The moderating role of social networks in the relationship between alcohol consumption and treatment utilization for alcohol-related problems

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A R T I C L E   I N F O

A B S T R A C T

Many individuals wait until alcohol use becomes severe before treatment is sought. However, social networks, or the number of social groups an individual belongs to, may play a moderating role in this relationship. Logistic regression examined the interaction of alcohol consumption and social networks as a predictor of treatment utilization while adjusting for sociodemographic and clinical variables among 1,433 lifetime alcohol-dependent respondents from wave 2 of the National Epidemiologic Survey on Alcohol Related Conditions (NESARC). Results showed that social networks moderate the relationship between alcohol consumption and treatment utilization such that for individuals with few network ties, the relationship between alcohol consumption and treatment utilization was diminished, compared to the relationship between alcohol consumption and treatment utilization for individuals with many network ties. Findings offer insight into how social networks, at times, can influence individuals to pursue treatment, while at other times, influence individuals to stay out of treatment, or seek treatment substitutes.

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1. Introduction

1.1. Treatment for alcohol related problems

An estimated 8.5% of Americans experience an alcohol use disorder at some point in the past-year (Hasin, Stinson, Ogburn, & Grant, 2007). While effective treatment exists, only about 28% of individuals suffering from alcohol use disorders seek help for their problems (Cohen, Feinn, Arias, & Kranzler, 2007). Common reasons that many individuals with alcohol use disorders site for not seeking treatment include: feeling like they are strong enough to handle it on their own, thinking the problem will get better on its own, or they stopped drinking on their own (Cohen et al., 2007). From these commonly cited reasons for not seeking treatment, it is assumed that most individuals with alcohol problems wait until their problems are severe before any treatment is sought. This conclusion is further supported in research which suggests that an individual's level of alcohol consumption is a robust measure associated with treatment use (Booth, Yates, Petty, & Brown, 1991; Kaskutas, Weisner, & Caetano, 1997), such that higher rates of alcohol consumption are associated with higher rates of treatment utilization.

1.2. Social networks and treatment utilization

An objective of *Healthy People 2020* (USDHHS, 2010a) is to increase the number of individuals with alcohol problems who receive treatment. Paired with the National Institutes of Health strategic initiative of systems-thinking approaches to health (USDHHS, 2010b), the number of groups an individual belongs to in their social network may reveal important keys to how persons experiencing health problems, such as alcohol use disorders, adopt strategies to promote health and well-being.

Generally speaking, social networks represent a stable influence in decisions made concerning health and wellness (Cohen, Doyle, Skoner, Rabin, & Gwaltney, 1997; House, Landis, & Umberson, 1988; Morgan, Neal, & Carder, 1997). Here, social networks are examined using a social network diversity framework such that social networks are defined as the number groups for which individuals report some level of participation between 2 weeks and 1 month (Brissette, Cohen, & Seeman, 2000).

When operationalized in this manner, the available research on the relationship between social networks and treatment utilization for alcohol problems presents conflicting findings. On the one hand, social networks can have a negative relationship with treatment utilization for alcohol problems. For example, the increased negative feedback concerning an individual's drinking that comes from large social networks is associated with natural recovery (remission from alcohol use disorder symptoms in the absence of treatment utilization) (Humphreys & Noke, 1997). Additionally, large amounts of social support found in large social networks are negatively related to treatment utilization as well (Maulik, Eaton, & Bradshaw, 2009).

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On the other hand, social networks can have a positive influence on treatment utilization. For example, social networks that transmit social norms about cutting down on alcohol consumption is a significant predictor of treatment utilization (Weisner, 1993). Additionally, social networks that transmit information about treatment services, including where to access treatment, what types of treatments are available, and whether they are perceived as effective is also associated with increased treatment utilization (Gourash, 1978).

From these findings, it is not clear what role social networks play in relationship to treatment utilization for alcohol related problems. However, when social networks are considered as a moderator in the relationship between alcohol consumption and treatment utilization, a possible explanation for the roles of social networks emerge. For example, individual with high levels of alcohol consumption that belong to a large number of social networks may receive the positive influences from social networks known to have a positive relationship with treatment utilization, including social norms messages concerning cutting down on alcohol use and where to access treatment services. Furthermore, individuals with high levels of alcohol consumption that belong to a large number of social networks may have problems so great that the negative feedback concerning drinking and elevated social support may not provide the assistance needed to achieve recovery unassisted by treatment (e.g. natural recovery). Thus, for individuals with high levels of alcohol consumption that belong to many social networks, it is likely that a strong, positive relationship between alcohol consumption and treatment utilization exists.

However, individuals with high levels of alcohol consumption that belong to few social networks may be offered less knowledge from these networks concerning whether their drinking is excessive and what they can do about it (seeking treatment). Given the diminished social influence, individuals with high levels of alcohol consumption who belong to few social networks may experience a weakened relationship between alcohol consumption and treatment utilization compared to individuals with high alcohol consumption that belong to a large number of social networks.

In an attempt to understand the role that social networks play in treatment use for alcohol related problems, the moderating role that social networks play between level of alcohol consumption and treatment utilization for alcohol related problems is examined. The following hypotheses are formally tested: 1) Controlling for additional known factors related to treatment utilization, there is a positive relationship between higher alcohol consumption and treatment utilization for alcohol related problems. 2) Controlling for additional known factors related to treatment utilization for alcohol problems, social networks moderate the positive relationship between alcohol consumption and treatment utilization. As the number of social networks increases, the strength of the relationship between alcohol consumption and treatment utilization increases. However, as the number of network ties decreases, the strength of the relationship between alcohol consumption and treatment utilization decreases.

2. Materials and methods

2.1. Sample

The sample for this study includes respondents who met diagnostic criteria for past-year DSM-IV alcohol dependence at wave 2 of the National Epidemiologic Survey on Alcohol Related Conditions (NESARC) ($N = 1,433$). Alcohol dependence and psychiatric disorders were established with the Alcohol Use Disorder and Associated Disabilities Interview Schedule (AUDADIS-IV) (Grant et al., 2007, 2003, Grant, Kaplan, & Stinson, 2007; Ruan, Goldstein, Chou, Smith, et al., 2008). A sample of adults with alcohol dependence was preferred to examine treatment utilization, as previous work has

shown individuals with alcohol dependence are 3 times as likely to seek treatment than individuals with less severe alcohol use disorders, including alcohol abuse (Cohen et al., 2007). NESARC is a population-representative survey of United States adults aged 18 or older living in noninstitutionalized settings (Grant et al., 2007; Grant, Dawson, et al., 2003; Hasin et al., 2007). The NESARC data are weighted to represent the U.S. general population based on the 2000 decennial census and to reflect survey design characteristics including oversampling of women, Black and Hispanic individuals, and persons of younger age (Grant, Dawson, et al., 2003). Only wave 2 NESARC data were used because social network measures are contained only in the second wave. The response rate for wave 2 was 86.7% among wave 1 participants who were eligible for re-interview. All analyses of NESARC data were conducted in methods consistent with IRB guidelines for secondary data analysis.

2.2. Measurement

2.2.1. Alcohol consumption

Individual alcohol consumption is measured through self-reported average daily alcohol consumption in the past year, in ounces. This is the only measure present in the NESARC that examines alcohol use across a variety of alcoholic beverages, including beer, wine, wine coolers and hard liquor. Alcohol consumption is computed as a continuous measure that standardizes alcohol content, in ethanol, among different beverages. The reliability of this alcohol consumption measure available in the NESARC has shown an acceptable level of reliability (ICC = .70) (Grant, Dawson, et al., 2003).

2.2.2. Social networks

Social networks are measured by the social network index (Cohen et al., 1997), which examines the number of social groups in which the respondent has regular contact (i.e. at least once every 2 weeks) with at least one person. Through the Social Network Index, a count variable was created that assessed individuals for membership in 11 different types of social groups. See Table 1 for the types of groups assessed in the Social Network Index.

Table 1
Social Network Index.

1. Are you married, dating, or involved in a romantic relationship? (Yes/No)
2. How many of your grown children do you see or talk to on the phone or Internet at least once every 2 weeks?
3. Do you see or talk on the phone or Internet to any of your parents or people who raised you at least once every 2 weeks? (Yes/No)
4. Do you see or talk on the phone or Internet to your spouse's/partner's parents or other people who raised your spouse/partner at least once every 2 weeks? (Yes/No)
5. How many of your other relatives, not counting spouses, partners, children, parents or parents-in-law do you see or talk to on the phone or Internet at least once every 2 weeks?
6. How many close friends do you see or talk to on the phone or Internet at least once every 2 weeks?
7. How many fellow or teachers do you see or talk to on the phone or Internet at least once every 2 weeks?
8. How many people do you work with that you see or talk to on the phone or Internet at least once every 2 weeks?
9. How many of your neighbors do you visit or talk to at least once every 2 weeks?
10. How many people involved in volunteer/community service do you see or talk to on the phone or Internet at least once every 2 weeks?
11. How many members of your religious group do you see or talk to socially every 2 weeks?
12. Thinking about all other groups together, how many members of these other groups do you see or talk to on the phone or Internet at least once every 2 weeks?

Social network diversity scoring: If respondent is married, or responds with a number of one or greater for each of the following questions, participant is a member of the social network.
Social network size scoring: Count of the number of individuals a respondent reports within each of the following questions.
Source: Brissette et al., 2000.