Journal of Substance Abuse Treatment 80 (2017) 52–58

Contents lists available at ScienceDirect

Journal of Substance Abuse Treatment

Patient adherence to multi-component continuing care discharge plans

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ARTICLE INFO

Article history:
Received 10 April 2017
Received in revised form 2 July 2017
Accepted 5 July 2017
Available online xxxx

Keywords:
Adherence
Compliance
Residential
Outcomes
Substance use disorder

ABSTRACT

Intuitively, it is assumed that greater patient adherence to treatment recommendations in substance use disorder (SUD) treatment is associated with favorable outcomes, but surprisingly, there is limited research systematically examining the adherence–outcome relationship in the context of the continuing care phase post-discharge from residential treatment. This study sought to determine the effect of adherence to multi-component continuing care plans on long-term outcomes among patients following the primary treatment episode. Data were abstracted from electronic medical records for 271 patients (59.0% male) discharged from a U.S. residential program between 2013 and 2015. Patients were categorized based on their level of adherence to their individualized continuing care discharge plan, and studied through retrospective record review for 12 months post-discharge. 12-month outcomes included past 30-day and continuous abstinence, re-admission, and quality of life. With the exception of re-admission rate, fully adherent patients demonstrated significantly better results on all study outcomes at 12 months compared to patients who were partially or non-adherent. Fully adherent patients were 9.46 times (95% CI: 5.07–17.62) more likely to be continuously abstinent through 12 months relative to the other adherence groups. Fully adherent patients were 7.53 times (95% CI: 2.41–23.50) more likely to report a positive quality of life at 12 months relative to the other adherence groups. The findings support the widely held contention that greater adherence to continuing care discharge plans is associated with favorable long-term outcomes, and provide insight into realistic outcomes expectations for patients who are adherent to their multi-component continuing care discharge plans.

1. Introduction

Poor adherence—defined as the patient's inability to adequately participate in the recommended treatment regimen of a health care provider—has long been considered a major barrier in the treatment of a variety of chronic medical conditions, such as diabetes, hypertension, and asthma (Clark, 1991; Dekker, Dieleman, Kaptein, & Mulder, 1993; Garcia-Perez, Alavarez, Dilla, Gil-Guillen, & Orozco-Beltran, 2013; Graber, Davidson, Brown, McRae, & Woolridge, 1992; Ho, Bryson, & Rumsfield, 2009; Kurtz, 1990). Long-term and complex treatment regimens in particular are inherently susceptible to poor adherence (Aronson, 2007; Dunbar-Jacob & Dwyer, 1991; Griffith, 1990). A sizeable knowledge base, derived primarily from the medical treatment literature, supports a link between the extent to which a patient's behavior (e.g., taking medication, executing lifestyle changes) coincides with his or her prescribed medical treatment (Dunbar, 1980; Lieberman, 1996; Sackett, 1979) and positive treatment outcomes (for reviews see DiMatteo, Giordani, Lepper, & Croghan, 2002; Simpson et al., 2006). Similarly, the treatment of substance use disorder (SUD) is increasingly being contextualized within a disease management framework, much like that of the aforementioned chronic medical conditions (Institute of Medicine [IOM], 2006; McLellan, Lewis, O'Brien, & Kleber, 2000).

Accordingly, there has been a shift in focus in recent years from the primary to secondary or continuing care phase of treatment. The continuing care phase involves providing some form of less-intensive, tapered care (e.g., standard outpatient treatment, community-based self-help/support groups). The overarching goal of any continuing care model is to sustain treatment gains attained in the primary phase in an effort to manage SUD and ultimately achieve remission. Intuitively, it is assumed that greater patient adherence to SUD treatment is associated with favorable outcomes, but surprisingly, there is limited research systematically examining the adherence–outcome relationship in the context of psychosocial (i.e., non-medication-assisted treatment) SUD treatment (Mattson et al., 1998; Project Match Research Group, 1998), and no studies have explicitly focused on adherence to multi-component continuing care plans post-discharge from the primary treatment episode.

According to the U.S. Surgeon General's recent report on alcohol, drugs, and health (Department of Health and Human Services, 2016),

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http://dx.doi.org/10.1016/j.jsat.2017.07.003
0740-5472/

there are a number of evidence-based interventions for the treatment of SUD with demonstrated efficacy and effectiveness. Considerable work also supports the widely held contention that the provision of lower intensity continuing care services delivered in the context of outpatient treatment after the primary treatment phase (e.g., residential) is associated with favorable long-term clinical outcomes (e.g., for reviews see McKay, 2009; Proctor & Herschman, 2014). As elaborated by McKay (2009), however, there is significant between-patient variability in response to continuing care interventions, which can be influenced by a number of patient-level and program-level factors. One patient-level factor of particular interest is adherence given that poor adherence often leads to attrition, which in turn is associated with unfavorable long-term outcomes (e.g., Simpson, Joe, & Brown, 1997). Although participation in continuing care activities (e.g., community-based self-help groups, formal outpatient aftercare programming) is a reliable predictor of positive long-term functioning (McKay, 2009; Proctor & Herschman, 2014), few patients are adherent in that many participate in minimal or no available continuing care options (Etheridge, Hubbard, Anderson, Craddock, & Flynn, 1997), and even fewer receive continuing care for any appreciable length of time. For instance, findings from two large evaluation studies revealed that only about 1 in 5 patients remained in treatment or participated in continuing care beyond 3 months following residential treatment discharge (Ershoff, Radcliffe, & Gregory, 1996; Peterson, Swindle, Phibbs, Recine, & Moos, 1994).

Perhaps the most comprehensive evaluation of SUD treatment adherence comes from a large-scale, multisite clinical trial conducted by the Project MATCH Research Group (1993). Two independent but parallel matching studies were conducted with patients recruited from outpatient treatment settings (Outpatient arm), and patients receiving continuing care treatment following residential treatment completion (Aftercare arm). Reported findings indicated that higher adherence was associated with better outcomes for all patients (Project Match Research Group, 1998). More in-depth analysis of the adherence—outcome relationship from a subsequent Project MATCH investigation among patients with an alcohol use disorder revealed that adherence (i.e., treatment attendance) was positively related to the trial's two primary drinking outcome measures (i.e., % of days abstinent, and drinks per drinking day), and favorable treatment response was contingent on adequate treatment retention (Mattson et al., 1998).

Although Project MATCH was revolutionary for the addictions treatment field and its study design included a number of strengths with important implications for both treatment and research adherence (see monographs by Carroll, 1997; Zweben et al., 1998), further comment on a number of key methodological limitations is necessary. First, Mattson et al. failed to distinguish between the two study arms (i.e., "Outpatient" and "Aftercare") with respect to reported outcomes. The Outpatient arm was comprised of patients recruited from ambulatory clinics and newspaper advertisements, while the Aftercare arm included patients recruited from residential and partial-hospitalization treatment programs. Although the Aftercare group completed a more intensive level of care (e.g., residential) prior to enrollment in the study, the results were presented for the combined sample, which makes it difficult to glean any specific outcome expectations for patients in the continuing care phase of treatment based on level of adherence. Considering that the complexity of long-term treatment regimens in particular make them inherently vulnerable to poor adherence (Aronson, 2007; Dunbar-Jacob & Dwyer, 1991; Griffith, 1990), the association between adherence and outcome for the continuing care group is unclear and warrants further investigation.

Second, it is important to highlight that the indicator of patient adherence in Mattson et al. (1998) was limited solely to attendance through the 12-week treatment phase. In other words, Aftercare patients were only assessed for their level of treatment adherence to 3 months of continuing care; which was used to determine the relationship between early (i.e., 3-month) adherence and long-term outcomes up to 15 months after initiation of treatment. A final limitation relates to the use of strict inclusionary criteria, which warrants caution in generalizing the findings to other naturalistic treatment settings in which patient composition is more clinically diverse. That is, participation was limited to patients with an alcohol use disorder only (i.e., exclusionary criteria included a current drug dependence diagnosis or any intravenous drug use in the 6 months prior to enrollment), and those who were able to identify at least one collateral source to assist in tracking for follow-up evaluations, among other criteria (e.g., patients with current or planned involvement in a more intensive form of treatment for alcohol problems were also excluded). This methodological limitation (although a relative strength in some respects) is particularly salient considering that the use of strict inclusionary criteria often translates to a sizeable proportion of patients being excluded from study. As a result, the clinical implications may be more limited in scope due to the inherent difficulties associated with attempting to generalize findings derived from studies involving homogenous samples to the clinically diverse patients seen in "real world" community treatment settings. Conversely, clinical research studies conducted in naturalistic treatment settings afford researchers with the opportunity to address and overcome traditional barriers to applying laboratory-based research to clinical practice (Atkins, Frazier, & Cappella, 2006; DeFife et al., 2015). Results from naturalistic research designs also have immediate applications for routine practice and can offer important evidence not readily available from tightly controlled efficacy research or clinical trials.

Given that SUD is increasingly being recognized as a chronic condition requiring protracted disease management—comparable to other chronic medical conditions (e.g., hypertension, asthma, diabetes)—studies investigating the impact of patient adherence to continuing care plans and its impact on various outcomes are of paramount importance (McLellan, McKay, Forman, Cacciola, & Kemp, 2005). Several reviews of the vast SUD treatment literature suggest that long-term care strategies produce lasting benefits for individuals with a SUD (McKay, 2009; McLellan et al., 2000; Proctor & Herschman, 2014). However, the availability of evidence-based continuing care treatments in the absence of patient adherence, presumably renders such options of limited clinical value. Extensive evidence, primarily from the diabetes, hypertension, and asthma treatment literature, supports a link between patient adherence and positive treatment outcomes (for reviews see DiMatteo et al., 2002; Simpson et al., 2006). Similar findings, albeit to a lesser extent, have been reported in the SUD treatment literature, such that patients who are adherent to their recommended treatment regimen demonstrate favorable outcomes (e.g., Casati, Piontek, & Pfeiffer-Gerschel, 2014; Mattson et al., 1998; McLellan et al., 2000; Miller, Book, & Stewart, 2011; Nosyk, Marsh, Sun, Schechter, & Anis, 2010; Volpicelli et al., 1997; Weiss, 2004). The SUD treatment adherence research, however, has largely focused on adherence to medication-assisted treatment regimens involving the use of methadone, buprenorphine-based formulations, disulfiram, or naltrexone.

For such pharmacological interventions, the measurement of adherence is relatively straightforward and involves whether or not the patient is taking his/her prescribed medication as directed. Conversely, the measurement of adherence for psychosocial interventions is understandably more challenging given the variability in treatment regimens and complexity of quantifying adherence. Furthermore, even among the limited studies investigating patient adherence to psychosocial approaches, indicators of adherence have been inconsistent or based solely on patient adherence during the primary phase of treatment. Regarding the former, definitions of adherence vary widely (Mattson et al., 1998; Milligan, Nich, & Carroll, 2004) and often focus exclusively on attendance at continuing care group therapy (Lash & Blosser, 1999; Lash, Petersen, O'Connor, & Lehmann, 2001). As a result, much of the extant support for the adherence—outcome relationship in the SUD literature has neglected the multi-faceted psychosocial continuing care phase of SUD treatment. The use of strict inclusionary criteria in studies demonstrating the strongest support to date linking adherence to psychosocial treatment with long-term successful outcomes (Mattson et al.,