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Treatment Seeking and Subsequent 1-Year Drinking Outcomes among Treatment Clients in Sweden and the U.S.A.: A Cross-Cultural Comparison

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Abstract

Cross-cultural comparisons provide method for distinguishing unique aspects as well as shared aspects of different cultures. Theoretically framed by a health-services conceptual model, we examine the extent that culture-specific versus common characteristics are associated with treatment seeking and drinking outcome. Swedish (n=997) and U.S. (n=501) alcohol-dependent individuals were interviewed at baseline and 1-year (n=635 & n=384 respectively). Both studies gathered comparable background, help-seeking, and drinking data. Regression models tested predictors of 1-year follow-up drinking defined as abstinence or moderate drinking versus heavy drinking. Swedish individuals were older and had social networks comprised of mostly substance abusers compared to U.S. individuals who reported higher problem severity and greater drug involvement. Whereas U.S. individuals reported greater prior mutual-help attendance, Swedish individuals reported greater prior treatment involvement. Better 1-year drinking outcomes were reported by women, younger age groups and those with an abstinence goal in both samples. Cultural and institutional differences were apparent. For example, with Swedish individuals having a mostly non-using network predicted better outcomes, whereas lower problem severity was a predictor for U.S. individuals.

Keywords

cross-cultural; treatment outcome; drinking outcome; treatment system; gender

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Author Disclosure

Contributors. Authors Witbrodt and Romelsjö designed the study and wrote the protocol. Witbrodt conducted literature searches and provided summaries of previous research studies, conducted the statistical analysis, and wrote the first draft of the manuscript. Romelsjö contributed to and have approved the final manuscript.

Conflict of Interest. Both authors declare that they have no conflicts of interest.

1. Introduction

Many well designed studies indicate that treatment can lead to a reduction in drinking. This has been demonstrated in randomized clinical trials (Miller, Walters, & Bennett, 2001; Prendergast, Podus, Chang, & Urada, 2002; Project MATCH Research Group, 1997) and also in studies conducted in “real life” settings (Finney & Moos, 1991; Laffaye, McKellar, Ilgen, & Moos, 2008; Moos, Finney, & Cronkite, 1990; Moos, Finney, Ouimette, & Suchinsky, 1999; Weisner, Matzger, & Kaskutas, 2003). Even though several treatment outcomes studies (mostly U.S.) have been conducted, using either randomized or naturalistic designs, relatively fewer cross-cultural treatment outcomes studies have been conducted (Miller & Willoughby, 1997; Moggi, Giovanoli, Strik, Moos, & Moos, 2007).

This paper examines alcohol-dependent treatment-seeking individuals from two countries (Sweden and the U.S.) with comparatively well resourced treatment services but with different health and social welfare systems in place for the handling of problem drinkers. Differences in the organization and funding of treatment (reviewed below) may affect not only who enters treatment but also desired (and achieved) outcomes. What is more, though both countries share strong temperance traditions, alcohol misuse in Sweden has traditionally been viewed and handled as more of a social problem than a health problem (Bergmark, 1998; Rosenqvist & Kurube, 1992). In comparison, the concept of dependence as a disease and the Alcoholics Anonymous (AA) ideology have had a strong influence on how dependence is conceptualized and treated in the U.S. (Slaymaker & Sheehan, 2008). As such, the primary goals and expectations of treatment have been framed somewhat differently in the two countries.

1.1 Theoretical model and treatment outcomes

We use a behavioral health services model developed by Andersen, Aday and others (Aday & Andersen, 2005; Ronald M. Andersen, 1995; Ronald Max Andersen, 2008) as a theoretical framework to compare men and women in Swedish and U.S. treatment samples, first, on factors associated with treatment-seeking (*Who goes to treatment?*) and, secondly, on factors associated with assessed and self-perceived drinking outcomes at 1-year (*Who benefits?*). The Andersen and Aday model has been the most comprehensive and widely applied conceptual model in health services research focused on access to and use of healthcare services (Aday & Andersen, 2005; Phillips, Morrison, Anderson, & Aday, 1998). We use the model as modified for use in alcohol and drug research (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; Weisner & Schmidt, 2001).

Briefly, the model suggests that *contextual* and *individual* predisposing, enabling and need characteristics act to either facilitate or impede individuals' use of services. *Contextual* characteristics are those measured at an aggregate level and include factors that reflect health organization and provider-related factors as well as broader community (cultural) characteristics. *Individual* characteristics include demographic and psychosocial influences, personal and community resources available to the individual and both assessed and self-perceived need for care. Taken together these factors influence subsequent *outcomes* (assessed and self-perceived). Outcome variables as conceptualized in the Andersen and Aday model are seen as important for formulating health policy and health reform (Ronald Max Andersen, 2008).

1.2 Aims

Given universal access to alcohol and drug treatment in Sweden and greater integration of treatment with other adjunctive social welfare services (i.e., housing, employment, and other evaluated social service needs), we hypothesized that Swedish men and women would have better *evaluated* drinking outcomes at 1-year than U.S. men and women. No a priori hypotheses were made about (1) *individual level* predisposing, enabling and need characteristics associated with treatment-seeking; (2) men's and women's *self-perceived* assessments of their drinking problem at 1 year; or (3) *individual level* characteristics predictive of desired drinking outcomes in the samples. Because abstinence is the main focus of most treatment programs in the U.S. (Slaymaker & Sheehan, 2008) but not the primary aim of Swedish treatment providers (Bodin & Romelsjö, 2006; Haver, Dahlgren, & Willander, 2001; Storbjörk, 2006) both abstinence and moderate drinking (relative to heavy drinking) were evaluated as post-treatment outcomes. *Contextual* characteristics in the conceptual model (those measured at an aggregate level) were not directly measured. Rather, we relied on what is known about the two systems (described below) to draw conclusions about findings.

A comparative contrast strategy was used for this cross-cultural analysis (Tigerstedt & Törrönen, 2007). Following on longstanding support for the use of cross-cultural studies (Kessler et al., 1997), this comparative analysis aims to inform the discourse on whether prevailing conceptions about one's own treatment system can be verified with a comparison and, as well, to offer a framework for assessing the impact of one system relative to the other as influenced by unique social and cultural factors. Through juxtaposition, our intention was to elucidate those characteristics that might influence service delivery within each country (Ciraulo, Piechniczek-Buczek, & Iscan, 2003).

1.3 The Swedish treatment system

Sweden has long maintained a strong and universal welfare state (Esping-Anderson, 1990), a movement that began in the nineteenth century with the onset of "poor relief laws" that implied all citizens in need would be provided with a minimum standard of well-being. Stemming from this, early Swedish alcoholism treatment was directed at reforming poor abusers back to decent, sober, and self-supporting citizens. Today a level of social control, both societal and authoritative, remains from these historical influences. In keeping with the country's intent to provide for the basic needs of its citizens, treatment focuses on alcohol misuse, but it does so within the context of assisting the reintegration of individuals back into society (Storbjörk, 2006).

Treatment is publicly financed by way of a single-payer system of healthcare and is provided through two primary sources: 1) the health system, which is administered at the county level and has primary responsibility for treating medical complications, emergency care, medical detoxification, and medications and maintenance treatment or 2) the social-welfare system, which is administered at the municipal level and is responsible for providing adequate treatment to the population as a whole. The social welfare system can choose to reimburse for residential or outpatient services provided by the municipality either directly or by other public or private providers anywhere in Sweden. Treatment within the social-welfare system is integrated with other types of social interventions aimed at restoring and integrating clients to their full functions in work, family, and social life. More recent attempts at closer collaboration between the health and social-welfare systems (e.g., linking electronic records) have not yet resulted in the integration of these two sectors.

1.4 The U.S. treatment system

Treatment for alcoholism in the U.S. is historically embedded in the mid-nineteenth century teachings of Benjamin Rush who often has been referred to as the “father of American psychiatry.” Recognized as the first American authority on alcohol and alcoholism, his writing stands as the first articulation of a disease concept of alcoholism by an American (White, 1998, pg. 2). His recommendation that abstinence is the only way out of chronic drunkenness remains as an ideology of mutual-help groups like Alcoholics Anonymous (AA) and is the expressed goal of most professional treatment programs. Today most treatment programs incorporate AA’s twelve-step principles into their clinical practices to varying degrees (McElrath, 1997; Slaymaker & Sheehan, 2008) and most rely on AA (and similar self-help) groups to provide important support services following treatment (Humphreys, 2003; Magura, 2007).

Treatment services in the U.S. are currently financed through three main sources: 1) private health insurance (usually through one’s employer), 2) self-pay and 3) public health insurance (Medicaid and Medicare) or other public funds (e.g. federal block grants). The combined public sources comprise about 3/4’s of the funding for all treatment provided (Mark et al., 2005). Insured and self-pay clients primarily attend privately owned treatment programs whereas uninsured clients primarily attend publicly funded programs, though there is cross over between the two systems (Weisner & Schmidt, 2001). Insured clients often have coinsurance and deductible payments, and uninsured clients usually have minimal, if any, out-of-pocket payments.

2. Methods

2.1 Recruitment

The studies used parallel research methods to recruit adult clients from treatment settings in countywide geographical areas that reflected rather well each country’s larger population of treatment seekers. The sampling frames included new admissions presenting for services at study recruitment sites. Other than age (> 18), the only other criterion for study inclusion was the ability to complete an in-person structured interview in the native language. Clients were recruited within three days/visits after entering treatment. Trained interviewers not part of the treatment programs administered the structured interviews. Clients provided informed consent to participate in the respective studies. One-year follow-up interviews were conducted by telephone. The Swedish questionnaire was modeled on the U.S. one, with core questions retained for direct comparisons. Both asked questions about demographic characteristics, drinking patterns, substance use diagnosis, ASI problem severity, 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’s countywide treatment system 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 details on the study designs, see prior papers (Kaskutas, Russell, & Dinis, 1997; Room, Palm, Romelsjö, Stenius, & Storbjörk, 2003; Weisner & Schmidt, 1995).

For this paper, we included alcohol-dependent clients (with or without also having a drug abuse or dependence diagnosis). Both studies used a checklist of symptoms to diagnose dependence. The Swedish study used the 10-item CIDI that operationally defines the ICD-10 criteria (World Health Organization, 1992) and the U.S. study used the Diagnostic Interview Schedule for Psychoactive Substance Dependence (Erdman et al., 1992; Regier et al., 1984; Robins, Cuttler, & Keating, 1991) that operationally defines the seven DSM-IV

criteria (American Psychiatric Association, 2000). The 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).

2.2 Treatment sites and samples

The Swedish sample was recruited from agencies in Stockholm County, Sweden's most populous county (population of approximately 2.0 million) between 2000 and 2002. The county is composed of twenty-six municipalities, with Stockholm City the largest municipality (population about 850,000). Although most people in the county live in or very near to metropolitan Stockholm, many also live in smaller towns or villages in the countryside. Nine inpatient units that mainly provided services for detoxification and acute health complications from alcohol and drugs and eleven outpatient providers that offered specialized alcohol- and drug-treatment services (largely to patients coming from the detoxification units) participated as recruitment sites in the healthcare system. Six suburban municipalities and four districts of Stockholm City and four municipalities in northwest Stockholm County provided recruitment sites for the social-welfare system. Though treatment is eclectic across the system, social skills training, cognitive behavioral therapy and ego-strengthening/supportive therapy were the dominant modalities (Socialstyrelsen, 2004).

The Swedish baseline sample consisted of 1,865 individuals. Among these, 1231 were interviewed one year later (102 were ineligible for the follow-up, 169 refused follow-up, 50 died, and 313 could not be located). For comparability with the U.S. sample, individuals recruited from methadone treatment or drug detoxification sites were excluded ($n=340$) in all comparative analyses. From the resultant baseline sample, we selected out alcohol-dependent individuals (997), of whom 635 were interviewed one year later.

The U.S. sample was recruited from treatment programs in a single Northern California county between 1995 and 1996. The county represents a socially and culturally diverse population (approximately 900,000) with a mix of both rural and urban areas and reflects national patterns in the relationship of substance-use-related problems to other health and social problems (Schmidt, 1998; Weisner & Matzger, 2002; Weisner & Schmidt, 1995). Individuals entering representative public and private programs whose focus was not primarily drug abuse, had a least one intake per week, and were the first line treatment entry (e.g., aftercare programs were excluded) participated in the study. Private programs included two sites in a managed care organization offering long-term outpatient treatment (managed care is a form of healthcare coverage in the U.S. that is fulfilled through hospitals, doctors and other providers with which the care-provider organization has a contract); and two fee-for-service private hospital programs offering short-term detoxification and inpatient, as well as lengthier day treatment and outpatient programs. Public programs consisted of two detoxification sites, two residential programs (gender specific) and two outpatient programs. The private programs mostly followed the "Minnesota Model" philosophy, which combines professional treatment (cognitive behavioral, motivational interviewing and relapse prevention) with the 12-step facilitation (Institute of Medicine, 1990); and the public programs mostly followed a "social model" treatment (Borkman, Kaskutas, Room, Bryan, & Barrows, 1998), which closely adheres to the 12-steps of AA.

A total of 926 individuals were recruited into the study and 723 were interviewed one year later (126 refused to be interviewed, 26 died and 51 could not be located). Among those who were alcohol-dependent at study entry ($n=501$), 384 completed a follow-up interview.

2.3 Covariates (baseline)

Individual level predisposing, enabling and need covariates were chosen based on a review of help-seeking and treatment outcomes research (mostly U.S. studies) which has generally shown that lower dependence severity, lower psychopathology, greater motivation and having an abstinence treatment goal are consistent predictors of improved outcomes (Adamson, Sellman, & Frampton, 2009). As well, we considered variables used in other treatment outcomes studies, including prior formal and informal treatment exposures, social network influences and various demographic variables (Bodin & Romelsjö, 2006; Bottlender & Soyka, 2005; Ciraulo et al., 2003; Gombert, 2003; McKay & Weiss, 2001; Satre, Blow, Chi, & Weisner, 2007; Weisner, Ray, Mertens, Satre, & Moore, 2003).

Individual level *predisposing* variables included gender, age, relationship status, having children 18 years old in the home, educational status (defined for the samples based on roughly comparable years of education) and drinking goal at treatment entry (abstain vs. else). *Enabling* variables included formal treatment involvement (inpatient, recovery/residential homes & outpatient) and informal self-help attendance (AA, other 12-step/mutual-help groups & Links) assessed for lifetime and past year (attended vs. not) and social support for drinking (whether one's network was comprised of mostly abusers, both abusers and non-abusers, mostly non-abusers or no/very few contacts). *Need* variables included the number of past month heavy (5+) drinking days, summed dependence symptoms (a commonly used measure in the literature (Adamson et al., 2009)) and Addiction Severity Index (ASI) composite scores for the alcohol, drug and psychiatric domains (values 0–1, higher scores designate greater severity). Most studies (Mäkelä, 2004; McLellan et al., 1992; McLellan et al., 1985) have shown the ASI to be a reliable and valid instrument.

Last, a variable was created to adjust for potential index treatment influences. For the Swedish sample this variable included (1) being assessed and treated within the social welfare system, (2) being assessed by the social welfare system but referred to treatment outside that system or (3) being assessed and treated within any of the healthcare programs. For the U.S. sample, it included being treated (1) in a publicly funded treatment program or (2) in a privately funded treatment program.

2.4 Evaluated and self-perceived outcomes (1-year follow-up)

Based on a review of the literature, a drinking typology (total abstinence or moderate consumption vs. heavy consumption) at 1 year was used as an *evaluated outcome* for these alcohol dependent treatment-seeking samples. Moderate drinking (as used here) has been described as low-risk drinking in most literature (Dawson, Grant, Stinson, & Chou, 2004; Gastfriend, Garbutt, Pettinati, & Forman, 2007; Sobell et al., 2002). Our choice for moderate and heavy drinking thresholds is lower than those set by 2000 WHO guidelines (World Health Organization, 2000), but consistent with those published in a 2012 thematic issue of Drug and Alcohol Review on low-risk drinking guidelines (Stockwell & Room, 2012).

Questions from the Graduated Frequency Scale (GFS) that assesses problem drinking (Greenfield, 2000; Hilton, 1987) were used to create the drinking typology outcome. The GFS queries on the frequency of drinking at various consumption levels. GFS questions are core measures used in the U.S. National Alcohol Surveys (Alcohol Research Group, 1964–2005). Both samples were provided with a definition of a standard drink size before being asked GFS questions. The Swedish study defined a standard drink as 12-grams of ethanol whereas the U.S. sample defined it as 14-grams.

Using the GFS data, a yearly drink volume was calculated for each individual. This quantity measure was converted to grams of 100% ethanol per week (drinks) to determine level of drinking (moderate or heavy). Based on clients' reported GFS 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 et al., 2010). Heavy drinking was any consumption exceeding the moderate criteria. The 5-plus drink criterion was used for both genders in calculating the drinking typology (rather than the often-used 3+ and 5+ designations) because the two studies grouped the frequency-specific categories somewhat differently. Though alcohol-dependent women appear to drink equal to alcohol-dependent men on a g/kg/day basis (Glanz, Grant, Monteiro, Tabakoff, 2002), most research has recommended that moderate drinking be defined differently for men and women (Addiction, 2011; Dawson & Archer, 1992; Dawson et al., 2004; Nayak & Kaskutas, 2004). However, this gender distinction is currently being questioned (Dawson, Smith, Pickering, & Grant, 2012; Room & Rehm, 2012).

Self-perceived outcomes were measured using two items from the ASI alcohol composite measure, “How troubled or bothered have you been in the past 30 days by these alcohol problems?” and “How important to you is treatment for these alcohol problems?” Response categories ranging from ‘not at all’ to ‘extremely’ were dichotomized as ‘considerably/extremely’ versus ‘else’. We found no information on the reliability or validity of these questions as post-treatment outcome measures. They were considered here because of their representation in the theoretical model (Ronald Max Andersen, 2008).

2.5 Data analysis

T-tests and Pearson Chi-square tests were used to test for within and between sample differences and to describe both evaluated and self-perceived 1-year outcomes. A data reduction tactic was used before conducting a final multivariate regression model (one for each sample). First, all potential baseline predictor variables were forced-entered into a multinomial regression (one for each sample) predicting 1-year drinking typology (with ‘heavy drinker’ as the reference group). This step provided an overall description of how well the covariates performed together. Next, forward stepwise regression models were conducted to determine the optimal predictors of the drinking typologies. Because lifetime and past year treatment and mutual help variables were highly correlated, we chose to include only lifetime measures in the final regression models. Correlations between other baseline measures were smaller in magnitude (or nonexistent). SPSS Windows 15 (2007) was used for all statistical analyses.

3. Results

3.1 Sample characteristics: Who goes?

Several differences were found in the baseline samples at treatment entry. To start, the Swedish sample was comprised of disproportionately fewer women than the U.S. sample (26 vs. 38%). More Swedish (than U.S.) individuals were in the 50+ age group (44 vs. 16%), more had attained less than a gymnasium (33 vs. 23%) and more reported social networks comprised of mostly substance abusers (25 vs. 11%). In contrast, a larger proportion of the U.S. sample set abstinence as a treatment goal (84 vs. 54%), and more reported greater prior month 5+ drinking (15 vs. 11 days on average) and higher ASI drug severity (.122 vs. .035) and higher psychiatric severity (.448 vs. .248). A greater proportion of the U.S. sample attended AA and similar groups sometime in their past (91 vs. 64%) whereas more Swedish clients reported prior treatment experiences (87 vs. 74%). Sixty-one percent of the Swedish clients were from the healthcare system, 25% were assessed in the social welfare but treated outside that system, and 14% were assessed and treated within the social welfare. Fifty-four percent of the U.S. clients were from private treatment programs and 47% from public

programs. Male-to-male and female-to-female between sample differences were reflective of the overall sample comparisons (refer to Table 1 notes for subscripts denoting significant pair-wise differences).

More within sample differences were found comparing men with women in the Swedish sample than in the U.S. sample (Table 1). More Swedish men were in the 50+ age group (47 vs. 37%) and more women were in the 18–34 age group (22 vs. 15%). Compared to the majority of Swedish men reporting gymnasium level educations (48%), nearly a third (30%) of the women reported post-gymnasium educations. While men's networks were comprised of mostly abusers (28%) or a combination of abusers and non-abusers (32%), women's networks were comprised mostly of non-abusers (40%). Although past-year treatment was significantly more common among Swedish women than men (74 vs. 62%), a reverse pattern was found for U.S. men and women (Table 1) for lifetime treatment (78 vs. 65%). In both samples, women reported higher ASI psychiatric severity and more lived with underage children (< 18 years). Aside from the finding that more men than women reported few/no persons in their social networks (17 vs. 5%), no other meaningful gender differences emerged for the U.S. sample. These baseline data are displayed to provide comparative data on “*who goes*” to treatment. No adjustments were made for multiple comparisons in these descriptive results; hence, some findings may be spurious.

3.2 Attrition

Analyses directly comparing followed to non-followed samples indicated that clients in both samples with fewer social resources and more problematic drinking were less likely to be located at follow-up. This included those who were less educated, unmarried and more likely to have social networks comprised of either mostly substance abusers or few/no friends/family. They were also more likely to have been in prior treatment (U.S. only) than those who were interviewed and they reported higher ASI psychiatric severity. The magnitude of these differences was small for the most (Table 1 displays characteristics of the followed samples).

3.3 Self-perceived and evaluated outcomes

Table 2 displays the results for ASI questions that were used to assess self-perceived 1-year outcomes (these percentages represent group averages at each interview). Baseline values are reported to display how the samples compared at treatment initiation (significantly more in the U.S. reported self-perceived need). Gender did not differentiate self-ratings at the 1-year follow-up in either sample. About a quarter of the Swedish (26 & 25%) still rated these items as considerably/extremely important. In comparison, slightly more in the U.S. sample reported being considerably/extremely troubled or bothered by their alcohol problem at 1-year (29%) and fewer reported treatment as being important (17%).

Bivariate cross-tabulations of sample by drinking typology (Table 3) indicated that about twice as many U.S. reported no drinking between baseline and the 1-year follow-up compared to Swedish individuals (29 & 14%) and about a quarter of the clients in both samples (25 & 23%) reported moderate drinking during that time. A high percentage in both samples (but more Swedish) drank at heavy levels (46% & 63%) in the year following treatment initiation. Fewer women than men (both samples) were in the heavy drinking group.

Moving to step-wise multinomial regression findings for the Swedish sample (Table 4, far right columns), three baseline covariates increased the odds for both moderate drinking and abstinence (relative to heavy drinking). These included younger age (ORs=5.58 & 11.03), having abstinence as drinking goal (ORs=3.50 & 10.83) and having a network comprised of

mostly non-abusers (ORs=2.86 & 3.97). In contrast two covariates appeared to have opposite effects: Higher ASI psychiatric severity and lifetime treatment increased the odds of moderate drinking (ORs=3.24 & 2.05, weaker p-values) but decreased the odds of abstinence (ORs=0.28 & 0.23). Compared to heavy drinkers, moderate drinkers had fewer dependence symptoms (OR=0.68) and fewer heavy 5+ drinking days (OR=.96). Moreover, women were more than twice as likely to be moderate versus heavy drinkers (OR=2.31) and abstainers were more likely than heavy drinkers were to have children living with them (OR=3.29). Last, clients receiving substance use treatment within the social welfare system were less likely to be moderate than heavy drinkers (OR=0.27) and those from the social welfare system who were referred to an outside treatment program were more likely to be abstainers than heavy drinkers were (OR=6.09).

Table 5 displays the results for the U.S. sample. Female gender (ORs=2.54 & 2.28) and having an abstinence drinking goal (ORs=2.41 & 5.91) increased the odds of both moderate drinking and abstinence (relative to heavy drinking). Two other covariates were related to moderate drinking but not abstention. Younger age increased the odds of moderate drinking (OR=3.95) and prior lifetime treatment (OR=0.31) decreased the odds. One covariate was related to abstaining but not moderate drinking, that is, ASI psychiatric severity decreased the odds of abstention (OR=.10). Last, clients treated in public treatment programs were less likely to be moderate than heavy drinkers (OR=0.56). The same directional trend emerged comparing abstainers to heavy drinkers (OR=0.58).

Variables dropped from the forced-entry regression models had essentially no impact on the effect sizes or confidence intervals of those retained in the final forward stepwise models. Only one variable, having a mostly non-abuser network in the U.S sample, was significant in the forced-entry model but not the stepwise model.

4. Discussion

Results above illustrate the contribution of cross-cultural data in providing useful information about individual-level factors associated with “*who goes to treatment?*” and “*who benefits?*” From a comparative perspective, the Swedish sample was older (ages 50+) and predominantly more male, and a greater proportion reported having denser abusing social networks than the U.S. sample at treatment entry. Some of the Swedish differences appeared to be moderated by gender, especially age and social network composition where differences were more pronounced for Swedish men. In comparison, the younger U.S. sample (mostly ages 35–49) reported greater drug and psychiatric problem severity and more heavy drinking days.

Comparing factors associated with proximal drinking outcomes, three individual-level characteristics common to both samples predicted moderate drinking. These were female gender, younger age, and having an abstinence goal. More generally speaking, those characteristics often associated with lower problem severity and greater social resources were predictive of moderate drinking but not abstinence (e.g., fewer symptoms, fewer 5+ drinking days & not being treated in the public or social welfare programs). Predictors that differed or were opposite in direction may represent true cultural differences. For example, having a less dense abusing network was related to moderate drinking and abstinence in the Swedish sample, but not the U.S. sample. Moreover, lower psychiatric severity predicted abstinence in the U.S. sample, which is consistent with other U.S. literature, but higher psychiatric severity predicted moderate drinking in the Swedish sample. The latter result (which could be spurious, $p=.05$) may be worthy of further investigation. One might explore, for example, which ASI psychiatric items were most endorsed (relative to the U.S.) and explore whether age or gender moderated the association between severity and drinking

outcome. Additionally, it could be that Sweden is better than the U.S. on providing needed addiction and psychiatric services for those with co-occurring issues.

Taken together, a few clinical implications can be drawn for these results. For Swedish providers the social network finding especially stands out, that is, while denser abusing networks predicted treatment seeking, having mostly non-abusing networks predicted both abstinence and moderate drinking. Clinicians could easily incorporate discussions about the importance of social network influences into existing treatment modalities and longer-term treatment planning. Numerous studies have shown that pro-drinking social networks reduce all types of recovery efforts (Schutte, Nichols, Brennan, & Moos, 2003). For U.S. providers the high level of problem severity coupled with younger age at which individuals enter treatment (relative to Swedish individuals) is quite informative. Plans for health care reform, specifically parity for behavioral healthcare (Manchikanti, Caraway, Parr, Fellows, & Hirsch, 2011) may alleviate this problem by getting problem drinkers into specialized services sooner.

The handling of problem drinkers from a systems perspective further provides a comparative framework for interpreting these results. By Andersen's (2008) model, contextual influences include, for example, factors like resources and their organization within the larger system, as well as shared cultural beliefs and attitudes that affect potential, realized, and equitable access to care. In terms of potential and equitable access to treatment, healthcare in Sweden is universal and comprehensive and treatment is provided about equally in the healthcare and the social welfare systems. In comparison, healthcare in the U.S. (at this writing) is entrepreneurial and permissive and treatment is provided via a two-tiered system that is driven largely by ability to pay (private and public). Although both countries have well developed and diversified treatment systems in place relative to other countries (e.g., treatment intensity/levels of care and therapeutic approaches), treatment in Sweden appears more accessible (affordable for all) and considerably more integrated with other service agencies than the U.S. treatment system. Additionally, there seems to be more restrictions around readmissions to treatment and extended care in the U.S. The latter has led to heavy reliance in the U.S. on groups like AA.

Regarding the age differences, we suggest that younger age coupled with greater severity and more drug use among U.S. individuals and older age coupled with lower abuse-related problems among Swedish individuals may be in large part related to the handling of problem drinkers in the two countries. Although U.S. population-based data shows that alcohol use disorders are more common among younger individuals, clinical samples tend to be older (Dawson et al., 2005) and like that represented in the U.S. sample herein. Further, population studies show that many younger drinkers age out of problem use with little or no professional help (Sobell, Ellingstad, & Sobell, 2000) while others continue on a heavy drinking trajectory that leads to increased problems and late-entry treatment for drinking or related health problems (Moss, Chen, & Yi, 2010), either self-initiated or as required by employers or through drunk driver involvement. Intervention comes later and in many cases is complicated by other drug use (as evidenced by ASI drug scores). As part of healthcare reform, a current U.S. discourse is focused on integrating alcohol and drug treatment with mainstream medical care where early identification and intervention is more apt to occur and where co-occurring mental and physical problems can be addressed (Miller, 2002; Weisner, Mertens, Parthasarathy, & Moore, 2001). A similar discourse is occurring in Sweden.

In Sweden and especially relative to the U.S., men and women are more likely to be assessed for problem use via social welfare and healthcare involvement at numerous contact points across the life span. They also receive significantly more social pressure to seek help from formal and informal sources than U.S. individuals do (Witbrodt & Romelsjö, 2010).

Affordable treatment is not a barrier to early intervention. Greater integration between service sectors additionally means drinking problems can be identified and addressed sooner and in the context of other related problems. While some individuals may enter treatment without returning to problematic drinking (or age out of problem drinking much like U.S. individuals), others who maintain their heavy drinking patterns into older ages (with or without social consequences) are at high risk for developing alcohol dependency late in life. This reasoning, along with an over representation of older marginalized males in the Swedish treatment sample relative to the US sample (Stenius, Witbrodt, Engdahl, & Weisner, 2010) may partially explain the age distribution differences.

Because alcohol and drug problems are predominantly viewed as social problems in Sweden (Holmberg, 1999), the social welfare system is charged with maintaining substance abusers in the system until they are rehabilitated (SOU 2005:82). As a result, some individuals stay in the system (or move in and out) over long periods of time (Blomqvist, 1998, 2002). In contrast, less resourced and more severely impaired clients in the U.S. tend to rely more on disjointed service agencies and mutual-help groups. Marginalized persons (as defined by homeless literature) with often co-occurring drug and psychiatric problems (Cunningham & Blomqvist, 2006) tend to rely more on acute care services for immediate needs (Kushel, Vittinghoff, & Haas, 2001; O'Toole et al., 2006) rather than substance use treatment programs. In summary, the Swedish catchments appear to be broader than in the U.S.; hence, the system as a whole intervenes upon individuals with a wider range of severities. This rationale may in part explain why the U.S. sample exhibited greater problem severity at treatment initiation.

Lastly, our hypothesis that Swedish clients would have better post-treatment drinking outcomes was not supported. Rather, bivariate analysis showed significantly fewer U.S. clients were heavy drinkers and more were abstainers at 1 year. U.S. treatment providers rarely prescribe moderate drinking to their dependent clients. Even among the general public, alcohol dependence is mostly seen as a disease that can be arrested only through abstinence. The greater use of lifetime mutual-help in the U.S. exemplifies the influence that AA has had on how addiction and recovery are conceptualized. The high endorsement of abstinence as a treatment goal in the U.S. sample also indicates the role that AA has played in shaping expectations.

On the reverse side, one might suggest that Swedes may be rather more tolerant of heavy drinkers as long as they are maintaining expected role and social obligations. Still just under two-thirds of the Swedish sample reported lifetime mutual-help group attendance (e.g. Links or AA), suggesting that abstinence is a considered option. Swedish individuals come to AA particularly through 12-step based Minnesota Model programs (Bodin, 2006). A primary function of 12-step groups is to provide social network support for abstinence. Because post-treatment AA involvement is a strong predictor of both short- and long-term abstinence (Bodin & Romelsjö, 2007; Witbrodt & Delucchi, 2011) clinicians might do well to facilitate greater use of these groups.

4.1 Limitations

A group of general limitations must be acknowledged. To start, attrition influences (similar in both studies) always need to be considered when interpreting results. We know that clients lost-to-follow-up had characteristics often associated with poorer outcomes. We acknowledge that our drinking intent (baseline drinking goal) and severity (count of dependence symptoms) variables are not validated measures and, as such, need to be interpreted as exploratory. This is also true for our self-perceived outcome measures. Additionally, slightly different measures were used to calculate the drinking thresholds and both studies relied on self-report data for drinking measures with no information from

collaterals. However, papers have found self-report data about alcohol use to be reasonably accurate (Babor, Steinberg, Anton, & Del Boca, 2000; Killeen, Brady, Gold, Tyson, & Simpson, 2004). Last, conclusions about contextual influences (aggregate-level factors) on help-seeking and subsequent outcomes are limited to a few broad generalizations. Other conclusions are left to more informed readers.

4.2 Implications

In summary, cultural and institutional phenomena are woven into these results in ways that are difficult to tease apart and to discuss in a single manuscript. Still, both similarities and differences were found between these two treatment populations. The findings may provide insights to policy makers, researchers, clinicians and other care providers that can be acted upon to improve the efficacy of services.

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Highlights

- This is a cross-cultural analysis of US and Swedish treatment seekers.
- Differences and commonalities were found in who goes to treatment in the samples.
- Cultural differences were found for factors associated with drink outcomes.
- Better 1-year drink outcomes were reported by the women in both samples.

Table 1

Background characteristics for Swedish and US alcohol-dependent men and women and for the total and followed samples.

	Swedish Sample				US Sample			
	Men	Women	Total Baseline	Total 1-year	Men	Women	Total Baseline	Total 1-year
<i>(unweighted n)</i>	(739)	(258)	(997)	(635)	(312)	(189)	(501)	(384)
Age (%)								
18–34	<i>bd</i> 15	<i>c d</i> 22	<i>a</i> 17	18	<i>b</i> 30	<i>c</i> 29	<i>a</i> 30	29
35–49	38	41	39	38	54	54	54	54
50+	47	37	44	29	16	17	16	18
Married/partnered	23	27	<i>af</i> 24	<i>f</i> 26	29	30	<i>a</i> 30	X
Live with children	<i>bd</i> 11	<i>cd</i> 29	16	17	<i>be</i> 19	<i>ce</i> 37	<i>ag</i> 25	<i>g</i> 27
Education (%)								
<9 yrs gym./< high sch.	<i>bd</i> 33	<i>cd</i> 31	<i>af</i> 33	<i>f</i> 30	<i>b</i> 25	<i>c</i> 19	<i>ag</i> 23	<i>g</i> 19
9 yrs gym./high sch.	48	39	45	46	47	49	47	49
> gym./>high sch.	19	30	22	25	28	32	29	32
Treatment drink goal (%)	<i>bd</i> 56	<i>cd</i> 48	<i>a</i> 54	52	<i>b</i> 83	<i>c</i> 87	<i>a</i> 84	83
# Dependence symptoms	<i>b</i> 4.9	4.9	<i>a</i> 4.9	4.9	<i>b</i> 5.4	5.0	<i>a</i> 5.3	5.3
(<i>se</i>)	(.04)	(.06)	(.03)	(.04)	(.06)	(.11)	(.06)	(.06)
# 5+ drink days, past mo.	<i>b</i> 12	<i>c</i> 10	<i>a</i> 11	11	<i>be</i> 16	<i>ce</i> 14	<i>ag</i> 15	<i>g</i> 14
(<i>se</i>)	(.38)	(.57)	(.32)	(.39)	(.60)	(.93)	(.51)	(.59)
ASI drug severity	<i>b</i> .035	<i>c</i> .037	<i>a</i> .035	.032	<i>b</i> .126	<i>c</i> .114	<i>ag</i> .122	<i>g</i> .114
(<i>se</i>)	(.003)	(.005)	(.003)	(.003)	(.002)	(.011)	(.006)	(.007)
ASI Psych severity	<i>bd</i> .236	<i>cd</i> .277	<i>af</i> .248	<i>f</i> .234	<i>be</i> .423	<i>ce</i> .478	<i>ag</i> .448	<i>g</i> .441
(<i>se</i>)	(.008)	(.012)	(.007)	(.008)	(.013)	(.018)	(.011)	(.012)
Social network (%)								
Mostly abusers	<i>bd</i> 28	<i>cd</i> 16	<i>af</i> 25	<i>f</i> 21	<i>be</i> 9	<i>ce</i> 14	<i>ag</i> 11	<i>g</i> 11
Both abusers/non-abusers	32	28	<i>a</i> 31	30	15	17	<i>a</i> 15	17

	Swedish Sample				US Sample			
	Men	Women	Total Baseline	Total 1-year	Men	Women	Total Baseline	Total 1-year
<i>(unweighted n)</i>	<i>(739)</i>	<i>(258)</i>	<i>(997)</i>	<i>(635)</i>	<i>(312)</i>	<i>(189)</i>	<i>(501)</i>	<i>(384)</i>
Mostly non-abusers	29	40	<i>a</i> 32	38	60	64	<i>a</i> 61	65
Few/no persons	11	16	<i>a</i> 13	11	17	5	<i>a</i> 13	7
AA/NA/CA/Links/oth. (%)								
Lifetime attendance	<i>b</i> 65	<i>c</i> 60	<i>a</i> 64	63	<i>b</i> 92	<i>c</i> 89	<i>a</i> 91	90
Past year attendance	<i>b</i> 31	<i>c</i> 35	<i>a</i> 32	31	<i>b</i> 79	<i>c</i> 68	<i>a</i> 75	73
Addictions treatment (%)								
Lifetime attendance	<i>b</i> 86	<i>c</i> 89	<i>a</i> 87	86	<i>b</i> 78	<i>c</i> 65	<i>a</i> 74	70
Past year attendance	<i>bd</i> 62	<i>cd</i> 74	<i>a</i> 66	65	<i>b</i> 47	<i>c</i> 43	<i>a</i> 45	42
Index Treatment								
Social welfare (within)	15	12	14	13				
Social welfare (outside)	27	20	25	22				
Healthcare	<i>d</i> 58	<i>d</i> 67	<i>f</i> 61	<i>f</i> 65				
Public					<i>e</i> 50	<i>e</i> 61	54	54
Private					<i>e</i> 50	<i>e</i> 39	47	47

Shared subscripts indicate significant pair-wise comparisons ($p < .05$):

^aSwedish total to US sample total;

^bSwedish males to US males;

^cSwedish females to US females;

^dSwedish males to Swedish females;

^eUS males to US females;

^fSwedish followed to total;

^gUS followed to total. Data are above weighted.

Table 2

Self-perceived problem severity and need to treatment

	Baseline			1-year		
	Men (%)	Women (%)	Total (%)	Men (%)	Women (%)	Total (%)
Swedish sample						
How troubled or bothered	61	63	62 ^a	27	25	26
How important is treatment now	61	62	62 ^a	26	24	25 ^a
U.S. sample						
How troubled or bothered	89	95	91 ^a	27	32	29
How important is treatment now	71 ^c	84 ^c	75 ^a	18	16	17 ^a

Note: χ^2 results; $p < .05$.^aSwedish total to US sample total;^bSwedish males to Swedish females;^cUS males to US females. The same superscripts are used to make these comparisons at baseline and 1-year interviews.

Table 3

Drinking status at 1-year.

	Men (%)	Women (%)	Total (%)
Swedish sample			
Abstainer	14	13	14 ^a
Moderate	18 ^b	35 ^b	23
Heavy	68 ^b	52 ^b	63 ^a
U.S. sample			
Abstainer	27	32	29 ^a
Moderate	21	35	25
Heavy	52 ^c	33 ^c	46 ^a

Note: $p < .05$,^aSwedish total to US sample total;^bSwedish males to Swedish females;^cUS males to US females

Table 4

Results of a multinomial regression testing baseline factors predicting of 1-year drinker typology in the Swedish sample.

Baseline Predictors	Moderate vs. Heavy Drinker		Abstainer vs. Heavy Drinker	
	Sign.	OR (95% CI)	Sign.	OR (95% CI)
Women	.001	2.26 (1.41, 3.63)	.956	1.02 (0.53, 1.95)
Age 18–34 (vs. 50+)	>.001	5.79 (2.90, 11.5)	>.001	11.8 (4.90, 28.7)
Age 35–49 (vs. 50+)	.520	1.20 (0.69, 2.08)	.616	1.20 (0.59, 2.41)
Married/partnered (vs. not)	.385	1.26 (0.75, 2.11)	.099	0.53 (0.25, 1.13)
Live with kids (vs. not)	.052	.51 (0.25, 1.01)	.001	3.57 (1.70, 7.46)
Gym/hi sch. (vs. <gym/<hi sch.)	.107	1.69 (0.89, 3.21)	.197	0.59 (0.26, 1.31)
>Gym/>hi sch. (vs. <gym/<hi sch.)	.151	.66 (0.38, 1.16)	.060	0.54 (0.28, 1.03)
Abstinence goal (vs. else)	>.001	3.54 (2.16, 5.79)	>.001	10.5 (5.10, 21.8)
No. dependence symptoms	.002	.69 (0.55, 0.87)	.091	1.30 (0.97, 1.75)
No. 5+ drinking days	.002	.96 (0.94, 0.99)	.156	.98 (0.95, 1.01)
ASI psychiatric severity	.040	3.51 (1.06, 11.6)	.052	.23 (0.05, 1.01)
Both (vs. mostly abusers)	.243	1.73 (0.69, 4.33)	.798	1.20 (0.30, 4.80)
Mostly non- (vs. mostly abusers)	.005	2.83 (1.37, 5.85)	.001	4.04 (1.72, 9.50)
Few/none (vs. mostly abusers)	.435	1.35 (0.64, 2.83)	.192	1.80 (0.74, 4.37)
Lifetime AA/NA/CA/Links (vs. not)	.602	.87 (0.52, 1.46)	.117	1.85 (0.85, 3.98)
Lifetime treatment (vs. not)	.037	2.22 (1.05, 4.70)	>.001	0.16 (0.07, .385)
Tx inside soc. welfare (vs. healthcare)	.002	.28 (0.12, 0.63)	.391	1.46 (0.62, 3.42)
Tx outside soc. welfare (vs. healthcare)	.954	1.02 (0.56, 1.84)	>.001	5.29 (2.66, 10.5)

Notes: OR=odds ratio; CI = confidence interval; sign.= p-value significance; tx, treatment; no., number

Table 5

Results of a multinomial regression testing baseline factors predicting of 1-year drinker typology in the US sample.

Baseline Predictors	Moderate vs. Heavy Drinker		Abstainer vs. Heavy Drinker	
	Sign.	OR	Sign.	OR
Women	.012	2.20	.005	2.32
Age 18–34 (vs. 50+)	.005	2.78	.149	1.39
Age 35–49 (vs. 50+)	.276	4.02	.561	1.70
Married/partnered (vs. not)	.068	0.54	.365	1.35
Live with kids (vs. not)	.161	1.61	.806	.92
Gym/hi sch. (vs. <gym/<hi sch)	.193	1.82	.241	1.59
>Gym/>hi sch. (vs. <gym/<hi sch.)	.075	2.06	.839	0.93
Abstinence goal (vs. else)	.008	2.98	>.001	6.19
No. dependence symptoms	.069	0.79	.390	0.89
No. 5+ drinking days	.198	0.98	.998	1.00
ASI psychiatric severity	.365	0.54	>.001	0.11
Both (vs. mostly abusers)	.214	0.46	.593	0.72
Mostly non- (vs. mostly abusers)	.020	0.35	.252	0.58
Few/none (vs. mostly abusers)	.445	0.67	.542	0.71
Lifetime AA/NA/CALinks (vs. not)	.224	1.91	.271	1.80
Lifetime treatment (vs. not)	.001	0.32	.064	0.53
Tx in public (vs. private program)	.016	0.46	.094	0.61

Notes: OR=odds ratio; CI = confidence interval; sign.= p-value significance; tx, treatment; no., number