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Factors associated with treatment attrition for Medicaid-enrolled youth with serious emotional disturbances

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ABSTRACT

Premature discontinuation from treatment is a significant problem that undermines the delivery of effective mental health services and increases the risk for relapse and poor outcomes. However, factors associated with treatment attrition in children and adolescents are not well understood. This retrospective longitudinal cohort study examines factors associated with attrition for Medicaid-enrolled youth, aged 5 to 17 with "new episodes" of ICD-9-CM diagnosed serious emotional disturbance (N = 43,122). Information on individual-level (demographic and clinical characteristics) and contextual-level variables (county socio-demographic, economic, and health care resources) were abstracted from Medicaid claim files and the Area Resource File. Multilevel modeling was used to assess the association between individual and contextual-level variables and attrition. Of the 43,122 youth in the study sample, 4056 (9.4%) discontinued treatment. The odds of treatment attrition were significantly higher for youth who were male (OR = 1.16, $p < 0.001$), black compared to white (OR = 1.19, $p < 0.001$), had a co-occurring substance abuse disorder (OR = 1.35, $p = 0.01$), and lived in a county with a larger percentage of minorities (OR = 1.02, $p = 0.01$). In contrast, youth diagnosed with bipolar and depressive disorders compared to ADHD (OR = 0.78, $p < 0.001$ and OR = 0.87, $p = 0.01$, respectively), with comorbid psychiatric (OR = 0.74, $p < 0.001$) and medical disorders (OR = 0.82, $p < 0.001$), and a prior history of two or more psychotropic medications compared to no medications (OR = 0.76, $p < 0.001$) had lower odds of attrition. Residence in a county with a larger number of pediatricians and psychologists also reduced the odds of attrition (OR = 0.97, $p = 0.05$ and OR = 0.99, $p = 0.03$ respectively). Overall, this study suggests that a combination of individual factors, demographic and clinical, and contextual factors impact attrition in children's mental health outpatient treatment.

1. Introduction

An estimated 20% of youth in the U.S. are diagnosed with a mental disorder, 9 to 13% have significant functional impairments, and 5 to 9% have serious emotional disturbances (SED)—(Federal Interagency Forum on Child and Family Statistics, 2013; Friedman, Katz-Leavy, Manderschied, & Sondheimer, 1998; Friedman, Kutash, & Duchnowski, 1996; US Department of Health and Human Services, 2000). Children and youth with SED have complex needs often requiring comprehensive services of varying levels of intensity over extended periods of time and involvement with multiple providers and service systems. Many have multiple psychiatric disorders – disruptive behavioral disorders and mood disorders are the most highly prevalent – and experience significant functional impairments that interfere with their functioning at home, school, and with community activities (Angold, Messer, Stangl, et al., 1998; Costello, Mustillo, Erkanli, Keeler, & Angold, 2003; Kessler et al., 2012; Kessler, Foster, Saunders, & Stang, 1995; Lewinsohn, Rohde, & Seeley, 1995; Merikangas et al., 2010; Roy-Byrne, Davidson, Kessler, et al., 2008; SAMHSA, 2008; US Department of Health et al., 2010).

Despite the prevalence and high level of need in this population, current estimates suggest that only half of children with SED receive mental health care (Federal Interagency Forum on Child and Family Statistics, 2013; Merikangas et al., 2010). Even when they do access mental health services, a significant portion of youth discontinue treatment after only a short time. In one large scale study of child and adolescent users of mental health services using Market Scan data (N = 11,659), Harpaz-Rotem, Leslie, and Rosenheck (2004) found that 45% dropped out within the first month of treatment and only 22% of the children remained in treatment for as long as 6 months. In another study, close to two-thirds of children and adolescents receiving outpatient mental health services terminated treatment within six months

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(Andrade, Lambert, & Buckman, 2000). Although some of the observed attrition may reflect a reduced need for clinical services, failure to complete a full course of recommended treatment may contribute to deleterious outcomes for children with serious emotional disturbance. Those outcomes may include the exacerbation of psychiatric symptoms (Dulmus & Wodarski, 1996; Reis & Brown, 1999), failure to succeed in or continue educational or vocational training (Trout, Nordness, Pierce, & Epstein, 2003; Woodward & Fergusson, 2001), and suicide (Cash & Bridge, 2009; Kuehn, 2005).

Despite awareness of the impact of inadequate treatment, most studies have focused on adult populations (Block & Greeno, 2011; Kazdin, 1996; Pekarik & Stephenson, 1988). Consequently, little is known about factors associated with attrition in children and adolescents. The existing studies that have examined attrition in child and adolescent populations are difficult to compare due to differences in definitions of treatment attrition, populations, and types of variables examined; and much of the literature is dated (de Haan, Boon, de Jong, Hoeve, & Vermeiren, 2013). Moreover many of the studies have limited generalizability because of small, highly restricted study groups, such as youths with a single disorder or from a single treatment setting (Gonzalez, Weersing, Warnick, Scahill, & Woolston, 2011; Kazdin & Wassell, 2000). Finally, the existing studies tend to focus primarily on patient demographic and clinical characteristics and do not provide adequate attention to contextual factors such as healthcare system resources, population demographics, and socioeconomic characteristics. This is a significant gap because researchers are realizing the need for comprehensive models that simultaneously account for the contribution of both individual and contextual factors in mental health care and outcomes (Davidson, Andersen, Wyn, & Brown, 2004; Fontanella, Guada, Phillips, Ranbom, & Fortney, 2013; Phillips, Morrison, Andersen, & Aday, 1998).

The current study addresses these gaps in knowledge by combining multiple data sources to examine a wide range of factors potentially associated with outpatient treatment attrition in a large statewide sample of Medicaid-enrolled youth with SED in Ohio. The objectives of this study were twofold: (1) to identify the baseline rate of treatment attrition for children with SED in this population and (2) to examine individual and community-level characteristics associated with treatment attrition. We expand upon previous research by focusing on treatment attrition utilizing a large statewide sample of Medicaid enrolled youth rather than focusing on one outpatient clinic, thus enhancing generalizability, and by examining contextual factors in addition to the typically studied individual demographic and clinical factors. Below, we review the literature on a selection of variables that are associated with attrition and that exist in the data set examined in this study.

2. Factors associated with attrition for youth with serious emotional disturbance

2.1. Sociodemographic factors: age, gender, race and ethnicity

There is some evidence that age influences treatment attrition. For example, in a national study of privately insured children and adolescents with new episodes of mental health care, Harpaz-Rotem et al. (2004) found that adolescents were more likely to terminate treatment early compared to school age children. Other studies (Holmes, 1983; Pekarik, 1991; Pekarik & Stephenson, 1988; Pelkonen, Marttunen, Laippala, & Lonnqvist, 2000) have also found that adolescents are more likely to drop out compared to younger children, potentially because of stigma from peers over receiving mental health treatment. The impact of gender on treatment attrition is less clear, with findings demonstrating mixed results regarding differences between girls and boys (McKay, McCadam, & Gonzales, 1996; Gonzalez et al., 2011). Boys in general are more likely to use mental health services; but this disparity disappears with age (McKay & Bannon, 2004). Most studies have found that children and adolescents of minority backgrounds are more likely to drop out of treatment than non-minority youth (Aratani & Cooper, 2012; de Haan et al., 2013; Gonzalez et al., 2011; Schneider, Gerdes, Haack, & Lawton, 2013; Warnick, Gonzalez, Weersing, Scahill, & Woolston, 2012). Thus based on the above mentioned literature, we hypothesize that treatment dropout rates will be higher for adolescents and black children and adolescents.

2.2. Medicaid eligibility status

We found no studies that investigated the role of Medicaid eligibility status on attrition. However, research suggests that mental health service utilization varies by eligibility status, notably for children in foster care relative to other Medicaid recipients (dosReis, Zito, Safer, & Soeken, 2001; Takayama, Bergman, & Connell, 1994). For example, in a statewide study of child and adolescents enrolled in Medicaid, dosReis et al. (2001) found that children in foster care use far more mental health services compared to youth in other aid categories. Absent guidance from the literature, given the high level of monitoring by caseworkers for youth in foster care, we expect treatment dropout rates to be lower for children in foster care relative to other aid categories.

2.3. Clinical factors

2.3.1. Diagnosis and severity of illness

Research suggests that treatment attrition varies by clinical diagnosis. Numerous studies (Baruch, Vrouva, & Fearon, 2009; Burns, Cortell, & Wagner, 2008; Johnson, Mellor, & Brann, 2008) have found that youth with behavioral disturbances such as attention-deficit hyperactivity (ADHD) and conduct disorders are more likely to drop out of treatment; whereas those with anxiety and mood disorders are less likely to drop out. Severity of illness has also been shown to be associated with treatment drop-out. For example, in a national study of privately insured children and adolescents with new episodes of mental health care, Harpaz-Rotem et al. (2004) found that children who had more comorbid psychiatric disorders were less likely to drop out compared to those who did not. On the basis of this literature, we expect that children and adolescents with ADHD and disruptive behavior disorders would have higher rates of treatment attrition and that youth with mood disorders would have the lowest rates of attrition. In addition, we expect lower rates of treatment dropout for children and adolescents with greater severity of illness as measured by the indicators of severity available in the data set used here, such as the presence of psychiatric and medical comorbidities, and the number of psychotropic drug classes.

2.3.2. Dual diagnosis

Community and clinical studies show that dual disorders are highly prevalent among adolescents. In a review of studies on adolescent substance abuse, Armstrong and Costello (2002) found that 60% of youths with a substance abuse disorder had a co-occurring psychiatric disorder, most commonly conduct disorders, ADHD, depression and post-traumatic stress disorder. Adolescents with substance abuse and comorbid psychiatric disorders have poorer treatment course and outcomes than those with single disorders, likely due to low retention and completion rates in treatment (Grella, Hser, Joshi, & Rounds-Bryant, 2001; Wise, Cuffe, & Fischer, 2001). Therefore, we expect that treatment dropout will be higher for children and adolescents with co-occurring substance abuse disorders.

2.3.3. Service history

Prior service history such as past inpatient or outpatient treatment was found to be associated with treatment dropout in one study of attrition. Harpaz-Rotem et al. (2004) found that youth with a history of prior psychiatric hospitalizations were less likely to terminate