Predictors of Client Dropout from Intensive Outpatient Substance Use Disorder Treatment

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Abstract

Can we predict client dropout from Substance Use Disorder (SUD) at the time of their admission? Clients drop out of treatment for SUD at alarmingly high rates[5]. When clients drop out of treatment prior to successful completion, they don't benefit from the education, skills, and strategies needed to build and maintain long-term recovery. The University of Minnesota's Center for Practice Transformation (CPT) partnered with NUWAY® to investigate the association between participant characteristics and metrics of recovery at admission and early dropouts from treatment. Results indicate that recovery metrics are better predictors of early dropout from SUD treatment.

Background

Dropout rates from SUD treatment programs are high and retaining clients in treatment until they complete programming is as critical to the field as it is the people it serves. Approximately 30% of clients receiving residential services leave treatment programming before completion[3] and the dropout rates for outpatient services are often much higher at 50% or more[5]. By identifying risk factors for early dropout at the time of admission, measures can be taken to improve retention rates among those at risk for early dropout[1] leading to successful program completion and better long-term recovery outcomes. Among the limited number of studies done on SUD treatment dropout, there has not been a consensus regarding factors that relate to early dropout and findings are often contradictory. Prior studies have shown that factors associated with dropout include co-occurring mental health diagnoses, sex, age, race, and personality traits[2,4,5]. However, these factors are not replicated across all studies reviewed[5]. The lack of clarity in identifying predictors of early dropout is concerning and limits the ability to identify and adapt treatment strategies to meet the needs of clients who are most at risk of leaving treatment early. This study aims to identify predictors of early dropout at the time of admission to intensive outpatient treatment programming.

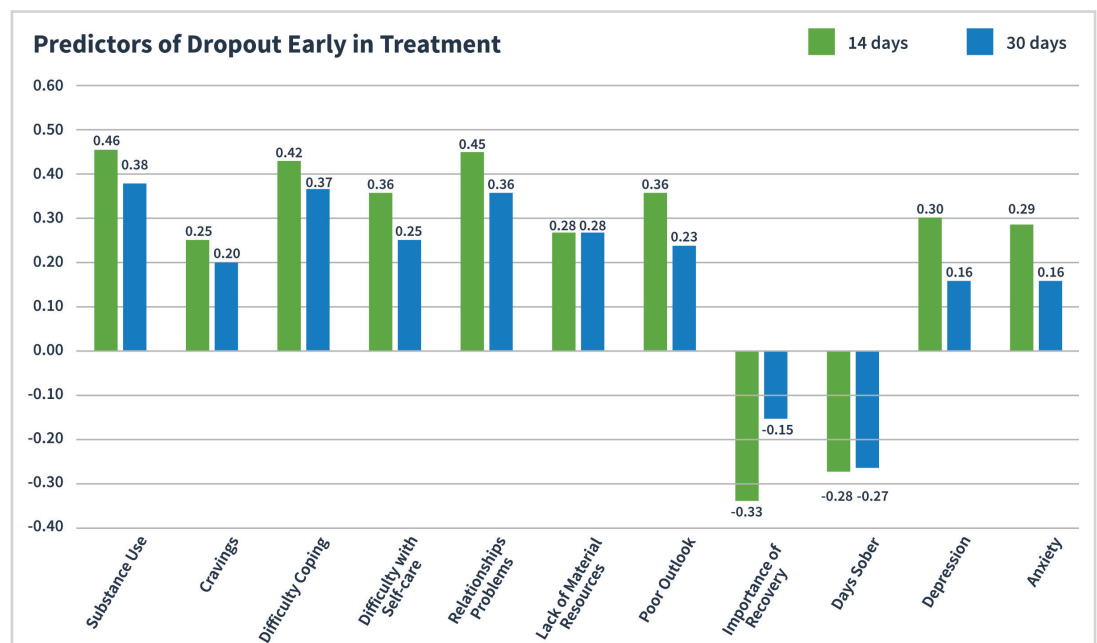This study was conducted by the University of Minnesota's Center for Practice Transformation (CPT) as part of an ongoing larger study of outcomes at NUWAY®, a large non-profit organization in the Midwest serving individuals recovering from substance use disorders and co-occurring mental illnesses.

Methods

Upon admission to intensive outpatient services, clients were voluntarily enrolled in the study and completed an admissions survey including recovery metrics such as substance use, depression, anxiety, self-care, relationships, coping, outlook on life, material resources and importance of recovery. Demographic characteristics were also collected from the admission survey and participant electronic health record (EHR). At the time of their discharge, information regarding length of time in programming was retrieved from the EHR. Subsets of participants who received fewer than 14 days of treatment and fewer than 30 days in treatment were identified. Analysis using Fisher's Exact and Kruskal-Wallis tests are reported using Cramer's V and effect sizes using Cohen's d respectively.

Results

At the time of the proceeding analyses, there were 5,707 participants included in the study who had discharge dates reported in the EHR. Of the total participants, 13.8% (n=631) dropped out before 14 days of treatment and 31.6% (n=1,446) dropped out before 30 days of treatment.

Predictors of Dropout Early in Treatment

14 days — green; 30 days — blue

Predictor	14 days	30 days
Substance Use	0.46	0.38
Cravings	0.25	0.20
Difficulty Coping	0.42	0.37
Difficulty with Self-care	0.36	0.25
Relationships Problems	0.45	0.36
Lack of Material Resources	0.28	0.28
Poor Outlook	0.36	0.23
Importance of Recovery	-0.33	-0.15
Days Sober	-0.28	-0.27
Depression	0.30	0.16
Anxiety	0.29	0.16

Demographic Characteristics

Characteristics of participants at admission showed small but significant associations with early dropout at both 14- and 30-days. The largest associations were observed with living situation prior to admission and 14-day dropout (V = 0.101, p = < 0.001) and 30-day dropout (V = 0.110, p = < 0.001); prior treatment setting and 14-day dropout (V = 0.111, p = < 0.001) and 30-day dropout (V = 0.120, p = < 0.001). There were smaller but significant associations observed between both early dropout groups and race, education, felony status, and recent homelessness. There was a small but significant association between marital status and 30-day dropout but not 14-day dropout. There were no associations between age, sex, gender identity, employment status, court ordered treatment, number of treatment attempts, and age of first use.

Two Week Dropout Recovery Metrics

All but one of the recovery metrics measured at admission showed significant associations with dropout prior to 14 days in treatment. Metrics with a moderate associations were current substance use (d = 0.46, p = < 0.001), relationship problems (d = 0.45, p = < 0.001), and difficulty coping (d = 0.42, p = < 0.001). Those with small to moderate associations were difficulty with self-care (d = 0.36, p = < 0.001), poor outlook on life (d = 0.36, p = < 0.001), importance of recovery (d = -0.33, p = 0.001), and depression (d = 0.30, p = < 0.001). There were smaller but significant associations between 14-day dropout and anxiety, days sober, lack of material resources, and cravings. Food insecurity had no association with dropout prior to 14 days in treatment.

One Month Dropout Recovery Metrics

The same recovery metrics as those observed for participants who dropped out prior to 14 days in treatment were observed in those who dropped out prior to 30 days in treatment. Metrics with moderate to small associations were substance use (d = 0.38, p = < 0.001), difficulty coping (d = 0.37, p = < 0.001). Those with significant but small associations with 30-day dropout were lack of material resources, days sober, difficulty with self-care, cravings, depression, anxiety, depression, and importance of recovery. Food insecurity had no association with 30-day dropout.

Discussion

This study adds to the extant literature on predictors of treatment dropout and comparing these findings with prior research can help to shed light on this contradictory and poorly understood topic. Nearly all demographic characteristics observed at admission are associated with early dropout before two weeks and one month of treatment. However, these associations are very small, enough to be practically meaningless. Because there were no associations between dropout and age, sex, gender identity, employment status, court ordered treatment, number of treatment attempts, and age of first use, we can assume that they do not exist or are so small to be of no practical consequence. Some of these findings contrast with prior studies which found that sex and prior treatment history were predictive of dropout[5], adding to the lack of clarity in the literature. Therefore, it seem client characteristics are not good predictors of early dropout from treatment in this setting.

Recovery metrics seem to be more useful as predictors of early dropout than demographics. Most metrics of recovery measured in this study including substance use, cravings, coping, self-care, relationships, material resources, outlook on life, recovery importance, days sober, depression, and anxiety were found to predict early dropout prior to both 14 days and 30 days. There tended to be stronger effects on dropout at 14 days, leading to stronger prediction of dropout, than before 30 days. Moreover, metrics with positive effects were all oriented toward struggling while metrics with negative effects indicated higher functioning. This means that clients struggling at admission are more likely to drop out of treatment early and those who have been sober longer and think of recovery as more important are not as likely to drop out of treatment early.

Findings from these analyses identified multiple factors with the potential to change retention trajectory. The strongest predictors of all dropout were substance use, difficulty coping, and relationship problems. Many programs do not teach coping and relational skills early in care, opting instead to provide basic psychoeducation on SUD. Given the findings of this study, it may be beneficial for outpatient treatment programs to implement treatment curriculum that incorporates coping skills training and relationship building skills within the first two weeks of care, potentially limiting the likelihood that clients will drop out of care early. Moreover, because recovery metrics gathered at admission are predictive of dropout, they can and should be used to individualize treatment, improving client retention through completion of treatment.

Limitations

This was an initial exploration of the data from this longitudinal study with limited ability to uncover complex interactions between variables. Future research using advanced statistical modeling may better parse the relationships between characteristics, recovery metrics and early dropout.

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