

Feasibility of Screening for Preschool Behavioral and Emotional Problems in Primary Care Using the Early Childhood Screening Assessment

Clinical Pediatrics
2017, Vol. 56(1) 37–45
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DOI: 10.1177/0009922816638077
cpj.sagepub.com


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Abstract

The American Academy of Pediatrics recommends screening young children for behavioral and emotional problems (BEP) during primary care visits. Because of time constraints, few primary care providers (PCPs) use standardized screening tools to detect BEP. The Early Childhood Screening Assessment (ECSA) is a brief screening tool developed specifically to meet the needs of pediatric primary care providers (PCPs). The ECSA has established psychometric properties, but the feasibility and acceptability of the ECSA have not been established. This study examines the degree to which PCPs would incorporate ECSA screening and how PCPs value the ECSA as a tool to detect children with BEP. Twenty-seven pediatric PCPs were trained to implement ECSA screening. Six months after training, 96% of PCPs reported that the ECSA was practical for use at well-visits, 70% were still screening and 89% agreed that it helped detect more cases of BEP than by routine history-taking alone.

Keywords

early childhood screening, behavioral and emotional problems, primary care

Significant behavioral and emotional problems (BEP) are common among preschool-aged children; 9% to 12% of children aged 2 to 5 years old are affected^{1,2} and a growing literature demonstrates the validity of specific psychiatric syndromes in preschool-aged children.^{1,3-8} These clinical problems can negatively affect a child's relationships with peers and family members, and can cause impairment at home, school, or childcare settings.^{1,2,6,8} When left untreated, early BEP often persist and can be associated with future problems in school and in relationships.⁹⁻¹¹ However, if identified early, young children with BEP can benefit from evidence-based treatment with positive long-term outcomes reported.¹²⁻¹⁵

Thus, given the importance of early identification and intervention for BEP, the American Academy of Pediatrics and the Society for Developmental and Behavioral Pediatrics recommend screening for BEP in pediatric primary care.^{16,17} Screening facilitates early recognition of BEP and can identify children who could benefit from further evaluation and, possibly, treatment. In general, pediatric primary care providers

(PCPs) rely solely on clinical observation to detect BEP and do not use validated screening tools.^{17,18} However, many children with BEP may not exhibit obvious symptoms in the context of a brief well-visit, making it harder to detect underlying problems. In addition, few parents spontaneously discuss their concerns about their child's BEP with their PCPs, so PCPs may not be aware of the family's struggles with their child's problems.¹⁹ Thus, many young children with BEP are underrecognized in primary care when structured screening is not implemented.¹⁹⁻²¹

To date, systematic screening for BEP in primary care is rarely implemented.^{19,22} In a study of pediatric

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providers from more than 200 practices, fewer than 7% reported using a standardized measure to assess BEP on a routine basis (ie, during 50% or more of visits). Half of all providers surveyed (50.2%) reported they never used any structured measure to identify BEP.²² Time constraints are commonly identified as a major barrier to the implementation of universal screening in primary care.^{19,23} Therefore, this barrier along with other concerns including the lack of PCP training in mental health assessment, limited access to mental health services/resources, and logistical barriers to integrating screening into the primary care workflow must be addressed in order to successfully implement standardized screening in a busy primary care practice. Ideally, a screening tool must not only have adequate psychometric properties, but also be *practical* to use, that is, relatively simple and quick to complete and score, inexpensive and easily accessible.

There are several validated screening tools for early childhood BEP that are included on the American Academy of Pediatrics' Task Force on Mental Health's list of mental health screening tools for use in the pediatric primary care setting.²⁴ These measures include the Pediatric Symptom Checklist, the Strengths and Difficulties Questionnaire, the Ages and Stages Questionnaire–Social Emotional, the Brief Infant Toddler Social Emotional Assessment, and, the Early Childhood Screening Assessment (ECSA). Some of these instruments may be less convenient to use in primary care because they can take up to 15 minutes to complete, are complicated to score, require different forms for different ages, or are not freely accessible. In contrast, the ECSA,²⁵ which is the focus of our study, was developed specifically for the primary settings and has features that make it simple and convenient for a primary care setting. The ECSA takes 5 to 10 minutes to complete, is simple to score, and is free for use. In addition, the ECSA detects *both* clinically significant BEP during early childhood (18-60 months) as well as signs of caregiver depression using the validated Patient Health Questionnaire–2 items.^{25,26,27} Incorporating assessment of caregiver well-being in an early childhood screen is particularly important because of the strong influences of caregiver mental health on child well-being.^{28,29}

Although the ECSA was designed to promote early identification of BEP in a primary care setting, its feasibility and acceptability have not been formally established. To determine the feasibility and acceptability of screening using the ECSA in primary care, we were interested in assessing (1) whether PCPs were able to incorporate standardized screening with it given the real world factors that have limited the use of other measures

and (2) whether PCPs found ECSA screening to be valuable for detecting children with significant BEP. Thus, the primary aim of this study was to examine the feasibility and acceptability of the ECSA to screen for BEP in preschool-aged children in pediatric primary care practices. Secondary aims were to describe the prevalence of positive ECSA screens for caregiver-reported BEP among preschoolers and caregiver-reported symptoms of depression.

Methods

Study Design

Prior to implementing screening using the ECSA, PCPs completed a questionnaire about their current practices for screening preschoolers for BEP. PCPs then participated in a 90-minute formal training session on how to implement screening using the ECSA. PCPs unanimously chose to administer the ECSA only at well-visits for 3- to 5-year-old children as they were already performing other developmental screenings for 18- to 24-month-olds. Six months after implementing standardized screening using the ECSA, providers were surveyed again about their experiences using the ECSA. See Figure 1 for the study timeline. In addition, a retrospective chart review compared billing for well-visit screening before and after implementation of the standardized screening at each of the PCP practices in order to obtain an objective estimate of practice changes. The study was conducted between April 2014 and February 2015 and was approved by the Nemours Institutional Review Board.

Participants and Setting

Primary Care Practices. The study was implemented at 3 large urban pediatric primary care practices in northeastern Florida. These practices were selected because they had a minimum of 5 pediatric primary care providers, served a large patient population representative of the geographical area and had previously participated in community-based research. Furthermore, the practices were willing to incorporate screening into their pediatric well-visits. The principal investigator approached the practices, attended staff meetings and provided an overview of the study. Each primary care pediatrician and pediatric nurse practitioner was invited to participate and provided written informed consent prior to initiation of study procedures.

Caregivers. All adults accompanying children aged 3 to 5 years for scheduled well-child visits at participating

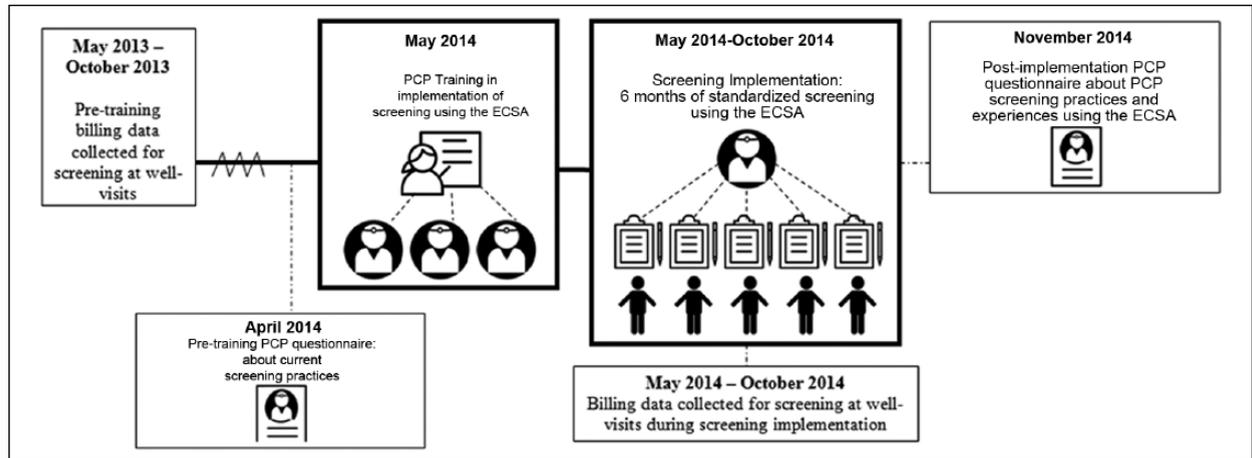


Figure 1. Study timeline.

clinics were given a copy of the ECSA to be completed by the caregiver(s). Caregivers could include parents, grandparents, or legal guardians. The study team modified the ECSA to include an additional question asking caregivers for consent to allow a deidentified copy of their child's ECSA to be collected for research purposes. Agreement was indicated by circling "yes" or "no" on the ECSA form.

PCP Training in Implementation of Screening Using the ECSA

The PCPs and their staff within the three practices were trained to implement standardized screening using the ECSA. The seminar was conducted at a convenient time agreed upon by participating PCPs and Continuing Medical Education credit was offered to participants.

A 90-minute presentation was developed for PCPs and led by the principal investigator, a board-certified Child and Adolescent Psychiatrist. Prior to training, the seminar content was peer-reviewed by mental health and pediatric primary care experts and focused particularly on the prevalence and presentations of early childhood BEP and the value of early childhood screening. In addition, the impact of caregiver depression on young children and its relevance to the screening tool was reviewed. Administration, scoring, and interpretation of the ECSA were reviewed and clinical vignettes were used to illustrate how to evaluate both negative and positive screens. Special attention was paid to practical ways to implement screening in a busy primary care practice through office staff engagement with screening tool distribution, collection, billing, and coding. PCPs were also given resources to help families with positive screens (ie, mental health referrals, educational books,

and websites), including a resource list of four local mental health practices that provided doctoral-level evaluation and treatment services for young children. These practices accepted public and/or private insurance and were within 15 miles of the primary care clinics.

Logistics of Screening in Practices

Once the PCPs had completed the training, each practice began the implementation phase of the study. During the implementation phase, which lasted 6 months, each practice aimed to screen all children aged 3 to 5 years with the ECSA at their regularly scheduled well-child visit. Participating practices were given paper copies of the ECSA to distribute to families of children aged 3 to 5 years at the start of each well-visit and caregivers were asked to complete the form prior to the examination. Completed ECSAs were scored by medical staff.

Measures

Primary Care Provider Survey. This 6-item survey was specifically developed by the study team to assess PCP self-reported practices in early childhood screening at well-visits (see Table 3 for items). Respondents were asked to characterize their practices in screening, counseling, and referring patients with BEP on a 5-point Likert-type scale ranging from 1 = "Never" to 5 = "At Most Well-Visits." After 6 months of screening, providers completed a follow-up PCP survey, which included the original items as well as 9 additional items about the feasibility and value of using the ECSA at well-visits (see Table 2). Respondents were asked to indicate agreement with statements on a 5-point Likert-type scale ranging from 0 = "Strongly Disagree" to 5 = "Strongly

Agree.” Two other questions elicited the amount of time they spent discussing positive screens with caregivers at well-visits (see Table 2). In addition, respondents were given the opportunity to write any additional comments about their experiences using the ECSA at the end of the follow-up PCP survey.

Early Childhood Screening Assessment. The ECSA is a 40-item, parent-report screening tool for children 18 to 60 months old, written at a fifth-grade reading level and designed for use in primary care settings (available at <http://tulane.edu/som/tecc/mental-health-screening.cfm>). The first 36 items of the ECSA focus on child BEP (eg, “seems sad, cries a lot”), as well as regulatory, developmental, and social problems. The last 4 items focus on parent well-being, including the 2-item parental depression screen (Patient Health Questionnaire–2 Item; PHQ-2)²⁶ and 2 items about caregiver stress. Caregivers are asked to rate problems on a 3-point Likert-type scale ranging from 0 = “Rarely/Not True” to 2 = “Almost Always/Very True.” The first 36 items are summed to obtain a total child score. Positive screens are indicated by total child scores ≥ 18 and identify young children at high risk for having a psychiatric disorder and who require additional assessment.²⁵ The 2 PHQ-2 items are summed to obtain a caregiver depression score, with caregiver scores ≥ 2 concerning for depression. The 2 caregiver stress items are not scored. The psychometric properties of the ECSA in identifying children with BEP has been established in 3 populations, with sensitivity of 86% and specificity of 83%, using a comprehensive diagnostic interview as the gold standard.²⁵ Concurrent validity with established risk factors and existing parent-report measures and criterion validity demonstrated using structured psychiatric interviews have been described previously.²⁵ The PHQ-2 has been used extensively and has also been validated to identify maternal depression in both pediatric²⁷ and adult primary care settings.²⁶

Referral Information. At the bottom of the ECSA, PCPs indicated (yes/no) whether children and/or caregivers with positive screens were counseled and/or referred for further evaluation.

Billing Records. Billing data from the 3 practices were analyzed for 2 distinct 6-month periods: prior to and during the 6-month screening implementation (see Figure 1). The same 6-month period (i.e., May through October) in consecutive calendar years was chosen to ensure consistency in the total number of well-visits in each period. The total number of well-visits for children aged 3 to 5 years (Current Procedural Terminology (CPT)] codes

99392 and 99393), and the number of these well-visits at which screening was performed and billed (CPT code 96110) was obtained. While the 96110 code could be used for any type of developmental screening, practices involved in the study indicated that they were only using this code to document screening using the ECSA.

Data Analyses

Completed ECSAs, defined as those with at least 34 out of 36 child items answered for the child score and with both caregiver depression items for the caregiver score, were included in the analysis. Child ECSA scores of 18 or higher were considered positive BEP screens and caregiver PHQ-2 scores of at least 1 were considered positive caregiver screens for our analysis.

Primary care providers’ self-reported practices prior to and following screening implementation were dichotomized into those that occurred on a routine basis (ie, “at most well-visits” and “at all well-visits”) and those that did not occur routinely (ie, “never,” “rarely,” and “sometimes”).

McNemar’s test, which analyzes associations in paired categorical data, was used to compare PCP self-reported practices in screening, referral, and counseling prior to versus following screening implementation. Chi-square analysis was used to test the association between billing for screening (yes/no) and time point (pre- or postscreening implementation). Quantitative analyses were completed with SAS (SAS Institute Inc, Cary, NC). Thematic content analysis was applied to all of the written comments provided.

Results

Participants

Primary Care Providers. Of the 28 PCPs invited to participate, 27 (22 pediatricians, 5 pediatric nurse practitioners; 67% female) from 3 separate practices participated in the early childhood screening seminar. PCPs had been in practice an average of 15.5 years (SD = 10.3, range 0.5–38 years). One practice, with 5 PCPs, cared for patients with a mix of private and public insurance (70% private, 30% public), and 2 practices, with a total of 22 PCPs, treated nearly all privately insured patients (5% or <5% public insurance, respectively).

Caregivers and Children. The demographics of participating caregivers and children are shown in Table 1. Caregivers did not complete all required demographic information on the ECSA form, resulting in missing data for each variable (see Table 1).

Table 1. Demographic Characteristics of Caregivers and Children.^a

	n	%
Caregiver (n = 855)		
Mother	695	81
Father	148	17
Grandmother	11	1
Grandfather	1	<1
Child (n = 1451)		
Gender (n = 1403)		
Female	652	46
Male	751	53
Race (n = 1359)		
White	1106	81
African American	109	8
Mixed race	79	5
Asian	52	4
American Indian	4	<1
Arabic	2	<1
Other (not specified)	7	<1
Ethnicity (n = 1381)		
Hispanic	79	5
Non-Hispanic	1302	94
Age (n = 1407)		
3 years	458	32
4 years	535	38
5 years	414	29

^aNumbers differ due to missing data.

Feasibility of Implementing Screening Using the ECSA

During the 6-month period of screening implementation, it is estimated that the PCPs saw a total of 2900 children aged 3 to 5 years for well-visits. PCP offices distributed 2000 ECSAs. Caregivers gave permission for the study team to analyze a total of 1469 (73%) of the 2000 ECSAs distributed to the practices. Of these, 98.8% (n = 1451) surveys included complete child data and 99.3% (n = 1458) included complete caregiver depression data.

Primary Care Provider Reports of Feasibility and Value of Screening

Primary care provider–reported assessment of the feasibility and value of screening with the ECSA at well-visits is shown in Table 2. Nearly every PCP (96%) agreed that the ECSA was feasible and practical for use at well-visits, and almost all PCPs (89%) agreed that use of the ECSA helped detect more cases of BEP than by routine history taking alone. Perhaps most important, as a measure of

feasibility, nearly all PCPs (89%) reported that they would continue to use the ECSA at well-visits.

Qualitative: PCP Opinions About Routine Screening Using The ECSA

Two primary themes emerged from thematic analysis of providers' written comments. The first theme was concern over the length of time required by caregivers to complete the questionnaire. Providers reported that caregivers did not have ample time between check-in and the start of the well-visit to complete the 40-item measure and that some caregivers struggled to complete the tool while looking after small children. A small number of providers (n = 2) were frustrated that the ECSA was not completed and scored prior to them seeing the patient, which they felt limited its usefulness. Second, some providers (n = 2) reported that caregivers were sometimes not open to accepting referrals for children with positive scores.

Changes in PCP Practices After 6 Months of Implementing ECSA Screening

Table 3 shows PCP self-reported practices in screening, counseling, and referring families for early childhood BEP as well as for caregiver depression before and after 6 months of implementing screening using the ECSA. Analysis showed that six months after implementing ECSA screening, 70% of providers reported that they were screening with the ECSA at most well-child visits (vs 4% baseline, $S(1) = 18.0, P \leq .0001$). Billing data shown in Figure 2 indicated that there was also a significant increase in billing for screening at well-visits in the 6 month period during implementation of screening compared with the same 6-month period in the previous calendar year (0.1% baseline vs 32.2% post, $P < .0001$).

Following the 6-month screening implementation period, there was a trend showing more PCPs reported counseling caregivers about any concerns regarding BEP at most well-visits (67% baseline vs 85% post, $S(1) = 3.6, P \leq .06$). Significantly more PCPs (52%) reported referring families for further assessment of BEP at most well-visits at the end of the screening implementation period (vs 26% baseline, $S(1) = 5.4, P \leq .02$).

Prevalence of Positive ECSA Screens

Of the ECSAs with complete child data, 12.4% (n = 180) scored positive (total child score ≥ 18), suggesting elevated risk of having a psychiatric disorder. Among those children with positive screens, PCPs reported counseling 95% of these families and providing a referral to 44% for

Table 2. Clinical Experiences of Primary Care Providers (n = 27) Using the Early Childhood Screening Assessment (ECSA).^a

	Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
I can detect more cases of child behavioral and emotional problems using a screening tool than by routine history taking alone.	0 (0)	0 (0)	3 (11)	13 (48)	11 (41)
I can detect more caregivers at risk for depression using a screening tool than by routine history taking alone.	0 (0)	0 (0)	1 (4)	11 (41)	15 (56)
I feel that using a standardized tool is feasible and practical in screening preschoolers for behavioral and emotional problems.	0 (0)	0 (0)	1 (4)	16 (59)	10 (37)
Using the ECSA adds significant value to the well-child visit.	0 (0)	0 (0)	6 (29)	13 (62)	2 (10)
The ECSA enhances the level of care preschoolers receive at well-child visits.	0 (0)	0 (0)	4 (19)	11 (52)	6 (29)
The length of the ECSA is acceptable.	0 (0)	4 (19)	3 (14)	11 (52)	3 (14)
The time needed to score the ECSA is acceptable.	0 (0)	1 (5)	0 (0)	14 (67)	6 (29)
The time needed to discuss the results of the ECSA during a well-visit is acceptable.	0 (0)	1 (5)	6 (29)	12 (57)	2 (10)
I plan to continue to use a standardized tool (ECSA) during well-visits to screen preschoolers for behavioral and emotional problems.	0 (0)	0 (0)	3 (11)	12 (44)	12 (44)

	< 1 minute	2-5 minutes	5-10 minutes	> 10 minutes
Time spent counseling caregivers regarding a negative screen	25 (93)	2 (7)	0 (0)	0 (0)
Time spent counseling caregivers regarding a positive screen	0 (0)	6 (22)	16 (59)	5 (19)

^aValues are presented as n (%). Rounding resulted in totals of 99% to 101%.

Table 3. Primary Care Providers' (n = 27) Self-Reported Practices Before and After 6 Months of Screening Using the ECSA.^a

	Never	Rarely	Sometimes	At Most Well-Visits	At All Well-Visits	
I screen/assess preschool children for . . .						
behavioral/emotional problems using a standardized tool	Pre	19 (70)	3 (11)	4 (15)	1 (4)	0 (0)
	Post	0 (0)	0 (0)	8 (30)	9 (33)	10 (37)
I screen/assess caregivers for . . .						
caregiver depression using a standardized tool	Pre	23 (85)	4 (15)	0 (0)	0 (0)	0 (0)
	Post	0 (0)	3 (11)	8 (30)	6 (22)	10 (37)
I counsel caregivers of preschool children about their concerns regarding . . .						
behavioral/emotional problems	Pre	1 (4)	0 (0)	8 (30)	11 (41)	7 (26)
	Post	0 (0)	2 (7)	2 (7)	12 (44)	11 (41)
caregiver depression	Pre	7 (26)	12 (44)	7 (26)	0 (0)	1 (4)
	Post	1 (4)	8 (30)	12 (44)	4 (15)	2 (7)
I refer families of preschool children for further assessment/treatment of . . .						
behavioral/emotional problems	Pre	1 (4)	2 (7)	17 (63)	3 (11)	4 (15)
	Post	0 (0)	3 (11)	10 (37)	8 (30)	6 (22)
caregiver depression	Pre	12 (44)	9 (33)	4 (15)	0 (0)	2 (7)
	Post	1 (4)	9 (33)	9 (33)	6 (22)	2 (7)

^aValues are presented as n (%). Rounding resulted in totals of 99% to 101%.

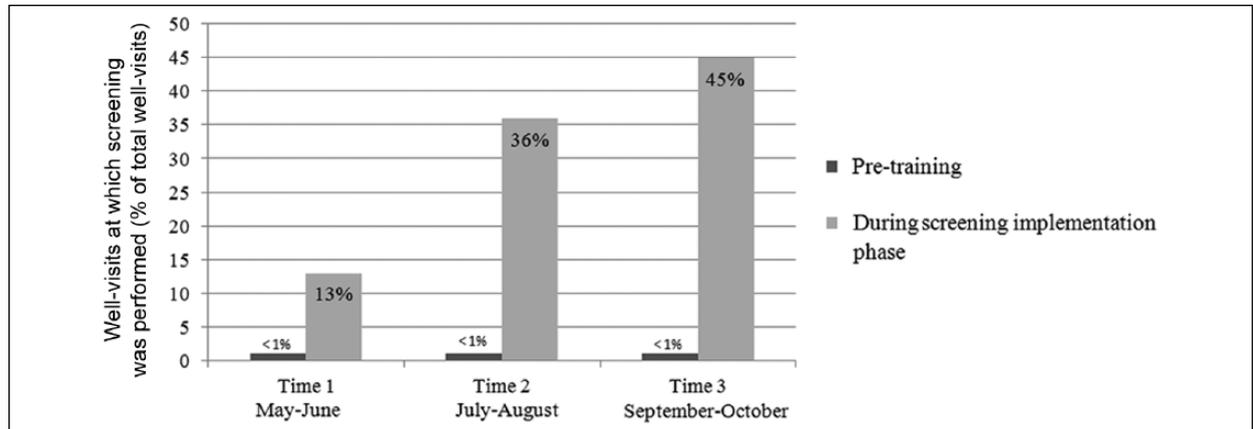


Figure 2. Billing record data about the percentage of 3- to 5-year-old well-visits at which screening was performed: Pretraining versus during screening implementation.

further mental health evaluation. Regarding caregiver depression, 3.1% ($n = 45$) had elevated depression scores (≥ 1) on the PHQ-2. Among those caregivers with positive screens, PCPs reported counseling 84.6% of these caregivers, but did not provide referrals to caregivers for further mental health evaluation.

Discussion

This study examined the feasibility of implementing standardized screening during well-visits for children ages 3 to 5 years for BEP using the ECSA within pediatric primary care. Results indicate that the ECSA was feasible to implement in these practices: providers were able to administer the instrument to more than 1450 children, score and interpret it, and determine clinically appropriate plans based on the score within the context of a routine well-visit. PCPs also reported that they were able to identify at-risk children (and caregivers) more effectively using the ECSA compared with routine history taking, indicating the clinical value of the tool. The fact that nearly 90% of PCPs planned to continue using the measure after the study ended is encouraging and further reflects the impact that the intervention had on practice patterns. Both PCP self-reports and billing records indicated significant increases in screening for BEP following implementation of standardized screening. However, while 70% of providers reported routine use of the ECSA, standardized screening was billed for at only 45% of the well-visits at the end of the study. This apparent discrepancy could reflect the fact that PCPs were not routinely billing for services performed. Given that Medicaid did not reimburse practices for this screening code, it is possible that these billing rates underrepresent actual practices.

Although there was a major increase in screening, it was not universal. In some instances, PCPs noted that it was difficult for caregivers to finish the 40-item measure

while looking after a young child. Consequently, a small proportion of the screening tools were not fully completed by the time the PCP entered the examination room. Certainly, there is an inherent challenge for caregivers of very young children in completing any questionnaire in a waiting room prior to a visit. Despite this concern, 98.8% of caregivers did complete the ECSA sufficiently to be scored which is comparable to the 97% completion rate for the Pediatric Symptom Checklist that used a less stringent criterion of fewer than 5 of 35 items missing.³⁰ Those practices that have shorter wait times and thus less available time to complete screening may consider using a pre-appointment screen through an electronic health record portal. Concerns about completion time may also be addressed by decreasing the number of items included in the screening instrument; the study team is currently exploring empirically supported approaches to doing so.

Primary care providers reported counseling 95% of children with positive screens, indicating that the results triggered discussion about this topic, an important first step in supporting families³¹ and in assisting them with accessing needed services. Furthermore, implementation of ECSA screening resulted in significant increases in referral rates, optimizing the probability that these referred children would receive comprehensive assessment and treatment as appropriate.

The results showed that more than 1 in 10 children screened positive on the ECSA, indicating a likelihood of a BEP diagnosis. This rate is at the lower end of epidemiologic studies demonstrating rates of mental health problems in children 2 to 6 years old between 14% and 19%.^{1,9} Rates of caregiver depressive symptoms were also lower than reported in previous primary care and maternal depression studies,^{25,27,32,33} including another study using the ECSA in a population with low socioeconomic status, in which 21% of mothers endorsed depressive symptoms.²⁵ This difference may be due to the mixed caregiver group, which

included mothers, fathers, and grandparents.³⁴ It is also possible that the caregivers who refused permission for their data to be included in the study were experiencing increased psychological distress. Although there may be some reluctance for caregivers to disclose depressive symptoms in pediatric symptoms, one rigorous study has demonstrated that adults do endorse these symptoms in pediatric primary care.²⁷ Despite the potential for underreporting, 47 caregivers endorsed depressive symptoms, providing an opportunity for discussion and possible intervention.

The study had several limitations that warrant consideration. The patients and PCPs in the sample are not representative of all primary care practices. The providers in the study were willing and able to take part in research and screen for BEP, which represents relatively high motivation for screening. In addition, PCPs in this practice had access to community mental health services that provided evaluation for very young children, which are not readily available for many community PCPs. Future studies should include rural and more racially, ethnically and economically diverse patient samples. The study did not assess the perspectives of caregivers in regard to ease of completion and the utility of the ECSA; given the potential concerns ECSA raised by providers, it would be useful to obtain feedback from those actually completing the measure. Although rates of billing for screening were reported, examination of screening reimbursement would be beneficial. Practices in this study reported that the private payors (but not Medicaid) reimbursed a small amount for early childhood emotional and behavioral screening (coded as 96110). This may influence other providers' willingness to incorporate screening if full reimbursement is not possible.

Despite these limitations, these findings offer the first assessment about the feasibility of standardized screening for early childhood BEP from the perspective of pediatric primary care providers. The limitations of the study were offset by several strengths. The providers were from different practices providing care to a large urban sample serving both privately and publicly insured patients. The response rate and sample size was high and the ECSA was readily incorporated into busy clinic settings whose demographics are similar to many suburban practices serving young children

The present study demonstrates considerable promise regarding the feasibility of the ECSA as part of a primary care BEP screening program for 3- to 5-year-old children. Future research should include an evaluation of family engagement in mental health treatment, as well as clinical outcomes of children identified through screening. Implementing universal screening is only a first step toward enhancing early childhood mental health. Screening is most useful if it provides opportunities for early intervention, and ultimately, improves

patient outcomes. As such, screening should be implemented as part of a system of care in which children and families have access to evidence-based treatments.

Acknowledgments

We appreciate the primary care practices who participated in the project: Baptist Pediatrics, Carithers Pediatric Group, and Jacksonville Pediatrics. We are grateful to Peggy Greco, PhD, for her critical review of the manuscript. We also thank Lauren James and Robin Landy for their assistance in preparation of this manuscript.

Author Contributions

All authors contributed to study conception and design. EMF also designed the data collection instruments, supervised data acquisition, analysis and interpretation, and drafted and revised the manuscript. ERB played a lead role in data analysis, and in drafting and revising the manuscript. CMB contributed through refining the design of the data collection instruments, acquiring and performing initial data analyses, and helping to draft and revise the manuscript. TW helped to refine the data collection instruments, analyze and interpret data, and revise the manuscript. CBK assisted with the design of the data collection instruments, data acquisition and analysis, and revision of the manuscript. MMG designed the Early Childhood Screening Assessment, and played a significant role in analyzing and interpreting data as well as drafting and revising the manuscript. All authors approved the final manuscript as submitted.

Authors' Note

The sponsoring agencies had no role in the design and conduct of the study; collection, analysis, or interpretation of the data; preparation, review, or approval of the manuscript; or decision to submit the manuscript for publication.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This study was funded by the Nemours Foundation and by a grant awarded to Dr Fallucco through Managed Access to Child Health, a grantee of the Substance Abuse and Mental Health Services Administration (SAMHSA) grant (5U79SM059939-04).

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