programme variants (e.g. spiritual, non-spiritual, professionally led, lay led).

**METHODS**

**Criteria for considering studies for this review**

**Types of studies**

Randomised controlled trials comparing AA or other TSF programmes to other psychological treatments or no treatment. Where available observational studies with control groups will be considered and separately analysed.

**Types of participants**

Adults (>18) with alcohol dependence attending AA or other TSF programmes; studies on patients coerced to participate will be included and results will be considered separately from those of studies on voluntary participation.

**Types of interventions**

**Experimental Interventions**

AA or TSF programmes for encouraging retention (meeting attendance), reducing drinking, remaining abstinent, and reducing social problems related to alcohol consumption.

**Control interventions**

1. No treatment.
2. Other psychological interventions, e.g. Motivational Enhancement Therapy (MET) based on the principles of cognitive and social psychology: MET seeks to evoke the clients motivation for changing the harmful use of drugs. Each client is helped by a Counsellor to set their own goals and plan (Miller 1996); Cognitive-behavioural coping skills training (CBT): a treatment where the goal is abstinence from use of substances through identification of high risk situations for substance use and the implementation of effective coping strategies (Marlatt 1995); Relapse Prevention Therapy (RPT): a cognitive-behavioral approach to the treatment of addictive behaviours that specifically addresses the nature of the relapse process and suggests coping strategies useful in maintaining change (Marlatt 1995; Parks 2001).
3. Twelve-Step programme variants (e.g. spiritual, non-spiritual, professionally led, lay led).

**Types of outcome measures**

1. Severity of dependence and its consequences measured as: addiction severity measured with a questionnaire (e.g. ASI, a semi-structured interview protocol used to assess a spectrum of addiction-related behaviours and consequences (McLellan 1980), or severity of impact of alcohol abuse measured with a questionnaire (e.g. Drinking Inventory Consequences (DrInC): a self-administered 50-item questionnaire designed to measure the consequences of alcohol abuse in five domains: Interpersonal, Physical, Social, Impulsive, and Intrapersonal. Each scale provides lifetime and past 3 month measures of adverse consequences, and scales can be combined to assess total adverse consequences (NIAA 2003a; NIAA 2003b).
2. Retention in, or drop out from, treatment.
3. Reduction of drinking, self-reported.
4. Abstinence, self-reported.
5. Qualitative outcomes regarding patients and relatives' satisfaction will be reported as described in the included studies.

**Search methods for identification of studies**

We searched electronic bibliographic databases: The Cochrane Central Register of Controlled Trials (CENTRAL, The Cochrane Library 2005, issue1), which include the Specialized Register Search; MEDLINE (OVID - January 1966 to February 2005); EMBASE ((OVID -January 1988 to February 2005); and
CINAHL ((OVID -January 1967 to February 2005) with no language or time restrictions. Search strategies were developed for each database to take account of differences in controlled vocabulary and syntax rules. See Appendix 1; Appendix 2; Appendix 3; Appendix 4

Data collection and analysis

Study Selection
One reviewer (MF) inspected the search results by reading the titles and the abstracts. Doubts were resolved by discussion. Each potentially relevant article located in the search was retrieved and assessed for inclusion. Decisions about inclusion were discussed among reviewers.

Assessment of the methodological quality of Randomised Controlled Studies
Quality assessment was performed by one reviewer (MF) and discussed with other reviewers. Disagreements were resolved by discussion. Study quality was assessed according to the latest quality criteria from the Drugs and Alcohol Editorial Group (see the module of the group (Amato 2005). The randomisation procedures are described below to indicate the types of procedures accepted (from the best to the worst) and to explain what we mean by allocation concealment and follow-up.

Randomisation method
Computer generated list, random number table, coin toss etc.
Date of birth, number of hospital records, etc.
Double randomised consent design (Jadad 1998).

Allocation concealment
Methods described and acceptable (Higgins 2005): centralised (for example, allocation by a central office unaware of participant characteristics) or pharmacy-controlled randomisation; pre-numbered or coded identical containers which are administered serially to participants; 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; sequentially numbered, sealed, opaque envelopes; other methods; no description.

Follow up
Information on people who left the study for any reasons clearly reported (Greenhalgh 1997).

Assessment of the methodological quality of Observational Studies with a Control Group
For observational controlled studies it was decided at protocol stage that quality would be assessed against the scales developed by the Scottish Intercollegiate Guidelines Network (SIGN 2004). The quality evaluation was not used as a criteria for exclusion and inclusion but the findings are described and discussed below.

Data extraction
One reviewer (MF) extracted data and discussed with other reviewers.

Statistical analysis
If possible, we calculated relative risks with Review Manager (RevMan 2003). The types of intervention considered here involve heterogeneity due to social context, political organization (for instance in the legal consequences of dependence related problems, access to social services etc.) (Ferri 2006); therefore the random-effects model was chosen.

Considering the varieties of approaches delivered under the name of Twelve-Steps, we decided at protocol stage to perform separate analyses basing on the characteristics of the interventions, for example: the standardized procedures for the conduct of groups; the spiritual approach, the professionally led groups; and the former alcoholic led groups. Other subgroups may be identified as the review is updated and reasons for separate analysis will be justified. In fact, the heterogeneity of studies (interventions, patients, settings and outcomes measured) prevented a formal meta-analysis and therefore the results are described narratively in the results section.

RESULTS

Description of studies
See: Characteristics of included studies; Characteristics of excluded studies.

Methods
The search strategy identified 117 studies, of which 29 were eligible for inclusion and 8 met the inclusion criteria. All the studies meeting the inclusion criteria (Brown 2002; Cloud 2004; Davis 2002; Kahler 2004; MATCH 1998; McCrady 1996; Walsh 1991; Zemore 2004) were randomised controlled studies. Twenty two studies were excluded and the reasons are explained in the table 'Characteristics of excluded studies'. Briefly these reasons can be summarized as: study design not in the inclusion criteria (ten studies); objectives not in the inclusion criteria (three studies); intervention not in the inclusion criteria (five studies); outcomes measured not in the inclusion criteria (four studies).

Participants
One study (Brown 2002) studied participants who had completed an inpatient detoxification treatment; another study (Davis 2002) studied participants who had applied for outpatient rehabilitation without passing through in-patient treatment. Project MATCH and its sub-analyses (Cloud 2004; MATCH 1998) studied either participants in outpatient therapy or participants in aftercare. Inpatients only participated in Kahler (Kahler 2004). McCrady (McCrady 1996) considered men with alcohol problems and their wives. Walsh (Walsh 1991) recruited people in their work setting and considered compulsory participation in inpatient programmes versus compulsory Alcoholic Anonymous meetings. Zemore (Zemore 2004) compared a hospital based programme combining medical and behavioural interventions against a community based 12-steps program.
Interventions
Since some ambiguity existed regarding classifying interventions as a conventional AA or other TSF programme we defined the interventions as they are reported by study authors. Three studies (Davis 2002; McCrady 1996; Walsh 1991) considered AA in association with other treatments, and in one study compulsory attendance at AA meetings was studied.
Three studies (Brown 2002; MATCH 1998; Zemore 2004) considered 12-step facilitation (TSF). Two studies compared TSF with Motivational Enhancement Therapy and Cognitive Behavioural Therapy (MATCH 1998) and Relapse Prevention Therapy (Brown 2002); and one study investigated the relationship between helping others and being involved in TSF (Zemore 2004). One study (Kahler 2004) consider motivational enhancement to encourage people to attend 12-step facilitation.

Duration of trials
Four studies (Brown 2002; Davis 2002; Kahler 2004; Zemore 2004) lasted six months; one study (Cloud 2004) lasted one year; one study (McCrady 1996) lasted 15 weeks; one other study (Walsh 1991) lasted two years; and Project Match lasted three years (MATCH 1998).

Countries in which trials were conducted
Brown 2002 was conducted in Canada. Cloud 2004; Davis 2002; Kahler 2004; MATCH 1998; McCrady 1996; Walsh 1991; and Zemore 2004 were conducted in the USA.

Types of comparisons
AA versus other self-help programs (Davis 2002; McCrady 1996; Walsh 1991)
Brief advice to attend AA versus Motivational enhancement for 12-steps involvement (Kahler 2004)
TSF versus other self-help programs (Brown 2002; Cloud 2004; MATCH 1998)
Hospital based 12-step principles versus community based programmes (Zemore 2004)
(see Table 1: Studies Interventions and Comparisons, and Table 2: Studies by intervention, comparison and aim)

Table 1. Studies and interventions and comparisons

<table>
<thead>
<tr>
<th>Author</th>
<th>12-step</th>
<th>AA</th>
<th>Other self-help</th>
<th>Total comparisons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brown 2002</td>
<td>°</td>
<td>°</td>
<td>°</td>
<td>1</td>
</tr>
<tr>
<td>Cloud 2004</td>
<td>°</td>
<td>°</td>
<td>°</td>
<td>1</td>
</tr>
<tr>
<td>Davis 2002</td>
<td>°</td>
<td>°</td>
<td>°</td>
<td>1</td>
</tr>
<tr>
<td>Kahler 2004</td>
<td>°</td>
<td></td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>
Table 1. Studies and interventions and comparisons  (Continued)

<table>
<thead>
<tr>
<th>Study</th>
<th>Intervention</th>
<th>Intervention</th>
<th>Intervention</th>
<th>Comparison</th>
<th>Aim</th>
<th>Outcomes</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATCH 1998</td>
<td>°</td>
<td>°</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>McCrady 1996</td>
<td>°</td>
<td>°</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Walsh 1991</td>
<td>°</td>
<td>°</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zemore 2004</td>
<td>°</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 2. Studies by intervention, comparison and aim

<table>
<thead>
<tr>
<th>Study</th>
<th>Intervention</th>
<th>Intervention</th>
<th>Intervention</th>
<th>Comparison</th>
<th>Aim</th>
<th>Outcomes</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cloud 2004</td>
<td>Cognitive behavioural skills</td>
<td>12-step facilitation</td>
<td>motivational enhancement treatment</td>
<td>three intervention are compared on 2 groups of patients N=952 outpatients; N=774 inpatients</td>
<td>to assess if Alcoholic Anonymous affiliation predicts post-treatment outcomes</td>
<td>Mean proportion of days abstinent</td>
<td>Secondary analysis of MATCH</td>
</tr>
<tr>
<td>Kahler 2004</td>
<td>Brief Advice to attend Alcoholic Anonymous</td>
<td>motivational enhancement for 12-steps involvement</td>
<td></td>
<td></td>
<td>to test the hypothesis that patients in ME-12 would result in better involvement in AA and better alcohol outcome</td>
<td>Percent-age days abstinent (PDA) and Drink per drinking day (DDD) measured and Alcoholics Anonymous attendance measured with Timeline Followback questionnaire</td>
<td></td>
</tr>
<tr>
<td>Zemore 2004</td>
<td>Hospital based hybrid model blending professional medical behavioural science with 12-step principles</td>
<td>two community-based programs including both genders</td>
<td>community-based program for women only</td>
<td></td>
<td>12-step involvement; helping others; substance use</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 2. Studies by intervention, comparison and aim  (Continued)

<table>
<thead>
<tr>
<th>Study</th>
<th>Aim</th>
<th>Comparison</th>
<th>Intervention</th>
<th>Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brown 2002</td>
<td>Relapse prevention</td>
<td>12-steps facilitation</td>
<td>-</td>
<td>To quantify the change in self-efficacy process in RP; utilization of AA's principle in TSF</td>
</tr>
<tr>
<td>Davis 2002</td>
<td>group and individual therapy, emphasis on AA</td>
<td>weekly alcohol education movies</td>
<td>-</td>
<td>To examine the effectiveness of the standard out-patients treatment in US Proportion of abstinent days; reduction in number of days drinking (during 6 months study period); reduction in overall quantity of alcohol consumed; length of abstinence at 6-month follow-up</td>
</tr>
<tr>
<td>MATCH 1998</td>
<td></td>
<td>Motivational Enhancement Therapy</td>
<td>Cognitive-behavioural Therapy</td>
<td>Twelve-steps facilitation</td>
</tr>
<tr>
<td>McCrady 1996</td>
<td>Alcohol behavioural marital therapy (ABMT)</td>
<td>ABMT plus AA/alanon</td>
<td>ABMT plus relapse prevention</td>
<td>To assess within treatment behaviour Drinking during treatment, patterns of AA/ABMT condition</td>
</tr>
<tr>
<td>Walsh 1991</td>
<td>Compulsory in-patients treatment</td>
<td>Compulsory attendance at AA meetings</td>
<td>choice between options</td>
<td>To assess the effectiveness of mandatory in-patients treatment vs mandatory AA attendance Drinking at follow-up</td>
</tr>
</tbody>
</table>

Outcomes

The majority of the studies considered outcomes about drinking behaviour (Brown 2002; Cloud 2004; Davis 2002; Kahler 2004; MATCH 1998; McCrady 1996; Walsh 1991; Zemore 2004). The MATCH study was designed to test a series of a priori hypotheses on how patient-treatment interactions relate to outcome. Two independent but parallel matching studies have been conducted, one with clients recruited from outpatient settings, the other with participants receiving aftercare treatment following inpatient care. Several publications (MATCH 1998) derived from the study and each of them investigate different associations, overall 504 hypotheses were tested on these data (Moyer 2001). Among the publications derived from MATCH data we identified, one article reported measuring drinking outcomes (in terms of Percent
Days Abstinent and Drinks per Drinking Days) at 12-weeks during treatment; another publication measured the same outcomes at one year post-treatment. A third publication studied only the outpatient arms at three year follow-up, looking for association of participants characteristics with successful treatment. The most recent publication (Cutler 2005) looked for associations between treatment outcome and treatment quantity (see Table 3: studies by intervention and outcomes).

Table 3. Included studies by intervention and outcomes

<table>
<thead>
<tr>
<th>Outcome</th>
<th>12-step</th>
<th>AA</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASI</td>
<td>2 studies</td>
<td>-</td>
</tr>
<tr>
<td>Drop-out</td>
<td>2 studies</td>
<td>3 studies</td>
</tr>
<tr>
<td>Reduction of drinking</td>
<td>3 studies</td>
<td>3 studies</td>
</tr>
<tr>
<td>Abstinence</td>
<td>1 study</td>
<td>1 study</td>
</tr>
<tr>
<td>DrInC</td>
<td>1 study</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>4 studies</td>
<td>4 studies</td>
</tr>
</tbody>
</table>

Risk of bias in included studies

All included studies are declared to be randomised controlled trials.  

Randomisation methods

While randomisation is always mentioned, the methods and procedures to perform it are not described in any report or publication and could not be assessed.  

Allocation concealment

Allocation concealment was never mentioned in any report or publication of the included studies.  

Follow up

Details of people who left the study have been provided in six out of eight studies.  

The main methodological problem with the included studies is the statistical power which was never mentioned and possibly not taken into account when designing the studies. The largest study (MATCH 1998) was suspected to be susceptible to a type I error due to the enormous quantity of hypotheses tested and analyses performed (Moyer 2001).

Effects of interventions

Outcomes considered at protocol level

1. Severity of dependence and its consequences measured as: addiction severity measured with a questionnaire (for example, ASI, a semi-structured interview protocol used to assess a spectrum of addiction-related behaviours and consequences (McLellan 1980), or severity of impact of alcohol abuse measured with a questionnaire (for example, Drinking Inventory Consequences (DrInC)). Two studies (2062 participants) (Brown 2002; MATCH 1998) adopted the Addiction Severity Index to measure alcohol problems at baseline and at follow up.

1.1 TSF versus Cognitive Behavioral Therapy (CBT) and versus Motivational Enhancement Therapy (MET).

In MATCH 1998 (N = 1726) the Addiction Severity Index (psychiatric composite) is measured at baseline and at 12-weeks post-treatment. The TSF group showed no significant differences compared to other groups (CBT and MET) either in outpatient or in aftercare settings. The mean score differences varied from 0.21 (baseline) to 0.12 (12-weeks) (P = 0.934) with CBT outpatients; and 0.22 (baseline) to 0.17 (12-weeks) (P = 0.695) in CBT aftercare. The same pattern (no differences between groups and settings) is observed when the addiction severity index (psychiatric composite) is measured at month 9 and month 15.

The MATCH study measured impact of consequences of alcohol abuse (MATCH 1998) at baseline, 9 and 15 months and did not find any differences between TSF and the other two compared treatments (MET and CBT). All three interventions reduced drinking consequences (as measured by the questionnaire mentioned above).

1.2 TSF versus Relapse Prevention (RP)

Brown 2002 (N = 336) adopted the Addiction Severity Index with two composite scores specifically related to alcohol and drug use.
over the previous 30 days of measurement. No differences (statistical significance is not reported) are evident in scores measured at baseline and after 6 months. (TSF ASI alcohol baseline = 0.31, SD = 0.23; month 6 = 0.15, SD = 0.19; RP ASI alcohol baseline = 0.33, SD = 0.22; month 6 = 0.20, SD = 0.22).

2.3 TSF versus RP

In Brown 2002 at the end of treatment (following 10-session aftercare) in the TSF group N = 58 (41.4%) left the treatment; at the end of follow-up (at six months from completion of intensive treatment) N = 70 (50%) of participants left treatment; in the RP group at T1 N = 58 (41.4%) left treatment and at T2 N = 65 (51.6%) left treatment. In MATCH 1998 drop outs are reported at one year and at three years (only for outpatients), but information is not reported at type of treatment level but divided by outpatients and aftercare setting. Zemore 2004 and Kahler 2004 (N = 279) and Walsh 1991 (N = 48) only measured ASI at baseline. The remaining four studies (Cloud 2004; Davis 2002; McCrady 1996; Walsh 1991) did not report this measure of alcohol addiction severity.

2. Drop out from treatment

This is measured as the difference between number of participants assigned to the treatment and the absolute number of participants who completed it (and checked at follow up).

2.1 AA plus different therapies versus educational intervention

In Davis 2002 (N = 105) AA meetings (minimum six) provided in a programme also involving group therapy sessions, alcohol education films, a leisure education session and three community meetings led by a PhD trained in alcoholism (Standard Treatment), helped recipients to accept treatment in comparison with a minimal treatment condition (alcoholism education movie once a week). In this study 3/52 participants rejected Standard Treatment (including AA) and 13/53 rejected Minimal Treatment.

2.2 AA plus marital therapy (ABMT) versus Relapse Prevention (RP)

McCrady 1996 (N = 90) combined AA with marital therapy and 7/31 (22.58%) participants left treatment before the 12-week treatment had completed versus 8/30 (26.67%) in the alcohol-focused behavioral marital therapy (ABMT) group and 7/29 (24.14%) in the ABMT plus relapse prevention (ABMT/RP) group. In Walsh 1991 (N = 227) 12% of participants in the compulsory AA group left before the end of the treatment compared to 14% in the compulsory hospital treatment and 10% of the choice by participants group.

2.3 TSF versus RP

In Brown 2002 at the end of treatment (following 10-session aftercare) in the TSF group N = 58 (41.4%) left the treatment; at the end of follow-up (at six months from completion of intensive treatment) N = 70 (50%) of participants left treatment; in the RP group at T1 N = 58 (41.4%) left treatment and at T2 N = 65 (51.6%) left treatment. In MATCH 1998 drop outs are reported at one year and at three years (only for outpatients), but information is not reported at type of treatment level but divided by outpatients and aftercare setting. Zemore 2004 and Kahler 2004 do not report this information.

3. Reduction of drinking, self-reported

3.1 AA plus different therapies versus minimal treatment

Davis 2002 measured reduction of drinking (in the preceding six months) at intake and at follow-up in terms of drinking days and in amount of alcohol drunk:

(N = 44 Standard treatment, including AA)
baseline, amount (oz/day) = 111.8, SD = 64.4; follow up, mean days = 29.3, SD = 43.7 (P < 0.001)

(Zemore 2004 N = 27) and Kahler 2004 (N = 48) only measured ASI at baseline. The remaining four studies (Cloud 2004; Davis 2002; McCrady 1996; Walsh 1991) did not report this measure of alcohol addiction severity.

3.2 AA plus marital therapy (AA/ABMT) versus Relapse Prevention (RP)

McCrady 1996 reported reduction of drinking during the 12-weeks treatment as % of drinking days and in % of drink per drinking days, without finding any significant differences:

AA/ABMT, behavioural treatment + alcoholics anonymous:
% of drinking days = 19.38, SD = 22.10 measured on 23 participants
% of drink per drinking days measured on 19 participants = 5.94, SD = 5.05 measured on 19 participants
ABMT, behavioural marital therapy:
% of drinking days = 15.10, SD = 24.61 measured on 24 participants
% of drinks per drinking days = 7.27, SD = 9.75 measured on 14 participants
ABMT/RP, marital therapy + relapse prevention:
% of drinking days = 9.75, SD = 11.12 measured on 22 participants
% of drinks per drinking days 4.61, SD = 2.73 measured on 17 participants

3.3 AA compulsory group versus AA hospital compulsory group

Walsh 1991 (N = 227) describes the AA compulsory group as similar to the hospital compulsory group and the self-choice group in four measures of drinking (mean number of daily drinks, number of drinking days per month, binges and serious symptoms) but worse if the outcomes compared were any drinking, intoxication, blackouts, IOWA stage, Rand impairment score, definite alcoholism, cocaine use, or time to additional treatment. The authors performed a life-time analysis of 200 participants followed by interview. They found overall 46 participants abstinent at every follow-up assessment (during 24 months). The hospital group had a significant lower rate of relapse than AA group (P = 0.005) or other choice group (P = 0.0018) the difference between the choice group and the AA group were not significant (P = 0.9848).

3.4 TSF versus RP

In Brown 2002 (N = 226) mean days of use in the TSF group was 46.1 at intake and 13.3 at six months follow up versus 46.0 intake and 9.2 in the relapse prevention group.

3.5 TSF versus CBT versus MET

In the MATCH 1998 (N = 1726) outpatient arm (N = 952) during 1 to 12 weeks treatment, the percentage of days abstinent is reportedly higher for TSF and CBT clients than for MET participants.
Coherently, the amount of drinks per drinking days is lower for TSF and CBT compared with MET (drink reduction is reported as a graph and calculated with hierarchical linear modelling). In the aftercare arm (N = 774) the same pattern is showed during 1 to 12 weeks treatment, with the percentage of days abstinent reduced for the three groups and drinks per drinking days increased for the three groups. At year one (15 months after treatment onset) in both outpatient and aftercare arms there was an improvement in terms of drinking reduction from baseline. TSF participants had a better Percentage Days Abstinent than the other groups (P < 0.01). At three years follow up, only outpatient data were considered to match results with participants characteristics, without finding significant differences with other treatments.

Kahler 2004 (N = 48) compared Brief Advice to Motivational Enhancement for attending TSF and did not find any difference between groups either in terms of percentage of days drinking or in terms of drinks per drinking days at 6 months follow-up.

4. Abstinence, self reported

Most studies included in this review did not allow assessment of the effect of TSF in promoting complete abstinence.

4.1 AA plus different therapies versus minimal treatment

Only one of the included studies (Davis 2002) measured abstinence at six-month follow up by confirming self-report through witness of a collateral and found that Standard Treatment (including AA) obtained a higher percentage abstinent than comparison treatment: 17/47 (36.2%) and 7/37 (18.9%), respectively (P < 0.05).

Other outcomes, not specified in the review protocol

Below we list other measures reported in the included studies. Many of these are process rather than outcome measures and as we did not list these in the protocol, we have not reported the results.

- Sum of steps completed, considered self member of AAN, meetings attended, spiritual awakening, rated importance attending, attended AA meetings, been an AA sponsor last 90 days, meetings in 90 days, had AA sponsor (Cloud 2004).
- Pre-treatment commitment to abstinence and 12-step involvement, AA-NA attendance and involvement after treatment (Kahler 2004).
- Test of three hypotheses: 12-steps involvement predicts help during treatment, helping during treatment predict 12-steps involvement at follow up, helping during treatment and 12-step involvement impact treatment outcomes (Zemore 2004).
- Employment status, AA attendance (monthly) (Davis 2002).
- Attendance at meetings, treatment skills (McCrady 1996).
- 12 job-performance variables (Walsh 1991).
- Number of days to lapse (any use of substance), Number of days to relapse (three or more consecutive days of consumption), and psychological status (Brown 2002).

D I S C U S S I O N

Overall, severity of addiction does not seem to be differentially influenced by the interventions from studies included in this review. TSF improved scores in drinking consequences in the same way as other comparison treatments, though regression to the mean cannot be discounted as a factor. Similarly, there is no conclusive evidence from a number of different studies to show that AA helps patients to accept therapy and keep patients in therapy any more or less than other interventions. Similarly, there was no evidence that other TSF interventions impacted the number remaining in treatment any more or less than relapse prevention treatment.

In terms of reduction of self-reported drinking measures, this review shows that TSF helps to reduce alcohol consumption similarly to other comparison interventions, though without a no treatment control group conclusions are limited. Two studies comparing TSF to other interventions showed a similar reduction in alcohol consumption in all groups. It was not clear whether AA specifically helps people to reduce drinking during treatment and at follow up compared with other interventions. Three studies comparing AA in different conditions with other interventions found few differences between interventions in reducing amount of drinks and percentage of drinking days.

Although one small study reported AA had better abstinence outcomes than a comparison treatment, there is no conclusive evidence to show that AA can help patients to achieve abstinence, nor is there any conclusive evidence to show that it cannot. Most studies included in this review did not allow assessment of the effectiveness of TSF in promoting complete abstinence.

12-step and AA programmes for alcohol problems are promoted worldwide. Yet experimental studies have on the whole failed to demonstrate their effectiveness in reducing alcohol dependence or drinking problems when compared to other interventions. Even with the notable contribution from the USA National Institute on Alcohol Abuse and Alcoholism (NIAAA) in terms of funding, resources and researchers for the MATCH study (MATCH 1998), and then in giving free access to the Match data to allow further analysis, no conclusive results have been obtained about superiority of one treatment over the other included studied (Cutler 2005).

In general, the available research seems to be concentrated on prognostic factors associated with assumedly successful treatments rather than on the effectiveness of treatments in themselves. Moreover, further attention should be devoted to quality of life out-
comes for patients and their families and it is possible that a well designed qualitative study could identify hypotheses for further research.

AUTHORS’ CONCLUSIONS

Implications for practice

People considering attending AA or TSF programmes should be made aware that there is a lack of experimental evidence on the effectiveness of such programmes. It should also be underlined that in the available studies all the interventions appeared to improve at least some of the outcomes considered. Policy makers and health care professionals need to consider the options they provide and the advice they give in this regard. The active collaboration of patients or clients should perhaps be sought to identify the best intervention for that specific person.

Implications for research

Further large-scale studies comparing just one AA or TSF intervention with a control should be undertaken to test the efficacy of that intervention over longer follow-up periods.

Further attention should be devoted to quality of life outcomes for patients and their families and it is possible that a well designed qualitative study could identify hypotheses for further research.

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References to studies included in this review

Brown 2002  {published data only}


Cloud 2004  {published data only}

Davis 2002  {published data only}

Kahler 2004  {published data only}

MATCH 1998  {published data only}

Project MATCH research group. Matching Alcoholism Treatments