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Alcohol treatment outcomes following discharge from a partial hospital program

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Abstract

Background: Thousands of individuals in the United States seek alcohol treatment each year, typically in outpatient settings. Partial hospital programs provide a high level of structured, individualized outpatient care for individuals who are in treatment for alcohol use disorder. Previous research in other outpatient and inpatient settings has found that psychological distress, pain, and aftercare utilization are associated with treatment outcomes.

Objectives: The current study evaluates baseline characteristics and aftercare utilization predictors of alcohol use outcomes of individuals in a week-long partial hospital program.

Methods: The 113 participants (59.3% male) were interviewed during their time in the program and then were reassessed one month post-discharge.

Results: Results indicated that a greater number of mental health provider visits and 12-step attendance were associated with abstinence at follow-up such, while baseline characteristics did not consistently predict outcomes.

Conclusions: Findings highlight the importance of aftercare planning, particularly in our more severe, clinical sample.

Keywords

outpatient treatment; alcohol use disorder; psychological distress; chronic pain; aftercare utilization

Alcohol use continues to be a prevalent problem in the United States, with close to 7% of the adult population meeting diagnostic criteria for an alcohol use disorder (AUD) in the past year (SAMHSA, 2015). Despite the high rate of problematic use, only 1.1% of the U.S. adult population received alcohol treatment in the past year, most commonly in outpatient settings (SAMHSA, 2015). Outpatient substance use treatment can take a variety of forms (i.e., outpatient weekly psychotherapy, intensive outpatient treatment (IOP), partial hospital day treatment programs) depending on the severity of the problem and risk posed to the

individual from continued use. For individuals who require a high level of care and are not at risk for harm, partial hospital day treatment programs are the most structured and time-intensive alternative to inpatient services.

Although there is no universal definition of the elements of a partial hospital day treatment program, most such programs attempt to address individuals' needs through group and individual psychotherapy, medication, and case management for approximately 20 hours/week over a period of 1–2 weeks, excluding weekends and nights (Center for Medicare and Medicaid Services, 2012). Partial hospital programs are designed to be utilized either as a step-down from inpatient detoxification and/or as a precursor to less intensive outpatient services (National Association of Private Psychiatric Hospitals, 1990). Given the time and money spent on treatment and the problematic consequences of long-term alcohol use, it is important to determine the individual characteristics and post-treatment factors that are associated with outcomes following partial hospital day treatment discharge.

Much of the treatment outcome research regarding the effectiveness of outpatient substance use programs comes from research in IOP settings, which offer fewer hours of weekly services compared to partial hospital options—typically 10–12 hours per week—albeit in similar group and individual formats. Abstinence rates six month post-graduation from IOP treatment vary, ranging from one-third (Bottlender & Soyka, 2005) to three-quarters of participants (Wallace & Weeks, 2004). Much less is known regarding relapse outcomes in patients having undergone partial hospital treatment.

Several individual characteristics have been consistent predictors of outcomes in previous AUD treatment studies. Research in other outpatient settings has established that frequent, high quantity drinking and problematic use-related consequences are associated with subsequent relapse into use (Adamson et al., 2009; Witkiewitz & Marlatt, 2007). In addition, psychological distress (depression and anxiety) are among the most common predictors of relapse (Marlatt & Gordon, 1985; Marlatt & Donovan, 2005; Witkiewitz & Marlatt, 2007). Individuals with AUD have high rates of depressive or anxiety disorder compared to the general population (Grant et al., 2015). Those with comorbid anxiety or depression diagnoses are more likely to consume more alcohol and remain more disabled post-treatment than individuals without a comorbid diagnosis (Burns, Teesson, Neill, & Burns, 2005).

Pain may also contribute to ongoing substance use. Among patients seeking treatment for alcohol and drug use, about one-third of patients report experiencing significant pain (Jakubczyk et al., 2015; Sheu et al., 2008). Many problematic drinkers specifically report using alcohol to cope with physical pain (Alford et al., 2016; Brennan, Schutte, & Moos, 2005; Sheu et al., 2008). Not only does pain predict lapses into heavy drinking among persons during and after treatment (Witkiewitz et al., 2015), it also predicts more negative outcomes associated with use (Brennan et al., 2005).

In addition to individual characteristics at the time of alcohol treatment entry, aftercare treatment engagement may also be associated with longer-term treatment success. Medical or mental health treatment utilization and AA/self-help meeting attendance impacts alcohol-

related outcomes (e.g., Adamson et al., 2009; Mckellar, Stewart, & Humphreys, 2003; Rapp et al., 1996). Although alcohol-related medication (e.g., antabuse, naltrexone, acamprosate, gabapentin, topiramate) is not universally prescribed, research has suggested that some medications are associated with better treatment outcomes (Center for Substance Abuse Treatment, 2006). However, adherence rates are low (e.g., Suh, Pettinati, Kampman, & Brien, 2006). Because continued care through ongoing contact with providers can reduce risk for relapse and extend time before relapse (McKay, 2009), a major goal of partial hospital treatment programs is to coordinate care post-discharge.

The goal of the current study is to evaluate 30-day post-discharge outcomes of individuals seeking treatment for alcohol in the partial hospital program setting, focusing on characteristics of patients and aftercare/treatment utilization. The following hypotheses are evaluated: (1) higher levels of alcohol use at admission will predict increased risk for relapse and higher rates of alcohol use in the month after discharge; (2) baseline anxiety and depression will be associated with higher relapse risk and more drinking at follow-up; (3) chronic pain will be associated with a higher relapse risk and more drinking at follow-up; (4) being prescribed an alcohol-related medication at discharge will predict higher rates of abstinence and lower rates of use; and (5) attending aftercare will be associated with a lower risk of relapse and use.

Material and Methods

Participants and Procedures

Participants (n=113) were consecutive persons seeking treatment for alcohol use at an Alcohol and Drug Partial Hospitalization Program in a New England hospital. Participants were recruited from July 2015 through December 2015. The Alcohol and Drug Partial Hospitalization Program provides treatment each weekday from 9:00 am to 3:30 pm and treats up to 20 patients at a time. This program provides abstinence-based, cognitive-behavioral treatment. Patients attend 3–4 groups/day (e.g., relapse prevention, drink and drug refusal skills, goal setting, etc.), daily individual counseling with a mental health worker, and medication management with an attending psychiatrist. Research study staff screened potentially eligible consecutive participants—at least 18 years of age and met diagnostic criteria for AUD—on the day of program admission (n=156). Participants who were unable to provide informed consent due to acute illness, cognitive impairment, or psychosis, and patients who were unable to complete assessments in English were excluded. Potential participants were not interviewed for the following reasons: refusal (n=6), lack of time to complete assessment prior to program activities starting (n=25), previously enrolled in study (n=5), left program (n=6), and not fluent in English (n=1). The total analytic sample size was 113.

After ensuring eligibility, participants consented to the study and completed questionnaires with a research assistant. Approximately one month following discharge, research assistants contacted participants via telephone to answer questions on their alcohol use, psychological symptoms, and physical pain. Additionally, research staff conducted a records review at discharge to verify aftercare plans. Participants received a \$5 gift card as compensation for

completion of the baseline assessment, and \$30 compensation for the follow-up interview. The Institutional Review Board approved all procedures.

Measures

Alcohol Use

Alcohol use during the 30 days before study enrollment and at follow-up was assessed by the Alcohol Use Disorders Identification Test-C (AUDIT-C; Bradley et al., 1998). Scores range from 0–12: cut-offs for problematic use are 4 for men and 3 for women. In addition to the AUDIT-C, participants were asked how many drinks, on average, they consumed in a typical week over the past 30 days. Relapse was dichotomously defined as any self-reported alcohol use over the 30 days following program discharge.

Chronic Pain

Pain was measured with the Brief Pain Inventory (Cleeland & Ryan, 1994), an assessment of pain intensity and impact. Patients were also asked to indicate the length of time in which they had experienced physical pain. Chronic pain was a dichotomous variable defined as having pain for 6 months or more with at least moderate intensity.

Psychological Distress

Psychological distress was measured with the 4-item Patient Health Questionnaire (PHQ-4; Kroenke, Spitzer, Williams, & Löwe, 2009). The PHQ-4 asks participants to rate how often they have been bothered by problems over the past 2 weeks on a scale of 0 (*not at all*) to 3 (*nearly every day*). Cronbach's alpha coefficients suggest that the PHQ-4 had good reliability ($\alpha = .84$). The PHQ-4 was divided into anxiety ($\alpha = .93$) and depression ($\alpha = .75$). Any score over 3 is considered a positive for anxiety or depression.

Treatment Services Review

At the follow-up assessment, participants were asked about their utilization of aftercare services. Specifically, participants indicated their attendance at physical health and mental health appointments as well as 12-step meetings. Additionally, they indicated whether or not they were prescribed medication at discharge and on how many days they took the medication. The medical record was reviewed for verification of discharge medication and appointments made with providers.

Analysis Plans

We present descriptive statistics to summarize self-reported ratings of alcohol use, pain, psychological distress, and treatment utilization at baseline. We used logistic regression to determine if any participant characteristic at baseline predicted study drop-out. Subsequent analyses only included data from individuals who completed follow-up. Logistic regression evaluated alcohol use variables, pain, psychological distress, and aftercare utilization as predictors of follow-up self-reported abstinence. Exploratory analyses evaluated alcohol use among participants who relapsed utilizing linear regression. Missing data was deleted listwise.

Results

Characteristics of Study Sample

Participants were primarily male (59.3%) and ranged in age from 19–84 ($m=44.27$, $SD=14.15$). The sample was primarily Caucasian (81.4%) and non-Hispanic/Latino (93.8%). Approximately half of participants were single (51.3%) and 29.2% were married. Almost half of participants in the sample were employed at least part-time (42.5%). Participants were referred to the program in a variety of ways: self-referral (57.5%), referral by a psychiatrist or mental health counselor (16.8%), by inpatient detoxification program staff (11.5%), family or friend (10.6%), PCP (2.7%), or emergency room personnel (0.9%). Participants' average length of stay in the program was 7.13 days ($SD=3.66$).

Table 1 displays descriptive characteristics of individuals enrolled in the study. Participants averaged a score of 9.61 on the AUDIT at baseline, and consumed an average of 60 drinks per week. Participants averaged a score of 7.63 on the PHQ. Almost half of participants had experienced chronic pain (49.51%).

Upon discharge, medical record review indicated that 27% ($n=24$) of the follow-up sample were prescribed at least one new medication for their alcohol use (16 were prescribed antabuse, 10 naltrexone, 5 gabapentin, and 1 topiramate). Over half (61%) reported that they attended a visit with their PCP, three-quarters (75%) attended at least one visit with a mental health provider, and 58% attended at least one AA/self-help meeting during the 30 days following program discharge.

Attrition

Of the 113 participants enrolled in the study, 89 (78.8%) completed the follow-up assessment. Logistic regression analyses revealed that there was no significant differential attrition by baseline AUDIT score, average number of drinks per week gender, total PHQ score, anxiety or depression subscores, or chronic pain.

Treatment Outcomes

Predictors of Relapse: Patient Characteristics

Among the 89 participants who completed the follow-up, 62 (69.7%) were abstinent during the follow-up assessment period. Preliminary logistic regression analyses revealed that neither program completion ($OR=1.16$, $CI=.27-5.05$) nor number of days of program treatment received ($OR=1.03$, $CI=.90-1.17$) significantly predicted abstinence. A series of binary logistic regression models tested whether baseline alcohol use, psychological distress, or chronic pain predicted abstinence (see Table 2). Results indicated that neither alcohol variables (AUDIT total, total drinks per average week) at baseline, chronic pain, or psychological distress predicted rates of abstinence. Subsequent analyses including individuals who did not complete follow-up coded as having relapsed found the same pattern of results.

Treatment Utilization

Being prescribed an alcohol-related medication at discharge did not reduce the rate of relapse, nor did visiting a PCP. However, visiting a mental health provider was associated with higher rates of abstinence, and a greater number of visits were associated with increased abstinence. Additionally, there was a relationship between higher number of AA meetings attended and abstinence (Table 2). Results from analyses that included individuals who did not complete follow-up coded as having relapsed again revealed the same pattern of findings.

Exploratory Evaluation of Drinking Outcomes among Relapsers

Subsequent exploratory analyses utilized data only from individuals who relapsed at the follow-up (n=27). Paired sample t-test revealed that participants' ratings of the number of drinks they consumed in typical week in the month following treatment was significantly less than the month prior to hospital admission ($t=4.60$; $p<.01$). Thus, even among individuals who relapsed, alcohol use one month post-treatment was significantly lower than pre-treatment levels meaning that patients did not relapse to pre-treatment levels of use.

Discussion

This study evaluated the patient characteristics and treatment outcomes of individuals seeking alcohol treatment in a partial hospitalization program. In addition to high levels of problematic drinking, patients receiving treatment in a partial hospitalization program also demonstrated elevated levels of psychological distress and almost half reported chronic pain. Results suggested that less than a third of the sample relapsed to alcohol use at the one-month follow-up. No baseline characteristics predicted the possibility of relapse. Importantly, aftercare utilization was predictive of abstinence: individuals who saw a mental health provider and attended 12-step meetings were more likely to have successful a short-term post-treatment outcome.

Aftercare treatment remains the critical element to the success of day program participants. Our findings support the goal of the Partial Hospital program to facilitate in aftercare planning, thus reducing burden on patients. Attending scheduled mental health visits after discharge was associated with more successful outcomes. Findings are consistent with continuing care literature where outcomes are most promising when care is ongoing and accessible to the individual (McKay, 2009). Additionally, findings mirror previous work in the 12-step literature: AA attendance predicts better treatment outcomes, (Gossop, Stewart, & Marsden, 2007; Kelly et al., 2006) (Mckellar et al., 2003). However, some individuals in recovery from substance use issues report negative views of 12-step programs, particularly regarding views on spirituality (Kahler et al., 2006; Kelly et al., 2006) and may never choose to seek these services. Locating less "spiritual" meetings may be a priority for some.

The Alcohol and Drug Partial Hospitalization Program from which participants were recruited incorporates psychiatric and psychological treatment over the course of approximately one week. Patients admitted to this program received daily group cognitive behavioral therapy, individual counseling, and medication management. Thus, this program

comprehensively addressed the individual's unique needs both while they were in treatment and at discharge through aftercare planning. Participants came from a clinical sample of problematic users whose baseline rates of use were high: participants averaged 60 drinks per week at baseline, yet level of drinking did not predict abstinence post-discharge from the program.

Unexpectedly, psychological distress did not predict alcohol-related outcomes. Previous research has found those who experience comorbid anxiety or depression and AUD have higher rates of relapse, heavy drinking, and other negative outcomes than those who do not (Bradizza, Stasiewicz, & Paas, 2006; Burns et al., 2005). Indeed, many problematic drinkers use alcohol to cope with anxiety and depression, and this problematic coping motive for alcohol use is associated with more negative outcomes among clinically-impaired individuals in IOP (Bottlender & Soyka, 2005). It is possible that the rates of anxiety and depression in the current study measured at baseline were symptoms of protracted withdrawal and that the true impact of these symptoms would not be immediately evident. Perhaps these symptoms were successfully addressed in treatment: approximately half of individuals self-reported that they were prescribed anti-depressants during the program and at discharge (51.7%) and 40.4% were prescribed medication for anxiety. Given that psychological distress was not measured at follow-up, it is not possible to discern the impact of continued alcohol use or abstinence on these indices. Aftercare with a mental health provider presumably addresses negative affect; thus, perhaps the reduced risk of relapse among those who attended mental health appointments is partially explained by a focus on dual diagnosis.

As reported in other studies (Brennan et al., 2005; Jakubczyk et al., 2015), physical pain was common in our sample. Results suggest that, although not predictive of outcomes in this small sample, pain should be carefully considered in alcohol treatment (Murphy et al., 2015) as both a motive for use and a predictor of alcohol use. The inclusion of therapy or medical care that is specifically focused on pain management may be beneficial in order to reduce this problematic drinking motive.

Alcohol medication was not prescribed for many individuals in the partial hospital program (we lack data on the reasons for this) nor was medication prescription related to relapse outcomes in the first month post hospitalization. Still, among those receiving medication, the adherence rates in our sample were high (82%), although we did not include a biological assay, objective measure (like MEMS) or observer report for verification. Future research should include an additional measure of adherence. Given the potential benefit of alcohol-related medications (Lee, Kresina, Campopiano, Lubran, & Clark, 2015), it was surprising to observe low rates of prescription in the context of this intensive setting. Future research may help to address reasons for low alcohol-related medication use both from the patient and treating physician's perspectives.

Several important limitations should be noted. A one-month follow-up is brief, although often the highest risk period for relapse in the first 3 months (c.f. Marlatt & Donovan, 2005); thus the study of early outcomes may shed light on individual characteristics and treatment factors that lead to longer-term success. Additionally, our sample size was small, particularly

among the relapse group, and recruited from a single setting. Given the diversity of content and experience in partial programs and IOPs, it is difficult to compare findings to those from other studies. These patients self-selected day program treatment; we do not have a comparison treatment condition. Lastly, treatment focus of the partial hospitalization program and our analysis was abstinence and this may not have been the goal of each individual. Freedom in goal selection – whether moderation or abstinence – is associated with higher self-efficacy for achieving treatment success (e.g., Lozano & Stephens, 2010). Therefore, future studies may benefit from assessing personal treatment goals as they relate to outcomes.

Conclusions

Baseline drinking and psychological characteristics had little influence on drinking outcomes in the month post discharge from the program where two-thirds remained abstinent. Aftercare planning is crucial, and missed appointments should trigger immediate contact with patients as these may be signals of drinking risk. Understanding how to increase the use of medications, and how to optimize aftercare utilization are critical to improving the care of this population.

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Table 1.

Descriptive Statistics of Alcohol, Psychological, and Pain Variables

Measure	Baseline (n=113)		Follow-Up (n=89)	
	Mean	SD	Mean	SD
<u>Alcohol Measures</u>				
AUDIT total score	9.61	2.86	1.45	2.82
Drinks per typical week	60.00	58.03	2.35	8.09
<u>Psychological Distress</u>				
PHQ Total	7.63	3.33	---	---
PHQ Anxiety	4.18	1.91	---	---
PHQ Depression	3.45	1.83	---	---
<u>Chronic Pain (%)</u>	0.41	0.49		
<u>Treatment Utilization</u>				
Any alcohol-related medication (%)	---	---	0.27	0.44
Any PCP visits (%)	---	---	0.61	0.49
# PCP visits			0.76	0.74
Any mental health provider visits (%)	---	---	0.75	0.43
# mental health provider visits			3.15	4.36
Any 12-step meetings (%)	---	---	0.58	0.50
# 12-step meetings			9.01	13.68

Table 2.

Predicting Abstinence and Quantity of Alcohol Use at Follow-Up

	<u>Abstinence</u>	
	OR	CI
Gender	2.47	0.98–6.22
<u>Alcohol Use</u>		
AUDIT total score	1.11	0.95–1.30
Total weekly drinks at baseline	1.00	0.99–1.01
<u>Psychological Distress</u>		
Total psychological distress	1.07	0.93–1.22
Anxiety	1.16	0.92–1.46
Depression	1.04	0.81–1.34
<u>Chronic Pain</u>	1.70	0.87–6.37
<u>Treatment Utilization</u>		
Any alcohol-related medication	0.64	0.24–1.72
Any PCP visits	1.69	0.68–4.22
# PCP visits	1.64	0.84–3.21
Any mental health provider visits	4.16	1.51–11.50
# mental health provider visits	1.22	1.00–1.50
Any 12-step meetings	1.78	0.71–4.44
# 12-step meetings	1.10	1.02–1.19

Note: all predictor variables were measured at baseline except treatment utilization variables.

Significant values are represented in bold.