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Course of remission from and relapse to heavy drinking following outpatient treatment of alcohol use disorder

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ABSTRACT

Background: We sought to understand alcohol behavior change as a process over time by identifying patterns of relapse and remission after outpatient treatment and evaluating how these patterns predict longer-term clinical outcomes.

Method: We conducted latent profile analyses using data from the outpatient arm in Project MATCH. Relapse and remission episodes were defined by the number of consecutive 14-day periods that included any heavy drinking days and no heavy drinking days. Indicators of each profile were: initial 2-week post-treatment remission/relapse status, number of remission/relapse transitions in the first year after treatment, duration of remission episodes, and duration of relapse episodes.

Results: We identified 6 profiles: 1) "remission," 2) "transition to remission", 3) "few long transitions," 4) "many short transitions," 5) "transition to relapse," and 6) "relapse." Profile 1 had the best long-term outcomes. Long-term outcomes were not uniform among individuals with at least some heavy drinking (profiles 2 through 6; ~75% of the sample). Individuals who transitioned back to and sustained periods of remission (profiles 2–4) had better long-term outcomes than those who failed to transition out of relapse (profiles 5–6) following treatment.

Conclusions: Post-treatment change in alcohol use is a process in which individuals variably transition in and out of "relapse" and "remission" statuses. "Any heavy drinking" following treatment is not necessarily a sign of treatment failure. A more nuanced look at the process of AUD change by considering whether individuals are able to transition to and sustain periods of remission seems warranted.

1. Introduction

The clinical course of alcohol use disorder (AUD) is the progression of change in AUD "symptoms" following the initiation of formal treatment or of self-initiated behavior change (Maisto et al., 2014). Although alcohol consumption per se does not constitute a symptom of AUD according to the DSM-5 or ICD-10, it has been the center of attention among those interested in AUD clinical course. Clinical course is an important topic for AUD treatment providers and researchers because of its relation to the problem of maintenance of change. Recent research on AUD clinical course has shown that post-treatment alcohol consumption is characterized by heterogeneity in drinking patterns among individuals and that change within individuals is discontinuous. For example, Witkiewitz and Masyn's (2008) analyses of Relapse Replication and Extension Project (RREP) data identified three drinking trajectories following first use of alcohol over the course of one year post-treatment: frequent heavy drinking, frequent drinking following the first lapse and a return to less frequent drinking, and infrequent moderate drinking. These trajectories were essentially replicated in analyses of two additional data sets yielded from Project MATCH (Matching Alcoholism Treatment to Client Heterogeneity; Witkiewitz et al., 2007) and the COMBINE study (Combined Pharmacotherapies and the Behavioral Interventions for Alcohol Dependence; Witkiewitz et al., 2010). Findings such as these have led to the conceptualization that AUD clinical course is a dynamic change process (DiClemente and Crisafulli, 2016; Witkiewitz and Marlatt, 2004).

Two clinical course "change points" (Frank et al., 1991) that have received major attention are remission and relapse. Remission occurs when the initial change response is maintained for at least a specified period of time, and relapse occurs when a period of remission is disrupted by symptom reappearance. In the case of AUD, relapse has been defined in empirical studies most commonly by the occurrence of any alcohol use (also may be called a "lapse" or a "slip," which, if followed by continued drinking may lead to a full "relapse") or the occurrence of

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"heavy" alcohol use (Maisto et al., 2016b).

Among the clinical course "change points" (response, remission, relapse, recovery, and recurrence) that Frank et al. (1991) defined, AUD clinicians and researchers have paid most attention to relapse (Maisto et al., 2016b). Despite the wide agreement that the broad "change point" concept of AUD relapse is critical, there are divergent views about specifying its definition and whether to view relapse as an outcome or as part of the AUD change course. Traditionally, relapse was considered as an endpoint or as an outcome (of a behavior change episode) in the AUD treatment literature. A different view emerged and gained popularity in the mid-1980s among addictions clinical researchers that relapse is most productively conceptualized as part of the behavior change process (Brownell et al., 1986; Witkiewitz and Marlatt, 2004). This conceptualization of AUD relapse prevails (Hendershot et al., 2011; Maisto et al., 2016b) and is consistent with Frank et al.'s (1991) idea of change points, originally developed for the clinical course of depression.

Given empirical evidence (cited earlier) that implies that the clinical course of AUD, as reflected in one's alcohol consumption, is best viewed as existing on a continuum (also see Miller, 1996a), it is important to justify study of a construct like relapse, which traditionally has been identified as a discrete "state." In this paper, we still identify discrete states of relapse/remission that patients transition between, but we do not consider relapse as an end point or outcome. The major reasons are both pragmatic and clinical. In this regard, Maisto et al. (2016b) noted that the construct of relapse is virtually embedded in the literatures on AUD clinical practice and clinical research, and it is unlikely that use of the term relapse will fade in the near future. In addition, relapse is frequently used in clinical decision-making. Indeed, the construct is often applied as an indicator of treatment prognosis in clinical practice, despite a general lack of empirical evidence suggesting the occurrence of relapse at any given point may predict one's longer-term functioning, which is the ultimate concern of any treatment.

The current thinking that relapse is part of the AUD change process has been mostly considered in conceptual literature, but unfortunately has not been reflected in the empirical literature. Maisto et al. (2016b) reviewed studies published 2010–2015 on AUD relapse in clinical populations and identified 139 unique studies that met inclusion criteria. They found that all studies conceptualized and analyzed relapse as an endpoint or outcome; none modeled relapse as a possibly recurrent event that is part of the AUD change process. This stark lack of correspondence between current conceptualizations and empirical studies likely has slowed progress toward understanding when, how, and why relapse occurs, which is likely to impede progress toward improving the longer-term effectiveness of AUD treatments. Therefore, empirical study of AUD relapse that is aligned with current thinking about AUD clinical course seems to be indicated.

The purpose of this paper was to conduct secondary analyses of Project MATCH data to investigate AUD relapse as part of a process of behavior change. Two-week periods (or "states") of remission and relapse were defined and identified, and transitions (changes) between these states for each participant were coded. We aimed to model the number of both types of transitions occurring in the first year post-treatment, duration of remission episodes, and duration of relapse episodes. The number of transitions and the duration of relapse/remission episodes were chosen as a way to represent in some detail any change in alcohol consumption over time that happens. We also indexed whether an individual was defined as in remission or relapse in the first 2 weeks post-treatment. Because of the heterogeneity of AUD relapse, we aimed to identify subgroups defined by these four variables (number of transitions, duration of remission episodes, duration of relapse episodes, and remission/relapse status in the first 2 weeks post-treatment), and compare them on alcohol-related and psychosocial outcomes 1- and 3-years post-treatment. This study differs from previous research because it focuses explicitly on the frequency of *transitions* between remission and relapse states and the duration of those states, rather than remission or relapse outcome itself. Furthermore, this study investigated the relation between shorter-term remission and relapse events to longer-term course at 3 years post-treatment conclusion, which meets the time criterion for "recovery" from AUD in major psychiatric diagnostic systems such as DSM.

It is important to note that this study is considered an initial, descriptive investigation of the process of AUD clinical course over time. As such, the research design includes simplifying features, such as defining remission and relapse only according to alcohol consumption and time. In addition, this study's aim was not to test whether course of remission and relapse episodes predicts longer-term outcomes independent of other possible predictors such as baseline drinking patterns, but rather to obtain initial empirical evidence of the association between the post-treatment course of relapse and remission episodes and longer-term outcomes. This is essentially clinicians' aim in alcohol and other drug treatment.

2. Method

2.1. Participants and procedure

We used data from the outpatient arm of Project MATCH (Project MATCH Research Group, 1997), a randomized clinical trial that evaluated the efficacy of three psychosocial treatments for AUD. The treatments were Cognitive Behavioral Therapy (CBT; Kadden, 1995), Motivational Enhancement Therapy (MET; Miller et al., 1992), and Twelve-Step Facilitation (TSF; Nowinski et al., 1992) for AUD. Participants (n = 952) were recruited across nine research centers in the U.S. and included individuals who were actively drinking during the 3 months prior to study enrollment and who were seeking outpatient treatment (the aftercare arm of Project MATCH was excluded from the present analysis). Of the 952 outpatients, 877 (92.1%) had drinking data available during the follow-up period and were included in the present analyses. Among patients included in the present study, 28.5% were female, 20.0% were non-White, and the mean age was 38.9 (SD = 10.6).

During the 12-week treatment period, a total of 61.2% of the participants reported consuming at least one drink (Maisto et al., 2016a). Follow-up measures included in the present study were assessed at baseline and 12 and 36 months post-treatment. For further details refer to Project MATCH Research Group (1997).

2.2. Measures

2.2.1. Alcohol consumption

Alcohol use was measured using the Form-90 (Miller, 1996b), a calendar-based method to obtain retrospective self-reports of alcohol use in the previous 90 days. The Form-90 was administered at each post-treatment assessment. Drinking data were used to quantify periods of relapse and remission, described further later in the Analytic Approach section. The 1- and 3-year post-treatment summary alcohol use variables encompassed the past 30 days and included percent drinking days (PDD), defined as the percentage of days in which any alcohol was consumed, percent heavy (4/5 drinks in a day for women/men) drinking days (PHDD), and drinks per drinking day (DDD), defined as the average number of drinks on days that an individual reported drinking. Many studies have illustrated the reliability and accuracy of the Form 90 (Witkiewitz et al., 2015a,b).

2.2.2. Alcohol-related negative consequences

The Drinker Inventory of Consequences (DrInC; Miller et al., 1995) was used to obtain self-reports of alcohol-related negative consequences at 1 and 3 years post-treatment. Patients reported on a 4-point scale (1 = never, 4 = daily or almost daily) the frequency of 45 alcohol-related consequences. Internal consistency of DrInC in this sample ranged from α = 0.93–0.96 at baseline and 12 month follow-up, respectively.