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Initiation and engagement as mechanisms for change caused by collaborative care in opioid and alcohol use disorders

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ABSTRACT

Background: To assess the mechanism by which a collaborative care (CC) intervention improves self-reported abstinence among primary care patients with opioid and alcohol use disorders (OAUD) compared to treatment as usual.

Methods: Secondary data analysis of SUMMIT, a randomized controlled trial of CC for OAUD. Participants were 258 patients with OAUD receiving primary care at a multi-site Federally Qualified Health Center. Using a mediation analysis decomposition of a total effect into a mediated and a direct effect, we examined the effect of CC on abstinence at six months, attributable to the HEDIS treatment initiation and engagement measures for the total sample, for individuals with alcohol use disorders alone, and for those with a co-morbid opioid use disorder.

Results: Although the CC intervention led to an increase in both initiation and engagement, among the full sample, only initiation mediated the effect of the intervention on abstinence (3.8%, CI = [0.4%, 8.3%]; 32% proportion of the total effect). In subgroup analyses, among individuals with comorbid alcohol and opioid use disorders, almost 100% of the total effect was mediated by engagement, but the effect was not significant. This was not observed among the alcohol use disorder only group.

Conclusions: Among primary care patients with OAUDs, treatment initiation partially mediated the effect of CC on abstinence at 6-months. The current study emphasizes the importance of primary care patients returning for a second substance-use related visit after identification. CC may work differently for people with co-morbid opioid use disorders vs. alcohol use disorders alone.

1. Introduction

Opioid and alcohol use disorders (OAUDs) contribute to high rates of morbidity and mortality in the US (Degenhardt et al., 2011; Roerecke and Rehm, 2013; Ronan and Herzig, 2016; Substance Abuse and Mental Health Services Administration, 2018). Alcohol use disorders affect an estimated 15.8 million people, an estimated 1.9 million people abuse or are dependent on prescription opioids and 323,000 are dependent on heroin (Center for Behavioral Health Statistics and Quality, 2015; Substance Abuse and Mental Health Services Administration, 2014). OAUDs also frequently co-occur with each other and with other substance use disorders (SUDs) (Grant et al., 2015), making them more challenging to treat and more likely to be persistent and severe (McCabe and West, 2017; Moss et al., 2015; Upah et al., 2015; Witkiewitz and Vowles, 2018).

Treatments for OAUDs (i.e., medications, psychotherapy) are effective, yet only a small percentage of those needing treatment receive it (Blanco et al., 2015, 2013; Compton et al., 2007; Grella et al., 2009; Hasin et al., 2007; Substance Abuse and Mental Health Services Administration, 2018). Of adults with substance use disorders (SUDs), most do not perceive a need for treatment, and among those who do perceive a need but do not obtain treatment, multiple barriers, such as long waiting lists, stigma and the lack of treatment availability, hinder treatment entry into specialty care settings (Appel et al., 2004; Cunningham et al., 1993; Grant, 1997). Further, many people who need treatment do not know how or where to seek it (Park-Lee et al., 2015; Substance Abuse and Mental Health Services Administration, 2013) and may not be motivated to begin treatment (Substance Abuse and Mental

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Health Services Administration, 2014).

Primary care offers an important setting in which to identify OAUD and provide treatment because most individuals (82%) visit a PC provider at least once a year (Blackwell et al., 2014). Furthermore, the 2010 Patient Protection and Affordable Care Act (ACA) has several financing and reimbursement provisions that encourage treatment of behavioral health conditions in primary care (Buck, 2011; Croft and Parish, 2013), and these disorders can be effectively treated in primary care with FDA-approved medications (Balhara, 2014; Doolittle and Becker, 2011; Drainoni et al., 2014; Mauger et al., 2014; Myles et al., 2000; Schackman et al., 2012; Tofighi et al., 2014). Despite this, few primary care providers offer OAUD treatment. Among community health centers, only 21% report offering any SUD treatment services, and, when available, about half rely exclusively on providing a referral to specialty SUD treatment (Gurewich et al., 2012; HRSA Health Center Program, 2017; Shin et al., 2013; Urada et al., 2014).

Collaborative care (CC) approaches have been used to improve the identification of individuals with behavioral health disorders in primary care, assess for the presence of the disorder and facilitate the delivery of appropriate evidence-based care, resulting in improved patient outcomes (Archer et al., 2012; Katon and Guico-Pabia, 2011). Based on the Chronic Care Model developed by Wagner et al. (2001), CC is a systematic approach to organizing and coordinating care for patients with complex conditions (Katon et al., 2010). It consists of four core elements: (1) Team-driven: a behavioral health team, including a care coordinator, or care manager is integrated into the medical team to increase engagement in care and develop patient-centered care plans; (2) Population-focused: the team provides care to a defined group of patients (e.g., all patients with OAUDs); (3) Measurement-based: The team uses systematic, patient-reported measures to drive clinical decision-making; and (4) Evidence-based: the team facilitates use of evidence-based practices in the clinical setting (American Psychiatric Association and Academy of Psychosomatic Medicine, 2016; Katon, 2003, 2009; Unutzer et al., 2002). In addition to its impact on treatment for depression and anxiety disorders, CC has recently been found to improve abstinence in patients with OAUDs presenting to community health clinics for primary care (Watkins et al., 2017b).

Little is known about the mechanisms underlying the relationship between CC and improved patient outcomes. CC may work by increasing the likelihood of patients receiving evidence-based treatment. In one study of telemedicine-based CC for PTSD, attendance at 8 or more sessions of cognitive processing therapy fully mediated the CC intervention effect at 12 months (Fortney et al., 2015). To our knowledge, no similar are studies examining whether treatment utilization mediates the relationship between CC and improved depression or substance use outcomes. However, studies conducted to validate treatment utilization indicators as measures of the quality of SUD treatment, suggest that treatment initiation and engagement measures are associated with improved outcomes (Dunigan et al., 2014; Garnick et al., 2014; Garnick et al., 2007; Garnick et al., 2012; Harris et al., 2010, 2015). Treatment initiation is defined as at least one SUD-related treatment visit within 14 days of identification, and engagement is defined as receiving an additional two SUD-related treatment visits within 30 days after the initiation visit. These findings suggest that initiation of and engagement in OAUD care could mediate the relationship between primary-care based CC and improved OAUD treatment outcomes.

We report here on secondary data analyses of the Substance Use Motivation and Medication Integrated Treatment (SUMMIT) randomized controlled trial (RCT) (Watkins et al., 2017b). We estimated the efficacy of CC in increasing initiation of and engagement in evidence-based OAUD treatment (i.e., either a brief psychotherapy treatment and/or medication-assisted treatment (MAT) with either sublingual buprenorphine/naloxone (BUP/NX) for opioid use disorders or long-acting injectable naltrexone (XR-NTX) for alcohol use disorders (Heinzerling et al., 2016; Osilla et al., 2016), and examined the extent to which initiation and engagement mediated the effect of CC on abstinence from alcohol and opioids. Because the study population consisted of individuals with opioid and/or alcohol use disorders who had different clinical characteristics, we also conducted subgroup analyses with two non-overlapping groups: those with only an alcohol use disorder, and those with an opioid use disorder, nearly all of whom also had a co-morbid alcohol use disorder. We hypothesized that receiving the CC intervention would be associated with treatment initiation and engagement, that initiation of and engagement in OAUD treatment would be associated with increased abstinence, and that initiation of and engagement in OAUD treatment would mediate the relationship between the CC intervention and abstinence.

2. Methods

2.1. Participants and procedures

Participants from the two largest clinics of a federally qualified health center (FQHC) in Los Angeles County were recruited for the SUMMIT randomized controlled trial. Between June 3, 2014, and January 15, 2016, all adult patients attending a primary care visit who screened positive for risky or worse substance use in the past 3-months using a 3-question screener based on the NIDA quick screen (National Institute on Drug Abuse, 2017) were assessed for eligibility. Inclusion criteria were: aged 18 or older, meeting criteria for an opioid and/or alcohol use disorder diagnosis based on the NIDA-modified ASSIST (National Institute on Drug Abuse, 2017) and later confirmed using the Comprehensive International Diagnostic Interview (CIDI), version 3.0 (Forman et al., 2004; Haro et al., 2006); English or Spanish-speaking, and willing to be randomized. Patients with functional impairment from bipolar disorder or schizophrenia (Arbuckle et al., 2009; Luciano et al., 2010), patients reporting abstinence from opioids and/or alcohol in the previous 30 days, and/or current enrollment in a SUD treatment program were excluded. Of the 745 patients with a positive screen, 452 were eligible for study participation, 377 were enrolled, and 261 completed a 6-month follow-up interview. Three participants were dropped from these analyses because of missing data making the analytic sample size equal to 258. More than half of the sample (n = 149) had alcohol use disorder only while only 4 had an opioid use disorder only and the remaining 105 had both disorders. A detailed description of the study and patient characteristics have been previously published (Ober et al., 2015; Watkins et al., 2017b). The RAND Institutional Review Board approved the study on April 26, 2012.

2.2. Intervention

The CC intervention is based on principles of the chronic care model (Bodenheimer et al., 2002a, b) which is designed to facilitate the integration of behavioral health treatment into primary care. The CC intervention (Ober et al., 2015; Watkins et al., 2017a, b) included the institution of a care coordinator; a population-based management approach in which the care coordinators entered all patients into a clinical registry and tracked patients over time; measurement-based care; and integration of addiction expertise by an addiction medicine physician and a clinical psychologist affiliated with the Motivational Interviewing Network of Trainers, who provided training and consultation to providers at the FQHC. The care coordinator met with CC participants when they screened positive for an OAUD to assess motivation and encourage patients to meet with a behavioral health therapist for evaluation and treatment. Care coordinators entered all CC patients into an electronic registry that tracked treatment progress and prompted coordinators to reach out to patients with missed visits. The study's two care coordinators were paraprofessionals with a high school degree who received 2-days of motivational interviewing training. The five behavioral health therapists randomized to the CC condition received 2-days of training in the brief therapy (Osilla et al., 2016, 2018) and one