

# Chapter 6 Psychosocial Interventions for Alcohol Use Disorders

## Overview of Psychosocial Interventions

Psychosocial interventions for treatment of alcohol and drug problems cover a diverse array of treatment interventions (Raistrick and Tober 2004; Carroll and Onken 2005; Raistrick et al. 2006; Bottlender et al. 2006). These interventions generally focus on the individual (their beliefs, feelings and behaviour), their social context, including family, community and cultural factors and the interaction between these two domains.

Psychosocial interventions encompass treatment content (that is, the skills, strategies and the theoretical orientation of treatment) and treatment process (that is, the interaction between the clinician and patient which includes the strength of engagement, interpersonal processes and ability to work on shared treatment goals (Marsh and Dale 2006).

The effectiveness of treatment depends not only on the treatment itself but also who delivers it and how it is delivered (Raistrick et al. 2006). The process of natural change also has a part to play, as most people (estimated 70-80%) experience major changes in their substance use without any formal help or treatment. However, the evidence shows that people who receive substance abuse treatment do better than those who do not (Raistrick and Tober 2004).

The most widely used empirically supported psychosocial approaches are brief interventions (discussed in Chapter 4), motivational interviewing and cognitive-behaviour therapy (CBT), including coping skills training, relapse prevention and behavioural couples therapy (Miller et al. 1995; Miller and Wilbourne 2002; Raistrick and Tober 2004; Carroll and Onken 2005).

## When to Use Psychosocial Interventions

Psychosocial interventions can be used in a variety of treatment settings. They can be implemented individually or in groups and delivered by a range of health workers. Psychological treatments can be brief or intensive and specialised (e.g., cognitive behaviour therapy, couples therapy). Brief interventions are most suited for non-dependent drinkers (see Chapter 4). Motivational strategies are often used early in treatment and engage patient into the process of change. Cognitive behavioural or other specialised therapy is added as appropriate to provide patients with necessary skills to maintain change.

In general, low intensity psychosocial interventions are indicated for people with low dependence, increasing the level of intensity for those with more severe dependence and co-existing mental health concerns.

## Choosing Psychosocial Interventions: A Stepped Care Approach

Stepped care model is a practical approach to implementing psychosocial and other interventions in which patients are offered the least “restrictive” intervention appropriate to their presentation (Sobell and Sobell 2000; Raistrick and Tober 2004; Raistrick et al. 2006). The next level of intensity is offered if the first treatment fails to provide sufficient benefit to the patient.

An adaptation of this model detailing a stepped care process for the application of psychosocial interventions has been developed. This adaptation presupposes that issues relating to risk management, withdrawal, and rehabilitation options have been ruled out and a psychosocial intervention is indicated (NSW Health Department, 2008).

There is no published literature evaluating effectiveness of the stepped care approach. However, this model has been accepted as a useful guide in selecting treatment strategies and using resources efficiently (Raistrick et al. 2006). At present, there is limited evidence to support ‘patient–treatment’ matching based upon patient characteristics. The stepped care approach provides an adjunct to decision-making and does not replace clinical judgment and expert advice (NSW Department of Health 2008).

Recommendation	Strength of recommendation	Level of evidence
6.1 A stepped care approach is recommended as a framework for selecting psychosocial interventions, incorporating assessment, monitoring, implementation of a treatment plan, regular review of progress, and increasing intervention intensity in the absence of a positive response to treatment.	D	IV

## Motivational Interviewing

Motivational interviewing, introduced by Miller and Rollnick in 1991, is an interviewing style which employs empathic counselling skills in an attempt to alter patient views of the implications of continued alcohol use. As defined by Miller and Rollnick (2002), motivational interviewing is a “client-centred, directive method for enhancing intrinsic motivation to change by exploring and resolving ambivalence”.

One of the key elements in motivation for change is self-efficacy. Self-efficacy refers to a person’s belief in their ability to carry out and succeed with a specific task, and is a reasonable predictor of change (Miller and Rollnick 2002). A clinician’s own expectations about a person’s likelihood of change can also have a powerful effect on outcome (Miller and Mount 2001).

### ***Motivational Interviewing: Meta-analyses***

A meta-analysis by Hettrema et al. (2005) published in 2005 studied 72 clinical trials spanning a range of target problems, 31 of which focused on alcohol. The results of this meta-analysis indicate that there is a high variability in effectiveness of

motivational interviewing across providers, settings and target groups. Overall it shows small to medium effectiveness in improving health outcomes. Motivational interviewing is effective when used on its own when compared to no treatment or education, with the average short-term between-group combined effect size ( $d_c$ ) of 0.77 (95% CI 0.35, 1.19) at 1 month post-treatment, decreasing to 0.39 (95% confidence interval, CI, 0.27, 0.50) at >1 to 3 months and 0.3 (95% CI 0.16, 0.43) at one year (where  $d_c = 1.0$  represents a between-group difference of one standard deviation). Motivational interviewing also appears to improve outcomes when added to other treatment approaches. Manual guided motivational interviewing does not appear to be an efficient way of delivering this intervention, particularly where a therapist strictly follows a manual's instructions ignoring the patient's current motivational status. The authors suggest that when motivational interviewing is offered as an independent intervention, its effect could be prolonged by offering booster sessions or stepped care. They also note that when motivational interviewing is used as a prelude to treatment, its effect remains significant over a longer period of time, 'suggesting a synergistic effect of motivational interviewing with other treatment procedures'. Motivational interviewing is often more effective in patients who are more resistant to change at the start of treatment and is not effective in those who are already motivated to changing behaviour and are committed to begin treatment.

A meta-analysis by Vasilaki et al (2006) of 22 studies reviewed the evidence for the efficacy of motivational interviewing as a brief intervention for excessive drinking. Of these studies, 7 were conducted among college students; six were tested in outpatient settings; five in emergency rooms or clinics; and two in specialist treatment agencies. They analysed a final sample of 15 studies (2767 participants), once others had been rejected for methodological problems. Brief motivational interviewing (of 87 minutes) was found to be statistically significantly more effective than no treatment in nine studies, with the aggregate Cohen's effect size of 0.18 (95%CI 0.07, 0.29) (positive effect sizes indicate better outcomes for motivational interviewing). The effect size was largest at 3-month follow-up (0.6 (95% CI 0.36, 0.83)). It was also found that brief motivational interviewing of 53 minutes was more effective than other types of treatment in another nine studies, with aggregate effect size of 0.43 (CI 0.17, 0.7). Other treatments included brief advice/standard care in five studies, and one study of each, directive confrontational counselling, educational intervention, skill based counselling and cognitive behavioural treatment. The conclusions of this meta-analysis were that brief motivational interviewing was an effective treatment modality for reducing hazardous alcohol consumption, particularly in the short-term (within the first 3 months of treatment). It was more effective with young people, in those with occasional heavy drinking pattern and low dependence, than with older drinkers or those with a more severe dependence. Specifically, help-seeking low-dependent drinkers benefited the most. The authors suggest that future studies should focus on factors such as age, gender, employment status, mental health, marital status and readiness to change.

### ***Motivational Interviewing: Randomised controlled trials***

The largest randomised controlled study of psychosocial interventions for alcohol use disorders was the Project MATCH study (Project MATCH Research Group 1997; 1998a; 1998b). The effectiveness data from this study was included in both meta-analyses discussed above. Its aim was to assess benefits of matching of patients with the DSM-III-R diagnosis of alcohol dependence or abuse (with at least 3 months of active drinking prior to entrance into the study) to three types of psychosocial treatments. It compared four sessions over 12 week period of motivational

enhancement therapy (a manual guided motivational interviewing) to 12 weekly sessions of either cognitive behavioural therapy (CBT) or twelve-step facilitation. There were two groups of patients, one from outpatient clinics (n = 952) and the other involving clients receiving aftercare following inpatient treatment (n = 774). Participants in all treatment groups showed significant improvements on all drinking measures with no consistent differences between groups. Overall, in the first year there was an increase in days abstinent from 20-30% to 80-90% at 12-month follow up and the amount of alcohol consumed on a drinking day fell from 12-20 to 1-4 standard drinks (Project MATCH Research Group 1997). During the treatment phase, small but statistically significant differences among treatments were found only in the outpatient arm on measures of alcohol consumption and alcohol-related negative consequences. Abstinence or moderate alcohol consumption (without alcohol-related consequences) was reported by 41% of patients receiving CBT and twelve-step facilitation, compared with 28% of those receiving motivational enhancement therapy (Project MATCH Research Group 1998a).

At 3-year follow up the reductions in alcohol consumption, observed in the first year after treatment, were sustained. Almost 30% of the patients were totally abstinent. Those who continued drinking reported abstinence on an average of two-thirds of the time in the last 3 months. There were no significant differences between the treatment groups (Project MATCH Research Group 1998b).

No matching effect was found. It was concluded that the three treatments were equally effective. In the outpatient setting there appears to be a temporary advantage to assigning individuals to CBT or twelve-step facilitation rather than motivational enhancement therapy.

The secondary analysis of data from the above study (Cutler and Fishbain 2005) showed that the drop out patients (that the authors used as a zero treatment/control group) also improved, showing 72% days abstinent at 1 year follow-up. Further, most of the effect occurred after the first session. The conclusions of the latter paper were that the current psychosocial treatments for people with alcohol problems are not particularly effective and untreated patients in clinical trials also show significant improvement. The improvements appear to be due to "selection effect" whereby patients who are motivated to enter treatment are likely to reduce drinking regardless of treatment provided. The authors indicate that while treatments were not particularly effective when compared to the drop out patients, it is likely that many patients would benefit from them. The authors further suggest that these treatments should not be discontinued or reduced on the basis of these findings, but their effectiveness should not be over-emphasised and perhaps better attention should be paid to patient characteristics and beliefs.

Two forms of motivational intervention (individual vs group treatment) were tested in alcohol-dependent patients by John et al. (2003). In this trial, 322 in-patients undergoing detoxification were randomised to group or individual counselling. The aim was to examine whether 3 sessions of individual counselling (40 minutes duration each) was more effective than the more costly 2-week group treatment program (9 sessions, 90 minutes each and four outpatient sessions after discharge) in enhancing motivation to seek help with alcohol problems and to live abstinely. At 6-month follow-up, group treatment participants showed a higher rate of participation in self-help groups; however this effect had disappeared at 12 months. Abstinence rates did not differ between groups (27.3 % and 29.2% were abstinent at 6 month follow up in the individual counselling and group treatment respectively). This study suggests that in patients with alcohol dependence, an intensive motivational

treatment may not provide any benefit over a less intensive counselling approach in the long term.

Another large study of psychosocial treatment for alcohol problems, was the UK Alcohol Treatment Trial (UKATT) (UKATT Research Team 2005a). It was a pragmatic randomised trial that compared socially based treatment (social behaviour and network therapy) with motivational enhancement therapy, with the hypothesis that they would prove equally effective. It was carried out in 7 UK sites with 742 participants. Social behaviour and network therapy comprised eight 50 minute sessions over 8 to 12 weeks that focused on cognitive and behavioural strategies to help clients build social networks supportive of change. The motivational enhancement therapy comprised three 50 minute sessions over 8 to 12 weeks. It combined counselling in the motivational style with objective feedback. Findings showed that both groups reported substantial reductions in alcohol consumption, dependence and problems and better mental-health-related quality of life at 12 months. The two therapies did not differ in effectiveness. Participants in both groups reported that the number of abstinence days increased from 29% to 43% at 3 months and to 46% at 12 months. Alcohol consumption reported by patients continuing to drink fell from 27 drinks per drinking day to 18 drinks at 3 months and to 19 drinks at 12 months (mean adjusted values). Therefore, total alcohol consumption decreased by 48% at 3 months and by 45% at 12 months. The Leeds dependence questionnaire score reduced from 17 to 12 at 3 months and to 11 at 12 months. The alcohol problem questionnaire score fell from 12 to 7 at 3 months and to 6 at 12 months. The mental component of the SF-36 score rose from 30 to 37 at 3 months and to 39 at 12 months indicating improvement in mental health (UKATT Research Team 2005a). The results of the trial have demonstrated effectiveness of the two treatment modalities in reducing alcohol consumption and associated problems and improving mental health of alcohol dependent patients.

The cost-analysis study showed that both types of treatment were cost effective. Each saved 'about five times as much in expenditure on health, social, and criminal justice services as they cost' (UKATT Research Team 2005b).

Monti et al. (2007) examined the effect of a motivational interview versus personal feedback in a hospital setting (emergency department) in young patients (18 to 24 years of age) who either tested positive on alcohol at admission and/or were identified on screening as having alcohol problems. Patients (n = 198) were randomly assigned to receive either a 35 - 40 minute motivational interviewing session (that included personal feedback), or personal feedback only. All patients received additional booster telephone calls at 1 and 3 months. At six-month follow-up, both patient groups showed reductions in alcohol consumption that were sustained at 12-months follow up. Average number of drinks per week reduced from 13 standard drinks at baseline to 6 drinks at 12 months in the motivational interview group and from 11 to 9 respectively in the feedback only group. Patients who received the motivational interview drank on significantly fewer days, had fewer heavy drinking days, and drank fewer drinks per week, compared with patients who received feedback only. It was estimated that twice as many patients who received a motivational interview reliably reduced their alcohol consumption at 12 months as those who received a personalised feedback only. The results of this study provide support for effectiveness of motivational intervention in reducing alcohol consumption in young people in emergency department setting.

In a study of rural community health care centres, 26 patients achieving an AUDIT score indicating hazardous alcohol use were randomised to receive a motivational interview session with a nurse practitioner or to a control condition (no treatment)

(Beckham and Beckham 2007). At 6 weeks, there was a significant reduction in number of drinks per day and also in GGT levels in the treatment group compared to the controls. The number of drinks reduced from 4.4 to 3.8 in the control group and from 4.7 to 2 drinks in the intervention group. The results of this small study indicate that one session of motivational interviewing can be effective in reducing hazardous alcohol consumption in patients attending rural community health care clinics.

### **Motivational Interviewing: Summary**

The evidence base for motivational interviewing is still strong. It is effective as a stand alone treatment, as a prelude to treatment and as an adjunct to other treatment modalities in addressing patient’s ambivalence to change their drinking or other behaviours. It is effective in reducing alcohol consumption and associated problems and improving mental health of alcohol dependent patients. The effect is more evident in the short term (e.g. within the first 3 months of treatment).

The effect varies between providers, settings and target groups. It is particularly effective in ethnic minority populations, young people and those with occasional heavy drinking pattern and in treatment-seeking populations with low level of dependence. There is some evidence to suggest that motivational interviewing is effective in emergency department and rural settings.

The cost-effectiveness studies suggest that both motivational interviewing and CBT approaches can save ‘about five times as much in expenditure on health, social, and criminal justice services as they cost’ in the UKATT study. Motivational interviewing may be more cost-effective than other treatment modalities, such as CBT and 12-step facilitation. For example, in the Project MATCH four sessions of motivation enhancement therapy were found to be equal in efficacy to twelve sessions of cognitive behaviour therapy and twelve sessions of twelve step facilitation. In the UKATT study, three sessions of motivation enhancement therapy were equivalent to 8 sessions of social behaviour and network therapy. Motivation enhancement therapy, in these studies, was less intensive, about one third the number of sessions but equally efficacious, hence it was more cost effective than other treatments. More intensive motivational interviewing approaches (e.g. 13 group sessions) may not provide additional benefit over a less intensive approach (e.g. 3 sessions of individual counselling).

<b>Recommendation</b>	<b>Strength of recommendation</b>	<b>Level of evidence</b>
6.2 Motivational interviewing approaches can be used as a first-line or stand-alone treatment, or as an adjunct to other treatment modalities in addressing patient’s ambivalence to change their drinking or other behaviours.	A	1a

### **Cognitive Behavioural Interventions**

Cognitive behavioural interventions, also called cognitive behavioural therapy (CBT) comprise a range of approaches that are broadly based on learning principles and the idea that behaviour is influenced by cognitive processes (Dobson 2000).

The cognitive-behavioural approach implies that excessive alcohol use is a maladaptive way of coping with problems (Bandura 1986). Inability to cope with life stresses in general and alcohol cues in particular are thought to maintain excessive drinking and lead to a resumption of drinking following unsuccessful cessation attempts. This learned behaviour can be changed through the application of combined cognitive and behavioural interventions (Kadden 1994). Interventions are designed to enhance patient motivation to stop or reduce drinking, to increase patient understanding of alcohol effect and consequences of excessive drinking and to challenge maladaptive beliefs and thought patterns that lead to problematic alcohol use.

### ***CBT approach: Reviews***

The Mesa Grande project (Miller and Wilbourne 2002) is a review of clinical trials of treatment for alcohol use disorders. The trials cover treatment modalities such as brief intervention, motivational enhancement, pharmacotherapies, skills training, psychotherapy, marital and family therapies, mutual help approaches, aversion therapies, specific behavioural procedures, and milieu therapy (i.e. inpatient vs. outpatient). This particular paper describes the progress up to and including 2000 (59 new trials, 361 in total). The main finding at that date was that the strongest evidence of efficacy was found for brief intervention, community reinforcement, case management and cognitive behavioural approaches such as social skills training, behaviour contracting and behavioural marital therapy. Among pharmacological approaches naltrexone and acamprosate appeared most supported by evidence. Least supported were methods designed to educate, confront, or to foster insight regarding the nature and causes of alcoholism. The review suggests that CBT interventions such as social skills training, behaviour contracting and behavioural marital therapy are effective treatments of alcohol use disorders.

### ***CBT approach: Randomised Clinical Trials***

The Project MATCH (see above under Motivational Interviewing for more detail) was an earlier study aimed to assess benefits of matching alcohol dependent patients to three types of psychosocial treatments: motivational enhancement therapy and twelve-step facilitation (Project MATCH Research Group 1997; 1998a; 1998b). As stated above, CBT was as effective as motivational enhancement therapy and 12-step facilitation in reducing alcohol consumption in patients with alcohol use disorders. With regard to patient-treatment matching it was found that: a) patients with high degree of anger were more likely to benefit from motivational enhancement than from CBT; b) patients with higher degree of alcohol dependence had better outcomes with 12 step programs than with CBT; c) patients with lower psychiatric severity at baseline did better with 12-step facilitation than with CBT; d) there was a trend (not statistically significant) for patients with high psychiatric severity at baseline to have better outcomes with CBT than 12-step facilitation.

The UKATT study described above (UKATT Research Team 2005a) that compared socially based treatment (based on a CBT approach) with motivational enhancement therapy. According to this study, CBT is as effective as motivational enhancement therapy in reducing alcohol consumption and associated problems and improving mental health of alcohol dependent patients.

The COMBINE study (Anton et al. 2006) was designed to evaluate the efficacy of pharmacotherapy, behavioural therapy and their combinations for treatment of alcohol dependence and to evaluate placebo effect on overall outcome. This large RCT involved 1383 patients with the diagnosis of alcohol dependence, recently abstinent from alcohol. The treatments included naltrexone and acamprosate (alone or together), placebo (single or double), each with or without a combined behavioural intervention (CBI). The CBI integrated cognitive behavioural therapy, motivational interviewing and 12-step facilitation and was delivered by trained behavioural health specialists in up to 20 sessions of 50 min duration. All the above groups received medical management. One group received a CBI only (no pills or medical management). The treatment was of 16 weeks duration. It was found that by the end of the treatment period, participants in all nine different treatments and combined interventions showed reductions in drinking, including the placebo group. No combination was more effective than naltrexone or CBI alone in the presence of medical management. Patients who received CBI with placebo or naltrexone (both in conjunction with medical management) had higher percent days abstinent when compared to those receiving placebo with medical management without CBI. However, CBI alone was less effective (e.g. resulted in lower percent days abstinent) than medical management and placebo or when CBI was combined with medical management and placebo. At one year follow up the differences were similar but no longer significant. Overall the percent days abstinent declined across groups at 1 year follow up.

The results of this study suggest that although CBI, consisting of cognitive behavioural therapy, motivational interviewing and 12-step facilitation, may reduce alcohol consumption, placebo pills and a meeting with a health care professional can have a stronger positive effect than CBI alone.

The COMBINE study aimed to determine whether improvements in outcome could be achieved by combining pharmacotherapy and behavioural interventions, but no such combining effect had been detected. It has been suggested that the variability between treatment providers may be more important than the variability between treatments (Bergmark 2008; Buhringer and Pfeiffer-Gerschel 2008).

### **Specific cognitive-behavioural interventions**

Despite core similarities of cognitive behavioural interventions, they differ in duration, modality, content and treatment setting (Kadden 1994). This section discusses the effectiveness of specific cognitive-behavioural interventions, including behavioural self-management (controlled drinking programs), coping skills training, cue exposure and behavioural couples therapy. We have also included a study investigating the effect of CBT for insomnia on relapse to heavy drinking.

#### ***Behavioural self-management or self-control: Controlled Drinking Programs***

This approach teaches individuals to reduce their alcohol consumptions. It is most suitable for individuals at the less severe end of the dependence spectrum (Ambrogne 2002; Edwards et al. 2003). The components of behavioural self-management include: goal setting; self-monitoring of daily drinking; controlling the rate of drinking; and identifying problematic drinking situations and triggers to drinking (Heather, 1995).

The controlled drinking approach is widespread in Australia, Norway, Britain and Switzerland but it has not received much support from the treatment services in some countries, such as the USA and Canada until relatively recently (Ambrogne 2002; Gastfriend 2007).

*Behavioural self control: Reviews and meta-analyses*

Behavioural self control is ranked seventh in the Mesa Grander review of effectiveness of psychosocial interventions (Miller and Wilbourne 2002).

A meta-analysis by Walters (2000) included 17 randomised controlled trials investigating the efficacy of behavioural self-control training for problem drinking and showed that this treatment modality was superior to no intervention in reducing both alcohol consumption and problematic drinking. It was also superior to alternative non-abstinence-oriented interventions. There was a trend (not statistically significant) towards higher effectiveness of behavioural self-control training over traditional abstinence-oriented treatment. Self-control training was equally effective for use with alcohol-dependent and problem-drinking subjects. The effect lasted at follow-ups spanning several months to several years.

*Behavioural self control: Other studies*

A consistent finding in a number of earlier studies, not included in the meta-analysis, is that patients with alcohol problems of various severity are able to maintain problem free drinking at least over the 1-2 years of follow up and that treatment outcomes are similar for patients who choose drinking moderation goal and for those with the goal of abstinence (Booth et al. 1984; Booth et al. 1992; Miller et al. 1992). Also, patients, who choose the goal of moderation and begin to learn behavioural self-management strategies, are likely to move towards abstinence by the 4<sup>th</sup> month of treatment (Hodgins et al. 1997).

*Behavioural self control: Summary*

Behavioural self control therapy is an effective treatment modality in reducing problematic alcohol consumption in patients with and without dependence. There is, however, a reason to believe that studies failing to find a benefit for BSCT were conducted mainly on alcohol patients with more severe problems. This treatment modality is currently recommended for patients with no or low level of dependence and those considered suitable for moderation goal (Berglund et al. 2003; Raistrick et al. 2006).

<b>Recommendation</b>	<b>Strength of recommendation</b>	<b>Level of evidence</b>
6.3 Behavioural self-management (controlled drinking program) can be recommended as a treatment strategy for people with no or low level dependence and for when both patient and clinician agree that moderation is an appropriate goal.	A	Ib

## ***Coping Skills Training***

Based on Bandura's (1969, 1997) Social Learning Theory, skills training assumes that developing effective coping skills can help individuals deal with stressful social situations (Dobson 2002).

Coping skills training is based on the premise that drinking has become a way of coping with interpersonal stress (Monti et al. 1994). Skills training provides alternative strategies to cope with social skills deficits and teach clients to deal with interpersonal stress without drinking to excess.

Examples of social skills training include communication skills, listening techniques, assertiveness, problem solving, drink refusal skills, coping with urges to drink, relaxation, anger management and stress management skills training. Skills training is usually delivered in conjunction with other interventions such as broad spectrum cognitive behavioural approaches, cue exposure and more recently, with pharmacotherapies such as naltrexone and acamprosate.

### *Coping Skills Training: Reviews*

Coping skills training has been regarded as one of the best-established and empirically supported interventions. A number of earlier reviews have stated that there is consistent evidence that coping skills training is effective in reducing alcohol consumption among alcohol dependent people (Mattick and Jarvis 1993; Monti et al. 1994; Miller et al. 1995; Shand et al. 2003; Raistick et al. 2006). It has been suggested that skills training is more effective than other approaches when included as a component of a more comprehensive treatment, but not when delivered as a stand-alone treatment or as aftercare (Longabaugh and Morgenstern 1999). Social skills training was identified as the ninth best supported treatment for alcohol use disorders in the Mesa Grande review discussed above (Miller and Wilbourne 2002). There are no recent reviews or meta-analyses of coping skills training.

### *Coping Skills Training: Randomised controlled trials*

Randomised clinical trials provide some more evidence in support of coping skills training as an effective treatment modality.

The form of CBT, evaluated in the Project MATCH (Project MATCH Research Group 1997), included coping skills training as a prominent part of the treatment intervention. As discussed above, this approach was as effective as motivational interviewing and 12-step facilitation in reducing alcohol consumption in patients with alcohol use disorders.

Ferrell and Galassi (1981) specifically selected alcohol dependent patients with poor social skills for their study. Patients who received assertion training had better interpersonal skills and a longer period of sobriety as compared to those who received human relations training. Therefore, there may be additional advantages in offering skills training to patients who are identified at assessment as specifically lacking in social skills.

A prospective cohort study assessed the effectiveness of coping skills training in 2376 participants treated in community residential facilities (Forys et al. 2007). Patients completed self-efficacy measures at baseline and at one year follow-up. Findings were that alcohol-specific and 'general approach coping' was significantly associated with less alcohol consumption and drug use at follow-up and 'avoidance coping' was associated with more alcohol use and drug problems. Patients who had greater participation in life skills and vocational training were more likely to rely on alcohol-specific and general approach coping than on avoidance type coping at one year follow up. Authors conclude that life skills and vocational training is an effective way to promote healthy coping in patients with substance use disorders.

Ball et al (2007) have compared brief coping skills training, brief motivational enhancement (each comprising 3 weekly sessions) and a waiting list control group (who received delayed brief intervention of their choice in the 3-week post-treatment phase of the study) in a clinical trial with non-dependent heavy drinkers (n = 98). The authors chose to compare the coping skills and motivational enhancement treatments because they considered them the two brief psychotherapies with the most empirical support (Carroll et al. 2004). They found that all study participants reduced their drinking. The control patients had more drinks per drinking day at all study phases, i.e. before, during and after the treatment period. All three groups reduced their drinking in the first phase (3-week pre-treatment monitoring). The lack of difference between the two treatments could be attributed to an intensive pre-intervention monitoring that used a hand-held computer and included an extensive baseline and daily assessment of alcohol consumption. It appears that this intensive pre-intervention monitoring in the first 3 weeks of the study had a positive effect of its own and may have rendered the three-session brief interventions of limited additional benefit (Ball et al. 2007). This is in agreement with the findings of the project MATCH study (Project MATCH Research Group 1997) suggesting that a cognitive-behavioural intervention, motivational enhancement and 12-step facilitation were equally effective in reducing alcohol consumption. The results of the secondary analysis of the data (Cutler and Fishbain 2005) showed that most of the effect also occurred prior to the treatment intervention in all groups, including the drop-outs (secondary analysis control group).

In addition, there is some evidence that teaching coping skills to spouses of alcohol dependent patients may help improve the mental health and wellbeing of spouses but may not have much effect on patients' alcohol consumption. Hansson et al. (2004) individual coping skills training (4 monthly 90-minute sessions) and group support (12 fortnightly 90-minute sessions of CBT focusing on communication skills, coping with partner's drinking and stress management) were found to be significantly more effective than an 'information only' session of 60 minutes duration for spouses (n=38) of alcohol-dependent individuals, with most improvement in spouses' mental health and wellbeing shown in the first year. There were no significant changes in the second year and no differences between the treatment groups in the effect on partners' drinking levels. Of the 38 participants, 16 (2 of these had divorced) reported that their partners had improved (drinking less or less often) by 24 months, and 22 (7 divorced) reported no reduction in drinking. In general, divorce was commoner in the treatment groups than in the information only group. One of the drawbacks of this study is the small sample size; however the follow-up rate was very high (38 out of 39 spouses participated in the 24 months follow up).

Recommendation	Strength of recommendation	Level of evidence
6.4 Coping skills training is recommended for people who appear to lack the relevant skills to achieve and remain abstinent.	A	Ib

### ***Cue exposure***

Cue exposure is a variant of cognitive behavioural intervention. It is based on the associative learning principle (Gossop et al. 2002), which assumes that people, places and events that regularly precede drinking (or drug-taking, for example) become associated with the pleasant effects of taking the drink or drug, and consumption becomes a conditioned response to these cues; the Pavlovian effect (Pavlov 1927). Repeated exposure to these stimuli (such as the sight and smell of alcohol) with instructions to resist craving and without subsequent reinforcement in a laboratory/clinic setting, eventually leads to extinction of some of the conditioned responses in real life situation, thereby reducing craving, expending time to first relapse and reducing alcohol consumption. However, some conditioned responses are difficult to extinguish and the effect is of a variable duration. There are earlier reports of spontaneous and rapid re-instatement of previously extinguished conditioned responses after a priming dose of alcohol (Drummond et al. 1990). Later studies incorporated priming doses before patients attempted to resist drinking (Sitharthan et al. 1997; Dawe et al. 2002). Negative affective states have been shown to trigger relapse. Adding negative emotional cues to cue exposure therapy is a useful approach, but it does not seem to add to effectiveness of this therapy compared to standard CBT (Kavanagh et al. 2006). Using virtual reality environments in cue exposure treatment may achieve more effective extinction of responses to cues in rehabilitation settings. However, at present there are only a few small studies investigating this approach in alcohol dependent patients (Kuntze et al. 2001; Lee et al. 2007).

Cue exposure therapy usually consists of 6-12 sessions, each of 50-90min duration. Sessions can be run on a daily basis or less frequently (Conklin and Tiffany 2002).

#### *Cue Exposure: Meta-analyses*

Cue exposure can be applied with a treatment goal of either abstinence or moderation with moderately good results. In their meta-analysis of 9 studies investigating effectiveness of cue exposure therapy, Conklin and Tiffany (2002) have reported effect sizes ranging from 0.17 to 0.74, indicating variable effectiveness. Authors suggested that evidence from animal studies should be better utilised to increase effectiveness of cue exposure therapy in humans.

A number of studies have been published since the time of this meta-analysis, showing that cue exposure therapy is effective in reducing alcohol consumption, but not more effective than other cognitive-behavioural treatments. At present cue exposure therapy is often used in conjunction with coping skills training to increase the patient's ability to deal with cravings if they arise, but the effectiveness of this approach remains equivocal (Dawe et al. 2002, Kavanagh et al. 2006).

Kadden's (2001) status report and review of research priorities for NIAAA stated that: "A number of gaps in knowledge and consequent research opportunities were identified. Additional work on cue exposure is needed to identify the most potent cues for drinking, and strategies for reducing the impact of drinking cues. ... research should identify its most effective elements and ways to sustain gains following treatment. The mediating role assigned to coping skills in the cognitive-behavioral model needs to be substantiated, and the effectiveness of various coping skills components must be determined". The gaps identified in this statement appear not to be fully closed.

#### *Cue Exposure: Randomised controlled trials*

In a study examining the efficacy of cue exposure, Sitharthan et al. (1997) compared cue exposure (with a priming dose) to standard cognitive behavioural therapy consisting of goal setting, self-monitoring and behavioural and cognitive strategies to moderate drinking. This was a randomised controlled trial that recruited patients without severe alcohol dependence ( $n = 53$ ). Both interventions were delivered in six 90-minute sessions. Cue exposure produced significantly greater reductions than standard cognitive behavioural therapy in participant reports of drinking frequency and consumption at six month follow-up, suggesting that cue exposure was an important component of cognitive-behavioural approach.

Heather et al. (2000) conducted a randomised controlled trial comparing Moderation-Oriented Cue Exposure (MOCE) to Behavioural Self-control Training (BSCT). Patients ( $N = 91$ ) were randomised to receive either MOCE or BSCT and had weekly sessions with trained therapists for 16 weeks. At six-month follow-up, both MOCE and BSCT were effective in reducing alcohol consumption. From the results, it is unclear whether MOCE and BSCT are both effective cognitive-behavioural interventions, or whether treatment itself, regardless of type, is effective in reducing consumption.

Using the same interventions, Dawe et al. (2002) compared the effectiveness of moderation-oriented cue exposure (following a priming alcohol dose) with cognitive-behavioural intervention in a community sample of problem drinkers including those with severe dependence. Participants ( $n = 100$ ) were randomly assigned to one of the two treatments and received a mean of 5.84 sessions. At eight-month follow-up, there were significant decreases in alcohol consumption, severity of dependence, impaired control, and alcohol-related problems in both groups compared to pre-treatment levels. Both treatments were as effective in patients with a mild-to-moderate level of dependence as they were in those with severe dependence.

Negative affective states have been shown to increase the risk of relapse. One recent study explored the effect of negative emotional states as an additional cue of the cue exposure therapy. The study looked at the addition of two variants of cue exposure to cognitive-behaviour therapy for alcohol misuse (Kavanagh et al. 2006). This was conducted with 163 outpatients of treatment centres in Brisbane and Sydney. The selection criteria included reports of an increased desire to drink when dysphoric. Eight weekly 75-minute sessions were given to all participants. One group received CBT and a moderation-oriented cue exposure and another received CBT and an emotional cue exposure (with negative cue induction). The groups were compared to CBT alone. The CBT sessions focused on developing skills in self-control of alcohol use. Average improvements were highly significant across all conditions (including reduction of alcohol consumption, related problems, alcohol expectancies and depression and increase in self-efficacy), with an acceptable level

of maintenance of all effects at 12 months. However, treatment retention and effects on alcohol consumption were progressively weaker in groups that received additional cue exposure or emotional cue exposure compared to CBT alone. The authors conclude that the results do not indicate that the addition of either versions of cue exposure to CBT improves outcomes.

#### *Cue exposure: Other study designs*

As discussed in Shand et al. (2003), Rohsenow et al. (2001) compared the efficacy of cue exposure, coping skills and communication skills. In a 2 x 2 design, the effect of cue exposure (CE), in conjunction with coping skills (CS), (CE/CS) was compared to a meditation-relaxation control, and communication skills training was compared to an education control. These treatments were added to an intensive treatment program for persons dependent on alcohol. Both CE/CS and communication skills training appeared to be effective in decreasing number of heavy drinking days at six and twelve month follow-ups. In the second six months after treatment, those who received both CE/CS and communication skills training consumed a lower number of drinks on drinking days than did those in the other treatment combinations. CE/CS also resulted in reports of more use of coping skills during follow-up, and many of the strategies taught in the CE/CS condition were associated with reduced drinking. These results suggest that cue exposure, coping skills and communication skills are promising elements of comprehensive alcohol treatment programs.

Loeber et al. (2006) tested cue exposure alone against standard CBT in a quasi-experimental study. Patients with a diagnosis of alcohol dependence ( $n = 63$ ) were recruited from an in-patient alcohol-detoxification facility and were sequentially assigned to either treatment. Outcome measures were self-reports of craving and self-efficacy before and after treatment; drinking behaviour was assessed at 3 and 6-month follow-up. It was found that both treatments were associated with a reduction of self-reported craving and an increase in self-reported measures of self-efficacy. A significant time x treatment interaction indicated a greater increase in self-reported measures of self-efficacy after cue exposure treatment. Measures of drinking behaviour showed clearly that both treatments were efficacious. For example, in the first 3-months period the number of days abstinent increased by 371 and 331 percent in the cue exposure and CBT group respectively, decreasing to 309 and 285 percent respectively at 6 months. The authors conclude that cue exposure and standard cognitive-behavioural treatment are equally effective on drinking behaviour for patients with a moderate severity of alcohol dependence.

Virtual reality programs have been increasingly used in behavioural science research, including the field of substance abuse. The virtual reality cue reactivity programs appear feasible in nicotine, cocaine and alcohol dependent individuals (Kuntze et al. 2001; Bordnick et al. 2005; Bordnick et al. 2008; Cho et al. 2008). In a small study Lee et al. (2007) used virtual reality to create two lifelike situations and applied cue exposure therapy (CET) to 8 members of an Alcohol Anonymous group for 8 x 30-minute sessions. The scenes were a Japanese-style pub and a Western bar. This was a pre-test post-test design study with no comparison or control group. Outcomes were measured by the Alcohol Urge Questionnaire; mean score on the first session was 15.75 (SD = 10.91) which decreased to 11.50 (SD = 5.76) at the final session. These initial reports support the use of virtual reality settings in cue-based treatment for alcohol problems.

### *Cue exposure: summary*

There is evidence to suggest that cue exposure is at least as effective as standard CBT.

Elements of self-control skills training and other supporting interventions are often included as part of cue exposure therapy. However, it should be noted that when standard CBT and cue exposure treatments are combined, the additive effect may be masked. This may occur due to excessive complexity of the resulting intervention (i.e. more may not necessarily be better) (Kavanagh et al. 2006) and some degree of overlap in the content of these therapies (Dawe et al. 2002).

It has been suggested that cue exposure may be particularly effective in patients with stronger cue reactivity (Heinz et al. 2009). Imaging studies indicate that such heightened sensitivity of neuronal circuits to alcohol related cues in some patients may be partly genetically influenced (Heinz et al. 2005). Identifying such patients may provide opportunities for targeted use of cue exposure treatment and enhance treatment effectiveness in this subgroup of patients in future. Ways to increase the effectiveness of cue exposure therapy are continued to be explored (Taylor et al. 2009).

Based on studies of cue exposure in treatment of post-traumatic stress disorder (PTSD) and phobias, disruption of re-consolidation of memories related to drug cues using pharmacological agents, such as propranolol or glucocorticosteroids, appears a feasible treatment strategy but it has not yet been tested in patients with alcohol problems (Taylor et al. 2009).

<b>Recommendation</b>	<b>Strength of recommendation</b>	<b>Level of evidence</b>
6.5 Cue exposure in conjunction with other psychosocial interventions can be an effective intervention for treating alcohol dependence.	A	lb

### ***Behavioural couples therapy (BCT)***

Behavioural couples therapy is based on an assumption that problematic alcohol use and relationship functioning are reciprocal. Excessive alcohol use causes deterioration of relationships in a family unit which often results in further increase in drinking. However, functional relationships can help patients to achieve abstinence or controlled drinking, and reduce a risk of relapse (O'Farrell and Fals-Stewart 2000; O'Farrell et al. 1993). BCT has a long standing evidence of effectiveness in reducing alcohol consumption and improving marital and partner relationship functioning when compared to treatments that do not include spouses (Epstein and McCrady 1998; O'Farrell and Fals-Stewart 2000).

#### *BCT: Meta-analyses*

Evidence from a meta-analysis presented by Powers et al. (2008) further supports the conclusions of the narrative reviews quoted above and indicates that BCT is an effective treatment. Their meta-analysis of 12 randomised controlled trials (total of

754 participants; including 8 trials of alcohol use disorders, published in 1985-2008) concludes that there is a clear overall advantage of including BCT compared to individual-based treatments (Cohen's effect size,  $d = 0.54$ ). Immediately post-treatment BCT showed an advantage only in the relationship satisfaction measure, however, at 3 months the advantage was evident across all 3 outcome domains: (frequency of use,  $d = 0.45$ ; consequences of use,  $d = 0.50$ ; and relationship satisfaction,  $d = 0.51$ ). The difference was maintained for at least a year. BCT was more effective than CBT with the focus on relationships ( $d = 0.44$ ). There was no dose-response effect (i.e. the number of consecutive BCT sessions did not influence the outcome). The authors therefore conclude that behavioural couples therapy is more effective than individual treatment. It appears that relationship improvement evident immediately post-treatment later leads to reduction of patient's drinking and its consequences. Compared to individual-based treatment BCT produces better child adjustment, reduced interpersonal violence and higher cost-effectiveness (Powers et al. 2008). However, BCT is a more costly intervention, given that treatment sessions lasted almost twice as long as individual CBT sessions (Vedel et al. 2008). It suggests that BCT is an option that should be explored if available.

Recommendation	Strength of recommendation	Level of evidence
6.6 Behavioural couples' therapy, which focuses on drinking behaviour as the problem, can improve drinking outcomes following treatment and should be delivered by an appropriately trained clinician.	A	1a

### ***CBT for adolescents***

Thush et al. (2007) have investigated the effectiveness of a targeted intervention program designed to change cognitive determinants of drinking and thus reduce hazardous alcohol consumption in at-risk adolescents ( $n = 107$ ). The program consisted of 7 weekly sessions that combined intervention methods which have been proven effective in reducing drinking in young adults, such as an alcohol social and sexual expectancy challenge, cognitive behavioral skill training (including drink refusal skills) and brief motivational feedback. The outcomes in the treatment group were compared to those of the control (information only) group. Results showed that the intervention was effective in changing several of the targeted cognitive determinants, such as a significantly increased perception of risk factors for developing alcohol problems and a significant decrease of positive expectancies for high dose of alcohol in the experimental group compared to control. However, despite these positive changes, the experimental group did not show a significant decrease or difference in decrease in drinking at post-test or at 6 and 12 months follow up, compared with controls.

### **CBT for treatment of insomnia**

Insomnia has a high prevalence in alcohol dependent patients (36-67%) compared to general population (17-30%) (Brower et al. 2001). Insomnia during early recovery has been linked to relapse (Foster and Peters 1999; Brower et al. 2001).

One study has investigated the effect of CBT for insomnia on relapse to heavy drinking in a group of outpatients with a diagnosis of alcohol dependence who had at least one month of continuous abstinence and were suffering from insomnia (N=60) (Currie et al. 2004). This trial tested 5 sessions of CBT against a self-help manual with telephone support for the treatment of insomnia or a waiting list control condition. The quality of sleep improved in patients in both treatment conditions. Patients in the CBT group had better sleep outcomes than those in the self-group or placebo. Similar proportion of patients relapsed to drinking in all three groups. It should be noted that about 30% of participants had more than 12 months of abstinence prior to the study. The results indicate that the shorter period of abstinence pre-treatment predicted relapse at post-treatment and 3 and 6 months follow up. The conclusions of this preliminary study were that CBT assisted to reduce the insomnia but did not have an effect in reducing relapses to drinking alcohol. More intensive sleep interventions are needed for patients in early recovery.

It should be noted that while it would be expected that CBT works through increasing cognitive and behavioural coping skills, a review of ten studies that examined the mechanism of action of CBT found it difficult to establish why CBT is an effective treatment for alcohol dependence (Morgenstern and Longabaugh 2000).

### **Other Counselling Strategies**

*Contingency management* is based on operant conditioning theory that assumes that behaviour is controlled and shaped by its consequences. It is a strategy that uses positive reinforcement to improve treatment outcomes by providing incentives to encourage behavioural changes. Withholding incentives when desirable behaviour is not maintained (that is, negative reinforcement) may also be used.

There is a strong evidence that contingency management is an effective strategy in treatment substance use disorders, particularly, opioids, tobacco, and polysubstance use (Griffith et al. 2000; Lussier et al. 2006; Prendergast et al. 2006). Its use in treatment of alcohol use disorders has been studied during the 1960s, 1970s, and 1980s. It has been shown to be effective in reinforcing abstinence and improving medication compliance (with disulfiram) and treatment attendance (Higgins and Petry 1999; Petry et al. 2000a). Most of the recent studies focus on the treatment of illicit drug problems. However, the research has not been routinely translated into clinical practice either in the USA or UK (Petry et al. 2000b) or in Australia (Cameron and Ritter 2007).

This is largely due to perceived high costs of provision of such interventions, including the costs of reinforcers and additional staff involvement (Helmus et al. 2003). However, implementing contingency management for alcohol use disorders has additional difficulties.

Unlike with most other drugs, it is difficult to reliably detect recent alcohol use as neither blood nor breath tests can detect alcohol use that occurred more than 12 hours previously (Kadden 2001). Providing reinforcement on the basis of other

factors, such as counselling session attendance, in addition to the negative breathalyzer test may be an effective strategy (Helmus et al. 2003).

A number of other approaches are being increasingly used in counselling settings, including for patients with alcohol problems. Examples include: solution-focused approaches (such as solution-focus brief therapy) mindfulness-based stress reduction, psychodynamic, narrative therapy.

*Solution focused therapy* focuses on patient's strengths and successes rather than weaknesses and is aimed at helping the patient to look for exceptions to the problem patterns and to find new solutions.

*Mindfulness-based stress-reduction* is an approach that utilises a specific meditative technique that focuses on increasing patient's awareness of their feelings, emotions and thoughts by bringing conscious attention to what they experience at the present moment.

*Psychodynamic therapy* focuses not only on the present problem but also on the patient's life history and encourages them to look for unconscious drivers for their motivation and behaviour patterns. Interpersonal therapy is a variation of this approach.

*Narrative therapy* encourages patients to talk about their problems in terms of personal life stories that define the meaning of their lives and relationships, assess the impact of these on the current behaviour and assists patients in the process of "re-authoring" or re-writing these stories in a way that would help overcome presenting problems.

These counselling approaches are not supported by a strong evidence base, particularly in the field of treatment of alcohol use disorders, and so are not yet widely recommended.

## **Relapse Prevention Strategies**

Relapse is a common problem in alcohol treatment, with approximately 60% of treated clients relapsing to problematic drinking within the first 12 months (Connors et al. 1996). It has long been observed that specific situations or mood states are associated with relapse, including negative emotional states (e.g. frustration, anger, anxiety, depression or anger); interpersonal conflict (e.g. relationships with partner, work colleagues, friends); and direct or indirect social pressure to drink (Marlatt and Gordon 1985).

Relapse prevention is not so much a specific intervention but rather a set of strategies that aim to help the client maintain treatment gains (Jarvis et al. 2005). These include psychosocial interventions described above such as skills training and cognitive restructuring that deal with immediate triggers of relapse and more global strategies that address long-term factors of relapse such as lifestyle balancing and after care (Larimer et al. 1999) (see also Chapter 11).

Relapse prevention may also incorporate medications for reducing alcohol use (e.g. naltrexone, disulfiram, acamprosate), or for addressing concomitant conditions linked to relapse (e.g. anxiety, depression) (see Chapters 7 and 10 respectively).

All moderately and severely alcohol dependent patients should be offered the opportunity to learn relapse-prevention strategies. These are best discussed after acute withdrawal symptoms have subsided. Relapse prevention addresses itself to the maintenance of change, and to the development of self-efficacy and coping skills (Edwards et al. 2003).

Recommendation	Strength of recommendation	Level of evidence
6.7 Psychosocial relapse prevention strategies are recommended for use with all moderately to severely alcohol-dependent patients.	A	Ib
6.8 Psychosocial relapse prevention strategies are best delivered as soon as acute withdrawal symptoms have subsided.	C	III

### Residential Rehabilitation Programs

Residential rehabilitation programs (sometimes called therapeutic communities) are usually long-term programs where people live and work in a community of other substance users, ex-users and professional staff. Programs can last anywhere between 1 and 24 months (or more). The aim of residential rehabilitation programs is to help people develop the skills and attitudes to make long-term changes towards an alcohol- and drug-free lifestyle. Programs usually include activities such as employment, education and skills training, life skills training (such as budgeting and cooking), counselling, group work, relapse prevention, and a 're-entry' phase where people are helped return to their community.

The effectiveness data are sparse. The results of meta-analysis by Smith et al. (2006) of seven studies investigating the effectiveness of therapeutic communities for substance related disorders, including alcohol indicate that there is little evidence that residential rehabilitation programs are more effective than other residential treatments (such as community residence) in terms of treatment completion or drug use related outcomes or that one type of therapeutic community is better than another. Prison based therapeutic communities are effective in preventing re-incarceration, criminal activity and alcohol and drug offences in the 12 month period after release from prison. No comparison could be made with other treatment modalities. The authors concluded that the use therapeutic communities for treatment of alcohol and drug use disorders is not based on sound evidence.

Programs with directed treatment orientation are more effective than those with undifferentiated approach (e.g. safety and security oriented, mostly shelter and food provision with limited counselling and active treatment) (Moos et al. 1999). Program completion and a longer period of care are associated with better outcomes at one year (Moos et al. 1999). Some programs are based on 12-step Alcoholics Anonymous (AA) approaches (Forys et al. 2007; Polcin and Henderson 2008).

An extended period of abstinence can be beneficial in reversing cognitive and physical harm arising from chronic heavy alcohol use.

Residential rehabilitation programs can be effective for people needing structured long-term support, and are more attractive to those with moderate to severe dependence, and limited social supports.

Recommendation	Strength of recommendation	Level of evidence
6.9 Residential rehabilitation programs can be effective for patients with moderate to severe dependence who need structured residential treatment settings.	D	IV

### Summary

In summary, there is strong support for the efficacy of motivational interviewing as a treatment intervention. There is also sufficient support for the efficacy of cognitive-behavioural treatment approaches, such as behavioural self-management, coping skills training, cue exposure and behavioural couples therapy, although there are variations in effectiveness across studies, settings and providers. However, there is less evidence for contingency management and residential rehabilitation programs and no sufficient evidence for solution-focused approaches, mindfulness-based stress reduction, psychodynamic, narrative therapy or other counselling techniques for use in treatment of alcohol problems at his stage. There is little evidence that patient-treatment matching is effective as a technique to reduce alcohol consumption.

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