Predicting the New Onset of Perceived Need for Care and Help-Seeking for Alcohol Use Disorders in the National Epidemiologic Survey on Alcohol and Related Conditions

by

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Abstract

Epidemiologic studies have found that approximately one third of individuals will experience either alcohol abuse or dependence during their lifetime. However, only a minority will seek help or perceive a need for help. The purpose of this thesis is to provide a longitudinal investigation of the predictors of new onset perceived need for care and help-seeking in individuals with a lifetime alcohol use disorder who have no prior history of perceived need or help-seeking. Methods: Data were drawn from Waves 1 and 2 of the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC; n=34,653), a 3-year longitudinal nationally representative survey of the United States population. Results: Respondents with an incidence of perceived need and help-seeking were more likely to be male, younger, less educated, and black. Those who sought help and perceived a need for help were more likely to have a concurrent Axis I or II disorder after controlling for sociodemographic differences and social, legal, economic problems. They also had very high odds of having a persistent alcohol use disorder (OR=4.68) and experiencing social or legal problems related to their alcohol use after controlling for sociodemographics and psychiatric comorbidity (AOR's from 5.59-38.42). Conclusion: Individuals with a history of having no perceived need for care or help-seeking may represent a unique group among those with an alcohol use disorder. Psychiatric comorbidity and social or legal problems related to alcohol use were both independent predictors of perceived need and help-seeking.

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Chapter 1: Introduction

Objectives

The objectives of the proposed study are twofold. The first objective is to present rates and longitudinal demographic information for individuals with an incidence of perceived need for help and help-seeking for alcohol abuse or dependence in a large nationally representative sample. The second objective is to provide a prediction of the factors which lead to perceived need for help and help seeking for alcohol use disorders over a three year period in the general population.

Alcohol use disorders

The Diagnostic and Statistical Manual of Mental Disorders – 4th Edition- Text Revision (DSM-IV-TR) lists two categories of alcohol use disorders. The first is alcohol abuse, which falls under the larger category of substance abuse, which is defined as "a maladaptive pattern of substance use manifested by recurrent and significant adverse consequences related to the repeated use of substances" (APA, 2000). The second is alcohol dependence, which falls within the larger category of substance dependence, and contains as its central feature "a cluster of cognitive, behavioural, and physiological symptoms indicating that the individual continues use of the substance despite significant substance-related problems" (APA, 2000). Within the DSM-IV-TR, an individual will receive a diagnosis of alcohol abuse if any of the four following criteria are met: 1) hazardous use, 2) interference with role obligations, 3) legal problems caused by drinking, and 4) continuing to drink despite social or interpersonal problems. In contrast, alcohol dependence is diagnosed if an individual meets any three of the following seven criteria: 1) tolerance as defined by either a) requiring increased amounts of alcohol to produce the same effect or b) a decrease in the effect of alcohol when using the same amount, 2) withdrawal as

defined by a reduction or cessation of prolonged alcohol use and two or more of the following 8 criteria (which develop within hours to days of the reduction or cessation of alcohol): autonomic hyperactivity, increased hand tremor, insomnia, nausea or vomiting, transient sensory hallucinations, psychomotor agitation, anxiety, and grand mal seizures, 3) drinking large amounts over a longer period of time than was intended, 4) a great deal of time spent drinking, 5) unsuccessful attempts to cut down or a desire to quit drinking, 6) reducing or giving up activities in order to drink, and 7) continuing to drink despite negative consequences. Alcohol dependence can be distinguished from alcohol abuse by the presence of three defining features: symptoms of physiological tolerance, withdrawal, and compulsive use. A diagnosis of alcohol abuse is made only when an individual fails to meet criteria for alcohol dependence, as a diagnosis of alcohol abuse requires fewer symptoms and is thought to be a less severe form of alcohol use disorder (APA, 2000).

The first two versions of the DSM (DSM and DSM-II) listed alcohol use as a disorder, but did not provide a clear picture of the problem. The revised edition of the DSM-III (DSM-III-R) was the first edition to base the diagnostic criteria for alcohol use disorders on the alcohol dependence syndrome definition of alcohol (Edwards and Gross, 1976). The dependence syndrome involves a number of essential elements: a narrowing of the drinking repertoire (alcohol begins to be consumed in a similar manner each day and is less likely to fluctuate based on internal or external circumstances such as mood or social situations), salience of drink seeking behaviour (alcohol intake becomes an increasing priority), subjective awareness of a compulsion to drink, tolerance, withdrawal, drinking in order to relieve symptoms of withdrawal, and relapse after abstinence (Edwards and Gross, 1976). Early work by Jellinek (1960) provided insightful and important details into the concept of alcoholism which were critical in shaping the

definition of dependency symptoms. According to Jellinek, alcohol dependence is a progressive disease with four phases: the pre-alcoholic phase, the prodromal phase, the crucial phase, and the chronic phase. In the pre-alcoholic phase, which is seen as the first phase of alcoholism, drinking is socially motivated and is used to relieve tension. Individuals in this phase begin to seek out situations where drinking will occur and to view alcohol as an effective way of handling stress. This phase may last anywhere from a few months to more than two years, with some tolerance to alcohol developing. An individual's drinking behaviour does not appear problematic to an outsider during this phase.

In the second phase, which Jellinek termed the prodromal phase, alcohol is used as a way to reduce tension and stress and to escape from everyday life. The following behaviours may develop during this phase: drinking larger amounts of alcohol, experiencing temporary memory loss while intoxicated ("blackouts"), sneaking drinks, hangovers become more frequent and painful.

During the third phase, or crucial phase, an individual begins to develop the symptoms of alcohol addiction. This phase is characterised by a loss of control (once drinking begins, an individual is unable to stop), feelings of guilt which result from a loss of control and lead an individual to begin making excuses for their drinking, drinking in the morning or to begin the day ("eye-opener"), trying to change the pattern of drinking behaviour (switching to a different type of alcohol or having periods of abstinence), loss of friends or family, seeking medical attention, anti-social behaviour (ex: drinking alone, thinking that others are criticising them, being highly critical of others).

In the final phase of alcoholism an individual is addicted to the substance and no longer has a choice whether they will take their first drink, they need to drink. Jellinek termed this the chronic phase, and it involves getting drunk for several days at a time, experiencing tremors when alcohol has not been consumed, experiencing delirium tremors (tremors combined with hallucinations), having a consistent supply of alcohol, having unreasonable hostility and resentment towards others, and an increase in fear and anxiety. Jellinek stated that individuals in the chronic phase of alcoholism must realize that they can no longer drink and accept help. If they cannot accept help, they are at risk of developing irreversible brain damage and physical problems which can result in death.

Assessing alcohol use disorders within the population

Several interviews have been created for assessing the rates of alcohol use disorders within the general population. One such interview, the Alcohol Use Disorders and Associated Disabilities Interview Schedule (AUDADIS), was created by the National Institute on Alcohol Abuse and Alcoholism (NIAAA) to measure alcohol use disorders in the United States population. It is a semi-structured interview used to measure alcohol use disorders and other Axis I and II disorders, and was designed for administration by highly trained interviewers to individuals over 18 years of age (Grant and Dawson, 2006). The AUDADIS follows the diagnostic criteria of the DSM-IV and has been used mainly in epidemiological studies (Dodgen and Shea, 2000). Research has shown that the reliability of the AUDADIS as a diagnostic tool is in the good to excellent range (Grant, Dawson, Stinson, Chou, Ward, and Pickering, 2003).

The Composite International Diagnostic Interview: Authorized Core Version 1.0 (CIDI-Core) was created by the World Health Organization (WHO) to measure mental disorders,

including alcohol and drug use disorders within the population. The survey has been replicated in many different languages for international use. It is a semi-structured interview which follows the diagnostic criteria of the DSM-III and ICD-10. The survey was designed to promote epidemiological research worldwide and its uses have been restricted mainly to epidemiological research (Dodgen and Shea, 2000). An expansion of the original CIDI was later designed in order to address some of the limitations of the original survey. The CIDI's limitations were that in providing an assessment of mental health, it also failed to provide information on risk factors, correlates, and sufficiency of treatment. The expansion of the CIDI, known as the World Mental Health-Composite International Diagnostic Interview (WMH-CIDI), was an attempt to include this information in the original survey (Kessler and Ustun, 2004).

The AUDADIS and the WMH-CIDI have several common features. Both surveys were designed for use in epidemiologic surveys. Both surveys are semi-structured, and were meant to be administered in-person by trained lay interviewers. The WMH-CIDI and the AUDASIS were also both designed with a focus on the assessment of mental health and its correlates within the population. The two surveys have also been created in several different languages for use in many countries worldwide. Several differences also exist between the surveys. One main difference is that the AUDADIS was designed with a specific focus on assessing alcohol use disorders (abuse and dependence) and their correlates within the population. Although the WMH-CIDI also contains a diagnostic section for alcohol use disorders, the survey was designed to assess for mental health and its correlates without a specific focus on alcohol. The WMH-CIDI and the AUDADIS also differ in how alcohol abuse and dependence are assessed. In the WMH-CIDI, if an individual fails to meet criteria for alcohol abuse, they are not assessed for dependence. The rational is that if an individual does not meet criteria for a less severe form of

alcohol use disorder, then they will not meet criteria for a more severe form. In contrast, with the AUDADIS individuals are assessed for alcohol dependence regardless of whether they meet criteria for abuse. The WMH-CIDI's method of assessing for alcohol abuse and dependence has been a source of controversy (Grant, Compton, Crowley, et al., 2007). The reasons for this controversy will be discussed in the section on prevalence of alcohol abuse and dependence of this thesis. Another important difference between the two surveys is that the diagnostic criteria for the WMH-CIDI are based on the DSM-III classification system, whereas the diagnostic criteria for the AUDADIS are based on DSM-IV criteria.

Prevalence of alcohol abuse and dependence

Alcohol abuse and dependence occur frequently within the population. They are a source of high costs to health care and an economic burden on society.

In the United States population, 17.8% of individuals will meet criteria for alcohol abuse during their lifetime and 4.7% will have alcohol abuse in the past 12 months. Prevalence rates of alcohol dependence are somewhat lower, with 12.5% of individuals experiencing lifetime alcohol dependence and 3.8% having alcohol dependence in the past 12 months (Hasin, Stinson, Ogburn, and Grant, 2007). These results are based on the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC), which utilized the AUDADIS to assess for alcohol abuse and dependence, based on DSM-IV criteria. The prevalence of alcohol abuse and dependence in the United States population has also been reported in studies which utilize data from the National Comorbidity Survey Replication (NCS-R). The NCS-R assessed alcohol abuse and dependence based on DSM-IV criteria using the WMH-CIDI. These studies reported rates of lifetime alcohol dependence at 5.4% and lifetime alcohol abuse at 13.2% (Kessler, Berglund,

Demler, et al., 2005). Rates of alcohol abuse are consistently found to be higher than rates for alcohol dependence within the population because only a subset of individuals who abuse alcohol will go on to develop symptoms of dependence.

The Canadian rate of past 12 month alcohol dependence based on the 2002 Canadian Community Health Survey Cycle 1.2 (CCHS 1.2) is 2.2%. The rate of past 12 month alcohol abuse is 7.3% (Rush, Urbanoski, et al., 2008). Alcohol dependence and problem drinking were assessed in the CCHS 1.2 with the WMH-CIDI. Another Canadian population study assessed rates of problem drinking using the CAGE questionnaire, which is a brief screen for alcohol dependence (Ewing, 1984). The CAGE questionnaire consists of the following 4 questions: Have you felt you needed to cut down on your drinking? Have you felt annoyed by criticism of your drinking? Have you felt guilty about drinking? Have you felt you needed a drink first thing in the morning (eye-opener)? The CAGE questionnaire is considered to be a sensitive screen for alcohol abuse and dependence (Mayfield, et al., 1974; Ewing, 1984; Dhalla, and Kopec, 2007). Individuals who answer yes to 2 or more questions should be further assessed for alcohol abuse or dependence, as their drinking behaviour is suggestive of a diagnosis. Researchers administered the CAGE questionnaire to a representative telephone sample of the Canadian population and demonstrated that 4.3% of individuals answered yes to at least 2 questions (Poulin, Webster, and Single, 1997).

Concerns have been raised regarding the method of assessing alcohol dependence using the World Mental Health-Composite International Diagnostic Interview (WMH-CIDI) (which was the assessment interview utilized in the National Comorbidity Survey Replication (NCS-R) and the World Health Organization World Mental Health Survey Initiative (WHO-WMH))

(Grant, et al., 2007). When the WMH-CIDI is used to assess for alcohol dependence, a respondent's past questions are skipped if they do not meet criteria for alcohol abuse, utilizing alcohol abuse as a screen for alcohol dependence. As mentioned above, the rational for this method of assessment is that individuals who do not meet criteria for a less severe form of alcohol use disorder would not be expected to meet criteria for a more severe form. However, the DSM-IV does not require the presence of abuse symptoms for a diagnosis of alcohol dependence (APA, 2000). Further, when alcohol use disorders are assessed using the AUDASIS (which assesses for alcohol dependence regardless of how abuse questions were answered), 34% of individuals with current alcohol dependence do not meet criteria for abuse (Hasin, and Grant. 2004). Critics of the WMH-CIDI state that studies which have utilized assessment methods in which alcohol abuse is utilized as a screen for alcohol dependence have grossly underestimated the percentage of individuals in the population with alcohol dependence (Grant, et al., 2007). This would account for the fact that lifetime rates of alcohol dependence in the United States population were lower when measured using the NCS-R and higher when measured using the NESARC. Given these findings, we could also assume that the prevalence rates for alcohol abuse and dependence reported in the Canadian population would be considerably higher if measured using the AUDADIS, as opposed to the WMH-CIDI.

In 2004, the World Health Organization (WHO) issued a report documenting the global status of alcohol consumption (WHO, 2004). Past year prevalence rates for alcohol dependence were gathered throughout countries in Africa, America, the Mediterranean, Europe, Southeast Asia, and the Pacific. One year prevalence rates for alcohol abuse and dependence ranged from 0.3% in the Eastern Mediterranean region to 10.9% in Eastern Europe, with average global rates estimated at 3.6% per year.

Rehm, Mathers, Popova, Thavorncharoensap, Teerawattananon, and Patra, (2009) estimated that alcohol abuse and dependence are causally related to between 4 and 6% of the rates of disease worldwide. These rates were based on research gathered across ten large countries (Brazil, China, Germany, India, Japan, Nigeria, Russia, South Africa, Thailand, and the United States). In order to establish diseases for which alcohol was a contributing cause, the authors utilized criteria for determining causality in epidemiology which were developed in an earlier study (Rehm, Room, Monteiro, et al., 2004). The following three criteria were included: 1) a consistent correlation between alcohol use and the disease in question, 2) bias, chance, and confounding variables are ruled out as correlated factors, and 3) alcohol use having a possible mediating role in the disease. These criteria were assessed based on consistency across studies, effect sizes, and support for the involvement of biological processes as mediators. An earlier study by the same authors revealed that alcohol is causally related to 60 different types of medical conditions (Rehm, Room, Graham, Monteiro, Gmel, and Sempos, 2003).

In the United States, 15% of the national health care budget is spent on the treatment of alcohol use disorders and alcohol related problems (Rice, Kelman, Miller, Dunmeyer, 1986), with costs for treatment exceeding $100 billion annually (Rice, 1994). Further, it has recently been argued that alcohol should be included in the classification of drugs which are deemed to be of high risk to public health (Sellman, Robinson, and Beasley, 2009).

Who is affected by alcohol use disorders?

Alcohol use disorders typically have their onset in the late teens to early twenties, with half of all cases beginning by age 14 (Kessler, et al., 2005). A large number of studies have shown that individuals who begin drinking at a young age are more likely to develop an alcohol

use disorder (Grant, and Dawson, 1997; Jessor, Donovan, and Costa, 1991; Labouvie, Bates, and Pandina, 1997; Margulies, Kessler, and Kandel, 1977; Muthen, and Muthen, 2000; Windle, 1991). Early onset of alcohol use and later development of alcohol use disorders has been linked to brain development during adolescence. In particular, alcohol has been shown to cause structural changes in several subtypes of the N-methyl-D-aspartate (NMDA) glutamate receptor (Sabeti, and Gruol, 2008; Carpenter-Hyland, and Chandler, 2007), a receptor which plays a large role in brain plasticity and also aids in the mediation of brain development. Research has revealed that alcohol influences specific subtypes of the NMDA receptors which are more prominent during adolescence. In influencing these more prominent subtypes, younger individuals who consume alcohol are at greater risk of developing a brain which is more likely to become tolerant to and withdraw from alcohol if they continue drinking alcohol into adulthood.

Results from the National Longitudinal Survey of Labor Market Experience in Youth (NLSY) have shown the following factors to be consistent predictors of the development of alcohol abuse and dependence: being male, divorced, separated or never married, being younger, having antisocial behaviours at an early age, and the use of marijuana (Grant, Stinson, and Harford, 2001). Other population based studies have shown that individuals who are male, white, Native American, younger, unmarried, and of a lower income have a higher prevalence of alcohol use disorders (Hasin, et al., 2007). Half of individuals with a lifetime alcohol use disorder also have a comorbid Axis I or II psychiatric disorder (Flensborg-Madsen, Mortenson, Knop. Becker, Sher, and Gronbaek, 2009). Disorders which are commonly comorbid with alcohol use disorders are personality disorders, mood disorders, anxiety disorders, and other drug use disorders (Hasin, et al., 2007, Flensborg-Madsen, et al., 2009). Individuals with an alcohol

use disorder are at higher risk of developing an additional mental disorder than are individuals with a mental disorder developing an alcohol use disorder (Flensborg-Madsen, et al., 2009).

Rates and correlates of perceived need for help and help-seeking for alcohol use disorders

Alcohol use disorders are characterised by low rates of help-seeking, with most studies reporting only around 25% of individual's ever seeking help (Hasin, et al., 2007). Low rates of help-seeking for alcohol use disorders result from low rates of perceived need for help (Mojtabai, Olfson, and Mechanic, 2002). Perceived need for help for alcohol use disorders can be defined as "an individual's recognition that their drinking behaviour is a problem which leads to the subsequent decision to seek help". Research on alcohol use disorders has shown that perceived need is the most important variable in the decision to seek help (Majella, and Tian, 1989). A small body of literature has investigated the correlates of perceived need for help for alcohol use disorders. Research has shown that individuals with alcohol dependence are more likely to have a perceived need for help than those with alcohol abuse (Duffy, Cowell, Council, and Shi, 2006; Wu, Ringwalt, 2004). According to the DSM-IV individuals with alcohol dependence have a more severe form of alcohol use disorder than individuals with alcohol abuse. Several studies have shown that individuals with more severe symptoms of alcohol use disorders are more likely to seek help (Hasin, and Grant, 1995; Glanz, Grant, Monteiro, and Tabakoff, 2002). Those with a compulsion to drink, those who experience their highest levels of alcohol use, and those who experience social pressure to quit drinking (from family, friends, or co-workers) are more likely to perceive a need for help and to seek help (Hasin, et al., 1995). Individuals with a comorbid psychiatric illness are also more likely to have a perceived need for help for alcohol use disorders (Mojtabai, Olfson, and Mechanic, 2009). Many individuals do not perceive a need for treatment

because they view their symptoms as not serious or temporary, do not think they have a mental health problem, do not think that anyone can help them, are embarrassed, fear being stigmatized, or have no insight into the nature of their symptoms (Mojtabai, et al., 2002). In fact, denial, and distortion of reality are common features among individual's with alcohol use disorders (Edwards and Gross, 1976), which would cause the perception of the problem to be less likely. Other positive correlates of perceived need and help-seeking are a longer time since the onset of dependence, and being non-white (Grella, Karno, Warda, Moore, and Niv, 2009). Increased problems associated with drinking also correlate with greater likelihood towards perceived need for help and help-seeking (Grella, et al., 2009). In order to assess problems associated with drinking and their relation to help-seeking and perceived need, Grella et al., (2009) created a count variable which included problems associated with job or school, driving, problems with family or friends, physical fights, legal issues, and taking care of family. Findings revealed that the number of problems increased the odds that a person would perceive a need for help or engage in help-seeking.

Current study

Few studies have investigated the predictors of new incidence perceived need for help and help-seeking for alcohol abuse and dependence. New incidence perceived need for help and help-seeking means those individuals who previously have had no perceived need for help or help-seeking and who now have perceived need for help or are seeking help for the first time. Several studies using clinical samples have investigated the predictors of perceived need or help-seeking for alcohol abuse and dependence (Freyer, Coder, Bischof, et al., 2007; Wells, Horwood, and Ferusson, 2007; Freyer-Adam, Coder, Bischof, et al., 2008); however, it is unclear whether

the results of these studies can be generalized to the larger population. When correlates of perceived need or help-seeking for alcohol abuse and dependence have been assessed within the population, results have been cross-sectional (Mojtabai, et al., 2002; Duffy, et al., 2006; Grella, et al., 2009). At present, there is a need for literature which examines the factors associated with perceived need for help over time among individuals with alcohol abuse and dependence within the general population. The current study utilized data from a nationally representative sample in order to predict the factors involved in perceived need for help for alcohol abuse and dependence. To my knowledge this is one of the first studies to investigate the predictors of perceived need for help in the population by utilizing a longitudinal population survey specifically designed for the assessment of alcohol use disorders and their correlates.

Chapter 2: Methods

Sample

Data were drawn from the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC) Waves 1 and 2, the largest longitudinal study ever conducted to assess the rates and correlates of alcohol use disorders within the United States population (Grant, and Dawson, 2006). The NESARC was conducted by the National Institute on Alcohol Abuse and Alcoholism (NIAAA), with Wave 1 conducted from the year 2001 to 2002, and Wave 2 from 2004 to 2005. Wave 1 of the NESARC included 43,093 non-institutionalized civilians who were 18 years of age or older. Individuals who took part in Wave 1 were then re-interviewed at Wave 2, resulting in an overall n for Wave 2 of 34,653. Only those who completed both waves of the survey were included in the final sample, yielding a combined overall response rate for both waves of 70.2% (overall response rate at time 1 = 81.0% x overall retention rate at time 2 = 86.7%). Respondents were not retained in Wave 2 of the survey for the following reasons: death,

institutionalization/incapacitation, deportation/permanently leaving the U.S., and being in the military. Wave 2 data was weighted to adjust for sociodemographics, and mental disorders, and no significant differences were found between Wave 2 respondents and the general population. The overall number of individuals that took part in both samples and will be included in the analysis for the current thesis is 34,653. Trained lay interviewers administered both waves of the NESARC survey via computer assisted personal interviews. On average, the interviewers had 5 years of experience working on census and other health-related surveys. Interviews were conducted in-person using laptop computer assisted software which included built-in skip, logic, and consistency checks. Prior to data collection, each respondent was informed of the nature of the survey and its potential uses, ensured of confidentiality, and told that participation was voluntary. The U.S. Census Bureau and the U.S. Office of Management and Budget reviewed and approved the ethics protocol. Statistical weights were provided to ensure representativeness of the sample. Detailed information about the NESARC sampling frame has been presented elsewhere (Grant, et al., 2004; Grant, et al., 2007; Grant, et al., 2008).

Measures

Alcohol abuse and dependence

DSM-IV Alcohol abuse and dependence were assessed in the NESARC using the Alcohol Use Disorder and Associated Disabilities Interview Schedule (AUDADIS) (Grant, et al., 2003). Individuals who met criteria for a lifetime alcohol abuse or dependence at Time 1 with no prior history of perceived need or help-seeking for alcohol were included in the analysis. A diagnosis of alcohol abuse was given if one or more of the following four DSM-IV criteria were met: 1) hazardous use, 2) interference with role obligations, 3) legal problems caused by

drinking, and 4) continued drinking despite social or interpersonal problems. A diagnosis of alcohol dependence was given if three or more of the following seven DSM-IV criteria were met: 1) tolerance, 2) withdrawal, 3) drinking large amounts over a longer period of time than was intended, 4) a great deal of time spent drinking, 5) unsuccessful attempts to cut down or a desire to quit drinking, 6) reducing or giving up activities in order to drink, and 7) continuing to drink despite negative consequences.

In order to assess the diagnostic validity and test-retest reliability of the AUDADIS for detecting the presence of alcohol abuse and dependence the WHO implemented a large-scale international study in 10 countries. (Ustun, Compton, Mager, et al., 1997).The diagnoses for alcohol abuse and dependence in the AUDADIS were measured for concurrent validity with the CIDI, and the Schedules for Clinical Assessment in Neuropsychiatry (SCAN). The results showed that the coefficients for diagnostic concordance of alcohol dependence were in the very good range (κ = 0.7-0.9), and the concordance for alcohol abuse was poor. The study also analysed the one-week test-retest reliability for alcohol abuse and dependence as measured by the AUDADIS. The test-retest reliability for alcohol dependence with chance corrected agreement was good (0.66-0.76), and low for alcohol abuse. The diagnostic reliability is lowest for lifetime diagnoses and higher for past year diagnoses. The authors suggested that the finding of poor concurrent validity and reliability for alcohol abuse indicates that the current operationalization and conceptualization of this disorder in the DSM-IV is not satisfactory. They further speculated the possibility that alcohol abuse is merely a transitional state between long-term alcohol use and the onset of dependence. The authors also commented on the subjective nature of the criteria for abuse (harmful use, social criteria) versus the less subjective nature of the criteria for dependence (physiological withdrawal and tolerance).

The DSM-IV lists alcohol abuse and dependence as separate disorders and states that alcohol abuse is a less severe form of alcohol use disorder than alcohol dependence (APA, 2000). As mentioned above, it has been argued that an alcohol use disorder may be progressive with alcohol abuse being a transitional state which can lead to alcohol dependence (Ustun, et al., 1997). Early work by Jellinek (1960), also lists symptoms of alcohol abuse on a trajectory which can lead to alcohol dependence. As such, the newest version of the DSM (DSM-V) will likely combine the two disorders into a single disorder called an alcohol use disorder and include physiological dependence as a specifier (APA DSM-V development, 2010). The current DSM-IV distinguishes alcohol abuse from alcohol dependence by including physiologic symptoms of withdrawal and tolerance, as well as compulsive use in the diagnostic criteria for alcohol dependence. Individuals diagnosed utilizing the DSM-IV criteria cannot receive a diagnosis of both disorders but must be diagnosed with either alcohol abuse or alcohol dependence. Using the current method of diagnosis, an individual is first assessed for alcohol dependence symptoms and in their absence is then assessed for alcohol abuse (APA, 2000).

Help-seeking and perceived need for help

To determine which individuals had sought help for alcohol abuse or dependence they were asked at Time 1 “Have you ever sought help because of drinking” and at Time 2 “Have you gone anywhere or seen anyone to get help because of drinking since the last interview”. To determine whether individuals had perceived need for help they were asked at Time 1 “Was there ever a time that you thought you should seek help for drinking but didn’t go” and at Time 2 “Was there a time that you thought should get help for drinking but didn’t go since the last interview”. Individuals who answered yes to any of the above questions were considered to have

perceived need for help or help-seeking at Time 1 and/or Time 2. Individuals who answered yes to help-seeking or perceived need for help at Time 2, but who answered no to both questions at Time 1 were considered to have a new incidence of perceived need for help or help-seeking at follow-up.

Sociodemographics

Sociodemographic variables assessed in the NESARC which were included in the current study are: sex (male, female), age (18-29 years, 30-44 years, 45-64 years, 65+ years), race/ethnicity (white, black, American Indian/Alaskan, Asian/Hawaiian/Pacific Islander, Hispanic or Latino), marital status (married or common-law, widowed/separated/divorced, never married), income ($0 - $19,999, $20,000 - $34,999,$ 35,000 - $59,999, $60,000+), education (less than high school, high school, some college or university), and metropolitan statistical area (MSA) type (In MSA – in central city, in MSA – not in central city, not in MSA). The following physical conditions were also included: permanent physical disability, temporary physical disability, arteriosclerosis, hypertension, diabetes, cirrhosis of the liver, other form of liver disease, angina pectoris, tachycardia, myocardial infarction, high cholesterol, other form of heart disease, and stroke. Physical conditions were measured across 4 numerical categories (no physical condition, 1 physical condition, 2 physical conditions, and 3 or more physical conditions).

Mental disorders

Axis I and Axis II mental disorders were defined in the NESARC according to DSM-IV criteria using the Alcohol Use Disorders and Associated Disorders Interview Schedule (AUDADIS). The following axis I mental disorders assessed in the NESARC at Time 1

(occurring in the past 12 months at Time 1) were included in the analysis: mania, hypomania, dysthymia, major depression, post-traumatic stress disorder, panic disorder, agoraphobia, social phobia, specific phobia, and generalized anxiety disorder. Axis II mental disorders will include all 10 personality disorders. However, borderline, schizotypal, and narcissistic personality disorders were not assessed until Wave 2 of the NESARC. The analyses for the current thesis will focus on axis I and II disorders which are comorbid with an alcohol use disorder at Time 1. Therefore, it will be assumed that the 3 axis II personality disorders which were not assessed until Time 2 were also present at Time 1. New research which utilizes both Waves of the NESARC has conducted analyses with the 3 axis II personality disorders not assessed at Time 1 under the assumption that they were present at Time 1 (Grant, et al., 2009). As stated in the DSM-IV, personality disorders represent a chronic, pervasive personality style which is evident in the early to late teens and continues throughout an individual's life. Therefore, individuals who meet criteria for an axis II personality disorder at Time 2 should also have met criteria at Time 1. A general category of drug use disorders will also be analyzed. This general category will include abuse and dependence of all drugs which were included in the NESARC. These drugs include cocaine, amphetamine, opiods, sedatives, tranquilizers, inhalants/solvents, hallucinogens, cannabis, heroin, or other drugs.

The NESARC employs DSM-IV definitions of independent mood and anxiety disorders to examine the co morbidity of mental disorders. Mood and anxiety disorders are independent if they are not a direct result of alcohol or drug intoxication or withdrawal. An individual received a diagnosis of an independent mood or anxiety disorder if none or some of their episodes were a result of drug or alcohol intoxication or withdrawal. In contrast, substance-induced mood and anxiety disorders include episodes that began after alcohol or drug intoxication or withdrawal but

did not occur if the person was abstinent for over 1 month. A diagnosis of a substance-induced mood or anxiety disorder was given if all of an individual's episodes within the past year were a result of alcohol or drug use (Grant, et al., 2004).

Social problems

Social problems assessed in the NESARC which were used in the current study include: separation, divorce, or breaking off a steady relationship, serious problems with a neighbour, friend, or relative, family member or close friend who died, having a period where drinking interfered with taking care of a home or family, having job or school troubles because of drinking, continued to drink despite causing trouble with family or friends.

Economic problems

The following economic problems were utilized in the analysis of this thesis: being fired or laid off from a job, unemployed and looking for a job for longer than a month, experienced major financial crisis, and declared bankruptcy or more than once been unable to pay bills.

Legal problems

Legal problems which were included in the analysis are: serious trouble with police or the law, being arrested or having other legal problems because of drinking, had accident while driving under the influence of alcohol, driven under the influence of alcohol and injured self in accident, getting into physical fights when drinking, and driven under the influence of alcohol and injured someone else in an accident

Beliefs about alcoholism

Personal beliefs about alcoholism will be categorized as either beliefs of personal weakness, or beliefs of social rejection. Beliefs about alcoholism were assessed at Wave 1. The beliefs of personal weakness which were assessed in the NESARC include "most people believe a person who had alcohol treatment is as intelligent as other people", "most people believe a former alcoholic is as trustworthy as the average person", "most people feel that entering alcohol treatment is a sign of personal failure", "most people think less of a person who has been in alcohol treatment", "if it was that that a person has been in alcohol treatment, most people would take his/her opinion less seriously". Beliefs of social rejection include "most people would accept a former alcoholic as a close friend", "most people would accept a fully recovered former alcoholic as a teacher of young children", "most people would not hire a former alcoholic to take care of their children", "most employers will hire a former alcoholic if he/she is qualified", "most employers will pass over the application of a former alcoholic in favour of others", "most people in my community would treat a former alcoholic the same as anyone else", and "most women would be reluctant to date a man who has been hospitalized for alcoholism".

Analytic strategy

A dichotomous variable was created to compare individuals with an alcohol use disorder (abuse or dependence) who have no perceived need or help seeking at either Time 1 or 2 and individuals who have no perceived need or help seeking at Time 1 and new onset perceived need or help seeking at Time 2. Individuals with an alcohol use disorder included those with lifetime alcohol abuse or dependence at Time 1. Individuals with new onset perceived need or help-seeking at Time 2 had no prior help-seeking or perceived need for help for an alcohol use

disorder during their lifetime (as assessed in lifetime measures taken at Time 1). Individuals could meet criteria for help-seeking or perceived need for help at any point during the 3 year period between Time 1 and Time 2. Help-seeking or perceived need for help at Time 2 was considered to be new onset as these individuals had no previous perceived need for help or help-seeking. In order to increase the number of individuals in each analysis, individuals with alcohol abuse and dependence were combined into an overall alcohol use disorders group.

First, the number and percentage of individuals with a lifetime alcohol use disorder and perceived need or help-seeking at Time 2 vs. no perceived need or help-seeking at Time 2 was calculated using crosstabular comparisons. Second, descriptive statistics were utilized to demonstrate the number of individuals with a lifetime alcohol use disorder and perceived need or help-seeking across the various sociodemographics (sex, age, marital status, income, race/ethnicity, education, urban/rural). Third, multiple logistic regression analyses compared those with a lifetime alcohol use disorder and perceived need or help-seeking vs. no perceived need or help-seeking at Time 2, and sociodemographics, mental disorders, persistence of alcohol use, social, economic, and legal problems, and personal beliefs about alcoholism. Fourth, the possibility that social, economic, and legal problems may act as a mediator in the relationship between psychiatric comorbidity and new onset perceived need and help-seeking was assessed. All regressions were adjusted for significant sociodemographic differences. Statistical significance was tested at the $p<.05$, $p<.01$, and $p<.001$ levels.

Chapter 3: Results

Of the 34,653 surveyed, a total of 6749 met criteria for either alcohol abuse or dependence and had no perceived need and help-seeking at Time 1. Of these individuals, 6553

continued to have no perceived need and help-seeking at Time 2, and 196 had a new incidence of perceived need and help-seeking at Time 2 (72 with perceived need only, 94 with help-seeking only, and 30 with perceived need and help-seeking). Those with a persistent alcohol use disorder (a lifetime alcohol use disorder at Time 1 who continued to meet criteria for an alcohol use disorder at Time 2), had significantly higher odds of seeking help or perceiving a need for help at Time 2 (OR= 47.68; 95% CI= 24.42-93.12; p<.001).

Sociodemographic predictors of perceived need and help-seeking

The results of a multiple logistic regression analysis investigating the relationship between sociodemographics and new incidence perceived need and help-seeking for alcohol use disorders are presented in Table 1. Among those with an alcohol use disorder at Time 1, females were less likely than males to have perceived need and help-seeking at Time 2 (OR=.56; 95% CI=.37-.87; p<.01). Individuals who were older were less likely than those who were young adults (ages 18-29) to have perceived need and help-seeking at Time 2, (ages 30-44 OR=.48; 95% CI=.31-.74; p<.01, ages 45-64 OR=.34; 95% CI= .21-.55; p<.001, ages 65+ OR=.07; 95% CI=.03-.20; p<.001). Individuals who were widowed, separated, or divorced were more likely than those who were married to have perceived need and help-seeking at Time 2 (OR=1.77; 95% CI = 1.13-2.76; p<.05). Those with some college or university education were less likely than individuals with less than a high school education to have perceived need and help-seeking for an alcohol use disorder at Time 2 (OR=.50; 95% CI=.30-.83; p<.01). Lastly, individuals who are black were more likely than those who are Caucasian to have perceived need and help-seeking at Time 2 (OR=1.73; 95% CI=1.08-2.76; p<.05).

Comorbidity as a predictor of perceived need or help-seeking

Table 2 displays the results of a multiple logistic regression analysis investigating the relationship between Time 1 comorbid disorders and new incidence perceived need and help-seeking for an alcohol use disorder at Time 2. After adjusting for sociodemographic differences and social/legal/economic problems significant differences were found for each group of disorders except for the mood disorders which were not significant. Significant odds ratios were as follows: any anxiety disorder (AOR = 1.54; 95% CI = 1.03-2.29; $p<.05$), drug use disorders (AOR = 1.84; 95% CI = 1.32-2.57; $p<.001$), post traumatic stress disorder (AOR = 2.62; 95% CI = 1.62-4.26; $p<.001$), and any personality disorder (AOR = 2.00; 1.37-2.91; $p<.001$).

Economic, Social or Legal problems as predictors of perceived need or help-seeking

The results of a multiple logistic regression investigating the relationship between economic, social, or legal problems between Time 1 and Time 2 and the new incidence of perceived need and help-seeking among individuals with a lifetime alcohol use disorder are presented in Table 3. The following economic problems were found to predict the new incidence of perceived need and help-seeking for an alcohol use disorder after controlling for sociodemographic differences: being unemployed for over 1 month (AOR=1.52; 95% CI=1.02-2.26; $p<.05$), and being unable to pay bills or declaring bankruptcy (AOR=1.62; 95% CI=1.08-2.44; $p<.05$). These problems were no longer significant after controlling for the presence of psychiatric comorbidity. Being fired from a job was found to significantly predict new incidence perceived need and help-seeking for an alcohol use disorder in an unadjusted odds ratio, however failed to remain significant after controlling for sociodemographic differences.

The majority of the social problems investigated were found to significantly predict a new incidence of perceived need and help-seeking for an alcohol use disorder at Time 2 after controlling for sociodemographics and psychiatric comorbidity. These included, problems with a neighbour, friend, or relative (AOR=1.81; 95% CI=1.05-3.10; p<.05), drinking interfered with taking care of home/family (AOR=17.25; 95% CI=9.55-31.15; p<.001), school or job troubles from drinking (AOR=17.91; 95% CI=9.68-33.14; p<.001), and getting into a physical fight while drinking (AOR=5.59; 95% CI=3.26-9.60; p<.001). Getting separated, divorced, or ending a steady relationship significantly predicted a new incidence of perceived need and help-seeking for an alcohol use disorder in an unadjusted odds ratio, however failed to remain significant after controlling for sociodemographic differences and comorbidity.

Lastly, all of the legal problems investigated were found to significantly predict a new incidence of perceived need and help-seeking with large odds ratios even after controlling for sociodemographic differences and comorbidity. These include: being arrested or having other legal problems related to drinking (AOR=38.42; 95% CI=22.84-64.62; p<.001), getting into a vehicle accident while driving drunk (AOR=8.92; 95% CI=4.92-16.19; p<.001), getting into a vehicle accident while driving drunk and injured self (AOR=9.84; 95% CI=4.01-24.10; p<.001), and getting into a vehicle accident while driving drunk and injured someone else (AOR=15.67; 95% CI=5.75-42.66; p<.001).

Personal beliefs about alcoholism as predictors of perceived need or help-seeking

Table 4 shows the results of a multiple logistic regression analysis investigating the relationship between beliefs about alcoholism at Time 1 and new incidence perceived need and help-seeking for an alcohol use disorder at Time 2. Individuals who agreed with the statement

"entering alcohol treatment is a sign of personal failure" at Time 1 were significantly more likely to have new incidence perceived need and help-seeking for an alcohol use disorder at Time 2 (AOR=1.80; 95% CI=1.28-2.53; p<.001). Those with new incidence perceived need and help-seeking at Time 2 were less likely to agree with the statement "most people would treat a former alcohol the same as anyone else" at Time 1 (AOR=.59; 95%CI=.39-.89; p<.05). The remaining beliefs were not found to differ significantly between individuals with an alcohol use disorder who have new incidence perceived need and help-seeking and those with no perceived need or help-seeking.

Chapter 4: Discussion

In the current thesis I sought to investigate factors which predict the first occurrence of perceived need for help and help-seeking for alcohol use disorders in the general population. This thesis builds on earlier cross sectional work in a prospective study which investigated the differences between individuals who have a perceived need for help or help-seeking and those who do not have a perceived need or help-seeking for alcohol use disorders (Oleski, Mota, Cox, and Sareen, 2010). This study found that in a representative sample of 43,093 U.S. adults, 11,843 (28%) met criteria for a lifetime alcohol use disorder, and out of these individuals 81% had never perceived a need for help or sought help for their alcohol use. In the current thesis, I focused on a subsample of individuals with an alcohol use disorder who have a history of no perceived need for help and help-seeking in order to investigate factors which may predict a first occurrence of help-seeking and perceived need for help.

Sociodemographics

An investigation of the sociodemographic predictors of first incidence help-seeking and perceived need revealed that those who sought help and perceived a need for the first time were less likely to be female, to be older, and to have some college or university education. They were more likely to be widowed, separated, or divorced, and to be black. Income level, urban vs. rural living, and the presence of a physical condition were not significant predictors of new onset perceived need for help and help-seeking for an alcohol use disorder. Findings demonstrate that among individuals with a lifetime alcohol use disorder and a history of having no perceived need for help and help-seeking, being male, younger, less educated, widowed separated or divorced and black tended to predict the first occurrence of help-seeking and perceived need for help after a three year time period in the U.S. general population. Previous population studies on help-seeking tend to focus on cross-sectional analyses of differences between individuals with an alcohol use disorder who seek help vs. those who do not seek help. In these studies, females and older individuals are found to be more likely to seek help (Oleski et al., 2010; Proudfoot and Teesson, 2002). The finding in the current thesis that men and younger individuals are more likely to have a first incidence of perceived need and help-seeking for an alcohol use disorder among individuals who have no prior history of perceived need and help-seeking is in contrast to previous population findings. However, the current study focused solely on those individuals who had no previous perceived need and help-seeking, and it is hypothesized that the individuals included in the current study could make up a unique subpopulation of individuals with an alcohol use disorder. Factors such as having a higher education, and being married, may help to normalize a person's experience socially, which in turn leads to the self-perceived view of less dysfunction and a lower likelihood towards perceived need for care and help-seeking.

Comorbidity

The presence of a comorbid mental disorder was a significant predictor of future perceived need and help-seeking for an alcohol use disorder among those with no prior perceived need and help-seeking even after adjusting for sociodemographics and social/legal/economic problems. This finding is consistent with a number of cross-sectional population studies showing that individuals with comorbidity are more likely to have a perceived need for help and to seek help for an alcohol use disorder (Cohen, Feinn, Arias, and Kranzler, 2007; Proudfoot and Teesson, 2002; Wu, et al., 1999;). Longitudinal studies investigating the predictors of help-seeking for alcohol use disorders have also found support that comorbidity is a factor that predicts help-seeking (Kranzler, Del Boca, and Rounsaville, 1996). The findings from the current thesis confirm that comorbidity is a predictor of help-seeking for alcohol use disorders among those who have no previous history of perceived need for help and help-seeking. Research by Lewis, Bucholz, Spitznagel, and Shayka, (1996) and Kranzler et al., (1996), demonstrated that individuals with comorbidity often suffer from a more severe form of alcohol use disorder, and those with a more severe alcohol use disorder are more likely to be motivated to seek help (Freyer et al., 2005). A person's level of motivation to seek help for their alcohol use is positively correlated to their help-seeking behaviour (Freyer et al., 2005), however they must first have the awareness that the drinking is problematic. Although comorbidity increases the chances that someone with an alcohol use disorder will seek treatment, it may also complicate treatment. Comorbid mental disorders that have gone untreated are commonly found among individuals in treatment for an alcohol use disorder and can lead to poorer treatment outcome (Chan, Dennis, and Funk, 2008). Alcohol use disorders often begin at an early age and can lead to the development of an additional comorbid mental disorder. A longitudinal study investigating

the temporal ordering of alcohol use disorders and other comorbid disorders among 18,146 people over a 26 year period found that individuals with an alcohol use disorder are more likely to develop a comorbid psychiatric disorder than are individuals with a psychiatric disorder of developing an alcohol use disorder (Flensborg-Madsen, et al. 2009). Disorders which were most frequently comorbid with alcohol use disorders were personality disorders, followed by mood disorders and drug abuse, and these are also the disorders most commonly seen in treatment seeking samples (Chan, et al., 2008). Individuals with an alcohol use disorder and a comorbid mental disorder will often have lower functioning and more severe symptoms which can lead to alcohol use that is more problematic and disrupting. Conversely, those without a comorbid mental disorder may not have the decrease in functioning necessary to have a perceived need for help or to engage in help-seeking. Spitzer (1998) argued that a DSM-IV diagnosis should not be seen as a "guideline" to identify those in need of treatment. Individuals often vary in the severity of their symptoms, and those with more symptoms often have an increased need for treatment relative to someone with fewer symptoms. For example, the DSM-IV diagnostic criteria for alcohol abuse lists that an individual will receive a diagnosis if any of the four following criteria are met: 1) hazardous use, 2) interference with role obligations, 3) legal problems caused by drinking, and 4) continuing to drink despite social or interpersonal problems. Following this criteria, a person could receive a diagnosis of alcohol abuse by only endorsing that their alcohol use is hazardous, whereas if they were to receive a diagnosis of abuse by fulfilling all 4 of the criteria, they may be more likely to seek help. Although hazardous use of alcohol may in itself be problematic personally, interpersonally, and socially, it may not be enough to elicit help-seeking. A study investigating factors that predicted help-seeking for alcohol use disorders in 1863 individuals across 5 clinical centres worldwide found that the more diagnostic criteria an

individual met, the more likely they were to seek treatment (Glanz, et al., 2002). Those with alcohol dependence, which is a more severe form of alcohol use disorder, are more likely to seek help than those with alcohol abuse (Duffy, et al., 2006).

Social, legal, economic problems and persistence of an alcohol use disorder

Results revealed that individuals who experienced social or legal problems related to drinking since Time 1 had much higher odds of perceiving a need for help or seeking help at Time 2 than those who did not experience these problems even after adjusting for sociodemographics and psychiatric comorbidity. The relationship between alcohol related social and legal problems and help-seeking for alcohol use disorders is consistently identified in treatment seeking samples and is often a motivator towards seeking help (Tucker, 1995; George & Tucker 1996, Proudfoot, Teesson, 2002). In the current thesis, odds ratios ranged from 6.16 - 39.15 for these problems, suggesting that among individuals with no prior history of help-seeking or perceived need, problems related to drinking are a huge push towards perceived need for help and help-seeking. Also in the current study, those with a persistent alcohol use disorder, had high odds of having perceived need for help or help-seeking at Time 2. Therefore, those with a chronic alcohol use disorder, who experienced problems related to their drinking, may have hit a "bottom", where they recognized that there is a need for change.

Although the presence of psychiatric comorbidity was significantly related to the experience of social and legal alcohol problems, it was found that psychiatric comorbidity and social and legal problems each separately predicted the new onset of perceived need or help-seeking for an alcohol use disorder. Therefore each is important in its relationship to help-seeking and perceived need for help among those with an alcohol use disorder. Both psychiatric

comorbidity and social and legal problems represent a decrease in functioning that may be a central motivator towards help-seeking, and without this decrease in functioning help-seeking and perceived need for help may not seem necessary. Many individuals may never experience the decreased functioning necessary to engage in help-seeking or to have a perceived need for change, and only a minority of those with an alcohol use disorder will ever seek help or perceive a need for help. Therefore, the target of interventions for alcohol use problems should not only be retroactive, but should also be focused towards educating the majority of people who will never have a perceived a need for help. These more proactive interventions would not only help to reduce the problematic behaviour and consequences associated with heavy drinking, but may also lead to a reduction of individuals who go on to develop more severe and persistent problems with alcohol.

Personal beliefs about alcoholism

Individuals who continued to have no perceived need for help or help-seeking at Time 2, generally did not differ from those who sought help in their beliefs that a person with an alcohol use disorder is weak or could be the subject of social rejection. Previous research on perceived barriers to care has indicated that individuals who do not seek help are more likely to feel that they do not have a problem, can handle it on their own, or that seeking help is a sign of failure (Tucker, Vuchinich, and Rippens, 2004) Based on these findings, it was hypothesized that individuals who do not have a perceived need for help or help-seeking may have more resistance and hold stronger negative beliefs about alcoholics which could deter them from seeking help. Interestingly, those who sought help or perceived a need at Time 2 were significantly more likely to endorse as true at Time 1 that entering alcohol treatment is a sign of personal failure, and were

significantly less likely to agree that most people would treat a former alcoholic like anyone else. The two groups did not differ significantly on any of the other beliefs about alcoholics. Many of the individuals in our sample may not identify themselves as an alcoholic and in which case would probably not associate personally with the statements. It is unclear why the relationship on beliefs which were significant was in the opposite direction than was originally hypothesized. One possibility is that help-seeking in the present sample resulted more from pressure of legal or social structures and the beliefs that an individual held played a less important role in help-seeking.

Unique sample characteristics

In the current study it was found that less than one percent of the 6749 individuals who met criteria for a lifetime alcohol use disorder with no prior perceived need or help-seeking had an incidence of perceived need or help-seeking at 3-year follow-up. The sample used in the current thesis focused on individuals with a lifetime alcohol use disorder who had no prior history of perceived need or help-seeking. Those who perceived a need for help and sought help in this sample had very high odds of experiencing a persistent alcohol use disorder and legal or social problems related to their drinking between Times 1 and 2. Therefore these factors appeared to play a large role towards seeking help in this sample. Those who sought help for these reasons were more likely to be male, younger, black, widowed/separated/divorced, less educated, and more likely to suffer from a concurrent Axis I or II mental disorder. Research on help-seeking among treatment seeking samples has shown that those who seek help are more likely to do so when their drinking is at its worst, when they experience social pressure to quit, and when they have high levels of internal motivation (Freyer, et al., 2005; Grella, et al., 2009).

In the current sample, individuals were not asked about their levels of motivation to seek help, but it appears that the accumulation of social pressures were a prominent reason for help-seeking or perceived need for help. It has also been shown that motivation to seek help is closely related to successful recovery in help-seeking samples (Freyer, et al., 2005). Therefore individuals who are motivated towards seeking help more by external factors may have a less successful treatment outcome. As noted earlier, one of the features of people who suffer from alcohol use disorders is denial of symptoms and the impact of drinking on their own health and the environment. These features, in combination with the social acceptability of alcohol, and drinking as a means of entertainment make it easier for someone to persistently drink in unhealthy ways while maintaining a lack of awareness that their drinking could be problematic. It has been argued that while some individuals with severe alcohol dependence would be best to consider abstinence as a treatment goal, others with less severe forms of drinking may benefit from a harm reduction model involving reduced drinking and increased awareness of consequences (Sobell and Sobell, 1995). Past research has shown that educating the public about healthy drinking behaviour and the risks of unhealthy drinking can significantly reduce high levels of drinking and encourage more responsible drinking behaviour (Sobell, Sobell, Leo, Agrawal, Johnson-Young, and Cunningham, 2002). Since this research has focused solely on the effects of educating individuals about drinking in general, one area for future research could focus on the effects of similar interventions on those with an alcohol use disorder who have no history of perceived need or help-seeking to investigate whether they are as open to reducing drinking behaviour. Future research could also focus on factors that help to maintain a lack of perceived need for help in order to help determine the best forms of intervention for these individuals.

Limitations

The results presented in this thesis must be interpreted within the context of the following limitations. First, alcohol use disorder and other mental disorder diagnoses were made by trained lay interviewers and not by clinicians, and this could affect the rate of diagnosis. Second, I did not have sufficient statistical power to examine alcohol abuse and dependence separately, and was therefore unable to identify the role of the individual disorders. Third, perceived need for care and help-seeking were combined in order to achieve satisfactory statistical power and were not investigated separately. Fourth, analyses focus on those with a lifetime alcohol use disorder at Time 1 and this does not account for those individuals who may have recovered without formal help-seeking. Fifth, survey questions are retrospective and responses are subject to possible recall bias.

Conclusion

In conclusion, this thesis investigated the predictors of new onset perceived need for help and help-seeking among individuals who met criteria for a lifetime alcohol use disorder with no prior history of perceived need for help or help-seeking. Findings revealed that those who sought help for the first time in this sample were more likely to be male, younger, black, less educated, and to have a comorbid Axis I or II mental disorder. Those who perceived a need for help and sought help had extremely high odds of having a persistent alcohol use disorder and experiencing social or legal problems related to their alcohol use, suggesting that external social and legal pressures were be the biggest motivator to help-seeking among respondents in this sample. The presence of psychiatric comorbidity and social or legal problems both independently predicted the new onset of perceived need or help-seeking. Those who sought help generally did not differ

in their beliefs about alcoholics relative to those who continued to have no perceived need for help and help-seeking. Individuals with a history of having no perceived need for help may represent a unique group which differs from those reported in treatment seeking samples. Education about healthy drinking and harm reduction may be beneficial for people with a history of having no perceived need for help, and future research should investigate the utility of using this approach with these individuals.

Table 1. Multiple logistic regression analysis of relationship between socio demographics and new onset perceived need for help or help-seeking for alcohol use disorders

Socio demographics	Alcohol use disorder and no perceived need or help-seeking at T1 – no perceived need or help-seeking at T2 (n=6553) n (%)	Alcohol use disorder an no perceived need or help-seeking at T1 – new onset perceived need or help-seeking at T2 (n=196) n (%)	Alcohol use disorder and no perceived need or help-seeking T1 or T2 (reference group) vs. Alcohol use disorder with new onset perceived need or help-seeking T2 OR(95%CI)
Sex			
Male	3920 (64.5)	140 (75.2)	1.00
Female	2633 (35.5)	56 (24.8)	.56(.37-.83)**
Age			
18-29	1435 (23.9)	76 (47.1)	1.00
30-44	2627 (39.1)	75 (32.9)	.48(.31-.74)**
45-64	1981 (29.6)	40 (18.7)	.34(.21-.55)***
65+	510 (7.4)	5 (1.3)	.07(.03-.20)***
Marital status			
Married or common-law	3676 (65.0)	80 (46.9)	1.00
Widowed/separated/divorced	1272 (13.1)	47 (16.0)	1.77(1.13-2.76)*
Never married	1605 (21.9)	69 (37.1)	1.15(.72-1.84)
Income level			
$0-$19,999	961 (12.5)	52 (22.8)	1.00
$20,000-$34,999	1247 (16.7)	37 (19.9)	.77(.43-1.38)
$35,000-$59,999	1843 (27.1)	59 (29.9)	.79(.47-1.31)
$60,000+	2502 (43.7)	48 (27.5)	.58(.33-1.03)
Education level			
< High school	555 (7.9)	34 (15.8)	1.00
High school	1585 (24.4)	60 (33.3)	.80(.46-1.37)
Some college or university	4413 (67.7)	102 (51.0)	.50(.30-.83)**
Race/ethnicity			
White	4757 (81.6)	127 (71.2)	1.00
Black	699 (6.3)	36 (12.4)	1.73(1.08-2.76)*
American Indian/Alaskan Native	123 (2.4)	6 (2.8)	1.12(.42-2.98)
Asian/Native Hawaiian	83 (1.6)	3 (3.5)	2.13(.60-7.58)
Hispanic or Latino	891 (8.2)	24 (10.2)	.98(.56-1.70)
MSA type			
In MSA – in central city	2036 (27.1)	67 (27.9)	1.00
In MSA – not in central city	3287 (52.7)	88 (46.9)	1.09(.74-1.59)
Not in MSA	1230 (20.2)	41 (25.2)	1.23(.77-1.97)
Physical conditions			
No physical condition	4215(65.3)	123(63.7)	1.00
1 physical condition	1455(21.9)	44(19.5)	.91(.6-1.4)
2 physical conditions	573(8.4)	18(10.1)	1.24(.7-2.2)
3 or more physical conditions	310(4.4)	11(6.7)	1.56(.7-3.5)

Note. All *n*'s were unweighted. All percents were weighted. ***p< .001. **p<.01. *p<.05

Table 2. Multiple logistic regression analysis of relationship between lifetime mental disorders and new onset perceived need for help or help-seeking for alcohol use disorders

Mental Disorders	No perceived need or help-seeking at T1 and T2 (n=6553) n (%)	New onset perceived need or help-seeking at T2 (n=196) n (%)	OR(95%CI)	AOR1(95%CI)	AOR2(95%CI)
Any anxiety disorder	1568(23.5)	53(30.3)	1.42(0.97-2.07)	1.56(1.05-2.30)*	1.54(1.03-2.29)*
Any mood disorder	1887(26.9)	76(37.5)	1.63(1.12-2.38)*	1.58(1.05-2.38)*	1.43(.95-2.16)
Drug use disorder	1538(23.3)	81(43.8)	2.56(1.85-3.55)***	2.05(1.48-2.84)***	1.84(1.32-2.57)***
Posttraumatic stress disorder	687(9.3)	42(21.8)	2.71(1.73-4.25)***	2.90(1.77-4.73)***	2.62(1.62-4.26)***
Any personality disorder	1890(28.0)	103(52.6)	2.85(1.98-4.10)***	2.19(1.51-3.19)***	2.00(1.37-2.91)***

*Note. A*ll *n*'s were unweighted. All percents were weighted. ***p< .001. **p<.01. *p<.05.
AOR1 – Adjusted for sex, age, marital status, income level, education level, race/ethnicity, MSA type, and physical conditions.
AOR2- Adjusted for social, legal, and economic problems, sex, age, marital status, income level, education level, race/ethnicity, MSA type, and physical conditions.

Table 3. Multiple logistic regression analysis of relationship between past year economic, social, or legal problems, and new onset perceived need for help or help-seeking for alcohol use disorders

Economic, social or legal problems	No perceived need or help-seeking at T1 and T2 (n=6553) n (%)	New onset perceived need or help-seeking at T2 (n=196) n (%)	OR(95%CI)	AOR1(95%CI)	AOR2(95%CI)
Economic problems					
Fired from job	518(8.3)	30(17.6)	2.37(1.43-3.92)**	1.56(.91-2.68)	1.45(.84-2.52)
Unemployed >1month	678(10.3)	45(22.6)	2.55(1.68-3.89)***	1.52(1.02-2.26)*	1.42(.96-2.09)
Unable to pay bills or bankruptcy	961(13.7)	51(25.8)	2.18(1.48-3.21)***	1.62(1.08-2.44)*	1.45(.97-2.17)
Social problems					
Family member/close friend died	2105(31.5)	68(32.8)	1.06(.75-1.5)	1.09(.76-1.55)	1.04(.74-1.48)
Separated/divorced/ended steady relationship	660(7.8)	30(16.9)	2.39(1.48-3.87)***	1.54(.89-2.65)	1.48(.87-2.54)
Problem with neighbour, friend or relative	540(7.9)	26(16.5)	2.31(1.38-3.88)**	2.07(1.20-3.57)**	1.81(1.05-3.10)*
Drinking interfered with taking care of home/family	57(.8)	37(17.3)	24.61(14.37-42.13)***	19.32(10.73-34.81)***	17.25(9.55-31.15)***
School or job troubles from drinking	35(.5)	27(1.5)	34.7(19.1-63.1)***	19.31(10.33-36.09)***	17.91(9.68-33.14)***
Physical fights while drinking	136(2.2)	38(20.4)	11.4(7.0-18.5)***	6.16(3.54-10.72)***	5.59(3.26-9.60)***
Legal problems					
Arrested or other legal problems related to drinking	88(1.3)	71(41.2)	54.2(34.0-86.2)***	39.15(23.47-65.29)***	38.42(22.84-64.62)***
Vehicle accident while driving drunk	109(1.6)	30(16.2)	11.7(7.1-19.4)***	9.20(5.11-16.58)***	8.92(4.92-16.19)***
Vehicle accident while driving drunk and injured self	31(.5)	10(5.9)	12.5(5.2-29.6)***	9.84(4.01-24.10)***	9.84(4.01-24.10)***
Vehicle accident while driving drunk and injured someone else	9(.2)	5(2.5)	17.8(6.0-52.5)***	15.67(5.75-42.66)***	15.67(5.75-42.66)***

Note. All *n*'s were unweighted. All percents were weighted. ***p< .001. **p<.01. *p<.05.
AOR1 – Adjusted for sex, age, marital status, income level, education level, race/ethnicity, MSA type, and physical conditions.
AOR2 - Adjusted for any comorbidity, sex, age, marital status, income level, education level, race/ethnicity, MSA type, and physical conditions.

Table 4. Multiple logistic regression analysis of relationship between beliefs about alcoholism and new onset perceived need for help or help-seeking for alcohol use disorders

Beliefs about alcoholism	No perceived need or help-seeking at T1 and T2 (n=6553) n (%)	New onset perceived need or help-seeking at T2 (n=196) n (%)	OR(95%CI)	AOR1(95%CI)
Beliefs of personal weakness				
A person who has had alcohol treatment is just as intelligent as average	5689(87.9)	163(64.7)	.76(.49-1.19)	.89(.56-1.40)
Former alcohol is just as trustworthy as average person	4726(73.2)	123(66.0)	.71(.5-1.0)	.82(.57-1.17)
Entering alcohol treatment is a sign of personal failure	1663(25.9)	76(39.5)	1.87(1.3-2.6)***	1.80(1.28-2.53)***
Most people think less of a person who has been in alcohol treatment	3024(46.8)	111(55.0)	1.39(1.0-1.9)*	1.31(.94-1.81)
Most people will take a former alcoholics opinion less seriously	2954(45.8)	100(48.3)	1.11(.8-1.6)	1.03(.70-1.50)
Beliefs of social rejection				
Most people would accept a former alcoholic as a close friend	5230(81.3)	160(81.5)	1.01(.65-1.6)	1.14(.72-1.81)
Most people would accept a former alcoholic as teacher of young children	4090(63.5)	117(61.9)	.93(.7-1.3)	1.13(.80-1.60)
Most people would not hire a former alcoholic to take care of their children	4008(62)	119(60.1)	.92(.7-1.3)	.85(.59-1.23)
Most employers would hire a former alcoholic if they are qualified	5355(83.3)	156(80.3)	.82(.5-1.3)	.87(.57-1.35)
Most employers will pass over the application of a former alcoholic in favour of another applicant	3947(61.4)	116(59.5)	.92(.6-1.4)	.88(.60-1.29)
Most people would treat a former alcoholic the same as anyone else	5195(80.5)	140(70.4)	.58(.4-.9)**	.59(.39-.89)*
Most women would be reluctant to date a man who has been hospitalized for alcoholism	4593(73.6)	130(66.1)	.70(.5-1.0)	.79(.53-1.19)

*Note. A*ll *n*'s were unweighted. All percents were weighted. ***p< .001. **p<.01. *p<.05.
N's and percentages indicate the number of individuals who endorsed each statement as true.
AOR1 – Adjusted for sex, age, marital status, income level, education level, race/ethnicity, MSA type, and physical conditions.

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