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Antidepressant Prescribing by Pediatricians: A Mixed-Methods Analysis

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Abstract

Background—Among pediatricians, perceived knowledge of efficacy, tolerability, dosing and side effects of antidepressants represent significant sources of variability in the use of these medications in youth with depressive and anxiety disorders. Importantly, the qualitative factors that relate to varying levels of comfort with antidepressants and willingness to prescribe are poorly understood.

Methods—Using a mixed-methods approach, in-depth interviews were conducted with community-based and academic medical center-based pediatricians ($N=14$). Interviews were audio-recorded and iteratively coded; themes were then generated using inductive thematic analysis. The relationship between demographic factors, knowledge of antidepressants, dosing and side effects, as well as prescribing likelihood scores for depressive disorders, anxiety disorders or co-morbid anxiety and depressive disorders, were evaluated using mixed models.

Results—Pediatricians reported antidepressants to be effective and well-tolerated. However, the likelihood of individual physicians initiating an antidepressant was significantly lower for anxiety disorders relative to depressive disorders with similar functional impairment. Pediatricians

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considered symptom severity/functional impairment, age and the availability of psychotherapy as they considered prescribing antidepressants to individual patients. Antidepressant choice was related to the physician's perceived knowledge and comfort with a particular antidepressant, financial factors and the disorder-specific evidence base for that particular medication and consultation with mental health practitioners. Pediatricians noted similar efficacy and tolerability profiles for antidepressants in youth with depressive disorders and anxiety disorders, but tended to utilize "therapy first" approaches for anxiety disorders relative to depressive disorders. Parental and family factors that influenced prescribing of antidepressants by pediatricians included parental ambivalence, family-related dysfunction and impairment secondary to the child's psychopathology as well as the child's psychosocial milieu.

Conclusions—Pediatricians consider patient- and family-specific challenges when choosing prescribing antidepressant medications and are, in general, less likely to prescribe antidepressants for youth with anxiety disorders compared to youth with depressive disorders. The lower likelihood of prescribing antidepressants for anxious youth is not related to perception of the efficacy or tolerability, but rather to a perception that anxiety disorders are less impairing and more appropriately managed with psychotherapy.

Key words and abbreviations

antidepressant; depression; anxiety; pediatrician

INTRODUCTION

In primary pediatric healthcare settings, both anxiety and depressive disorders are prevalent and are associated with significant morbidity. When they emerge during childhood or adolescence,^{1–3} depressive and anxiety disorders cause significant difficulties in the development of healthy social and family relationships, school performance, and increase the risk of secondary psychiatric disorders later in life.^{1,4–6} Moreover, these disorders often co-occur with other psychiatric disorders and increase the risk of suicidal ideation or suicide attempts.^{7–9} Unfortunately, children and adolescents suffering from depressive and anxiety disorders are often not identified and frequently do not receive treatment.¹⁰

Psychopharmacologic treatments (*e.g.*, antidepressant medications) effectively reduce depressive and anxiety symptoms in double-blind, placebo-controlled trials of pediatric patients,^{11–13} yet many pediatricians are hesitant to prescribe them^{14,15}. To this point, the extant data suggest that this may be attributable to a lack of confidence¹⁵ or perceived deficits in fund of knowledge.^{15,16} However, the factors influencing an individual's comfort with prescribing these medications in youth with anxiety or depressive disorders is largely unknown.^{17,18}

Factors that determine the likelihood of antidepressant prescribing in children and adolescents are largely unknown,^{17,18} and factors that influence the choice of antidepressant prescribed are poorly understood. In studies of adults who are treated with antidepressant medications, cost (or perception of cost), perception of tolerability,¹⁹ practitioner's prior experience with a particular antidepressant and formulary availability are likely determinants of antidepressant choice. While there is a general sense that these factors are important in

the decision making process, the way in which child health clinicians consider these factors is unknown.

There are a number of factors that may influence clinicians and make them more hesitant to prescribe these medications. Among these factors are concerns related to treatment-emergent suicidality and the “black box warning” regarding suicidality in children, adolescents and young adults. In this regard, a 2004 fixed-effect analysis, completed by the US FDA,²⁰ suggested an increased risk of suicidality in children and adolescents treated with antidepressants and ultimately resulted in the issuing of a black box warning. Subsequent studies have failed to replicate this effect and these studies include multiple meta-analysis^{21,22} and prospective trials of antidepressants in youth.^{11,23,24} However, primary care providers remain concerned that antidepressants may increase the risk of suicidal behavior (e.g., suicidal ideation, suicidal intent, suicide attempts). This concern has decreased prescribing of antidepressants in pediatric populations.²⁵ The qualitative factors that affect the perception of safety as well as tolerability (e.g., side effect profile) and its relationship to prescribing are poorly understood.

Parental and family factors are important regarding the decision to employ psychotherapy or antidepressant medications. These factors include parental ambivalence related to medications, parental expectation, parental anxiety related to psychopharmacologic treatment, patient perception of illness or impairment. In addition, these factors directly affect adherence and outcome.^{26,27} Recent prospective trials of youth with mood disorders have demonstrated that family environment and parent-child conflict may also predict or moderate response to acute treatments in adolescents;²⁷ but, how clinicians consider these factors is uncharacterized in the current literature. This study examines how clinicians’ beliefs, perceptions and themes related to efficacy, tolerability and safety of antidepressants in youth with anxiety and depressive disorders influence antidepressant-prescribing patterns, and if these themes or perceptions vary as a function of practice setting.

METHODS

This study was approved by the Institutional Review Board and received a waiver of consent. Prior to participation, the purpose of the study was explained to each participant. The proposed sample included in-depth, semi-structured interviews (IDIs) with individual pediatricians. To obtain a maximally representative sample, attempts were made to recruit physicians of both sexes, aged 28–70 years and to recruit equal numbers of pediatricians who practiced in urban and suburban as well as rural areas and efforts were made to sample pediatricians who practiced in both academic and community-based settings.

Demographics

Demographic and practice information was provided by the individual physician and included age, sex, ethnicity, years of training, practice setting type, attendance at mental-health-related continuing medical education within the past year and type of medical training (e.g., osteopathic or allopathic).

Quantitative Methods and Analysis

In addition to demographic and practice information (e.g., approximate frequency of depressive disorders or anxiety disorders in practice), physicians initially reported their “comfort” with antidepressant prescribing including (1) recognizing antidepressant side effects; (2) managing antidepressant side effects and (3) dosing/titrating antidepressants. Participants were asked to characterize their likelihood of prescribing an antidepressant in each of 3 clinical vignettes. Each vignette was gender neutral and described adolescents with (1) moderate major depressive disorder (MDD); (2) moderate generalized anxiety disorder and panic disorder, as well as significant school avoidance, but no significant depressive symptoms; (3) moderate MDD with co-occurring GAD. All vignettes also noted the absence of substance use or abuse, stated that “routine screening tests are negative” and ended with the question: “How likely are you to begin an antidepressant for the patient described above?” Potential responses included: “unlikely,” “somewhat likely,” “likely” and “very likely” and were coded sequentially from 0–3.

In addition to descriptive statistics, the likelihood of physician prescribing in patients with moderate anxiety disorders, moderate depressive disorders or moderate depressive disorders with a co-morbid anxiety disorder was evaluated using linear models incorporating demographic variables (e.g., age, sex, practice setting), continuing medical education exposure and self-reported comfort with (1) dosing antidepressants, (2) recognizing antidepressant-related side effects and (3) managing antidepressant-related side effects.

To facilitate data visualization of the likelihood of antidepressant prescribing, kernel density estimations were performed,^{28,29} and each density estimation reflected the probability density function of a continuous prescribing likelihood variable independent of any assumption regarding the underlying distribution for the prescribing likelihood. Thus, at every datum, the kernel function was created with the datum at its “center” so as to ensure the kernel being symmetric about that particular datum. Thereafter, the probability density was estimated by summation of all kernel functions divided by the number of observations.

All statistical analyses were performed in R (version 3.2.3). *P*-values <0.05 were considered statistically significant and, secondary to the exploratory nature of these analyses, no correction for multiple comparisons was made.

Qualitative Methods and Analysis

Individual interviews with pediatricians were conducted by a child and adolescent psychiatrist (JRS) and were audio-recorded. These interviews focused on determinants of prescribing, perception of tolerability and efficacy of antidepressants in youth with depressive disorders and anxiety disorders, and on parental and family factors that influence antidepressant prescribing. Specific questions are described in Table 1. Audio recordings were transcribed verbatim. Inductive thematic analysis was employed and transcripts coded in duplicate with all transcripts reviewed by the interviewer and one additional physician. The final coding team consisted of 2 physicians (1 psychiatrist, 1 child and adolescent psychiatrist/pediatrician). The initial coding framework was determined from 3 transcripts/coder and labels for themes and sub-themes were generated. These were then tested with 2

additional transcripts for each coder at which time both coders met with the principal investigator (JRS) to develop consensus. The coding team also met periodically to reconcile coding differences obtained in the course of the individual coding and during these meetings, attention was paid to code decay and drift, as well as other issues germane to coding integrity.

Results

Demographic and practice characteristics of the physician participations are shown in Table 2. Kernel density distributions of the likelihood of antidepressant prescribing (Figure 1) suggest that physicians are more likely to prescribe an antidepressant to youth with major depressive disorder (moderate severity) compared to youth with an anxiety disorder ($p=0.04$) associated with similar impairment and symptom severity. Multiple linear regression models of the likelihood of prescribing for youth with depressive disorders suggest that the likelihood of prescribing is associated with the amount of CME ($p=0.05$) and with the reported frequency of depressive and anxiety disorders in the practice ($p=0.03$ and $p=0.05$, respectively). However, no demographic or clinical variable was associated with antidepressant prescribing.

Determinants of Prescribing

Nine key factors were associated with antidepressant prescribing in youth with anxiety and/or depressive disorders. These included functional impairment, symptom severity, age, availability of non-pharmacologic treatment, standardized symptom ratings, child's preference patient-physician alliance and consultation with mental health providers.

Almost all physicians noted functional impairment to be a key factor in deciding to prescribe or not prescribe an antidepressant for a pediatric patient with a depressive or anxiety disorder. Two sub-themes emerged with regard to the functional impairment of the child and the functional impairment of the family. Symptom severity was also a key factor in the decision to prescribe antidepressants for the majority of pediatricians, although this theme—at times—overlapped with functional impairment. In cases where there was believed to be less symptom severity, pediatricians made statements reflecting the use of psychotherapy for patients with less severe symptomatology. As one physician described this approach, “it depends on how sick I feel they are, if I would just try psychotherapy verses psychotherapy with medication.”

The lack of availability of psychotherapy was a significant factor in clinical situations where clinicians were more likely to prescribe medications. For two clinicians, the availability of psychotherapy was particularly important in situations where the pediatrician was ambivalent with regard to whether or not to prescribe an antidepressant. Some physicians reported a sense of urgency with regard to the lack of therapy, noting: “if there is no access to psychotherapy, I might be more likely to prescribe just to kind of get something on board.” Another physician reflected on the effects of delaying treatment, in light of access concerns, by adding: “When they're having a lot of problems with access [to therapy] and they have that moderate kind of depression...I would say I'm more likely to prescribe

because they're going to have to wait months, and as they're waiting months, then they have worsening of their depression because I think they lose hope."

The age of the patient was identified by almost every pediatrician interviewed as an important factor in their decision making. Many of the participants expressed concern that additional factors (*e.g.*, family conflict, bullying, school-related problems) might be particularly important with regard to symptom formation in younger patients and therefore could be less amenable to purely psychopharmacologic interventions. About half of studied clinicians who identified age as an important factor to consider cited their discomfort with the use of antidepressants in younger children.

Self-report and parent report forms were used by approximately one third of pediatricians and of these pediatricians, most had been exposed to symptom rating scales either in training (*e.g.*, residency) or in continuing medical education programs. Scales described included the Screen for Child Anxiety and Related Disorders (SCARED) and the Patient Health Questionnaire-9 (PHQ-9), which were not used for universal screening, but rather used as a targeted screen when the clinician suspected a mood or anxiety disorder. Some practitioners drew parallels between the well-accepted use of similar instruments in pediatric patients with attention deficit hyperactivity disorder. Of practitioners who described the use of rating scales, none described serial or outcome assessment with these instruments during the course of treatment.

Practitioners noted that the pediatric patient's understanding of the concept of pharmacologic treatment was a factor in their decision to prescribe an antidepressant; among practitioners who responded with statements that were coded in this category, age was frequently noted to be a moderating factor. The importance of the child's understanding of pharmacologic treatment and agreement with this approach was viewed as increasingly important with increasing age. The pediatric patient's understanding of treatment was believed to be both a proxy for motivation and related to treatment adherence by many pediatricians.

Several physicians, all of whom were community-based, reported that the longitudinal experience and ongoing patient-parent-physician alliance is an important factor in terms of the decision to prescribe an antidepressant for a given child or adolescent with depression or anxiety. One male, community-based pediatrician reflected on this factor, noting: "some of it depends on their comfort with me and how long we've had a relationship and whether they're willing to trust my judgment in going up on meds."

Collaboration with a mental health practitioner (*e.g.*, therapist, psychologist, psychiatrist) or formal consultation were frequently noted as factors that made pediatricians feel more comfortable in prescribing antidepressants. An independent evaluation increased pediatricians' confidence in both the diagnosis of an anxiety or depressive disorder and also with regard to the perceived appropriateness of pharmacotherapy for an individual patient. For example, one pediatrician reported: "I usually insist on having a mental health partner, usually a therapist, and when I feel like I'm a little out of my element then I will tend to refer them on to a child psychiatrist." Of concern, several pediatricians reported that, after

having referred youth to some psychologists and therapists, they had received specific recommendations with regard to type of pharmacotherapy. These physicians did not report any discomfort with these recommendations from non-physician practitioners..

Determinants of Antidepressant Choice

Antidepressant choice appeared to be related to a number of themes that (with few exceptions) are non-specific to prescribing in general. Four key factors were identified as relating to physicians' choice of antidepressant: (1) reported comfort with the medication, (2) financial factors and access to the medication, (3) disorder-specific evidence for a given medication, and (4) pragmatic factors (*e.g.*, dosing, formulation).

The perceived comfort with several specific medications (predominantly SSRIs) was a significant factor in determining antidepressant choice for more than half of providers. Moreover, this theme converged with themes related to evidence base for certain medications and secondarily—for some physicians (n=6, 43%)—with a corresponding FDA indication for major depressive disorders for certain medications (*e.g.*, fluoxetine and sertraline).

Financial factors and access to medication was noted as important factors for pediatricians; specifically, academic-based practitioners, who tended to report seeing a greater number of patients from lower socioeconomic backgrounds and patients with public insurance limitations, tended to consider strongly the cost of the antidepressant in determining the antidepressants to prescribe. Almost half of the sample noted the generic availability of fluoxetine and general coverage across formularies.

Many pediatricians, both in academic- and community-based settings, referenced guidelines and also the evidence base for specific agents as factors that guided their choice of antidepressant medication in patients with depressive and/or anxiety disorders. Specifically, physicians referenced the Child & Adolescent Multimodal Study of Anxiety with regard to the evidence-base for sertraline in pediatric anxiety disorders and referenced the Treatment of Adolescent Depression Study (TADS)¹¹ in supporting the use of fluoxetine for pediatric patients with major depressive disorders. No references were made to the Treatment of SSRI-resistant Depression in Adolescents (TORDIA) study³⁰ or to the registration trials for the antidepressants that have received FDA-indications for major depressive disorder (*e.g.*, escitalopram, fluoxetine, sertraline) or for generalized anxiety disorder (*e.g.*, duloxetine) in pediatric patients.

Personal preference related to earlier positive experiences with the medication and practical experience with side effects, was a critical factor in determining antidepressant choice for most clinicians. In this regard, the majority noted fluoxetine and sertraline were two medications with which they felt most comfortable. One practitioner noted that he also frequently used venlafaxine.

Pragmatic factors such as the ease of titrating the dose of the medication and the availability of liquid formulations was noted to be an important factor in determining clinicians' antidepressant choice for some patients, particularly younger patients.

Perceived Safety and Tolerability of Antidepressants

Nearly all studied pediatricians believed that antidepressants were safe for youth with depressive and/or anxiety disorders, though nearly all also mentioned the black-box warning in discussing the safety of antidepressants with families. Side effects that were mentioned by most pediatricians included suicidality, gastrointestinal symptoms, irritability, headaches, sexual side effects, possible self-harm behaviors, appetite changes and weight gain, as well as numbing/personality change. However, most pediatricians noted that these side effects have infrequently resulted in discontinuation of antidepressants among youth with anxiety disorders or depressive disorders in their practices. In addition, somatic side effects attenuated over time. Most pediatricians believed that the side effect profiles of antidepressants were similar in anxious adolescents compared to depressed adolescents. Moreover, many pediatricians tended to minimize disease state-related differences, although some noted that in patients with anxiety disorders, it may be more difficult to disentangle side effects from somatic symptoms of anxiety. However, some physicians ($n=3$, 21%) noted activation and worsening anxiety or irritability in youth with anxiety disorders relative to the risk of these side effects in youth with depressive disorders. The overlap between somatic symptoms of anxiety and side effects was acknowledged by a minority of physicians ($n=2$, 14%):

About a quarter of pediatricians noted differences in the suicidality risk between anxious and depressed patients. Some pediatricians related this difference to the baseline differences in suicidality in youth with anxiety relative to youth with depressive disorders, commenting: “I think the side effects would be less as far as suicidality because that particular person is anxious and not depressed and you don’t have to worry about that.” Another practitioner likened this difference to the actual treatment effect, adding: “there is even lower risk of suicide or suicidality if you are taking this antidepressant for anxiety, instead of for depression.”

Prescribing of Antidepressants to Youth with Anxiety Disorders

In describing factors that influence their likelihood of prescribing antidepressants to youth with anxiety disorders, several important and surprising themes emerged, including: (1) sequential treatment with psychotherapy in youth with anxiety disorders and perceived decreased effectiveness of antidepressants in youth with anxiety relative to youth with depressive disorders. Psychiatric co-morbidity (e.g., co-occurring anxiety disorder in a patient with MDD or co-morbid ADHD) was also noted to influence the likelihood of prescribing antidepressants in youth with anxiety disorders.

For youth with anxiety disorders, regardless of severity, nearly all pediatricians recommended psychotherapy prior to initiation of pharmacotherapy. However, reasons cited for this preference seemed to be related to the perception of the disorder and the general sense that anxiety is more controllable and may not require medication unless psychotherapy has “failed.” Some pediatricians reported that this may also relate to parental ambivalence related to medications which was believed to be higher in the parents of anxious youth compared to depressed youth. One community-based pediatrician described his approach as follows: “for anxiety, my...initial response is therapy as a more appropriate modality and

that it should be managed for the majority of children there.” However, other pediatricians, including one academic-based pediatrician, shared that they see pharmacologic management as something to be tried following the failure of psychotherapy: “If I’m sort of in that thing where I could go either way, you know, one option would be, “Let’s refer you to counseling, see how things go, and if things get worse we can really do medicine.” Finally, there was a sense by a minority of clinicians that antidepressants are less effective in youth with anxiety disorders compared to youth with depressive disorders. This was cited as a reason for referring to psychotherapy prior to initiating pharmacotherapy.

Psychiatric co-morbidity (e.g., anxiety disorder + MDD) was discussed by nearly half of participants as a factor that increased their likelihood of either prescribing an antidepressant or of seeking psychiatric consultation in anxious youth..

Parental and Family Factors That Influence Prescribing of Antidepressants

Most pediatricians considered family and parent-specific factors in their decision to prescribe medications. Among the key themes with regard to this domain were parental ambivalence, functional impairment within the family and the child’s psychosocial milieu.

Parental ambivalence—which was included as a prompt in the semi-structured interview—was noted by most pediatricians to be a factor that was considered as they chose to prescribe or not prescribe an antidepressant medication. Pediatricians noted that parental ambivalence would immediately affect compliance with the medication but also appeared to interact, in some cases, with physician-related ambivalence regarding the potential effectiveness of antidepressants in youth with anxiety disorders. Nearly every pediatrician, in addressing parental ambivalence, reported utilizing a psychotherapy referral to work with parental ambivalence. Finally, several clinicians noted parental ambivalence to be moderated by a stronger parent-physician alliance and described an exploratory approach to understanding the parent or family’s ambivalence. Several pediatricians reported that they share their thought process and medical decision making process with the parents. For example, one pediatrician summarized this approach: “I think it is a matter of educating them about what your thought process is and why you think what is going on is going on.” Another pediatrician shared his approach to addressing parental ambivalence as follows: “So, you have to have the mom, or dad, or grandpa or whoever buy in on it, so if they’re initially ambivalent or against it, then it’s the discussion... it’s the ongoing discussion: What are their worries? Why don’t they want it? Have they had bad experiences themselves? Have they read something? Have they seen something on TV? Getting rid of some of the false information that they have and helping them understand what we’re actually trying to do for the child.”

The impact of the patient’s symptoms on family function was considered by nearly half of studied pediatricians as an important family-related factor that influences the likelihood of prescribing medication. All of the examples described pediatric patients with anxiety disorders. One pediatrician captured this, noting: “[I think]...is it affecting Mom’s ability to go to work? Is she on the verge of being fired because she’s getting called to pick the kid up from school 2 or 3 times a week because he’s having panic attacks or anxiety fits...?”

Another pediatrician who described family functional impairment shared: “the anxiety ones

are the ones that are having the most trouble with—the kid doesn't want to go to school, they're having panic attacks, it's disrupting mom and dad's daily life—so they're the ones that are actually more interested in starting meds for me.”

The patient's family environment and support system were noted by many pediatricians as a factor that was considered before initiating an antidepressant. Thematic coding of these statements often related to parental conflict and there was, thus, some overlap between *Parental ambivalence* and parental-conflict related statements within this theme. Nonetheless, family-related factors including both parent-child conflict and parent-parent conflict were seen as being important factors that influenced the decision to prescribe an antidepressant for a minority of pediatricians. Two physicians practicing at an academic health center—which serves a lower socioeconomic status population—noted multi-generational conflict and beliefs related to medication as a factor in their decision to prescribe an antidepressant. Several physicians (1 from a rural practice and 2 from an urban, academic health center-based practice) alluded to adversity—without mention of abuse or trauma—and limited family resources as factors that influenced their likelihood of prescribing. These statements suggested adjustment-related etiologies for the depressive or anxiety symptoms and reflected the lack of effectiveness of antidepressants in adjustment-related pathology. One physician from a rural practice summarized this as follows: “How much can I fix with medicine and how much is going to not be able to be fixed with medicine just because it's a circumstance of how they grew up and what their environment has been...” while a physician seeing a primarily urban population added: “Our families are frequently in very disruptive environments so I don't like situations where I know the kid is going to be getting it three days out of the week and not the other four, or something.” No physicians described differences with regard to this theme between anxious and depressed youth.

DISCUSSION

In this pilot examination of factors that affect prescribing of antidepressants for youth with anxiety disorders and major depressive disorder, a number of important themes were identified that have heretofore not been described in the extant literature. It is noteworthy that several of these themes and beliefs of pediatricians conflict with the current evidence base related to the morbidity associated with pediatric anxiety disorders and conflict with the evidence for the efficacy and tolerability antidepressants, particularly in youth with anxiety disorders.

The inductive thematic analyses of pediatricians' approaches to pharmacologic management of anxiety is of interest for several clinically-relevant reasons. First, there was a perception, on the part of pediatricians, that anxiety disorders are associated with less morbidity, or are not associated with substantial morbidity. However, recent research suggests that anxiety disorders are associated with an increased risk of suicide attempts³¹, suicidal ideation³² and an increased risk of developing depressive disorders^{4,33} as well as other internalizing disorders. Second, many pediatricians advocated a therapy-first approach for patients with moderate to severe anxiety disorders. Both psychotherapy and pharmacotherapy may be associated with equivalent responses although pharmacotherapy-associated improvements

may occur earlier²⁴ and for patients with specific anxiety disorders (e.g., a primary diagnosis of social anxiety disorder), pharmacotherapy is superior to both placebo and cognitive behavioral therapy³⁴. Third, several studied pediatricians reported that they would reserve antidepressant use to cases in which psychotherapy has “failed.” This approach may increase the duration of time a patient suffers, incurs additional morbidity or increased risk of academic, social and family-related sequelae of his or her disorder. Finally, there was a perception among a minority of pediatricians that antidepressants are less effective in anxiety disorders relative to depressive disorders. Recent meta-analyses of antidepressants suggest greater effect sizes for antidepressants in youth with anxiety disorders²² compared to the effect sizes reported for antidepressants in youth with depressive disorders.³⁵

Pediatricians consider a number of important family factors as they decide whether or not to antidepressants for youth. These factors appear very appropriate both with regard to the consideration of alternate etiologies of the child’s symptoms and reflect pediatricians’ approaches to working with psychological factors, such as ambivalence within the family. The latter is particularly important; treatment motivation predicts response to pharmacotherapy and psychotherapy in both pediatric and adult patients. Studied pediatricians were aware of family factors including accommodation (i.e., the degree to which the family acquiesces or changes behavior/expectations in an attempt to decrease the patient’s symptoms) that interacts with both the child’s symptom severity and also is influenced by parental beliefs³⁶ and parental anxiety that relate to treatment outcomes.³⁷

This is the first mixed methods examination of antidepressant prescribing in pediatricians and there are a number of limitations. First, the Cincinnati area is unique and a number of the study participants had trained at Cincinnati Children’s Hospital, a large, tertiary care center with extensive community relationships. This may artificially increase the experience and contact with psychiatric expertise and consultation among pediatric clinicians. Second, the in-depth interviews were conducted by a board-certified child and adolescent psychiatrist, so that questions related to prescribing were followed up in appropriate detail based on the interviewer’s knowledge of the disease processes being discussed. Thus, study physicians may have attempted to provide “expected” or “correct” responses. In addition, as the participants completed the survey, idealized response might have been provided rather than a response that reflects his or her actual practice.

CONCLUSION

Pediatricians, in this mixed-methods study, consider patient- and family-specific challenges when choosing prescribing antidepressant medications and are, in general, less likely to prescribe antidepressants for youth with anxiety disorders compared to youth with depressive disorders. The lower likelihood of prescribing antidepressants for anxious youth is not related to perception of the effectiveness or tolerability. This study refined our understanding of some of the qualitative factors that pediatricians consider when prescribing antidepressant medications for youth with depressive and/or anxiety disorders. Larger, quantitative and interventional studies that further address our understanding these would be an important next step in efforts to understand clinician behavior and to identify effective treatment for young patients who struggle with anxiety and depression.

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Figure 1. Kernel density distributions reflecting the likelihood of prescribing antidepressants in youth

The likelihood of prescribing an antidepressant in an adolescent with and anxiety disorder is shown in A, while the likelihood of prescribing an antidepressant to an adolescent with a depressive disorder or a co-morbid anxiety and depressive disorder are shown in B and C, respectively. Increasing x-axis values reflect higher likelihoods of prescribing.

Table 1**In-Depth Interview Domains and Questions**

Domain	Questions
Determinants of Prescribing	<ul style="list-style-type: none"> • Could you tell me about how you approach the decision to prescribe an antidepressant in a particular pediatric patient with anxiety or depression?
	<ul style="list-style-type: none"> • Are there specific factors that make you more or less likely to prescribe an antidepressant?
Determinants of Antidepressant Choice	<ul style="list-style-type: none"> • Could you tell me how you decide which antidepressant to prescribe?
Perceived Safety and Tolerability of Antidepressants in Youth with Depressive Disorders	<ul style="list-style-type: none"> • Do you have any concerns related to the safety and tolerability of antidepressants in depressed children and adolescents?
	<ul style="list-style-type: none"> • How would you characterize the safety of antidepressants in pediatric patients?
	<ul style="list-style-type: none"> • What's your experience been with regard to the tolerability of antidepressants in depressed youth?
	<ul style="list-style-type: none"> • Are the specific side effects that concern you regarding these medications in depressed youth?
Perceived Safety and Tolerability of Antidepressants in Youth with Anxiety Disorders	<ul style="list-style-type: none"> • Do you have any concerns related to the safety and tolerability of antidepressants in anxious children and adolescents?
	<ul style="list-style-type: none"> • How would you characterize the safety of antidepressants in pediatric patients with anxiety?
	<ul style="list-style-type: none"> • What's your experience been with regard to the tolerability of antidepressants in anxious youth?
	<ul style="list-style-type: none"> • Are the specific side effects that concern you regarding these medications in anxious youth?
Parental and Family Factors That Influence Antidepressant Prescribing	<ul style="list-style-type: none"> • How do the patient's parents affect your decision to prescribe or not to prescribe?
	<ul style="list-style-type: none"> • How does parental ambivalence related to medication affect your prescribing?
	<ul style="list-style-type: none"> • As a corollary, I wonder how very strong feelings—either positive or negative—on the part of the patient's parents affect your prescribing?
	<ul style="list-style-type: none"> • Are there factors within the family that affect your prescribing or avoidance of antidepressant use in a particular pediatric patient?

Table 2

Physician Demographics

Characteristics	Sample (N= 14)
Age, mean	42±12.2
Gender	
Male (n, %)	4, 28.6%
Race/Ethnicity	
White	10
Black	2
Other	2
Type of Practice	
Community-Based	6
Academic Medical Center	8
Provider Type	
MD	14
Years Since Training	
0–5	4
6–10	4
11–15	0
16–20	2
20+	4
Health-Related CME in the Past 12 Months	
Yes	8
No	6