



LUND UNIVERSITY

Interventions in adult children and spouses of alcoholics. Randomized controlled trials of mental health and drinking patterns.

Hansson, Helena

2007

[Link to publication](#)

Citation for published version (APA):

Hansson, H. (2007). *Interventions in adult children and spouses of alcoholics. Randomized controlled trials of mental health and drinking patterns*. [Doctoral Thesis (compilation), Department of Health Sciences]. Clinical Alcohol Research, Department of Health Sciences, Lund University.

Total number of authors:

1

General rights

Unless other specific re-use rights are stated the following general rights apply:

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal

Read more about Creative commons licenses: <https://creativecommons.org/licenses/>

Take down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

LUND UNIVERSITY

PO Box 117
221 00 Lund
+46 46-222 00 00

From

Clinical Alcohol Research, Malmö University Hospital,
Department of Health Sciences, Lund University, Sweden

Interventions in Adult Children and Spouses of Alcoholics

Randomized Controlled Trials of
Mental Health and Drinking Patterns

Helena Hansson



LUND
UNIVERSITY

Akademisk avhandling

som, med vederbörligt tillstånd av Medicinska Fakulteten
vid Lunds Universitet, för avläggande av doktorexamen i
medicinsk vetenskap i ämnet psykiatri, behandlingsforskning,
kommer att offentligen försvaras i
Aulan, Clinical Research Center (CRC),
Universitetssjukhuset MAS, Ingång 72, Malmö
Lördagen den 8 december 2007 klockan 10.00

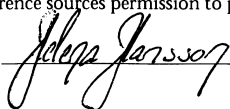
Fakultetsopponent: Professor Per-Anders Rydelius, Karolinska Institutet,
Institutionen för kvinnors och barns hälsa, Barn- och ungdomspsykiatri, Stockholm

Organization LUND UNIVERSITY		Document name DOCTORAL DISSERTATION	
Clinical Alcohol Research Department of Health Science Malmö, Sweden		Date of issue 2007-12-08	
		Sponsoring organization	
Author(s) Helena Hansson			
Title and subtitle Interventions in Adult Children and Spouses of Alcoholics Randomized Controlled Trials of Mental Health and Drinking Pattern			
Abstract Randomized studies of various support programs for spouses and children of alcoholics are few in the international literature. This thesis comprises two randomized controlled studies of intervention programs for two family groups: spouses living with an alcoholics partner (paper I and II) and university students who have grown up with at least one parents with alcohol problems (paper III and IV). Follow-ups of the intervention programs were performed after 12 and 24 months respectively, at which the effects of the programs in each study were evaluated. In the first study, 39 spouses of alcoholics were randomized into one of three interventions: standard information, individual coping skills training or group support. At the 12-month follow-up, all three groups had improved their coping styles, and their mental symptoms were reduced. There were tendencies of larger improvements in mental symptoms in the individual coping skills training and the group support groups compared with the standard information group. The 24-month follow-up showed that changes in mental symptoms (SCL-90) were significantly larger in the group support and coping skills training groups than in the control group. The major improvements in coping behavior, hardship and mental symptoms occurred in the first year. The stability of improvements achieved after one year was generally good. In the second study, 82 university students with at least one parent with alcohol problems were randomized into one of three programs: alcohol intervention, coping intervention and a combination of alcohol and coping intervention. The duration per session was identical in all three programs: two hours on two occasions with one month between. The 12 months follow-up showed that the groups receiving alcohol intervention (the alcohol intervention program and the combination program) improved their drinking pattern significantly more than the group not receiving alcohol intervention. No changes in coping behavior were evident. At the 24-month follow-up, the results showed that participants who had received both alcohol and coping intervention had improved their alcohol behavior more in the second follow-up year than those participants who had only received alcohol intervention or coping intervention. There were no changes in coping variables. The results documented in the first study constitute one of the few research contributions showing the effects of various types of intervention on spouses. Similarly, intervention studies of adult children of alcoholics are unusual. The current finding that alcohol intervention is effective in reducing alcohol consumption has important preventive aspects. The second-year improvement in the effect on alcohol consumption by the combined alcohol and coping intervention is important both theoretically as well as practically.			
Key words: adult children of alcoholics, spouses of alcoholics, university students, intervention, randomized controlled trial, coping behavior, drinking pattern			
Classification system and/or index terms (if any):			
Supplementary bibliographical information:		Language English	
ISSN and key title: 1652-8220		ISBN 978-91-85897-26-1	
Recipient's notes		Number of pages	Price
		Security classification	

Distribution by (name and address)

I, the undersigned, being the copyright owner of the abstract of the above-mentioned dissertation, hereby grant to all reference sources permission to publish and disseminate the abstract of the above-mentioned dissertation.

Signature



Date 2007-10-30

Interventions in Adult Children and Spouses of Alcoholics

Randomized Controlled Trials of
Mental Health and Drinking Patterns

Helena Hansson

Clinical Alcohol Research, Malmö University Hospital,
Department of Health Sciences, Lund University, Sweden
2007



LUND
UNIVERSITY

To Sarah and Carl

CONTENTS

LIST OF PUBLICATIONS	6
INTRODUCTION	7
Risk factors and protective factors	7
Alcohol use disorders	8
Children of alcoholics	8
Spouses of alcoholics	12
Coping	14
Interventions	15
AIMS	19
MATERIAL AND METHODS	20
Sample and design in papers I and II	20
Sample and design in papers III and IV	24
RESULTS	33
Paper I	33
Paper II	34
Paper III	37
Paper IV	40
GENERAL DISCUSSION	43
Establishing contact with spouses of alcoholics and adult children of alcoholics	43
Representativity	44
Randomized controlled trial versus other approach.....	45
Effects of intervention.....	46
Differences in improvements in spouses of alcoholics and children of alcoholics	48
Effects related to other factors	49
Possible negative effects of intervention in relatives	50
Relatives in alcohol use disorders versus other disorders	50
Suggestions for future implementation and research	51
GENERAL CONCLUSIONS	52
REFERENCES	53
POPULÄRVETENSKAPLIG SAMMANFATTNING	71
ACKNOWLEDGEMENTS	74
PAPERS I-IV	

LIST OF PUBLICATIONS

The thesis is based on the following papers, which will be referred to in the text by their Roman numerals.

- I **Zetterlind U, Hansson H, Åberg-Örbeck K, Berglund M.**
Effects of coping skills training, group support and information for spouses of alcoholics. A controlled randomized study.
***Nordic Journal of Psychiatry* 55(4), 257–262, 2001.**
- II **Hansson H, Zetterlind U, Åberg-Örbeck K, Berglund M.**
Two-year outcome of coping skills training, group support and information for spouses of alcoholics. A randomized controlled trial.
***Alcohol and Alcoholism* 39(2), 135–140, 2004.**
- III **Hansson H, Rundberg J, Zetterlind U, Johnsson K O, Berglund M.**
An intervention program for university students who have parents with alcohol problems. A randomized controlled trial.
***Alcohol and Alcoholism* 41(6), 655–663, 2006.**
- IV **Hansson H, Rundberg J, Zetterlind U, Johnsson K O, Berglund M.**
Two-year outcome of an intervention program for university students who have parents with alcohol problems. A randomized controlled trial.
***Alcoholism. Clinical and Experimental Research* 31(11), 1927-1933, 2007.**

The articles are reprinted by permission of the publishers (I: Taylor & Francis; II & III: Oxford University Press; IV: Blackwell Publishing).

INTRODUCTION

For each person with an alcohol problem it is estimated that the life and wellbeing of one other person on average is affected (Eurocare, 1998). However, the total number of people directly or indirectly concerned is significantly higher. The knowledge of the effects on spouses and children in alcoholic families was very limited until two decades ago.

The current understanding indicates differences in consequences between groups of family members. Children as well as spouses are exposed to considerable stress (Moos, 1990; Colder & Chassin, 1993) and suffering that is at least as severe, although different, as the suffering the alcoholic himself is subject to.

Studies show that children are more seriously affected as they are exposed to the stress in childhood and therefore are less capable of protecting themselves against the consequences, direct or indirect, of their parents' drinking. As adults, spouses have more extensive resources in dealing with the consequences.

The groups also differ in terms of hereditarity. There is a substantial risk of generational transfer of alcoholism. The risk of developing alcoholism is 4–10 times higher in children of alcoholics than in the general population (Enoch, 2006).

Several hypotheses address how this transfer works. Studies by Zucker et al. (1996) suggest that the combination of certain factors increases the risk. While the genetic risk factor is not present in spouses, there is possibly an assortative mating component functioning as an equivalent risk factor (Merikangas et al., 1988).

Because of the differences between these groups, this thesis treats the two groups separately, and risk factors and protective factors are reported on an individual level only.

Risk factors and protective factors

Risk factors are variables that predict a higher likelihood of negative outcomes, while protective factors are variables that predict a higher likelihood of positive outcomes. In the field of alcohol research, belonging to a risk group means that the risk of developing own problems is greater than it is for other people. Being a relative of someone with alcohol problems means an increased risk of own abuse as well as of psychosomatic diseases, anxiety and other mental problems (Orford, 1984). The increased risk is probably due to the presence of one or more risk factors or the absence of one or more protective factors (Moos et al., 1990). Risk factors as well as protective factors have biological, psychological and social components.

Studies have proved that genetic and environmental influences combined put some people at risk of developing alcoholism, while others are not affected (Knop et al., 1993; Schuckit & Smith, 1996). It should be stressed, however, that while these findings are associated with increased risk they do not necessarily indicate any causal relation.

Alcohol use disorders

The Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR, APA 2000) is the instrument most frequently used to classify alcohol use disorders (AUD) in Sweden today.

If at least three of the following criteria are met during one twelve-month period, the problem is defined as *alcohol dependence*: 1) increased alcohol tolerance (the need to drink larger amounts of alcohol to achieve intoxication); 2) withdrawal symptoms (e.g. upset stomach, sweating, shakiness, anxiety); 3) consumption of larger amounts of alcohol than intended; 4) failure to reduce or control alcohol use; 5) spending a greater deal of time in activities relating to obtaining alcohol, consuming it or recovering from its effects; 6) giving up or reducing important social, occupational or recreational activities because of alcohol use; and 7) continuing alcohol use despite it causing physical or psychological harm.

If at least one of the following criteria is met during one twelve-month period, and alcohol dependence is not present, the problem is defined as *alcohol abuse*: 1) failure to fulfill major role obligations, 2) exposure to physical hazards, 3) legal problems and 4) social or interpersonal problems.

Children of alcoholics

General aspects

Children in AUD families are a vulnerable group. A number of studies have proved that parents' drinking can harm their children's development, although exactly what is causing the damage is not completely clear. Long-term follow-up studies (over 20 years) indicate that genetic, gender and social factors as well as the emotional home atmosphere must be taken into account when explaining symptoms among young children of alcoholics (COA) and their later adjustments to adult life (Rydelius, 1981).

Genetic and environmental factors combined seem to significantly increase the risk of transmission (Enoch, 2006). Studies have shown that genetics explain the increased vulnerability to AUD, while the family environment contributes to the development and manifestation of AUD (O'Farrell & Fals-Stewart, 1999).

Genetics

A large number of studies of identical and non-identical twins as well as adoptees have shown that there is a strong genetic component in AUD.

Studies of identical and non-identical twins (of which at least one of the siblings had AUD) have shown that the prevalence of AUD among identical twins (monozygotic, MZ) is higher than among non-identical twins (dizygotic, DZ)

(Kaij, 1960; Loehlin, 1972; Kendler et al., 1992; McGue et al., 1992). A recently conducted meta-analysis in this field showed that the heritability (the genetic component of inter-individual variability) of all addictive substances ranges from 40% to 60%. For alcoholism specifically the heritability is 50% (Goldman et al., 2005).

Research in heritability that eliminates the childhood environment has been made possible by studying alcohol use in adoptees, who were adopted by parents of no biological relation. Studies of COA who were adopted at birth and grew up in non-alcoholic homes have contributed clear results on the genetic component of AUD (Goodwin et al., 1977; Bohman, 1978; Cloninger et al., 1981; Cadoret, 1986; Sigvardsson, Bohman & Cloninger, 1996). In an overview including several of their studies, Goodwin et al. (1984) showed that the risk of developing alcoholism in adoptees is several times higher if the biologic parent has alcohol problems. Alcohol problems only in the adopting parents do not increase the risk of alcohol problems in the adoptee (Bohman et al., 1987).

Swedish studies of adoptees have indicated two types of alcoholism, type 1 and type 2 (Cloninger et al., 1981), of which type 2 has a strong genetic influence. Type 1 alcoholism is characterized by late first appearance of the alcohol problem and good social adjustment, while type 2 alcoholism has teenage onset of recurrent social and legal problems from alcohol abuse. The biologic father typically has severe AUD and extensive criminality.

While the genetic component is not deterministic, it is clearly influential in developing AUD (Cadoret et al., 1995; Kendler et al., 1995; Slutske et al., 1998). Cadoret and co-workers (1996) studied adult adoptees of alcoholic biological parents and determined that a genetic factor, for which alcoholism is a marker, is present. McGue and co-workers (1996) studied adoption families, with one adoptee and other siblings, and found that the relationship between parental problem drinking, family functioning and adolescent alcohol involvement was significant among biological children but not among adopted children. This suggests that the alcoholism of adoptive parents alone does not seem to considerably increase the risk in adoptees of developing alcohol problems, but rather the genetic and environmental factors combined.

The genetic vulnerability seems to consist mainly of two components: an irregular reaction to alcohol, such as a weak reaction, already present when first starting to drink, and an intoxication experience characterized by a strong sense of euphoria (Schuckit, 1994; Schuckit & Smith, 2000; Hiller-Sturmhofel & Swartzwelder, 2004/2005; Schuckit et al., 2005; Schuckit et al., 2007).

Other factors reported to be associated with a family history of alcoholism have not been confirmed when controlled for background data. Schuckit and co-workers (2000) found that externalizing disorders do not relate to the presence or absence of a family history of alcoholism as such. When familial antisocial disorders and familial socioeconomic status were controlled for a family history of alcoholism, they did not appear to relate to childhood externalizing disorders. The internalizing symptoms are more strongly correlated with a family history of non-substance related mood and anxiety disorders than with a family history of alcoholism (Schuckit, 2000; Barnow et al., 2002; Preuss et al., 2002).

Another hereditary factor important in reducing the risk of alcoholism is related to alcohol-metabolizing enzymes (Li, 2000). These types of aversive reactions are however uncommon in the Swedish population and will not be discussed further in this thesis.

Gender differences

Potential different effects of parental alcoholism on men and women have rarely been studied and remain unclear (Harter, 2000). Some studies have found stronger effects of parental alcoholism on male children (Mathew et al., 1993; Rodney & Rodney, 1996). Sher et al. (1991) found a stronger effect on female children. Nordberg et al. (1991) presented results from long-term studies indicating both similarities and differences in terms of future social adjustment and psychiatric and somatic health between boys and girls from parental-alcoholism homes, and similarities and differences in children of alcoholic women compared with children of alcoholic men. A recent study showed that daughters of alcohol-abusing mothers perceived greater role reversal in their families of origin and greater past unfairness in their families of origin compared with daughters of alcohol-abusing fathers (Kelly et al., 2007). The differences seem to depend more on cultural and social factors than genetic factors.

Environmental factors

The environmental risk factors for development of AUD and other psychopathology are complicated. However, review works in the field provide convincing evidence that parental AUD is disruptive to family life.

Empiric research has proved that children in AUD families more often suffer from emotional disorders (Rydelius, 1981, 1983; Bennett et al. 1988; Von Knorring, 1991; Chassin et al., 1996), behavioral problems and psychopathology (West & Prinz, 1987; Johnson et al., 1999) and from an increased risk of subsequently developing own alcohol problems (Sher, 1991; Chassin et al., 2002).

Other studies have shown that children of AUD parents are more likely than others to experience negative emotionality, aggression, stress reactions, alienation, and low wellbeing (Elkins et al., 2004), regardless of whether they personally develop abuse.

Parents who misuse alcohol or other drugs often create an environment that promotes reversed parent-child roles (Gallant et al., 1998; Chase, 1999). Alcohol-abusing parents may periodically or habitually be emotionally or physically unavailable to their children. In two-parent families in which only one parent misuses alcohol, the non-abusing parent may be preoccupied with the partner's drinking, own distress or other family matters. As a result, alcohol-abusing parents and their partners may be unable to provide their children with an environment that supports a healthy psychosocial adjustment. In addition, the partners are likely to become overly dependent on their children to meet their own emotional and day-to-day care needs (Kelly et al., 2007).

Parents with a history of abuse show lower constraint, control, harm avoidance and traditionalism in relation to their families than other parents do (Elkins et al., 2004). Studies using behavioral observations to assess family interactions in alcoholic families have indicated that families with a pronounced alcohol problem are characterized by higher levels of conflict, lower levels of cohesion, impaired problem-solving and more negative and hostile communications relative to non-alcoholic families (Moos & Billings, 1982; Jacob & Seilhamer, 1987; Sher, 1991). Other known problem areas include emotional or physical violence, low levels of family organization, increased stress e.g. caused by work-related or financially related problems, inconsistencies in messages to children and breakdown in rituals and traditional family rules (Connors, Donovan & DiClemente, 2001).

Studies by Moos et al. (1990) have shown that the risk in COA of developing emotional problems depends on how severe the parents' abuse is and on whether there are other parental problems present.

Whether the consequences during childhood remain in adult age is somewhat ambiguous. In the last two decades, researchers have examined the psychological adjustment of adult children of alcoholics (ACOA). In general, these investigations have concluded that ACOA experience an increased risk of negative outcomes including substance abuse, antisocial behavior, mood disorders (e.g. depression and anxiety), academic underachievement, low self-esteem and relational difficulties (Johnson & Leff, 1999; Harter, 2000; Beesley & Stoltenberg, 2002). However, longitudinal studies by Drake and Vaillant (1988) have shown that problems that are obvious in the childhood of COA do not seem to remain in adult life, and that mental disorders are not more common among people who have lived close to a parent with alcohol problems than in control groups with different backgrounds. Hall and Webster (2002) found that ACOA seem to develop less effective stress management strategies and present more clinical at-risk patterns of responses than their counterparts.

Two large prospective longitudinal studies of high-risk population COA have taken biological as well as psychological and environmental predictors into consideration. Schuckit et al. (2000) described a decreased response to alcohol as a genetic risk factor. In Schulsinger's and co-workers' (1986) longitudinal study, the high-risk group reported worse family conditions during childhood, poor verbal ability and impulsive behavior. Expected lifetime alcohol dependence by age 40 was reported significantly more often in the high-risk group (31% versus 16%) (Knop et al., 2007).

Protective factors

Far from all ACOA develop own AUD or adjustment problems (Werner, 1986). The degree of organization or disruption, the severity of the abuse along with stress caused by the abuse and individual characteristics, such as temperament and intelligence, seem to be determining factors (Steinglass et al., 1987).

Studies have shown that children, who report perceived control over their environment, have good cognitive coping skills and report that their families are highly organized, seem to benefit from protective effects (Hussong & Chassin, 1997).

Good family functioning, good parent-child relationships, close parental monitoring, higher socio-economic status and educational aspiration have been shown to protect against heavy drinking in adolescence (Tiet et al., 1998).

Spouses of alcoholics

General aspects

Adults living close to a person with alcohol problems are highly affected by the problems: the alcoholism causes stress in the relationship, and being exposed to this kind of stress is highly detrimental (Velleman, 1992; Tomori, 1994; Hurcome et al., 2000). Alcohol misuse affects couples' relationships in a variety of negative ways, e.g. increased conflict, communication problems, poor sexual relations and domestic violence. Studies show that spouses of AUD persons have higher rates of psychological, stress-related medical problems, make greater use of healthcare systems and run a higher risk of developing own abuse than other people (Moos, 1990; Connors, Donovan & DiClemente, 2001; Schnurr & Green, 2004).

Relationships with pronounced alcohol misuse are often characterized by high conflict and sometimes a high degree of violent behavior. O'Farrell and Murphy (1995) showed that violence is four times more common in families with alcohol misuse than in non-misusing families. Spouses are expected to have more effective coping strategies or to more actively search for protective solutions in the stressful situation than children do. However, a recently published review article indicated that this ability can be affected by a degree of illness and emotionally inadequate reactions (Maffli, 2001).

Co-dependency

The literature on spouses of alcoholics deals largely with the controversial subject of co-dependency. The concept of co-dependency was established by Al-Anon wives and is similar to the personality perspective that was introduced in the late 1940s. Co-dependency is defined as a disorder specific to spouses of alcoholics, crucially important in establishing and maintaining the alcoholic's symptoms of alcohol dependence. Co-dependency is often described as a primary disease in spouses, which to some extent is present in spouses in all alcoholic families. In recent years, however, studies have shown an absence of evidence supporting the validity of the diagnosis of co-dependency (Zetterlind & Berglund, 1999; Fisher & Harrison, 2000) and the spouse perspective has largely moved towards a stress and coping perspective (Orford, 1994; Velleman et al., 1998). Today, partners of alcoholics are regarded as everyone else, with the difference that the addiction regularly makes them live under strong tension and stress (Moos, 1990).

Assortative mating

The concept of assortative mating, i.e. the tendency for individuals with similar phenotypes to mate more frequently than expected by chance, has been reported in many psychiatric disorders (Merikangas, 1982). Although studies within the area are complicated by a number of methodological problems, assortative mating must be regarded as a risk factor in many psychiatric disorders (Mathews & Reus, 2001). Strong support for assortative mating has been demonstrated in alcoholism (Merikangas et al., 1988).

Divorce and separation

Studies show that alcoholism is a common reason for relationships ending (Berglund & Tunving, 1985; Moos, 1990). A high level of alcohol consumption can involve several severe strains on a relationship, such as the alcoholic showing difficulties taking responsibility, mismanaging employment, getting into financial difficulties, impairing social relations and showing unpredictable behavior such as aggressiveness, violent tendencies and sexual aggression. Although a marriage ending might be detrimental, particularly for any children involved, maintaining a marriage under these circumstances can also be detrimental. In the long term, the psychological stress experienced by the partner of the alcoholic might result in disorders such as loss of self-confidence, developing anxiety or depression, which by extension might lead to damaging reactions to the stress.

Protective factors

Close personal relationships providing a strong sense of community have proved to be a protective factor in exposure to long-term stress (Krysan et al., 1990). Receiving help in changing the dysfunctional role and family relation patterns as well as improving family communication can also relieve stress, thus improving community (Moos, 1990).

Gender differences

There are few studies looking at the differences between male and female alcoholics and their relations with their partners. One explanation could be that it is difficult establishing contact with male spouses (Velleman & Templeton, 2003). However, studies in this area have shown that it is more common for alcoholic women to be married or co-habiting with partners who also have abuse problems (Nolen-Hoeksema & Hilt, 2006). In addition, previous studies have shown that non-alcoholic men are more inclined to leave the female alcoholic (Fox, 1956).

Coping

In the 1950s researchers started looking at the effects of stress and coping with stress on people's wellbeing. In studies of how people manage stress situations, irregularities in individuals' way of reacting and acting in stressful circumstances were noticed. Psychological techniques and behavioral patterns were developed to help people adapt to the demands in life, and the concept of coping was created.

The concept of coping is defined as an individual's cognitive and behavioral attempts to manage situations where inner and outer demands exceed the individual's resources. The outer demands refer to the actual situation, while the inner demands refer to the emotional reactions to the situation (Lazarus, 1991; Maes, Leventhal & de Ridder, 1996). The purpose of coping is to change a difficult relation between a person and people around that person or to maintain a desired relation (Lazarus, 1991; Holahan, Moos & Schaefer, 1996).

An important distinction in the research on coping is made between coping resources and coping strategies. Coping resources have mainly been defined as general skills and assets, such as health, education, social status, intellectual ability, etc., that might be advantageous in trying situations. Coping strategies have been defined as the mental strategies that an individual uses to manage a stressful situation. Coping strategies are principally described as *problem focused* or *emotion focused* (Holahan, Moos & Schaefer, 1996). They showed that individuals using *problem-focused coping strategies*, also called *active coping*, seem to adapt better to stress and experience fewer psychological symptoms than individuals using *emotion-focused coping*, also called *avoidance coping*. Individuals who are flexible in their choices of coping strategies adapt better than those with a more limited selection of coping strategies. Some researchers have also looked at these concepts on the basis of personality or as typical and habitual ways of approaching a problem in a *coping style*.

The coping concept in alcohol research was initially used in the 1970s by Orford et al. (1975) and was later developed by Moos et al. (1990). In this area, researchers have mainly studied coping behavior that might affect alcoholism. Orford showed that the use of active coping styles, e.g. family members taking action in abuse situations, creates stronger bonds in the family than if inactive coping styles (avoidance coping) are used. It has also been shown that there is a correlation between coping strategy and mental health (Moos et al., 1990). Coping efforts are strongly associated with emotional distress, and avoidance coping is generally linked to more depressive symptoms (Holahan et al., 2005). Studies in college students have shown that reliance on avoidance coping is linked to increased depressive symptoms (Penland et al., 2000).

Interventions

Prevention

Sundell and Forster (2005) claim that effective prevention programs are characterized by a focus on risk factors, protection factors and ways of combining skills training with social training, as well as aiming to affect young persons' environments. These programs apply optimal timing, learning processes that activate patients, high program loyalty and adequate training of the program administrators. There are three levels of preventive actions:

- *Universal prevention activity*, also called *primary prevention*. These prevention programs target an entire group in which the group members are not evaluated on the basis of individual risk.
- *Selective intervention*, also called *secondary prevention*. These programs target individuals or subgroups whose risk is known to be higher than the population at large, but where the disorder or problem has not yet manifested itself.
- *Indicated preventive intervention*. These are prevention programs targeting individuals who have already shown signs or symptoms, but not yet met diagnostic criteria.

Although there are numerous prevention programs, the knowledge about when and to what extent the preventions should be implemented is limited. It has been found that indicated preventive interventions have a stronger effect than selective interventions and, in particular, than universal prevention activity (Sundell & Forster, 2005).

Prevention programs for relatives

The importance of involving family members in the rehabilitation of patients with long-term or chronic illness has been described in a range of scientific studies ((chronic pain: Romano et al., 1989; Burns et al., 1996), (rheumatoid arthritis: Peeters, 1992), (fibromyalgia: Bennett et al., 1996), (multiple sclerosis: Gulick, 1994, 1995), (AIDS: Turner, 1998), (myocardial infarction: Mayou, 1978), (brain damage: Brooks, 1996; Gillen, 1998) and cancer (Zabora & Smith, 1991; Davis-Ali et al., 1993; Morse & Fife, 1998; Nijboer et al., 1998)).

From family members, the patient receives support in viewing life as manageable, comprehensible and meaningful (Antonovsky, 1991). In addition, the patient and family members are able to learn together how to cope with the stress caused by the disease.

From the 1980s, the awareness of the importance of involving family members in the treatment of alcoholism has increased significantly. Meta-analytic reviews indicate that involving family members in the patient's treatment is generally an effective means to promote recovery from alcoholism and drug abuse (Stanton & Shadish, 1997; O'Farrel & Fals-Stewart, 2001).

Treatment methods for family members have mainly focused on improving the results and sustainability of the alcoholic himself, rather than focusing on the family member's own wellbeing. Despite all current knowledge about relatives being a high-risk group for developing AUD and other behavior problems, is it far from granted that preventive interventions are focused on this target group on selective or indicated level, and the primary healthcare services devote very little of their resources to this group (Velleman & Orford, 1999; Copello et al., 2000a; Orford et al., 2005).

A number of new family treatment approaches were developed in the late 20th century, including unilateral family therapy (Sisson & Azrin, 1986; Thomas & Ager, 1993), an individualized skill-based pressures-to-change drinking programs (Barber & Crisp, 1995), community reinforcement-type family treatment (Meyers et al., 1996; Miller et al., 1999), behavioral couples therapy (McCrary et al., 1991; O'Farrell & Fals-Stewart, 2000) and social behavior and network therapy (Copello et al., 2002). All these studies are based on social-behavioral theory and they allow for engagement with a variety of combinations of family members, e.g. a spouse only, an adult child only, couples or larger networks.

These studies show that a significant share of the alcoholics entered treatment after their family members were involved in coping skills training programs. In addition, these programs lead to reduced physical and mental symptoms for the non-abusing family members. In the Miller study (1999), improvements in family members in terms of anger, depression, family conflict and family cohesion were reported irrespective of whether the problem-drinking family member entered treatment or not. That study did not, however, cover how changes occur in ways of coping in the families, in family cohesion or in family members' health and wellbeing. Only a few studies have been conducted with the main purpose of finding methods of helping the relatives to deal with problems and improve their own wellbeing (Dittrich & Trapold, 1984; Dittrich, 1993; Halford et al., 2001).

The UK Alcohol, Drug and Family Research Group (Velleman et al., 2003) has conducted a number of studies of interventions aimed at reducing family members' stress and strain. The stress-strain-coping-support model (SSCS) was developed from these studies and contains the following items: 1) giving the family member the opportunity to talk about the problem, 2) providing relevant advice and information, 3) exploring how the family member responds to their family member's misuse, 4) exploring and enhancing social support, and 5) discussing possible future specialist help. This method has proved effective in reducing family members' physical and psychological symptoms and in improving their coping mechanisms (Copello et al., 2000a; 2000b).

Another treatment family members of alcoholics are frequently referred to is Al-Anon. It has been indicated by several studies that participation in Al-Anon programs can lead to reduced personal problems (Dittrich & Trapold, 1984; Barber & Gilbertson, 1996).

Prevention programs for adult children of alcoholics

During the 70s and the 80s a clinical description of ACOA took shape, which contributed to the opinion that they were a group in need of "specialized treatment" (Ackerman & Gondolf, 1991; Brown, 1988; Woitiz, 1990). There were

initially not many studies aiming at validating this description empirically. In a literature review on ACOA (Giglio & Kaufman, 1990), very few empirical studies were found, and those conducted showed methodological limitations.

Most treatment studies in this field have focused on the psychosocial processes and outcomes. Review works regarding these studies have concluded, however, that it is probably of great importance that comprehensive models of alcoholic families and ACOA development must integrate psychosocial and biological influences, including genetic contributions to alcoholism, comorbid psychiatric disorders and temperament (Harter, 2000). Other reviews suggest that there is a need for more studies focusing on how genetic risk and environment interact in familial transmission of alcoholism (Jacob & Leonard, 1994; McGue, 1994). To be effective, prevention and intervention programs must be based on knowledge of the mediating and moderating factors of the exposure-adjustment relationship. Evaluation research with COA indicates several basic prevention components that should be included in programs for COA. These include information, education, skills-building in the areas of coping and social support, an outlet for the safe expression of feelings and healthy alternative activities (Emshoff, 1999).

Self-help groups

There are very few evaluation data available on the effectiveness of self-aid programs influenced by the twelve steps (Alcoholics Anonymous) and targeted at COA, such as Alateen. Some studies have reported that COA participating in Alateen achieved more positive scores on a mood-state and self-esteem scale than COA not participating (Hughes, 1977). Another study comparing Alateen with group counseling and no treatment in sons of alcoholics (4–16 years of age) indicated that group counseling gave more positive effects in improving self-worth and reducing withdrawal and antisocial tendencies than participation in Alateen. There are no randomized controlled studies conducted on Alateen participation.

The 18–25 year age group

Most cases of alcoholism are established by the age of 30 years with the peak prevalence at 18–25 years of age. Therefore the time frame for the development, and prevention, of alcoholism lies in adolescence and young adulthood (Enoch, 2006).

In Sweden, about 50% of all young adults attend university or other higher education (Swedish National Agency for Higher Education, 2005), which makes it a well-suited environment for intervention on alcohol with the aim of reducing young adults' alcohol consumption, particularly since recent studies (Task Force on College Drinking, 2002; Bullock, 2004) have shown that the alcohol consumption among university students is very high, as is the frequency of binge-drinking. Studies have also reported that university students consume larger amounts of alcohol than their non-university peers (Slutske, 2005). (Of course, this does not make it less important to offer intervention programs to the non-university group). The extensive drinking during these years can lead to several negative consequences in a long-term as well as a short-term perspective (NIAAA, 2005).

In a systematic literature overview of strategies for reducing high-risk drinking among university students, Larimer and Cronce (2002) reported positive effects of cognitive-behavioral techniques and motivational enhancement techniques, while also showing that informational intervention has consistently yielded weaker support. In most of these studies, primarily short follow-up periods have been evaluated. Only a few studies have indicated stability of achieved changes in long-term follow-ups. Baer et al. (2001) indicated that the achieved effects of intervention, i.e. greater reductions of negative consequences in an intervention group compared with a control group, remained during the first four years, and the study concluded that brief individual preventive interventions for high-risk university drinkers can achieve long-term benefits even in the context of maturation.

AIMS

The overall aims of these studies have been to evaluate the effects of different treatment methods to support relatives of alcoholics, with regard to both short-term and long-term effects, by the use of randomized, controlled trials.

In the first two papers, in which the objective was to compare the effects of various interventions in spouses of alcoholics with regard to coping strategies, mental symptoms, hardship and drinking patterns, the following questions were raised:

- What type of treatment can be effective in supporting and improving the relatives' mental health and coping strategies?
- Is a longer treatment (group support or individual treatment) more effective than a single information session?
- Does treatment in group work as well as individual treatment does?

In the third and the fourth papers, in which the effects of alcohol intervention and coping intervention among ACOA university students were studied, the following questions were raised:

- What effect does each of the three interventions studied have on the participants':
 - use of alcohol?
 - coping strategies?
 - wellbeing?

MATERIALS AND METHODS

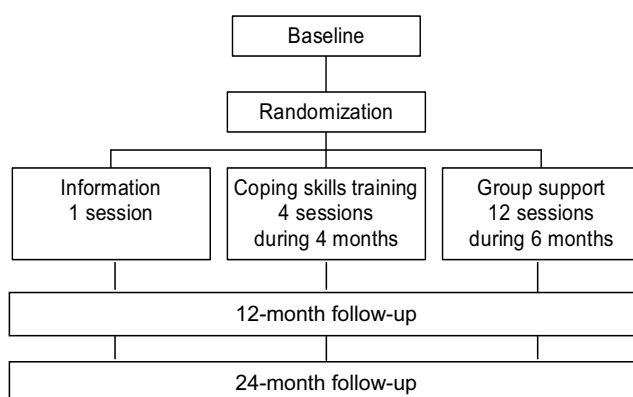
Sample and design in papers I and II

Intervention programs for spouses of alcoholics

Sample

The sample in papers I and II consisted of 39 participants (36 females and 3 males), who at the time lived with an alcoholic partner with a current alcohol problem. The participants were recruited for the study during one year (1994–1995), partly through staff at the Addiction Centre Malmö (formerly the Department of Alcohol and Drug Diseases, Malmö), Malmö University Hospital, who informed the patients' partners about the study, and partly through advertising in the daily press (four ads). Among the 39 spouses, 23 were recruited through advertising and 16 were recruited from the Addiction Centre Malmö.

Design



The participants were initially evaluated in a telephone interview, by which it was assessed whether they fulfilled the inclusion criteria or not. Among 41 evaluated subjects, 39 were included in the study. One spouse was excluded because of other current treatment and another because of severe domestic violence in the relationship.

The following inclusion criteria and exclusion criteria were applied in the study:

Inclusion criteria

- Spouses living with an alcoholic partner with a current alcohol problem
- Aged 18–60 years

Exclusion criteria

- Own drinking/drug problem
- Severe domestic violence in the relationship
- Ongoing psychosocial treatment or Al-Anon attendance
- Own major psychiatric disorder

After an informed consent and a baseline data collection (60 min), the participants were randomized into one of the following programs:

- **Standard information session**
- **Individual coping skills training** (information session and four other treatment sessions)
- **Group support** (information session and twelve group sessions)

The randomization was conducted with black-sealed envelopes. Only gender was stratified in the study.

The sample is described in table 1.

Table 1 - Background characteristics of the study sample groups

	Information	Coping skills training	Group support	Total
N (male/female)	14 (12/2)	13 (12/1)	12 (12/0)	39 (36/3)
Mean age (SD)	47 (8)	48 (12)	46 (6)	47 (9)
Education 12 years or more (%)	7 (50)	9 (69)	5 (42)	7 (54)
Employment full-time (%)	9 (64)	6 (46)	7 (58)	7 (56)
Years marriage, mean (SD)	20 (8)	12 (12)	9 (9)	14 (10)

The standard information session

All participants went through the standard information session after completed baseline data collection.

The standard information session lasted for 60 minutes. Scores on the Coping Behavior Scale (Orford et al., 1975) were presented and discussed as well as the importance of effective coping strategies in alcoholic families. The discussed coping strategies comprised negative coping strategies such as nagging, blaming, threatening, arguing, controlling, avoiding and an inactive coping style as well as positive strategies such as support, talking to the alcoholic partner, organizing family

activities and maintaining independence in the relationship. Those who scored in the highest quartile on the Coping Behavior Scale were suggested to try alternative coping strategies.

All spouses were given a booklet containing 1) information about the study, 2) the "family circle" describing patterns in alcoholic families, 3) their own scores on the Coping Behavior Scale, 4) information on social services (e.g. where to call in case of domestic violence) and 5) information about courses of action for the alcoholic partner if he/she wants treatment.

Finally, the spouses were randomized into one of the three study groups and given brief information concerning follow-ups.

Participants who were randomized into any of the two groups involving further treatment support, i.e. individual coping skills training or group support, were booked for further sessions. The others were discontinued.

Individual coping skills training

This intervention program included the standard information session (60 minutes) and four 90-minute sessions with one-month intervals.

In this program the therapist worked primarily with the spouses' coping behavior, based on a model by Orford et al. (1975). According to this model the spouse could reduce the partner's alcohol consumption by using supportive and independent coping strategies, rather than using controlling, tolerant and avoidant coping strategies which are deemed negative for the alcoholic's recovery. However, the main focus of this program was on the wellbeing of the spouses, independent of the behavior of the alcoholic partner.

The four sessions continuously evaluated the participants' coping behavior, while each of the four sessions centered on different components:

Session 1: The first session dealt with family adjustments by looking at family roles, relationships and sexuality. As an assignment for the next session, the participants were asked to provide a written description of themselves and their relationship in positive terms, containing five positive adjectives describing themselves, five positive adjectives describing their partner and five positive adjectives describing their relationship. They were also asked to read a book to discuss at the next session: the Swedish translation from 1993 of *If You Really Loved Me* by Ditzler & Ditzler (1989).

Session 2: The second session dealt with the issues of isolation and social networking. The assignment involved watching a film about alcohol problems and alcoholic families (Belstad AB & Arbetarskyddsämnden, 1995).

Session 3: The third session concerned the issues of family dynamics, family communications and dependence/independence in the spouse relationship. The spouses were assigned to do something for their own satisfaction.

Session 4: At the fourth and final session, the contents of the four previous sessions, in addition to the initial meeting, were summarized. At this session, the spouses were also asked to define future goals.

Group support

After the individual standard information session, these spouses participated in twelve 90-minute group sessions, every second week. After having taken part in the first information session, the waiting time until the first group session was 4.5 ± 3.0 (SD) weeks. There were two closed group sessions comprising five and six, respectively, of the spouses in the study. Two therapists moderated each session. In these group sessions, much emphasis was placed on the participants discussing their own experiences of living in a relationship involving addiction.

This program used a system-theoretic approach with elements of cognitive behavioral therapy. The central themes were coping strategies in the relationship with the alcoholic partner and the abuse situation, communication efforts and reduction of personal stress (stress management).

Techniques used at the group sessions include: 1) role-playing; 2) painting; 3) watching a film [transl. "Behind the Booze. When Do You Have Alcohol Problems? Relatives of Alcoholics, a Forgotten Group. What Can We Do?" (Produced by Belstad AB & Arbetarskyddsämnden)]; and 4) physical relaxation.

Follow-ups after 12 and 24 months

An independent researcher, uninformed of which type of treatment each respondent had received, conducted all follow-up interviews after 12 and 24 months. It proved possible to conduct the majority of the interviews without the researcher receiving information about which type of treatment the subject had received. However, in a few cases the researcher received information about type of intervention. Both follow-up sessions included a face-to-face interview as well as the standard questionnaires used at the initial assessment.

All 39 spouses in the study participated in the 12-month follow-up evaluation and 38 completed the 24-month follow-up evaluation. The spouse dropping out did so because of pressure from the alcoholic partner, but there was no domestic violence involved.

The study was approved by the Ethics Committee at Lund University.

Sample and design in papers III and IV

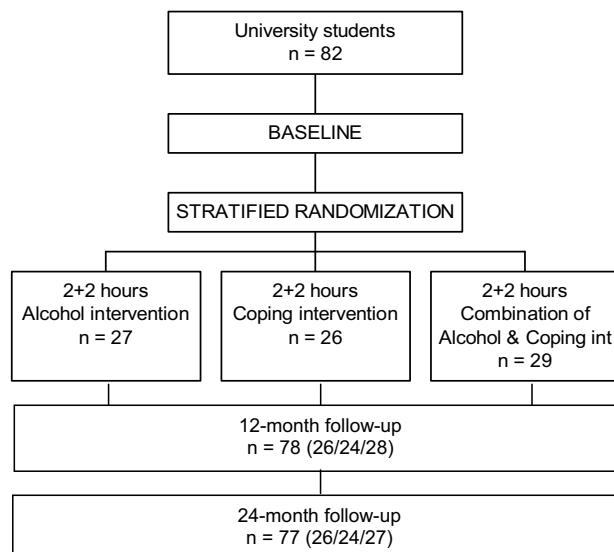
An intervention program for university students who have parents with alcohol problems

Sample

In papers III and IV, the sample consisted of 82 university students (57 female and 25 male) with at least one parent with alcohol problems.

The participants were recruited through advertising in the daily press and through an information booklet distributed to all students at Lund University, during one year (2000–2001). The advertising was done in two parts: one ad in a daily newspaper and one ad placed in three different student magazines. The information booklet was distributed once per term.

Design



The participants were initially evaluated in a telephone interview, in which it was assessed whether they fulfilled the inclusion criteria or not. 85 subjects applied for the study; three of the applicants were excluded because of complete lifetime abstinence.

The following inclusion criteria and exclusion criteria were applied in the study:

Inclusion criteria

The target group for the study was adult university students, who have grown up in an environment where one or both parents have or have had alcohol problems. The study was based on the students' experiences of growing up in his/her family and there was no objective evaluation of the parents' abuse conducted.

Exclusion criteria

Students who had a history of lifetime abstinence (had never drunk alcohol) or serious mental disorders were excluded from the study.

Setting and patient enrolment

This study was conducted at Lund University, where approximately 37,000 students were enrolled at the time. The intervention programs were conducted at the Student Healthcare Clinic at the university.

In order to successfully recruit participants to the study, it was important to get support for the study from both the university management and the student organizations representing the student body. Results from previous studies as well as the design of this study were presented on four different occasions to the university management and representatives of the student organizations.

The study was initiated by a one-hour structured interview, containing a face-to-face interview as well as six self-assessment questionnaires completed by the participants.

The participants were then randomized into one of three programs:

- **The alcohol intervention program**
- **The coping intervention program**
- **The combination program** (a combination of the alcohol and coping intervention programs)

For the randomization, black-sealed envelopes from different boxes based on different strata were used. The randomization was stratified for gender, above/below Swedish average score on mental wellbeing (Symptom Checklist-90, SCL-90) (Derogatis, 1977) and high/low score on the 10-item Alcohol Use Disorders Identification Test (AUDIT) (Saunders et al., 1993); high score ≥ 11 for male and ≥ 7 for females (Johnsson & Berglund, 2006).

All three intervention programs were manual based and individually presented. The duration per session was identical in all three programs: two hours on two occasions with one month between.

All participants finished the baseline assessment, accepted the intervention they were randomized into and completed the intervention.

The sample is described in table 2.

Table 2 - Background characteristics of participants in the three intervention groups

	Alcohol	Coping	Combination	Total
N (male/female)	26 (9/17)	24 (5/19)	28 (8/20)	78 (22/56)
Mean age (SD)	25.04±3.61	24.04±3.21	27.50±6.50	25.62±4.93
Pre-teenage experience of parents' abuse (before 12 yrs old)	20	22	25	67/78
Current abuse (parents)	23	23	25	71/78
Alcohol dependent (parents)	23	23	27	73/78

The alcohol intervention program

The alcohol intervention program is based on the Brief Alcohol Screening and Intervention for College Students, BASICS (Dimeff et al., 1999), and was prepared by the Department of Clinical Alcohol Research, Lund University. The objectives of BASICS are to reduce risky drinking behavior and harmful effects from drinking. The program is based on cognitive-behavioral skills training that promotes moderate drinking and motivational aspects.

The following modules were used in the alcohol intervention program in this study: 1) identifying high-risk drinking situations, 2) providing accurate information about alcohol, 3) identifying personal risk factors, 4) challenging myths and positive expectations, 5) establishing appropriate and safe drinking goals, 6) managing high-risk drinking situations and 7) learning from mistakes.

In the first alcohol intervention session, the students were provided with feedback on their AUDIT scores and estimated Blood Alcohol Concentration (eBAC) (National Highway Traffic Safety Administration, 1994) from the baseline assessment. They were then given basic information about alcohol, e.g. in terms of how alcohol habits are created and how the brain reacts to alcohol. This was followed by a discussion about facts and myths of alcohol and intoxication. By using a modified Alcohol Expectancy Questionnaire (Andersson et al., 2007), a conversation was conducted about the students' expectancy profiles.

The students also received practical information on how to limit intoxication by learning to estimate their blood alcohol concentration (eBAC) and about the factors influencing this. The students were also encouraged to discuss potentially positive and negative party situations in terms of alcohol consumption, and how to deal with those. To this end, the students were given drinking calendars.

As an assignment between the two intervention sessions, the students were asked to monitor their alcohol intake by keeping a diary of their consumption and calculating blood alcohol levels by means of the drinking calendars.

At the second intervention session, the topics from the first session were repeated. In addition, the assignment was discussed in detail, with a focus on drinking-moderation strategies, drinking refusal, peer influences, identification of high-risk situations, negative emotional states and learning from personal mistakes.

The coping intervention program

The coping intervention program is a manual-based cognitive behavioral program developed at the Department of Clinical Alcohol Research, Lund University. The objectives of the program are to increase knowledge about the impact of the family system on dysfunctional coping and to implement more effective coping strategies. Much emphasis is placed on the therapist using a reflecting approach and encouraging the participant to change.

The program began with the student receiving feedback on his/her coping behavior according to the answers in the Coping with Parents' Abuse Questionnaire (Zetterlind & Hansson, 2001). Then followed a discussion with the participant on the impact of the alcohol abuse on the function/dysfunction of the family and how this reflects on other relations. The discussion also concerned the effects on children in alcoholic families, recovery factors and coping patterns. General coping patterns in alcoholic families were discussed with a focus on relationship-coping, emotion-coping and problem-coping. Central coping strategies, such as the participant's ability to express emotion, handle discord and not use avoidance, were also discussed. In conclusion, the student was encouraged to try new coping strategies and define targets as well as ways of implementation. The therapist's advice was limited to guiding the student to a well-founded decision.

The students were asked to keep a diary of the coping strategies they use in trying situations in daily life during the month between the sessions, and to rate severity on an analog visual scale (intensity, 1–100). Part of the assignment was also to read and reflect on two books in Swedish [transl. "Become My Mother Again" (Jinder, 1991) and *If You Really Loved Me* (Ditzler & Ditzler, 1993)].

At the second intervention session, the topics from the first session were repeated and the assignment was discussed in detail.

The combination program

This program is a combination of the alcohol intervention program and the coping intervention program: it began with the alcohol intervention program lasting one hour, which was followed by the coping intervention program, also lasting one hour. In order to allow for both programs within the same session, the discussions about blood alcohol levels, personal expectations of alcohol use and coping strategies were slightly reduced, but all individual components of the programs remained included.

At the second session the therapist went through the assignment work from each of the two programs with the patient, and a short repetition of the main content of each program was provided.

Follow-ups after 12 and 24 months

The participants were followed up after one and two years respectively by an independent researcher. The interviewer was unaware of which intervention program each respondent belonged to. Both follow-up sessions included a face-to-face interview along with the standard questionnaires used at the initial assessment.

At the 12-month assessment, one student interrupted the interview and declined further participation. One student completed the face-to-face interview, but did not fill in the six self-completion questionnaires. Two students could not be located, despite several attempts. In addition to these four students dropping out before the 12-month follow-up, one further participant refused to participate in the 24-month follow-up.

The study was approved by the Ethics Committee at Lund University.

Instruments

The following assessment instruments were used in papers I-IV.

<i>Paper</i>	AUDIT	eBAC	SIP	Coping with Parents' Abuse Questionnaire	Coping Behavior Scale	SCL-90	Hardship Scale	ISSI
<i>I</i>	X				X	X	X	X
<i>II</i>	X				X	X	X	X
<i>III</i>	X	X	X	X		X		X
<i>IV</i>	X	X	X	X		X		X

Alcohol Use Disorders Identification Test (AUDIT) (Saunders et al., 1993) is an international test for early identification of hazardous and harmful alcohol use, which was originally designed by the World Health Organization. Bergman et al. (1998) translated the instrument into Swedish with good statistical characteristics. The total score is 40 points and the instrument can be divided into three subscales: alcohol consumption, dependence and harm. In papers III and IV cut-off levels of 8 (male) and 6 (female) were used. Similar cut-off levels are recommended for intervention by Reinert and Allen (2002). The scale is well validated internationally (Reinert & Allen, 2002; Kokotailo et al., 2004). Bergman et al. tested the scale on a Swedish population with an internal consistency of Cronbach's alpha = 0.95. In our second study (papers III and IV), Cronbach's alpha was 0.77 on standardized items.

Retrospective **Estimated Blood Alcohol Concentration (eBAC)** is based on a self-assessment questionnaire where the respondent provides data about the most recent pleasant drinking occasion (number of standard drinks, amount of time drinking those, gender and weight). The use of the word pleasant is meant to describe an ideal drinking occasion rather than a peak consumption occasion, and has been used in previous Swedish alcohol prevention studies (Andersson et al., 2007; Ståhlbrandt et al., 2007).

On the basis of this data, the eBAC is calculated in mg of alcohol per 100 ml of blood. This method for estimating BAC was obtained from the National Highway Traffic Safety Administration, US Department of Transportation (1994).

The Short Index of Problems (SIP) (Miller et al., 1995) is a scale based on a self-administered questionnaire designed to measure adverse consequences of alcohol consumption in five areas: physical, intrapersonal, social responsibility, interpersonal and impulse control. The scale is a brief version of the Drinker Inventory of Consequences (DrInC) developed in the MATCH project. This brief version has been translated at the Department of Clinical Alcohol Research, Lund University. It has 15 questions and a maximum score of 45. High scores on this scale indicate more negative consequences of current alcohol consumption.

Miller et al. (1995) obtained an internal consistency of 0.81 and Feinn et al. (2003) obtained an internal consistency of 0.79 in a psychometric testing of 153 problem drinkers. In our second study, Cronbach's alpha was 0.84 on standardized items.

Coping with Parents' Abuse Questionnaire (Zetterlind & Hansson, 2001) is also a self-assessment questionnaire with a scale. The scale is based on the Coping Behavior Scale (Orford et al., 1975), which has been reworked and adapted to the ACOA target group. The questions concern five areas of coping behavior and cover how respondents cope with alcohol problems in their families and how they have related to the family members concerned. The five coping typologies include: discord (Do you feel unhappy and dejected when your parent is drinking?); emotional (Have you been thinking of hurting yourself seriously, e.g. committing suicide?); control (Do you worry when other people close to you drink alcohol?); relationship (Do you find it difficult talking with your parent about how you feel because of his/her alcohol problem?); and avoidance (Do you accept things you do not like because you do not dare to say no?). A sixth area was included only in the interview: taking specific action. The scale contains 37 questions and the maximum score is 148. A lower index value on the scale indicates a better coping behavior. The recall period for the measure was three months back in time. The original scale has satisfactory reliability and validity. In our second study, Cronbach's alpha was 0.85 on standardized items.

The Coping Behavior Scale (Orford et al., 1975) was originally designed for wives of men with drinking problems but has since been adapted a number of times to make it relevant for husbands and other family members. The version for wives was used in papers I and II and it has also been used in a number of other studies (McCrary & Hay, 1987; Holmila, 1988).

The scale consists of 56 questions concerning different ways the spouse has coped with the alcoholic partner and the abuse problem in the last three months.

The questions include ten coping typologies: discord, avoidance, anti-drink, sexual withdrawal, taking specific action, indulgence, competition, assertion, fearful withdrawal and marital breakdown. The respondent is given three response options for each item: yes often; sometimes; no. A lower index value on the scale indicates a better coping behavior.

The Symptom Checklist -90 (SCL-90) (Derogatis, 1977) aims to measure how well a respondent has felt during the past week. The test contains 90 questions that all start with: "To what extent have you been troubled by...?". The questions are distributed across nine subscales, except seven items that do not belong to any of the subscales, and one Global Severity Index, GSI. The different sub-scales reflect different dimensions of the experience of symptoms: somatization, anxiety, depression, interpersonal sensitivity, obsessive-compulsive symptoms, hostility, phobic anxiety, paranoid ideation and psychoticism. The reference mean value in the Swedish version is 0.55 for women and 0.36 for men. In the present thesis the used cut-off point for clinically significant symptoms was 0.6 (Fridell et al., 2002). The internal consistency for the nine scales is high, 0.73–0.91 on Cronbach's alpha (Fridell et al., 2002). In our second study, the internal consistency was 0.97 according to Cronbach's alpha.

The Hardship Scale (Orford et al., 1975) consists of ten items. It tracks spouses' experience of hardship in the family during the last year. The respondent is given four response options for each item: 1) no, 2) uncertain, 3) clear and 4) often. The total scale score is calculated by adding the scores of all items.

The Interview Schedule for Social Interaction (ISSI) (Henderson et al., 1980) is a scale measuring social integration and attachment, and a brief Swedish version (Undén & Orth-Gomer, 1989) was used in this study to assess social support. The brief version consists of 30 items divided into four subscales and has been widely used (Eklund et al., 2007). The scale is summarized in four dimensions: availability of social integration (AVSI), adequacy of social integration (ADSI), availability of attachment (AVAT) and adequacy of attachment (ADAT). However, the total score is often used as a global index of social integration. A higher index value on the scale indicates more relations to family, friends, neighbors and colleagues. The specific questions are presented in Eklund et al. (2007). Individuals with total scores below 20 are regarded to have a poor social network (Undén & Orth-Gomer, 1989).

This scale has been standardized and validated in community samples and in substance abuse and psychiatric samples. It has adequate internal consistency (Cronbach's alpha = 0.74) and test-retest reliability (Undén & Orth-Gomer, 1989). The internal consistency score in our second study was 0.72.

Other tests

An **Overall alcohol score** was calculated to get a single measure of drinking improvement. The standardized difference score was defined in paper III as the mean of the standardized differences of AUDIT, eBAC and SIP, divided by the standard deviation.

The **Satisfaction with the interventions** was measured with one question – “Would you say that the intervention you received by participating in the study was adapted to your situation?” – by which the students were asked to rate the program on a 5-point satisfaction scale (1–5).

Statistics

Paper I

Differences between ordinal measures were checked by the Kruskal-Wallis one-way analysis of variance and the Mann-Whitney U-test.

Changes from the first and second examination were checked by the Wilcoxon matched pairs signed-rank test. SPSS 7.0 was used for all calculations and the significance level was $p < 0.05$.

Paper II

The Wilcoxon signed rank test was used to check changes within each group, while Kruskal-Wallis, Mann-Whitney or chi-square tests were used to compare the groups. SPSS 11.0 was used for all calculations and the significance level was $p < 0.05$.

Additional analysis

In papers I and II, an additional univariate analysis of variance was conducted post hoc using the same method as in papers III and IV (Altman, 1990; Vickers and Altman, 2001). The 12-month or 24-month follow-up score was the dependent outcome, type of intervention was the fixed variable and the initial score a covariate.

Paper III

Baseline differences were tested using the Kruskal-Wallis test. Changes within each group were tested with the Wilcoxon signed rank test.

Correlations between variables were calculated with the Spearman test. Differences in changes between the two groups were tested by the univariate analysis of variance (Altman, 1990; Vickers & Altman, 2001). The 12-month follow-up score was the dependent outcome, type of intervention was the fixed variable and the initial score was a covariate.

SPSS 11.5 was used for all statistical analysis and the significance level was $p < 0.05$. Scale reliability analyses were conducted with Cronbach's alpha and calculated on initial score.

Paper IV

Changes between 12 and 24 months in each group were tested with a paired sample t-test. The univariate analysis of variance was used to study changes between the 12-month and 24-month follow-ups according to Altman (1990) and Vickers and Altman (2001). The 24-month follow-up score was the dependent

outcome, type of intervention was the fixed variable and the 12-month score was a covariate.

The standardized mean difference effect size (d) was calculated with the Comprehensive Meta Analysis Software Program (Borenstein & Rothstein, 1998). Scale reliability analyses were performed with Cronbach's alpha and calculated on 12-month follow-up data. SPSS 14.0 was used for the statistical calculation and the significance level was $p < 0.05$.

Statistical power

Papers I and II

There are no documented studies with an approach similar to the one in this study. In order to discover a significant difference in a population, an effect size of about $d = 0.90$ is needed with $p = 0.05$ and power of 80% (Altman, 1990). The effect sizes in the studies of Dittrich and Trapold (1984) and Halford et al. (2001) were low and insignificant. Rychtarik and McGillicuddy (2005) reported reduction of depression symptoms in treated spouses compared with controls in a population of 149 subjects (effect size $PV = 0.28$). Unlike this study, however, the main objective in that study was to change drinking patterns in the spouses' alcoholic partners who did not want treatment. Therefore, this study was probably underpowered with a lower effect size than 0.90 in the intervention.

Papers III and IV

There are no documented studies with an approach similar to the one in this study either. In order to discover a significant difference in a total population of 82, an effect size of about 0.59 is needed with $p = 0.05$ and power of 80% (Altman, 1990). In the study of Kivlahan and co-workers (1990), an effect size of 0.98 on alcohol consumption was reported and 0.50 for binge drinking. The six-month figures in the Marlatt et al. study (1998) were 0.30 and 0.28, respectively. This study could therefore perhaps be regarded as somewhat underpowered.

RESULTS

Effects of coping skills training, group support and information for spouses of alcoholics. A controlled randomized study. (Paper I)

Initial data on the self-report assessments are presented in table 3. There were differences in baseline data between the three intervention groups. The group support participants obtained higher scores on the hardship scale than the coping skills training group and the information group, whereas the SCL-90 scores were lower for the information group than for the other two groups. There were no significant differences between the three groups regarding distribution on coping scores or AUDIT. The AUDIT scores confirm that only spouses without own alcohol problems were included. Spouses recruited by advertisement did not differ from those recruited through Addiction Centre Malmö, Malmö University Hospital (Zetterlind, 1999).

Table 3 - Initial data on the self-report assessments by treatment groups

	Information	Coping skills training	Group support
n (female/male)	14 (12/2)	13 (12/1)	12 (12/0)
SCL-90, GSI, mean (SD)	0.47 (0.33)	0.88 (0.57)	1.23 (0.68)**
Hardship mean (SD)	21.00 (4.76)	19.23 (5.28)	27.25 (5.38)***
Coping total mean (SD)	38.43 (11.73)	39.31 (10.33)	45.33 (17.09)
AUDIT mean (SD)	3.50 (3.84)	2.85 (2.15)	2.83 (1.95)

(Kruskal-Wallis test)
 *** $P < 0.001$; ** $P < 0.01$; * $P < 0.05$

The changes between the first and the second evaluation are presented in table 4. Results from the 12-month follow-up show that all three groups had changed their coping styles significantly and that mental symptoms were reduced in all groups.

The group receiving coping skills training and the group receiving group support combined had a significant reduction in mental symptoms $p < 0.01$ compared with the group receiving information only. The proportional reduction, however, yield no significant differences ($50 \pm 28\%$ vs. $31 \pm 38\%$, $p = 0.1$).

Total hardship score differences indicate group differences on a 5% level, with the group support group showing the largest decrease and the information group the smallest decrease. The proportional reduction, however, yield no significant differences, and neither do the comparison between the two longer-term intervention groups concerning the proportional changes. Changes in the total coping scores as well as changes in AUDIT were similar in the three groups. The findings indicate that changing of coping strategies in spouses of alcoholics can be

successful with only one single information session, whereas the reduction of mental symptoms may need longer treatment.

Additional analyses (not in paper I): According to a univariate analysis of variance with the 12-month SCL-90 score functioning as the dependent variable and the initial SCL-90 score functioning as a covariate, the intervention groups (coping skills training and group support) improved more (ns) than the information group, 0.188 (95% CI, -0.041; 0.415, $p = 0.105$).

Table 4 – Changes between baseline and 12-month follow-up. Mean score (SD)

	Information	Coping skills training	Group support
SCL-90, GSI score diff	-0.09 (0.16)	-0.50 (0.47) b	-0.48 (0.39)** b
% reduction	31 (38) a	55 (30) c	45 (26) c
Hardship score diff	-1.9 (7.2)	-5.2 (6.0) b	-10.7 (11)* b
% reduction	15 (24) a	22 (35) a	33 (31) b
Coping total	-15.7 (14.1) b	-13.2 (13.4) b	-17.5 (10.9) c
AUDIT	-1.0 (1.7) a	-0.5 (1.1)	-0.2 (1.6)
(Kruskal-Wallis test)		(Wilcoxon)	
** $P < 0.01$; * $P < 0.05$		Changes 1–2 measurements	
		c: $P < 0.001$; b: $P < 0.01$; a: $P < 0.05$	

Two-year outcome of coping skills training, group support and information for spouses of alcoholics. A randomized controlled trial. (Paper II)

Results at the 24-month follow-up and changes between baseline and the 24-month follow-up are presented in table 5. The improvements found in the 12-month follow-up remained at the 24-month follow-up on all scales. However, at the 24-month follow-up, there were no significant differences on any of the scales between the three groups. The changes (improvements) from admission to the 24-month follow-up were significant in terms of SCL-90, hardship and coping behavior for the group support participants and the coping skills training group. The information group showed significant changes in terms of hardship and coping behavior but not on SCL-90. The AUDIT scores were still low at the follow-ups in all three groups.

Changes in SCL-90 scores were significantly ($p < 0.05$) larger in the group support group and coping skills training group than for the information group.

A post hoc analysis, where only subjects with initial scores above 0.55 for women and 0.36 for men were analyzed, is presented in paper II. The results of the analysis indicate that spouses from the longer treatment programs (coping skills training and

group support) improved more on mental symptoms (SCL-90) than those receiving only the standardized information session. This difference was significant ($p < 0.05$). No subject with initial SCL-90 scores below mean for women and men respectively had higher scores at the 24-month follow-up. There was no corresponding pattern observed for coping behaviour.

Additional analyses added (not in paper II): According to a univariate analysis of variance with the 24-month SCL-90 score functioning as the dependent variable and the initial SCL-90 score functioning as a covariate, the intervention groups (coping skills training and group support) improved more than the information group, 0.310 (95% CI, -0.19; -0.60, $p = 0.037$). In the same analysis, including only those with values over the general population means, the improvements in the intervention groups were still significantly different, 0.605 (95% CI, -0.037; -1.173 $p = 0.038$).

Table 5 – Results at the 24-month follow-up and changes from baseline to the 24-month follow-up

	Group support		Coping skills training		Information	
SCL-90, GSI, 24-m follow-up, mean (SD)	0.60	(0.57)	0.30	(0.32)	0.45	(0.49)
Change SCL-90, GSI, from baseline to 24-m follow-up, mean (SD)	-0.63	(0.63)b	-0.51	(0.41)b	-0.16	(0.02)**
Improved at 24-m follow-up (SCL-90); GSI < 0.55(w)/0.36 (m) of those with GSI > 0.55(w)/0,36 (m) at baseline, n	6/10		5/6#		0/6 *	
Hardship 24-m follow-up, mean (SD)	19.41	(8.46)	15.67	(4.12)	17.57	(6.10)
Change hardship from baseline to 24-m follow-up, mean (SD)	-7.83	(9.87)a	-2.92	(4.68)a	-3.43	(5.35)a
Coping total 24-m follow-up, mean (SD)	24.75	(14.75)	21.50	(14.21)	24.07	(11.92)
Change coping total from baseline to 24-m follow-up, mean (SD)	-20.58	(19.11)a	-17.50	(12.69)b	-14.36	(13.57)b
AUDIT, 24-m follow-up, mean (SD)	2.58	(2.07)	2.42	(1.78)	2.79	(2.67)
Change AUDIT from baseline to 24-m follow-up, mean (SD)	-0.25	(2.01)	-0.08	(1.38)	-0.71	(1.82)
(Kruskal-Wallis test)			(Wilcoxon) Changes 0–2 measurements			
*** $P < 0.001$; ** $P < 0.01$; * $P < 0.05$			c: $P < 0.001$; b: $P < 0.01$; a: $P < 0.05$			
# One subject did not attend the 24-month follow-up						

Figures 1–3 illustrate the changes during the first and second year separately on each scale. The major changes occurred during the first year on all three scales. There were no significant changes during the second year, but the stability of improvements was evident. The improvements in the intervention groups after one year became more pronounced after two years.

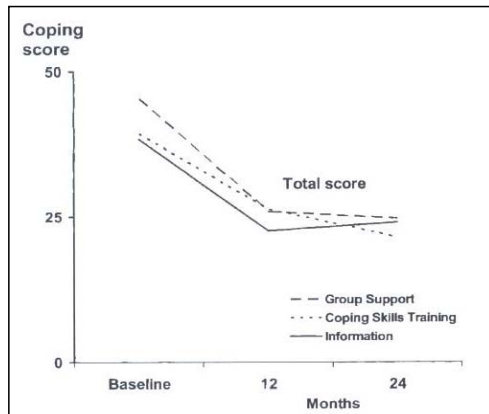


Figure 1 - Changes on the Coping Behavior Scale between baseline and the 12-month and 24-month follow-ups. Significant improvements occurred between the baseline examination and the 12-month follow-up in all three groups (all $p < 0.05$). There were no important changes from the 12-month to the 24-month follow-up.

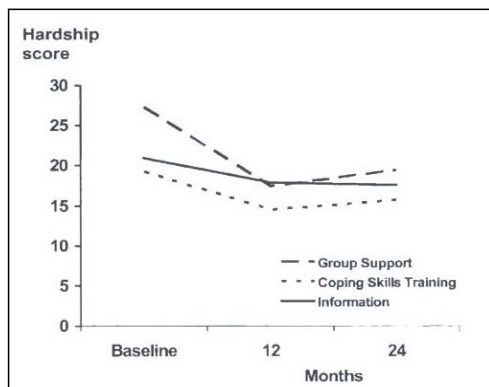


Figure 2 - Changes on the Hardship Scale between baseline and the 12-month and 24-month follow-ups. There were significant improvements ($p < 0.05$) at the 12-month follow-up in the group support and coping skills training groups. There were no significant changes between the 12-month and 24-month follow-ups.

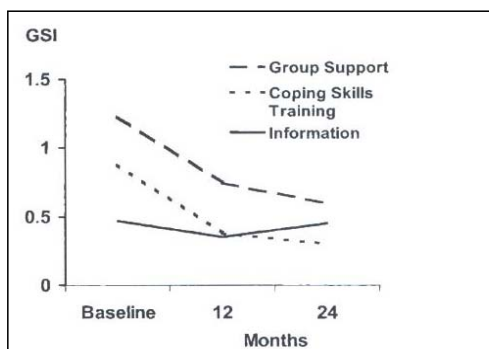


Figure 3 - Changes in GSI (SCL-90) between baseline and the 12-month and 24-month follow-ups. The coping skills training group showed significant improvement ($p < 0.05$) and the group support group a tendency of improvement ($p < 0.1$) regarding psychiatric symptoms at the 12-month follow-up. The changes in GSI during the second year for group support and coping skills training were insignificant (mean -0.15 , SD 0.40 and mean -0.06 , SD 0.26 , respectively).

An intervention program for university students who have parents with alcohol problems. A randomized controlled trial. (Paper III)

In table 6, baseline scores of self-report assessments for participants assigned to each of the three intervention groups are presented. There were no significant differences between the baseline scores of the three groups. Regarding the students' own alcohol behaviour, 54% of the participants had scores above the traditional cut-off point (8 and above in men and 6 and above in women) according to AUDIT (Reinert & Allen, 2002). Regarding mental wellbeing, the initial SCL-90 score was rather high, with most subjects (47) over the cut-off point for clinically significant symptoms at 0.6 (Fridell et al., 2002).

Table 6 – Baseline scores of self-report assessments of participants randomly assigned to three intervention groups

	Alcohol	Coping	Combination	Total
N (male/female)	26 (9/17)	24 (5/19)	28 (8/20)	78 (22/56)
AUDIT				
Total	8.2±4.1	7.7±5.1	6.9±5.6	7.6±4.9
Cut-off or over (>8 for men, >6 for women)	17	12	13	42
eBAC	0.89±0.66	0.69±0.54	0.61±0.50	0.73±0.57
SIP				
Total	3.3±3.4	2.7±2.6	2.9±4.2	3.0±3.5
SCL-90				
Total, GSI	0.81±0.49	1.03±0.65	0.84±0.55	0.89±0.56
Cut-off or over >0.6 (men/women)	14 (3/11)	15 (1/14)	18 (4/14)	47 (8/39)
Coping with Parents' Abuse Questionnaire				
Total	83.8±12.9	84.4±18.8	85.6±17.0	84.6±16.2
ISSI				
Total	20.4±5.3	19.2±6.9	18.0±6.9	19.2±6.4

The Spearman correlations between the outcome measures at baseline are presented in table 7. The three alcohol measures were significantly correlated with each other. The scores on Coping with Parents' Abuse Questionnaire correlated moderately with SCL- 90 and ISSI (negative correlation). Most of the correlations between the alcohol measures and the other measures were close to zero with the exception of eBAC, which was associated with the scores on Coping with Parents' Abuse Questionnaire (negative correlation).

Table 7 – Spearman correlation between outcome measures at baseline

	AUDIT (tot)	SIP	eBAC	SCL-90 (GSI)	Coping with Parents' Abuse	ISSI
AUDIT (tot)	-	0.75**	0.42**	-0.06	-0.07	-0.06
SIP		-	0.25*	0.06	0.10	-0.29*
eBAC			-	-0.06	-0.35**	0.18
SCL-90 (GSI)				-	0.53**	-0.38**
Coping with Parents' Abuse					-	0.56**
ISSI						-

** $P < 0.01$; * $P < 0.05$

In table 8, changes from baseline to the 12-month follow-up are presented. The 12-month follow-up showed that the groups receiving alcohol intervention (the alcohol intervention group and the combination group) improved their drinking patterns significantly more than the group not receiving alcohol intervention (change of standardized scores [-0.27 (CI -0.53 to -0.03)]). The groups receiving coping intervention (the coping program and the combination program) did not differ from the group not receiving coping intervention regarding the ability to cope with their parents' alcohol problems. Nor did they differ on changes in mental health or social interaction capacity.

Table 8 – Changes in scores from baseline to 12-month follow-up (12-month scores in brackets)

	Alcohol	Coping	Combination	Total	Statistics
N (male/ female)	26 (9/17)	24 (5/19)	28 (8/20)	78 (22/56)	Intervention vs. control ANCOVA
AUDIT	-1.88±3.59* (6.3±4.3)	-0.46±4.30 (7.2±4.8)	-0.93±3.22 (6.0±4.5)	-1.10±3.70** (6.5±4.5)	Alc + comb vs. cop -0.98 CI -2.56, 0.60
eBAC	-0.25±0.55* (0.61±0.46)	-0.09±0.44 (0.61±0.48)	-0.14±0.26* (0.48±0.44)	-0.16±0.43*** (0.56±0.46)	-0.09 CI -0.26, 0.08
SIP	-1.35±2.80*	0.04±3.03	-0.86±2.24*	-0.74±2.71**	-0.98 CI -2.07, 0.10
Stand diff alcohol measures	-0.53±0.47	-0.10±0.69	-0.29±0.56	-0.31±0.69	-0.27 CI -0.53, -0.03
SCL-90	-0.09±0.45 (0.70±0.41)	-0.04±0.40 (0.97±0.62)	-0.18±0.56 (0.65±0.57)	-0.11±0.48 (0.77±0.55)	Cop + comb vs. alc -0.03 CI -0.23, 0.18
Coping w Parents' Abuse	-9.35±14.95** (75.0±10.8)	-5.63±13.02* (79.6±15.9)	-9.39±13.67*** (76.8±12.9)	-8.22±13.85*** (77.1±13.2)	-2.36 CI -7.24, 2.52
ISSI	0.35±4.87 (20.7±5.7)	-1.21±4.90 (18.0±7.1)	1.96±5.54 (20.0±7.5)	0.45±5.23 (19.6±6.8)	0.33 CI -2.08, 2.74

Changes within each group were tested with the Wilcoxon signed rank test and changes between groups, with and without alcohol and coping intervention respectively, with linear regression (univariate analysis of variance).

Changes 0–1 measurements: *** $P < 0.001$; ** $P < 0.01$; * $P < 0.05$

The level of satisfaction with the interventions received (table 9) varied significantly between the three groups. Alcohol intervention had a significantly lower level of satisfaction than both combination ($p < 0.001$) and coping ($p < 0.05$).

Table 9 – Satisfaction of the program in the different intervention groups

	Alcohol	Coping	Combination	Total
N	26	24	29	79
Positive towards own program, N (score 4-5)	12	15	21	48

Total (Kruskal-Wallis test) $P < 0.01$
 Contrasts (Mann-Whitney U test)
 alcohol vs. combination $P < 0.001$
 alcohol vs. coping $P < 0.05$

Two-year outcome of an intervention program for university students who have parents with alcohol problems. A randomized controlled trial. (Paper IV)

In table 10, scores from the initial assessment and the follow-up assessments at 12 and 24 months are presented along with statistical analysis of changes between 12 and 24 months. In figures 4–6, the results are presented graphically.

Results from the 24-month follow-up show that the participants receiving both alcohol and coping intervention (the combination program), improved more in terms of drinking patterns during the second year than those receiving only alcohol intervention or only coping intervention. The improvements between 12 and 24 months was significantly stronger than in the coping group on AUDIT, eBAC and SIP (all $p < 0.05$, $d = 0.60$, 0.49 and 0.42 , respectively) and significantly stronger than in the alcohol group on AUDIT and SIP (all $p < 0.05$, $d = 0.52$ and 0.72 , respectively) (table 10, figure 4–6.)

The combination group improved significantly on AUDIT ($p < 0.05$) and SIP ($p < 0.05$) from 12 to 24 months, while the alcohol group and the coping group remained stable. There were no significant changes on eBAC.

There were no differences in the scores on Coping with Parents' Abuse Questionnaire, SCL-90 or ISSI between the three groups (table 10). The improvements on these scales achieved at the 12-month follow-up remained the same at the 24-month follow-up for all three groups, i.e. regardless of intervention program.

Table 10 – Two-year outcome values in alcohol intervention program, coping intervention program and combination program.

	Statistics			Statistics		
	<i>Changes between 12-24 measurements Paired Sample T-test</i>			<i>Between 12- and 24 months follow-up, B, 95% CI Univariate Analysis of Variance</i>		
	Alcohol mean (sd)	Coping mean (sd)	Combination mean (sd)	Alcohol – Coping	Alcohol – Combination	Coping – Combination
AUDIT						
Initial	8.2 (4.1)	7.7 (5.1)	6.4 (4.9)	-.91	1.57 *	2.48 *
Follow-up 12-month	6.3 (4.2)	7.2 (4.8)	5.7 (4.3)	[-2.71, 0.89]	[.18, 2.96]	[.60, 4.36]
Follow-up 24-month	6.3 (3.9)	7.9 (5.2)	4.3 (4.1) *			
eBAC						
Initial	0.89 (0.66)	0.69 (0.54)	0.61 (0.51)	-0.08	0.20	0.28 *
Follow-up 12-month	0.61 (0.46)	0.61 (0.48)	0.48 (0.45)	[-0.38, 0.23]	[-0.05, 0.44]	[0.001, 0.57]
Follow-up 24-month	0.62 (0.59)	0.72 (0.67)	0.37 (0.42)			
SIP						
Initial	3.3 (3.4)	2.7 (2.6)	2.4 (3.1)	0.30	1.42 **	1.53 *
Follow-up 12-month	1.9 (2.5)	2.8 (3.4)	1.9 (2.8)	[-1.56, 1.62]	[0.42, 2.41]	[0.15, 2.91]
Follow-up 24-month	2.3 (3.1)	3.1 (4.1)	0.9 (1.9) *			
Coping w Parental Abuse Questionnaire						
Initial	83.8 (12.9)	84.4 (18.8)	85.8 (17.2)	-0.43	0.28	3.69
Follow-up 12-month	75.0 (10.8)	79.6 (15.9)	76.3 (13.0)	[-5.83, 4.97]	[-4.02, 4.57]	[-2.15, 9.53]
Follow-up 24-month	73.7 (9.3)	77.1 (15.8)	74.1 (10.9)			
SCL-90						
Initial	0.81 (0.49)	1.03 (0.65)	0.83 (0.57)	0.03	-0.01	0.11
Follow-up 12-month	0.70 (0.41)	0.97 (0.63)	0.64 (0.58)	[-0.18, 0.23]	[-0.19, 0.17]	[-0.15, 0.37]
Follow-up 24-month	0.66 (0.51)	0.86 (0.63)	0.62 (0.49)			
ISSI						
Initial	19.0 (4.8)	17.8 (6.3)	17.1 (6.2)	-0.19	0.23	0.95
Follow-up 12-month	19.4 (5.5)	16.9 (6.6)	19.8 (6.2)	[-3.15, 2.77]	[-2.30, 2.76]	[-2.10, 4.00]
Follow-up 24-month	19.4 (4.3)	18.2 (7.6)	19.2 (6.5)			

** $P < 0.01$, * $P < 0.05$

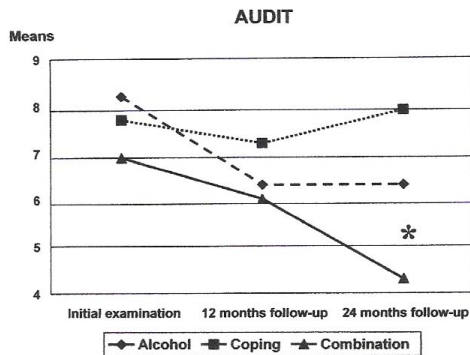


Figure 4 - The AUDIT mean scores by group at baseline and the 12- and 24-month follow-ups. The combination group improved significantly on AUDIT ($p < 0.05$) from 12 to 24 months, while the alcohol group and the coping group remained stable. The improvement from 12 to 24 months on AUDIT was significantly stronger in the combination group than in the alcohol group (all $p < 0.05$) and coping group (all $p < 0.05$).

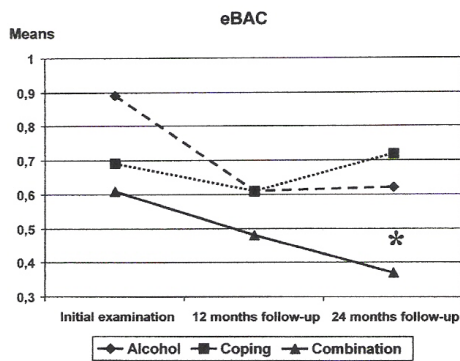


Figure 5 - The estimated blood alcohol concentration (eBAC) mean scores by group at baseline and the 12- and 24-month follow-ups. None of the three groups improved significantly on eBAC from 12 to 24 months, but the improvement was significantly stronger in the combination group than in the alcohol group ($p < 0.05$) and the coping group ($p < 0.05$).

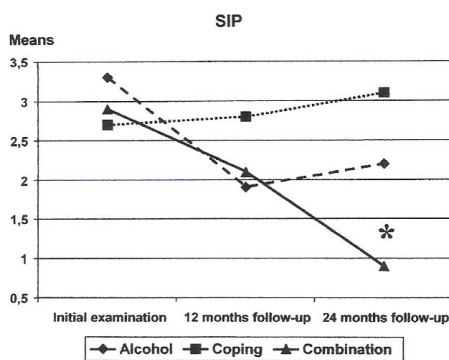


Figure 6 - The short index of problems (SIP) mean scores by group at baseline and the 12- and 24-month follow-ups. The combination group improved significantly on SIP ($p < 0.05$) from 12 to 24 months, while the alcohol group and the coping group remained stable. The improvement from 12 to 24 months on SIP was significantly stronger in the combination group than in the alcohol group ($p < 0.05$) and the coping group ($p < 0.05$).

GENERAL DISCUSSION

Establishing contact with spouses of alcoholics and adult children of alcoholics

Problems in establishing contact with relatives of alcoholics in treatment have been reported in studies for a long time (Pattison et al., 1965; Meyers et al., 1996; Zetterlind et al., 1996). However, the severity of difficulties has not been analyzed systematically, neither regarding inpatient nor outpatient care.

In studies of relatives of alcoholics in treatment, one of the main obstacles has been to get approval from the alcoholic himself to contact the relative (Pattison et al., 1965; Zetterlind et al., 1996). Different approaches to increasing the degree of patient cooperation in establishing contact with relatives have been evaluated. Methods employing a more individual approach have not proved to be more effective than standardized information methods. Neither have long-term contact with the patients provided any significant effect on the patients' willingness to cooperate (Zetterlind et al., 1996).

Recruitment to our first study (papers I and II) involved both contact through healthcare professionals (who contacted relatives of alcoholics in treatment) and advertising that directly targeted relatives (regardless of the alcoholic receiving treatment or not), while recruitment to the second study (papers III and IV) was done through advertising exclusively. While it is certainly difficult to estimate exactly how effective advertising is, there are without doubt many potential participants who for various reasons decide not to apply for participation.

In study documentation, circumstances present in families of alcoholics are described that could explain why spouses and other relatives do not participate in treatment. Concerned significant others have to deal with drug-related stressors, including verbal aggression, financial problems, marital conflict, social embarrassment and in some cases violence (O'Farrel, 1993; Velleman et al., 1993). Spouses of alcoholics may pretend that there is no problem, while the need for enhancing their social support network may go unnoticed by family and friends. This form of distress is known as a tolerant-inactive coping style (Orford et al., 2001). Many relatives of alcoholics carry a burden of secrecy as a result of their attempts to hide the alcohol misuse from others (Jacob & Seilhamer, 1987; Black, 2002). It seems to be less difficult to reach relatives of patients with other physical and mental disorders and provide information on available support and treatment. Several studies of relatives of patients other than alcoholics report a greater prevalence of participation (Haas, 1988; Spencer et al., 1988; McFarlane, 1995). This difference might partly be explained by a greater stigmatization in families of alcoholics (Zetterlind, 1999).

Many studies have shown that involving relatives of alcoholics in treatment can be helpful, not only for the effective treatment of the alcoholic, but also for the wellbeing of the relatives themselves. It is therefore of great importance to find

effective channels for reaching relatives, especially to offer treatment programs that appeal to relatives.

Representativity

The sample in the first study (paper I and II) contained spouses of patients receiving treatment at the Addiction Centre Malmö, Malmö University Hospital and spouses recruited through advertising in the daily press (targeting spouses with experience from living close to alcoholics). Hence, spouses of alcoholics in treatment as well as spouses of alcoholics not in treatment were included. This implies the question of whether there is any difference between spouses of partners who accepted treatment and of partners who did not. The outcomes of these two sub-groups in our study were similar, which suggests that there is no significant difference from a treatment perspective. This is in accordance with the results by Moos et al. (1990), who reported that spouses of alcoholics who became abstinent did not differ at follow-up from the control group with regard to behavior or wellbeing. Miller and co-workers (1999) revealed that family members in Al-Anon benefit from program attendance regardless of improvement in the drinker.

In order to confirm this suggestion we have compared the spouses with the corresponding group reported by Orford et al. (1975). The mean number of affirmative answers in our group was 7.7 on the 10-item Hardship scale, compared with 4.2 in the English sample. This indicates that our spouses had at least the same severity of Hardship as the English spouses. The mean number of affirmative answers in the Coping Behaviour Scale was 26.8 and 23.5 respectively, in the 56-item instrument, thus indicating few differences. The number of spouses with mental health symptoms, defined as SCL-90 scores above the Swedish mean, was 22. However, spouses with major psychiatric disorder were excluded. The sample's characteristic are similar to those described by others, for example, Moos et al. (1990). We regard the sample as representative of non-abusing spouses of alcoholics in general.

The sample in the second study (papers III and IV) was comprised of ACOA university students. They applied for participation in the study after receiving an information booklet with an invitation (mailed to all students at Lund University) or reading advertising about the study (printed in daily newspapers and various student magazines). It should be taken into consideration that ACOA university students is a selected group of ACOA and may as such not be completely representative for ACOA in general. ACOA university students do, however, constitute a group with high alcohol consumption that is highly exposed to hazardous drinking and the risk of developing alcohol problems. Although a family history of alcohol problems might interfere with an individual's ability to pursue a higher education (Sher et al., 1991), a considerable share of university students can be defined as ACOA. Approximately 20% of US college students have a positive family history of alcohol problems (Perkins, 2002). In a study conducted at two Swedish universities (Luleå Technical University and Växjö University) 9% of the male and 14% of the female first-year students reported that they had parents or siblings with alcohol problems (Andersson et al., 2007).

In both study 1 and 2, all participants either responded to advertising or to programs offered through their alcoholic partners in treatment. Thus they are help-seekers. Help-seekers may in many ways differ from non-help-seekers. Four studies assessing clinical or other help-seeking ACOA have found increased self-reporting of depressive symptoms (Lipman 1990; Tweed & Ryff, 1991; Jones & Zalewski, 1994; Hawkins, 1997). It is therefore difficult to conclude that the findings in these studies should be representative of relatives of alcoholics in general, but rather of help-seeking relatives of alcoholics.

These limitations of the material do not mean, however, that the findings can be neglected. The studies bring knowledge to the possibility of offering preventive interventions to specific groups of spouses and ACOA, and what such interventions should focus on.

Randomized controlled trial versus other approaches

Evidence-based treatment and scientific support have gained more attention in discussions about treatment of mental disorders during the last decade. The objective is to make sure that patients with mental problems are provided with effective treatment. Evidence-based treatment is based on the systematic analyses of documentation. Randomized controlled studies, in which the most effective treatment model can be identified by comparing a test group with a control group, play a central role (SBU, 2001).

The scientific methodology behind evidence-based treatment does however involve some difficulties in interpretation. In randomized studies, participant-approval is required and there is always a risk that those who decline participation differ on relevant aspects from those who agree to participate. Furthermore, different types of co-morbidity have to be excluded in order to increase homogeneity of the sample. This can mean that the results are applicable only to the group that is actually analyzed.

Another inherent difficulty is that many professionals involved in evaluation of new methods are very committed, which may have positive effects on the treatment results.

There is only a limited number of documented randomized studies on support to spouses and children of alcoholics. The randomized studies conducted in this field have mainly focused on teaching the spouse skills to motivate the partner to change his or her drinking (McCrary et al., 1991; Miller et al., 1999; Meyers et al., 2002), e.g. through marital therapy in treatment populations (Kaufman & Kaufman, 1992; Fals-Stewart et al., 1996).

The few randomized controlled studies, that have specifically analyzed ways to improve the functioning and wellbeing of spouses of alcoholics, have suffered from small sample sizes (Dittrich & Trapold, 1984; Halford et al., 2001). However, there are non-randomized studies of high quality on the subject. Moos and co-workers (1990) analyzed spouses and their alcoholic partners with regard to health, emotions, alcohol consumption, social function, social resources and coping behavior by selecting matched groups of spouses, and showed that the wellbeing of the alcoholic is affected by the spouse and vice versa.

A few randomized studies have focused on ACOA (Kuhns, 1997; Kingree & Thompson, 2000). Kingree and Thompson (2000) showed that specific mutual help-group meetings for ACOA with own substance abuse problems were more effective than substance abuse education classes. Kuhn (1997) showed that both psychotherapy and self-help groups lead to decreased depression compared with a no-treatment control group. The follow-up period in both these studies was six months.

Effects of intervention

Study I

The main finding in our first study was that all participants showed improvements on coping strategies, hardship and mental symptoms at the 12-month follow-up, regardless of what kind of support they received. Furthermore, the reduction in mental symptoms was greater in the longer programs (coping skills training and group support) than in the group with only one intervention session. However, there are previous studies suggesting that brief intervention can influence coping mechanisms (Sisson & Azrin, 1986).

In a group support study (non-randomized), with an approach showing similarities to study I in this thesis and focusing on the wellbeing of spouses of alcoholics, wives of alcoholics reduced their compliant behaviour and showed decreased symptoms of depression and anxiety and increased self-esteem in response to the program (Dittrich, 1993). The UK Alcohol, Drug and Family Research Group program (Velleman & Templeton, 2003) demonstrated that intervention can lead to changes in coping, improvements in social support and reduction in physical and psychological symptoms. Family members greatly appreciate the opportunity to talk about and reflect on their situation and consider how positive change can be achieved. In a study by Miller and colleagues (1999), all participants in three different intervention programs for family members reported reductions in depression, anger, family conflict as well as improvements in family cohesion and relationship happiness.

Although our study aimed at providing support for spouses, the participants from the three intervention programs reported improvements in the alcoholic partner too. There was a tendency for the alcoholic to improve his drinking in all groups, which suggests that openness about alcohol problems promotes improvements in the alcoholic family pattern. The UK Alcohol, Drug and Family Research Group (Velleman & Templeton, 2003) program also showed evidence that intervention in spouses can lead to a change in the problem alcohol consumption of the relative, which might lead to improved family relationships. In their study on unilateral family therapy, Sisson and Azrin (1986) found that even before the relative entered the program, the drinkers had already reduced their drinking.

Miller et al. (1999) found differences in effects on the alcoholic relatives between the programs they evaluated. Al-Anon was less effective in engaging unmotivated drinkers in treatment than the Community Reinforcement and Family program (CRAFT). This is in line with the findings of Sisson and Azrin (1986) as well as Barber and Gilbertson (1996), who found that referral of concerned significant others to Al-Anon

did not result in neither treatment engagement nor improved behavior among the drinkers. Hence, the expected outcome of Al-Anon engagement appears not to be a change in the drinker but possibly improvement in functioning of the family member who attends Al-Anon.

Long term effects: one-year result versus two-year result

The 24-month follow-up of our first study showed that the stability of improvements achieved after one year was generally good in all three groups, and that the major changes occurred already during the first year. An additional analysis showed that the spouses in the two longer programs had improved significantly more on mental symptoms after two years than spouses in the information group, and that the improvements on mental symptoms achieved after one year in the longer programs became more pronounced after two years. This suggests that longer treatment may be needed to achieve long-term improvement in mental wellbeing, while coping behavior can be improved with one single session.

Most studies on spouses of alcoholics have focused on, and proved, early positive results (Orford et al., 1975; Moos et al., 1990; Orford, 1990), while few studies have dealt with long-term effects. One of the few studies analyzing long-term effects reported that general marital therapy gave positive late improvements contrary to pure alcohol-directed marital therapy (McCrary et al., 1991). Koss and Shiang (1994) reported that short-time intervention is effective for specific populations, especially patients with less severe problems, such as job-related stress, anxiety disorders, mild depression and grief reactions and patients who have experienced unusual stress situations. On the other hand, short-time intervention has been found less effective, compared with more long-standing therapy, in patients with more severe problems.

Study 2

In the 12-month follow-up of our second study, we found that participants in the programs including intervention on their own drinking behavior had improved their attitude to alcohol significantly more than those who received coping intervention only. However, the groups did not differ much in terms of how they managed the alcohol problems of family members, regardless of whether they had received intervention for this or not.

Several intervention methods in high-risk alcohol consumption have been documented. Brief intervention is a direct-intervention method aimed at individuals with risky alcohol consumption. Brief intervention programs for high-risk drinking were first developed and tested on middle-aged men, and the first controlled trial in Malmö was reported by Kristenson and co-workers (1983). Brief intervention for risky alcohol consumption has been successful according to several systematic reviews and meta-analyses (Kaner et al., 2007; Salaspuro, 2003).

There are no previous studies specifically targeting ACOA university students, but there are several studies on alcohol-related behavior among university students in general. Published studies indicate that brief motivational intervention leads to reduced drinking and alcohol-related problems (Baer et al., 1992, 2001; Borsari & Carey, 2000; Larimer et al., 2001; Murphy et al., 2001). In a systematic literature overview of strategies for reducing high-risk drinking among university students,

Larimer and Cronic (2002) reported positive effects of cognitive-behavioral techniques and motivational enhancement techniques, while they reported consistently weaker support for information intervention.

Weber and McCormick (1992) found that persons raised in homes with an alcoholic family member benefit from attendance in mutual-help groups. In addition, Alateen attendance has been found to decrease blame that children place on themselves for their family member's alcoholic condition.

Long term effects: one-year result versus two-year result

In the 24-month follow-up of our second study, we found that the combination program participants showed further improvement between the 12- and 24-month follow-up regarding their own drinking behavior. The improvements noted at the first follow-up, indicating that drinking behavior can be affected by intervention on alcohol, are in line with findings from previous studies. In addition, the findings of further improvement after 12 months in the combination group is important, both from a theoretic and practical point of view.

Some studies based on general populations report long-term effects of their programs, but the follow-up periods are considerably longer. Few studies of student populations have measured the long-term effects of their programs. Yet the program on which the alcohol intervention in this study is based – Brief Alcohol Screening and Intervention for College Students (BASICS, Dimeff et al., 1999) – has proved to be effective in long-term as well as short-term follow-ups in previous studies (Baer et al., 2001). Most studies in this field, however, have short follow-up periods ranging from six weeks to 12 months, and studies involving drinking feedback normally assess the outcome after six weeks.

The positive interaction between alcohol intervention and coping intervention in the second year has not been previously reported, although studies have concluded that strong family bonding (i.e. communication, joint activities and support within the family) can lead to reduced alcohol consumption (O'Farrell & Murphy, 1995; Zhang et al., 1999; Kuendig & Kuntsche, 2006), particularly for those who have grown up with problem-drinking parents.

Perhaps the pairing of coping and alcohol interventions is required in order for the coping training to have any significant long-term effects on alcohol consumption. Perhaps coping in the context of alcohol makes alcohol more explicit relative to coping alone. In addition, coping drinking might be less likely to emerge among those who had learned coping skills in the context of an alcohol intervention.

Differences in improvements in spouses of alcoholics and children of alcoholics

Many of the ACOA in the second study (papers III and IV) reported high alcohol consumption and hazardous drinking behavior (average initial AUDIT score 7.6), while own drinking/drug problems was used as exclusion criterion in the first study. None of

the spouses in the first study (papers I and II) reported high initial AUDIT scores (average 3.3) and no subject was excluded due to this criterion.

In the second study we found improved drinking behavior (reduced AUDIT scores) in the groups receiving alcohol intervention. Since none of the participants in the first study had own drinking problems and alcohol intervention was not included in any of the programs, our results do not allow any comparison between spouses and ACOA on effects of alcohol intervention.

In terms of mental symptoms, our findings indicate differences between spouses and ACOA. Participants in both studies had similar initial scores on SCL-90 (spouses 0.86 and ACOA 0.89). In the first study, significant improvements on the SCL-90 scores were reported (Zetterlind et al., 2001; Hansson et al., 2004), while there is no similar result in the second study. Different types of mechanisms are probably present: childhood experiences with more developmental crises in ACOA and a stronger presence of acute stress situation in spouses. The different results on SCL-90 suggest that mental symptoms among spouses may be more likely to be improved by intervention, as they are possibly conditioned by the current situation to a larger extent than mental symptoms among ACOA are.

Effects related to other factors

Studies in the area of psychotherapy have shown that the main effects from psychotherapy are results from factors, which cannot easily be linked to specific techniques of the treatment (Lambert & Ogles, 2004). These are effects of concurrent factors being present in all types of therapy (common factors), e.g. expectations on the need for support to be met, to be treated with empathy and to receive explanations of the symptoms and fears. The relation between therapist and patient also sometimes count as a common factor. The personality and skills of the therapist have significant impact on the success of the treatment and can to some extent explain the outcome (Lambert & Ogles, 2004; Duncan & Miller, 2006). Furthermore, the quality of the alliance between the patient and the therapist is essential to the results (Safran & Muran, 2000). A skilled therapist seems in general to be one who can manage to follow a method to a reasonable extent while at the same time adapt the method to the individual patient (Duncan & Miller, 2006).

Some of the findings in our studies could be defined as specific effects, e.g. the reduction of alcohol consumption after alcohol intervention (paper III) and the late effect on alcohol consumption after the combination of alcohol and coping interventions (paper IV), while other findings, such as the reduction of mental symptoms in both intervention groups in our first study (papers I and II), are un-specific effects.

Treatment during a limited period of time has, according to documented studies, the advantage of being more focused on the actual problem and the solution of it. Koss (1994) among others mean that short-time therapy in general is effective in less serious disorders, which is the case in our studies.

Possible negative effects of intervention in relatives

Possible negative effects of establishing contact with relatives and involving them in interventions have not been thoroughly discussed within the addiction treatment area. One exception is relatives living in relationships characterized by domestic violence, where the support could increase the risk for violence in the relationship. The relationship between domestic violence and alcoholism has been clearly established in studies (O'Farrell et al., 1999; Cunradi et al., 2002; Fals-Stewart, 2003).

This risk factor was considered in our study with spouses of alcoholics (papers I and II), by using severe domestic violence in the relationship as an exclusion criterion. However, no spouses were excluded from the study due to domestic violence and no indication of domestic violence was found during the interventions.

Another example of negative effects of interventions with relatives is found in a study by Thelin and co-workers (1996) on information about risks of smoking to parents of newborns suffering from alpha-1-antitrypsin deficiency. In the follow-up of that study it was found that fathers in the intervention group were smoking more five to seven years after the intervention than fathers from the control group were.

Relatives in alcohol use disorders versus other disorders

Spouses of alcoholics are affected on many different levels. Several studies have shown that spouses of alcoholics often present significant rates of mental and physical problems, communication problems, low social activity and poor marital satisfaction (Moos, 1990; Halford, 2001). Research in this area has shown that the stress factors and coping processes that are present in relationships with alcoholics are similar to those in marriages with persons suffering from chronic physical disease, depression or long-term unemployment and to those in marriages with a physically violent partner (Moos, 1990; Velleman, 1992).

Another problem that has been discussed in connection with relatives of patients with mental illness is stigma (a mark of disgrace or discredit that sets a person aside from others (Byrne, 2001)). It is possible that stigma is more frequent or pronounced in families of alcoholics than in families of patients suffering from mental illness. Studies have shown that stigma is one of the most difficult aspects of addiction because it makes it harder for individuals and families to deal with their problems and get the help they need. Families of alcoholics tend to develop stigma by themselves to a larger extent than what is the case in families with other illnesses.

The number of studies on ACOA and their adult lives is limited (Velleman, 1992). Review articles have suggested that ACOA are more likely to develop a variety of negative outcomes, including substance abuse, antisocial or under-controlled behaviors, depressive symptoms, anxiety disorders, low self-esteem, difficulties in family relationships and generalized distress and maladjustment (Harter, 2000). Studies of depression in university students have generally found increased depression among ACOA. For instance, a large, well-designed study by Sher and co-workers (1991) found increased diagnoses of depression among first-year

university ACOA. But some studies have failed to repeat these findings (Harman et al., 1995; Schuckit & Smith, 1996).

None of these negative outcomes are however uniformly observed in ACOA and none are specific to ACOA. Co-morbid parental pathology, childhood abuse, family dysfunction and other childhood stressors may contribute to or produce similar outcomes (Harter, 2000). The emotional complex of problems is similar to what has been found when a parent is suffering from depression or other mental symptoms (Velleman, 1992; Harter, 2000). Neff (1994) compared ACOA with and without a mentally ill parent with comparable non-ACOA groups in a heterogeneous random community sample. ACOA whose parents had no history of mental illness did not differ from non-ACOA with no parental pathology. Whether it is the misuse itself or the burden of the wide variety of adverse childhood experiences that causes the increased risk has not been thoroughly evaluated (Anda et al., 2002).

Suggestions for future implementation and research

Interventions in several areas have been successfully performed in randomized controlled trials. However, it has proved difficult to implement the interventions into the system (in practical work). These problems have been well described concerning secondary intervention for risky alcohol drinking in general practitioner settings (Fleming et al., 2002; Kaner et al., 2007). Taking these difficulties into consideration, there seems to be a need to find other channels for interventions, and university settings might be a feasible option. Approximately 50% of all young adults in Sweden attend higher education, which makes it an environment well suited for interventions aiming at reducing alcohol consumption among young adults.

Studies in this area have shown that most students accept different types of evaluations of their drinking patterns and also accept attending intervention studies for high-risk samples (Larimer & Cronce, 2002; Johnsson & Berglund, 2006; Andersson et al., 2007; Ståhlbrandt et al., 2007).

Larimer and Cronce (2002) concluded that "campus personnel searching for effective individually oriented practices to implement on their campus right now, would be best served by implementing brief, motivational or skills-based interventions, targeting high-risk students identified either through brief screening in healthcare or other campus settings (indicated prevention) or through membership in an identified risk group".

Another possibility is to use modern technology for the development of effective techniques, such as web-based approaches. Interventions on the Internet have some obvious advantages over practitioner-delivered interventions. It involves little or no clinician contact, it can be conducted anonymously and it can be accessed without limitations of distance (Kypri et al., 2004). This approach has successfully been used in several studies (Cunningham et al., 2000; Skinner et al., 2001; Kypri et al., 2004).

Perhaps the total time for interventions could be further reduced. Several intervention programs have used rather short times for the intervention, but a science of timing and dosing for prevention activity does not yet exist (Zucker & Wong, 2006).

GENERAL CONCLUSIONS

In this thesis, different types of intervention programs for two groups of relatives of alcoholics were evaluated, spouses living with an alcoholic partner (papers I and II) and university students who have grown up with parents with alcohol problems (papers III and IV). The outcomes of the programs were evaluated after 12 and 24 months.

In the first two papers, the evaluation of three different interventions in spouses of alcoholics – information, coping skills training and group support intervention – showed that all three groups had improved their coping styles and that their mental symptoms were reduced after 12 months. There were tendencies of greater improvements in mental symptoms in the coping skills training groups and the group support groups compared with the standard information group.

The 24-month follow-up showed that reductions on mental symptoms were significantly more pronounced in group support and coping skills training than in information. These results indicate that the longer treatments (coping skills training and group support) are more effective in achieving long-term effects on mental symptoms. Major improvements in coping behavior, hardship and mental symptoms occurred in the first year. These improvements remained at the 24-month follow-up according to all scale scores, which suggests that short-term effects can be sustainable.

In the second study, evaluating the effects of alcohol intervention, coping intervention and a combination of alcohol and coping intervention in adult children of alcoholics studying at university, the 12-month follow-up showed that alcohol intervention lead to improved drinking patterns significantly more than coping intervention only. The groups receiving coping intervention did not differ from the group not receiving coping intervention regarding the ability to cope with their parents' alcohol problems, nor did they differ on changes in mental health and social interaction capacity.

The results at the 24-month follow-up showed that participants who had received both alcohol and coping intervention, i.e. the combination program, had improved their alcohol drinking patterns significantly during the second year. These positive effects of alcohol intervention between 12 and 24 months were found only in the combined intervention group. This suggests that intervention on alcohol alone is not enough to achieve long-term effects on drinking patterns; instead, this requires a combination of alcohol and coping interventions.

REFERENCES

- Ackerman RJ, Gondolf EW (1991) Adult children of alcoholics: The effects of background and treatment on ACOA symptoms. *Int J Addict* 26: 1159-71.
- Altman DG (1990) *Practical Statistics for Medical Research*. Boca Raton, FL, Chapman & Hall/CRC.
- American Psychiatric Association (2000) *Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR™)*. Forth Edition, Text Revision. Washington, DC, APA.
- Anda RF, Whitfield CL, Felitti VJ, Chapman D, Edwards VJ, Dube SR, Williamson DF (2002) Adverse childhood experiences, alcoholic parents, and later risk of alcoholism and depression. *Psychiatr Serv* 53(8): 1001-9.
- Andersson C, Johnsson KO, Berglund M, Öjehagen A (2007) Alcohol involvement in Swedish University freshmen related to gender, age, serious relationship and family history of alcohol problems. *Alcohol Alcohol* 42(5): 448-55.
- Antonovsky A (1991) *Hälsans Mysterium*. [Unravelling the Mystery of Health.] Lund, Natur och Kultur.
- Baer JS, Kivlahan DR, Blume AW, McKnight P, Marlatt GA (2001) Brief intervention for heavy-drinking college students: 4-year follow-up and natural history. *Am J Public Health* 91(8): 1310-6.
- Baer JS, Marlatt GA, Kivlahan DR, Fromme K, Larimer ME, Williams E (1992) An experimental test of three methods of alcohol risk reduction with young adults. *J Consult Clin Psychol* 60(6): 974-9.
- Barber JG, Crisp BR (1995) The 'pressures to change' approach to working with the partners of heavy drinkers. *Addiction* 90(2): 269-76.
- Barber JG, Gilbertson R (1996) An experimental study of brief unilateral intervention for the partners of heavy drinkers. *Res Soc Pract* 6: 325-36.
- Barnow S, Schuckit M, Smith TL, Preuss U, Danko G (2002) The relationship between the family density of alcoholism and externalising symptoms among 146 children. *Alcohol Alcohol* 37(4): 383-7.
- Beesley D, Stoltenberg CD (2002) Control, attachment style, and relationship satisfaction among adult children of alcoholics. *J Ment Health Counseling* 24: 281-98.

Belstad AB and Arbetarskyddsämnden (1995) *Bortom kröken. När har man alkoholproblem? De anhöriga, en bortglömd grupp. Vad kan vi göra?* [Behind the booze. When do you have alcohol problems? Relatives of alcoholics, a forgotten group. What can we do?] Videofilm.

Bennett LA, Wolin SJ, Reiss D (1988) Cognitive, behavioral, and emotional problems among school-age children of alcoholic parents. *Am J Psychiatry* 145(2): 185-90.

Bennett RM, Burckhardt CS, Clark SR, O'Reilly CA, Wiens AN, Campbell SM (1996) Group treatment of fibromyalgia: a 6 month outpatient program. *J Rheumatol* 23(3): 521-8.

Bergman H, Kallmen H, Rydberg U, Sandahl C (1998) Tio frågor om alkohol identifierar beroendeproblem. Psykometrisk prövning på psykiatrisk akutmottagning. [Ten questions about alcohol as identifier of addiction problems. Psychometric tests at an emergency psychiatric department]. *Läkartidningen* 95(43): 4731-5.

Berglund M, Tunving K (1985) Assaultive alcoholics 20 years later. *Acta Psychiatr Scand* 71: 141-7.

Black C (2002) *It Will Never Happen to Me. Growing Up with Addiction As Youngsters, Adolescents, Adults*. 2nd Edition. USA, Hazelden.

Bohman M (1978) Some genetic aspects of alcoholism and criminality. A population of adoptees. *Arch Gen Psychiatry* 35(3): 269-76.

Bohman M, Cloninger R, Sigvardsson S, von Knorring A-L (1987) The genetics of alcoholism and related disorders. *J Psychiatr Res* 21: 447-52.

Borenstein M, Rothstein H (1998) *Comprehensive Meta-analysis. A Computer Program for Systematic Reviews*. Englewood, Biostat™.

Borsari B, Carey KB (2000) Effects of a brief motivational intervention with college student drinkers. *J Consult Clin Psychol* 68(4): 728-33.

Brooks DN (1996) The head-injured family. *J Clin Exp Neuropsychology* 13(1): 155-88.

Brown S (1988) *Treating Adult Children of Alcoholics: A Developmental Perspective*. New York, Wiley.

Bullock S (2004) *Alcohol, drugs and student lifestyle: A study of the attitudes, beliefs and use of alcohol and drugs among Swedish university students* (Research Report no 21). Stockholm, SoRAD, Stockholm University.

Burns JW, Johnson BJ, Mahoney N, Devine J, Pawl R (1996) Anger management style, hostility and spouse responses: gender differences in predictors of adjustment among chronic pain patients. *Pain* 64(3): 445-53.

- Byrne P (2001) Psychiatric stigma. *Brit J Psychiatry* 178: 281-4.
- Cadore R (1986) Adoption studies: historical and methodological critique. *Psychiatr Dev* 4(1): 45-64.
- Cadore R, Winokur G, Langbehn D, Troughton E, Yates WR, Stewart MA (1996) Depression spectrum disease, I: The role of gene-environment interaction. *Am J Psychiatry* 153(7): 892-9.
- Cadore R, Yates WR, Troughton E, Woodworth G, Stewart MA (1995) Genetic-environmental interaction in the genesis of aggressivity and conduct disorders. *Arch Gen Psychiatry* 52(11): 916-24.
- Chase ND (1999). *Burdened children: Theory, research, and treatment of parentification*. Thousand Oaks, CA, Sage.
- Chassin L, Curran PJ, Hussong AM, Colder CR (1996) The relation of parent alcoholism to adolescent substance use: a longitudinal follow-up study. *J Abnorm Psychol* 105(1): 70-80.
- Chassin L, Pitts SC, Probst J (2002) Binge drinking trajectories from adolescence to emerging adulthood in a high-risk sample: Predictors and substance abuse outcomes. *J Consult Clin Psychology* 70(1): 67-78.
- Cloninger CR, Bohman M, Sigvardsson S (1981) Inheritance of alcohol abuse. Cross-fostering analysis of adopted men. *Arch Gen Psychiatry* 38(8): 861-8.
- Colder CR, Chassin L (1993) The stress and negative affect model of adolescent alcohol use and the moderating effects of behavioral undercontrol. *J Stud Alcohol* 54(3): 326-33.
- Connors J, Donovan DM, DiClemente CC (2001) *Substance Abuse, Treatment and the Stages of Change. Selecting and Planning Interventions*. New York, Guilford.
- Copello A, Ordoes J, Velleman R, Templeton L, Krishnan M (2000a) Methods for reducing alcohol and drug related family harm in non-specialist settings. *J Mental Health* 9: 219-333.
- Copello A, Orford J, Hodgson R, Tober G, Barrett C (2002) Social behaviour and network therapy: basic principles and early experiences. *Addict Behav* 27: 345-66.
- Copello A, Templeton L, Krishnan M, Orford J, Velleman R (2000b) A treatment package to improve primary care services for relatives of people with alcohol and drug problems. *Addict Res* 8: 471-84.

- Cunningham JA, Humphreys K, Koski-Jannes A (2000) Providing personalized assessment feedback for problem drinking on the internet: a pilot project. *J Stud Alcohol* 61(6): 794-8.
- Cunradi CB, Caetano R, Schafer J (2002) Alcohol-related problems, drug use, and male intimate partner violence severity among US couples. *Alcohol Clin Exp Res* 26(4): 493-500.
- Davis-Ali SH, Chesler MA, Chesney BK (1993) Recognizing cancer as a family disease: worries and support reported by patients and spouses. *Soc Work Health Care* 19(2): 45-65.
- Derogatis LR (1977) SCL90. Administration, scoring & procedures manual. In *For the R(evised) Version and Other Instruments of the Psychopathology Rating Scale Series*, pp 1-38. Baltimore, John Hopkins University School of Medicine.
- Dimeff LA, Baer JS, Kivlahan DR, Marlatt GA (1999) *Brief Alcohol Screening and Intervention for College Students. A Harm Reduction Approach*. New York, Guilford.
- Dittrich J (1993) Group programs for wives of alcoholics. In TJ O'Farrell (Ed) *Treating Alcohol Problems: Marital and Family Interventions*, pp 78-114. New York, Guilford.
- Dittrich J, Trapold MA (1984) A treatment program for wives of alcoholics: an evaluation. *Bull Soc Psychol Addict Behav* 3: 91-102.
- Ditzler J, Ditzler J (1989) *"If you really loved me..."*. London, Papermac/Macmillan.
- Ditzler J, Ditzler J (1993) *"Om du verkligen älskade mig..." ["If you really loved me..."]*. Stockholm, Proprius förlag.
- Drake RE, Vaillant GE (1988) Predicting alcoholism and personality disorder in a 33-year longitudinal study of children of alcoholics. *Br J Addict* 83(7): 799-807.
- Duncan BL, Miller SD (2006) Treatment manuals do not improve outcomes. In JC Norcross, LE Beutler & RF Levant (Eds) *Evidence-based Practices in Mental Health: Debate and Dialogue on the Fundamental Questions*, pp 140-9. Washington, APA.
- Duncan AE, Scherrer J, Fu Q, Bucholz KK, Heath AC, True WR, Haber JR, Howell, D, Jacob T (2006) Exposure to paternal alcoholism does not predict development of alcohol-use disorders in offspring: evidence from an offspring-of-twins study. *J Stud Alcohol* 67(5): 649-56.
- Eklund M, Bengtsson-Tops A, Lindstedt H (2007) Construct and discriminant validity and dimensionality of the Interview Schedule for Social Interaction (ISSI) in three psychiatric samples. *Nord J Psychiatry* 61(3): 182-8.

Elkins IJ, McGue M, Malone S, Iacono WG (2004) The effect of parental alcohol and drug disorders on adolescent personality. *Am J Psychiatry* 161(4): 670-6.

Emshoff JG, Price AW (1999) Prevention and intervention strategies with children of alcoholics. *Pediatrics* 103(5 Pt 2): 1112-21.

Enoch MA (2006) Genetic and environmental influences on the development of alcoholism: resilience vs. risk. *Ann N Y Acad Sci* 1094: 193-201.

Eurocare (1998) *Alcohol Problems in the Family: A Report of the European Union*. St Ives, Cambridgeshire, Eurocare.

Fals-Stewart W, Birchler GR, O'Farrell TJ (1996) Behavioral couples therapy for male substance-abusing patients: effects on relationship adjustment and drug-using behavior. *J Consult Clin Psychol* 64(5): 959-72.

Fals-Stewart W, Golden J, Schumacher JA (2003) Intimate partner violence and substance use: a longitudinal day-to-day examination. *Addict Behav* 28(9): 1555-74.

Feinn R, Tennen H, Kranzler HR (2003) Psychometric properties of the short index of problems as a measure of recent alcohol-related problems. *Alcohol Clin Exp Res* 27(9): 1436-41.

Fisher GL, Harrison TC (2000) *Substance abuse: Information for school counselors, social workers, therapists, and counselor*. 2nd edition. Boston, Allyn & Bacon.

Fleming MF, Mundt MP, French MT, Manwell LB, Stauffacher EA, Barry KL (2002) Brief physician advice for problem drinkers: long-term efficacy and benefit-cost analysis. *Alcohol Clin Exp Res* 26(1): 36-43.

Fridell M, Cesarec Z, Johansson M, Malling Thorsen S (2002) *SCL90. Svensk normering, standardisering och validering av symptomskalan [Swedish standardization and validation of the Symptom Check List]*. Stockholm, Statens Institutionsstyrelse.

Fox R (1956) The alcoholic spouse. In VW Eisenstein (Ed) *Neurotic Interaction in Marriage* pp148-168. New York, Basic Books.

Gallant WA, Gorey KM, Gallant MD, Perry JL, Ryan PK (1998) The association of personality characteristics with parenting problems among alcoholic couples. *Am J Drug Alcohol Abuse* 24(1): 119-29.

Giglio JJ, Kaufman E (1990) The relationship between child and adult psychopathology in children of alcoholics. *Int J Addict* 25(3): 263-90.

Gillen R, Tennen H, Affleck G, Steinpreis R (1998) Distress, depressive symptoms, and depressive disorder among caregivers of patients with brain injury. *J Head Trauma Rehabil* 13(3): 31-43.

- Goldman D, Oroszi G, Ducci F (2005) The genetics of addictions: uncovering the genes. *Nat Rev Genet* 6(7): 521-32.
- Goodwin DW (1984) Studies of familial alcoholism: a review. *J Clin Psychiatry* 45(12 Pt 2): 14-7.
- Goodwin DW, Schulsinger F, Knop J, Mednick S, Guze SB (1977) Alcoholism and depression in adopted-out daughters of alcoholics. *Arch Gen Psychiatry* 34(7): 751-5.
- Gulick EE (1994) Social support among persons with multiple sclerosis. *Res Nurs Health* 17(3): 195-206.
- Gulick EE (1995) Coping among spouses or significant others of persons with multiple sclerosis. *Nurs Res* 44(4): 220-5.
- Haas GL, Glick ID, Clarkin JF, Spencer JH, Lewis AB, Peyser J, DeMane N, Good-Ellis M, Harris E, Lestelle V (1988) Inpatient family intervention: a randomized clinical trial. II. Results at hospital discharge. *Arch Gen Psychiatry* 45(3): 217-24.
- Halford W, Price J, Kelly A, Bouma R, Young R (2001) Helping the female partners of men abusing alcohol: a comparison of three treatments. *Addiction* 96: 1497-508.
- Hall CW, Webster RE (2002) Traumatic symptomatology characteristics of adult children of alcoholics. *J Drug Educ* 32(3): 195-211.
- Hansson H, Zetterlind U, Åberg-Örbeck K, Berglund M (2004) Two-year outcome of coping skills training, group support and information for spouses of alcoholics: a randomized controlled trial. *Alcohol Alcohol* 39(2): 135-40.
- Harman MJ, Armsworth MW, Hwang C, Vincent KR & Preston MA (1995). Personality adjustment in college students with a parent perceived as alcoholic or nonalcoholic. *Journal of Counseling and Development*, 73, 459-62.
- Harter SL (2000) Psychosocial adjustment of adult children of alcoholics: a review of the recent empirical literature. *Clin Psychol Rev* 20(3): 311-37.
- Hawkins CA (1997) Disruption of family rituals as a mediator of the relationship between parental drinking and adult adjustment in offspring. *Addict Behav* 22(2): 219-31.
- Henderson S, Duncan-Jones P, Byrne DG, Scott R (1980) Measuring social relationships. The Interview Schedule for Social Interaction. *Psychol Med* 10(4): 723-34.
- Hiller-Sturmhofel S, Swartzwelder HS (2004/2005) Alcohol's effects on the adolescent brain. *Alcohol Res Health* 28: 213-221.

Holahan CJ, Moos RH, Holahan CK, Brennan PL, Schutte KK (2005) Stress generation, avoidance coping, and depressive symptoms: a 10-year model. *J Consult Clin Psychol* 73(4): 658-66.

Holahan CJ, Moos RH, Schaefer JA (1996) Coping, stress resistance, and growth: Conceptualizing adaptive functioning. In M Zeidner & NS Endler (eds). *Handbook of Coping: Theory, Research, Applications*, pp 24-43. New York, Wiley.

Holmila M (1988) *Wives, Husbands and Alcohol. A Study of Informal Drinking Control within the Family*, vol 36. Helsinki, The Finnish Foundation for Alcohol Studies.

Hughes JM (1977) Adolescent children of alcoholic parents and the relationship of Alateen to these children. *J Consult Clin Psychol* 45(5): 946-7.

Hurcom C, Copello A, Orford J (2000) The family and alcohol: effects of excessive drinking and conceptualizations of spouses over recent decades. *Subst Use Misuse* 35(4): 473-502.

Hussong AM, Chassin L (1997) Substance use initiation among adolescent children of alcoholics: testing protective factors. *J Stud Alcohol* 58(3): 272-9.

Jacob T, Leonard K (1994) Family and peer influences in the development of adolescent alcohol abuse. In R Zucker, G Boyd & J Howard (eds). *The Development of Alcohol Problems: Exploring the Biosychosocial Matrix of Risk*, pp 123-55. (NIAAA Research Monograph No 26, NIH Publication No 94-3495). Rockville, MD, U.S. Department of Health and Human Services.

Jacob T, Seilhamer R (1987) Alcoholism and family interaction. In T Jacob (Ed) *Family Interaction and Psychopathology: Theories, Methods and Findings*, pp 535-80. New York, Plenum.

Jinder Å (1991) *Bli min mamma igen [Become my mother again]*. Stockholm, Bonniers.

Johnson JG, Cohen P, Dohrenwend BP, Link BG, Brook JS (1999) A longitudinal investigation of social causation and social selection processes involved in the association between socioeconomic status and psychiatric disorders. *J Abnorm Psychol* 108(3): 490-9.

Johnson JL, Leff M (1999) Children of substance abusers: overview of research findings. *Pediatrics* 103(5 Pt 2): 1085-99.

Johnsson KO, Berglund M (2006) Comparison between a cognitive behavioural alcohol programme and post-mailed minimal intervention in high-risk drinking university freshmen: results from a randomized controlled trial. *Alcohol Alcohol* 41(2): 174-80.

- Jones DJ, Zalewski C (1994) Shame and depression proneness among female adult children of alcoholics. *Int J Addict* 29(12): 1601-9.
- Kaij L (1960) *Alcoholism in twins*. Stockholm, Almqvist & Wiksell.
- Kaner E, Beyer F, Dickinson H, Pienaar E, Campbell F, Schlesinger C, Heather N, Saunders J, Burnand B (2007) Effectiveness of brief alcohol interventions in primary care populations. *Cochrane Database Syst Rev* (2): CD004148.
- Kaufman E, Kaufman P (1992) *Family Therapy of Drug and Alcohol Abuse*, pp 34-45. Boston, Ally & Bacon.
- Kelley ML, French A, Bountress K, Keefe HA, Schroeder V, Steer K, Fals-Stewart W, Gumienny L (2007) Parentification and family responsibility in the family of origin of adult children of alcoholics. *Addict Behav* 32(4): 675-85.
- Kendler KS, Heath AC, Neale MC, Kessler RC, Eaves LJ (1992) A population-based twin study of alcoholism in women. *JAMA* 268(14): 1877-82.
- Kendler KS, Walters EE, Neale MC, Kessler RC, Heath AC, Eaves LJ (1995) The structure of the genetic and environmental risk factors for six major psychiatric disorders in women. Phobia, generalized anxiety disorder, panic disorder, bulimia, major depression, and alcoholism. *Arch Gen Psychiatry* 52(5): 374-83.
- Kingree JB, Thompson M (2000) Mutual help groups, perceived status benefits, and well-being: a testy with adult children of alcoholics with personal substance problems. *Am J Community Psychol* 28(3): 325-42.
- Kivlahan DR, Marlatt GA, Fromme K, Coppel DB, Williams E (1990) Secondary prevention with college drinkers: evaluation of an alcohol skills training program. *J Consult Clin Psychol* 58(6): 805-10.
- Knop J, Goodwin DW, Jensen P, Penick E, Pollock V, Gabrielli W, Teasdale TW, Mednick SA (1993) A 30-year follow-up study of the sons of alcoholic men. *Acta Psychiatr Scand, Suppl*, 370: 48-53.
- Knop J, Penick EC, Nickel EJ, Mednick SA, Jensen P, Manzardo AM, Gabrielli WF (2007) Paternal alcoholism predicts the occurrence but not the remission of alcoholic drinking: a 40-year follow-up. *Acta Psychiatr Scand* 116: 386-93.
- Knorrung von A-L (1991) Children and alcoholics. *J Child Psych Psychiatry Allied Disciplines* 32: 411-421.
- Kokotailo PK, Egan J, Gangnon R, Brown D, Mundt M, Fleming M (2004) Validity of the alcohol use disorders identification test in college students. *Alcohol Clin Exp Res* 28(6): 914-20.

Kristenson H, Ohlin H, Hulten-Nosslin MB, Trelle E, Hood B (1983) Identification and intervention of heavy drinking in middle-aged men: results and follow-up of 24-60 months of long-term study with randomized controls. *Alcohol Clin Exp Res* 7(2): 203-9.

Krysan M, Moore KA, Zill N (1990) *Research on Successful Families*. Washington, DC, Child Trends, Inc.

Koss MP, Shiang J (1994) Research on brief psychotherapy. In AE Bergin & SL Garfield (Eds) *Handbook of Psychotherapy and Behaviour Change*, 4th ed, pp 664-700. New York, Wiley.

Kuendig H, Kuntsche E (2006) Family bonding and adolescent alcohol use: moderating effect of living with excessive drinking parents. *Alcohol Alcohol* 41(4): 464-71.

Kuhns ML (1997) Treatment outcomes with adult children of alcoholics: depression. *Adv Pract Nurs Q* 3(2): 64-9.

Kypri K, Saunders JB, Williams SM, McGee RO, Langley JD, Cashell-Smith ML, Gallagher SJ (2004) Web-based screening and brief intervention for hazardous drinking: a double-blind randomized controlled trial. *Addiction* 99(11): 1410-7.

Lambert MJ, Ogles BM (2004) The efficacy and effectiveness of psychotherapy. In MJ Lambert (Ed) *Bergin and Garfield's Handbook of Psychotherapy and Behaviour Change*, 5th ed, pp 139-93. New York, Wiley.

Larimer ME, Crounce JM (2002) Identification, prevention and treatment: a review of individual-focused strategies to reduce problematic alcohol consumption by college students. *J Stud Alcohol Suppl* (14): 148-63.

Larimer ME, Turner AP, Anderson BK, Fader JS, Kilmer JR, Palmer RS, Crounce JM (2001) Evaluating a brief alcohol intervention with fraternities. *J Stud Alcohol* 62(3): 370-80.

Lazarus RS (1991) *Emotion and Adaptation*. New York, Oxford University Press.

Li TK (2000) Pharmacogenetics of responses to alcohol and genes that influence alcohol drinking. *J Stud Alcohol* 61(1): 5-12.

Lipman AJ (1990) Causal attributions in offspring of alcoholics. *Alcohol Treat Q* 7: 31-45.

Loehlin JC (1972) An analysis of alcohol-related questionnaire items from the National Merit Twin Study. *Ann N Y Acad Sci* 197: 117-20.

Maes S, Leventhal H, deRidder DT (1996) Coping with chronic diseases. In M Zeidner & NS Endler (Eds) *Handbook of Coping: Theory, Research, Applications*, pp 221-251. New York, Wiley.

- Maffli E (2001) Problem drinking and relatives. In H Klingemann & G Gemel (Eds) *Mapping the Social Consequences of Alcohol Consumption*, chapt 6, pp 79-91. Boston, Kluwer.
- Marlatt GA, Baer JS, Kivlahan DR, Dimeff LA, Larimer ME, Quigley LA, Somers JM, Williams E (1998) Screening and brief intervention for high-risk college student drinkers: results from a 2-year follow-up assessment. *J Consult Clin Psychol* 66(4): 604-15.
- Mathew RJ, Wilson WH, Blazer DG, George LK (1993) Psychiatric disorders in adult children of alcoholics: data from the Epidemiologic Catchment Area project. *Am J Psychiatry* 150(5): 793-800.
- Mathews CA, Reus VI (2001) Assortative mating in the affective disorders: a systematic review and meta-analysis. *Compr Psychiatry* 42(4): 257-62.
- Mayou R, Foster A, Williamson B (1978) The psychological and social effects of myocardial infarction on wives. *Br Med J* 1(6114): 699-701.
- McCrary BS, Hay W (1987) Coping with problem drinking in the family. In J Orford (Ed) *Coping with Disorders in the Family*, pp 86-116. London, Croom-Helm.
- McCrary BS, Stout R, Noel N, Abrams D, Nelson HF (1991) Effectiveness of three types of spouse-involved behavioral alcoholism treatment. *Br J Addict* 86(11): 1415-24.
- McFarlane WR, Lukens E, Link B, Dushay R, Deakins SA, Newmark M, Dunne EJ, Horen B, Toran J (1995) Multiple-family groups and psychoeducation in the treatment of schizophrenia. *Arch Gen Psychiatry* 52(8): 679-87.
- McGue M (1994). Genes, environment, and the etiology of alcoholism. In R Zucker, G Boyd, & J Howard (Eds). *The Development of Alcohol Problems: Exploring the Biosychosocial Matrix of Risk*, pp 1-40. (NIAAA Research Monograph, No 26, NIH Publication No 94-3495). Rockville, MD, US Department of Health and Human Services.
- McGue M, Pickens RW, Svikis DS (1992) Sex and age effects on the inheritance of alcohol problems: a twin study. *J Abnorm Psychol* 101(1): 3-17.
- McGue M, Sharma A, Benson P (1996) Parent and sibling influences on adolescent alcohol use and misuse: evidence from a U.S. adoption cohort. *J Stud Alcohol* 57(1): 8-18.
- Merikangas KR (1982) Assortative mating for psychiatric disorders and psychological traits. *Arch Gen Psychiatry* 39(10): 1173-80.
- Merikangas KR, Weissman MM, Prusoff BA, John K (1988) Assortative mating and affective disorders: psychopathology in offspring. *Psychiatry* 51(1): 48-57.

Meyers RJ, Dominguez TP, Smith JE (1996) Community reinforcement training with concerned others. In VB Van Hasselt & M Hersen (Eds) *Source Book of Psychological Treatment Manuals for Adult Disorders*, pp 257-94. New York, Plenum.

Meyers RJ, Miller WR, Smith JE, Tonigan JS (2002) A randomized trial of two methods for engaging treatment-refusing drug users through concerned significant others. *J Consult Clin Psychol* 70(5): 1182-5.

Miller WR, Meyers RJ, Tonigan JS (1999) Engaging the unmotivated in treatment for alcohol problems: a comparison of three strategies for intervention through family members. *J Consult Clin Psychology* 67: 688-697.

Miller WR, Tonigan JS, Longabaugh R (1995) The Drinker Inventory of Consequences (DrlnC): An instrument for assessing adverse consequences of alcohol abuse. Test manual. In Project MATCH Monograph Series, vol 4. Rockville, MD, NIAA.

Moos RH, Billings AG (1982) Children of alcoholics during the recovery process: alcoholic and matched control families. *Addict Behav* 7(2): 155-63.

Moos RH, Finney JW, Cronkite RC Moos, RH, Finney JW, Concrute RC (1990) *Alcoholism treatment: context, process and outcome*. Oxford, Oxford University Press.

Morse SR, Fife B (1998) Coping with a partner's cancer: adjustment at four stages of the illness trajectory. *Oncol Nurs Forum* 25(4): 751-60.

Murphy JG, Duchnick JJ, Vuchinich R E, Davison J W, Karg RS, Olson RS, Smith AF, Coffey TT (2001) Relative efficacy of a brief motivational intervention for college student drinkers. *Psychol Addict Behav* 15(4): 373-9.

National Highway Traffic Safety Administration UDoT (1994) *Computing a BAC Estimate*. Washington, DC, NHTSA.

National Institute of Alcohol Abuse and Alcoholism (NIAAA) (2005) *Helping Patients with Alcohol Problems: A Clinician's Guide*. Bethesda, MD, NIAAA.

Neff JA (1994) Adult children of alcoholic or mentally ill parents: alcohol consumption and psychological distress in a tri-ethnic community study. *Addict Behav* 19(2): 185-97.

Nijboer C, Tempelaar R, Sanderman R, Triemstra M, Spruijt RJ, van den Bos GA (1998) Cancer and caregiving: the impact on the caregiver's health. *Psychooncology* 7(1): 3-13.

Nolen-Hoeksema S, Hilt L (2006) Possible contributors to the gender differences in alcohol use and problems. *J Gen Psychol* 133(4): 357-74.

Nordberg L, Rydelius PA, Zetterström R (1991) Psychomotor and mental development from birth to age of four years; sex differences and their relation to home environment. Children in a new Stockholm suburb. Results from a longitudinal prospective study starting at the beginning of pregnancy. *Acta Paediatr Scand Suppl*, 378: 1-25.

O'Farrell TJ (Ed) (1993) *Treating alcohol problems: Marital and family interventions*. New York, Guilford.

O'Farrell TJ, Fals-Stewart W (1999) Treatment models and methods: Family models. In BS McCrady & EE Epstein (Eds) *Addictions; A Comprehensive Guidebook*, pp 287-305. New York, Oxford University Press.

O'Farrell TJ, Fals-Stewart W (2000) Behavioral couples therapy for alcoholism and drug abuse. *J Subst Abuse Treat* 18(1): 51-4.

O'Farrell TJ, Fals-Stewart W (2001) Family-involved alcoholism treatment. An update. *Recent Dev Alcohol* 15: 329-56.

O'Farrell TJ, Murphy CM (1995) Marital violence before and after alcoholism treatment. *J Consult Clin Psychol* 63(2): 256-62.

O'Farrell TJ, Van Hutton V, Murphy CM (1999) Domestic violence before and after alcoholism treatment: a two-year longitudinal study. *J Stud Alcohol* 60(3): 317-21.

Orford J (1984) The prevention and management of alcohol problems in the family setting: a review of work carried out in English-speaking countries. *Alcohol Alcohol* 19(2): 109-22.

Orford J (1990) Alcohol and the family: An international review of the literature with implications for research and practice. In L Kozłowski, H Annis & H Cappell (Eds) *Research Advances in Alcohol and Drug Problems*, vol 10, pp 81-155. New York, Plenum.

Orford J (1994) Empowering family and friends: a new approach to the secondary prevention of addiction. *Drug Alcohol Rev* 13(4): 417-29.

Orford J, Guthrie S, Nicholls P, Oppenheimer E, Egert S, Hensman C (1975) Self-reported coping behavior of wives of alcoholics and its association with drinking outcome. *J Stud Alcohol* 36(9): 1254-67.

Orford J, Natera G, Velleman R, Copello A, Bowie N, Bradbury C, Davies J, Mora J, Nava A, Rigby K, Tiburcio M (2001) Ways of coping and the health of relatives facing drug and alcohol problems in Mexico and England. *Addiction* 96(5): 761-74.

- Orford J, Templeton L, Velleman R, Copello A (2005) Family members of relatives with alcohol, drug and gambling problems: a set of standardized questionnaires for assessing stress, coping and strain. *Addiction* 100(11): 1611-24.
- Pattison EM, Courlas PG, Patti R, Mann B, Mullen D (1965) Diagnostic-therapeutic intake groups for wives of alcoholics. *Q J Stud Alcohol* 26(4): 605-16
- Peeters W (1992) Effect of rheumatoid arthritis upon other members of the family. *Clin Rheumatol* 11(2): 185-8.
- Penland EA, Masten WG, Zelhart P, Fournet GP, Callahan TA (2000) Possible selves, depression and coping skills in university students. *Pers Individ Dif* 29(5): 963-9.
- Perkins HW (2002) social norms and the prevention of alcohol misuse in collegiate context. *J Stud Alcohol Suppl* 14 March: 164-72.
- Preuss UW, Schuckit MA, Smith TL, Barnow S, Danko GP (2002) Mood and anxiety symptoms among 140 children from alcoholic and control families. *Drug Alcohol Depend* 67(3): 235-42.
- Reinert DF, Allen JP (2002) The Alcohol Use Disorders Identification Test (AUDIT): a review of recent research. *Alcohol Clin Exp Res* 26(2): 272-9.
- Rodney HE, Rodney L (1996) An exploratory study of African American collegiate adult children of alcoholics. *J Am Coll Health* 44(6): 267-72.
- Romano JM, Turner JA, Clancy SL (1989) Sex differences in the relationship of pain patient dysfunction to spouse adjustment. *Pain* 39(3): 289-95.
- Rychtarik RG, McGillicuddy NB (2005) Coping skills training and 12-step facilitation for women whose partner has alcoholism: Effects on depression, the partner's drinking, and partner physical violence. *J Consult Clin Psychol* 73(2): 249-61.
- Rydellius P-A (1981) Children of Alcoholic Fathers. Their social adjustment and their health status over 20 years. *Acta Paed Scand Suppl* 286.
- Rydellius P-A (1983) Alcohol and family life. *Child Health* 2: 76.85.
- Safran JD, Muran JC (2000) *Negotiating the Therapeutic Alliance*. New York, Guilford.
- Salaspuro M (2003) Intervention against Hazardous Alcohol Consumption – Secondary Prevention of alcohol Problems. In M Berglund, E Johnsson & S Thelander (Eds) *Treatment of Alcohol and Drug Abuse. An Evidence-Based Review*, pp 1-41. Weinheim, Wiley-VCH.

Saunders JB, Aasland OG, Babor TF, de la Fuente JR, Grant M (1993) Development of the Alcohol Use Disorders Identification Test (AUDIT): WHO Collaborative Project on Early Detection of Persons with Harmful Alcohol Consumption--II. *Addiction* 88(6): 791-804.

Schnurr PP, Green BL (Eds) (2004) *Trauma and Health: Physical Health Consequences of Exposure to Extreme Stress*. Washington, DC, American Psychological Association.

Schuckit MA (1994) Low level of response to alcohol as a predictor of future alcoholism. *Am J Psychiatry* 151(2): 184-9.

Schuckit MA (2000) Keep it simple. *J Stud Alcohol* 61(6): 781-2.

Schuckit MA, Smith TL (1996) An 8-year follow-up of 450 sons of alcoholic and control subjects. *Arch Gen Psychiatry* 53(3): 202-10.

Schuckit MA, Smith TL, Radzimirski S, Heyneman EK (2000) Behavioral symptoms and psychiatric diagnoses among 162 children in nonalcoholic or alcoholic families. *Am J Psychiatry* 157(11): 1881-3.

Schuckit MA, Smith TL, Kalmijn J, Danko GP (2005) A cross-generational comparison of alcohol challenges at about age 20 in 40 father-offspring pairs. *Alcohol Clin Exp Res* 29(11): 1921-27.

Schuckit MA, Smith TL, Pierson J, Danko GP, Allen RC, Kreikebaum S (2007) Patterns and correlates of drinking in offspring from the San Diego prospective study. *Alcohol Clin Exp Res* 31(10): 1681-91.

Schulsinger F, Knop J, Goodwin DW, Teasdale TW, Mikkelsen U (1986) A prospective study of young men at high risk for alcoholism. Social and psychological characteristics. *Arch Gen Psychiatry* 43(8): 755-60.

Sher KJ, Walitzer KS, Wood PK, Brent EE (1991) Characteristics of children of alcoholics: putative risk factors, substance use and abuse, and psychopathology. *J Abnorm Psychol* 100(4): 427-48.

Sigvardsson S, Bohman M, Cloninger CR (1996) Replication of the Stockholm Adoption Study of alcoholism. Confirmatory cross-fostering analysis. *Arch Gen Psychiatry* 53(8): 681-7.

Sisson RW, Azrin NH (1986) Family-member involvement to initiate and promote treatment of problem drinkers. *J Behav Ther Exp Psychiatry* 17(1): 15-21.

Skinner H, Maley O, Smith L, Chirrey S, Morrison M (2001) New frontiers: using the internet to engage teens in substance abuse prevention and treatment. In PM Monti, SM Colby & TA O'Leary (Eds) *Adolescents' Alcohol and Substance Abuse: Reaching Teens Through Brief Interventions*, pp 297-318. New York, Guildford.

Slutske WS (2005) Alcohol use disorders among US college students and their non-college-attending peers. *Arch Gen Psychiatry* 62(3): 321-7.

Slutske WS, Heath AC, Dinwiddie SH, Madden PA, Bucholz KK, Dunne MP, Statham DJ, Martin NG (1998) Common genetic risk factors for conduct disorder and alcohol dependence. *J Abnorm Psychol* 107(3): 363-74.

Spencer JH Jr, Glick ID, Haas GL, Clarkin JF, Lewis AB, Peyser J, DeMane N, Good-Ellis M, Harris E, Lestelle V (1988) A randomized clinical trial of inpatient family intervention, III: Effects at 6-month and 18-month follow-ups. *Am J Psychiatry* 145(9): 1115-21.

Stanton MD, Shadish WR (1997) Outcome, attrition, and family-couples treatment for drug abuse: a meta-analysis and review of the controlled, comparative studies. *Psychol Bull* 122(2): 170-91.

Statens Beredning för Medicinsk Utvärdering [The Swedish Council on Technology Assessment and Health] (2001) Sammanfattning och slutsatser. [Summary and conclusions.] In *Behandling av Alkohol- och Narkotikaproblem. En evidensbaserad kunskapssammanställning. [Treatment of alcohol and drug abuse. An evidence-based review.]* SBU-rapport nr 56, vol I, pp. 11-28.

Steinglass P, Bennett LA, Wohlin SJ, et al. (1987) *The Alcoholic Family*. New York, NY, Basic Books.

Ståhlbrandt H, Johnsson KO, Berglund M (2007) Two-year outcome of alcohol interventions in Swedish university halls of residence: a cluster randomized trial of a brief skills training program, twelve-step-influenced intervention, and controls. *Alcohol Clin Exp Res* 31(3): 458-66. Erratum in: *Alcohol Clin Exp Res* 2007 31(7):1268.

Sundell K, Forster M (2005) En grund att växa. Forskning om att förebygga beteendeproblem hos barn. [Base for growing. Research on prevention of behaviour problems in children.] I *Gränslös utmaning – alkoholpolitik i ny tid. Slutbetänkande från Alkoholinförelsetredningen, Stockholm*. Statens Offentliga utredningar, SOU 2005:25, pp 455-524.

Swedish National Agency for Higher Education (2005) www.hsv.se

Task Force on College Drinking (2002) *High-risk drinking in college: What we know and what we need to learn*. Final report of the Panel on contexts and Consequences. National Institutes of Health: Task Force of the National Advisory Council on Alcohol Abuse and Alcoholism. Available online at: http://www.collegedrinkingprevention.gov/NIAACollegeMaterials/TaskForce/TaskForce_TOC.aspx

Tiet QQ, Bird HR, Davies M, Hoven C, Cohen P, Jensen PS, Goodman S (1998) Adverse life events and resilience. *J Am Acad Child Adolesc Psychiatry* 37(11): 1191-200.

- Thelin T, Sveger T, McNeil TF (1996) Primary prevention in a high-risk group: smoking habits in adolescents with homozygous alpha-1-antitrypsin deficiency (ATD). *Acta Paediatr* 85(10): 1207-12.
- Thomas EJ, Ager RD (1993) Unilateral family therapy with the spouses of uncooperative alcohol abusers. In TJ O'Farrell (Ed) *Marital and Family Therapy in Alcoholism Treatment*, pp 3-33. New York, Guilford.
- Tomori M (1994) Personality characteristics of adolescents with alcoholic parents. *Adolescence* 29(116): 949-59.
- Turner HA, Pearlin LI, Mullan JT (1998) Sources and determinants of social support for caregivers of persons with AIDS. *J Health Soc Behav* 39(2): 137-51.
- Tweed SH, Ryff CD (1991) Adult children of alcoholics: profiles of wellness amidst distress. *J Stud Alcohol* 52(2): 133-41.
- Undén AL, Orth-Gomer K (1989) Development of a social support instrument for use in population surveys. *Soc Sci Med* 29(12): 1387-92.
- Velleman R (1992) Intergenerational effects--a review of environmentally oriented studies concerning the relationship between parental alcohol problems and family disharmony in the genesis of alcohol and other problems. I: The intergenerational effects of alcohol problems. *Int J Addict* 27(3): 253-80.
- Velleman R, Bennett G, Miller T, Orford J, Rigby K, Tod A (1993) The families of problem drug users: a study of 50 close relatives. *Addiction* 88(9): 1281-9.
- Velleman R, Capello A, Maslin J (Eds) (1998) *Living with Drink: Women Who Live with Problem Drinkers*. London, Longmans.
- Velleman R, Orford J (1999) *Risk and resilience: adults who were the children of problem drinkers*. London, Harwood.
- Velleman R, Templeton L; UK Alcohol, Drugs and the Family Research Group (2003) Alcohol, drugs and the family: results from a long-running research programme within the UK. *Eur Addict Res* 9(3): 103-12.
- Vickers AJ, Altman DG (2001) Statistics notes: analysing controlled trials with baseline and follow-up measurements. *BMJ* 323: 1123-4.
- Weber JA, McCormick P (1992) Alateen members' and non-members' understanding of alcoholism. *J Alcohol Drug Educ* 37(3): 74-84.
- Werner EE (1986) Resilient offspring of alcoholics: a longitudinal study from birth to age 18. *J Stud Alcohol* 47(1): 34-40.

- West MO, Prinz RJ (1987) Parental alcoholism and childhood psychopathology. *Psychol Bull* 102(2): 204-18.
- Woititz JG (1990) *Adult Children of Alcoholics*. (Expanded ed). Deerfield Beach, FL, Health Communications.
- Zabora JR, Smith ED (1991) Family dysfunction and the cancer patient: early recognition and intervention. *Oncology (Williston Park)* 5(12): 31-5
- Zhang L, Welte JW, Wieczorek WF (1999) The influence of parental drinking and closeness on adolescent drinking. *J Stud Alcohol* 60(2): 245-51.
- Zetterlind U (1999) *Relatives of Alcoholics*. Academic thesis, Lund University.
- Zetterlind U, Berglund M (1999) The rate of co-dependence in spouses and relatives of alcoholics on the basis of the Cermak co-dependence scale. *Nord J Psychiatry* 53: 147-51.
- Zetterlind U, Berglund M, Åberg-Örbeck K (1996) A comparison of two techniques to reach relatives of alcoholics for information of available support. *Alcohol Alcohol* 31(4): 359-63.
- Zetterlind U, Hansson H (2001) *Coping with Parents Abuse Questionnaire*. Clinical Alcohol Research, Lund University, Sweden. Internal report.
- Zetterlind U, Hansson H, Åberg-Örbeck K, Berglund M (2001) Effects of coping skills training, group support and information for spouses of alcoholics. A controlled randomized study. *Nord J Psychiatry* 55(4): 257-262.
- Zucker RA, Ellis DA, Bingham CR, Fitzgerald HE (1996) The development of alcoholic subtypes: Risk variation among alcoholic families during the childhood years. *Alcohol Health Res World* 20(1): 46-54.
- Zucker RA, Wong MM (2006) Prevention for children of alcoholics and other high risk groups. In M Galanter (Ed). *Alcohol Problems in Adolescents and Young Adults*, pp 299-320. New York, Springer.

POPULÄRVETENSKAPLIG SAMMANFATTNING

För varje person som har problem med alkohol berörs i genomsnitt minst ytterligare en person. Under de senaste två decennierna har medvetenheten och kunskapen om de anhörigas situation och hur de känslomässigt kan påverkas av ett långvarigt alkoholproblem ökat.

Den stress alkoholproblemet skapar påverkar den anhöriges samspel med både familjemedlemmar och vänner. Den anhörige löper ökad risk för såväl psykiska och psykosomatiska symptom som utvecklande av eget missbruksproblem. Att involvera nära anhöriga vid behandling av alkoholmissbruk är av stor vikt, såväl för alkoholmissbrukarens varaktiga förbättring som för den anhöriges hälsa, vilket är väl dokumenterat. Antalet randomiserade studier av olika stöd riktade till anhöriga och barn till alkoholberoende individer är få i den internationella litteraturen.

Klinisk alkoholforskning, Lunds Universitet, har under de senaste 15 åren bedrivit forskning kring metoder ämnade att via interventionsprogram hjälpa anhöriga till alkoholberoende personer. Under senare år har intresset kommit att riktas mot högskolestuderande vuxna barn till personer med alkoholproblem. Att vara student på universitetsnivå innebär att man klarat av en hel del ansvar och förväntningar tidigare i livet. Studentmiljön, med höga krav avseende studieresultat, etablerande av nya relationer och hanterande av en väl förankrad alkoholkultur, skapar dock nya förväntningar och krav på studenten. Många studenter, som pga stressymptom söker sig till studenthälsovården, ger uttryck för oro kring eget alkoholanvändande, grundad på erfarenheter från någon anhörigs alkoholproblem. Det är också många studenter som söker för oro och ångestsymptom, då de inte längre har kontroll över föräldrarnas alkoholproblem. Det finns idag få behandlingsmetoder anpassade för vuxna barn till alkoholister som innefattar både eget alkoholanvändande och relationen till den missbrukande föräldern.

Denna avhandling omfattar två randomiserade kontrollerade studier av interventionsprogram.

Den första studien avser interventionsprogram riktade till män och kvinnor, som lever tillsammans med en alkoholberoende person (artikel I och II). Studiens vetenskapliga frågeställningar har varit; a) *Vilken stödform kan vara effektiv för att stödja/förbättra de anhörigas mentala hälsa samt copingstrategi?*, b) *Är en längre behandlingsinsats avseende copingstrategier mer effektiv än ett enskilt informationssamtal?* och c) *Fungerar behandling i grupp lika bra som individuell behandling?*

Den andra studien avser program riktade till universitetsstuderande ungdomar, som vuxit upp med föräldrar med alkoholproblem (artikel III och IV). Den vetenskapliga frågeställningen för denna studie har varit; *Vilken effekt kan var och en av de tre studerade interventionerna ha avseende eget alkoholanvändande, egna copingstrategier och eget välbefinnande?*

Uppföljningar, vid vilka effekterna av de givna interventionerna i respektive studie utvärderats, har genomförts efter ett respektive två år.

Studie 1 (artikel I och II)

Genomförande

I den första studien erbjöds 39 anhöriga till alkoholmissbrukare en av tre olika interventioner; 1) standardiserad information vid ett tillfälle, 2) fyra sessioner av träning i coping (sätt att hantera interna och externa påfrestningar) under fyra månader eller 3) 12 gruppsessioner fördelade på två tillfällen per månad under ett halvår.

Inledningsvis genomfördes en basmätningintervju, vilken följdes av ett standardiserat informationssamtal (60 minuter). Därefter genomfördes en randomisering till ett av de tre interventionsprogrammen. Uppföljningsmätningar har sedan genomförts efter 12 resp. 24 månader med ett mycket högt deltagande.

Resultat

Vid 12-månadersuppföljningen hade alla tre grupperna signifikant förändrat sin copingstil och uppvisade en minskning av psykiska symptom. En tendens till större förbättring av psykiska symptom fanns i copingträninggruppen och i stödgruppen ($p=0.1$) jämfört med informationsgruppen. De tre gruppstöderna skilde sig inte åt när det gäller coping och hardship.

24-månadersuppföljningen visade att förbättringarna avseende coping-beteende, utsatthet och mentala symptom skedde huvudsakligen under de första 12 månaderna och att de förbättringar som uppnåts efter 12 månader generellt var stabila. Förändringarna avseende mentala symptom var signifikant större i de grupper som fått gruppstöd respektive copingträning än vad de var i kontrollgruppen (den grupp som endast fått information vid ett tillfälle). Förbättringen som uppnåts efter 12 månader i dessa båda grupper blev mer uttalad efter 24 månader.

Resultatet visar att information vid ett tillfälle kan vara effektiv när det gäller förändring av copingstrategier, medan en minskning av psykiska symptom tycks kräva en längre tids behandling.

Studie 2 (artikel III och IV)

Genomförande

I den andra studien erbjöds universitetsstuderande ungdomar som vuxit upp med föräldrar med alkoholproblem deltagande i ett av tre interventionsprogram; 1) alkoholintervention, 2) copingintervention eller 3) en kombination av dessa. 82 studenter med denna bakgrund deltog i studien. Utvärderingen har sedan genomförts genom uppföljande mätningar efter 12 respektive 24 månader. Deltagandet har vid båda tillfällena varit mycket högt.

Inledningsvis genomfördes en basmätningintervju. Utöver en personlig intervju fick studenten besvara 6 vedertagna mätinstrument. Efter detta genomfördes en stratifierad (kön, relation, psykiatrisk symptomatologi och alkoholanvändning) randomisering till ett av de tre interventionsprogrammen.

Resultat

Vid 12-månadersuppföljningen hade de två grupper som erhållit alkoholintervention en större minskning av alkoholkonsumtionen än den grupp som enbart erhållit copingintervention. Några förändringar av copingmåtteten förelåg inte.

Resultaten vid 24-månadersuppföljningen visade att deltagare som erhållit både alkohol- och copingintervention, dvs. kombinationsprogrammet, hade förbättrat sitt dryckesmönster signifikant under det andra året. Denna positiva effekt av alkoholinterventionen förelåg endast i den grupp som erhållit kombinationsprogrammet. Detta tyder på att intervention kring endast alkohol inte är tillräckligt för att uppnå långtidseffekter på dryckesmönster, utan att det istället krävs en kombination av alkohol- och copingintervention för att uppnå sådana effekter.

Några förändringar av copingvariablerna skedde inte under det andra året.

Konklusion

Resultaten som dokumenterats i den första studien - att information vid ett tillfälle kan vara effektiv när det gäller förändring av copingstrategier, medan en minskning av psykiska symptom tycks kräva en längre tids behandling - utgör ett av få forskningsbidrag som visar effekterna av olika typer av intervention riktade till anhöriga till alkoholberoende personer.

Fyndet i den andra studien - att alkoholintervention är effektiv för att förändra alkoholvanorna bland universitetsstuderande vuxna barn till personer med alkoholproblem - är betydelsefullt i samband med framtida utveckling av preventiva insatser. Även den under det andra året fortsatta förbättringen avseende alkoholvanor, vilken konstaterades för kombinationen av alkohol- och copingintervention, är av betydelse för utformningen av preventiva insatser.

ACKNOWLEDGEMENTS

A number of people deserve my gratitude for making my time working on the thesis stimulating and memorable.

First and foremost I would like to express my sincere gratitude to my supervisor, professor Mats Berglund, for his great leadership, enthusiasm, support and guidance through my research work. His great scientific experience and competence has made my work possible and I am grateful for the opportunity to be part of his team.

I am also grateful to my second supervisor, doctor Ulla Zetterlind, who has inspired and supported me. She has always been available for discussing various aspects of my research work as well as for small talks with great presence and humour.

I will also thank:

Ulla Zetterlind and her co-worker Kirsten Åberg for all their work with the intervention programs in the first study.

Jenny Rundberg for her excellent work with the follow-up interviews in the second study. Her accurate and competent interaction with the students has been vital to the success of the study.

All members of the Clinical Alcohol Research group, Department of Health Science, Lund University, during the period 2000 to 2007, for support and good friendship. A special thank to Eva Skagert, whose precise work and talent for layout, when preparing the manuscripts and this thesis, have been of great help.

The Faculty of Medicine, Lund University, for great financial support. The thesis was also financially supported by the National Institute of Public Health, the Swedish Retailing Monopoly, the Swedish Council for Working Life and Social Research, the Swedish Research Council and the Swedish Council for Planning and Coordination of Research.

The management of Addiction Centre and all the colleagues who I have had the pleasure working with and who have provided me with support, experience and knowledge. A special thank to Karin Heuman who hired me and introduced me to the work at the Addiction Centre Malmö.

The management of Department of Psychiatry, University Hospital for supporting me to conduct research and for allowing me leaves of absence for research studies.

The staff at the Student Health Care, Lund University, who with openness and warmth let me conduct the project at their facilities.

Dr. Antonio Marañon for his statistical help and advice.

A special thank to all spouses and students in the two studies for their participation and for sharing their experiences of living close to people with alcohol problems. Thank you so much for your open and warm attitude!

My parents Birgit and John for valuable support in daily life and not least for being wonderful grand parents of my children. I love you.

Finally, I would like to thank my dearest ones; my husband Richard, who always inspires me to continue working, for all his help and endless support in my work with the thesis; and my wonderful children Sarah and Carl for all love and joy they bring into my life every day. I love you with all of my heart.

