

Diagnosis and Medication Overload? A Nurse Review of the Psychiatric Histories of Older Youth in Treatment Foster Care

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Prior research has raised concern about the appropriateness of psychotropic medication use and the validity of psychiatric diagnosing for youth in child welfare but has lacked in-depth case information. This study reports results from a psychiatric nurse review conducted with eight youth entering a foster care intervention using case records and multiple key informant interviews. Results revealed extensive histories of unique (nonoverlapping) psychiatric diagnoses ($M = 8$, range 7–9) and past psychotropic medications ($M = 13$, range 9–21). The findings highlight the need to improve assessment practices and to create mechanisms that promote greater continuity of psychiatric care.

Using psychotropic medications in children and adolescents has increased exponentially over the past two decades (Cooper, Arbogast, Ding, Hickson, Fuchs, & Ray, 2006; Olfson, Marcus, Weissman, & Jensen, 2002; Thomas, Conrad, Casler, & Goodman, 2006; Zito, Safer, dosReis, Gardner, Magder, Soeken, Boles, Lynch, & Riddle, 2003). This increase has been particularly noticeable in child welfare, where youth have consistently been found to have elevated rates of medication use (dosReis, Zito, Safer, & Soeken, 2001; Ferguson, Glesener, & Raschick, 2006; Raghavan & McMillen, 2008; Raghavan, Zima, Andersen, Leibowitz, Schuster, & Landsverk, 2005; Zito, Safer, Sai, Gardner, Thomans, Coombes, Dubowski, & Mendez-Lewis, 2008). For example, in a nationally representative sample of children served in the child welfare system, rates of psychotropic medications use were two to three times that of the general population (Raghavan et al., 2005). In a study comparing rates of medication use for Medicaid recipients, youth in foster care were found to have rates of psychotropic medication use eight times higher than youth who received Medicaid due to income eligibility (dosReis et al., 2001).

Polypharmacy, in which individuals are prescribed multiple psychotropic medications from different drug classes, is a particular concern for foster youth. A study of 17-year-old foster youth in Missouri found that 10% were on three or more psychotropic medications (Raghavan & McMillen, 2008). Another study of medicated foster youth in Texas found an average of 2.55 psychotropic medications per child, with over 40% of the sample receiving medications from three or more different types of drug classes at the same time (Zito et al., 2008).

Concerns about the prescribing of psychotropic medications to youth in the child welfare system have also been raised by the youth receiving these medications, who complained of medications being “slapped” on them after short evaluations and of being overmedicated to the point of drowsiness (Lee, Munson, Ware, Ollie, Scott, & McMillen, 2006, p. 490). Child welfare workers and mental health professionals have expressed concerns about overuse of psychotropic medications and prescriptions written after very short

evaluations (McMillen, Fedoravicious, & Rowe, 2005; McMillen, Fedoravicious, Rowe, Zima, & Ware, 2007; Moses, 2008). Reasons for these purported medication problems were varied, including limited communication between psychiatrists and other involved professionals, low reimbursement rates, changes in psychiatrists with each placement move, and pressures on psychiatrists to medicate youth to save placements that were on the brink of disruption (McMillen et al., 2007).

None of these studies is able to empirically demonstrate whether using these medications is the most appropriate treatment for any individual young person. Without knowing the clinical presentation of the person to whom the medication was prescribed and the context of the prescribing situation, researchers can only note trends and concerns. The inclusion of psychiatric diagnostic context, which is missing in most studies, would provide additional information to assist in understanding the circumstances and diagnostic presentation that has resulted in using multiple psychotropic medications.

The validity of child psychiatric diagnoses, however, remains a controversial issue. Pediatric psychiatric patients often present with symptoms that cross diagnostic categories (Bostic & Rho, 2006), resulting in diagnosis and treatment approaches that can vary widely across providers (Carey, 2006). Also, just as there may be concerns about how medications are prescribed to foster youth, child welfare stakeholders have expressed concerns about the validity of psychiatric diagnoses and the frequency with which they are provided for youth in the child welfare system. In one qualitative study, child welfare caseworkers complained about how diagnoses accumulated in case records as children received frequent psychological evaluations and treatment services, all of which required a diagnosis for reimbursement. Caseworkers complained that these diagnoses did not reflect the severe adversities these children had experienced and that the large number of diagnoses made it difficult to find permanent homes (McMillen et al., 2007).

In response to these concerns, a manualized diagnosis and medication review process was developed for older youth in the child welfare system using a psychiatric nurse. This study reports results

from eight nurse diagnostic reviews conducted in a pilot study with youth entering a treatment foster care program. The authors chose to focus on a small sample to present more detailed information depicting the history of each youth. The purposes of this study were (1) to thoroughly describe the histories of diagnoses and medications in a small sample of youth from the foster care system involved in psychiatric services and (2) to determine if a nurse-led diagnostic and medication review could help clarify the clinical picture by examining referring diagnoses and medications alongside current symptoms. Due to long careers in the foster care system among the target population, the authors hypothesized that diagnoses and medications would have accumulated over time in the case records of these young people and that not all diagnoses contained in the case file would be relevant to the current circumstances and clinical presentation.

Methods

Sample and Procedures

The sample was composed of the first eight youth referred into a new treatment foster care program for older youth in the year 2009. Youth were referred from an agency contracted to handle difficult child welfare cases by caseworkers who determined whether the youth was appropriate for transition to a treatment foster home. Youth were eligible for the study if they were between ages 16 and 18, in the custody of the state child welfare agency, resided in a residential treatment setting, and were either receiving psychiatric medications or had a history of psychiatric hospitalization. Youth with IQs below 70 were not eligible for the study.

The diagnosis and medication review was completed by a masters level nurse who was board certified by the American Nursing Credentialing Center as a psychiatric and mental health clinical nurse specialist. She also had 15 years of experience working in a psychiatric hospital. The review process was manualized and began with data abstracted from child welfare records. This information was used to guide interviews, which were conducted with the youth, the child welfare casework, the treating therapist, psychiatrist, and additional

informants identified by the youth, aimed at sharpening the diagnostic. Data were collected in a structured case note format and crafted into a preliminary summary and then presented to the family support team (the youth, relatives, caseworkers and other professionals) for feedback and finalized. The nurse used the criteria and guidelines detailed in the DSM-IV-TR (American Psychiatric Association [APA], 2000) to assign diagnoses. The summary presented a detailed review of diagnosis and medication history as well as historical and health information impacting the diagnostic picture of the youth.

As part of participation in the treatment foster care program, youth also participated in structured interviews that assessed history of abuse, service use, and diagnoses. Youth received \$25 for this interview. All components of the study were approved by the University Human Subjects Committee and a federal certificate of confidentiality was obtained. Child welfare caseworkers provided written consent and youth provided written assent prior to participation in the study.

Measures

Information collected through the chart review was entered into a data collection form that included fields for current symptoms/presenting information, medical diagnoses, placement history, psychiatric hospitalizations, psychiatric diagnoses (including date, clinician, and reason for diagnosis), and medications (including name, dose, prescriber, treatment response and documented side effects). The nurse recorded all variations of psychiatric diagnoses previously received (see Table 1), but a conservative approach was taken to obtain a count of unique (nonoverlapping) diagnoses using the following rules. A diagnosis was counted only once, no matter how many times it appeared in the record or appeared with different specifiers, including diagnoses listed as not otherwise specified (NOS). All types of bipolar disorders were counted once, and depressive disorders were counted once, with the exception of dysthymia, which was considered distinct. The diagnosis mood disorder NOS was also counted separately. The diagnosis of behavior disorder was not counted separately

Table 1
Documented Unique Psychiatric Diagnoses Given by Mental Health Professionals in Records of Treatment Foster Care Clients

	Youth A	Youth B	Youth C	Youth D	Youth E	Youth F	Youth G	Youth H
Psychotic disorders	Schizophrenia, paranoid type Schizophrenia, undifferentiated type							
Mood disorders	Bipolar DO, NOS Bipolar II, rapid cycling Mood DO, NOS Depressive DO, NOS	Bipolar DO Depressive DO, NOS Episodic Mood DO, NOS Major Depressive DO, severe with psychotic features Mood DO, NOS	Major Depressive DO Bipolar, with brief psychosis Bipolar I Bipolar II, rapid cycling	Mood DO, NOS Depressive DO, NOS Major Depressive DO Bipolar, NOS Bipolar I, MRE manic	Bipolar II, Rapid Cycling Mood DO, NOS Bipolar, NOS Bipolar Affective DO, Depressed Depressive DO, NOS	Depressive DO, NOS Mood DO NOS Affective DO, Depression Dysthymic DO	Depression with psychotic features Major Depression Recurrent Depression, with psychosis	Mood DO, NOS Bipolar II, rapid cycling
Personality disorders		Borderline Personality DO/Cluster B traits	Borderline Personality Traits Cluster B Traits	Borderline Personality DO	Borderline Personality DO	Borderline Personality DO	Borderline Personality DO	Cluster B Traits
Behavioral disorders	ADHD, NOS ADHD Conduct DO Behavior DO, NOS Oppositional Defiant DO	Oppositional Defiant DO ADHD Impulse Control DO	Oppositional Defiant DO ADHD	Behavior DO Behavior DO, NOS ADHD, NOS Oppositional Defiant DO Conduct DO	Oppositional Defiant DO ADHD	ADHD, predominantly inattentive type Oppositional Defiant DO Behavior DO, NOS	ADHD Impulse Control DO Conduct DO	Oppositional DO Conduct DO Impulse Control DO ADHD

Anxiety disorders	Posttraumatic Stress DO	Posttraumatic Stress DO	Anxiety DO, NOS Other Anxiety Diagnosis ¹	Obsessive Compulsive DO
Other disorders of childhood	Learning DO, NOS	Enuresis Learning DO, NOS	Developmental DO Reactive Attachment DO Mild Mental Retardation Specific Learning Disability	Mental Retardation Borderline Intellectual Functioning
Substance abuse disorders			Substance Abuse	History of Alcohol Abuse History of Marijuana Abuse Polysubstance Abuse
Other psychiatric disorders	Adjustment DO, depressed features Adjustment DO, mixed emotional features	Adjustment DO, mixed	Other Diagnosis ²	Substance Abuse History of Alcohol Abuse History of Cannabis Abuse Adjustment DO, with disturbance of conduct

Notes: DO = disorder; NOS = not otherwise specified; ADHD = attention deficit hyperactivity disorder.

¹ Specific diagnosis not listed to protect confidentiality

if conduct disorder or oppositional defiant disorder was also present. All substance use disorders were grouped and counted once. Learning disorders or disorders of intellectual functioning were not included in the final count. Finally, nurse-assigned diagnostic determinations were assigned clinically according to DSM-IV-TR (APA, 2000).

Physical abuse and neglect were assessed using the Childhood Trauma Questionnaire and scored based on cut scores for moderate to severe abuse (Bernstein & Fink, 1998). Sexual abuse was measured using three items adapted from Russell (1986). Youth self-report of diagnoses of conduct disorder (CD), posttraumatic stress disorder (PTSD), mania, attention deficit disorder (ADHD), and major depression were assessed using the Diagnostic Interview Schedule (DIS), version 4 (Robins, Cottler, Bucholz, & Compton, 1995).

Analysis

The diagnostic summaries were used as the source data for information on diagnosis and medication history. The psychiatric nurse and two coauthors met and reviewed each summary to discuss and identify patterns across cases. All diagnoses in the chart were listed and examined for analysis in a table. Table 2 was constructed to examine medication use across each. Medications that are used to treat the same condition or that work in a similar way are commonly grouped into drug classes, such as antidepressants or antipsychotics. The authors grouped medications into classes based on standard categories used in medical pharmacology textbooks (i.e., Queener & Gutierrez, 2003; Skidmore-Roth, 2008).

Results

Sample

The average age of the sample was 17.4. Six of the eight youth were female; six were African American, one was Caucasian, and one was biracial. Two youth met criteria for physical neglect, four met criteria for physical abuse, and six met criteria for sexual abuse. Youth reported an average of 13 previous child welfare placements, with a range from 6 to 32. According to DIS past year diagnosis, two youth

Table 2
Current and Past Psychotropic Medications by Class for Clients in a Treatment Foster Care Program

	Youth A	Youth B	Youth C	Youth D	Youth E	Youth F	Youth G	Youth H
Number of meds at intake	3 medications in 2 classes	4 medications in 4 classes	3 medications in 3 classes	3 medications in 2 classes	5 medications in 4 classes	1 medication in 1 class	6 medications in 3 classes	4 medications in 3 classes
Number of meds, historical, in case record	10 in 4 classes	12 in 6 classes	21 in 7 classes	11 in 5 classes	13 in 6 classes	9 in 5 classes	15 in 4 classes	12 in 5 classes
Medications by class, historical, in case record	<p>Anticonvulsant Zonegram</p> <p>Antidepressant Prozac Trazadone</p> <p>Atypical Abilify</p> <p>Antipsychotics Seroquel Risperdal Zyprexa</p> <p>Mood Stabilizer Carbatrol Lamictal</p>	<p>Antianxiety Vistaril</p> <p>Antidepressant Trazadone Prozac</p> <p>Antipsychotics Zyprexa Seroquel Abilify Geodon</p> <p>Antihypertensive Tenex</p> <p>Mood Stabilizer Topamax Lithium Lamictal</p> <p>Stimulant Concerta</p>	<p>Antianxiety Vistaril</p> <p>Ativan</p> <p>Anticonvulsant Zonegram</p> <p>Antidepressant Zoloft</p> <p>Antipsychotics Wellbutrin Trazadone Effexor Luvox</p> <p>Antihypertensive Tenex</p> <p>Antipsychotics Zyprexa Lithium Lamictal</p> <p>Mood Stabilizer Concerta</p>	<p>Antianxiety Ativan</p> <p>Antidepressant Lexapro Trazadone</p> <p>Antipsychotics Abilify Seroquel Risperdal Geodon</p> <p>Zyprexa (Zydis)</p> <p>Mood Stabilizer Eskalith Lamictal</p> <p>Stimulant Concerta</p>	<p>Anticonvulsant Trileptal</p> <p>Antidepressant Celebra Prozac</p> <p>Antihypertensive Tenex</p> <p>Antipsychotics Guanifacine Lisinopril (BP)</p> <p>Antipsychotics Abilify</p> <p>Risperdal</p> <p>Seroquel</p> <p>Mood Stabilizer Lamictal Topamax Depakote</p> <p>Stimulant Adderall</p>	<p>Antidepressant Celebra Prozac Trazadone</p> <p>Antihypertensive Tenex</p> <p>Antipsychotics Risperdal Seroquel Zyprexa</p> <p>Opioid antagonist Naltrexone</p> <p>Stimulant Adderall</p>	<p>Antidepressant Celebra Zoloft Wellbutrin SR Provigil Imipramine</p> <p>Antihypertensive Tenex Lisinopril</p> <p>Maxide</p> <p>Antipsychotic Haldol</p> <p>Mood Stabilizer Lithium Lamictal Abilify</p> <p>Seroquel Risperdal</p> <p>Stimulant Concerta Ritalin</p>	<p>Anticonvulsant Zonegram</p> <p>Antidepressant Prozac</p> <p>Antipsychotics Abilify Seroquel Zyprexa Geodon Risperdal Haldol</p> <p>Mood Stabilizer Lithium Lamictal Restoril Lunesta</p>

did not meet criteria for any diagnosis, four met criteria for oppositional defiant disorder (ODD), two met criteria for PTSD, two met criteria for a mood disorder, one met criteria for ADHD, and one met criteria for CD.

Diagnostic Review

Results of the review are presented in Tables 1 and 2. The authors struggled with how best to present the data while protecting confidentiality; they chose not to list specific referral diagnoses, the diagnoses following the review, or current medications, as they could potentially be identifying; instead, all active and prior diagnoses are included in Table 1. In two youth's cases, rare diagnoses were changed to more general terms.

Diagnoses

Youth had an average of eight unique (nonoverlapping) historical diagnoses (range 7–9), with an average of three active diagnoses at the time of referral (range 1–5). There was little concordance between the referring diagnoses and the diagnoses based on the report of the youth using the DIS. In two cases, the DIS found no evidence of a current psychiatric diagnosis, though youth were being treated for multiple diagnoses. Seven of the eight youth had current or past diagnoses with a NOS or rule-out designation, evidence of diagnoses that did not clearly fit in traditional categories.

Several diagnostic patterns were noted across participants. All eight of the young people had at least one type of mood disorder diagnosis at the time of referral, and six of the eight had a referring diagnosis of either ADHD, ODD, or CD. Given the extensive abuse histories of the youth in the sample, it is notable that only one of the participants had a referring diagnosis of PTSD, and one had a referring diagnosis of reactive attachment disorder. The diagnostic histories also revealed complicated clinical pictures including substance use, low intellectual functioning or learning problems, and indications of personality disorders. Six of the eight young people also suffered from comorbid chronic physical conditions, such as asthma and diabetes.

Medication Review

At the time of referral into the study, youth were taking an average of four psychotropic medications each (range 1–6). Seven of the youth were taking medications from at least two different medication classes. Antipsychotics use was prevalent. Six of the eight youth were prescribed these medications at intake, and four were taking two or more simultaneously.

The medication histories of the youth were extensive. The case records documented an average of 13 previous psychotropic medications (range 9–21), from an average of five medication classes (range 4–7). Using stimulants, antidepressants, and mood stabilizers could be linked to the referring diagnoses that these medications are recommended to treat. The correspondence between diagnosis and the use of antipsychotic medications was less clear, though it appeared in most cases to be targeted toward reducing symptoms of aggression.

The review found documented, historical evidence of side effects associated with past medications for all of the youth, including tardive dyskinesia and lithium toxicity. Several youth had conditions that have been associated with taking atypical antipsychotics including metabolic changes, elevated cholesterol, obesity, and type II diabetes.

Results of the Review

The psychiatric nurse review resulted in changes in psychiatric diagnoses for six of the eight youth. Generally, this involved keeping some of the currently assigned diagnoses and eliminating others. In two cases, the total number of diagnoses was reduced, but a new diagnosis of PTSD was added. Even after extensive review, half of the cases had NOS diagnoses, primarily associated with mood disorders. Behavioral disorders were retained for half of these youth following the review and a mood disorder diagnosis was retained for seven of the eight participants. Recommendation for reevaluation of medications was made in two cases in which youth were on large numbers of medication or dosages that exceeded recommendations.

Discussion

This is the first study to take a historical look at the diagnoses and medications of high-end mental health consumers from the child welfare system. These findings confirm fears that youth are provided a wide range of psychiatric diagnoses from a wide range of sources, which may result in such a large number of diagnoses that they are no longer helpful in guiding treatment. The authors also found evidence that these youth are prescribed a host of different medications. This discussion focuses on this accumulation of diagnoses and medications and then discusses programmatic and clinical options that may address them.

Accumulation of Diagnoses

The eight mental health consumers in this study had been given a high number of psychiatric diagnoses during their time in the foster care system. This confirms caseworker reports that youth accumulated psychiatric diagnoses while in state custody (McMillen et al., 2007). The review supports the assertion that young people who have experienced complex trauma and other developmental challenges—from maltreatment to multiple separations to institutionalization—might be difficult to diagnose well. They present clinically with symptoms such as irritability, aggression, emotional dysregulation, and impulsivity—symptoms that could be part of a number of disorders and depending on the perspective of the clinician assessing the symptoms, might result in the assignment of different diagnoses. These different diagnoses tended to pile up over time, resulting in diagnoses with limited validity, which remained even though the diagnostic criteria no longer fit the clinical presentation of the youth. While it is natural to expect that a youth's clinical presentation may change over time, the large number of diagnoses these youth still carried resulted in youth being labeled with diagnoses that were not helpful in conveying information about their problems or guiding their treatment.

Accumulated History of Psychotropic Medications

The youth in this study had been prescribed a large number of psychotropic medications from a large number of medication classes.

While this study was not designed to illuminate the reasons for this finding, it offers a few observations. First, there is likely a relationship between diagnosis and prescribing behavior. If the prescribing physician attributes a youth's behavior to bipolar illness, then it would follow that an antimanic medication would be prescribed. If it is attributed to major depression, then an antidepressant would be prescribed. Given the large number of diagnoses assigned to these youth, it is not surprising that they had been prescribed psychotropic medications from a large number of medication classes. Second, case records contained reports from a large number of prescribing physicians, resulting in a lack of continuity in psychiatric treatment. This discontinuity introduces the diagnostic and prescribing biases of many physicians over time.

Clinical Implications

This review presents several implications for improving clinical practice. Periodic reviews to purge old, unhelpful diagnoses can assist in reducing the accumulation of these diagnoses over time. Diagnosing professionals should write new assessments based on thorough case reviews that use language that clearly discards old diagnoses. In addition, thorough assessments are needed that detail not just psychiatric symptoms, but the potential etiology and stories behind them. At the same time, these data *do not* support the need for regular, frequent assessments, as is often recommended (American Academy of Child and Adolescent Psychiatry, 2001; Romanelli, Landsverk, Levitt, Leslie, Hurley, Bellonci, Gries, Pecora, & Jensen, 2009). In fact, the large number of assessments appeared to contribute to the lack of diagnostic clarity. Restructuring reimbursements to pay for longer, more detailed assessments less frequently could assist in providing higher quality evaluations at the same or lower cost, especially for youth who have long service histories.

The findings also highlight the need to create protocols and documentation practices that allow continuity of psychiatric care as youth move from one place to another. While the youth's child welfare case record reflected many different medications prescribed over time, often missing was any indication of whether the medication had

worked or why it was changed. Clinicians new to the case need to know what has worked and what has not. The system also needs to find creative ways to encourage continued management of care by the same psychiatric team, even when youth change placements. Using a model that parallels the medical home concept holds the promise of centralizing the management of care for these youth.

Along with protocols that promote continuous management of psychiatric treatment from the provider side, interventions are needed that educate and empower youth to participate in their treatment. The lack of diagnostic clarity in these youth's clinical presentation means that psycho-education should be focused around the management of symptoms rather than on particular diagnostic labels. In addition, youth with complicated histories of diagnoses and medications need portable medical summaries they can use to quickly convey this information to new providers, especially as they transition out of the child welfare system and take over the management of their own care.

Limitations

The small number of youth in this study were purposefully chosen because they had psychiatric histories and histories of residential treatment and are not representative of foster youth overall. They have been in the foster care system longer than most youth and had a longer time to accumulate diagnoses and medications. In addition, medication practices for fostered youth have been found to differ across regions (Raghavan, Lama, Kohl, & Hamilton, 2010), so youth from other geographic areas with different service structures may have very different experiences. Readers should also consider that the review was conducted by one psychiatric nurse whose own biases in assigning diagnoses may influence the results. As the review revealed, DSM-IV criteria alone did not adequately capture the clinical picture of these youth and clinical judgment was required to assign a final diagnosis.

Conclusion

This case record review of a small number foster youth with psychiatric service involvement discovered a large array of psychiatric diagnoses and a very high number of prior psychotropic medications. When youth present to clinicians with such complex histories, an involved assessment process may be required to help identify the most appropriate course of treatment. The manual review process conducted here, led by a master's level psychiatric nurse, did provide some additional clarity, but was hampered by documentation that did not always give justification for diagnoses and treatment decisions or clinical reactions to treatment. New policies that promote higher quality assessments and continuity of psychiatric treatment are needed.

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