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**Studies of Alcoholics Anonymous (and Similar Self-Help Group)  
Affiliation in Longitudinal Samples of  
Treated and Untreated Problem and Dependent Drinkers in  
the U.S. and Sweden**

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## **ABSTRACT**

**Background** AA has become an important adjunct to alcoholism treatment worldwide. As well, many persons turn to AA as a first (sometimes only) source of help for a drinking problem. Thus, these groups represent a significant resource for the handling of alcohol problems, both at the system level and the individual level. The primary aim of this thesis is to further the knowledge on who benefits from AA (and similar self-help group) affiliation, both proximally and distally. This research is framed by a widely utilized behavioral help-seeking model of health care utilization (as adapted to alcohol treatment research) that considers the roles of contextual (aggregate or system wide) and individual factors that act to either facilitate or impede help-seeking.

**Method** A two-pronged analytical strategy is used. First, a cross-cultural comparative study of the role and impact of self-help groups under two different treatment systems (Swedish and U.S.) was conducted using treatment samples interviewed at baseline and 1 year later (proximal outcomes) to assess who attends and who benefits. The Swedish and U.S. studies, which collected data at the countywide level, used the same research methodologies and collected comparable measures. Next, long-term trajectories analyses were conducted to explore more specific aspects of AA as a program and the relationship of these aspects to distal drinking outcomes (with follow-ups at 1, 3, 5, and 7 years) using a U.S. sample of treated and untreated problem drinkers. Gender was considered in all Papers.

**Results** Some differences were found between the two samples at treatment entry. In general, the Swedish sample was older, more male, and with denser using social networks relative to the U.S. sample. In contrast, the U.S. sample reported greater drug and psychiatric severity. In terms of gender, both Swedish and U.S. women were more likely than their male counterparts to be in a marital-like relationship and to have care of children under the age of 18 years at treatment initiation, and they presented with higher family/social, medical, and psychiatric problem severity. Males in both samples initiated treatment with greater legal severity. Though male-to-female ASI severity scores were in the same direction in the both samples, the magnitude of most ASI scores was noticeably greater for the U.S. sample (except ASI alcohol severity scores which were similar). Paper I showed that even though mutual help played a more significant role in post-treatment help seeking in the U.S. than in Sweden, for the most, similar factors predicted attendance at year 1. In both samples having an abstinence goal, having a high self-perceived need of treatment, being both alcohol and drug dependent, having prior self-help, and getting employment suggestions to seek treatment predicted 1-year self-help attendance. Factors predicting drinking outcomes in Paper II revealed younger age, female gender, abstinence goal, and less prior treatment predicted either abstinence or moderate (vs. heavy) drinking for both samples. Non-using social networks and drink severity predicted drinking outcomes in the Swedish sample. Paper III revealed a greater proportion of marginalized persons are found in the Swedish than U.S. treatment. In both countries, these individuals used more inpatient treatment and more social services and community mental-health services. However, the role of the Swedish social service system as a referral or social pressure institution was more apparent than in the U.S., as was the role of police. Paper IV found that gender did not differentiate practice of specific AA behaviors. For both genders, greater problem severity and a greater number of negative consequences predicted greater AA affiliation over time, as did having an abstinence goal and more social network support to not drink. Though higher AA affiliation was a predictor of

abstinence for both genders, males were less likely than women to be abstinent over time. Men were also more likely to reduce their AA participation across time. Latent class analyses in [Paper V](#) results found heterogeneity in patterns of AA attendance and sponsorship (supporting the value of using clustering analyses). Any pattern of AA attendance, even if it declined or was never high for a particular 12-month period, was better than little or no attendance in terms of abstinence. Having a sponsor had added value above the positive value of attendance in increasing abstinence, suggesting there is a benefit for maintaining a sponsor over time above that found for attendance.

**Conclusion** AA (similar self-help) groups can play a legitimate role in the handling of alcohol-dependent individuals seeking help for their problem. They provide a social context and recovery assistance at no cost in any system. Contextual factors (i.e., aggregate level or countrywide variables were not empirically tested) suggest that these groups are relied upon more in the U.S. than Sweden (consistent with the history of treatment/handling of alcohol problems in the two countries). Individual level predisposing, enabling, and need variables differentiated who initiates and who stays involved over time (especially severity and social factors), and these were influenced by contextual characteristics in the comparative analyses. Women use AA at least equal to men and their outcomes are as good (or better) as for men who affiliate with these groups (U.S. results). While heterogeneity was found in how U.S. individuals use self-help groups over time, any level of affiliation was better than little or no attendance in terms of increasing the changes of abstinence over 7 years. Still, some individuals with little or no affiliation reported abstinence at all follow-ups. These results are worth consideration when making referrals to self-help groups. It is advised that these groups not replace but instead complement an array of services within an overall system of care for problem drinkers.

## **LIST OF PUBLICATIONS**

- I. Witbrodt, Jane & Romelsjö, Anders (2010). Gender differences in mutual-help attendance 1-year after treatment: Swedish and U.S. samples. *Journal of Studies on Alcohol and Drugs* 71(1): 125-135.
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- IV. Witbrodt, Jane & Delucchi, Kevin (in press). Do women differ from men on Alcoholics Anonymous participation and abstinence? A multi-wave analysis of treatment seekers. *Alcoholism: Clinical and Experimental Research*.
- V. Witbrodt, Jane, Kaskutas, Lee Ann, Bond, Jason & Delucchi, Kevin (in press). Does sponsorship improve outcomes above Alcoholics Anonymous attendance? A latent class growth curve analyses. *Addiction*.

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## **LIST OF ABBREVIATIONS**

AA	Alcoholics Anonymous
ARG	Alcohol Research Group
CA	Cocaine Anonymous
DDD	Drinks per drinking day
DIS	Diagnostic Interview Schedule (for Psychoactive Substance Dependence)
DSM-IV	Diagnostic and Statistical Manual of Mental Disorders, 4 <sup>th</sup> edition
GF	Graduated frequency (scale)
GSO	(AA) General Service Office
GSR	(AA) General Service Representatives
ICD-10	International Classification of Diseases, 10 <sup>th</sup> version
NA	Narcotics Anonymous
PDA	Percent days abstinent
SoRAD	Centre for Social Research on Alcohol and Drugs
TSF	Twelve-Step Facilitation
U.S.	United States
WHO	World Health Organization

## 1 BACKGROUND AND SIGNIFICANCE

### 1.1 INTRODUCTION

Alcoholics Anonymous (AA), which originated in North America in the 1930s, is the most widely sought source of self-help<sup>1</sup> for alcohol problems in the United States (U.S.), and of importance in several other countries, one of them being Sweden in northern Europe. Worldwide, AA has become a valuable adjunct to alcoholism treatment (Mäkelä, 1993b). Though the pathway into these groups is often through formal treatment programs (Mäkelä et al., 1996a, pg. 99), as is the case in the U.S. and Sweden (Bodin, 2006; Magura, 2007; Mäkelä, 1993b; Stenius, 1991), many people also turn to AA as a first (or only) source of help for their drinking problem (Eisenbach-Stangl & Rosenqvist, 1998). This is especially true in the U.S. (Substance Abuse and Mental Health Services Administration & Office of Applied Studies, 2008). Thus, these groups can and do (as in the U.S.) represent a valid resource for the handling of alcohol problems, both at the individual level and the system level. As used here, the concept “system” is seen as the collection of public and private institutions that provide alcohol and drug specific treatment services to individuals in need of help and support as a result of problematic substance use (either self-defined or other-defined).

While AA’s core structure has remained essentially unchanged over the years, remarkably, its function for those seeking help for a drinking problem varies from culture to culture and, as well, in relation to changes over time in attitudes towards drinking and to changes in who is held responsible for the problem. This has been illustrated well in prior cross-cultural studies (Eisenbach-Stangl & Rosenqvist, 1998; Mäkelä, et al., 1996a). This thesis adds to that work. Specifically, using a cross-cultural comparative analytical approach with Swedish and U.S. treatment samples followed for 1 year, three papers in this thesis collectively address (for each country): Who goes to treatment and what prompts that action; who affiliates with AA (and similar self-help groups); what proximal drinking outcomes result from these help-seeking efforts? A second analytical approach takes the comparative analysis a step further to explore how long-term or distal patterns of AA involvement (or lack of involvement) over time relate to drinking outcomes over time using a U.S. sample of treated and previously untreated problem drinkers followed for 7 years. Most research on the benefits of AA has been limited to studies using U.S. treatment samples (reviewed below). What is more, only a scant research has been conducted with longitudinal samples. Rather most treatment outcomes studies report results for only proximal outcomes (typically 3 to 12 months; (Berglund et al., 2003)) even though the path from problem drinking to non-problem drinking usually takes much longer and is often marked by lapses into and out of problem use (Dennis, Scott, Funk, & Foss, 2005).

Before reviewing historical and more general information on how AA works and, additionally, AA’s function in relationship to treatment systems in the U.S. and Sweden, a bit more needs to be said about how AA has been able to be adapted cross-

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<sup>1</sup> The terms *self-help* and *mutual-help* have been variously applied to twelve-step groups like AA by researchers (and other authors). Although the terms can be used interchangeably and the latter is more accurate of how twelve-step groups function, AA and similar twelve-step groups themselves usually prefer the term *self-help* (Humphreys & Rappaport, 1994). Accordingly, the terms twelve-step and self-help will be used in this pages.

culturally and still retain its core foundation. AA's adaptability is due in large part to its organization, which has been described as nonhierarchical, nonprofessional, and flexible (T. Borkman, 2008b). As an example, even though AA is based on a defined system of beliefs, the order and tenor of AA meetings tends to vary from country to country, and, indeed, even in response to local culture (Mäkelä, 1991). Even though the prototypical AA meeting is a unique speech event defined by rules of talk<sup>2</sup> some cultural variation tends to occur here. Nevertheless, although social position and other individual characteristics or traits may influence one's linkage to AA, once there a person's social position is not to be carried into the meetings. Tradition 3 (the long form) defines rather well, how AA's broader function is served:

*Our membership ought to include all who suffer from alcoholism. Hence, we may refuse none who wish to recover. Nor ought AA membership ever depend upon money or conformity. Any two or three alcoholics gathered for sobriety may call themselves an AA group, provided that, as a group, they have no other affiliation (Alcoholics Anonymous World Services, 1991).*

## 1.2 AA'S DIFFUSION WORLDWIDE

The spread of AA worldwide is evidence of its applicability across racial, religious, and political boundaries. As a social movement, AA has been made relevant in diverse environments (Mäkelä, 1993b). AA's early diffusion occurred mainly through individual members visiting other countries or by visitors coming to the U.S. (this was largely the case for Sweden) or emigrating there (Mäkelä, et al., 1996a, pg. 33). Spreading beyond the U.S., first to other English-speaking societies and to societies with a strong Protestant-oriented temperance tradition (Sweden being one of these), by the late 1980s AA had spread to all continents and had a reported membership of more than 1.5 million (Mäkelä, 1991). These groups were typically in wealthy non-communist, non-Islamic countries (and a few industrialized Asian countries). Although an estimated 65 percent of the worldwide members in 1988 came from temperance countries (Mäkelä, 1993b), a striking trend in membership had been occurring leading up to that year. While international membership between 1965 and 1988 decreased somewhat in English-speaking and Scandinavian Protestant countries (early temperance societies), it increased in central and southern European countries and, particularly, in Latin America (Mäkelä, et al., 1996a, pg. 28). This diffusion beyond the range of traditional temperance countries was further indication of AA's adaptability to diverse cultures.

Today AA has a presence in between 150 and 180 countries with an estimated total of 116,000 groups and more than two million members worldwide (Alcoholics

<sup>2</sup> Mäkelä (1996, 140-141) identified ten customs of discourse in AA meetings from research in Finland which also apply to AA meetings in the U.S. and other countries. These include: 1) do no interrupt the person speaking, 2) speak about your own experiences, 3) speak as honestly as you can, 4) do not speak about other people's private affairs, 5) do not profess religious doctrines or lecture about scientific theories, 6) you may speak about your personal problems in applying the program but do not attempt to refute the program, 7) do not openly confront or challenge previous turns of talk, 8) do not give direct advice to other members of AA; 9) do not present causal explanations of the behavior of other AA members; 10) do not present psychological interpretations of the behavior of other AA members.

Anonymous, 2010).<sup>3</sup> AA groups can now be found in countries like Russia and China, as well as several African and once Soviet Bloc countries.<sup>4</sup> Sweden has over 400 AA groups generating approximately 1140 weekly meetings (AA Sweden; see [www.aa.se/meetings/sverige.php](http://www.aa.se/meetings/sverige.php)). AA describes itself as a spiritual but not religious fellowship with one primary purpose, “*to carry its message to the alcoholic who still suffers*” (Tradition 5). The AA fellowship is the network of relationships among attendees, members, families, and friends. AA has no secondary goals of advocacy, reform, or education groups<sup>5</sup> (T. Borkman, 2008b).

### 1.3 AA'S INFLUENCE ON OTHER ADDICTIONS

Since its codification in the 1935s<sup>6</sup>, AA's model has been adopted and adapted by subsequent Twelve-Step recovery fellowships (Chappel & DuPont, 1999; Mäkelä, et al., 1996a), including organizations like Narcotics Anonymous (NA), Cocaine Anonymous (CA), and Marijuana Anonymous (MA) for drug-dependent individuals. NA, which addresses drug addiction overall, is the largest of these groups, perhaps because many drug abusers (U.S. literature) abuse more than one substance (Laudet, 2008). In 2010, over 25,000 NA groups were hosting approximately 58,000 weekly meetings in 131 countries (Narcotics Anonymous World Services, 2010). Nearly a third of those completing the 2009 NA membership survey reported they also attend other twelve-step fellowships (mostly AA). In keeping with AA's twelve-step principles, drug-related fellowships promote abstinence from all mind-altering substances including alcohol.

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<sup>3</sup> In 1968, Alcoholics Anonymous took an inventory of its membership in the form of a survey. This effort went so well that a committee was set up to conduct a survey of 5% of the registered groups in the United States and Canada. The “Triennial Survey” has been conducted by AA every three years since the first survey in 1968. Survey questionnaires are distributed to the General Service Representatives (GSRs) or contacts of the selected groups with the assistance of the Area Delegates. The most recent survey was conducted in the summer of 2007. The survey was conducted at regularly scheduled AA meetings. The selected groups were specifically asked not to call a special meeting for conducting the membership survey. All members attending the regular scheduled meeting were asked to complete a questionnaire unless they had previously done so at another meeting. The forms were anonymous and confidential. Completed questionnaires were returned to the Public Information (PI) service desk of the AA General Service Office (GSO).

<sup>4</sup> There are 19 international AA Service Centers outside the U.S. AA's literature has been translated into languages as diverse as Afrikaans, Arabic, Hindi, Neapli, Persian, Swahili, and Vietnamese, among many others. The Big Book is printed in 45 languages.

<sup>5</sup> “An A.A. group ought never endorse, finance, or lend the A.A. name to any related facility or outside enterprise, lest problems of money, property, and prestige divert us from our primary purpose (Tradition Six).”

<sup>6</sup> June 10, 1935 (see Big Book of A.A., pg. 171)

## **1.4 AA AND PROFESSIONAL TREATMENT IN THE U.S. AND SWEDEN**

AA and other self-help groups are not formal service providers in the traditional sense of the term. Rather AA may be better seen as an organization advocating certain beliefs and providing an alternative way of life to those willing to accept these beliefs more than it is a type of formal treatment (Humphreys, Moos, & Finney, 1995). Still, from a health services perspective peer-to-peer self-help groups like AA can (and do (Eisenbach-Stangl & Rosenqvist, 1998)) play an essential role in an overall system of treatment services. This appears to be especially (and historically) so in the U.S. system as compared to other countries with equally developed treatment systems, and more so than in the Swedish system which is among the most extensive and universally available (affordable) in the world (and more universal than the U.S. system).

Studies of AA's relationship with treatment have been conducted in other countries much less than in the U.S. (AA's origin). Hence, this thesis adds to a less published international research on treatment and AA. The following quote from two known European social scientists regarding AA's situation in the international arena provides added rationale for using a cross-cultural analytic approach to study the functional role of AA (and similar self-help groups) within the larger systems of service provision in each country in three (of five) thesis papers:

*The position of AA within the treatment system for alcoholics varies strongly from country to country according to the cure, care and control context. And with the varying position of AA also its social meaning varies (Eisenbach-Stangl & Rosenqvist, 1998).*

The relevance of these concepts will be made more evident in the remaining sections of this thesis and, especially, in those sections that provide historical overviews of the handling of problem drinkers in the U.S. and Sweden.

### **1.4.1 AA in the current U.S. treatment system**

In the U.S., AA and similar self-help groups augment<sup>7</sup> the formal treatment system (Fiorentine, 1999; C. Weisner & L. A. Schmidt, 2001) without any additional funds (Humphreys et al., 2004). Much of the U.S. treatment system relies on these groups for free aftercare for program graduates, and as a safety net for early discharges mandated by insurance utilization reviews and by other service reductions in both the private (employer-based insurance) and the public (government funded) treatment sectors (Rose M. Etheridge, Craddock, Duntzman, & Hubbard, 1995). Treatment providers (both systems) often refer individuals to self-help groups with the explicit goal of providing the problem drinker with an ongoing non-drinking community (Institute of Medicine, 1990). In terms of self-help attendance preceding treatment, recent national survey data of the U.S. general population at large (2006 and 2007) showed that almost one third of those who reported attending a self-help group in the

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<sup>7</sup> *Other than their use as adjunctive treatment, there appears to be no evidence that AA is used as a replacement for primary formal treatment in the U.S. Rather the ubiquity of groups plus common knowledge of their purpose makes them a place many turn to before and after formal treatment. Additionally, many problem drinkers transition in and out of "recovery" (abstinence). In that process, it is probable they move in and out of AA more than formal treatment.*

prior year reported receiving specialty treatment for a substance use problem (alcohol or drug) in the same year (Substance Abuse and Mental Health Services Administration & Office of Applied Studies, 2008). Supporting these data, AA's own 2007 triennial membership survey (a nonscientific survey of current U.S. and Canadian members) reported that 33% (or more than an estimated 430,000 members) said they had been referred to AA by a treatment program (A.A. World Services, 2008). This is about double the percent referred to AA from treatment programs in 1977 (A.A. World Services, 2002), and is suggestive of a greater reliance on these groups by both the U.S. treatment system and the population.

#### **1.4.2 AA in the current Swedish treatment system**

In Sweden, AA's association with the professional treatment system occurred after Minnesota model treatment was introduced to the country in the 1980s and at a time when Sweden was seeking different solutions to the growing costs of the public sector (Stenius, 1991) and when the welfare state was partly reorganized and provision privatized. These changes also indicated that the target group of the treatment system broadened to include not only the poor but also a new middle class (Eisenbach-Stangl & Rosenqvist, 1998). For attendees of Minnesota model programs, AA appears to serve as a type of aftercare much like that seen in U.S. treatment programs (Bodin, 2006). Minnesota model programs in Sweden represent a rather small portion of publicly funded treatment. The National Board of Health and Welfare, which monitors the developments in the overall treatment of alcohol and drug clients on an ongoing basis, reported that 78% of all clients in the 2003 survey were undergoing treatment in units under public ownership (Minnesota model programs are mostly privately-owned). About a quarter of the total sample of programs surveyed reported using Minnesota model treatment methods (Socialstyrelsen, 2004). An earlier 1990s national survey of just in-patient facilities reported that Minnesota model programs comprised one quarter of all beds (Blomqvist, 1998b).

### **1.5 A SHIFT IN THINKING**

With the recognition that not all treatment works (White, 2005), treatment providers are gradually being required to adopt the evidence-based treatment (EBT) standards expected in health care more generally; and behavioral health researchers have been challenged to disseminate evidence-based practices into clinical settings (Miller, Zweben, & Johnson, 2005). For substance misuse treatment, EBT efficacy research is based on a hierarchy of scientific evidence with randomized clinical trials (RCT) representing the "*gold standard*" (but not always practical in behavioral health research); followed by quasi-experimental studies (e.g. studies with some degree of control over factors that can confound interpretation of results), correlational studies (e.g., studies with systematic evidence across studies or programs), and anecdotal evidence (e.g. case reports, professional opinion). The cost of providing effective services factors into this discourse. In defining EBTs, usually some compilation of the strengths of the research evidence for (or against) different approaches is generated. This has been the case in both Sweden and the U.S., with discussions around EBT occurring in both countries since the 1980s (or about 2 decades). Because much of the discussion on the handling of problem drinkers (and to a lesser extend drug misusers) in this thesis is historical, some discussion on future directions of treatment (especially

how self-help groups fit into the service delivery model) is added to this time line. As well, it is hoped that this thesis will contribute (in some small way) to the research evidence. Papers I through V fall into the quasi-experimental category.

### 1.5.1 A review of the Swedish discourse

As a brief review of the EBT effort in Sweden, the Swedish Council on Technology Assessment in Health Care (acronym SBU) was founded in 1987 in response to changing technologies and the high increases in health care costs (Berglund et al., 2003). In 2001, the SBU delivered a research overview based on a meta-analysis of randomized controlled trials conducted worldwide on the effectiveness of alcohol and drug treatments. Consistent with EBT practices, the main objective of this effort was to identify the most efficacious interventions (12-step treatment was one such intervention), as well as technologies still in use but lacking an adequate evidence base. Results of the overview were made available to clinicians and health care administrators in an effort to promote the most appropriate use of limited resources. Following on these SBU efforts, the National Board of Health and Welfare in 2002 initiated the development of common national guidelines for substance misuse care. As part of developing these guidelines, five expert groups composed of medical and social researchers took part in a review of relevant research literature (Blomqvist, Palm, & Storbjörk, 2009). The final treatment guidelines, which were published in 2007, raised not only hopes but also some debate. A review of the literature suggests the U.S. as a whole (statewide differences do exist) has not taken action on the evidenced-base treatment (EBT) issue to the extent that Sweden has, but similar mixed sentiments have been voiced as summarized in a paper by a longstanding U.S. treatment researcher.

*Although, historically, [evidence-based treatment] has not been a standard of care in behavioral health, there are sound scientific, ethical, and compassionate reasons to learn and deliver an EBT as it becomes available..." [However] evaluating scientific evidence is a complex and evolving process. There is the danger that funders and regulators will take action prematurely, without good understanding of the state of evidence and the practical constraints inherent in implementing worthy goals (Miller, et al., 2005).*

In reviewing published behavioral health EBT research, one part of the EBT debate in Sweden appears to be focused on the provision of services to drug misusers and the use of compulsory treatment. This is taken up here because drug use is discussed in the cross-cultural comparison papers (I, II and III) of this thesis (and a forthcoming paper). Although both Sweden and the U.S. have a history of a “war on drugs” and a rejection of harm reduction interventions, the countries differ in views of drug use and treatment policies. Since the 1990s, drug use in Sweden has been increasing even though drug users represent a small group relative to the U.S. (Bergmark, 1998). Swedish drug policy is known to be restrictive and the ultimate goal is to become a “drug free society.” In comparison, a level of tolerance is accepted around “recreational use” in the U.S.

Following WHO recommendations, Sweden handles substance misusers as “sick individuals” who should be provided with care and treatment (Israelsson, 2010). As such, individuals who refuse voluntary treatment can be committed to compulsory care if they pose a serious threat to the health and well-being of themselves or significant others. In comparison, legal sanctions (e.g., accept treatment or serve time

in prison) are more common in the U.S. This is especially true for drug users convicted of drug crimes. Like the U.S. treatment system, alcohol and drug abusers in Sweden are often treated in the same programs (excluding methadone maintenance) and, as in the U.S., a portion of individuals abuse both alcohol and drugs. However, unlike Swedish treatment goals for problem drinkers (e.g. social reintegration and non-problem drinking), total lifelong abstinence is the only officially acceptable goal for drug abusers (Blomqvist, et al., 2009), and tolerance for drug use is low, both by society at large and officially. Believing that drug abusers should be provided with care, Swedish drug treatment has largely relied on re-education, “social fosterage,” and coercion in order to turn abusers into norm-abiding citizens (Blomqvist, et al., 2009). Against this backdrop, drug dependent individuals might do well in 12-step programs that set total abstinence as a lifelong goal.

### **1.5.2 A review of the U.S. discourse**

Leading up to EBT efforts in the U.S., since the 1980s clinicians, programs, and systems providing treatment have developed a strong allegiance to particular models, often 12-step based or some combination of that and other model(s), but with little regard to scientific evidence for efficacy (Morgenstern, 2000). Somewhat like the EBT discourse in Sweden, the developmental process has led to a polarization of science versus practice, and to the broader impassioned debate over the merits of using evidence-based practices in behavioral health services (Miller, Sorensen, Selzer, & Brigham, 2006). Guidelines around EBT practices, which (as noted above) are less defined than in Sweden, will likely be further complicated by policy and public sentiments around healthcare reform (among other serious economic issues), including how treatment will be provided and funded in the near future. Parity legislation scheduled to go into effect in 2014 in the U.S. will require all insurers (private and public) to reimburse access to behavioral health care (for psychiatric and substance use disorders) at a level equivalent to coverage for other medical conditions under one's insurance carrier (<http://www.kff.org/healthreform/upload/8061.pdf>). There are clear trends that substance abuse treatment may be integrated with mainstream health care (Weisner, 2002 12061; Weisner, Mertens, Parthsarathy, & Moore, 2001). The argument here is that individuals with substance use disorders often have co-occurring mental and physical problems that would be best served in integrated care systems. As such, treatment of problem use will be largely in the control of the medical sector.

In keeping with EBT concerns, but more to the point of Papers IV and V, there has been a shift in the U.S. treatment discourse based on evidence that the natural course of alcohol and drug dependence is marked by recurrent cycles of remittance which often require multiple episodes of care (Dennis, Scott, Funk, & Foss, 2005). Instead of the once practiced “acute care model” a new “continuing care model” of treatment has been proposed. This new model recognizes the chronic, relapsing nature of substance use disorders and, hence, the need for ongoing care (A. Thomas McLellan, 2002; A. Thomas McLellan, McKay, Forman, Cacciola, & Kemp, 2005; A. Thomas McLellan & Meyers, 2004). The newer continuing care model proposes that substance use disorders be evaluated, treated, and monitored like other chronic illnesses, with interventions that vary in intensity over time to match changes in symptoms and other idiosyncratic factors (McKay, 2005; A. Thomas McLellan, Lewis, O'Brien, & Kleber, 2000). The issue over “chronic” versus “acute” care has been less of an issue in Sweden for somewhat obvious reasons – under a social welfare system all citizens, problem substance users included, have the right to economic and social safety and

equality in living circumstances. Like the U.S., concerns about early identification and intervention along with the appropriate levels and types of care are part of the Swedish EBT discourse. It is highly unlikely that the U.S. reliance on self-help groups will change.

### **1.5.3 Concerns about self-help**

One concern of this thesis is the potential over-reliance of providers (especially in the U.S.) on self-help groups as a sole source of continuing/aftercare (or as a replacement for primary treatment) for those with a substance use problem. AA's triennial membership surveys (U.S. and Canadian members only) show that the majority of individuals who initiate involvement in AA discontinue their involvement in less than a year (McCrady & Delaney, 1995, p. 161). This suggests AA's appeal in the U.S. is limited. What is more, even though several evidence-based twelve-step facilitation (TSF) interventions evaluated in the U.S. have led to better post-treatment self-help attendance and outcomes (Dennis M. Donovan & Floyd, 2008), it is not clear that effects or involvement is sustained relative to other interventions (or lack of).

What is more, most (but not all) (Humphreys, Moos, & Finney, 1996; Kaskutas, Bond, & Ammon Avalos, 2009; Kelly, Stout, Zywiak, & Schneider, 2006; R. H. Moos & Moos, 2006) of what is known about the value of AA has been based on short-term outcome studies in the U.S. AA's Triennial Surveys provide information on the characteristics of those who stay engaged beyond 1 year (e.g. 5, 10, and >10 years) but these surveys represent very biased samples – nothing is known about those who dropped out (a comparison group). Hence, evidence is still lacking on who responds best to AA over the longer course. Along the same lines, we have little research on what it takes or how long it takes to instill an abstemious lifestyle in alcohol-dependent persons. U.S. research suggests this is not a homogeneous population. Indeed, a literature on “natural recovery” (not reviewed here) shows that not everyone needs treatment or AA to move out of problem use (L. C. Sobell, Ellingstad, & Sobell, 2000). Papers IV and V address these long-term issues using newer and more sophisticated longitudinal modeling techniques.

## **1.6 A LITTLE MORE ABOUT ATTRITION IN AA**

Although the frequently quoted AA membership survey attrition figure (95% in the first year) for the U.S. has been publicly challenged as being too high (Archer, 2007), scientific evidence has nonetheless shown high attrition rates for AA among those discharged from treatment (Mäkelä, et al., 1996a). Early U.S. research studies reported attrition rates in the range of 35-68% occurring in the first weeks and months of contact with AA (Emrick, 1989). Recent U.S. studies of attrition in AA during the year following discharge from treatment indicate that rates are about 40% (Kelly & Moos, 2003; Tonigan, Miller, Chavez, et al., 2002). Even though a large U.S. research shows that post-treatment AA relates to better drinking outcomes, there is some convincing new evidence that a fair portion of treated individuals maintain abstinence without post-treatment AA (Kaskutas, Ye, Greenfield, Witbrodt, & Bond, 2008). It is instructive to understand more about whom these individuals are, a matter taken up in Paper V.

No data on attrition rates for post-treatment AA attendance were found for Sweden in the literature.<sup>8</sup> A single author who has published research on post-treatment AA among Swedish clients treated in a Minnesota Model program did not provide information on the proportion of individuals who reported no AA attendance at the 1- or 2- year follow-ups (Bodin, 2006; Bodin & Romelsjö, 2006, 2007). As a matter of opinion, just as it would be imprudent to assume that a single therapy should work for everyone with a particular mental disorder or that a single drug prescription should work for everyone with a particular medical condition, it would be illogical to assume that self-help groups should work for everyone with a substance use disorder. As concluded by Ernie Kurtz (historian and recognized AA researcher) in a handbook written for practitioners “*self-help is not a panacea and it appeals to a small minority of people (Kurtz, 1997).*”

## 1.7 RATIONALE FOR THE THESIS STUDIES

This thesis primarily aims to further the knowledge on who benefits from AA (and similar self-help group) affiliation both proximally and distally. While a body of methodologically sound research has been generated in the last decade on the shorter-term benefits of AA, with almost all of it coming out of the U.S., much less is known about the predictors of long-term AA affiliation among treated and untreated problem drinkers and how that involvement relates to drinking outcomes over time. As stated earlier, this thesis takes a two-pronged analytical strategy to address these aims. First, a comparative study of the role and impact of AA (and other self-help groups) under two different treatment systems (Swedish and U.S.) is conducted using treatment samples interviewed at baseline and 1 year later. Secondly, long-term trajectories analyses are conducted to explore more specific aspects of AA as a program and the relationship of these aspects to drinking over 7 years (with follow-up interviews at 1, 3, 5, and 7 years). This interview schedule is supported by conclusions in U.S. longitudinal literature about the pace of change in individuals' alcohol consumption and related problems.

The reasons for the cross-cultural comparison between Sweden and the U.S. are many. The more obvious reason is that both studies used the same research methodologies and they shared many comparable measures (most particularly measures on self-help, alcohol and drug use, other service utilization, social pressures to enter treatment, and use-related problems and severity). The studies were designed by researchers from two international research centers<sup>9</sup> with the original aim of understanding the “social ecology” of treatment, that is, understanding the experiences

<sup>8</sup> Looking at another Nordic country, rates of attrition were found among Finnish AA members. These statistics were based on anniversary announcements published in the national AA newsletter and could include persons with and without prior treatment. Results showed that half coming to AA for the first time drop out in less than 3 months, about 40% with less than a year of sobriety remain sober in AA another year, and about 80% with 1 to 5 years of sobriety (and about 90% with more than 5 years) remain sober in AA another year. These rates were on the same order as the US and Canada membership statistics (Mäkelä, 1992attrition).

<sup>9</sup> Alcohol Research Group (ARG), Emeryville California and the Centre for Social Research on Alcohol and Drugs (SoRAD).

of clients and the treatment system within the social contexts in which these occur. The Swedish study was modeled on the U.S. study.

Additionally, the two countries share characteristics that make comparisons for this thesis meaningful. Both were strongly influenced and shaped by events arising out of the temperance movement, both give alcohol a high place on the political agenda, both have established treatment systems, and both have histories with self help movements. Within these similarities lie differences in the ways inwhich alcohol problems are currently handeled. For example, Sweden has centrally planned health care, whereas the U.S. has a two-tiered health care system which is greatly influenced by market forces. Whereas, AA and the disease concept has influenced the U.S. treatment system far more than Swedish system, Sweden, with its roots in poor relief, has developed treatment as a branch of relief or social welfare (Rosenqvist & Kurube, 1992). This thesis uses a parallel (side-by-side) approach in this cross-cultural comparison and it makes no effort to determine which is the better system of treatment.

Findings from this research should have implications for treatment efforts in the Swedish and U.S. treatment systems by providing empirical data on factors associated with the initiation of AA and the patterns of AA affiliation that facilitate improved outcomes among heterogeneous groups of individuals, both short- and the long-term. This thesis takes the earlier comparative work (Eisenbach-Stangl & Rosenqvist, 1998; Mäkelä, et al., 1996a; Rosenqvist & Kurube, 1992) a step further and looks deeper at gender differences as related to the aims, and, also, at the handling of more marginalized individuals in the treatment systems. More specifically, framed by a behavioral help-seeking model of health care utilization (L. A. Aday et al., 1999; R. M. Andersen, 1995; Greenley & Mechanic, 1976; Mechanic, 1976; Narrow, Regier, Rae, Manderscheid, & Locke, 1993; Vaillant, 1996) as adapted to alcohol treatment research (Booth, Kirchner, Fortney, Ross, & Rost, 2000; Weisner, Matzger, Tam, & Schmidt, 2002; C. Weisner & L. Schmidt, 2001), this thesis explores the contextual (aggregate system) and individual roles that predisposing characteristics, formal and informal enabling influences, and need factors play in predicting AA attendance and other AA endorsed behaviors, and subsequently how these relate to both proximal and distal outcomes.

To understand the connection between who goes to AA and who benefits, it is useful to understand how AA works. The remainder of this section (1.0 Background and Significance) provides information on AA as a social movement and on how it functions in the U.S. and Sweden. Though there are variations in AA practices in different societies (as well as within an individual society), for example, variation in membership composition, interpretations of spirituality, and the relationship to professional treatment (Mäkelä, 1993b), much of what follows on the actual workings of AA is described from a U.S. perspective. As concluded in Mäkelä's study of AA in eight societies (1996), in spite of differences substantial cross-cultural unity is present organizationally, and in terms of beliefs and practices (pg. 241). Unity across societies, according to Mäkelä, was most evident in the adherence to the Twelve Steps and the Twelve Traditions, the use of AA sanctioned literature, and a bottoms-up structure of governance based on autonomous groups.

In addition, AA's influence on the current day alcohol and drug treatment system (especially evident in the U.S.) is described from an historical perspective, starting with early-recorded accounts on the handling of problem drinkers in the U.S. and Sweden. This historical content, which adds depth to contextual factors associated with AA in each system today, is used to aid interpretation of findings in the three comparative papers that use Swedish and U.S. data. Lastly, the overriding behavioral

help-seeking theory (L. Aday & Andersen, 1974; L. A. Aday & Andersen, 2005; R. M. Andersen, 1995) used to structure the five papers included in this thesis is described.

## 1.8 PRINCIPLES AND ORGANIZATION OF TWELVE-STEP RECOVERY

AA's ability to sustain as a social movement has been attributed to its development of a codified program of recovery and its development of organizational structures and procedures (White, 1998, pg. 143). For more than 75 years the AA principles and organization has remained essentially unchanged. It has not been co-opted by any other social movement or entity. As observed nearly two decades ago by an early AA researcher,

*Undisputed is the fact that AA is a major social movement that continues to grow in size and significance not only in helping individuals with alcohol problems but also in influencing the professional community, government agencies and programs, and the general public – all of this without taking a formal public stance on any issue (Kurtz, 1997).*

AA's "Twelve Steps" represent the principles<sup>10</sup> by which its members find recovery, and the "Twelve Traditions" represent the principles by which its society functions. Organizational order and coherence are maintained through the Twelve Traditions. These serve as principles for the relationship between the individual and the organization and between organizational units (T. Borkman, 2008b). The steps and traditions are detailed in two primary texts, "*Alcoholics Anonymous*" (known as the "Big Book"<sup>11</sup>) and "*Twelve Steps and Twelve Traditions*" (1952). The prior, initially titled "*Alcoholics Anonymous: The Story of How More than One Hundred Men Have Recovered from Alcoholism*" (1939; now in its fourth edition), is comprised of two parts. The first describes how the program works (these first 164 pages have remained essentially unchanged since the 1939 edition) and the second part consists of members personal stories (these have undergone additions, deletions, and title changes in various editions).

### 1.8.1 AA groups, members, and fellowship

According to two basic AA texts, AA groups are autonomous (except in matters affecting other groups), fully self-supporting, and forever nonprofessional. Members seeking recovery share a common concern, the desire to quit drinking. Members provide emotional support and aid to one another by sharing their experiential knowledge (T. Borkman, 2008b). Relationships among members are egalitarian, and help is a freely given (Medvene, 1984, pg. 11) and it is reciprocal. Recovery is the process by which alcoholics become abstinent with the aid of peers and by "working" a twelve-step program. According to Borkman, a sociologist and twelve-step author (T.

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<sup>10</sup> Principles of AA: acceptance, faith, surrender and trust, honesty, courage, willingness, humility, forgiveness, freedom (from self), perseverance, patience, charity and love.

<sup>11</sup> In the late 1980s, AA's General Service Office in New York City started to publish translations of the "Big Book" in the languages of countries in which little or no AA activities had been previously established (Mäkelä, 1993b).

Borkman, 1976, 1999, 2008b), recovery includes working the program through reciprocal involvement with peers, groups, and their meetings. Recovery is a self-paced process that is shaped by the practices of the group, one's choice of sponsor(s), and peers with whom one identifies and interacts. Individuals seeking recovery decide how many and which meetings they want to attend; the pace, order, and number of steps they work; whether or not they use a sponsor; whether they become a sponsor; what and how much service they wish to give others; and how they interpret spirituality and higher power (T. Borkman, 2008a, 2008b).

The AA program is represented by a set of prescribed beliefs, values, and behaviors (Mäkelä, et al., 1996a; Tonigan, 2007). Working the program means working the Twelve Steps (displayed below), often with the guidance of a sponsor. Fellowship entails the practice and activities of AA. The Twelve Traditions (also displayed below) provide the guiding principles for the fellowship (Gerard J. Connors, Walitzer, & Tonigan, 2008). Attending meetings, reading twelve-step literature, self-identifying as a member, doing step-work, having a sponsor, being a sponsor, doing service work, and experiencing a spiritual awakening as a result of one's twelve-step involvement are some ways that individuals practice and experience recovery. Meeting attendance is a basic component of recovery. As described by Borkman (2008):

*Meetings are where the ritualized aspects of AA are practiced, where members learn the belief system, observe how seasoned members behave, learn how to tell their stories, and through listening, observing and taking their turn talking, gain new identities and the “experience, strength and hope” to resolve their drinking and living problems.*

Meetings can be closed (only for those who self-identify as an AA member) or open (for families, friends, and interested persons). Meetings can take different formats, that is, one or two members may tell their stories (speaker meetings), members may share in a general discussion (discussion meetings), or members may read and discuss some particular text from the AA literature (literature or step meetings). Though meeting formats tend to be somewhat diverse across groups,<sup>12</sup> taking on characteristics of members of the group, most meetings have commonalities. These include rituals around the opening, announcements, discussion, money collection (optional donation), refreshments, and the closing. The discussion is the main part of the meeting. Here attendees talk in turn. There is neither cross talk (as in a group therapy session where a counselor would respond to someone who has shared) nor overt negative feedback for those who speak. “Passing” or not talking at a meeting is accepted (Mäkelä, et al., 1996a).

Beyond meeting attendance, sponsorship (both having and being a sponsor) is another key (but not required) recovery behavior. A sponsor is a peer who has maintained sobriety by working the steps and acts as a guide or mentor to someone with less experience. Sponsors share their experiential knowledge of how to apply a twelve-step program (T. Borkman, 2008b) without imposing their personal views on the sponsored person. Members share with a sponsor<sup>13</sup> that which is too private or inappropriate in meetings (Mäkelä, et al., 1996a). AA has a slogan, “You have to give

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<sup>12</sup> This is where cultural differences noted in 1.1 Introduction are the most obvious.

<sup>13</sup> Members may choose to share with ordained clergy or closed mouth, understanding friend, doctor, psychologist, member of the family (Big Book, pg. 74).

*it away to keep it.*" It is through helping other alcoholics that one is helped, a concept often referred to as the helper therapy principle (T. Borkman, 2008b, pg. 21; Zemore & Kaskutas, 2004) and closely linked to spiritual development.

In AA, a spiritual awakening occurs as a result of working through the steps and starts with acceptance of a higher power. Higher power can be God or any transcendent being or source that is greater than and external to the individual (Tonigan, Toscova, & Connors, 1999). For some who have difficulty with the concept, this can mean the twelve-group itself or, perhaps, a sponsor (Kelly & McCrady, 2008). AA's ideology places strong emphasis on tolerance.

Doing service is another prescribed AA behavior. This can include activities like taking a turn talking at a meeting or sharing with others before, during, or after meetings; or assisting with maintenance of a group (like chairing a meeting or making coffee or setting up chairs for a meeting) or the larger organization (like hosting other social events or taking meetings to jails, hospitals, or other institutions).

### **1.8.2 The Twelve Steps of AA**

The Twelve Steps of AA serve as the foundation of the program (McCrady & Delaney, 1995). New members are encouraged (but not required) to start at the first step and move sequentially through the steps at their own pace. AA World Services publishes a book that provides an interpretation of the twelve steps (I. Alcoholics Anonymous World Services, 1978). At AA step-meetings, portions or an entire step is read from this text and discussed. AA's "Big Book" (Alcoholics Anonymous, 2001b) also has three chapters devoted to a practical description of how to use the steps. Paragraphs from Chapter 4 (pages 83-84), known as "The Promises" and related to working the steps, are also read in many AA meetings:

*If we are painstaking about this phase of our development, we will be amazed before we are half way through. We are going to know a new freedom and a new happiness. We will not regret the past nor wish to shut the door on it. We will comprehend the word serenity and we will know peace. No matter how far down the scale we have gone, we will see how our experience can benefit others. That feeling of uselessness and self-pity will disappear. We will lose interest in selfish things and gain interest in our fellows. Self-seeking will slip away. Our whole attitude and outlook upon life will change. Fear of people and of economic insecurity will leave us. We will intuitively know how to handle situations which used to baffle us. We will suddenly realize that God is doing for us what we could not do for ourselves.*

*Are these extravagant promises? We think not. They are being fulfilled among us—sometimes quickly, sometimes slowly. They will always materialize if we work for them.*

Step 12 results in the culmination of working the prior steps: "*Having had a spiritual awakening as the result of these steps, we tried to carry this message to alcoholics and to practice these principles in all out affairs.*" A spiritual awakening in AA is defined as "*a new consciousness and being*" (AA World Services, 1978, p. 107) wherein one finds meaning and purpose in life where there was none previously. Purpose is given expression by the portion of Step 12 that encourages taking the AA message to other alcoholics, an essential part of maintaining sobriety (McCrady &

Delaney, 1995). Quoting from the book “Alcoholics Anonymous” (Fourth Edition), “*To be helpful is our only aim (page 89)...Helping others is the foundation stone of your recovery*” (page 97).

As to the other 11 steps, Step 1 serves as the necessary foundation to subsequent steps (admitting powerlessness over alcohol). In sequential steps the alcoholic acknowledges that he or she is not the center of the universe and that there is a power greater than oneself (Step 2); makes a decision to turn his or her will over to a greater power (Steps 3) and through introspection and self-evaluation discloses to another all that has been uncovered (Steps 4 and 5); relinquishes control, but not responsibility, over character defects uncovered in Step 4 (Steps 6 and 7); examines and takes action in interpersonal relationships (Steps 8 and 9); and maintains sobriety by making use of a new way of living (Steps 10 and 11). The Twelve Steps of AA are as follows (Alcoholics Anonymous, 2001a):

<i>Step 1</i>	<i>We admitted we were powerless over alcohol – that our lives had become unmanageable</i>
<i>Step 2</i>	<i>Came to believe a power greater than ourselves could restore us to sanity</i>
<i>Step 3</i>	<i>Made a decision to turn our will and our lives over to the care of God as we understand Him</i>
<i>Step 4</i>	<i>Made a searching and fearless moral inventory of ourselves</i>
<i>Step 5</i>	<i>Admitted to God, to ourselves, and to another human being the exact nature of our wrongs</i>
<i>Step 6</i>	<i>Were entirely ready to have God remove all these defects of character</i>
<i>Step 7</i>	<i>Humbly asked Him to remove our shortcomings</i>
<i>Step 8</i>	<i>Made a list of all persons we had harmed, and became willing to make amends to them all</i>
<i>Step 9</i>	<i>Made direct aments to such people when possible, except wherever to do so would injure them or others</i>
<i>Step 10</i>	<i>Continued to take personal inventory and when we were wrong promptly admitted it</i>
<i>Step 11</i>	<i>Sought through prayer and mediation to improve our conscious contact with God as we understood Him, praying only for knowledge of His will for us and the power to carry that out</i>
<i>Step 12</i>	<i>Having had a spiritual awakening as the result of these steps, we tried to carry this message to alcoholics and to practice these principles in all out affairs</i>

### **1.8.3 The Twelve Traditions of AA**

The Twelve Traditions, which (as noted above) are guidelines for the organization itself and for the conduct of its members, have provided a template for a successful model of self-supported expansion (Kelly & McCrady, 2008; McCrady & Delaney, 1995). The Twelve Traditions of AA are intended to preserve the integrity of the AA program. The group and organizational relationships put forth in the Twelve Traditions are integral parts of a Twelve-Step Recovery Model. Still, individual AA groups are relatively autonomous within the traditions (T. Borkman, 2008b). Tradition 1 emphasizes that the common welfare must be put before the welfare of individuals. Traditions 2 through 11 set guidelines related to: who is in charge of the group

(Tradition 2); membership requirement (Tradition 3); group autonomy (Tradition 4); the group's primary purpose (Tradition 5); endorsement of outside entities or not lending its name, an action that could serve as a barrier preventing the spiritual aim from being realized (Tradition 6); self-support, such that diversion from AA's primary purpose is averted (Tradition 7); maintaining a nonprofessional and non-hierarchical organizational structure (Traditions 8 and 9); neutrality on outside issues, thus protecting AA's unity (Tradition 10); and a public relations policy based on attraction rather than promotion, thus discouraging personal ambition and self-seeking (Tradition 11). Lastly, Tradition 12 perpetuates the willingness of members to "give up personal desires for the common good" (AA World Services, 1978, p.184). Together the Twelve Steps and the Twelve Traditions function to represent the three key facets of the Twelve-Step Recovery Model represented in AA's triangular AA logo: recovery, service, and unity.

- Tradition 1      Our common welfare should come first; personal recovery depends upon A.A. unity*
- Tradition 2      For our group purpose there is but one ultimate authority—a loving God as He may express Himself in our group conscience. Our leaders are but trusted servants; they do not govern*
- Tradition 3      The only requirement for A.A. membership is a desire to stop drinking*
- Tradition 4      Each group should be autonomous except in matters affecting other groups or A.A. as a whole*
- Tradition 5      Each group has but one primary purpose—to carry its message to the alcoholic who still suffers*
- Tradition 6      An A.A. group ought never endorse, finance, or lend the A.A. name to any related facility or outside enterprise, lest problems of money, property, and prestige divert us from our primary purpose*
- Tradition 7      Every A.A. group ought to be fully self-supporting, declining outside contributions*
- Tradition 8      Alcoholics Anonymous should remain forever non-professional, but our service centers may employ special workers*
- Tradition 9      A.A., as such, ought never be organized; but we may create service boards or committees directly responsible to those they serve*
- Tradition 10     Alcoholics Anonymous has no opinion on outside issues; hence the A.A. name ought never be drawn into public controversy*
- Tradition 11     Our public relations policy is based on attraction rather than promotion; we need always maintain personal anonymity at the level of press, radio, and films*
- Tradition 12     Anonymity is the spiritual foundation of all our traditions, ever reminding us to place principles before personalities*

## 1.9 HISTORICAL OVERVIEW OF TREATMENT AND AA IN THE U.S.

Though current U.S. treatment philosophies vary across treatment programs (e.g., cognitive behavioral, motivational enhancement, relapse prevention, twelve-step facilitation, or eclectic), most clinicians routinely recommend twelve-step attendance

during and following treatment (McCrady & Miller, 1993; McElrath, 1997; Slaymaker & Sheehan, 2008). Many incorporate aspects of a twelve-step recovery into their treatment. For example, among 519 outpatient, residential, and specialty care facilities surveyed in a 1997 national study 71% reported they place “*moderate*” to “*great*” emphasis on the Twelve Steps (Slaymaker & Sheehan, 2008). In the following paragraphs, some key elements are reviewed chronologically to better illustrate how the Twelve-Step philosophy came to be woven into the fabric of the American alcohol and drug treatment system. The following information comes mainly from chapters (cited in the text) of “*Slaying the Dragon: A History of Addiction Treatment and Recovery in American*” (White, 1998).

The earliest history of alcohol treatment began in the late 1700s when care was provided in homes by a few progressive physicians and this spanned across the 1800s when care was later provided in religiously-oriented inebriate homes, medically-oriented inebriate asylums, private addiction cure institutes, and through bottled home “*cures*” (Chapters 2-9). This network of institutions was based on the concept that inebriety was a treatable disease. Discouraged about the ability to cure the addicted of his or her disease, treatment took a turn around the start of the 1900s when the inebriate homes and asylums were closed and alcoholics and addicts were instead sent to public hospital wards, sequestered in inebriate penal colonies, or exiled to back wards of deteriorating psychiatric hospitals (Chapter 10). The earlier notion that addiction was a primary and treatable disease gave way to two new views: addiction was a symptom of an underlying emotional disturbance that should be treated by psychiatry, and alcoholism represented willful misconduct that should be punished by the criminal justice system (Chapters 10-11). The temperance movement, which predominated in the U.S. from the 1800s until the repeal of prohibition in 1933, mostly mirrored these views. If alcohol and drugs were effectively prohibited, there would be no need for treatment programs.

At the end of prohibition, the American Disease Model came into practice and was popularized by the start of AA (1935). Influenced by a new alcohol science and Alcoholics Anonymous in the 1940s the “*modern alcoholism movement*” emerged with a focus on changing the perception of how alcoholism and the alcoholic were seen (White, 1998; Chapter 19). AA’s focus away from the evil of alcohol and instead onto the individual vulnerability of the alcoholic came to be embraced by the American culture as a whole (Chapter 16). In 1942, the Center of Alcohol Studies was formally established for research, training, and publications at Yale University (Chapter 19). In that same period the National Committee for Education on Alcoholism was founded (1944) by Marty Mann, with the call that alcoholism be viewed as a disease and that community clinics be set up to treat alcoholics. This was followed by the founding of state alcoholism commissions (among other entities) aimed at community education and treatment. Little or no professional help was available for those with socially stigmatized disorders like alcoholism. Psychiatric hospitals continued to be the primary source of care in the middle decades of the 20<sup>th</sup> century. Some care was provided by compassionate peers who were themselves “*in recovery*.<sup>1</sup>” The grass roots nature of the early alcoholism movement waned as the alcoholism industry (and by extension the addiction industry) emerged and then became professionalized and commercial, as marked by several contributing events in the 1950s and 1960s (Chapter 20). Although a disease model was advanced, treatment programs remained segregated in specialist programs with little connection to medical and mental health (Miller, et al., 2006).

The birth and spread of the “Minnesota Model” of treatment, which has been traced to the arrival and spread of AA across Minnesota in the 1940s, played a pivotal

role in the emergence of treatment we know today in the U.S. The Minnesota Model (1948) combined professional treatment with the twelve steps of AA. This model of treatment first influenced - then dominated - the treatment industry in the next 40 years. In “*Slaying the Dragon*,” White posits, “*Why Minnesota?*” His answer (based on conversations with key persons<sup>14</sup>) was that the model, in part, arose from “*the Scandinavian tradition of concern and innovation in the areas of education and social welfare issues (Anderson)*” along with an ideological leadership<sup>15</sup> and a critical mass in the growth of AA in the Midwest “*plus the unique community-oriented culture within Minnesota and a general climate of social reform (Spenser).*” Many Scandinavians who had migrated to the U.S. settled in Minnesota. There continues to be a contact between Nordic countries and Minnesota and a few institutions have had counselors (often claiming to have Nordic ancestors) from the U.S. (Stenius, 1991). The confluence of culture, personalities, time, and place (White, Chapter 21) came together synergistically. About this time, the National Institute of Mental Health established a special division of alcoholism (1950) and the American Medical Association officially defined alcoholism (1952 and 1956). The Veteran’s Health Administration (VA) opened alcoholism treatment units (1957) within its network of VA hospitals (Chapter 26). As well, E.M. Jellinek published the Disease Concept of Alcoholism (1960). In 1963, an official statement by the American Public Health Association identified alcoholism as a treatable illness.

These earlier events were followed by an expansion in private and non-hospital-based inpatient treatment programs spurned by the insurance industry’s reimbursement for alcoholism treatment and the American Psychiatric Association’s urge that health insurance plans cover treatment. AA’s membership growth was steepest in the 1970s and 1980s when professional treatment programs began to proliferate, a sign of their endorsement of twelve-step groups. About this time, funding for various other national legislative committees and agencies were established and lead to the start of research, education, and treatment. Congress passed the Comprehensive Alcohol Abuse and Alcoholism Prevention Treatment and Rehabilitation Act (1970) and later established the National Institute on Abuse and Alcoholism (Chapter 26), thus opening public funding for treatment and stimulating growth in private treatment programs (Weisner & Morgan, 1992). Community- and hospital- based programs across the U.S. began to emulate the Minnesota Model which is still one of the most commonly emulated treatment approaches in America (Fuller, 1989; Institute of Medicine, 1990).

The incorporation of AA into almost all treatment programs in the U.S. today (National Treatment Center Study, 2005) indicates a strong endorsement by professionals to the disease concept of dependence and to abstinence as the preferred goal of treatment (Weisner & Morgan, 1992), an approach apparently not as widely adopted internationally (Mäkelä et al., 1996b, p. 186). As well, some voice has been given to the potential cost-effectiveness and health care cost offsets associated with

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<sup>14</sup> Dan Andersen, a pioneer of the Minnesota Model and first CEO of Hazelden, and Jerry Spensor, a later Hazelden president.

<sup>15</sup> An article from “*The Nation*” (May 30, 1923) entitled “*The Norse State*” is an illustration of the influence that Scandinavians had on the Minnesota culture: “*Good or bad, the Scandinavians monopolize Minnesota politics. Of the last nine governors of the state, six have been Scandinavians. So is Dr. Shipstead, who defeated Senator Kellogg in the 1922 election; so is Harold Knutson, Republican whip of the House. Scandinavians make up a large portion of the Minnesota state legislature...*”

use of self-help groups. A few U.S. studies have attempted to look at cost savings associated with AA versus formal treatment (Brandsma, Maultsby, & Welsh, 1980; Humphreys & Moos, 1996, 2001; Walsh et al., 1991). One such study (using an untreated sample -- no prior AA or treatment) found reduced alcohol-related health care costs at a 3- year follow-up for those in the group that initially attended AA compared to the group that initially selected outpatient treatment (Humphreys & Moos, 1996). More notably, both groups had comparable drink-related outcomes. As of this writing, it is not clear that the success of self-help groups has been used as a pretext for delaying or reducing support for treatment services (Humphreys, et al., 2004). As research on AA has been dominated largely by North American perspectives (Mäkelä, 1993a), comparatively less has been documented about how AA has been integrated into the continuum of care in countries with different patterns and perceptions of problem use and different systems for providing services. Sweden is as example of one such country.

## **1.10 HISTORICAL OVERVIEW OF TREATMENT AND AA IN SWEDEN**

The history of treatment in Sweden began later than in the U.S. (and somewhat later than some other European countries). However, in contrast to the U.S. and, as will be shown here, Sweden has a treatment history with extreme continuity since the 19<sup>th</sup> century. There is some documentation of small scale private “institutes” and of trial special “cures” for alcoholics existing as early as the 1840s, but it is more likely that alcoholics were being treated at spas, by private practitioners and in general hospitals for medical problems related to alcohol misuse itself, such as cirrhosis or deliria, acute poisoning, or injury related drunkenness (Prestjan, 2007). Some traces of an organized temperance movement began in 1819 in Sweden but the first central organization, the Swedish Temperance Society, was founded later (1837). As in several other European countries, temperance societies were patterned on the American Temperance Society organized in 1826 (Bengtsson, 1938). In that same decade, Swedish parliament was noted as discussing measures related to organized and institutionalized care. In the 1870s a famous Swedish physician Manus Huss termed the word “alcoholism”<sup>16</sup> and was among those who first reported on alcoholism care in other countries and advocated for the same in Sweden. By the 1880s a certain official acceptance of the disease concept and medical care was evident as an alternative to prior repressive measures in relation to “alcoholics” (a new term replacing “drunkards”). Still the idea that inebriety was a curable disease was controversial, and the idea that drunkards could be treated for their disease was viewed with hesitancy and suspicion (Prestjan, 2007).

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<sup>16</sup> Magnus Huss was the first to define “alcoholism” as a chronic, relapsing disease. Published in Swedish in 1849 (translation quoted in William Marctet) “On Chronic Alcoholic Intoxication” (1868), 21, Huss wrote: “The name chronic alcoholism applies to the collective symptoms of a disordered condition of the mental, motor, and sensory functions of the nervous system, these symptoms assuming a chronic form, and without their being immediately connected with any of those (organic) modifications of the central or peripheric portions of the nervous system which may be detected during life, or discovered after death by ocular inspection; such symptoms, moreover, affecting individuals who have persisted for a considerable length of time in the abuse of alcoholic liquors.”

The first specialized treatment centers for the care and cure of alcoholics appeared on a small scale in 1895 and the years following (Room, Palm, Romelsjö, Stenius, & Storbjörk, 2003). Public philanthropic interest supported this early alcoholism treatment as a few new homes opened. The disease concept advocated by Swedish alcoholism physicians included “*will and morality*” in the etiology and symptomatology of alcoholism, and accordingly the primary aim in the treatment was to “*liberate, awaken, revive and strengthen the will of the alcoholic*” (Prestjan, 2007, p. 37). Even though the Swedish drinking problem was considered the most serious social problem in the country by the end of the 19<sup>th</sup> century, care in the early institutions was voluntary. This changed when the Alcoholics Act passed in 1913 (and broadened in years 1922, 1931 and 1938) provided for the compulsory treatment of anyone whose excessive drinking was seen as a burden to his/her own or others’ safety or life, anyone who failed to provide for his/her family, or anyone who was a burden to the poor-relief system (Blomqvist, 1998a).

In response to the growing strength for the temperance movement and without outlawing alcohol, ration books were introduced nationally starting in 1917 to register and ration the amount of alcohol each individual purchased. In Sweden’s first public referendum in 1922, 49% voted for prohibition and 51% for the ration system which existed until 1955 (Nycander, 1998). Criminals, drunkards, or morally incomprehensible persons had difficulty obtaining a ration book (Blocker, Fabey, & Tyrrell, 2003, pg. 603). As well, unemployed people and married housewives had to rely on their husband’s ration book. (At this same time, the U.S. response to the alcohol problem was to enact national prohibition legislation banning the sale, manufacture, and transportation of alcohol.) The number of inpatient treatment beds remained largely constant from the earlier part of the century until the 1950s and with most occupied by involuntary (compulsory) admissions. Under a major change in Swedish alcohol policy (1955) the ration book system was abandoned (Björ, Bruun, & Fränberg, 1985; Blomqvist, 1998b) and more interest was devoted to the care of alcoholics, temperance education, and “*such more positive measures*” (Elmer, 1957). Aside from a separate state-run compulsory treatment system (a small part of the overall treatment system) (Palm & Stenius, 2002), the county and municipal governments have responsibility for guaranteeing provision of alcohol and drug treatment today. Today some level of stigmatization appears evident around seeking out treatment services from the social welfare system. Although alcohol consumption is fairly low relative to other European countries, by international standards the Swedish treatment system is dense and well developed and its treatment programs and ideologies are diverse (K. H. Bergmark, 1998). Like the U.S, most treatment in the last 30 years has shifted from inpatient to outpatient treatment (Stenius & Edman, 2007).

Sweden’s history with AA groups began in the 1950s<sup>17</sup> when the first group was formed in Stockholm. This was eight years after the start of the Swedish Links, the dominant local mutual-help group at the time (Kurube, 1992a). The Swedish Links movement was also ideologically influenced by the U.S. AA movement, which

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<sup>17</sup> First attempts at AA-inspired activities in Sweden began in 1939 when an inspector of the temperance board and a group of alcoholics adapted the AA program to be more appropriate to the Swedish culture and tradition. This effort lasted six years and led to the forming of Links in 1945. Links members, compared to AA members, tend to be older, males, less educated, and with less intact social networks (K. H. Bergmark, 1998).

is reflected in their seven-point-program that overlays with AA's steps.<sup>18</sup> Unlike AA, the spiritual components are absent. Like AA, Links is based on mutual support and the belief that alcoholism is a progressive and irreversible disease (Kurube, 1998) that some are predisposed to, and that the only way to recover is to abstain from drinking (Kurube, 1992b). Some early Links groups considered themselves to be AA groups (K. H. Bergmark, 1998). Links remains a viable mutual-help organization in Sweden though its membership has dwindled over time.

Similar to the U.S. (but a bit later) AA groups and membership increased most dramatically when institutional twelve-step treatment programs like the "Minnesota Model" treatment programs were introduced to several Nordic countries in the 1980s (Stenius, 1991). (Some of this history has been described above – see section 1.4.2.) This occurred on a large scale when the Swedish Council on Alcoholism and Addiction (SCAA) was founded in 1983, and it endorsed the Minnesota Model treatment program at a time when new models of treatment were being sought, private initiative became more feasible, and public funding was not a problem (K. H. Bergmark, 1998). Many physicians from the start favored the Minnesota model and those who brought the model to Sweden were physicians, however, it is not clear that this constituted an effort to take the care of alcoholics away from the social work sector (K. H. Bergmark, 1998). Between 1980 and 1990, the number of AA groups in Sweden increased by over 1100%, that is, from 23 to 278 (Eisenbach-Stangl & Rosenqvist, 1998). Unlike the U.S., however, the disease concept has not been wholly endorsed by the majority of treatment providers (K. H. Bergmark, 1998). Though clients' drinking is addressed and abstinence is promoted, generally (and in keeping with historical roots) alcohol problems are viewed more as a social problem, and treatment is focused more broadly on integrating the problem drinker back into society by assisting with housing, employment, and other social service needs as part of the treatment experience.

## 1.11 MODERN AA (SELF-HELP) RESEARCH

A rather extensive research literature on AA and other self-help organizations has grown in the U.S. since the late 1960s (Emrick, Tonigan, Montgomery, & Little, 1993; Kurtz, 1997; Mäkelä, et al., 1996a; Tonigan, 2008). Less has been published (especially independent studies) about how AA has been integrated into systems of care other countries (Mäkelä, 1993a). Some data on AA among treated Swedish individuals (as used in this thesis), however, has been recently published. Using a Minnesota model treatment sample described earlier (n= 244; 96% inpatient; 46% referred from social welfare, 45% from employer or legal system, and 7% private clients), Bodin found that women and men attended AA meetings equally in the year following treatment, but women became more involved in particular AA prescribed behaviors (i.e., making a call to another member, reading AA literature, and having a spiritual awakening). Having a treatment goal of abstinence and prior AA affiliation predicted

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<sup>18</sup>The seven points of the Links are: 1) Admit that you are powerless over alcohol. 2) You must believe in a power that is greater than your own. 3) Do not demand anything from your fellow beings. 4) We aim for absolute honesty, purity, love for your fellow beings and unselfishness. 5) Admit your faults and imperfections to some other beings. 6) Resolve all conflicts to other ad try to make up for your mistakes. 7) As you were helped you shall help others.

better post-treatment AA involvement (Bodin, 2006). In terms of drinking, having an abstinence goal and more post-treatment AA involvement also predicted better 1-year outcomes (Bodin & Romelsjö, 2006), and greater 1-year AA involvement predicted better drinking outcomes at year 2 (Bodin & Romelsjö, 2007). As cautioned by the author, this single study of clients recruited from a private treatment center should not be generalized to larger population of treatment seekers in Sweden.

As with Bodin's study, research on self-help for the most has focused mainly on describing who attends or affiliates and on describing who gains the greatest benefit from their participation. As will become apparent in the next two sections that review the literature on AA (limitations are discussed in section 1.12), it is difficult to draw solid conclusions from the studies on AA because of numerous methodological differences, for example, sampling differences, measurement differences, or lack of control over confounding influences. As well, the role of AA and who is attracted to these groups has changed with *time* itself and as a result of national changes in healthcare, social welfare, and treatment.

### **1.11.1 Who uses AA (self-help)?**

The first research on self-help was focused largely on describing who attends A.A. and most of it was based on studies with U.S. samples. The clinical importance of identifying personal factors that facilitate (or inhibit) affiliation has been expressed by many others. Better knowledge of who affiliates leads to better clinical referrals which in return ups the chances of successful resolution of drinking problems (McCrary & Delaney, 1995, pg. 161). The following review of this body of research, however, reveals a mixed picture of inconsistent and sometimes conflicting findings.

Starting with early attempts to profile AA affiliates, Ogborne's review of the literature identified several defining characteristics of AA members. These included demographics factors (White ethnicity, male, age over 40, middle or upper class, and social stability), psychological traits (authoritarian personality, cognitive simplicity, strong affiliation needs, prone to guilt and existential anxiety, internal locus of control, and a tendency to conform), and religious orientation (Ogborne & Glaser, 1981). In that same decade, Bradley concluded in a review of the literature, "*o clear profile has emerged of the alcoholics who are most likely to affiliate with AA* (Bradley, 1988)." Similarly, a review by Emrick (Emrick, 1987) reported that socioeconomic status, social competence and stability, and type of religion were *unrelated* to AA affiliation, and instead alcohol-related variables like severity were related to attendance (but inconsistently so). A later review by Emrick, however, concluded that the use of external supports, loss of control, dependence severity, and spiritual activities were the most likely predictors of AA affiliation (Emrick, et al., 1993). Because of AA's strong spiritual focus, many over the years have assumed that the AA fellowship is best suited for those with some degree of religiosity. However, a 2000 U.S. study (Weiss et al., 2000) found that individuals who attended self-help groups (mainly AA) were those without any particular religious preference. Along the same lines, Tonigan found that those who defined themselves as atheists and agnostics (U.S. study) were less likely to attend than those with spiritual and religious self-definitions, but once engaged these same individuals benefited equally to those who identified as being religious/spiritual (Tonigan, Miller, & Schermer, 2002).

Moving into the 1990s, longitudinal studies with stronger research designs and more reliable measurements began to be conducted (Tonigan, 2008; Tonigan, Toscova, & Miller, 1996), but still inconsistent findings continued to emerge. For example,

Humphreys found that Blacks and women and individuals with more severe psychological, family, and substance use problems were more likely to attend AA/NA at a 6-month post-treatment follow-up. Educational and marital status were unrelated to attendance (Humphreys, Mavis, & Stöffelmayr, 1991). Kaskutas looked more closely at the ethnic issue and found that Whites were more likely to attend AA independent of treatment, but Blacks attended AA as part of treatment and, once introduced to AA, they were as inclined as Whites to be actively involved in various prescribed AA activities (Kaskutas, Weisner, Lee, & Humphreys, 1999). AA members in the U.S. today are still over represented by White members (Tonigan, Connors, & Miller, 1998) relative to their representation in the general population. This is not the case for gender. In the U.S. and, as well, in Sweden women are over-represented relative to their proportion in the general population with alcohol problems (Bodin, 2006; Mäkelä, et al., 1996a).

Taking up the gender question, Timko found in a sample of primarily untreated problems drinkers that women were more likely to attend self-help groups than men at a 1-year follow-up, a result that did not extend to a later 3-year follow-up (Timko, Moos, Finney, & Connell, 2002). This was consequential information because up to this point many clinicians were guarded about referring women to AA, believing that the twelve-step philosophy, especially the focus on “*powerlessness*” and “*making amends*,” might detract from women’s personal autonomy (Kelly, et al., 2006; Timko, 2008).

Exploring the severity issue, Project MATCH, a research study known for its methodological rigor and numerous research findings, found that alcohol dependence and psychiatric symptoms were related more strongly to AA participation among outpatients than inpatients (aftercare sample) at 6 months (Gerald J. Connors, Tonigan, & Miller, 2001). Although the alcohol severity finding (defined by numerous measures) seems to be a thread running through many studies, the psychiatric severity issue remains less well understood. A limited research suggests, however, that when dual diagnosis clients (those with a mental disorder and a substance use disorder) become connected with AA/NA they benefit from that participation (Timko, 2008). Evidence also suggests that dually diagnosed clients are less likely to be referred to twelve-step groups than substance use disorder-only clients (Humphreys, 1997). Project MATCH also found that individuals (both study arms) with networks supportive of drinking (prior to treatment entry) were less likely to become involved later in AA than those with unsupportive drinking networks (Longabaugh, Wirtz, Zweben, & Stout, 1998). More noteworthy, at the 3 year follow-up outpatients with initially high network support to drink drank less often and less heavily if they had been assigned to the Twelve-Step Facilitation condition (Longabaugh, Wirtz, Zweben, & Stout, 2001). This effect was partially mediated by their AA attendance.

Attempts to understand inconsistent findings started emerging in the second half of the 1990s. For example, Tonigan moved a seemingly conflicting body of research ahead by identifying study quality as a selection moderator in a 1996 meta-analysis (Tonigan, et al., 1996). Selecting out only rigorously designed studies modest relationships between drinking severity and AA affiliation were found, whereas combining strong and poor designs resulted in the conclusion that severity did not influence AA affiliation. In later research using theoretically-driven analyses with a sample of primarily untreated problem drinkers followed for 16 years, Moss and colleagues attempted to understand why AA participation may not always be related to alcohol problem severity (Rudolf H. Moos & Bernice S. Moos, 2004). Moos found that drinking problems and dependence symptoms (but not alcohol involvement) were

related to AA affiliation a year after study enrollment, but that these relationships did not replicate between subsequent paired follow-ups, that is, the relationship did not hold over time. Similar results were obtained by McKellar (McKellar, Stewart, & Humphreys, 2003) in a large study of alcohol-dependent males in Veteran's Administration inpatient treatment. Here alcohol impairment at a 1-year follow-up did not predict lagged AA affiliation at the 2-year follow-up. Moos concluded this kind of evidence suggested "*an egalitarian model of self-help*" (as opposed to a need-based model) in which need factors play little or no role in continued participation (Rudolf H. Moos & Bernice S. Moos, 2004, pg. 15). The McKellar 2003 study also looked at motivation for change as a predictor of AA help seeking and found that high self-reported motivation for change at baseline predicted lower AA involvement at year 1. Contrary to this somewhat counterintuitive finding, another treatment sample study (mostly male, white, middle-aged alcoholics) found that high determination scores from the SOCRATES (Miller & Tonigan, 1996) predicted AA affiliation at follow-up (Isenhart, 1997). SOCRATES is a 19-item, self-administered instrument made up of three scales (Problem Recognition, Ambivalence, and Taking Steps) designed to assess client motivation to change drinking-related behavior.

Earlier work with the untreated problem drinker sample (Moss and colleagues) used a stress coping framework to predict AA attendance (Finney & Moos, 1995; Humphreys, Finney, & Moos, 1994) and found that baseline support from one's partner did not differentiate AA attendees from non-attendees, but it did differentiate the degree of involvement among attendees. Those with less partner support were more involved in AA a year later, as were those reporting more stress in their relationship with their partner or spouse (Humphreys, et al., 1994). Friendship and extended family support did not distinguish AA involvement, nor did friendship and extended family stressors. Whereas problem severity ("*hardship*" or distress factors in their theoretical framework) was related to treatment and/or AA attendance at the 1-year follow-up, social pressure to enter treatment (conceptualized as another "*impetus*" for help seeking) did not. Under the stress coping model it was predicted that greater social resources (married, employed, more social support) would lessen help-seeking, but instead they found that the relationship between problem severity and help-seeking was stronger (an interaction effect) among those with greater social resources (Finney & Moos, 1995).

In summary, problem severity appears to be the most consistent predictor of self-help affiliation in the initial recovery period, especially among those treated in outpatient programs (Cloud, 2004; Tonigan, Bogenschutz, & Miller, 2006; Tucker, Vuchinich, & Rippens, 2004; Witbrodt, Bond, & Delucchi, 2009). Studies with initially untreated problem drinkers show the relationship between problem severity and AA affiliation to be stronger among problem drinkers with greater social resources. Demographic characteristics, on the other hand, have been less consistent in predicting affiliation. For example mixed results have been found for age (Brown, O'Grady, Farrell, Flechner, & Nurco, 2001; Lemke & Moos, 2003; Satre, Mertens, Areán, & Weisner, 2004; Sussman, 2010) and gender (Bodin, 2006; Del Boca & Mattson, 2001; Kelly, et al., 2006; Satre, et al., 2004; Timko, et al., 2002; Weisner, Ray, Mertens, Satre, & Moore, 2003), as well as variables related to socioeconomic status (Humphreys, et al., 1995; Kaskutas, et al., 2008; Timko, Billow, & DeBenedetti, 2006; Timko, Finney, Moos, & Steinbaum, 1993).

Findings reported in this section (1.11.1) came almost exclusively from U.S. research. Studies of catchments and attrition and the role of AA are culturally bound. For example, if AA (or other self-help) is used as an adjunct to or substitution for

treatment in a sobriety culture like the U.S. it will likely attract different individuals than in a culture where AA is used as a complement to universal but stigmatizing treatment as in Sweden.

Looking more globally, Mäkelä's (1993) study of seven countries (which included the U.S. and Sweden) found that women in *all* countries seemed to be overrepresented in AA compared to the share of heavy drinkers or treatment seekers in their respective countries, age was an inconsistent factor, socioeconomic status (SES) varied between countries (Swedish AA members were mostly from higher SES groups, but in the U.S. no consistent correlation is evident), and spirituality was too complex to draw valid conclusions (between and within countries). As a logical extension of attempts to understand, “*who uses self-groups?*” researchers have attempted to understand just how affective that utilization is.

### **1.11.2 Does AA (self-help) result in better outcomes?**

As with the research on affiliation, the research on the effectiveness of self-help has also been largely mixed and for many of the same reasons (e.g., weak research designs, sample difference, or lack of measurement uniformity). Nonetheless, using more rigorous methodologies and extended follow-up periods, more recent studies have found relationships between self-help affiliation and outcomes, with convincing evidence, for example, that patterns of attendance over time moderate the effects. Still the direct relationship between self-help groups and outcomes remains uncertain, in large part because randomized clinical trials that direct and restrict attendance are difficult to conduct with such a freely-available source of support as AA (and to a lesser extent NA). This relationship becomes even more blurred when meeting attendance is studied over longer follow-up periods and as people transition in and out of both formal treatment programs and twelve-step groups.

Added to these issues, only scant research (especially U.S. based research) has focused on outcomes other than actual alcohol and drug use. Abstinence as measured across some determined period of time (e.g., past 30 days or past 90 days) has been a primary measure as well as percent days abstinent (PDA) and average drinks-per-drinking day (DDD) or average drink volume over some extended time frame (Tonigan, 2008), perhaps because most self-help studies have been conducted with U.S. treatment samples and the intended goal of treatment programs and AA/NA is alcohol and drug abstinence. Only recently has the issue of low-risk drinking remerged in the U.S. literature. In a 2011 editorial entitled, “*It's time for low-risk drinking goals to come out of the closet,*” Sobell and Sobell, early proponents of low-risk drinking outcomes for those not severely dependent (L. C. Sobell, Cunningham, & Sobell, 1996; M. B. Sobell & Sobell, 1995), argued that “*the failure by alcohol counselors in the United States to offer low-risk drinking goals is due to their being trained through an apprenticeship model rather than an evidence-based academic model, as used to train other health professionals* (M. B. Sobell & Sobell, 2011).” As noted earlier, Sweden, has not placed as great an emphasis on abstinence as a treatment goal as the U.S. treatment system.

### **1.11.3 A review of studies on AA (self-help) attendance and more proximal outcomes**

Starting with early literature reviews, Emrick (1987) reported that five studies found no relationship between attendance and abstinence and six found a positive

relationship (i.e., more meetings and less drinking). Using meta-analytic techniques to summarize 13 studies, Emrick found a modest correlation between meeting attendance and drinking ( $r=.19$ ). In a later (1993) meta-analysis of 107 studies, Emrick (1993) found better initial outcomes occurred when formal treatment was combined with meeting attendance, a finding also reported in a more current longitudinal study of initially untreated individuals followed for 16 years (R. H. Moos & Moos, 2006). Still later, Tonigan's meta-analysis (1996) found a stronger relationship between AA and alcohol outcomes in outpatient than inpatient samples, and a relationship between AA and abstinence that was not as strong as the relationship between AA and psychological functioning.

Turning to treatment outcomes studies conducted around 2000 and later, those originating in the Department of Veterans' Affairs (VA) using male inpatient samples<sup>19</sup> have found abstinence rates twice as high among those reporting AA attendance versus no attendance. In one particular VA study, 49% of AA attendees were abstinent at 12 months and 44% were abstinent at 18 months, compared to 24% and 23%, respectively, for non-attendees (Ouimette, Moos, & Finney, 1998). Another (R. Moos, Schaefer, Andrassy, & Moos, 2001) VA study found a linear relationship between the number of meetings attended and 1-year abstinence: 0 meetings, 21% abstinent; 1-19 meetings, 33% abstinent; 0-49 meetings, 54% abstinent; 50 or more meetings, 62% abstinent. Likewise, Project MATCH found that AA attendance had a positive relationship with abstinence during treatment, at 6 months, and at 12 months (Tonigan, Connors, & Miller, 2003). This relationship held across both outpatient and aftercare study arms (Tonigan, et al., 2003), across all 11 study sites (Tonigan, 2001), and across all three therapies studied (Project MATCH Research Group, 1998). Moreover, the relationship between AA attendance and abstinence extended through a 10-year follow-up of the New Mexico Project MATCH sample (Tonigan, Miller, Westphal, et al., 2002). Similarly, in a 10-year follow-up of inpatients, AA meeting attendance was the only independent variable that predicted abstinence (Cross, Morgan, & Mooney 1990). Although there is less empirical evidence, treatment-seeking individuals with drug use disorders also appear to benefit from greater twelve-step attendance (Crape, Latkin, Laris, & Knowlton, 2002; D. M. Donovan & Wells, 2007; Fiorentine, 1999; Gossop, Stewart, & Marsden, 2008; Humphreys, 2004; Kissin, McLeod, & McKay, 2003; Witbrodt & Kaskutas, 2005). Results for inpatient samples reported on here are different from what Tonigan found in a 1996 meta-analysis.

Studies on the patterns of attendance have displayed a fairly constant result. For example, several studies found that AA's and NA's effects tend to be stronger when meeting attendance is consistent versus inconsistent (Fiorentine, 1999; McLatchie & Lomp, 1988; Toumbourou, Hamilton, U'Ren, Steven-Jones, & Storey, 2002). Hoffmann found that following inpatient treatment almost three-quarters of the weekly AA attendees were abstinent at 6 months compared to 42% of the non-attendees (Hoffmann, Harrison, & Belille, 1983). Similarly, Fiorentine found little difference in alcohol abstention following outpatient treatment at a 2-year follow-up between those who attended less than weekly compared to not at all (40% vs. 39%), but abstinence rates among those who attended AA meetings at least weekly were nearly twice (75%) as high (Fiorentine, 1999). Additionally, odds of cocaine use a year following treatment were lower for patients reporting at least 2 meetings a week (Rose M. Etheridge, Craddock, Hubbard, & Rounds-Bryant, 1999).

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<sup>19</sup>Results from studies like this are open to self-selection bias (males in inpatient VA programs) and should not be generalized to a larger population of problem drinkers.

#### **1.11.4 Longitudinal studies on AA (self-help) and distal outcomes**

Surprisingly little has been documented about patterns of AA engagement over time. In the U.S., newcomers are sometimes counseled to attend 90 meetings in 90 days, and some members continue to attend daily or near daily. Respondents to AA's U.S. membership survey reported averaging two AA meetings per week. Such high rates of meeting attendance may be the norm or they could simply reflect the higher proportion of newcomers at AA. One U.S. 3-year study of patients treated in inpatient and/or outpatient treatment programs found that more self-help attendance in months 1-6, 13-18, 19-24, and 25-30 consistently predicted less frequent drinking in the subsequent 6 months (McKay et al., 2005). Two other longitudinal studies with considerably longer follow-up periods have reported on patterns of attendance and improved outcomes. Moos and colleagues found that individuals with an extended duration of AA affiliation had better 16-year alcohol outcomes than those with a shorter duration of attendance. Another longitudinal study (7 year) found that both the duration and the intensity of AA attendance affected abstinence rates (Kaskutas, et al., 2009; Kaskutas, et al., 2008).

While empirical evidence showing the association between self-help attendance and abstention has increased, longitudinal research conducted over extended time (i.e., more than 1 to 3 years) is still limited to just a few studies which have only looked at drinking outcomes as related to self-help attendance (Kaskutas et al., 2005; Kaskutas, et al., 2009; R. H. Moos & Moos, 2005; R. H. Moos & Moos, 2006). Much of what we know about AA's effect among untreated populations comes from the 16-year of initially untreated individuals (Timko, Moos, Finney, & Moos, 1994). That study enrolled callers to an alcohol information hotline and clients in detoxification programs. The study considered detoxification patients as primarily untreated, thus combined them with the information hotline callers and interviewed the combined sample at 1, 3, 8 and 16 years. Attending more AA meetings between baseline and the 1-year follow-up was associated with abstinence at the 1 year follow-up (Timko, et al., 1994) and the 8-year follow-up (Rudolph H. Moos & Bernice S. Moos, 2004), with women benefiting more from their AA attendance during years 2-8 than men (Timko, et al., 2002). Individuals who affiliated with AA early on, who continued to participate, and who participated longer had the best 1- and 8-year alcohol-related outcomes (abstinence, social consequences, and dependence symptoms), but frequency (vs. duration) of participation itself was only related to abstinence (Rudolph H. Moos & Bernice S. Moos, 2004). Additionally, individuals with extended AA participation had better 16-year outcomes than those with a shorter duration attendance.

In another longitudinal study, Kaskutas used latent class trajectories analyses to describe AA (but not NA or CA) attendance trajectories across 5- and 7- years among a heterogeneous sample (n=586) of alcohol-dependent individuals (some were also drug dependent) (Kaskutas, et al., 2005; Kaskutas, et al., 2009). In both the 5- and 7- year analyses, four attendance patterns were delineated: *high* attendance over time, *descending* attendance over time, *medium* but steady attendance over time, and very *low* attendance at all follow-ups. While a very modest decline in attendance was observed in the *high attendance* class at the 5-year follow-up, this became much more apparent by the next follow-up 2 years later. At all but that last follow-up, past 30-day alcohol abstinence rates on average were highest for the *high attendance* class; but by year 7, the average abstinence rate for the *high attendance* class was similar to that of the *descending* class. Overall, long-term abstinence was more probable among those with continued affiliation with AA. Abstinence rates on average in the 7 years

following treatment entry were similar between those with sustained high levels of attendance and those with initially high levels of attendance who later stopped attending. This suggests that disengagement from AA does not necessarily indicate a return to drinking (Kaskutas, et al., 2008). Paper V builds on this earlier work. Most essentially, instead of looking at average rates of abstinence for the various attendance classes, Paper V relates patterns of attendance to patterns of abstinence.

#### **1.11.5 Studies of other AA (self-help) activities and outcomes**

Although most research on AA's effectiveness has been based on meeting attendance (often interchangeably termed affiliation or participation), growing evidence suggests that other AA activities are key to AA's impact (Bodin, 2006; Cloud, Ziegler, & Blondell, 2004; Emrick, 1987; Emrick, et al., 1993; Magura et al., 2003; Pagano, Phillips, Stout, Menard, & Piliavin, 2007; Sheeren, 1988; Toumbourou, et al., 2002). A variety of measures has been used by researchers to measure these AA activities, drawing primarily from AA's philosophy of recovery. Summarizing across 16 studies, Emrick found that having a sponsor and being more involved in AA than in the past, followed by leading an AA meeting and doing twelve-step work were the activities that best predicted better outcomes (Emrick, et al., 1993).

Among activities frequently studied, having a sponsor is the one activity that often shows up as a predictor of better drinking outcomes. For example, having a sponsor was a significant predictor of during-treatment (Caldwell & Cutter, 1998) and 6-month (Morgenstern et al., 2003; Timko & Debenedetti, 2007; Tonigan & Rice, 2010) and 12-month abstinence (Isenhart, 1997; Subbaraman, Kaskutas, & Zemore, 2011; Timko & Debenedetti, 2007; Toumbourou, et al., 2002; Witbrodt & Kaskutas, 2005). Sheeren found that the use of a sponsor and reaching out to other AA members for help were the most significant areas of involvement relating to sustained abstinence in a sample of 59 AA members (Sheeren, 1988). Vaillant's study of the natural history of alcoholism in a sample of male alcoholics (Vaillant, 1995) identified having a relationship with a non-professional helping person, social stability, and frequency of meeting attendance as key components (Vaillant, 1988). Highlighting the importance of timing and analytic approach, longitudinal lagged analyses by Tonigan (Tonigan & Rice, 2010) found that having a sponsor at 3 months predicted 6-month abstinence, but not 12-month abstinence. However, concurrently having a sponsor was associated with abstinence at 12 months (also see (Crape, et al., 2002; Pagano, Friend, Tonigan, & Stout, 2004; Zemore & Kaskutas, 2004).

A number of studies (including Bodin's 2006 work with a Swedish treatment sample) have used scales of AA participation that reflect meeting attendance and various activities to study the relationship between scale scores and drinking-related outcomes (reviewed in (Kaskutas, 2004)). For example, using a nine item Recovery Interview (which asks about meeting attendance, frequency of speaking with one's sponsor and of reaching out to others in the program or in need of the program, prayer and meditation, reading literature, and how much one's life revolves around AA), Morgenstern found twice the rate of relapse for "*low advice seekers*" (i.e., infrequently seeking advice from AA sources) than for high advice seekers; both groups had high meeting attendance (Morgenstern, Kahler, Frey, & Labouvie, 1996). The participation subscale in McKay's Involvement in Self-Help scale (McKay, Alterman, McLellan, & Snider, 1993) (capturing meeting attendance, service, talking with a sponsor, and talking with another AA member) yielded participation scores that related to half as many days of alcohol and drug use for the high participation group. A scale developed

by Humphreys and Kaskutas (a 5-item AA Affiliation short scale (Humphreys, Kaskutas, & Weisner, 1998a)) found strong relationships between scale scores and abstinence (Bond, Kaskutas, & Weisner, 2003; Kaskutas, Bond, & Humphreys, 2002). Aside from attendance (McKay & Weiss, 2001; Rudolph H. Moos & Bernice S. Moos, 2004; R. H. Moos & Moos, 2006) few longitudinal studies have looked at the influence of particular AA activities on more distal abstinence outcomes (Kaskutas, et al., 2005; Kaskutas, et al., 2009). This is taken up in the two papers (IV and V) in this thesis.

In summary, despite the evolving body of literature suggesting that self-help meeting affiliation is associated with both short-term (R. Moos, et al., 2001) and long-term (Tonigan, Miller, Westphal, et al., 2002) effects, the relationship between involvement and abstinence in the U.S. remains a topic of debate (Ferri, Amato, & Davoli, 2006; Humphreys, 2010; B. Johnson, 2010; B. A. Johnson, 2010; Kaskutas, 2008). Though not scientific research (only active members participate), AA membership surveys add support to the argument that long-term engagement results in long-term abstention. The 2007 AA membership survey shows that almost half the current members reported being sober for 5 or more years and 33% for more than 10 years (Alcoholics Anonymous, 2007); see (Kaskutas, et al., 2008) for a related review. Still, we know from U.S. national survey data that alcohol dependent individuals who do not affiliate with AA or treatment nevertheless succeed in achieving sobriety (Dawson, Goldstein, & Grant, 2007; Dawson, Grant, Stinson, & Chou, 2006a, 2006b; Dawson et al., 2005).

## 1.12 LIMITATIONS OF RESEARCH FINDINGS

More than any other issue, interpretation of findings on AA's effectiveness has been criticized by the implicit self-selection bias of individuals choosing to attend AA. Because members are not randomly selected from the population of chronic problem drinkers, those who choose to attend may have higher motivation than those who opt not to become involved (Emrick, et al., 1993), or they may have more severe problems (Humphreys, 2003b) or differ in other ways that could account for the relationship between AA and outcomes (Fortney, Booth, Zhang, Humphrey, & Wiseman, 1998; Kownacki & Shadish, 1999). Because AA (and to a lesser extent other self-help groups) in the U.S. is so freely available and is sought by many individuals, randomization to AA versus some other condition has been deemed methodologically impractical (Humphreys, 2003b). Rather, we are left with conducting naturalistic or quasi-experimental studies that statistically adjust for differences that would have been balanced through random assignment (McKellar, et al., 2003; R. H. Moos & Moos, 2006; Ye & Kaskutas, 2009). These concerns about selection bias have been somewhat diminished by findings across studies suggesting that AA affiliates often have greater problem severity and more psychological, employment, and family/social problems than non-affiliates (Humphreys, Kaskutas, & Weisner, 1998b; Humphreys, et al., 1991; Morgenstern, et al., 1996); also see (Emrick, et al., 1993).

Another major limitation of this body of research is its over-reliance on treatment samples. However, naturalistic studies of community samples are now finding that considerable bidirectional movement occurs between treatment and self-help groups (Fiorentine & Hillhouse, 2000; Timko, Moos, Finney, & Lesar, 2000) such that results from treatment samples may be more generalized than once thought (Tonigan, 2008). This over reliance on treatment samples is taken up in this thesis by the inclusion of an untreated general population sample of problem drinkers (described in section 4.0).

Studies that use cross-sectional designs present yet another limitation. These yield correlated results (that have often been used to infer causal relationships (Tonigan, 2008)), but causal connections should not be inferred when predictors do not precede outcomes in time. Although the relationship between self-help and improved outcomes in the majority of studies has been correlated, more recent studies, using cross-lagged analyses and other more elaborate statistical modeling techniques, are showing evidence of a causal relationship between AA affiliation and improved outcomes (Gerald J. Connors, et al., 2001; Kelly, et al., 2006; McKellar, et al., 2003).

Lastly, comparability across studies has been limited by different measures used to define affiliation or involvement. Most early studies looked at attendance but a growing literature on self-help effectiveness has explored AA activities other than attendance, finding (as noted above) that these activities may be better measures of effectiveness than attendance. Paper IV in this thesis explores the relationship of attendance and other prescribed 12-step behaviors on drinking outcomes.

### **1.13 THEORETICAL OVERVIEW**

This thesis is guided by a behavioral model of health services utilization originated by Andersen and revised across five phases by Andersen, Aday and other collaborators in response to changing needs in health services research over time (L. A. Aday, Andersen, & Fleming, 1980; Ronald Andersen, Kravits, & Anderson, 1975; R. Andersen & Newman, 1973; Ronald Andersen, Smedby, & Anderson, 1970). Revisions resulted mainly in additions to the first 1960's model (not shown) but without changes to the fundamental components of the model or their relationships. This behavioral health services model has been the most comprehensive and widely applied model in health services research focused on access to and use of health care services (L. A. Aday & Andersen, 2005) and has been used nationally and internationally as a framework for utilization and cost studies of general populations as well as special studies of minorities, low income, children, women, the elderly, oral health, the homeless, and the HIV-positive population. It and similar models of health service utilization have been modified for use in alcohol and drug research (L. A. Aday, et al., 1999; Booth, Yates, Petty, & Brown, 1991; Hser, Anglin, Grella, Longshore, & Prendergast, 1997; Hser, Shen, Chou, Messer, & Anglin, 2001; Hubbard et al., 1989; Maddux & Desmond, 1981; Simpson, 1990; Simpson & Marsh, 1986; Vaillant, 1995 ; C. Weisner & L. Schmidt, 2001). Some efforts to integrate elements of the well-known Health Beliefs Model to explain use and especially preventive health behavior were intentionally incorporated into the early model. The most current phase 5 model is displayed in Figure 1.

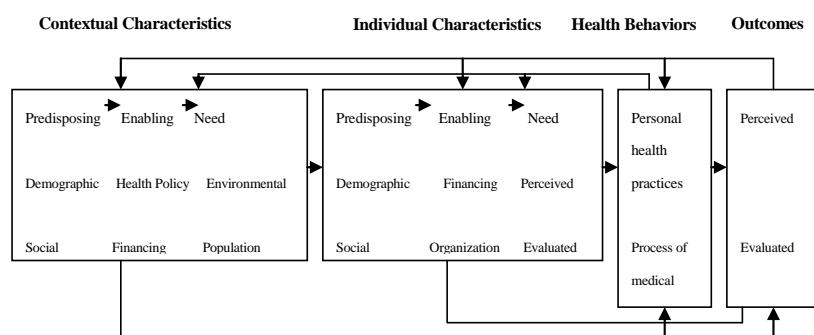
Changes made to the model displayed in Figure 1 are summarized here because some papers in this thesis are better represented by the earlier more parsimonious models (for diagrams of the actual models refer to (R. M. Andersen, 1995). More to the point, data for the U.S. parent study were originally collected using an early iteration of the conceptual model. Later grants supporting the collection of the U.S. longitudinal follow-up data (1, 3, 5 and 7 years), along with the opportunity to use the Swedish data, allowed use of the model illustrated above.

Looking historically at the model, the aim of the first phase model was to assist in defining and measuring multiple dimensions of access to care. The model suggested that individuals' use of health services was a function of their predisposition to use services, factors that enabled or impeded their use, and their need for care. This model essentially included variables shown under the "Individual Characteristics" component

in Figure 1. The main goal of the phase 1 model was to define and measure multiple dimensions of access to care, including *potential access* (enabling resources), *realized access* (actual use of services), and *equitable access* (which occurs when demographic and need variables explain most the variance in utilization) (R. M. Andersen, 1995, 2008). The phase 2 model (1970s) added a component for the health care system (see Enabling variables under “*Contextual Characteristics*” in Figure 1) and a component for consumer satisfaction (now subsumed under the “*Outcomes*” component). The phase 3 model added the “*Health Behaviors*” component (e.g., diet, exercise and other personal health practices) and an “*Outcome*” component which included self-perceived and evaluated health status variables and consumer satisfaction. The outcome variables were seen as fundamental for formulating health policy and health reform.

The last two phases of the model, starting with phase 4, introduced the dynamic and recursive nature of health services, thus feedback loops were added to show that outcomes, in turn, can affect subsequent predisposing, enabling and need characteristics and their use of services under the “*Individual Characteristics*” component. According to Andersen (2008), this phase called for “*a creative and challenging conceptualization, longitudinal and experimental study designs and innovative types of statistical analyses*” (as applied in this thesis). Phase 5 added a “*Contextual Characteristics*” component to the model. These are measured at some aggregate rather than individual level and include predisposing, enabling, and need factors that reflect health organization and provider-related factors and community (cultural) characteristics.

Before moving on, a bit more needs to be said about the core variables in the behavioral health services model. Those used in this thesis will be taken up in greater detail in section 4. The model is organized around three key elements: predisposing characteristics or measures that exist prior to the onset of a problem and describe the propensity of individuals to use services; enabling influences or measures that distinguish between formal and informal resources available in the community, and influences or means available to the individual for the use of services; and need level (measures of problem severity), either self-perceived or evaluated. The main purpose of these help-seeking factors (in both contextual and individual components in the model) is to discover conditions that either facilitate or impede use of services.



**FIGURE 1. Andersen and Aday behavior model of health services utilization.** Replicated from Medical Care (2008) 46:7 pg. 651, with journal and author (Ronald Andersen) permission.

More specifically, predisposing characteristics can include individual traits and conditions that represent biological imperatives suggesting the likelihood that people will need and use services (e.g., gender, age, psychological characteristics, and genetics), as well as psychosocial characteristics that determine the status of an individual within the community, his or her ability to cope and command resources to deal with arising problems, and how healthy or unhealthy the physical environment is (e.g., education, occupation, ethnicity, social class, health beliefs, or other cultural and societal influences that serve to facilitate or impede help-seeking). Enabling influences include factors that influence doing something about one's problem (e.g., income, insurance, waiting lists, extent and quality of social relationships, and organization and supply and types of medical personnel and facilities). Within the broader limits of predisposing and enabling factors, an imperative or need also accounts for help-seeking and actual use of services. Evaluated need, which has a social or environmental as well as personal component, represents professional judgment about the problem and is linked more to the type and amount of services received. In comparison, self-perceived need (one's own judgment) may better help explain care seeking and adherence to a regime (R. M. Andersen, 1995).

The larger theoretical framework described here is used to study treatment seeking and AA affiliation with the longitudinal samples of treated and untreated individuals described in this thesis. The model has received criticisms (L. A. Aday & Andersen, 2005) that relate to its use as applied in this thesis. Like most studies that have used the model, not all components in the model are used simultaneously in the thesis papers. Additionally, potential significant moderating effects (interactions) between subcomponents are not represented in the model. A theme in the thesis papers is the moderating influence of gender on help seeking. Others have also criticized the specification of independent and dependent variables in the model. As applied to this work (and noted by originators), the Andersen and Aday model is intended to serve as a framework or conceptual model used to explore the main research questions. It is not intended as a statistical model of causation as might be assumed when viewing the diagram in Figure 1.6. One last word, contextual factors (those measured at an aggregate level) were not directly measured like other components (individual or outcomes) in the model. Rather, information like that described earlier in this section, along with other published data is used to pull findings together.

## 2 AIMS OF THE THESIS

The main objectives of this thesis is to better understand the contextual and individual roles of predisposing characteristics, enabling influences, and need factors associated with AA (and other self-help) affiliation, both proximally and distally (*Who goes?*); and how these relate to longitudinal drinking outcomes (*Who benefits?*). The five papers comprising this thesis are framed by the Andersen and Aday conceptual model of health care utilization and they employ sequentially more complex data analyses.

Section 1 illustrated that AA is a widely utilized source of help for those with alcohol problems, and self-help groups represent a significant component in the system of informal care. This occurs more so in the U.S. than in Sweden, although AA groups have increased considerably in Sweden, going from 23 in 1980s to nearly 300 in 1990s to over 400 today. Numerous studies have found that self-help affiliation after treatment is associated with improved outcomes. As well, there is some evidence that formal treatment combined with 12-step affiliation leads to even better outcomes. Moreover, research suggests that participation (in general) not only seems to improve the likelihood of achieving and maintaining remission, but it also decreases the need for further professional care. Hence, identifying those factors that led to formal and informal help seeking (professional treatment and self-help groups), that in turn lead to better outcomes, is valuable information for the Swedish and U.S. treatment systems. This appears especially relevant at this time as cost containment around health care is being discussed (and debated) in both countries.

Aside from knowing for whom AA works, it is also useful to understand how it works from a theoretical standpoint. This thesis did not directly address this issue, but it is taken up now as further theoretical validation of the role that self-help groups can play in an overall system of care. Rudy Moos, a longstanding and respected U.S. researcher on self-helps groups, is one of few researchers attempting to do this, thus, is quoted here. Using “*four theories<sup>20</sup> that identify social processes that may protect individuals against the initiation and development of substance use problems and facilitate their resolution,*” Moos identified the active ingredients that define how self-help groups work as being: “*bonding, goal direction, and structure; abstinence-oriented models and norms; involvement in rewarding activities other than substance use; and building self-efficacy and effective coping skills* (R. H. Moos, 2008).” Moos (2008) went on to describe four other issues still in need of attention, including (1) personal factors that may moderate these active ingredients (e.g., gender, spirituality/religiosity, psychiatric severity, and substance severity); (2) active ingredients of self-help groups and formal treatment (e.g., treatment modality and therapeutic approach); (3) potential detrimental effects of the active ingredients (e.g. coerced attendance, emphasis on powerlessness for women especially, and potential psychological harm induced by the emotional intensity of group discussions); and (4) active ingredients and other aspects of the recovery milieu itself (e.g., social network influences including family, friends, peers and workplace). Many of these are assessed in the papers comprising this thesis.

In summary, Papers I, II, and III use a comparative analysis strategy. For both countries, survey methods were the same (a significant empirical point). In addition to identifying characteristics unique to one’s own system of care more clearly, cross-

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<sup>20</sup>*Social learning theory, social control theory, behavioral economics or behavior choice theory, and stress and coping theory.*

cultural studies also have the potential to expose rival hypothesis which can then contribute to general theory. As well, findings have implications for more efficacious service delivery. Papers IV and V investigate self-help affiliation and drinking outcomes using an analytic approach that draws upon a long tradition of work on the repeated cycles of cessation and resumption of use that typify alcohol and drug abuse patterns (Frykholm, 1985; Hser, et al., 1997; Vaillant, 1995). Little work to date has looked at the effects of specific self-help behaviors on outcomes over time. Thus, the aims of this thesis are:

- 1) To compare women with men from a Swedish treatment sample and women with men from a U.S. treatment sample on predisposing, enabling and need factors associated with (a) treatment initiation, and more specifically (b) with self-help affiliation in the 1-year post treatment. *Who goes?*
- 2) To study the role of predisposing, enabling and need factors on 1-year drinking outcomes (abstinence and moderate drinking versus risky drinking) among alcohol-dependent men and women seeking treatment services under different systems of care (i.e., Swedish universal healthcare and U.S. public and private sources). Gender as a moderator is tested in terms of who enters treatment, as well as its relationship to drinking outcomes. *Who benefits?*
- 3) To compare (a) the proportion of marginalized (vs. socially integrated) substance-use disordered men and women in the Swedish treatment system with those in the U.S. treatment system, (b) where these individuals show up in other social welfare and healthcare service sectors, and (c) the types of formal and informal referrals and pressures these individuals receive to enter treatment. *Who goes? What treatment? What pressures?*
- 4) To compare women with men on (a) their AA affiliation (meeting attendance and AA- prescribed behaviors at baseline and 1 ,3, 5, and 7 years), (b) time-invariant and time-varying predisposing, enabling and need factors associated with their affiliation over time, and (c) abstinence over time, adjusting for AA affiliation and other gender-specific influences. *Who practices what? What is the benefit?*
- 5) To study AA affiliation (meetings attendance and sponsorship) and drinking by drawing upon previous work on the repeated cycles of cessation and the resumption of use that typify alcohol and drug use patterns by (a) constructing latent class trajectories of AA meeting attendance, AA sponsorship, and abstinence to (b) to test the added benefit of sponsorship class membership above the benefits of attendance class membership in predicting abstinence class membership over 7 years. *What works? For whom?*

### **3 MATERIALS AND METHODS**

Three papers in this thesis utilized data from two studies that used parallel research designs, one Swedish and one U.S. These two studies collected data at the county level (these function fairly similarly in the U.S. and Sweden) on adults 18 years and older. In both studies a treatment sample and a general population sample of untreated problem drinkers (some of whom were dependent) was collected. The U.S. study conducted follow-up interviews with the problem drinker general population and treatment samples at 1, 3, 5 and 7 years. The Swedish study conducted follow-up interviews at 1 and 5 years with the treatment sample. The 5 year data were not ready for analysis soon enough for use in this thesis. The Swedish general population sample was not interviewed beyond the baseline interview.<sup>21</sup> Two other papers in this thesis use only the U.S. data. One analyzed the treatment sample and the other analyzed alcohol-dependent individuals from the combined general population and treatment samples. An overview of the study sites and research methods are provided below, starting with the U.S. study because the Swedish study was modeled on it.

#### **3.1 STUDY PROCEDURES**

##### **3.1.1 U.S. study recruitment sites**

The U.S. sample was recruited from a single Northern California county. This county represents a socially and culturally diverse population (approximately 900,000), with a mix of both rural and urban areas that generalize to other parts of the U.S. (Weisner & Schmidt, 1995). Public and private treatment programs in the county whose focus was not primarily drug dependence (i.e., methadone programs were excluded), had a least one intake per week, and were the first line treatment entry (e.g., aftercare programs were excluded) participated in the study (treatment sample). The county is a useful level of analysis for the U.S. treatment sample, as health and social services are administered at that level in California and in many other states in the U.S. Study treatment programs served both insured (mostly through one's employer) and uninsured (mostly unemployed or employed with insufficient healthcare benefits) individuals. The programs primarily followed either the Minnesota Model philosophy, which dominates the U.S. treatment philosophy (Institute of Medicine, 1990) or a social model treatment philosophy (T. J. Borkman, Kaskutas, Room, Bryan, & Barrows, 1998; Kaskutas, Keller, & Witbrodt, 1999), which tends to be community-based and closely follows the twelve-steps and twelve-traditions of AA. The total sample, which consisted of 926 individuals from 10 countywide programs, was interviewed between the years 1995 and 1996. Follow-up rates at years 1, 3, 5, and 7 were 78%, 75%, 72%, and 67% respectively.

A two-tiered sampling strategy was employed to collect the general population sample of problem drinkers. Telephone screening interviews using random digit dialing were conducted to identify problem drinkers in the community. To be identified as a problem drinker, individuals had to respond positively to experiencing two of the three following criteria in the prior 12 months: (1) drinking 5 or more on a single day at least once a month (for women, 3 drinks at least once a week); (2)

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<sup>21</sup>A comparative analysis using the 5-year data was presented at the 2011 Kettil Bruun Society meeting in Lucerne, Switzerland.

experiencing at least one (from a list of eight) social consequence from drinking (e.g., drunk driving or other arrest or accident when drinking; complaints from family, work, health workers); (3) having had at least one (from a list of nine) symptom of abusive drinking (felt should cut down, got drunk when reason not to, blackout, morning drinking, shakes, benders, ashamed or told to leave when drinking, skipped meals, felt like drinking affected looks or responsibilities). Although no standardized definition of problem drinking is used in the alcohol literature, the measure used here is consistent with the predominant approach taken in research on alcohol epidemiology (Institute of Medicine, 1990). Eighteen percent of the problem drinker sample was alcohol-dependent.

Once a problem drinker was identified by phone screen and confirmed they had not received alcohol treatment in the previous 12 months, a private fieldwork agency carried out in-person interviews. Each participant was given a 1-1/4 hour in-person interview. Fieldwork ran April 1995 through December 1996. A total of 13,394 15-minute telephone screeners were required to identify 1,013 problem drinkers (a 7.6% problem drinking rate), with 69% agreeing to the in-person interview and 96% successfully completing an in-depth interview (n=672). Eligible problem drinkers who refused the in-person interview were slightly older (39 vs. 36 yrs). Telephone follow-up interviews conducted in years 1, 3, 5, and 7 resulted in response rates of 93%, 91%, 88%, and 86% respectively for this sample.<sup>22</sup>

### **3.1.2 Swedish study recruitment sites**

The Swedish treatment sample was recruited from Stockholm County, Sweden's most populous county, thus representing the majority of the population (population of approximately 1.8 million). Individuals were recruited in each of two systems offering substance use services, that is, the health-care based system and the social-welfare system (Room, Palm, Romelsjö, Stenius, & Storbjörk, 2006). Each system serves an approximately equal share of all individuals seeking specialized treatment for substance misuse on any day. All treatment is publicly financed and free or very affordable for everyone. During the ten years before the study, there had been efforts to further integrate the addiction health care and social services systems, mainly through co-location of outpatient units, but serious institutional barriers still existed in terms of data protection legislation and different professional regimes (medical versus social work); see (Stenius & Storbjörk 2004).

The health-care based system is responsible primarily for detoxification and acute health complications from dependence. Additionally, they administer some outpatient treatment. The social-welfare system is responsible for providing adequate alcohol and drug treatment to the population as a whole and as part of a variety of other social services. Treatment can be offered by staff within the social welfare office itself or it can be provided on contract by private treatment programs on an either inpatient or outpatient basis. The total sample, which consisted of 1,865 individuals from the two delivery systems, was interviewed between the years 2000 and 2002. For comparability with the U.S. data, Swedish clients recruited from methadone treatment, medication treatment (prescription drug dependence), and drug detoxification sites were dropped from analysis in this thesis. Thus the baseline sample consisted of

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<sup>22</sup>Only alcohol-dependent individuals from the general population sample were used in this thesis (Paper V).

n=1,525 individuals. Among these, 964 were interviewed at 1-year (63% follow-up rate).

Table 3.1. Baseline characteristics of individuals in the Swedish treatment sample, the U.S. treatment sample, and the U.S. general population sample (i.e., both the total recruited sample and the alcohol-dependent sub-sample).

(n)	Treatment		General Population	
	Swedish (1,525)	U.S. (926)	U.S.	U.S.
			prob. drinker (672)	alc. depend. (137)
Females (%)	28	34	39	34
Age (mean)	43	39	34	33
Age (%)				
18-34	25	37	56	55
35-49	40	49	31	35
50+	35	13	13	10
Education %				
<3 year gym./< Hi school	37	22	13	27
3 year gym./Hi school	45	51	39	38
post gym./> Hi school	18	27	48	35
Alcohol Dependent (%)	60	55	<sup>a</sup> 16	100
Drug dependent (%)	32	51	2	20
Alcohol & drug dependent (%)	11	26	4	20
ASI alcohol (mean)	.3753	.3702	.1960	.3341
ASI drug (mean)	.0767	.1297	.0238	.0443
ASI psychiatric (mean)	.2253	.3914	.1517	.2608
ASI family/social (mean)	.1911	.2800	.0948	.1684
ASI medical (mean)	.3106	.2822	.1589	.1461

<sup>a</sup> 78% of the general population were problem drinkers (i.e., no alcohol or drug dependence diagnosis).

The Stockholm County general population sample was collected in 2002. Statistics Sweden conducted a telephone survey using a random listing from the population register of 6000 individuals. Following the screening interview (among those agreeing to be interviewed, n=3,556 or 59% response rate) individuals identified as problem drinkers (n=367 or 10%) were asked a series of questions like those used with the treatment sample. As noted, this sample was not used for this thesis. For further details on this sample see (Room, et al., 2003; Storbjörk & Room, 2008).

### 3.2 SWEDISH AND U.S. SAMPLE CHARACTERISTICS

Table 3.1 provides background information on the samples at baseline. Summarizing main differences, the Swedish treatment sample (n= 1,526) was older

(more in the 50+ age group), proportionately more male, less educated (more with less than 12 years of education), and more medically impaired (based on the ASI medical composite score) than the U.S. treatment sample. In contrast, the U.S. sample (n=926) reported greater problem severity for the ASI drug, psychiatric, and family/social domains. Reported drug use was more problematic in the U.S. treatment sample (as reflected in the ASI drug and drug dependence measures).

Compared to the U.S. treatment sample (with various substance use disorders), individuals in the U.S. general population alcohol-dependent sub-sample (n=137) reported lower severity in all ASI domains, and it was younger (more were in the 18-34 years old). Sample characteristics for the U.S. general population sample (n=672) are displayed in Table 3.2 to display how the alcohol-dependent subgroup compared to this larger (problem drinking) group.

### **3.3 STUDY METHODS AND MATERIALS (SWEDISH AND U.S.)**

In both studies, consenting adults in the treatment samples were recruited from new admissions within three days/visits after entering treatment. Trained interviewers not part of the treatment programs administered the in-person structured interviews. Participants provided written informed consent to participate in the respective studies at baseline and verbal consent to be contacted for follow-up interview. Follow-up interviews were conducted by telephone (a few were completed in-person). Other than age ( $\geq 18$  years), the only other criterion for study inclusion was the ability to complete a structured interview in the native language. The same age and language criteria were applied to the general population samples.

The Swedish questionnaire was modeled on the U.S. one, with core questions retained for direct comparisons. Both asked comparable questions about demographic characteristics, drinking patterns, drug use, substance-use diagnosis, ASI problem severity, social network composition, and formal and informal treatment utilization. Weights were constructed for each study such that the recruited samples were adjusted to be representative of the client flow within each study county's treatment system as a whole, and for fieldwork duration across agencies and non-response differences within agencies. Both studies were granted human subjects and institutional review board approval within their respective research institutions. For more complete details on the study designs see prior papers (Kaskutas, Russell, & Dinis, 1997; Room, et al., 2003; Weisner & Schmidt, 1995).

#### **3.3.1 Study measures (Swedish and U.S.)**

Table 3.2 lists independent (predictors) and dependent (outcomes) variables used in the papers forming this thesis. These are grouped by the role they play in the Andersen and Aday theoretical model described above. Except for demographic variables like age, gender, and ethnicity/Swedish-born, almost all variables were collected at baseline and follow-up(s). Aside from usual demographic and social stability (e.g., income or employment) measures, others are discussed more generally here (and more specifically in the individual papers).

### 3.3.1.1 Contextual variables

None of the characteristics displayed in the Contextual component of the model -- those gathered at some aggregate rather than individual level -- were measured directly in this thesis work. Rather, three papers utilized a side-by-side analysis with individuals from the Swedish and U.S. treatment systems to explore characteristics in the Individual, Health Behavior (self-help attendance), and Outcome components in the model. Thus, only more qualitative contextual differences could be described in the comparative papers.

#### 3.2 Study variables organized by the Andersen and Aday behavioral model of health services use (and as adapted for problem drinking and drug using individuals).

<b>ENVIRONMENT</b>	Country: Treatment system	Sweden or U.S. Sweden: assessed and treated within the social welfare system, assessed by the social welfare system but referred to outside treatment, or assessed and treated within any of the healthcare programs U.S.: publicly funded or privately funded treatment program
<hr/>		
<b>POPULATION</b>		
<b>Predisposing</b>	Demographics:  Social structure	Gender, age, marital/cohabitating status, live with children; educational status, Swedish born/US ethnicity, religiosity, psychological status Number of heavy drug users or heavy drinkers, size of social network
<b>Enabling</b>	Intervention referral source  Attitude Prior help seeking Social network  Alcohol-related consequences	Referral or suggestions from addiction treatment, probation/lawyer/judge, children/family members/friends, social welfare staffer, employer/boss/supervisor, Employee Assistance Program Drinking goal (abstinence vs. else); importance of treatment Treatment (inpatient, recovery/residential, outpatient) or self-help (AA, other 12-step, Links, "other") Number who encourage quitting; number who encourage alcohol or drug use; social support for drinking (mostly users, both users and non-users, mostly non-users, or no/very few contacts) Drunk driving arrest, public drunkenness arrest, other alcohol-related arrest, alcohol-related traffic accident, any other sort of serious alcohol-related accident, serious arguments with family members or friends about drinking, serious alcohol-related complaints from boss or supervisor about work or attendance at work, and doctor or health professional warning about a serious alcohol-related health problem
<b>Need</b>	Social influences Social stability Drug use  Alcohol & drug Severity Problem severity Assessed need  Perceived need	Alcohol and drug user network size Household income housing status, employment status Number of days used methadone, heroin, other opiates, stimulants, sedatives/hypnotics, cocaine, cannabis, hallucinogens, solvents Alcohol dependent, drug dependent, alcohol and drug dependent; number of symptoms ASI alcohol, drug, psychiatric, family/social, medical indices ASI severity for alcohol, drug, psych, family/social & medical problems ASI severity of alcohol, drug, psych, family/social & medical problems
<b>HEALTH BEHAVIOR</b>	Service use	Post-treatment self-help involvement (number of meetings, other recovery activities); treatment readmissions
<b>OUTCOMES</b>	Evaluated Perceived	Abstinence, drinker typology Need for more treatment

### *3.3.1.2 Individual variables*

Social structure, social network, and social influence variables come from the Social Network Assessment (SNA) which considers friends and family members and has been used in prior research (Bond, et al., 2003; Delucchi, Matzger, & Weisner, 2004; Humphreys, et al., 1998b; Kaskutas, Ammon, & Weisner, 2004; Kaskutas, et al., 2002; Matzger, Delucchi, Weisner, & Ammon, 2004; Weisner, Delucchi, Matzger, & Schmidt, 2003; Weisner, Matzger, & Kaskutas, 2003; Weisner, Ray, et al., 2003; Witbrodt & Kaskutas, 2005). These measures capture how many persons someone has to talk to when he or she has problems or needs advice; how many persons are available for practical help (such as help moving, a quick loan, etc.); and how many persons one sees regularly. Among the regular contacts in one's social network, the number (and proportion) of heavy drinkers, drug users, and abstainers or light drinkers was assessed. As well, the number (and proportion) of regular contacts encouraging alcohol or drug use and/or encouraging reduction or abstinence was assessed.

Likewise, variables assessing intervention referral sources (baseline only) queried whether anyone in four classes of formal service provision (legal, social services, medical, and psychiatric) brought up one's drinking, suggested treatment, made a referral or provided counseling or services, or gave an ultimatum to obtain help. Similar questions queried whether a boss, co-worker, family member or friends had talked about one's drinking, suggested help seeking, or gave an ultimatum.

Two measures were used to assess intention/attitude toward change (baseline). The first asked about one's drinking goal for treatment (e.g., stop altogether, cut down, get it under control or stop for a while, do nothing) and the second assessed the importance of treatment at baseline. This latter comes from the Addiction severity Index (discussed below).

Prior help seeking (lifetime and past 12-months) assessed whether one had received prior treatment for a substance use problem (specialty inpatient, recovery home/residential, and outpatient alcohol and drug treatment services were counted). One paper (coauthored) also reported on other services used (e.g. medical, psychiatric, and social welfare services).

The alcohol-related consequences (past 12 months) variable was comprised of the sum of 8 social consequences that cover a range of ways that individuals come to the attention of others in the community (Weisner, Greenfield, & Room, 1995) and included items like alcohol-related arrests and accidents, arguments with family or friends about drinking, work related problems around drinking, and medical warnings about alcohol-related health problems.

Drinking (past 12-months) was calculated using the graduated frequency (GF) scale (Greenfield, 2000). The graduated frequencies (GF) series of questions (Clark & Hilton, 1991) capture the frequency of drinking at various levels (e.g., 5+, 8+ drinks). These are used to calculate a yearly drink volume (often expressed as average drinks per some unit of time, e.g., dividing the yearly total by 52 to get an average weekly volume). Drink volume is computed by summing responses to the GF questions (cross products of the midpoint of the quantity grouping by the midpoint of the respective frequency group), which begin with the question for anyone reporting ever having 24 or more drinks, "*During the last 12 months, how often did you have 24 or more drinks of any kind of alcoholic beverage in a single day?*" Next, such a respondent is asked, "*During the last 12 months, how often did you have 12 to 23, but no more than 23 drinks of any kind of alcoholic beverage in a single day?*" This question is asked for 8-11, 5-7, 3-4, and 1-2 drinks in a day as well. Respondents enter the GF series at a level

that is appropriate given the maximum number of drinks they report ever consuming in a single day in the prior 12 months. The 10 frequency response options for these quantity groupings range from never to daily. For each quantity, the interviewer begins with the most frequent option (every day) and continues reading the decreasing-frequency response categories until the respondent hears the frequency that matches how often they have that range of drinks in a single day. The GF has been used in Alcohol Research Group (ARG) Center studies since 1990. The Swedish study used the same scale but it included fewer drink groupings.

Drug use (lifetime and past 30 days) variables measured the frequency of prescribed and non-prescribed use across various classes of drugs (e.g., marijuana, stimulants, sedatives/hypnotics, opioids, painkillers, and inhalants).

Alcohol and drug dependence severity (baseline) was measured using a checklist of questions based on criteria from the 10-item CIDI that represent the ICD-10 criteria (World Health Organization, 1992) for the Swedish sample and the Diagnostic Interview Schedule for Psychoactive Substance Dependence (Erdman et al., 1992; Regier et al., 1984; Robins, Cuttler, & Keating, 1991) that represent the seven DSM-IV criteria (American Psychiatric Association, 2000) for the U.S. sample. The CIDI and DIS diagnoses were collapsed at analysis (alcohol dependent, drug dependent, both alcohol and drug dependent). The individual symptoms were also summed to assess degree of severity. ICD-10 and DSM-IV use comparable measures to assess dependence (Hasin, 2003). The validity of the alcohol dependence diagnosis is good for both measures (Saunders, 2006).

The alcohol severity index (ASI) was used to capture assessed need and perceived need. The ASI assesses past 30-day problem severity in seven life domains by using key items to produce a continuous composite score for each domain (0-1, with higher scores designating a greater severity) (A. Thomas McLellan et al., 1992). Only the alcohol, drug, family/social, medical, legal and psychiatric domains were used in this thesis to measure assessed need. A single item in the ASI alcohol and drug domains was used to measure perceived need, "*How important to you is treatment for your [alcohol/drug] problem?*"

### 3.3.1.3 Health behavior variables

Self-help group utilization (lifetime and past 12 month) was measured as the number of Alcoholics Anonymous, Narcotics Anonymous, Cocaine Anonymous, and Links meetings attended. This was used to create continuous and dichotomized (attended yes vs. no) measures of attendance. The AA Affiliation Scale (Humphreys, et al., 1998a, 1998b; Kaskutas, Weisner, et al., 1999) was used to gauge overall engagement in AA. It includes lifetime and current (12 months) meeting attendance as well as AA-prescribed activities/behaviors. Scale activities include having a sponsor, considering one self a member, reading literature, being a sponsor, doing service at meetings, calling another member for help, and having had a spiritual awakening as a result of AA/NA/CA involvement. Dichotomized activities were analyzed separately and as a summed composite measure. Treatment readmissions (dichotomized) were also considered in longitudinal statistical models.

### 3.3.1.4 Outcome variables

Evaluated outcome (follow-ups) was assessed using alcohol, drug, and total (alcohol and drug) abstinence status (past 30 days) and was based on the ASI alcohol

and drug items, “*How many days in the past 30 days did you use....*” These data were dichotomized (yes vs. no). Drinking typology (i.e., total abstinence, moderate consumption, and heavy consumption) was calculated using the GF yearly drink volume measure (above) that was converted to grams of 100% ethanol per week (*drinks*) for each individual to determine a level of prior year drinking (moderate or heavy). Based on the individual’s self-reported GF responses, moderate drinking was defined as consuming less than 168 grams (100% ethanol) per week for men (14 drinks on average) and less than 110 grams for women (9 drinks on average), combined with no frequent-heavy-drinking (International Center for Alcohol Policies, 2003). Frequent-heavy-drinking was defined as consuming 5 or more drinks per occasion at least monthly (Rehm, Popova, & Patra, 2009). The same criterion was used for both men and women. Heavy drinking was any consumption exceeding the moderate criteria. Additionally, perceived outcome was measured using the ASI question, “*How serious is your [alcohol/drug] problem?*”

### 3.4 STATISTICAL METHODS

As a first step, usual standard exploratory analysis techniques were used to discern relationships among the data that were relevant to specific research questions, including frequency distributions, histograms, scatter plots (against time), summary measures of location and dispersion (including means, standard deviations, and tests for normality), and correlations to describe the relationships among predictors and outcomes over time. Framed by the Andersen and Aday conceptual model of health care utilization, sequentially more complex analyses were conducted in the five papers.

The first three comparative papers in this thesis used a combination of simple descriptive statistics (chi square, t-tests and analysis of variance) and multivariate regression statistics with the Swedish and U.S. treatment samples. One paper (III) used only baseline measures and two papers (I and II) used baseline and 1 year measures. A binary logistic regression model was used when abstinence was the outcome and a multinomial regression was used when drinking typology (3 categories) was the outcome. These analyses were conducted in SPSS (SPSS Inc., 2005) and provided fundamental information for the early stages of the conceptual model.

The fourth thesis paper used generalized estimated equation (GEE) statistics to model self-help attendance over time in the U.S. treatment sample. Interaction terms for gender were added to selected predisposing, enabling, and need variables in the model. GEE estimates a single overall average group trajectory for an outcome variable and has the advantage of providing unbiased trajectory parameter estimates even when the variance structure is not correctly specified (Diggle, Liang, & Zeger, 1994). Therefore, it serves as a relatively robust method of estimating parameters for longitudinal models. This technique allows the inclusion of cases even if they are missing one or more interviews. In addition, both time invariant and time-varying predictors (i.e., predisposing, enabling and need factors) can be incorporated into the analysis. GEE models were estimated in STATA (Stata Corp., 2009).

The fifth paper used a latent class analysis (LCA) approach to construct three sets of latent class trajectories, that is, for AA attendance, sponsorship, and abstinence. In LCA a single outcome variable measured at multiple time points, in this case the attendance, sponsorship, and abstinence at each follow-up, is used to identify clusters of individuals (latent classes) who share common patterns of over time (Bengt Muthén, 2001). The LCA model assumes that individuals belong to one of ‘k’ latent classes

(determined in the analytic process); and within a given class, all individuals have the same average trajectory over time, and this trajectory varies across the classes. This approach has the advantage over more conventional growth modeling approaches that assume individuals come from a single population, that a single growth trajectory can approximate everyone in the population (like GEE model used in Paper IV), and that covariates that affect the growth factors influence everyone in the same way (Jung & Wickrama, 2008).

A rationale for approaching longitudinal data in this manner is provided by Nagin who uses an analogy of clinical diagnostic classifications (Nagin, 1999). We know that not everyone with the same diagnosis is identical; however, we also recognize that such groupings are meaningful and helpful in both clinical practice and research. The latent trajectories analysis was conducted in Mplus. An advantage of Mplus software is that it uses a full-information maximum likelihood estimation under the assumption that data are missing at random (Little & Rubin, 2002; Bengt Muthén & Shedden, 1999). In theory, this method provides the same result as multiple imputation and it means that no bias is introduced by using only cases with data at every interview. Once the attendance, sponsor, and abstinence trajectory classes were established, a block-entry multinomial regression model was used to test whether particular sponsorship classes were predictive of particular abstinence classes (outcome), after controlling for the effects of attendance class (and other baseline covariates).

## **4 MAIN FINDINGS**

### **4.1 PAPER I. GENDER DIFFERENCES IN MUTUAL-HELP ATTENDANCE 1-YEAR AFTER TREATMENT: SWEDISH AND U.S. SAMPLES**

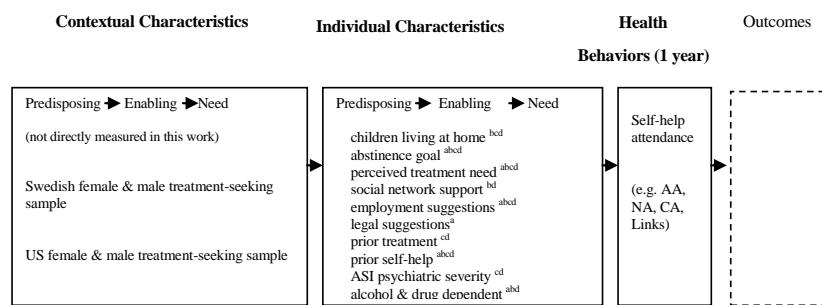
Paper I explored predisposing, enabling and need factors that differentiated baseline treatment seeking and self-help attendance in the 1-year post-treatment period among men and women in the Swedish and U.S. treatment systems. In the theoretical conceptual model (see Figure 4.1), the “system” difference is represented in the Contextual Characteristics component, which may include characteristics like cultural or historical values and attitudes, or the supply, accessibility, and quality of staff and services. This information was not empirically tested. Rather the paper used a side-by-side analysis to inform the discussion of differences (and similarities). One main finding in this paper was how different the genders were within the respective samples (as represented by the Individual Characteristics component in the model). Compared with men, women treatment seekers in the Swedish sample were more educated (26 vs. 15% had post gymnasium studies), more likely to be in a marital-like relationship (30 vs. 20%), and more likely to have non-adult children living with them (24 vs. 12%). Although both Swedish women and men were dependent primarily on alcohol (62 and 59%) and fewer were dependent on drugs (32% for both genders), women were more likely than men were to be dependent on both alcohol and drugs (15 vs. 10%). Women also tended to have greater problem severity. They reported higher composite scores than men for the ASI family/social (.232 vs. .175), ASI psychiatric (.261 vs. .212), and ASI medical (.338 vs. .300,  $p \leq .10$ ) domains. Men scored higher only on the ASI legal domain (.113 vs. .061). Men were also somewhat more likely to get suggestions to enter treatment from employment (14 vs. 9%) and legal sources (14 vs. 7%).

As in the Swedish sample, women treatment seekers in the U.S. sample were more likely to be in a marital-like relationship (33 vs. 29%) and living with non-adult children (42 vs. 23%). Additionally, U.S. women (like the Swedish women) reported statistically higher composite scores for the ASI family/social (.355 vs. .241), ASI medical (.323 vs. .261), and ASI psychiatric (.444 vs. .364) domains, and U.S. men (like the Swedish men) reported higher ASI legal composite scores (.145 vs. .123,  $p \leq .10$ ). As with the Swedish sample, rates for alcohol- or drug-dependence diagnoses were similar for both genders (51 & 55%), but men (not women as in the Swedish sample) were more likely to be dependent on both alcohol and drugs (28 vs. 22%). Men reported more prior lifetime treatment (76 vs. 59%) and more prior year mutual-help attendance (73 vs. 64%). Except for suggestions from family, friends, and acquaintances (men received 10% more), suggestions to seek treatment for a substance-use problem from other sources were similar for both genders. Compared with the U.S. sample, the Swedish sample received more suggestions from health and social service agencies, which might be expected under a social welfare regime where services tend to be more integrated and with equal access.

Higher rates of mutual-help group seeking were found for U.S. individuals (represented in the Health Behavior component of the model). Twice as many U.S. women and men (72% for both genders) reported post-treatment attendance in the year following treatment initiation compared with the Swedish women and men (32 & 37% respectively). In addition, twice as many U.S. individuals set abstinence as a treatment goal (74 vs. 37%). This greater affiliation with mutual-help groups is consistent with the emphasis that U.S. treatment staff puts on AA and NA (both during and after treatment) and is consistent with abstinence being the main goal of treatment programs

and self-help groups. Indeed, most U.S. research has used abstinence as a measure of treatment success.

Predisposing, enabling and need factors associated with post-treatment mutual-help group attendance in the Swedish sample (both genders) included having a treatment goal to stop drinking ( $OR = 2.0$ ), perceiving the need for treatment as extremely high ( $OR = 1.4$ ), getting treatment suggestions from persons in one's employment environment ( $OR = 2.1$ ), being dependent on both alcohol and drugs ( $OR = 2.4$ ) and ever attending a mutual-help group ( $OR = 2.6$ ). Differences emerged by gender. For women, living with non-adult children ( $OR = 2.4$ ) and having more close persons to talk with ( $OR = 1.1$ ) predicted attendance. For men, getting treatment suggestions from the legal system ( $OR = 1.8$ ) predicted attendance. Almost identical factors were associated with post-treatment mutual-help group attendance for both genders in the U.S. sample, that is, having a drinking goal to stop completely ( $OR = 2.3$ ), perceiving the need for treatment as extremely high ( $OR = 2.1$ ), getting treatment suggestions from employment resource ( $OR = 4.6$ ), ever attending mutual-help groups ( $OR = 3.3$ ), and having lower psychiatric severity ( $OR = 0.3$ ). For women, but not for men, being both alcohol and drug dependent ( $OR = 3.8$ ) and having persons to talk with ( $OR=1.1$ ) increased the likelihood of follow-up mutual-help attendance.



**FIGURE 4.1. Conceptual help-seeking model for “Individual Characteristics” predicting self-help attendance. Superscripts denote significance for Swedish men<sup>a</sup> and women<sup>b</sup> and U.S. men<sup>c</sup> and women<sup>d</sup>.**

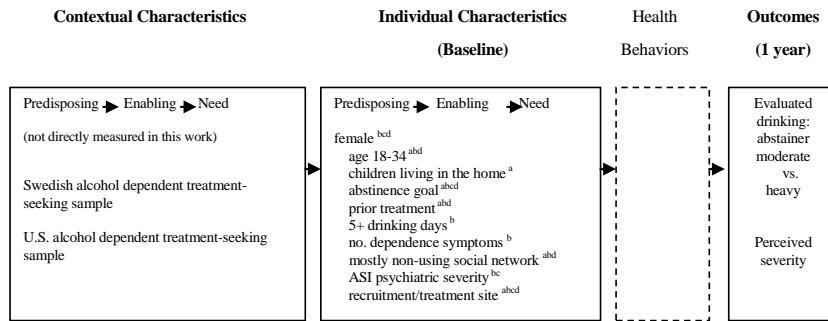
#### 4.1.1 Summary

Both Swedish and U.S. women were more likely than their male counterparts to be in a marital-like relationship and to have care of children under the age of 18 years at treatment initiation (predisposing factors), and they presented with higher family/social, medical and psychiatric problem severity (need factors). Males in both samples on the other hand initiated treatment with greater legal severity. Though male-to-female ASI severity scores were in the same direction in the both samples, the magnitude of most ASI scores was noticeably greater for the U.S. sample. ASI alcohol severity scores were similar in both samples. Even though mutual help played a more significant role in post-treatment help seeking in the U.S. than in Sweden, very similar predisposing, enabling, and need factors predicted attendance at year 1. Being both alcohol and drug dependent also predicted mutual-help attendance but for different genders in the two samples.

## **4.2 PAPER II. CORRELATES OF 1-YEAR DRINKING OUTCOMES AMONG SWEDISH AND U.S. TREATMENT CLIENTS: A CROSSTCULTURAL COMPARISON**

As with Paper I, Paper II used a side-by-side cross-cultural comparison and relied on general knowledge about the handling of alcohol problems in Sweden and the U.S. to represent Contextual Characteristics in the theoretical model (see Figure 4.2). However, paper II only included individuals diagnosed with an alcohol-dependence disorder at baseline (some of whom also misused drugs). Like the prior paper, similar baseline characteristics defined these alcohol-dependent samples at treatment initiation. Unlike Paper I, Paper II *statistically* compared Swedish treatment seekers with U.S. treatment seekers on baseline characteristics. Those tests showed that the U.S. alcohol-dependent sample had significantly higher ASI psychiatric (.448 vs. .248) and drug severity (.122 vs. .035) scores and more set abstinence as a treatment goal (84 vs. 54%) compared with Swedish alcohol-dependent sample. In contrast, a greater percentage of Swedish individuals reported having social networks comprised of mostly alcohol and drug abusers (25% vs. 11%) and a greater percentage were in the 50 and above age groups (44 vs. 16%). Both these latter statistics were driven by an overrepresentation of Swedish males in these areas. Lastly, the U.S. sample reported more prior mutual-help involvement and the Swedish sample reported more prior formal treatment involvement.

Specific findings for predisposing, enabling and need factors predicting better drinking Outcomes at year 1 (i.e., both abstinence vs. heavy drinking and moderate drinking vs. heavy drinking) in the Swedish sample included being in the 18-34 year age group, having an abstinence goal, and having a mostly non-using social network. Additionally, moderate versus heavy drinking (but not abstinence vs. heavy drinking) was predicted by female gender, higher ASI psychiatric severity, fewer five-plus drinking days, fewer dependence symptoms, and prior treatment episodes. In the U.S. sample, female gender and having an abstinence goal predicted better drinking outcomes (for both moderate drinking and abstinence), and being in the 18-34 year age group and no prior treatment predicted moderate drinking (but not abstinence). In both samples, the type of site that individuals were recruited from was controlled in the multivariate regressions predicting drinking outcome. Being recruited from the social welfare system but treated in specialty treatment outside it (vs. in the healthcare system) predicted abstinence (vs. heavy drinking) for the Swedish sample, and being recruited and treated in the public (vs. private) treatment system reduced the likelihood of moderate drinking (vs. abstinence) for the U.S. sample.



**FIGURE 4.2.** Conceptual help-seeking model for “Individual Characteristics” associated with 1-year drinker typology. Superscripts denote significance for Swedish abstainers<sup>a</sup> or moderate drinkers<sup>b</sup> and U.S. abstainers<sup>c</sup> or moderate drinkers<sup>d</sup> (versus heavy drinkers).

#### 4.2.1 Summary

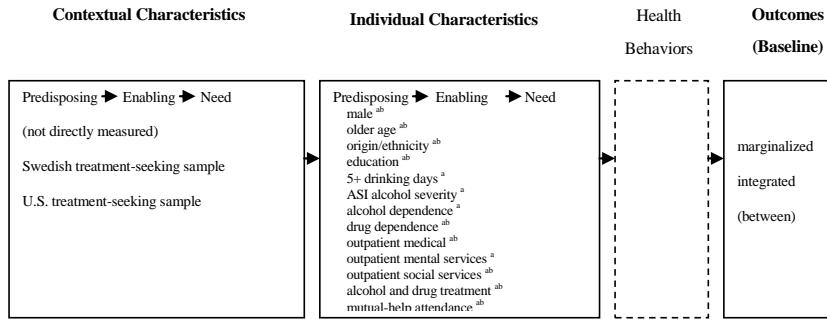
These data suggest that the Swedish sample was overrepresented by older males with denser using social networks (enabling factor) relative to the U.S. sample. In contrast, the U.S. sample was overrepresented by individuals with greater drug and psychiatric severity (need factors) relative to the Swedish sample. The Swedish sample reported more prior alcohol and drug treatment involvement and the U.S. had more prior mutual help group involvement, again, a probable reflection of how these two systems handle problem drinkers. Twice as many predisposing, enabling and need factors predicted drinking outcome in the Swedish sample than the U.S. sample. In terms of factors predicting moderate drinking (vs. heavy drinking), U.S. literature tends to show that among individuals seeking change, moderate drinking is more common for those who are not highly dependent on alcohol, are males, are younger, and are not socially and economically unstable (Humphreys, 2003a). Predictive factors found in Paper III align with many of these, and especially for the Swedish treatment sample.

As to the relationship between recruitment site and outcomes, it may be that those treated outside the social welfare system were sent to a higher level of specialized addiction treatment (as opposed being treated by social workers or medical staff) and this resulted in a better drinking outcome. It is equally probable (or perhaps more likely) that those treated in the social welfare system were more marginalized individuals with poorer prognoses and with longer histories of involvement in the overall system. Similarly, U.S. individuals treated in the public system (mostly those without private insurance that usually comes through one’s employment) were perhaps those with fewer social and economic resources to draw upon and this resulted in poorer drinking outcomes. These latter findings require further examination. Paper III gets at some of these issues as related to marginalization status.

#### **4.3 PAPER III. FOR THE MARGINALIZED, OR FOR THE INTEGRATED? A COMPARATIVE STUDY OF THE TREATMENT SYSTEMS IN SWEDEN AND THE U.S.**

Paper III compared individuals in the Swedish and U.S. treatment samples based on their marginalization (vs. integrated or between) status at baseline, with marginalization status determined by housing status, employment status, and social network composition. Using this definition of marginalization, findings showed that the Swedish treatment system served a much higher share of marginalized persons than the U.S. system (17 vs. 9%) and that the U.S. treatment sample included a larger proportion employed individuals with stable housing (32 vs. 15%). In both treatment samples most individuals belonged to the “*between*” group (i.e., either homeless or without employment). Swedish marginalized treatment seekers were older (76% over 35 years or older) than U.S. marginalized individuals (66% over 35 years), but in both samples males (>80%) and minority groups (immigrant and nonwhite groups) were overrepresented. In both samples, the marginalized individuals had more prior treatment episodes (especially for inpatient treatment). Drug use was connected with a marginalization status in both countries (relative to the socially integrated groups). This was particularly so in Sweden where the socially integrated group was represented by a larger share of alcohol-dependent persons (76 vs. 49%), higher ASI alcohol scores (.468 vs. .328), and a higher number of five plus drinking days (75 vs. 61%). Patterns of drug use differed in the two samples. Amphetamines, cannabis, sedatives and heroin were the most commonly used drugs among Swedish marginalized individuals, while cannabis, crack, cocaine and amphetamine were the most commonly used drugs among the U.S. marginalized individuals.

All the U.S. marginalized individuals were recruited from residential programs, either medical inpatient or public residential treatment. Inpatient settings were also the most common recruitment units for Swedish marginalized individuals. In contrast, among the integrated groups, almost half of the U.S. and almost three quarters of the Swedish individuals were recruited from outpatient programs. Swedish marginalized individuals were recruited mostly from the social services system. In contrast to the marginalized group, only 25 percent of the socially integrated had entered treatment through a social services treatment unit. Among the Swedish marginalized persons interviewed in social service units, 85 percent reported that their first contact with social services dated back ten years or more. In both samples, marginalized individuals reported more experiences in inpatient, residential, or detoxification programs; and more social service or community mental health use. Self-help had of markedly less importance for Swedish than U.S. marginalized persons. Referrals from other treatment units seemed to be considerably more common in the Swedish system in all groups. The legal system had only a marginally more central role in U.S. system. Pressure from work was about as common among the integrated in the both sample.



**FIGURE 4.3.** Conceptual help-seeking model for “Individual Characteristics” (lifetime and past year) associated with marginalization status at baseline treatment entry. Superscripts denote significance for the Swedish<sup>a</sup> and U.S.<sup>b</sup> marginalized (vs. integrated) individuals.

#### 4.3.1 Summary

These findings indicate that the Swedish treatment system serves more marginalized, out of work, homeless persons than the U.S. treatment system does. This does not mean that Sweden has a larger proportion of marginalized persons -- rather the system serves more of these individuals. Marginalized individuals in the Swedish sample were somewhat older and those in the U.S. sample were somewhat heavier drug users. Marginalized individuals in both samples used more inpatient treatment and more social services and community mental health services. However, the role of the Swedish social service system as a referral or social pressure institution was more apparent than in the U.S., as was the role of police. This delineation of alcohol and drug treatment in relation to other social services interventions and to the criminal justice system is a critical distinction. The Swedish social service system plays a central role in treatment, a role that may partly explain why the Swedish system differed from the U.S. system, why more marginalized persons were found in the Swedish treatment system, and why marginalized persons exhibited fewer addiction-related problems than marginalized persons did in the U.S. treatment system. In the Swedish treatment system, clients are handled for a mixture of reasons, and the categorizations of clients are accordingly complex. Further, the amount of self-help and private psychotherapy reported by U.S. clients supports the belief that the societal definitions of drinking and drug problems and how and by whom they should be handled are somewhat different when viewed under different sociopolitical systems. Both treatment systems seemed rather divided, one for well resourced and one for less-well-resourced clients (but perhaps more so in the U.S.).

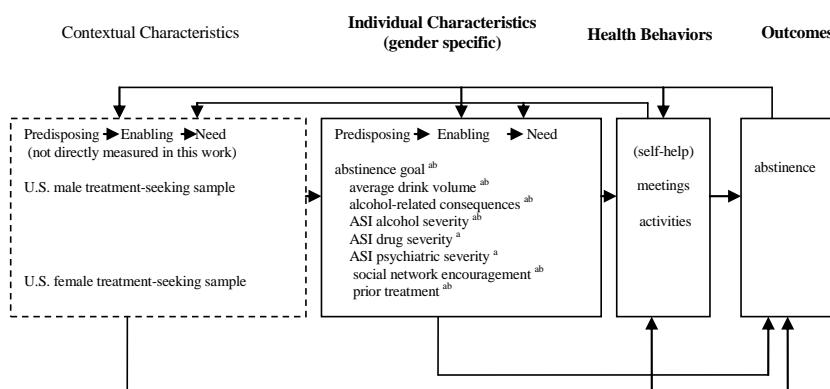
#### 4.4 PAPER IV. DO WOMEN DIFFER FROM MEN ON ALCOHOLICS ANONYMOUS PARTICIPATION AND ABSTINENCE? A MULTI-WAVE ANALYSIS OF TREATMENT SEEKERS

Although prior U.S. research on women’s use of self-help has resulted in rather mixed findings (Bogenschutz, 2008; Timko, 2008), results in Paper IV are in agreement with one other U.S. longitudinal study that looked at AA over 8 years and found that

women attended AA at least equally (more in year 1) to men and that they benefited more than men from of that involvement (Timko, et al., 2002). Paper IV adds to the findings in Timko's study by looking at not only meeting attendance but also other AA prescribed behaviors by gender. Paper IV used the U.S treatment sample. Findings showed that women's and men's reported use of AA (and similar self-groups) at baseline and 1, 3, 5 and 7 years interviews was very similar. Besides attendance, other AA variables included having a sponsor, doing service, reading literature, and being a sponsor. These items were tested both individually and as a summed composite score.

Women and men were alike on most predisposing, enabling, and need factors associated with AA affiliation (attendance and summed behaviors) as tested in longitudinal generalized estimating equation (GEE) models with linear effects of time. Except for drinking goal at treatment initiation, all other variables were time varying (i.e., collected at every interview and included in the GEE model). For both genders, having an abstinence goal, lower drink volume, more alcohol-related consequences, more prior treatment, and more encouragement to reduce drinking predicted attendance and scaled behaviors (refer to Paper IV for odds ratios which are too numerous to display here). Higher ASI alcohol severity predicted greater attendance for men and women (and higher ASI alcohol severity predicted summed behaviors for men). Relative to men, women with higher ASI drug severity were less likely to affiliate with AA (attendance and summed behaviors), but women with higher ASI psychiatric severity were more likely to attend meetings over time.

After determining which factors predicted the AA affiliation measures, one final GEE model was conducted to test how gender related to past-30-day abstinence over time, controlling for the influence of other predisposing, enabling, and need influences (time invariant and time varying). Though higher AA affiliation was a predictor of abstinence for both genders, males were less likely than women to be abstinent across time. Men were also more likely to reduce their AA participation across time.



**FIGURE 4.4. Conceptual help-seeking model comparing women with men in the U.S. longitudinal treatment sample on “Individual Characteristics” associated with “Health Behaviors” and on their abstinence over time (follow-ups at 1, 3, 5, & 7 years). Superscripts denote significance by gender (women<sup>a</sup> and men<sup>b</sup>).**

#### **4.4.1 Summary**

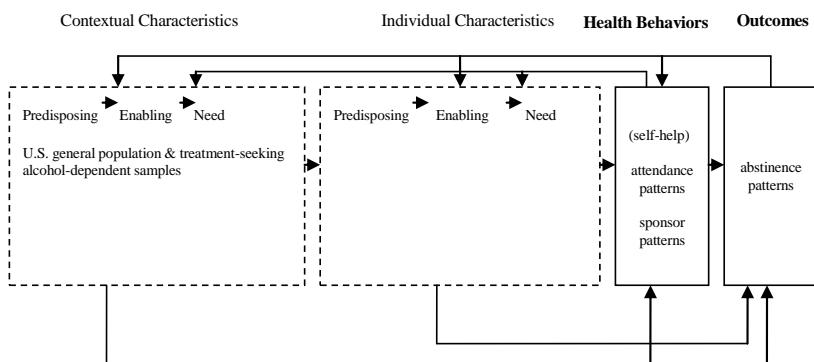
Women and men in this U.S. treatment mostly used AA (and other self-help groups) in the same ways. For both genders, greater problem severity and more negative consequences (need factors) predicted greater AA affiliation over time. Many AA members (and other treatment personnel) would refer to these as measures of “bottoming out.” Greater affiliation was also predicted by having a commitment to recovery (predisposing factor), which is consistent with the goal of most U.S. treatment programs and with AA’s philosophy (the only membership requirement is a “*desire to quit drinking*”); and by having more friends and/or family members supporting reduction (enabling). These data did not query whether this support came from AA peers or other outside sources (like family). In terms of the relationship between AA affiliation and abstinence at follow-ups (controlling for other influences), greater affiliation paralleled greater abstinence.

### **4.5 PAPER V. DOES SPONSORSHIP IMPROVE OUTCOMES ABOVE ALCOHOLICS ANONYMOUS ATTENDANCE? A LATENT CLASS GROWTH CURVE ANALYSES**

Rather than assuming that individuals come from a homogeneous population represented by a single growth trajectory and that covariates that affect the trajectory influence everyone in the same way (as assumed in the GEE model in Paper IV), this paper used a modeling technique that clustered individuals based on their patterns (trajectories) of AA attendance, sponsorship, and abstinence over time. Latent class growth curve analyses for this alcohol-dependent U.S. sample (from the general population and treatment samples) produced a 4-class solution for attendance: a *low* group (n=308) whose attendance was minimal at every follow-up, a *medium* group (n=69) whose attendance averaged about 1 meeting per week on average, a *descending* group (n=81) whose high attendance at year 1 decreased sharply at year 3 and then leveled, and a *high* group (n=37) whose high attendance declined only slightly from year 1 to year 7. A 3-class solution best described the sponsorship trajectories and included a *low* group (n=352) whose likelihood of having a sponsor stayed steady, increasing slightly at year 3 (ranging on average from 0% to 4%), a *descending* group (n=72) whose likelihood of having a sponsor was high at year 1 (72%) and then declined sharply by year 5 when it leveled to almost no one having a sponsor, and a *high* group (n=77) whose likelihood of having a sponsor rose slightly from year 1 to year 3 (from 72% to 88%) and then declined to 75% at year 7. A 3-class solution best described the abstinence trajectories and included a *low* group (n=263) whose likelihood of abstinence averaged about 12% across the four follow-ups, a *descending* group (n=35) whose rate of attendance was high years 1 and 3 (all 35 individuals were abstinent) and then declined from about half abstinent at year 5 to none abstinent at year 7, and a *high* group (n=202) whose likelihood of abstinence rose slightly after year 1 (from 75% to nearly 100% on average at year 7).

Results from a multinomial regression predicting abstinence class membership showed that individuals in the *low attendance* class were less likely than those in the *high, descending, and medium attendance* classes to be in *high* (vs. *low*) abstinence class. Overall, being in the *high sponsor* class predicted better abstinence outcomes than being in either of two other classes (*descending* and *low*), independent of attendance class effects. Though declining sponsor involvement was associated with greater likelihood of high abstinence than low sponsor involvement, being in the

*descending sponsor class* also increased the odds of being in the *descending abstinence class*.



**FIGURE 4.5.** Conceptual help-seeking model for U.S. alcohol-dependent individuals from the general population and treatment samples (follow-ups at 1, 3, 5, & 7 years) testing the association with “Health Behaviors” (attendance patterns and sponsorship patterns) on abstinence patterns. Superscripts denote significance independent influence on “Outcomes.”

#### 4.5.1 Summary

Findings suggest heterogeneity in patterns of AA attendance and sponsorship (supporting the value of using clustering analyses). Any pattern of AA attendance, even if it declined or was never high for a particular 12-month period, was better than little or no attendance in terms of abstinence. Individuals who reported *low attendance* at all follow-ups had a *lower pattern of abstinence* than those in the *high, descending*, and *medium attendance* classes. Greater initial attendance carried added value. This is consistent with the research that Moos and colleagues conducted with the sample of initially untreated individuals followed for 16 years. Having a sponsor had added value above the positive value of attendance in increasing abstinence, suggesting there is a benefit for maintaining a sponsor over time above that found for attendance. In addition to these positive findings for AA affiliation, it must be noted that the largest percentage of individuals clustered in *low attendance* class (more than half the total sample were in this class). Still, more than a quarter of these *low attendance* individuals were in the *high abstinence* class. This suggests a good number of alcohol-dependent individuals fare well with little or no AA involvement. Because of its relative size, this is a group that needs to be studied further to understand better the mechanisms of action that lead to desired outcomes.

## **5 LIMITATIONS FOR PAPERS I-V**

Limitations to these papers are common to this type of research (see section 1.3) and include the ability to generalize beyond the sampling frames used, reliance on self-report, attrition of more severe cases, and possible intervention effects. In terms of generalizing the results, the counties used in both studies (U.S. and Swedish) represented rather well their larger populations in terms of problem use. Consideration was given to the issue of how findings generalize by paying close attention to measures and treatment system characteristics. Also, for the U.S. sample the relationship between substance use and problems in the study county was comparable to the same data reported in the National Alcohol Survey, the National Drug and Alcohol Treatment Utilization Survey (NDATUS) /Uniform Facility Data Survey (UFDS), and the National Household Survey on Drug Abuse (Greenfield & Weisner, 1995; Schmidt & Weisner, 1993; Weisner, et al., 1995; C. Weisner & L. Schmidt, 2001). To address the reliance on self-report of drinking and drug use, robust questions and well-established interview techniques were used in the studies. Recent articles find that self-report data on alcohol use can be accurate and sometimes biased towards over-reporting (Babor, Steinberg, Anton, & Del Boca, 2000). There was no evidence suggesting that the bias arising from self-report of drinking would be more predominant among any particular population characteristics in the study. The Swedish and U.S. studies used here compared well with others in their follow-up rates. For the two papers using 7-year data, differences in follow-up characteristics were minimized in the analysis. Still, attrition may produce some bias. Because individuals were sampled at a point when they met problem drinking status in the community survey (for the U.S. general population sample) and when their problems were serious enough to enter treatment (for the treatment samples), their drinking was potentially at its highest point, and a reduced drinking trajectory could at least partly be attributed to regression to the mean. Lastly, the follow-up interviews and tracing contacts by the studies (and especially the U.S. study) may have acted as an intervention resulting in lowered drinking.

## 6 CONCLUSIONS

To this point, results of the five papers included in this thesis have been discussed separately. This concluding section, which attempts to pull findings together, is organized within each of the two analytical approaches (i.e., cross-cultural comparative and trajectories analyses) and around the main components in the overriding Andersen (and colleagues) theoretical model used in the thesis (see Figure 1). That is, first findings from the three cross-cultural comparative papers are discussed in terms of *contextual characteristics* (Swedish and U.S. system-wide influences), *individual characteristics* (person-centered), and proximal drinking *outcomes* (abstinence, moderate drinking, heavy drinking); and secondly, the two U.S. longitudinal papers are discussed in terms of *individual characteristics* (person-centered), *health behaviors* (post-treatment self-help affiliation trajectories), and distal drinking *outcomes* (abstinence trajectories based on repeated measures over 7 years).

### 6.1 CROSS-CULTURAL COMPARATIVE ANALYSES

The comparative Papers I, II and III collectively examined: 1) *individual* predisposing, enabling, and need factors defining who seeks treatment in each country to better explain those *contextual characteristics* that facilitate or impede men's and women's initiation of treatment, as well as marginalized (versus integrated) individuals initiation of treatment and other service utilization; 2) *individual* predisposing, enabling, and need factors associated with post-treatment *health behaviors* defined here as self-help affiliation; and 3) *individual* predisposing, enabling, and need factors associated with proximal drinking *outcomes*.

#### 6.1.1 Contextual characteristics influencing help seeking

The introductory section of this thesis provided an intentionally, rather inclusive overview of the historical and cultural influences leading up to what we know about the handling of problem drinkers in the present Swedish and U.S. systems of care. This text presented background information on *contextual* influences in the theoretical model not empirically measured in this thesis. *Contextual* influences can include, for example, factors like national policy and resources and their organization within a larger system, as well as shared cultural beliefs and attitudes, that affect potential, realized, and equitable access to care (R. M. Andersen, 2008). Similarities and differences were apparent between the two countries. As might be expected from an examination of the sort presented here, these are broad and rather general (and even more so in this concluding recap).

To start, in both countries the handling of inebriates mostly took form out of temperance movements, with the earliest recorded dealings of problem drinkers focused on providing *care*. Replaced later on by the belief that inebriety was a treatable disease, the U.S. quickly moved from providing *care* in homes (late 1700s) to providing *cures* (under sometimes deplorable conditions) in asylums, religiously-oriented inebriate homes and private addiction cure institutes in the 1800s. By the early 1900s, alcohol and drug addiction in the U.S. was primarily being treated as a symptom of an emotional disturbance (mostly in psychiatric settings) and alcoholism was characterized generally as willful misconduct that should be punished. In Swedish early, recorded history from the 1800s shows that inebriates were likely provided with

*care* at spas, by private practitioners, and in hospitals for drinking-related medical problems. By the late 1800s, the disease concept had a certain official acceptance and a few treatment centers for the *care and cure* of alcoholics appeared, but the idea that “drunkards” (a stigmatizing label)<sup>23</sup> could be treated for a disease was mostly viewed as controversial. Further, Swedish alcoholism physicians advocating for the disease concept included “*will and morality*” in the etiology and symptomatology of alcoholism.

In the period around the turn of the 20<sup>th</sup> century, inebriates in both countries were viewed as a social problem and much of the responsibility for dealing with “*deviant*” drinking shifted to the police and judiciary authorities, but with the *control* of the problem drinking somewhat taking different paths in the two countries. In the U.S. prohibition was enacted in the 1920s with the intent of diminishing alcohol consumption (and problems) by eliminating businesses that manufactured, distributed and sold it -- get rid of alcohol and you get rid of the need for treatment. Considered by many as a failed social and political experiment, the era led many to the belief that federal government *control* cannot always replace *personal responsibility*. The 1930s through the 1950s in the U.S. saw (among other converging events) the establishment of AA and a call from leaders in various disciplines for alcoholism to be seen as a disease (with abstinence as the *cure*). Sweden in this same period enacted laws for the compulsory treatment (*care*) of excessive drinkers who were deemed a burden to the safety or life of themselves or others, who failed to meet family obligations, or who were a burden to the poor-relief system. Rather than attempting to outlaw alcohol (like the U.S.), Sweden instead enacted a ration book system (the Bratt system), which remained in place until the 1950s, as a way of *controlling* the problem drinking.

Moving forward to the current day handling of problem drinkers, AA exerted a strong influence in the U.S. on how excessive drinking is conceptualized and how treatment is administered – today alcoholism continues to be viewed as a discrete, genetically linked, irreversible disease (officially at least) and lifelong abstinence (alcohol and drugs) remains the stated goal. Yet some level of personal responsibility seems apparent. For example, it is not uncommon to hear in AA meetings the advice to newcomers, “*You’re not responsible for your disease, but you are responsible for your recovery.*” Sweden, on the other hand, continues to view and treat alcohol problems as more of a social problem and, although drinking is addressed and abstinence is generally promoted, treatment is focused more broadly on integrating problem drinkers back into society. As well, the cultural norms of will, personal responsibility, and social responsibility seem to persist around the handling of drinking problems. Compulsory treatment for alcohol misuse continues to exist in Sweden although voluntary admissions now far outnumber compulsory admissions. An increase in drug use (low in comparison to other countries) has opened a nascent discourse on the use of compulsory treatment. In comparison, the U.S. treatment system has increasingly become an adjunct to the judicial system (with coercive referrals to treatment and especially for drug use) and to a lesser degree through Employee Assistance Programs.

In terms of potential and equitable access to treatment (important *contextual* characteristics), healthcare in Sweden is universal and comprehensive and treatment is

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<sup>23</sup> It is well beyond the scope of this thesis (and even more so beyond this author’s knowledge) to consider the contextual use of language, but in reporting what others have written over time (that is their terminologies are retained in this discussion), it is most curious how the words *inebriate*, *problem drinker/drinking*, *excessive drinker/drinking*, *dependent drinker*, *alcoholism* have been used to describe the same state.

provided about equally in the healthcare and the social welfare systems. In comparison, healthcare in the U.S. (at this point) is entrepreneurial and permissive and treatment is provided in privately- and publicly- funded programs. Both countries have well developed and diversified treatment systems in place (e.g., treatment intensity/levels of care and therapeutic approaches), but treatment in Sweden appears somewhat more accessible (affordable) and it is far more integrated with other service agencies (and especially for those who enter through the social welfare system) than the U.S. treatment system. Hence, there appears to be more restrictions around treatment access in the U.S., and especially for readmissions or extended care. This observation was most evident in Paper III which looked at treatment for marginalized versus integrated individuals.

Even though marginalized individuals in both countries shared similar profiles, that is, they were more likely to be males, older (even more so in Swedish sample), less educated, drug dependent, ethnic minorities/non-Swedish born, recruited from inpatient programs, and with high multi-service utilization histories; twice as many marginalized individuals were found in the Swedish treatment system compared to the U.S. system. It is highly unlikely that the U.S. has fewer marginalized persons than Sweden. Instead, these findings suggest that marginalized Swedish persons are provided addiction care (admitted and readmitted) in the treatment system via their involvement in the social welfare system. In comparison, the lack of integration (relative to Sweden) in the U.S. suggests that marginalized persons are treated via disconnected service agencies (i.e., emergency or acute care settings, as supported by U.S. homeless literature). This data provides a good example of how *contextual* differences impact service utilization as conceptualized in the Andersen (and colleagues) model.

#### **6.1.2 Individual characteristics influencing help-seeking and drinking outcome**

Comparing *individual* characteristics, overall the Swedish treatment-seeking sample was older, more male, and with denser user/weaker social networks than the U.S. treatment sample which reported greater drug severity (but not alcohol severity) and greater problem severity in other life areas as defined by ASI measures. As noted above (6.1.1), older age and male gender may have been driven by an overrepresentation of marginalized persons in the Swedish sample who, once in the social welfare system, tends to stay involved (indeed the marginalized individuals reported entering the social welfare system 10 or more years earlier). Setting these overall *individual* differences aside, it was most noteworthy that gender differences within each sample mostly replicated between the two samples in terms of *individual* characteristics (i.e., patterns but not magnitude where U.S. was consistently higher on all common characteristics). In both samples women (compared to men) were more likely to be married, with children, and with higher ASI medical, psychiatric, family/social severity; and men (compared to women) in both samples were more likely to get suggestions to enter treatment (especially legal suggestions).

In terms of *contextual* (system) differences, these findings (*individual* characteristics) are difficult to tease apart. It may be, for example, that individuals in the Swedish system (compared the U.S.) have access to treatment at an earlier point in the course of problem drinking and before that drinking has impacted other life areas (and especially for women); or it may be that greater integration between service sectors means drinking problems are identified and dealt with sooner; or it may be that individuals perceive problem drinking differently in the two countries; or, equally likely, it may be a combination of factors. The impact that greater drug use in the U.S.

treatment sample may have had on compounding problem severity across other life domains is also complicated and not easy to disentangle.

Comparing baseline characteristics of the full treatment samples (as represented in Paper I, Table 1) to those of the alcohol-dependent sub-sample (as represented in Paper II, Table 1) provided some information here. Most *individual* level characteristics remained comparable and constant in the two papers. However, while ASI drug severity decreased in the Swedish alcohol-dependent sample (versus the full sample), drug severity stayed the same in the U.S. alcohol-dependent (versus the full sample). This provides compelling evidence of dual alcohol and drug misuse in the U.S. sample overall, which may help explain higher severity in other life domains (relative to the Swedish sample). The only other difference found when comparing the data in the two tables (i.e., Paper I and Paper II), was that two older age groups were less represented in both alcohol-dependent samples (but much more so in the Swedish sample). Taken together these results suggest that chronic alcohol use is linked to often co-occurring drug use. This finding should have implications for clinicians in terms of recommending levels of care or referrals to other ancillary services. At minimum, these differences suggest that *contextual* characteristics play a significant role in help-seeking behaviors. Research findings detected in one culture cannot be arbitrarily generalized to another culture.

Moving on to self-help affiliation (the primary focus of this thesis), the cross-cultural analysis was continued to determine which *individual* level predisposing, enabling, and need factors were associated with self-help in the first year following treatment. Enough has been said in preceding sections about the greater use of and greater reliance on self-help groups in the U.S. (compared to Sweden) and to the *contextual* characteristics contributing to this occurrence. It is obvious that the role of AA in the handling of problem drinkers is *contextual*. In addition to more subtle cultural attitudes around the stigmatization of treatment or lifelong abstinence, individuals attracted to AA and similar self-help groups, as well as the role these groups serve within a system, will vary depending on whether they represent a substitution for ongoing care as in the U.S. today or whether they are a complement to universal treatment as in Sweden today. Still, self-help groups (like AA and Links) seem to have a foothold in Sweden today and, given Sweden's current emphasis on evidence-based practices (U.S. empirical evidence and most clinicians already support self-help affiliation), these groups could become one more important piece in the overall system of care for problem drinkers. This may be even truer if drug use increases, as Sweden's official stance on drug use is total lifelong abstinence.

As with *individual* characteristics used to describe treatment seeking, many common *individual* level characteristics predicted self-help affiliation in the two samples. These were having a high-perceived need to be in treatment and having an abstinence goal at treatment entry, having prior exposure to self-help groups, and getting suggestions from employment personnel to seek treatment. These appear to be related (at least latently) to greater *perceived* and *evaluated* problem severity. Other predictive factors were either sample- or gender-related, including: encouragement to cut down or quit drinking (Swedish and U.S. women), dual alcohol and drug dependence (U.S. and Swedish women, and Swedish men), receiving legal suggestions to enter treatment (Swedish men), and lower ASI psychiatric severity (U.S. women). Once again, most of these characteristics appear to be related largely to problem severity. In summary, despite *contextual* differences noted in the two samples, overall *individual characteristics* predicting self-help affiliation were much alike.

Lastly, we utilized a cross-cultural analysis strategy to determine which *individual* predisposing, enabling, and need characteristics were associated with proximal drinking *outcomes*. More differences were found in this analysis than those described above were. Three common (both samples) *individual characteristics* predicted moderate drinking (versus heavy drinking). These were female gender, younger age (18-34) and having an abstinence goal. Only one common *individual* characteristic, having an abstinence goal at treatment entry, predicted total past year abstinence (versus heavy drinking). More generally speaking, characteristics often associated with lower problem severity and greater social resources appeared to be related to moderate drinking in both samples (e.g., fewer symptoms, fewer 5+ drinking days, not treated in the public or social welfare systems). Still, other results were completely opposite in direction in the two samples and likely represent true cultural differences. For example, non-using/stronger networks were related to both moderate drinking and abstinence in the Swedish sample but not the U.S. sample; and lower ASI psychiatric severity was related to abstinence in the U.S. sample, but conversely higher psychiatric severity was related to moderate drinking in the Swedish sample. It is difficult to draw conclusions about these differences without further analysis.

All in all, the U.S. sample appeared to have better 1-year drinking outcomes (fewer were heavy drinkers versus moderate drinkers or abstainers) than the Swedish sample in the simple bivariate analysis despite what appears to be a more integrated and more accessible treatment system in Sweden. In purely exploratory analyses completed in the very early stages of analysis, the two samples were combined and a multivariate model was used to test whether the U.S. sample still had fewer heavy drinkers after controlling for known influences and sample differences. In so doing, neither sample did better on the drinking outcome measure. This exploratory work was not employed (or reported) because there are too many unknown prognostic factors in such a modeling strategy (moreover, only a small part of the overall variance was explained in this effort, further evidence of unmeasured prognostic affects). In addition, this was not an *a priori* analysis strategy (and not a strategy taken in most cross-cultural studies). Nonetheless this exploratory work is noted here because it would be easy (but imprudent) to conclude that one system is superior to another without accounting for other overt (and not so overt) differences. Because the Swedish sample was overrepresented by marginalized individuals, a chronically involved group, a future study might do well run statistical tests stratified on social status (e.g., marginalized, integrated and between). Now that 1-year and 5-year follow-up data are available, it would also be informative to conduct a longitudinal analysis, perhaps using a GEE (or similar) model to measure change between year 1 and year 5, controlling for both baseline influences and time varying influences (especially use of medical, social welfare, and specific treatment services) predicting a culturally relevant outcome.

## 6.2 LONGITUDINAL TRAJECTORIES ANALYSES

Evaluation research on AA, which has improved in terms of longitudinal designs and larger samples and multidimensional measures of AA affiliation, has provided empirical evidence indicating an association between 12-step attendance and abstention. Still the body of quality research is limited and especially so for longitudinal research conducted across several years. Papers IV and V add to the scant literature on the long-term course of drinking (abstinence). These two papers used the U.S. samples to examine: 1) time invariant (especially gender) and time varying

*individual* predisposing, enabling, and need characteristics associated with AA affiliation (post-treatment *health behaviors*), as well as the influence of AA affiliation on drinking *outcome*; and 2) whether distinct patterns of AA sponsorship had any added benefit over distinct patterns of AA attendance on distinct patterns of abstinence *outcome*.

#### **6.2.1 Individual characteristics influencing post-treatment health behaviors (AA affiliation)**

In terms of specific AA endorsed behaviors and attendance, Paper IV found that U.S. treatment-seeking men and women use AA very similarly and that women do as well or better as a result of their affiliation. Aside from the work by Timko that reported on U.S. women's and men's use of self-help groups (duration of attendance) over a 8 year period using an initially untreated sample (with follow-ups at 1 and 8 years), this is the first paper to look in depth at use of specific AA behaviors and activities over an extended period of time and with a gender focus. Some U.S. clinicians have voiced concern about referring women to groups like AA, contending that the AA steps focused on “powerlessness” and “making amends” may detract from women’s personal autonomy. Paper IV suggests this is probably not the case. Since no measures for powerlessness or making amends were available to test this hypothesis, we cannot be sure that those who stayed engaged versus those dropped out of self-help groups were the same on these measures. We can say, however, that any influence these may exert on AA affiliation appears not to be strongly gender specific.

What is more, *individual* characteristics related to post-treatment AA affiliation were (for the most) the same for men and women. Only two gender differences stood out: women with higher ASI psychiatric severity over time were less likely to affiliate with AA, and men with social networks that supported drinking over time were less likely to affiliate. Like results in the comparative papers, some factors associated with self-help affiliation were also predictive of abstinence (after controlling for AA affiliation). Many *individual* characteristics associated with post-treatment AA affiliation (*health behaviors*) and improved drinking *outcome* appeared to be related to higher baseline alcohol-problem severity and with a reduction in severity at follow-ups.

#### **6.2.2 Post-treatment AA attendance and sponsor trajectories associated with abstinence trajectories outcomes**

Paper V is an extension of earlier latent class analyses with this U.S. dataset that described AA attendance trajectories across 5- and 7- years using alcohol-dependent individuals from the general population and treatment samples. That work did not construct abstinence trajectories or AA sponsor trajectories as was done in Paper V. Instead, for each attendance trajectory (class) the proportion of individuals abstinent at every follow-up was plotted and reported as an average abstinence trajectory. The significance of this method over what is done in these two thesis papers is not (at first glance) easy to grasp. Thus, a hypothetical example is offered. Taking, for example, the class with high AA attendance at every follow-up and assume that at the first two follow-ups half that class reports no drinking and the other half drinking. On average (plotted rates), 50% of the entire high attendance class appears to be abstaining over these two follow-ups. In the two subsequent follow-ups, the abstinence patterns reverse (abstainers become drinkers and drinkers become abstainers). Again, on average (plotted rates) 50% of the entire high attendance class appears to be abstaining over

those two later follow-ups. However, in reality, two different abstinence patterns are apparent for these high AA attendees, one declining and the other inclining. Paper V attempts to get at true patterns of abstinence over time (as well as patterns of attendance and sponsorship).

Details of the patterns are discussed in section 4.5. Overall findings indicated heterogeneity in patterns of post-treatment AA attendance among alcohol-dependent drinkers in the U.S. general population and treatment samples. More generally, any pattern of AA attendance, even if it declined or was never high for a particular 12-month period, was better than little or no attendance in terms of abstinence. Greater initial attendance carried added value and there was a benefit for maintaining a sponsor over time above that found for attendance. This examination of sponsorship adds to a very small literature on that aspect of AA affiliation. It has been estimated that there may be at least 100,000 AA members in the U.S. acting as sponsors, yet research knows little about whether or not this is helpful (Humphreys, 2003b).

Despite findings supporting the benefit of AA attendance, which are supported by a host of other U.S. research findings (but shorter-term studies) on the effectiveness of AA, a large proportion of the sample was in the *low AA attendance* class. Moreover, a significant number of these *low attendance* individuals were in the *high abstinence* class. This suggests that not everyone needs to attend AA meetings to change their drinking over time. Analysis with these data also showed that treatment (re)admissions in follow-up years were not a substitution for AA affiliation. These findings support the use of AA as an adjunct to treatment for those inclined to affiliate with AA (and similar groups) but AA should be just one of several options open to persons seeking help.

### 6.3 Implications

In terms of the value of self-help groups, these papers have provided empirical evidence that AA (and similar groups) should play a complementary (but not primary) role in the handling of problem drinkers, especially if a system is targeted at a wider range of problem severity. This appeared true for Sweden and the U.S. (and was most apparent in the U.S. trajectories analysis). This thesis purposely provided a detailed description (albeit general, but with recognition of cultural differences) of how AA works, as well as, details on the twelve-steps and the twelve-traditions. This background information was provided in this thesis because of recommendations coming out of a 2003 workshop convened with leading U.S. treatment researchers (Humphreys, et al., 2004) and based on the papers comprising this thesis which are in agreement with those recommendations. This panel advised clinicians to become familiar with empirically validated techniques when fostering self-help engagement, to have a menu of treatment and self-help options available for use with clients, and to address thoughtfully the diversity of client characteristics in their practice when making recommendations. These recommendations have cross-cultural implications.

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