Anxiety and Depression Treatment in Primary Care Pediatrics

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abstract

BACKGROUND AND OBJECTIVES: Primary care pediatricians (PCP) are often called on to manage child and adolescent anxiety and depression. The objective of this study was to describe PCP care practices around prescription of selective serotonin reuptake inhibitors (SSRI) for patients with anxiety and/or depression by using medical record review.

METHODS: We identified 1685 patients who had at least 1 visit with a diagnosis of anxiety and/or depression in a large primary care network and were prescribed an SSRI by a network PCP. We randomly selected 110 for chart review. We reviewed the visit when the SSRI was first prescribed (medication visit), immediately previous visit, and immediately subsequent visit. We abstracted rationale for prescribing medication, subspecialist involvement, referral for psychotherapy, and medication monitoring practices.

RESULTS: At the medication visit, in 82% ($n = 90$) of cases, PCPs documented reasons for starting an SSRI, most commonly clinical change (57%, $n = 63$). Thirty percent ($n = 33$) of patients had documented involvement of developmental-behavioral pediatrics or psychiatry subspecialists at 1 of the 3 visits reviewed. Thirty-three percent ($n = 37$) were referred to unspecified psychotherapy; 4% ($n = 4$) were referred specifically for cognitive behavioral therapy. Of 69 patients with a subsequent visit, 48% ($n = 33$) had documentation of monitoring for side effects.

CONCLUSIONS: When prescribing SSRIs for children with anxiety and/or depression, PCPs in this network documented appropriate indications for starting medication and prescribed without subspecialist involvement. Continuing medical education for PCPs who care for children with these conditions should include information about evidence-based psychotherapy and strategies for monitoring potential side effects.

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WHAT'S KNOWN ON THIS SUBJECT: Children with anxiety and depression often present first to pediatricians. Survey and interview studies find many pediatricians are not comfortable prescribing medication for these children. Selective serotonin reuptake inhibitors (SSRI) are first-line medications for anxiety and depression.

WHAT THIS STUDY ADDS: When first prescribing SSRIs for children with anxiety and/or depression, pediatricians documented rationales for medication and often prescribed independently, without subspecialist involvement, but did not monitor medication side effects systematically. A minority recommended psychotherapy and rarely specified evidence-based psychotherapy.

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The prevalence of anxiety and depression within the pediatric population has increased over the past decade, both within the United States and globally.[1] Concerns about access to mental health care have intensified because of the coronavirus disease 2019 pandemic.[2–8] The American Academy of Pediatrics, American Academy of Child and Adolescent Psychiatry, and Children's Hospital Association issued a Declaration of Mental Health Emergency in October 2021.[9]

Primary care pediatricians (PCPs) are often the first point of contact within the health care system for children and adolescents with anxiety and/or depression.[10,11] Their engagement in care is essential; exclusive management by subspecialists, such as developmental-behavioral pediatricians and child and adolescent psychiatrists, is not feasible because of the high prevalence of these conditions, a shortage of trained subspecialty clinicians, long wait lists, and insurance challenges.[12,13] However, survey and interview studies have found that many PCPs are uncomfortable managing mental health conditions. Their discomfort has been attributed to perceived limited knowledge about the assessment, pharmacological management, and referral procedures for these conditions.[14–19] Previous studies found that PCPs identify and manage attention-deficit hyperactivity disorder more frequently than they manage anxiety and depression.[11,20–22] Adolescents with depression managed in primary care often do not receive adequate follow-up care.[23] Objective data are limited regarding PCP management of children and adolescents with anxiety and/or depression, particularly those requiring medication as part of the management plan.

Current clinical practice guidelines for management of pediatric anxiety and depression suggest that PCPs should initiate treatment and partner with subspecialists as needed in severe or complex cases.[24–26] For treatment of both anxiety and depression, an individualized, multimodal approach is recommended, including pharmacological and nonpharmacological treatments. Among pharmacological interventions, the selective serotonin reuptake inhibitor (SSRI) class has the most evidence for use.[25–30] For therapy, cognitive behavioral therapy (CBT) and interpersonal therapy for adolescents are specific modalities with strong evidence to support their use.[30–37] The combination of CBT with an SSRI may have more benefit than either treatment alone.[38,39] Discussion about treatment benefits and risks is an important element of quality care.[25,26] Close follow-up, including side effect monitoring, is also recommended.[25,26]

The specific aim of this medical record review study was to determine whether PCPs in a large primary care network followed clinical practice guidelines when providing medical care to children and adolescents who had been prescribed an SSRI medication for anxiety and/or depression. To this end, we evaluated documentation about the reason for the SSRI prescription, the specific medications used, involvement of subspecialists, referral for psychotherapy, and follow-up monitoring for potential adverse side effects (with particular focus on monitoring for suicidality). We collected these data to improve collaborations between PCPs and subspecialists in caring for children and adolescents with anxiety and depression who require prescription medication and to design continuing medical education curricula or quality improvement efforts to improve the quality of primary care for children and adolescents with these mental health conditions who are treated with SSRI medication.

METHODS

Setting and Population

Patients were children 6 to 18 years old seen at Packard Children's Healthcare Alliance (PCHA), a community-based network of 25 primary care offices in the San Francisco Bay Area of Northern California. Sixty-seven clinicians were included. PCHA clinics are private practice sites that are affiliated with Lucile Packard Children's Hospital and Stanford Children's Health. The Stanford University School of Medicine institutional review board approved this study.

For inclusion, patients had to be seen for at least 1 primary care pediatrics visit between October 1, 2015 and October 1, 2021, have an *International Classification of Disease, 10th Revision* (ICD-10) diagnosis code of anxiety and/or depression (Supplemental Table 4) and have a prescription for a SSRI medication prescribed by a PCHA primary care pediatrician (Medical Doctor or Doctor of Osteopathic Medicine). Of 180 primary care pediatricians in the network, 67 (37%) pediatricians who prescribed an SSRI were included. The following medications were included: citalopram, escitalopram, fluoxetine, fluvoxamine, sertraline, paroxetine, vilazodone, and vortioxetine. Supplemental Figure 3 shows that 3740 patients met diagnostic criteria, and of those, 1685 also met medication criteria. Patients were stratified by age and diagnosis. Because of the uneven distribution of patients with medication across

the age groups, we randomly selected 35 patients with anxiety or depression aged 6 to 12 years, 25 patients with anxiety only aged 12.1 to 18.9 years, 25 patients with depression only aged 12.1 to 18.9 years, and 25 patients with anxiety and depression aged 12.1 to 18.9 years. This number of patients was selected to ensure an effect size of 65% with 90% power, enabling comparison of age groups in the analysis.

Abstraction Tool

A Research Electronic Data Capture (REDCap) abstraction tool was generated to gather data from the visit in which an SSRI was first prescribed by the PCP (medication visit), the previous visit within 12 months of the medication visit (previous visit), and the visit after medication prescription within 12 months of the medication visit (subsequent visit) (Fig 1).[40,41] Previous and subsequent visits were only included if the visit had an anxiety or depression ICD-10 code or was a well-child visit. The 12-month time frame was selected to capture annual health supervision visits, which serve as an important touchpoint for mental health screening.[42,43] A well-child visit was a visit with a recorded "well-child" ICD-10 or descriptor (see Supplemental Table 4).

Collected data reflected patient demographics, patient coexisting conditions, decision-making related to medication start, subspecialist involvement, recommendations for psychotherapy, and other recommended treatments (Fig 2). Subspecialist involvement was defined as specific mention of a developmental-behavioral pediatrician or psychiatrist participating in the child's care (for example: "Patient sees Dr X for anxiety"). Documentation of severity level was defined as inclusion of either a specific severity adjective in the clinical note ("mild," "moderate," or "severe") or a standardized screening tool score that corresponds to a specific severity level (for example, Generalized Anxiety Disorder-7 [GAD-7] score 0–9 = mild, 10–14 = moderate, and >14 = severe).

Data Collection

A pediatrician and a medical student researcher (T.L. and J.H.) abstracted duplicate charts and Cohen κ scores for interrater reliability were calculated. This process was refined and repeated until a Cohen κ score of 0.7 was established for the primary outcome question, "Was the child referred for psychotherapy at the medication visit?" and a Cohen κ score of 1.0 for the secondary outcome question, "Is a subspecialist documented as being involved at the medication visit?". These outcomes were selected to explore the rate of multimodal treatment in children prescribed medication by primary care pediatricians.[25] After interrater reliability was established, charts were abstracted independently with biweekly meetings throughout the data collection period. Disagreements were reconciled by consensus of 3 reviewers (T.L., J.H., and L.H.).

Statistical Analysis

Data cleaning and analysis were performed in SPSS 26 and 27.[44] Descriptive statistics (frequency counts and proportions) summarized data from the abstraction tool. A χ^2 test of independence determined association between previous medication prescription by a developmental pediatrician or psychiatrist and presence of a medication follow-up visit. As a secondary analysis, 2 logistic regression models determined effects of age, sex, insurance, and comorbidity on (1) likelihood that patients who had not previously had documented subspecialist involvement were referred to developmental-behavioral pediatrics or psychiatry at any visit and (2) referral for psychotherapy.

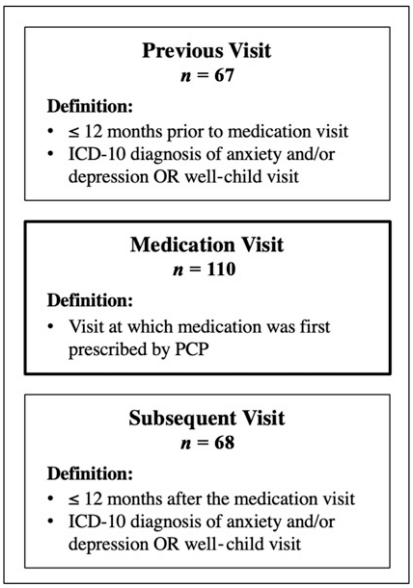

FIGURE 1
Visit definitions for data abstraction.

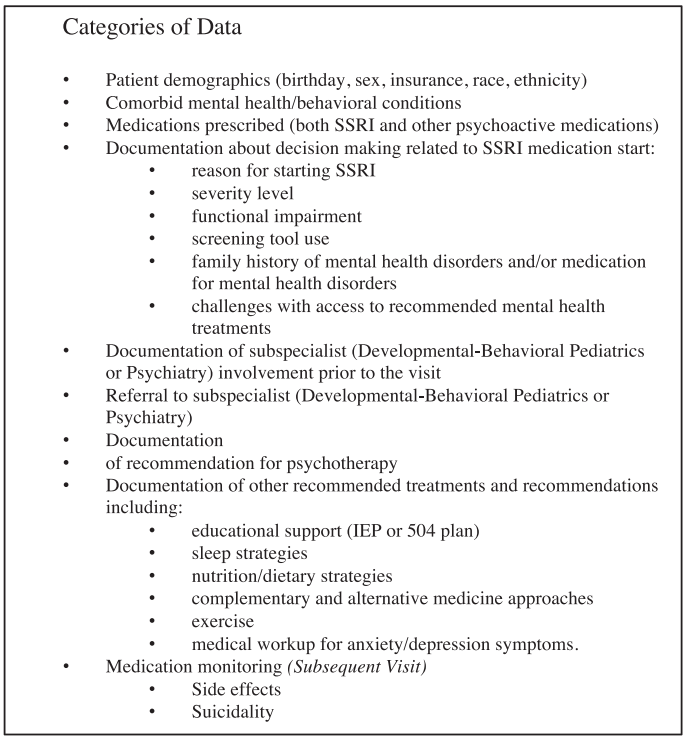

FIGURE 2
Categories of data abstracted from the medical chart for children diagnosed with anxiety and depression. IEP, individualized education plan.

RESULTS

Patient Characteristics

Table 1 describes demographics and coexisting diagnoses of the 110 patients in the chart review. Of all patients, 58% ($n = 64$) were female and 42% ($n = 46$) were male. Sixty percent ($n = 66$) had private insurance, 55% ($n = 60$) were white, and 64% ($n = 70$) were non-Hispanic. At the medication visit, PCPs documented coexisting behavioral or mental health conditions in 49% ($n = 54$) of cases. The most common coexisting conditions were attention deficit/hyperactivity disorder (28%, $n = 31$), autism spectrum disorder (7%, $n = 8$), obsessive compulsive and related disorders (5%, $n = 6$), and feeding and eating disorders (4%, $n = 5$).

The mean interval between previous visit and medication visit was 148 days (median = 126 days; range 2–364 days). The mean interval between medication visit and subsequent visit was 79 days (median = 30 days; range 7–365 days).

SSRI Medications

Of 110 patients, 37% ($n = 41$) were prescribed sertraline, 30% ($n = 34$) were prescribed fluoxetine, 26% ($n = 28$) were prescribed escitalopram, and 7% ($n = 7$) were prescribed citalopram. The abstraction tool also included fluvoxamine, paroxetine, vilazodone, and vortioxetine, but no patients in the study were prescribed these medications.

The most common non-SSRI psychoactive medications prescribed at a visit in which SSRI was prescribed were stimulant class medications (24%, $n = 26$) and melatonin (11%, $n = 12$). Other medications prescribed included: α agonist class (6%, $n = 7$), dopamine antagonist class (5%, $n = 6$), bupropion (4%, $n = 4$), atomoxetine (3%, $n = 3$), anticonvulsant class (3%, $n = 3$), the selective serotonin-norepinephrine reuptake inhibitors (SSNRI) class (0.9%, $n = 1$), benzodiazepine class (0.9%, $n = 1$), and trazodone (0.9%, $n = 1$).

Decision-Making at Medication Start

Reason for Starting SSRI

PCPs explicitly stated a reason for starting medication in 82% ($n = 90$) of patients (Table 2). Clinical change was listed as the reason in 57% ($n = 63$) of cases, with factors including failure to improve, worsening symptoms, high severity, or functional impairment. In 20% ($n = 22$) of patients, the documented reason for initial prescription of an SSRI by the PCP was continuation of an SSRI originally prescribed by a subspecialist. Other documented reasons for medication included: family preference (5%, $n = 6$), suggestion by therapist (5%, $n = 5$), and inability to access other treatments (1%, $n = 1$).

Documentation of Relevant Patient Factors

Functional impairment was the most commonly documented factor contributing to medication initiation (72%, $n = 79$). Functional impairment included problems with: academics (eg, missing school), community functioning (eg, not participating in previously enjoyed sports activities), eating, and sleep. PCPs documented severity level of anxiety and/or depression in 46% ($n = 50$) of patients. PCPs documented use of an anxiety or depression screening tool (ie, Spence Child Anxiety Scale, Screen for Child Anxiety Related Disorders [SCARED], GAD-7, Patient Health Questionnaire-9 [PHQ-9]) in 26% ($n = 29$) of patients at the medication visit.[45–48] PCPs documented that 12% ($n = 13$) of patients had challenges with access to psychotherapy, mental health subspecialists, or other recommended treatments.

TABLE 1 Characteristics of Patients with Anxiety and Depression Diagnoses Prescribed Selective Serotonin Reuptake Inhibitors ($N = 110$)

Patient Characteristics	*n* (%)
Age group at first anxiety and/or depression visit, y	
6–12.0	35 (32)
12.1–18	75 (68)
Sex	
Female	64 (58)
Male	46 (42)
Insurance	
Private	66 (60)
Public	23 (21)
Military	3 (3)
Unknown	15 (14)
None	2 (2)
Race	
White	60 (55)
Black	4 (4)
Asian	7 (6)
American Indian or Alaska Native	1 (1)
Other	15 (13)
Unknown	23 (21)
Ethnicity	
Non-Hispanic	70 (64)
Hispanic	13 (12)
Missing	27 (24)
Coexisting conditions in patients with anxiety and depression at medication visit	
Attention-deficit or hyperactivity disorder	31 (28)
Autism spectrum disorder	8 (7)
Obsessive compulsive and related disorders	6 (5)
Feeding and eating disorders	5 (4)
Bipolar and related disorders	1 (1)
Sleep disorders	3 (3)
Tic disorders	3 (3)
Disruptive, impulsive control, and conduct disorders	2 (2)
Gender dysphoria	2 (2)
Trauma and stressor related disorders	2 (2)

Subspecialist Involvement

PCPs documented either subspecialist (developmental-behavioral pediatrics or psychiatry) involvement or referral to a mental health subspecialist in 53% ($n = 58$) of patients. Of the total study group, 30% ($n = 33$) had documented subspecialist involvement in at least 1 of the 3 visits. Thirty-seven ($n = 41$) had referral to a mental health subspecialist at any of the visits. Of patients who had subspecialist involvement documented at the medication visit, PCPs continued prescriptions initiated by subspecialists in 51% ($n = 17$ of 33) of cases. In addition, 15% ($n = 5$ of 33) had seen a subspecialist but medication had not been started previously, and 3% ($n = 1$ of 33) had a subspecialist involved solely via phone consult. In 15% ($n = 5$ of 33) of cases, documentation did not clearly describe involvement of a subspecialist.

Of patients who had documentation of subspecialist involvement at the subsequent visit (10%, $n = 11$), 18% ($n = 2$) had documentation of a subspecialist making medication changes in the interval between visits.

Multimodal Treatment

At the medication visit, PCPs referred the patient for unspecified therapy in 33% ($n = 37$) of cases, for cognitive behavioral therapy (CBT) in 4% ($n = 4$) of cases, and for other specified therapies (eg, therapy for sensory aversions) in 4% ($n = 4$) of cases. Of the total, 23% ($n = 25$) were already receiving therapy; 36% ($n = 40$) were not already receiving or referred for therapy (Table 3).

Other Recommendations at Medication Visit

At the medication visit, PCPs documented counseling patients about factors related to mental health: nutrition (34%, $n = 37$), sleep hygiene (20%, $n = 22$), and exercise (16%, $n = 18$). PCPs also counseled about complementary and alternative medicine approaches for anxiety and/or depression (6%, $n = 7$) (Table 3).

PCPs recommended a medical workup for anxiety and/or depression symptoms including thyroid and anemia testing in 9% ($n = 10$) of patients. They also recommended that patients receive education support, including a 504 Plan or an Individualized Education Plan in 8% ($n = 9$) of cases (Supplemental Table 5).

Medication Monitoring

Of the total, 62% (68 of 110) patients had a subsequent visit. Of these patients, PCPs documented monitoring for medication side effects in 48% ($n = 33$) and specific monitoring for suicidality in 34% ($n = 23$). PCPs documented use of a standard screening tool (SCARED, GAD-7, PHQ-9) for monitoring anxiety and/or depression symptoms in 18% ($n = 12$) of the subsequent visits.

A χ^2 independence test showed no significant difference in presence of

TABLE 2 Documented Reasons for Prescribing SSRI at Medication Visit ($N = 110$)

Explicitly Stated Reason for Starting SSRI at Medication Visit	Number of Patients, *n* (%)	Contributing Patient Factors Documented at Medication Visit	Number of Patients, *n* (%)
Clinical change documented	63 (57)	Documentation of functional impairment	79 (72)
Started or recommended by DBP or Psychiatry, continued by PCP	22 (20)	Documentation of severity	50 (46)
Indication not mentioned	20 (18)	Screening tool used (eg, Spence, SCARED, PHQ-9)	29 (26)
Family preference	6 (5)	Family history of mental health disorder	21 (19)
Suggest by non-MD therapist	5 (5)	Challenges with access to treatments	13 (12)
Unable to access other treatment	1 (1)	Family history of medication for anxiety or depression	11 (10)

Total % is greater than 100 because >1 option could be selected. DBP, developmental-behavioral pediatrics; MD, medical doctor.

medication follow-up visits ($X^2 = 0.48$ df $= 1$, $P = .49$) between patients who had been previously prescribed medication by a subspecialist (developmental-behavioral pediatrics or psychiatry) and patients who had not.

Likelihood of Referrals

The first regression model, assessing effects of patient and clinical factors on the likelihood of referral to subspecialist, was not statistically significant, $\chi^2(5) = 3.64$, $P = .602$. The model explained 4.8% (Nagelkerke R^2) of the variance. None of the predictor variables (age, sex, insurance, comorbidity) were statistically significant. The second regression model, assessing effects of the same variables on the likelihood of referral for psychotherapy, was not statistically significant, $\chi^2(5) = 5.64$, $P = .34$. The model explained 7.2% (Nagelkerke R^2) of the variance. None of the predictor variables were statistically significant. Results are summarized in Supplemental Tables 5 and 6.

DISCUSSION

PCPs in the studied network generally followed practice care guidelines when prescribing an SSRI medication to manage anxiety and/or depression in children and adolescents, with several notable areas for improvement.[24,26,49] In 30% of patients, PCPs documented psychiatry or developmental-behavioral pediatrics subspecialist involvement. PCPs referred 34% of patients for nonspecific psychotherapy at 1 of the studied visits but referred only 4% for evidence-based cognitive behavioral therapy.

Adherence to Guidelines

These objective data support previous survey-based studies, which indicated that pediatricians consider symptom severity, functional impairment, and availability of psychotherapy in making decisions about prescribing medication.[16] Documentation of functional impairment and other factors supporting medication demonstrates that PCPs in this network were adhering to guidelines and starting treatment of children with anxiety and/or depression. Additionally, as recommended in both anxiety and depression clinical practice guidelines, PCPs often counseled patients about other measures, including the common factors of sleep, nutrition, and exercise.

Our finding that PCPs documented the use of a screening tool (eg, SCARED, GAD-7, PHQ-9) in 26% of patients is consistent with previous survey findings that about one-third of pediatricians know and use anxiety or depression screening tools.[16,50] Future studies should investigate other strategies to reduce barriers to the use of standardized instruments in primary care.

Subspecialist Involvement

PCPs in this network documented subspecialist involvement at the medication visit, preceding visit, or subsequent visit in 30% of patients. Of patients who had a subspecialist involved, the subspecialist initiated the medication in the majority of cases. Phone consultation between

TABLE 3 Nonmedication Treatment Recommendations

Therapy	*n* (%)
Nutrition	37 (34)
Unspecified therapy	37 (33)
Sleep	22 (20)
Exercise	18 (16)
Education support	9 (8)
Medical workup	10 (9)
CAM or alternative	7 (6)
Cognitive behavioral therapy	4 (4)
Other specified therapies, eg, feeding therapy for oral aversion related to anxiety	4 (4)

>1 treatment could be selected. CAM, complementary and alternative medicine.

PCP and subspecialist was rarely documented.

Practice guidelines for management of pediatric anxiety and depression recommend that PCPs partner with subspecialists as needed in severe or complex cases.[24,26,25] A surprising finding in our study was that 47% of these patients on SSRI medications had neither documented subspecialist involvement nor referral to a mental health subspecialist. This result is in the lower range of percentages reported by earlier survey studies showing 50% to 80% of PCPs referred patients with moderate-to-severe anxiety or depression to subspecialists.[16,50] If patients in our study had milder presentations, that might account for lower rates of referral to subspecialists. Another previous study indicated that PCPs who prescribed SSRIs had lower rates of referral than PCPs who did not prescribe SSRIs.[19] Our findings suggested 2 distinct situations in which PCPs prescribed SSRI medications for children with anxiety and/or depression: (1) patients with moderate-to-severe symptoms who presented first to PCP and (2) patients who first were seen by a subspecialist who started medication and then by the PCP who continued medication.

Regression models did not indicate significant contribution from age, sex, insurance, or presence of comorbidity on the likelihood of referral to subspecialists or referral for psychotherapy. Clinician factors not captured in these models are likely significant contributing factors.

Areas for Improvement

We identified 3 areas for improvement. First, PCPs often referred patients for unspecified therapy at medication visit; however, they rarely prescribed evidence-based therapies such as CBT (4% of patients).[30] A possible improvement strategy is to embed a summary of evidence- based treatment into order sets for therapy. Second, PCPs used screening tools at low rates; only 26% of patient had an anxiety- or depression-specific screening tool result documented at medication visit. Making screening tools accessible through the electronic health record may help increase their rate of use.[49] Third, many patients did not have a subsequent visit for SSRI medication follow-up. There was also a large range in interval between medication and subsequent visits (7–365 days), suggesting that there were inconsistent approaches to follow-up scheduling. For patients with subsequent visits, PCPs rarely documented monitoring for medication side effects. Documentation templates prepopulated with important patient or caregiver interview questions related to medication side effects could increase consistency of gathering side effect related information at follow-up visit.

Limitations and Future Research

Our study had several limitations. We focused on cases in which the PCP wrote a prescription for an SSRI. We cannot comment on the care of patients with anxiety and depression who did not receive medication, or whose medication was prescribed only by a subspecialist. We relied on an electronic health record review; any aspects of decision-making, recommendations and counseling during the visit that were not included in patient notes could not be captured. We did not evaluate how PCPs perceived their experience of caring for children with anxiety and depression. Finally, these data represent one network and generalizability of the findings cannot be assumed. Future studies should integrate PCP and patient experiences of treatment of anxiety and depression.

CONCLUSIONS

Primary care pediatricians in this studied network who prescribed SSRI medication to children with anxiety and/or depression largely adhered to clinical practice guidelines. They often prescribed medication without subspecialist involvement. They often recommended adjunctive therapy in concordance with guidelines, although they rarely specified the specific therapy modality. The rate of medication follow-up visits within 1 year of the medication visit was low, and documentation of discussion about side effects and/or suicidality was rare. These findings encourage subspecialists collaborating with PCPs to make specific therapy recommendations and to ensure that children and adolescents with anxiety and depression on SSRIs receive timely and comprehensive follow-up care.

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ABBREVIATIONS

CBT: cognitive behavioral therapy
GAD-7: Generalized Anxiety Disorder-7
ICD-10: International Classification of Diseases, 10th Revision
PCHA: Packard Children's Healthcare Alliance
PCP: primary care provider
PHQ-9: Patient Health Questionnaire-9
REDCap: Research Electronic Data Capture
SCARED: Screen for Child Anxiety Related Disorders
SSRI: selective serotonin reuptake inhibitor

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