The Inappropriate Prescribing of Psychotropic Medication to Foster Children: An Integrative Review

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The Inappropriate Prescribing of Psychotropic Medication to Foster Children: An Integrative Review

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Research Proposal
Abstract

Background: The prescribing rates of psychotropic medication for foster children far exceed the prescribing rates of psychotropic medications for other children, ages 0-18. Many psychotropic medications have not been researched for children and have not been proven safe or effective for this age group, and do not adhere to AACAP safety guidelines.

Objectives: The purpose of this integrative literature review is to identify the factors that contribute to the high prescribing rates of psychotropic medication among foster children, as well as identifying the risks associated with prescribing habits that do not follow AACAP guidelines. Additionally, safer alternatives to psychotropic medications will be assessed.

Methods: An integrative literature review was conducted following the Whittemore & Knafl guideline. Databases searched included: CINAHL, ProQuest Nursing, PubMed, ProQuest Sociology, and PsycINFO. Included articles were related to foster children, ages 0-18, and were published between 2008-2018. Eighteen articles were selected for review.

Results: Trends that are correlated with high prescribing rates were based on demographics, diagnosis, prescriber and medication type, and fragmented care. Additionally, the risks associated with prescribing habits that do not follow AACAP guidelines were: polypharmacy, exorbitant and off label antipsychotic use, receiving a treatment plan that does not follow evidence-based practice, and receiving medication before proper mental health screenings were completed. Furthermore, alternative options that can limit the amount of psychotropic medications prescribed and better ensure medication safety are: psychosocial treatment, treatment foster care, and the “Fostering Healthy Futures” program.

Conclusion: Psychotropic medications are being prescribed without utilizing the AACAP protocols effectively. Additionally, safer first line treatments, such as psychological therapy, could be used in place of medications to increase safety and decrease negative long-term effects for foster children who are prescribed psychotropic medication.

Key Words: foster children, overmedication, polypharmacy, psychotropic
Introduction

Background and Significance

Foster care is a growing phenomenon in the United States. According to the Adoption and Foster Care Analysis and Reporting System (2014), in the year 2014, an estimated 415,129 children in the U.S., ages 0-18, were part of the foster care system. The American Academy of Child and Adolescent Psychiatry (AACAP) lists several reasons why a child would be placed in foster care, such as a child being abused, neglected, or abandoned by his parents (AACAP, 2015). Trends have shown increasing numbers of children in the foster system over the last three years and fewer adoptions (Davenport, 2015). Transferring a child into foster care puts the child under tremendous stress and this stress is compounded by the trauma endured from possible abuse in the child’s previous home (AACAP, 2015).

Psychotropic medications, also known as psychoactive medications, are drugs that affect a person’s emotions, thoughts, and behaviors (Scott, 2009). The word psychotropic comes from the Greek words “psycho” and “trop”, which literally translate to turning the mind, because that is what these medications are intended to do (Online Etymology Dictionary, 2017). Psychiatric disorders cause there to be too much or too little transmission of a specific neurotransmitter in the brain. Psychotropic drugs operate by activating a neurotransmitter that will either inhibit or potentiate an electrical impulse to correct the existing imbalance. The main categories of psychoactive medications are antidepressants, mood stabilizers, psychostimulants, antianxiety drugs, and antipsychotic drugs (Scott, 2009).

The U.S. Government Accountability Office (GAO) released a report in 2011 after auditing the trends of prescribing psychoactive drugs to foster children, ages 0-18, in five states
(Lord, 2014). The audit uncovered that foster children were being prescribed psychotropic medications at an average rate that was 4.5 times higher than their peers. The report also found that thousands of foster children across the U.S. were prescribed more than five psychotropic medications concurrently, with no evidence supporting this method of treatment. In fact, polypharmacy increases both adverse and long-term effects of treatment, as well as making it difficult to discern which medication is responsible for positive outcomes. Additionally, the report uncovered that thousands of foster children were prescribed psychotropic medications at amounts that surpassed the FDA approved doses. Furthermore, the report indicated that 6.5% of foster children were prescribed antipsychotic medication, which is an extremely potent group of medications with severe side effects. The average age of the children taking antipsychotics was between 6-11 years old, and many antipsychotics have not been proven safe or effective for children. (Lord, 2014).

In the last 20 years, foster care has grown 65% (Steele & Buchi, 2008). One study found that 71% of foster children were given psychotropic medication compared to 3.9% of youth in the general population (Warner, Song, & Pottick, 2014). Zito et al. (2008) found 72.5% of foster youth were taking psychotropic medications, while dosReis et al. (2011) found the prevalence of psychotropic medication use can be as high as 77% among foster youth. These rates highlight a steadily increasing trend in prescribing psychotropic medication to the foster population, yet studies lack evidence of the effectiveness of the treatment regimens and disregarded safety concerns, especially in an adolescent population (Steele & Buchi, 2008).

The AACAP created protocols to ensure the proper prescribing of psychotropic drugs for foster children (Lee, Foras, & Brown, 2015). The first requirement outlined is that after a child is removed from his home, he is required to receive a mental health screening and assessment to
determine if any trauma treatment is necessary. If psychotropic drugs are utilized for treatment, a psychiatric evaluation must be done. Additionally, all stakeholders must be informed about the medication plan, be part of the decision-making process, and the responsible stakeholder must consent to the medication and the minor must assent to it. The prescribing physician must then establish guidelines for the medication use and monitor the medications effect over time. While it is the intention of many physicians and caseworkers to be constantly active in the medicating process, heavy caseloads and time limits often prevent adequate monitoring and joint planning. Additionally, there are currently no requirements for medication training in a regular foster care home, and the physician has no obligation to provide further resources for foster parents to understand medication regimens (Lee, Foras, & Brown, 2015).

Despite the AACAP guidelines, higher rates of mental disorders and prescribing of psychotropic medication creates a major risk for the foster population (Lord, 2014). While all medications have side effects, the risks and potential adverse effects of psychotropic medication in the adolescent population is not well understood. It is evident that foster children are prescribed medications much more than the general population. It is unclear if there is proper understanding and adherence to the medication regimen or if the types, dosages, number of concurrent medications, and ages at which foster children begin taking psychotropic medications are safe or the best course of treatment (Lord, 2014).

**Purpose Statement**

The purpose of this integrative literature review is to better understand the factors associated with over-prescription of psychotropic medications to foster children as defined by the AACAP guidelines and to ascertain what risks are associated with high prescribing rates. Additionally, this review will determine alternative treatments to remedy this growing problem.
Research Questions

The following research questions will guide this study:

1. What factors contribute to high prescribing rates of psychotropic medications among foster children?
2. What risks are associated with prescribing psychotropic medication to foster children that do not follow AACAP guidelines?
3. What alternatives to psychotropic medications can effectively manage mental illness in foster children?

Conceptual Framework

The conceptual framework for this paper is Neuman’s system model. This model focuses on how a person responds to stressors in his or her environment, which is referred to as an open system. Biological, mental, environmental, sociocultural, developmental, and spiritual factors are all interrelated pieces that compose the system. A healthy individual can adapt to stressors in any of these capacities. The system model is therefore considered a holistic model of care (Neuman, & Fawcett, 2011).

In Neuman’s model, the basic functions of life, such as genetic structure and baseline physiology, are at the center of the circle. Concentric circles around the core called lines of resistance (LOR) are factors that protect a person against stress. The outermost circle is called the flexible line of defense (FLD) and just within that circle is the normal line of defense (NLD). The FLD acts as a first line barrier against the stressors and the more flexibility that the line has, the less the stress will affect a person. The NLD represents a person’s normal healthy state, and it is not good at shielding against stress. The NLD indicates the stability of the system. When both
Foster children are in a very high stress system. Each stressor the children encounter weakens their lines of defense and leaves them vulnerable. A break in the system from environmental stressors seems to affect the psychological variable most often in foster children. Interventions such as therapy could act as a primary prevention strategy by educating foster children about healthy coping mechanisms and managing stressors to strengthen weakened lines of defense. With secondary prevention, damage has already been done to the system and the focus is on ensuring that the damage to the system does not reach the core. At this point, medication may be necessary. It is possible that utilizing more primary prevention for children in foster care could limit the need for medication, as well as limiting the severity of damage to child’s system from stress.
Figure 1. The Neuman system model (Neuman, 2011).

Methods

Research Design

An integrative literature review was conducted to address the research questions proposed in this study. The review analyzes and comprehensively summarizes the selected sample of studies to create a picture of the overuse of psychotropic medication for the foster youth population. Both quantitative and qualitative studies are included in the review. This literature review will help nurses gain a better understanding of the issue at hand and advocate for the best interest of their patients who meet these criteria.

Literature Search Strategies

A computerized search was completed utilizing several databases, including the Cumulative Index to Nursing and Health Literature (CINAHL), PsycInfo, ProQuest Nursing and Allied Health Source, ProQuest Sociology Collection, and PubMed. Searches were done on these
databases with a variety of combinations of key words which included foster children, foster system, foster care, foster parents, foster home care, psychotropic drugs, psychotropic medications, hypnotics, antianxiety agents, tranquilizing agents, antipsychotics, and antidepressive agents. The word foster was searched with the limiter of subject heading to ensure that the subjects in the selected articles are part of the foster system.

**Literature Search Limitations and Inclusion/Exclusion Criteria**

Articles used in this literature review include those relating to children in the foster care system, ages 0-18. Furthermore, articles are connected to the keywords used in the database search; however, to ensure the database search isolates the most relevant results, the word foster will be required to be a major subject heading for the search criteria. Additional inclusion criteria are that the article is peer reviewed, written in English, identified as a research or journal article, is a primary source, is published after the year 2008, is a quantitative or qualitative study, and that the study is done in the U.S. The articles that met these criteria were read and evaluated for use on an individual basis. Articles were excluded if the research participants were not specified as foster children, if the study was done in a language other than English, if the article was a literature review or case study, if the article was written before 2008, if participants were primarily over 18 years old, or if the study was pertaining to foster care outside of the U.S. Of the 6,402 articles identifies in the databases using key word searches, eighteen articles were selected after determining that all inclusion and exclusion criteria were met. Table 1 depicts the way the articles were selected based on the inclusion and exclusion criteria listed above.

**Data Synthesis and Analysis**
Eighteen articles were included in the literature review. All articles included outcomes of foster children who were prescribed psychotropic medication. Data synthesis and analysis was done with the framework of Whittemore and Knafl (2005). Each article was individually reviewed for related content and divided into subgroups to further facilitate the analysis for data reduction. Data was congregated and exhibited based on variables, such as the author, year written, sample, alternative treatments, and results. Data is displayed in a matrix for clear comparison of all variables. Data comparison was done to find themes and answer the proposed research questions. Table 2 lists selected articles in a clear way for data analysis.

**Results**

The results are categorized based on the proposed research questions. The first section will highlight trends that are correlated with high prescribing rates, such as demographics, diagnosis, prescriber and medication type, and fragmented care. The second section will analyze the risks associated with prescribing habits that do not follow AACAP guidelines, such as polypharmacy, exorbitant and off label antipsychotic use, receiving a treatment plan that does not follow evidence-based practice, and receiving medication before proper mental health screenings and diagnosis are completed. The final section will consider alternative options that can be utilized to limit the amount of psychotropic medication prescribed and can better ensure medication safety, such as psychosocial treatment, treatment foster care, and the “fostering healthy futures” program.

**Factors Associated with Prescribing Trends**

**Demographics.** White, male children, on the older end of the spectrum were found to be the most likely to be prescribed a psychoactive medication and were most likely to struggle
behaviorally (Raghavan, Lama, Kohl & Hamilton, 2010; Steele & Buchi, 2008; Warner, Song, & Pottick, 2014). Moreover, Zito et al. (2008) found that white males between the ages 10-14 were most likely to be prescribed psychotropic medication and Brenner et al. (2014) found that 6-12-year olds had highest medication use. Medication rates were found to be higher among Medicaid insured foster children and varied depending on demographic location, drastically differing from state to state (Warner, Song, & Pottick, 2014). One study found that predictors were more location based then individual or diagnosis based (Raghavan, Lama, Kohl & Hamilton, 2010). Urban areas have a higher incidence of psychotropic medication oversight (Mackie et al., 2011) and the southwest states have highest prevalence of prescribing psychotropic medication (Zito et al., 2008). Other studies found that symptoms were the greatest predictor of prescribing rates (Brenner et al., 2014).

**Diagnosis.** While the high prescribing rates of psychotropic medications may be part of a growing trend of physicians prescribing more over the past 10 years, the high rates of psychotropic use among the foster population is also due to the prevalence of behavioral and emotional issues consistent in this population (Mackie et al., 2011). Zito et al. (2008) found that of the children being treated with psychotropic medication, 39% of kids were being treated for ADHD, 36% for depression, 34% for anxiety, and, 21% for conduct disorders, and 17% for bipolar disorder. Raghavan & McMillen (2008) found that 45% of foster children were diagnosed with at least one DSM IV diagnosis. The most common diagnoses among foster children receiving psychotropic medication was ADHD (55%) followed by anxiety (52%) (Linares, Martinez- Martin, & Castellanos, 2013).

**Provider and Medication Type.** Zito et al. (2008) found that in a general random sample of children in foster care, psychiatrists prescribed 93% of psychotropic meds to foster
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children, as opposed to primary care providers (PCP). Zito et al. (2008) also found that psychiatrists are more likely to prescribe antipsychotics and lithium than antidepressants and anxiolytics like PCP’s. Alternatively, Brenner et al. (2014) found that foster children are more often prescribed psychotropic medication from a non-psychiatrist. Brenner et al. (2014) and Raghavan & McMillen (2008) found that antidepressants were the most common medication prescribed, comprising 67% of the psychotropic medications, whereas Linares, Martinez-Martin, & Castellanos (2013) found that the most common medication prescribed was stimulants (69%) followed by atypical antipsychotics at (65%). The most common combination of medications was antidepressants and antipsychotics (Raghavan & McMillen, 2008).

**Fragmented Care.** One cause of high prescribing rates of psychotropic medication for children in foster care is discontinuity of care (Fontanella, Gupta, Hiance-Steelesmith, & Valentine, 2015). Limited access to quality care, frequently changing guardianship, and providers being unable to access medical charts were the primary barriers that led to fragmented care in this population (Steele & Buchi, 2008). Having a constant source of care, having a relationship with the same provider time after time, having an individualized plan of care, having a reliable source to monitor treatment outcomes are all important factors in ensuring proper, safe and effective treatment (Fontanella, Gupta, Hiance-Steelesmith, & Valentine, 2015). Foster children rarely have continuity of care, and frequent disruptions in care can risk adherence to already complex medication routines, as well as monitoring for adverse reactions to medication (Warner, Song, & Pottick, 2014). Because of a lack of continuous care, many foster children do not get the required mental health screenings and do not have sufficient primary care, which is the first barrier of defense when it comes to consistently monitoring treatment plans (Fontanella, Gupta, Hiance-Steelesmith, & Valentine, 2015). Fragmented care also jeopardizes proper
medication reconciliation which can lead to patients receiving multiple psychotropic medications in the same class (Fontanella, Gupta, Hiance-Steelesmith, & Valentine, 2015). Additionally, some foster parents were told that their foster child had a mental health condition but were not able to obtain resources or appointments for several months (Hayes, Geiger, & Lietz, 2015). Fontanella, Gupta, Hiance-Steelesmith, & Valentine (2015) found that of 93.6% of foster children who were diagnosed with bipolar disorder, only 46% had regular outpatient visits and more than 31% of the sample had a gap in care of 60 days or more. Another sample showed that more than half of foster children with severe emotional disorders taking psychotropic medication did not receive monthly outpatient treatments, which is considered a minimal requirement of care (Fontanella, Gupta, Hiance-Steelesmith, & Valentine, 2015). Moreover, continuity of care is associated with positive effects such as improved health outcomes, increased medication adherence, improved preventative care, decreased emergency and hospital visits and lower expenditures (Fontanella, Gupta, Hiance-Steelesmith, & Valentine, 2015).

Risks Associated with Non-Protocol Prescribing

**Polypharmacy.** Psychotropic polypharmacy is described as taking three or more psychotropic medications concurrently (Rubin et al., 2012). Polypharmacy is more prevalent among foster youth than the general population (Warner, Song, & Pottick, 2014). In 2008, Raghavan & McMillen found that the prevalence of polypharmacy was 10% among foster children, while Brenner et al. (2014) found that the rate of polypharmacy was 25%, and Mackie et al. (2011) found that 41.3% of foster youth exhibited polypharmacy. Rubin et al. (2012) found that 20% of those who displayed polypharmacy were taking multiple medications in the same drug class. For those receiving 5 or more psychotropic medications, antipsychotics were the most common concomitantly prescribed drug (Zito et al., 2008).
Antipsychotic Use. Rubin et al., (2012) found that 10% of foster children were taking antipsychotics, while Zito et al., (2008) found that 22% were taking antipsychotics. Antipsychotics are mainly used to treat schizophrenia, bipolar, and autism disorders, however antipsychotics are prescribed most often to foster children for off label uses (Rubin et al., 2012). dosReis et al., (2011) found that, 53% of foster children taking antipsychotic medications were prescribed the medication as a treatment for ADHD and 34% for the treatment of depression, which are off label uses. Also, psychotropic medications are being prescribed to foster children at increasing rates to treat disruptive behaviors (Rubin et al., 2012). dosReis et al., (2011), Raghavan & McMillen, (2008), and Rubin et al., (2012) found that nearly all the antipsychotics prescribed were second generation antipsychotics, also known as atypical antipsychotics. Second generation antipsychotics are strongly linked to adverse metabolic effects, such as the development of type 2 diabetes, dyslipidemia, and weight gain (Cohen, Lacasse, Duan & Sengelmann, 2013; dosReis et al., 2011; Rubin et al., 2012), as well as pathological cholesterol changes, and negative effects in the cardiac and neurologic systems (Cohen, Lacasse, Duan & Sengelmann, 2013). Children were discovered to develop these metabolic disorders in relation to atypical antipsychotics 5.1 times more often than the adult population (dosReis et al., 2011).

Additionally, despite the lack of evidence to suggest the efficacy of polypharmacy or analyze the risks that may come with it, more than 38% of foster children were concomitantly prescribed an additional psychotropic medication together with their antipsychotic medication (dosReis et al., 2011). Finally, over 20% of the children in foster care taking antipsychotics were prescribed more than one antipsychotic medication concurrently (Rubin et al., 2012).

Lack of Evidence Based Practice. Even though many foster children have mental health needs, very few receive treatment formulated with evidence-based practice, which includes
training children and parents to understand negative side effects of medication, proper medication administration, and to ensuring that each child receives a full mental health evaluation with an accurate diagnosis before prescribing medication (Scozzaro & Janikowski, 2015). There is limited evidence regarding the effectiveness of psychotropic medication among foster children, with complete disregard for functional outcomes, potential for long term durability, and the safety consequences of the treatment regimen for the children (Cohen, Lacasse, Duan & Sengelmann, 2013). Zito et al. (2008) found that all the atypical antipsychotics used by the children in the study were utilized for off label uses without approval from the FDA for dosage and indication in this age group and that 74% of SSRI being prescribed were not approved for adolescents and children. Linares, Martinez- Martin, & Castellanos (2013) found that antipsychotic medications are often combined with stimulant medications to treat ADHD and to treat aggressive behavior although it has not been approved for this population. Brenner et al. (2014) found that 7% of children 0-5 in his study were receiving psychotropic medications, despite regulations stating that children of this age group should not be prescribed any psychotropic medication at all. Additionally, using more than two antipsychotic medications concurrently is not an evidenced based practice and it increases the risk of adverse effects, yet 20% of people taking antipsychotics were taking more than one drug in the same class (Rubin et al., 2012). Also, despite evidence-based practice suggesting monthly psychiatric visits while taking psychotropic drugs, only 42% of adolescents stated that they had seen a psychiatrist in last two months (Brenner et al., 2014). More than 50% of people taking a psychotropic medication were not seeing a psychologist or receiving adjunct social service treatment, as evidence based practice suggests (Brenner et al., 2014).
Lack of Appropriate Screening. Children in foster care are more likely to have mental health care needs which is why more emphasis needs to be placed on ensuring timely mental health evaluations at the time children enter care, following the recommendation of the American Academy of Pediatrics and the Child Welfare League of America (Steele & Buchi, 2008). It is essential that all children get screened for mental illness because there is a proven correlation between being part of a traumatic event, like abuse, and having traumatic symptoms that are indicative of mental illness (Griffin et al., 2011). Almost 80% of foster children have significant emotional and behavioral problems, as well as being eight times more likely than their peers to be hospitalized for a psychiatric disorder (Williams & Sherr, 2009). Foster children were reported to be diagnosed with mental health conditions ten times more than other children in the Medicaid system, and receiving a proper mental health screening increased the likelihood of proper medication and psychosocial treatment following evidenced based practice (Steele & Buchi, 2008). Receiving medication oversight and extra services such as case management, social services, school services, outpatient treatment, and psychiatric visits were highly correlated with number of medications prescribed and increased with each additional medication (Brenner et al., 2014). One study found that more than half of foster children that participated did not receive a mental health evaluation (dosReis et al., 2011).

Alternative/Safer Treatment Options

Psychosocial Treatment. Children in foster care use mental health services at a rate 20 times that the general population (Linares, Martinez-Martin, & Castellanos, 2013). More than 50% of the children in foster care have some type of emotional or behavioral problem, but only 55% of those children receive mental health services and treatment that follow national standards (dosReis et al., 2011; Scozzaro & Janikowski, 2015). Despite several organizations creating
standards of care for medicating foster children, few state and county health administrators stated that they knew that these standards existed (Warner, Song, & Pottick, 2014). According to the standards of care psychotropic medication should not be provided before foster children begin counseling and psychotherapy, and once the child begins therapy the therapy should continue concurrently with the medication treatment (Scozzaro & Janikowski, 2015). For 50% of foster care children, psychotropic medication was the sole treatment for their mental health issues, lacking any adjunct psychosocial treatment (Warner, Song, & Pottick, 2014). A study found that only 33% of the children who were given psychotropic medication received behavioral health care along with it (Mackie et al., 2011; Scozzaro & Janikowski, 2015). Fontanella, Gupta, Hiance-Steelesmith, & Valentine (2015) found that 30% of children who required mental health services received none during a yearlong period. Taussig & Culhane (2010) found that within a group of foster children, 42% met diagnostic criteria for a DSM diagnosis and 57% met criteria for a mental health disorder, yet most of the children in the study did not receive any psychosocial therapy (Hayes, Geiger, & Lietz, 2015). Warner, Song, & Pottick (2014) found that only 10% of youth in foster care being treated with psychotropic medication received concurrent individualized therapy and only 5% received behavioral therapy. Foster parents stated that they were concerned when Medicaid would only approve 4-8 sessions for children to resolve serious emotional and behavioral issues, and many were told that if they want any behavioral counseling that they would likely have to pay out of pocket (Hayes, Geiger, & Lietz, 2015). One study found that the only trauma related diagnosis in the DSM is PTSD, so children with lesser trauma symptoms either get overtreated or not treated at all (Griffin et al., 2011). Better practice to treat trauma symptoms would be to help the children develop more strengths and protective factors.
against trauma, to focus less on treatment with medications, and focus more on risk behaviors, safety, and support (Griffin et al., 2011).

Psychosocial treatment may be effective as sole first line treatment for moderate mental health issues. Williams & Sherr (2009) found that psychosocial treatment was equally as effective for treating foster children with severe emotional and behavioral issues as it is in treating the general population despite its limited use, and that therapy was more effective when focusing on the child’s strength (Williams & Sherr, 2009).

**Treatment Foster Care.** Treatment foster care (TFC) is a community based intensive treatment intervention for foster children with emotional, behavior, and mental health problems (Brenner et al., 2014). In TFC, “treatment foster parents” work as primary caregivers who obtain more training and ensure more supervision of treatments then regular foster parents (Brenner et al., 2014). Brenner et al. (2014) conducted a study and found that 59% of children in TFC take psychotropic medication. For foster children with severe behavioral issues, treatment foster care was found to be more effective at treatment, reducing criminal actions, and ensuring adjunct treatment and services (Robst, Armstrong, & Dollard, 2011).

**Fostering Healthy Futures.** Fostering Healthy Futures (FHF) is a program that combines skills group and mentoring to achieve better self-esteem, social support, social acceptance, and coping skills for foster children that were abused. In a randomized controlled trial, it was concluded that 9 months of treatment at FHF significantly reduced mental health symptoms in the children that participated. There was a decrease in symptoms of anxiety, depression, suicidality, and trauma, and the children had improved quality of life. After the program, children were less likely to need mental health therapy or psychotropic medication. The
trial proved that a good skills training curriculum with evidenced based practice was effective at reducing risk and promoting health (Taussig & Culhane, 2010).

**Discussion**

It was unanimously concluded across all the articles that were reviewed that psychotropic medications are prescribed at higher rates for foster children than the general population. This poses several safety concerns, especially with medications that are considered high risk medications, such as antipsychotics, and when polypharmacy is involved, as each comes with serious adverse effects. It is also unsettling that many of the medications prescribed are not approved for children or for the indicated reason that they were being prescribed. Furthermore, prescribing rates were found to be erratic and vary based on demographics. Prescribing rates should not only be lower but should also be consistent and based solely on symptomology and diagnosis. A 2006 report from the Government Accountability Office (GAO) stated that 1 in 3 states recognized the use of psychotropic medication by the foster population to be among the most pressing issues in the child welfare system (Rubin et al., 2012).

Another issue with the hasty prescribing of medications is that foster advocates do not feel that they were able to participate in treatment planning and education, which is a protocol outlined by the AACAP. A survey found that 48% of foster parents were not included in the treatment planning for their kids, despite being responsible for ensuring the child follows the treatment regimen and felt that physicians often prescribed medications in place of trying to get to the root of mental health issues (Hayes, Geiger, & Lietz, 2015). Many parents consulted the internet, friends, and social workers to gain information about treatment that should have been explained by the provider. Foster parents have reported wanting more decision-making power in their children’s care, being their advocate (Hayes, Geiger, & Lietz, 2015).
Additionally, it seems that despite numerous organizations aside from the AACAP attempting to create safety standards for psychotropic medication use among children in foster care, such as the American Academy of Pediatrics and the Child Welfare League of America, there is limited evidence that these guidelines are used in practice (Steele and Buchi, 2008; Williams & Sherr, 2009). A study found that 47.9% of states endorsed that there should be a state policy about foster children receiving a mental health evaluation (Mackie et al., 2011). 54.2% of states specified that they had policies about psychotropic medication, but 30.4% of these policies were only regarding a subpopulation of children 6 years and younger (Mackie et al, 2011). Only 2 states have specific policies against high risk medications like antipsychotics (Mackie et al, 2011). 26.9% of states said that they had a policy regarding polypharmacy (Mackie et al, 2011). Shockingly, only 29% of welfare agencies stated that they had policies about psychotropic medication monitoring and oversight (Mackie et al, 2011). Perhaps it is not that more policies are needed to regulate the use of psychotropic drugs, rather a more unified set of guidelines with higher utilization and enforcement rates.

Moreover, regardless of the frequent attempts to create effective policy, one of the most effective strategies for reducing the high prescribing rates may be through education. A blind trial was done to determine if an educational session with current literature about psychotropic medication would affect the habits and attitudes of prescribers and advocates regarding psychoactive medication given to foster children. The results were that prescriptions for psychoactive drugs from prescribers and advocates that attended the seminar immediately decreased and continued to decrease for 7 months after the information session, dropping by nearly 20% (Cohen, Lacasse, Duan & Sengelmann, 2013).
One unexpected finding was that one of the ways that psychotropic medication was not used according to protocol was that in some studies psychotropic medication was under prescribed to foster children who were given a DSM diagnosis that qualified them for medical treatment. Undertreatment was found to be an issue with 41% of people who met diagnostic criteria for medical treatment of ADHD and 19% who met criteria for depression, yet they were not prescribed any medication for it (Raghavan & McMillen, 2008).

The safer treatments such as psychosocial and behavioral therapy, should be used as first line treatment for foster children and should continue as adjunct therapy even if it is determined that medical treatment is necessary. Using psychoactive drugs to treat children should be avoided unless all evidenced based practices, such as psychosocial treatments, have been expended, a benefit versus risk analysis for the psychotropic medication comes out in favor of the benefit, the prescriber of the medication is aware of all the effects of the medications, and close observation of the child taking the medication is verified.

**Limitations**

There were several limitations to this review paper. Many of the papers reviewed for this article obtained research based on Medicaid reports which were lacking in certain data points leaving important variables unknown, like the accuracy of DSM diagnoses used to prescribe psychotropic medication and what medications the children were on before entering foster care. Also, the Medicaid reports were not verified by the foster children or parents who were included in the report, so adherence and understanding of the medication regimen were often unknown. Additionally, finding and relevant studies proved difficult because of the sensitive nature of the subjects and because of a lack of available research on the topic. Furthermore, it was difficult to
comprehensively conclude long term effects because of a lack of long term studies among the foster population.

**Suggestions for future research**

Due to the overwhelming results that prove that there is an issue with prescribing psychotropic medication to children in foster care that is not complicit with AACAP guidelines, it is imperative that future research is determine ways to minimize the improper prescribing of psychotropic medications. Ideas for future research would be to continue to follow prescribing trends of psychotropic medications, to assess long term functional outcomes of psychotropic treatment with and without adjunct psychosocial therapy, to do a longitudinal study to determine if psychotropic medication is effective long term or if it is ineffective and discontinued, to determine foster children with continuous care receive less medications then those with fragmented care, to assess polypharmacy trends with psychotropic medication, to assess prescribing habits among different providers to determine the factors that lead to demographic based medication trends, and to determine the efficacy of psychotropic medications that are currently being used without FDA approval. Additionally, it is important to determine which medications and doses can safely be given to children, and to research how much foster children and foster parents understand about their medication regimens and if they accurately follow them.

**Implications for nursing**

As nurses, we are bound by the principles of beneficence and non-maleficence. It is our duty to ensure that the patients that we treat are benefiting from our treatment and that the value of the treatment outweighs the risks associated with it. We must ensure that protocol is being
followed and that foster children receive timely mental health evaluations. Furthermore, any opportunity to educate families about psychotropic medications, their adverse effects, and proper administration should be done. Primary prevention of stressors should be utilized whenever possible, and when medication is utilized, nurses should help ensure that there is proper medication oversight. Additionally, as first line advocates, it is our duty to represent vulnerable populations, like foster children, and advocate on their behalf to prescribing physicians, policy makers, and legislators, to enlighten them about the needs of the population. Nurses in contact with foster children should advocate for psychosocial and behavioral treatment, as well as reducing the amount of psychotropic medication prescribed and the duration of time that children remain on those medications. Lastly, it is important to aid foster parents in understanding the Medicaid system to ensure that effective continuous care is obtained for their children.

**Conclusion**

This review was done because the trend of inappropriately prescribing psychotropic medications to foster children poses a serious threat to a vulnerable population. This review helps determine factors related to high prescribing rates of psychotropic medications, expose the risks related to improper prescribing of psychotropic medication, and outline alternative treatment methods for nurses and healthcare workers to consider in the future. Potential implications of this review are that standardized medication safety procedures may be updated and alternative treatments to medication may be utilized as first line treatment for mental disorders in foster children. Additionally, this review may highlight the need for more oversight and guardian education about psychotropic medication.
References


Appendices

Preliminary Data Search

Table 1: Table of study selection and review process.

<table>
<thead>
<tr>
<th>Number of studies found using keywords</th>
<th>CINAHL N= 118</th>
<th>Psychinfo N=249</th>
<th>PubMed N=481</th>
<th>ProQuest Nursing N= 4286</th>
<th>ProQuest Sociology N=1268</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Studies meeting inclusive criteria</td>
<td>20</td>
<td>11</td>
<td>11</td>
<td>37</td>
<td>36</td>
</tr>
<tr>
<td>Number of studies after using exclusion criteria</td>
<td>10</td>
<td>4</td>
<td>6</td>
<td>6</td>
<td>27</td>
</tr>
<tr>
<td>Number of studies after excluding duplicates</td>
<td>9</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Total Selected articles: 18</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Data Matrix

Table 2: Data summary of included articles.

<table>
<thead>
<tr>
<th>Source</th>
<th>Sample</th>
<th>Method</th>
<th>Concepts Measured</th>
<th>Alternative Interventions</th>
<th>Results</th>
</tr>
</thead>
</table>
| Brenner, Southerland, Burns, Wagner, & Farmer, 2014 | 247 foster children (14 Treatment Foster Homes) | Randomized trial | • Treatment foster care  
• Psychotropic medication  
• Polypharmacy  
• Psychosocial therapy | Randomized test trial of Treatment Foster Care Agencies | A high correlation between mental health symptoms and psychotropic treatment and a high rate of polypharmacy |
<table>
<thead>
<tr>
<th>Study</th>
<th>Sample Size</th>
<th>Study Design</th>
<th>Methods</th>
<th>Data Analysis/Significance</th>
<th>Findings</th>
</tr>
</thead>
</table>
| Warner, Song, & Pottick, 2014             | 1,722 foster children | Survey | • Mental health services  
• Psychotropic medication  
• Primary intervention  
• Adjunct therapy  
• Continuity of care | -                          | Among foster children presenting problems predicted psychotropic treatment |
| Rubin, Matone, Huang, dosReis, Feudtner, & Localio, 2012 | 686,080 foster children (based on Medicaid files) | Data analysis with logistical regression | • Polypharmacy  
• Antipsychotics  
• Psychotropic treatment  
• Medicaid  
• Evidence based practice | Prescriptions filled | Use of antipsychotics and polypharmacy have increased |
| Mackie et al., 2011                       | 58 (informants) | Cross sectional national study | • Psychotropic medication policy  
• Medication oversight  
• Mental health evaluation  
• Medication consent  
• Polypharmacy  
• antipsychotics | Interviews, document review, and census review | Psychotropic medication policy varies by state if it exists at all. Most are rarely followed |
| Scozzaro & Janikowski, 2015               | 200 (case files) in Northeast county | Case file analysis | • Demographics  
• Mental health  
• Behavioral therapy  
• Psychotropic therapy  
• Mental health | Case file review | Foster children have higher rate of mental health diagnosis as well as psychotropic medication and behavioral therapy |
### Inappropriately Medicating Foster Children

<table>
<thead>
<tr>
<th>Study Authors</th>
<th>Sample Size</th>
<th>Study Type</th>
<th>Variables</th>
<th>Findings</th>
</tr>
</thead>
</table>
| Fontanella, Gupta, Hiance-Steelesmith, & Valentine, 2015 | 952 foster youth | Longitudinal cohort study           | • evidence based practice  
• adjunct therapy  
• continuity of care  
• serious emotional disturbance  
• bipolar and schizophrenic patients  
• lack of screening | Outpatient psychosocial and medical treatment  
Less than half sample received regular outpatient services-discontinuous care |
| Zito et al., 2008                 | 472 foster youth in southwest states | Random sample Medicaid data analysis | • Medicaid  
• psychotropic monotherapy  
• adjunct therapy  
• mental health disorders  
• polypharmacy  
• antipsychotics  
• drugs by class  
• demographic  
• prescribers | Assessment of Medicaid data  
Foster children receive psychotropic treatment and polypharmacy at much higher rate than general population |
| Cohen, Lacasse, Duan, & Sengelman, 2013 | 4,000 prescribers and advocates | Blind trial                         | • child welfare workers  
• education  
• alternative treatments  
• evidence based practice | Educational information on psychotropics  
(CriticalThin kRX seminar) |
| Raghavan, Lama, Kohl              | 5,501 foster | Cross sectional                      | • psychotropic trends | National Survey of  
Child characteristics |
<table>
<thead>
<tr>
<th>Authors</th>
<th>Sample Size</th>
<th>Methodology</th>
<th>Outcomes</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hamilton, 2010</td>
<td>children analysis</td>
<td>• Mental health</td>
<td>Child and Adolescent Well Being</td>
<td>rather than mental health need determine prescription</td>
</tr>
<tr>
<td>Steele &amp; Buchi, 2008</td>
<td>6177 foster children in Utah</td>
<td>Database analysis</td>
<td>Medical and mental health evaluation</td>
<td>Prevalence of mental health issues and that psychotropic medication use increasing with age</td>
</tr>
<tr>
<td>Linares, Martinez-Martin, &amp; Castellanos, 2013</td>
<td>252 kids (95 sibling groups) in New York</td>
<td>Cohort study with interviews and surveys</td>
<td>Caregiver and child assessments</td>
<td>correlations with prescription of psychotropics and long term effects of antipsychotics</td>
</tr>
<tr>
<td>Raghavan &amp; McMillen, 2008</td>
<td>403 foster children in Midwestern states</td>
<td>Interview s</td>
<td>Interviews based on DSM IV and medication audits</td>
<td>Polypharmacy correlates to abuse or psychiatric disorder</td>
</tr>
<tr>
<td>Hayes</td>
<td>442 Foster</td>
<td>• psychotropic</td>
<td>Open ended</td>
<td>Parents</td>
</tr>
<tr>
<td>Study</td>
<td>Sample Size</td>
<td>Study Design/Methodology</td>
<td>Results/Findings</td>
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<td>-------------------------------------------</td>
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<tr>
<td>Geiger, &amp; Lietz, 2015</td>
<td>foster parents</td>
<td>parent interview</td>
<td>treatment • behavioral treatment • mental health diagnosis • Medicaid • Continuity of care • Adjunct therapy submerged in case worker intake but dissatisfaction and confusion with behavioral therapy and psychotropic therapy treatments</td>
<td></td>
</tr>
<tr>
<td>Robst, Armstrong, &amp; Dollard, 2011</td>
<td>1567 foster children in Florida</td>
<td>Data analysis</td>
<td>Treatment foster care • Treatment group care • Medicaid • Felonies</td>
<td></td>
</tr>
<tr>
<td>Williams &amp; Sherr, 2009</td>
<td>218 foster children</td>
<td>Interview and survey analysis</td>
<td>Medicaid • Emotional disorders • DSM diagnosis • Foster vs. non- foster youth • Screening policy</td>
<td></td>
</tr>
<tr>
<td>Griffin, McClelland, Holzberg, Stolbach, Maj, &amp; Kisiel, 2011</td>
<td>14,103 foster children</td>
<td>CANS survey</td>
<td>CANS decision support tool • Mental health symptoms policy</td>
<td></td>
</tr>
<tr>
<td>dosReis, Yoon, Rubin, Riddle, Noll, &amp; Rothbard, 2011</td>
<td>16,969 in Mid-Atlantic region</td>
<td>Bivariate statistical analysis based on surveys</td>
<td>antipsychotics • psychiatric diagnosis • lack of screening</td>
<td></td>
</tr>
<tr>
<td>Taussig &amp; Culhane, 2010</td>
<td>156 foster children</td>
<td>Randomized control trial</td>
<td>maltreated children • mental health functioning • psychiatric • Mentoring and skills group- “Fostering Health”</td>
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<tr>
<td>symptoms</td>
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<tr>
<td>• alternative treatment</td>
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<tr>
<td>• adjunct therapy</td>
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</tbody>
</table>

| Futures” program |  |  |