

## Pediatric Residents' Attitudes, Knowledge and Skills in Primary Care Behavioral Health Service Delivery

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**Pediatric Residents' Attitudes, Knowledge and Skills in Primary Care Behavioral Health Service Delivery**  
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**Background**

- Overview**
- PCPs positioned to serve increasing number of youth with behavioral health (BH) concerns in primary care (PC)
  - Common barrier to providing effective care → lack of BH training PCPs receive (Sarty et al., 2002)
  - Most PC medicine residency program directors report BH training is important/should be emphasized more (Chin et al., 2000)
  - Most directors of accredited PC residency training programs in internal medicine/pediatrics acknowledge training on topic is minimal/suboptimal (Leigh et al., 2006)
  - American Academy of Pediatrics (2009) policy statement → key aspirational behavioral health competencies for PCPs → **should be acquired via innovations in residency training**
- Objective**
- Exploratory study to quantify pediatric residents' attitudes, knowledge and skills in primary care behavioral health service delivery for purpose of informing future intervention efforts

**Results**

Data yielded 3 major findings: (1) residents generally scored higher on their knowledge and skills in diagnosing BH conditions than in treating conditions, (2) residents' attitudes and knowledge in managing BH conditions were higher than their skills in response to clinical vignettes, and (3) there were no significant differences in AKSS between interns and upper-level residents

Table 1: Pre-Resident Demographic Information

	R1s	R2/R3s	P-value
Site 1 Pediatric Residents (n=23)	17	11	n/a
Site 2 Pediatric Residents (n=12)	5	7	n/a
Total Number of Pediatric Residents (n=40)	22	18	n/a
Average Age (years)	27.8	30.3	0.02
Female (%)	81.8	72.2	0.47
Foreign Medical Education (%)	13.6	11.1	0.81
Orthopedic Medical School (%) (compared to National for Life Science Major (%)	96.6	61.1	0.68
Allopathic	90.9	77.8	0.25
Hermetic/Major (%)	9.1	22.2	0.25

Table 2: Comparison of Knowledge of Practice Parameters Across Sites

	All	Site 1	Site 2
Evidence-based Practice Parameter	Score	Average Score (95% Confidence Interval)	
ADHD Evaluation	2-10	6.47 (5.83, 7.12)	6.15 (5.39, 6.91)
ADHD Treatment	2-9	5.79 (5.12, 6.46)	6.36 (5.26, 7.46)
Depressive/Suicide Evaluation	2-10	7.29 (6.71, 7.87)	7.11 (6.47, 7.80)
Depressive/Suicide Treatment	2-10	5.92 (5.33, 6.51)	6.27 (5.35, 7.20)
Anxiety Evaluation	4-10	6.55 (6.00, 7.11)	6.36 (5.68, 6.88)
Anxiety Treatment	2-10	5.55 (4.90, 6.21)	5.80 (5.10, 6.50)
Sleep Disorder Evaluation	4-10	5.55 (4.90, 6.21)	5.07 (4.50, 5.64)
Sleep Disorder Treatment	2-9	4.92 (4.20, 5.64)	4.41 (3.55, 5.27)
Developmental Delay Evaluation	2-10	6.71 (5.96, 7.46)	6.44 (5.53, 7.36)
Developmental Delay Treatment	1-10	5.55 (4.62, 6.48)	5.15 (4.07, 6.22)
Substance Abuse Evaluation	1-10	6.47 (5.84, 7.11)	6.22 (5.43, 7.01)
Substance Abuse Treatment	1-8	5.13 (4.45, 5.82)	4.78 (3.96, 5.62)

Table 3: Comparison of Knowledge of Practice Parameters Across Years

	All	R1s	R2/R3s
Evidence-based Practice Parameter	Score	Average Score (95% Confidence Interval)	
ADHD Evaluation	2-10	6.47 (5.83, 7.12)	6.15 (5.39, 6.91)
ADHD Treatment	2-9	5.79 (5.12, 6.46)	6.36 (5.26, 7.46)
Depressive/Suicide Evaluation	2-10	7.29 (6.71, 7.87)	7.11 (6.47, 7.80)
Depressive/Suicide Treatment	2-10	5.92 (5.33, 6.51)	6.27 (5.35, 7.20)
Anxiety Evaluation	4-10	6.55 (6.00, 7.11)	6.36 (5.68, 6.88)
Anxiety Treatment	2-10	5.55 (4.90, 6.21)	5.80 (5.10, 6.50)
Sleep Disorder Evaluation	4-10	5.55 (4.90, 6.21)	5.07 (4.50, 5.64)
Sleep Disorder Treatment	2-9	4.92 (4.20, 5.64)	4.41 (3.55, 5.27)
Developmental Delay Evaluation	2-10	6.71 (5.96, 7.46)	6.44 (5.53, 7.36)
Developmental Delay Treatment	1-10	5.55 (4.62, 6.48)	5.15 (4.07, 6.22)
Substance Abuse Evaluation	1-10	6.47 (5.84, 7.11)	6.22 (5.43, 7.01)
Substance Abuse Treatment	1-8	5.13 (4.45, 5.82)	4.78 (3.96, 5.62)

Table 4: Comparison of Skills in Using Practice Parameters Across Sites & Years

	All	Site 1	Site 2	R1	R2/R3s
Evidence-based Practice Parameter	Score	Average Score (95% Confidence Interval)			
ADHD Evaluation	1-6	3.21 (2.70, 3.71)	3.41 (2.74, 4.08)	2.75 (2.19, 3.31)	3.41 (2.59, 4.23)
ADHD Treatment	0-4	2.35 (2.06, 2.66)	2.30 (1.89, 2.70)	2.50 (1.69, 2.89)	2.71 (2.09, 3.32)
Depressive/Suicide Evaluation	1-6	2.62 (2.12, 3.11)	2.89 (2.27, 3.50)	2.00 (1.30, 2.70)	2.65 (1.89, 3.40)
Depressive/Suicide Treatment	0-4	2.00 (1.72, 2.28)	1.96 (1.63, 2.30)	2.08 (1.56, 2.61)	1.94 (1.50, 2.38)
Sleep Disorder Evaluation	1-8	3.15 (2.68, 3.63)	3.30 (2.63, 3.96)	2.83 (2.13, 3.52)	2.65 (1.91, 3.38)
Sleep Disorder Treatment	1-5	2.89 (2.40, 2.97)	2.33 (2.01, 2.66)	2.50 (1.92, 3.08)	2.29 (1.92, 2.67)
Developmental Delay Evaluation	1-3	1.38 (1.19, 1.57)	1.44 (1.19, 1.69)	1.25 (0.99, 1.51)	1.15 (1.11, 1.19)
Developmental Delay Treatment	1-2	1.28 (1.13, 1.43)	1.08 (1.01, 1.16)	1.08 (0.93, 1.23)	1.29 (1.06, 1.52)

**Method**

- Participants**
- 40 residents across two pediatric residency programs participated in study (Table 1)
  - Residency program sites were flagship hospitals of two large health systems in a northeastern state
  - 28 (out of 30 total residents) participated at site 1 and 12 (out of 18 total residents) participated at site 2 (83.3% participation rate; 40 out of 48 total residents)
- Survey Tool Development**
- The Attitudes, Knowledge and Skills (AKS) Survey, developed by study investigators, includes 23-items
  - Responses were scored by 2 independent raters based on completeness and accuracy when compared with current evidence-based practice parameters of the AAP and AACAP. Possible scores ranged: ADHD evaluation, 0-16; ADHD treatment, 0-9; anxiety evaluation, 0-11; anxiety treatment 0-3; depression evaluation, 0-15; depression treatment, 0-8; suicide evaluation, 0-3; suicide safety plan, 0-3
- Data Collection**
- Surveys were administered separately for R1s and R2/R3s within the first quarter of the training year

**Conclusions**

- Findings underscore the need cited by the AAP<sup>9</sup> to improve behavioral health competencies of future pediatricians
  - Findings provide quantitative data in which to compare future evaluations of innovative residency training
  - Just as important as developing residency training enhancements to improve primary care BH delivery, arguably may be how these enhancements are evaluated in methodologically-rigorous designs
  - This study may provide the first step in this process
- Limitations**
- Generalizability of these residents to those across the nation may be limited without controlling for other demographic, educational/training, and competency covariates such as individual pediatric board exam scores, particularly the psychiatry sub-section scores
  - Attitudes and knowledge data were self-reported and thus subject to bias
  - On the skills tests, there were higher score ceilings for evaluation ratings than for treatment ratings
  - The survey was developed by study investigators due to a lack of existing measures that focus specifically on resident's AKSS in behavioral health, thus preexisting psychometric properties of the measure are not available

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