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Which Pediatricians Co-Manage Mental Health Conditions?

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Abstract

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Objective/Background—Given the prevalence of mental health (MH) conditions (MHCs) in children, pediatricians should initiate treatment alone or in collaboration with a specialist for children with MHCs. However, the majority of pediatricians do not manage or co-manage common MHCs even with an onsite MH provider. This study examines which physician, practice, and training characteristics are associated with pediatricians' co-managing at least half of their patients with MHCs.

Methods—We analyzed responses of general pediatricians (n=305) from the AAP 2013 Periodic Survey. Practice characteristics include presence of an onsite MH provider and perceived access to services. Independent variables included socio-demographics, training experiences, and interest in further training. The outcome was co-management of 50% of patients with MHCs. Weighted univariate, bivariate and multivariable analyses were performed.

Results—Of the pediatricians who reported co-managing 50% of their patients with MHCs, logistic regression analysis showed that pediatricians who completed 4 weeks of DBP training had 1.8 increased odds (1.06, 3.08, p=0.03) of co-management, those very interested in further education in managing/treating MHCs had 2.75 increased odds (1.63, 3.08, p<0.001), and those with more training in MH treatment with medications had 1.4 increased odds (1.12, 1.75, p=0.004) of co-managing children with MHCs.

Conclusion—Specific educational experiences and interest in further education in managing/treating MHCs were significantly associated with co-managing 50% of patients suggesting that enhanced MH training among pediatricians could increase the co-management of children with MHCs.

Keywords

Co-Management Mental Health; Developmental Behavioral Pediatrics; Pediatric Education Learning Problems; Behavior Problems

Introduction

Mental health (MH) conditions (MHCs) affect 1 in 5 children and have surpassed physical conditions as the most common reasons children have impairments and limitations¹, with only a minority receiving appropriate services.² To improve access to services, given the shortage of MH specialists, policy statements from professional organizations have called for integrating MH care into the primary pediatric medical home.² In response, the American Academy of Pediatrics (AAP) generated a set of proposed MH competencies for pediatricians to better define their new role in MH care, acknowledging that new educational approaches and system changes were needed in order to achieve these competencies.³ These competencies include not only performing a diagnostic assessment, but also initiating treatment, either alone or in collaboration with MH professionals, for children with common MH conditions. However, the majority of pediatricians are still not managing or co-managing most common child MHCs.^{4,5}

Integrating the care for other chronic conditions into the medical home has been done successfully. In the 1990s, studies demonstrated that children with asthma had difficulties accessing quality care,⁶ and national efforts, including clinical guidelines, physician

education, and learning collaboratives improved asthma care in the medical home.^{7,8} Currently, children with asthma are more likely to have access to a medical home and their health care needs met compared to children with attention deficit and hyperactivity disorder (ADHD) or autism spectrum disorder.^{9,10} Similar efforts have been taken to enable pediatricians to assume a more active role in MH care. In 1998 the Accreditation Council for Graduate Medical Education (ACGME) mandated a four- week developmental and behavioral pediatric (DBP) rotation.¹¹ In 2000 evidence-based clinical guidelines were created for ADHD,¹² followed by the creation of a MH toolkit (2010),¹³ and a residency curriculum (2014).¹⁴ Practitioners who completed the full four weeks of DBP are more likely to manage or co-manage MHCs,^{15,16} but recent studies demonstrated that less than a quarter of pediatricians treat MHCs other than ADHD,⁵ and two-thirds of pediatricians endorse training as a barrier to providing MH care.¹⁷

Given the slow uptake in addressing MHCs in pediatric care, collaborating with MH providers can serve as a first step for pediatricians to build their skills and manage MHCs more independently.¹⁸ Three main models for co-management exist, two of which are when either the primary care provider (PCP) or the subspecialist become the primary manager. The third is “collaborative and coordinated care that is conceptualized, planned, delivered, and evaluated by two or more health care providers, one being a PCP and the other a subspecialist”^{18,19} and is when both providers share equally responsibility for their patients’ care. Studies have shown primary pediatricians can successfully co-manage patients with chronic physical illnesses with subspecialists and improve care.^{18,19} In adults, co-management improved mental and physical health outcomes, access to specialty care, and lead to better engagement and acceptability of MH services.²⁰ One study of adolescent depression demonstrated that pediatricians were more likely to prescribe medications for depression when working in a co-management model.²¹ However, our prior study demonstrated that only a third of pediatricians reported co-managing at least half of their patients.⁴ Co-management for MH care is understudied and we know little about what factors influence pediatricians to co-manage MHCs.

Co-management requires access to MH providers, a major barrier identified by pediatricians.¹⁷ New models of care that incorporate onsite MH providers have been endorsed nationally as a way to facilitate the collaboration and co-management between providers.²² Organizations have defined three main approaches to integrate MH care (coordinated, co-located, fully integrated) which differ on the proximity of MH providers and the level to which their systems and visions are united.²² There is evidence that integrated models of care can impact providers’ behaviors and improve MH outcomes in some, but not all studies.²³ However, the presence of an on-site provider is still uncommon^{4,24} and a national study of practicing pediatricians found no association between the presence of an onsite provider and treating or co-managing MHCs.⁴ Therefore, it is important to explore other factors, beyond the physical presence of a MH provider, which influence co-management. The objective of this study is to investigate physician characteristics, practice characteristics, and training experiences that are associated with general pediatricians’ co-managing more than 50% of their patients with MHCs.

Methods

Periodic Survey Administration

Data for this study come from the 2013 AAP Periodic Survey (PS). The AAP has conducted a PS of pediatricians multiple times yearly since 1987 to inform policy, develop new initiatives, or evaluate current projects. Each PS is sent to a random sample of about 1600 of the >50,000 pediatricians who are non-retired members of the AAP. The details of the survey have been previously described.¹⁷ This PS was sent up to 7 times to 1617 randomly selected US non-retired members of the AAP in 2013 (N=54,491) of whom 594 (36.7%) responded. (www.AAP.org/research/periodicsurvey/). The questionnaire was pretested for clarity and approved by the AAP Institutional Review Board. These analyses included pediatricians exclusively practicing general pediatrics.

Survey Questions

The survey, which contained largely closed-ended questions, asked about physician characteristics (e.g., age, sex, race/ethnicity, year completed residency, years in practice) and practice characteristics (e.g., region, practice type, number of ambulatory visits per week, patient insurance, patient race/ethnicity). Years in practice was dichotomized separating pediatricians who trained before and after 1998 since that is the year the DBP rotation was mandated. Pediatricians were asked questions about their current practices in response to common MHCs: ADHD, depression, anxiety, behavioral problems, and learning disabilities. The question, “In your practice, how frequently do you inquire about, screen for, treat/ manage/comange, and refer each of these problems/conditions?” The question on co-management was, “Within the past 12 months, approximately what percent of your patients with mental health problems have you co-managed with any mental health care provider?” The outcome measure for this study was whether pediatricians co-managed <50% vs. 50% of these patients, suggesting they co-manage more often than they do not.

Pediatricians were asked whether 7 types of MH practitioners (child psychologists, child psychiatrists, developmental-behavioral pediatricians, developmental service providers [i.e., early intervention], substance abuse counselors, social workers (SW), and child life specialists) were located on-site at their practices. The question was, “In column A please mark which of the following mental health providers are located ON SITE at your primary practice, that is, the practice where you spend most of your time? Please check Yes or No for each provider.” If these practitioners were not on site, pediatricians were asked how difficult it was for patients who need routine MH services to be seen by a MH provider in their practice community (very, moderately, somewhat, or not at all difficult).

Pediatricians were asked questions about trainings they received in child /adolescent MH. First, pediatricians were asked how many weeks of a DBP residency rotation they completed, which was categorized as <4 vs. 4 weeks. Second, pediatricians were asked whether they received 7 trainings; 3 were trainings in treating MHCs (anxiety, ADHD, and depression) with medication, and 4 were trainings in assessment and non-medication treatments for MHCs (interview techniques, DSM diagnostic criteria for anxiety, ADHD and depression, managing depression through counseling or CBT, and positive parenting

techniques). The total number of trainings, the number of trainings in treating MHCs with medication, and the number of trainings in assessment and non-medication treatments for MHCs were calculated. Finally, pediatricians were asked if they attended a child MH lecture/conference in the past 2 years and whether they were very, somewhat, or not at all interested in further education on identifying, managing/treating, or co-managing pediatric MHCs.

Statistical Analyses—Although the sample reflected the AAP membership at the time of the survey, non-response was considerable. Thus, sample weights were created to minimize potential bias due to differential non-response and to ensure that the respondents were representative of the membership. As previously described,¹⁷ auxiliary information available for both responders and non-responders (age, sex, region, and membership status) was used as predictors in logistic regression analyses to estimate the probability of responding to the survey. The final logistic regression model included the three-way interaction of age, sex, and region, as well as their two-way interactions and main effects. Ten weighting cells were created using deciles of the response propensity score distribution. The inverse of the mean propensity score for each cell was used to create the sample weights, which were then rescaled such that the mean was unity and the sum was equal to the analytic sample size.

Weighted means and standard errors were used to summarize continuous measures, and weighted percentages were used to describe categorical measures. The Chi-square test was used to examine the bivariate association of the number of conditions physicians usually treated/managed/co-managed with the outcome, co-manage 50% or <50% of their patients. The number of conditions that they reported usually treating/managing/co-managing was calculated (range 0–5). This analysis elucidated whether pediatricians who did not co-manage were treating/managing alone or referring. Additional bivariate associations with co-management of 50% of patients with MHCs were assessed using weighted linear regression, weighted logistic regression, and the Rao-Scott chi-square test. Weighted multivariable logistic regression was used to examine the adjusted associations of physician characteristics, practice characteristics, practices, and trainings in MH with co-managing 50% of patients with MHCs. The results are summarized using adjusted odds ratios (aOR) and 95% confidence intervals (95% CI). All analyses were performed in SAS 9.3 (SAS Institute, Cary, NC)

Results

Respondents (n=305) characteristics and practice characteristics are summarized in Table 1. Physicians were 46 years old on average, 68% female, 75% Caucasian, and 55% completed their residency after 1998 (Table 1). 49% of pediatricians practiced in suburban areas, 52% in a pediatric group practice, and 36% reported 100 ambulatory visits a week. Bivariate analyses showed the only physician characteristic that was associated with co-managing 50% of their patients with MHCs was a younger physician age. None of the practice characteristics were significantly associated with comanagement.

The bivariate association of the number of conditions pediatricians reported usually treating/managing/co-managing, and co-managing 50% of their patients with MHCs is shown in

Table 2. There was a significant association between the number of MHCs pediatricians reported treating/managing/co-managing and the percentage of pediatricians reporting co-managing 50% of their patients ($p=0.006$).

54% of pediatricians reported that obtaining routine MH services by providers in their practice community was very or moderately difficult, only 12% reported that it was not at all difficult, but this was not associated with co-managing 50% of their patients with MHCs. About one-third of pediatricians reported that a child/adolescent MH provider was located on-site with social workers (SW) being the most common type of provider (Table 3). Pediatricians who had a SW on site were significantly more likely to report co-managing 50% of their patients with MHCs (43% vs. 30%, $p=0.03$). Having any type of MH provider on site did increase the odds of co-managing 50% of patients with MHCs, although this was not statistically significant. (40% vs. 29%, $p=.06$).

Almost 80% of pediatricians reported receiving training in dosing with ADHD medication and training in DSM diagnostic criteria while approximately 40% reported receiving training in treating depression/anxiety with medication (Table 4). About half of pediatricians reported receiving 4 weeks DBP training in residency, training in interviewing techniques, training in positive parenting techniques, and were very interested in further education on managing/treating child or adolescent MHCs.

Bivariate analyses showed that those who had significantly more training in treating MHCs with medication co-manage 50% of their patients (1.95 vs. 1.42 trainings, $p<.001$) (Table 4). Each of the three different trainings in treating MHCs with medication (dosing with antidepressant/antianxiety medications, dosing with ADHD medications, and strategies for managing/treating depression with medication) was positively associated with co-managing 50% of their patients with MHCs (all $p<.01$). Conversely, 3 of the 4 other trainings in assessment and non-medication treatments for MHCs (interviewing techniques, strategies to manage/treat depression through counseling, and positive parenting techniques) were not associated with co-managing 50% of their patients with MHCs. Training in DSM criteria, completing 4 weeks DBP training in residency, having attended a lecture or conference in child/adolescent MH in the past 2 years, and being very interested in further education on managing/treating MHCs were positively associated with co-managing 50% of patients with MHCs.

The results of the weighted multivariable logistic regression analyses are shown in Table 5. Pediatricians who completed 4 vs. <4 weeks of DBP training had 1.8-fold increased odds of co-managing 50% of their patients with MHCs (aOR=1.80, 95% CI=1.06, 3.08, $p=.03$). Pediatricians who were very vs. somewhat or not at all interested in further education on managing/treating MHCs had 2.75-fold increased odds of co-management of 50% of their patients (95% CI: 1.63, 4.66, $p<.001$). Lastly, pediatricians who received more trainings in treating MHCs with medications had 1.4-times the odds of co-managing 50% of their patients with MHCs (95% CI: 1.12, 1.75, $p=.004$).

Discussion

Pediatricians who reported completing 4 weeks of DBP in residency, being very interested in further education on managing/treating MHCs, and having received specific training in medication management were more likely to co-manage 50% of their patients with MHCs. In bivariate analyses, pediatricians who completed residency after the DBP rotation was mandated were more likely to co-manage 50% of their patients with MHCs, again supporting the impact of education and more recent initiatives.^{15,25} There was also a significant association between co-managing 50% of their patients with MHCs and volume of mental health issues addressed. One could question whether pediatricians not co-managing patients could be managing on their own or simply referring. This analysis may suggest otherwise.

Despite perceived availability of MH resources being cited as a barrier to providing MH care,¹⁷ our data did not show that association. The availability of any onsite MH provider did not achieve statistical significance with co-managing 50% of their patients with MHCs, although 40% of pediatricians who had onsite MH providers reported co-managing 50% of their patients with MHCs compared to 29% who did not have an onsite provider.

These results highlight the importance of education for producing pediatricians who co-manage patients with MHCs which is consistent with prior study.^{15,26} However, more than half of pediatric program directors are unaware of the MH competencies and teach the majority of MH care during a rotation.²⁷ Since specific training in managing conditions with medications is consistently associated with practices,¹⁵ these trainings must be present in all programs. This finding is in contrast to trainings in non-medical behavioral management strategies, which were not associated with co-managing 50% of patients with MHCs. Time is consistently cited as a barrier for pediatricians in providing MH care which may be why education in counseling was not associated with co-managing 50% of patients with MHCs, but further study is needed to better understand this finding.¹⁷ The AAP has created resident teaching materials on evidence-based communication skills for common MHCs and anxiety and, while the impact is unknown,¹⁴ this training has had a reported modest impact on pediatricians' practices in MH care.²⁸

This educational gap is starting to receive national attention. One of seventeen new routine activities endorsed by the American Board of Pediatrics that all pediatricians in training should become competent in is to "assess and manage patients with common behavioral/mental health problems" and includes the ability to manage common conditions and initiate medications.²⁹ This focus on behavioral health is promising but it is unknown what national guidance will be provided to programs about educational activities that will lead to a practitioner who is competent to assess and manage common MHCs. It is also unclear whether general pediatric faculty themselves are able to teach these competencies supporting the need for collaboration between pediatricians and MH professionals.

Implementing new models of care in resident continuity clinic can help trainees learn about MH in the context of the medical home. Approximately one-third of pediatric residency programs have enhanced models of MH care in their trainees' primary care practices and

data do suggest that training in these practices influences trainees' confidence and competence.^{27,30} However, there is a spectrum of integration within enhanced models of care and which model components encourage pediatricians to provide treatment for common MHCs is unknown. Our findings on the importance of education may strengthen the argument that fully integrated models of care may provide the most promise in changing providers' behaviors and helping to build their skills in MH care.²² Collaborating and co-managing with MH providers in one educational program facilitated confidence building and feelings of self-efficacy²⁶ suggesting adapting this strategy in continuity clinics may help faculty members and pediatric trainees build skills and promote future task shifting.

Subgroup analysis demonstrated that pediatricians who reported having an onsite Social Worker (SW) were more likely to co-manage at least half of their patients with MHCs. There is a range of roles SWs play in pediatric practices although many coordinate care and link patients to appropriate services, such as MH resources, thus explaining this association.³¹ Care coordination has been associated with increased access to services and improved outcomes.³² While this implies an onsite provider can increase access to MH professionals, the goal is for pediatricians to be providing first line treatment since the shortage of child psychiatrists will not improve in the near future and the majority of practices do not have an on-site provider.^{24,33} This finding again highlights the need for education. More attention and education should focus on how pediatricians and MH providers can best co-manage patients without reducing the perceived scope pediatricians need to play in MH care. On the other hand, in this study few pediatricians reported working with an on-site MH professional, suggesting this lack of association may be due to inadequate power.

The role of education in changing providers' behavior in co-management and new national attention to MH education can help facilitate the changing culture of MH integration in primary care. However, obtaining educational experiences and desiring more education also reflects interest. While a 4-week DBP rotation is mandatory, other educational experiences may be optional. It is important to consider that the association between educational experiences and co-management may be mediated by interest, or perceived responsibility. Prior study of graduating residents demonstrates that while they may perceive it to be their responsibility to identify MHCs, the majority do not perceive it to be their responsibility to treat them, although perceived competence in dosing medications was associated with responsibility in treatment.¹⁶ Theories of behavioral change suggest that one's intention is what is most predictive of behavior.³⁴ Constructs of intent include expectancies (perceived responsibility) and normative influences (practice culture). Future education is needed to further shift pediatricians' perceived responsibility for and intent to manage MHCs.

These findings need to be interpreted with caution given the low response rate, although suboptimal response rates are not unusual for surveys of physicians.³⁵ This survey was weighted to account for nonresponse bias. However, it is unlikely that all bias was corrected for. These data are cross-sectional so causation cannot be inferred. In addition, responses were self-reported practices and these practices were not verified. Another limitation was the lack of precision and provision of definitions for some of the survey questions. Co-management was not defined in the survey so this term could have been interpreted

differently by responding pediatricians, which could affect the accuracy of their responses. In the question on treatment, treat, manage, and co-manage were all grouped together when in fact these could all be separate questions and open for interpretation. The questions that were asked about the presence of onsite providers did not explore the roles of the pediatrician or the MH professional. However, to our knowledge, this is the first national study of general pediatricians looking at co- management. The small numbers of other on-site specialists may have influenced the lack of relationships found between the presence of an on-site professional and co-management.

Conclusion

The co-management of MHCs between pediatricians and MH providers is an essential component for initiating the process of integrating MH into primary care. Training in co-management is promising, but we have no data on precisely what and how much education is necessary to produce pediatricians capable of and willing to co-manage their young patients with MHCs. Further study is needed to understand how targeted instruction can improve co-management of MHCs in pediatric primary care and how to implement models of care in residency primary care practices to support the experiential learning of trainees and their faculty members.

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Abbreviations

ADHD	Attention Deficit Hyperactivity Disorder
DBP	Developmental Behavioral Pediatrics
MH	Mental Health
MHCs	Mental Health Conditions
SW	Social Worker
PCP	Primary Care Physician AAP=American Academy of Pediatrics

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What's New

Educational experiences, especially targeted training in treating MH problems with medications, were associated with increased the odds of co-managing more than half of their patients in general pediatricians surveyed nationally.

Table 1

Physician and Practice Characteristics by Co-management of Child MH Problems (n=305)

	Co-manage <50% or 50% of patients with MH Problems			
	Analytic Sample (n=305)	<50% (n=204)	50% (n=101)	p-val
Physician Characteristics				
Sex				
Female	211 (68.0)	135 (63.9)	76 (36.1)	.13
Male	94 (32.0)	69 (73.0)	25 (27.0)	
Age, y; weighted mean (SE)	46.0 (0.6)	46.9 (0.8)	44.2 (1.0)	.04
Years in practice				
<5	57 (21.1)	37 (64.4)	20 (35.6)	.09
5–9	46 (16.4)	27 (59.4)	19 (40.6)	
10–19	93 (30.6)	57 (61.6)	36 (38.4)	
20	107 (31.9)	81 (76.6)	26 (23.4)	
Race/Ethnicity				
Caucasian	229 (74.7)	148 (64.6)	81 (35.4)	.19
Asian	35 (11.5)	28 (80.4)	7 (19.6)	
Other	41 (13.8)	28 (67.6)	13 (32.4)	
Year completed residency				
<1998	148 (44.8)	103 (70.2)	45 (29.8)	.22
1998	154 (55.2)	98 (63.5)	56 (36.5)	
Practice Characteristics				
Region				
Northeast	67 (22.1)	45 (67.7)	22 (32.3)	.91
Midwest	60 (20.6)	39 (64.8)	21 (35.2)	
South	119 (38.7)	78 (65.6)	41 (34.4)	
West	59 (18.6)	42 (70.5)	17 (29.5)	
Location of practice				
Urban	120 (40.0)	82 (68.2)	38 (31.8)	.73
Suburban	151 (49.3)	97 (64.5)	54 (35.5)	
Rural	32 (10.7)	23 (70.5)	9 (29.5)	
Practice Type				
One or two physician	28 (9.0)	20 (73.3)	8 (26.7)	.91
Pediatric group practice	158 (52.1)	104 (65.5)	54 (34.5)	
Multispecialty group practice	37 (12.0)	25 (67.2)	12 (32.8)	
Medical school/parent university	23 (7.5)	14 (61.9)	9 (38.1)	
Other *	59 (19.5)	41 (69.0)	18 (31.0)	
Ambulatory visits per week				
< 100	193 (64.2)	129 (66.9)	64 (33.1)	.93
100	108 (35.8)	72 (66.4)	36 (33.6)	
Patient insurance				

	Co-manage <50% or 50% of patients with MH Problems			
	Analytic Sample (n=305)	<50% (n=204)	50% (n=101)	p-val
<80% have private insurance	187 (61.4)	128 (68.5)	59 (31.5)	.48
80% have private insurance	77 (24.9)	47 (61.1)	30 (38.9)	
Unknown	41 (13.7)	29 (69.8)	12 (30.2)	
Caucasian patients, %				.32
49%	126 (41.9)	90 (71.5)	36 (28.5)	
50–74%	110 (36.2)	69 (62.5)	41 (37.5)	
75%	65 (21.9)	42 (64.4)	23 (35.6)	

N (weighted percent) shown

* Other practice types include HMO (staff model), government and non-government hospitals and clinics, and non-profit community health centers

Table 2

Bivariate Association of the Number of MH Conditions Usually Treat/Manage/Co-manage (range 0–5) * and Co-manage 50% of their Patients with MH Problems

Number of MH conditions usually treat/manage/co-manage *	Co-manage <50%	Co-manage 50%
None	78.6	21.4
One	71.2	28.8
Two	66.7	33.3
Three	52.6	47.4
Four	48.3	51.7
Five	44.5	55.5

Weighted % shown

* MH conditions include ADHD, depression, anxiety, behavioral problems and learning disabilities

Table 3

Co-location and Availability of Mental Health Services (N=305)

		Co-manage <50% or 50% of patients with MH Problems		
	Analytic Sample (n=305)	<50% (n=204)	50% (n=101)	p-val
Routine MH services				
Difficulty obtaining routine MH services by providers in your practice community				
Very difficult	56 (19.0)	41 (72.0)	15 (28.0)	.52
Moderately difficult	105 (34.7)	70 (67.1)	35 (32.9)	
Somewhat difficult	101 (33.8)	62 (61.5)	39 (38.5)	
Not at all difficult	38 (12.5)	27 (71.2)	11 (28.8)	
Co-location MH providers				
Child psychiatrists				
No	265 (87.1)	178 (67.3)	87 (32.7)	.65
Yes	40 (12.9)	26 (63.6)	14 (36.4)	
Child psychologists				
No	259 (84.9)	172 (66.5)	87 (33.5)	.79
Yes	46 (15.1)	32 (68.6)	14 (31.4)	
Developmental-behavioral pediatricians				
No	280 (91.8)	188 (67.2)	92 (32.8)	.69
Yes	25 (8.2)	16 (63.2)	9 (36.8)	
Developmental services (i.e., early intervention)				
No	281 (92.3)	187 (66.7)	94 (33.3)	.87
Yes	24 (7.7)	17 (68.3)	7 (31.7)	
Substance abuse counseling				
No	277 (91.6)	186 (67.1)	91 (32.9)	.56
Yes	26 (8.4)	16 (61.4)	10 (38.6)	
Social workers				
No	224 (73.4)	156 (70.1)	68 (29.9)	.03
Yes	79 (26.6)	46 (57.0)	33 (43.0)	
Child life specialists				
No	274 (90.9)	185 (67.6)	89 (32.4)	.38
Yes	27 (9.1)	16 (59.0)	11 (41.0)	
Any child/adolescent MH providers				
No	198 (64.4)	139 (70.6)	59 (29.4)	.06
Yes	107 (35.6)	65 (60.1)	42 (39.9)	

N (weighted percent) shown

Table 4

Training in Child/Adolescent MH and MH activities by Co-management of Child MH Problems (n=305)

		Co-manage <50% or	50% of patients with MH Problems	
	Analytic Sample (n=305)	<50% (n=204)	50% (n=101)	p-val
Training in child/adolescent MH				
Total number of trainings (range 0–7)	3.58 (0.1)	3.28 (0.1)	4.18 (0.2)	<.001
Number of trainings in treating MH problems with medications (range 0–3)	1.60 (0.1)	1.42 (0.1)	1.95 (0.1)	<.001
Training in dosing with antidepressant/anxiety medication				
No	172 (57.4)	129 (75.5)	43 (24.5)	<.001
Yes	123 (42.6)	70 (56.2)	53 (43.8)	
Training in dosing with ADHD medication				
No	66 (21.4)	54 (81.7)	12 (18.3)	.004
Yes	232 (78.6)	145 (62.6)	87 (37.4)	
Training in strategies for managing/treating depression with medication				
No	183 (60.5)	133 (73.4)	50 (26.6)	.003
Yes	115 (39.5)	66 (56.4)	49 (43.6)	
Number of other MH trainings in assessment and non-medication treatments (range 0–4)	2.01 (0.1)	1.89 (0.1)	2.26 (0.1)	.01
Training in interviewing techniques				
No	145 (47.7)	103 (71.1)	42 (28.9)	.13
Yes	153 (52.3)	96 (62.7)	57 (37.3)	
Training in DSM diagnostic criteria				
No	54 (17.1)	44 (81.6)	10 (18.4)	.01
Yes	245 (82.9)	156 (63.7)	89 (36.3)	
Training in strategies for managing/treating depression through counseling or cognitive behavioral therapy				
No	237 (78.6)	162 (68.2)	75 (31.8)	.31
Yes	61 (21.4)	37 (61.2)	24 (38.8)	
Training in positive parenting techniques				
No	161 (52.2)	115 (71.5)	46 (28.5)	.07
Yes	144 (47.8)	89 (61.8)	55 (38.2)	
Training in child/adolescent MH				
4 weeks DBP residency training				
No	145 (46.1)	108 (75.1)	37 (24.9)	.005
Yes	160 (53.9)	96 (59.8)	64 (40.2)	
Child/Adolescent MH Activities				
Attended child MH lecture/conference in past 2 years				
No	154 (50.8)	112 (72.4)	42 (27.6)	.04
Yes	151 (49.2)	92 (61.1)	59 (38.9)	

	Analytic Sample (n=305)	Co-manage <50% or 50% of patients with MH Problems		p-val
		<50% (n=204)	50% (n=101)	
Very interested in further education on identifying depression and other MH problems in children or adolescents				
No	122 (39.7)	88 (71.6)	34 (28.4)	.14
Yes	181 (60.3)	114 (63.3)	67 (36.7)	
Very interested in further education on managing/treating child or adolescent MH problems				
No	149 (48.6)	116 (78.1)	33 (21.9)	<.001
Yes	155 (51.4)	87 (55.9)	68 (44.1)	

N (weighted percent) shown

Table 5

Weighted Multivariable Logistic Regression: Adjusted Odds of Co-managing 50% of patients with MH problems (N=305)

	aOR	95% CI	p-value
4 weeks DBP residency training			
Yes vs. No	1.80	1.06, 3.08	.03
Very interested in further education on managing/treating child or adolescent MH problems			
Yes vs. No	2.75	1.63, 4.66	<.001
Number of trainings in treating MH problems with medications (range 0–3)	1.40	1.12, 1.75	.004