Pediatric Residency Training and Behavioral Health: Models and Outcomes

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Pediatric Residency Training and Behavioral Health: Models and Outcomes

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INTRODUCTION

- 75% of youth diagnosed with behavioral health (BH) conditions first present in primary care[1]
- Pediatricians and pediatric residents are expected to manage these BH concerns due to shortage of available specialty BH providers in which to refer[2]
- Primary care has largely become the de facto BH delivery system, and PCPs have become the de facto providers
- Accreditation Council for Graduate Medical Education[3] mandated a 4-week developmental behavioral pediatrics (DBP) rotation in pediatric residency programs to train future PCPs in BH
  - Despite this mandated rotation, most PCPs believe they have inadequate training in BH[4]
  - 85% of pediatric residency directors report minimal or suboptimal BH training in their programs[5]
- The American Academy of Pediatrics published a Policy Statement[6] citing need for improved BH competencies for future PCPs
- The Policy Statement recommended these competencies be obtained through innovations in program curricula/training

PURPOSE

- Describe and evaluate two innovative BH training curricula on improving pediatric residents' knowledge and skills in primary care BH service delivery compared to "training as usual"

METHOD

Participants

- PGY 1-3 pediatric residents across 3 training sites in the northeastern U.S.; non-participants either had scheduled clinic responsibilities or were scheduled off work at the time
- Residents at all 3 sites participated in 1-month DBP rotation

Instrument

- 29-item survey developed by study investigators
  - *Items 1-8* consist of demographic questions including items about education/training history
  - *Items 9-21* consist of resident's self-reporting their level of knowledge in evaluating/treating ADHD, and anxiety, depression using evidence-based practice parameters on a 1-10 scale (1 = low confidence; 10 = high confidence)
  - *Items 22-29* consist of open-ended questions asking residents to demonstrate their ability to deliver evidence-based care in evaluation and treatment for ADHD, anxiety, depression, and suicide using clinical vignettes.
    - Participants were asked to list all steps/considerations they would employ, in an exhaustive format, in evaluating/treating a condition based explicitly on evidence-based practice parameters in their field

Data Collection

- Surveys were administered to residents at beginning and end of their training year; study participation was voluntary

Data Analysis

- ANOVAs and chi-square tests examined differences in background variables between sites
- Multilevel models examined whether the change in outcomes over time was significantly different between sites
  - Models tested whether the DIPC and DO sites experienced significantly more change in their outcomes than TAU
  - For outcome variables with less than 5 categories, they were treated as ordinal variable and cumulative link multilevel models were used; for outcome variables with 6 or more categories, they were treated as continuous

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SITE 1

(Control Group, Treatment as Usual)	
Service-Delivery Components (requiring an embedded behavioral health provider)	Didactic Components (not requiring an embedded behavioral health provider)
Not provided	Not provided

SITE 2

(Didactic Exposure-Only)	
Service-Delivery Components (requiring an embedded behavioral health provider)	Didactic Components (not requiring an embedded behavioral health provider)
Not provided	**Lectures on behavioral health topics** 18 lectures throughout year focuses on commonly presenting behavioral health concerns; instruction specifically addresses AAP/ACAP practice parameters for ADHD, anxiety, depression, & suicide/crisis intervention **Readings and quizzes** Readings consists of AAP/ACAP practice parameters as well as evidence-based evaluation of ADHD, anxiety, depression, & suicide/crisis intervention; Residents take quizzes over readings and feedback is provided **Vignettes** Residents read vignettes describing behavioral health concerns & identify the appropriate course of treatment based on evidence-based practice parameters; Feedback is provided

SITE 3

(Service-Delivery + Didactic Exposure)	
Service-Delivery Components (requiring an embedded behavioral health provider)	Didactic Components (not requiring an embedded behavioral health provider)
Warm hand-offs On-site psychologists collaborating w/ residents on behavioral health concerns through direct patient care in conjunction w/ a well-/sick-child visit **Behind-the-scenes consults** On-site psychologists collaborating w/ residents on behavioral health concerns through indirect (informal discussion in the resident lounge) patient care in conjunction w/ a well-/sick-child visit **In-vivo performance feedback** Feedback provided to residents in providing evaluation for ADHD, anxiety, depression, and/or suicide risk assessments; Observations conducted by embedded psychologists; Performance feedback is provided based on AAP/ACAP practice parameters **Joint Precepting** Psychologists precept pediatric residents and psychology fellows in a shared space; Psychologists also precept the resident in conjunction with the medical preceptor	**Lectures on behavioral health topics** 18 lectures throughout year focused on commonly presenting behavioral health concerns; instruction specifically addresses AAP/ACAP practice parameters for ADHD, anxiety, depression, & suicide/crisis intervention **Readings and quizzes** Readings consists of AAP/ACAP practice parameters as well as evidence-based evaluation of ADHD, anxiety, depression, & suicide risk assessment; Residents take quizzes over readings and feedback is provided **Vignettes** Residents read vignettes describing behavioral health concerns & identify the appropriate course of treatment based on evidence-based practice parameters; Feedback is provided

1ST YEAR OUTCOMES

Background: Participants/Sites

Variable	Training as Usual (TAU) (n = 12)	Didactic Only (DO) (n = 20)	Didactic + Integrated Primary Care (DIPC) (n = 24)	
Mean age, y (SD)	30.17 (2.29)	30.15 (2.41)	31.35 (2.29)	F=1.74, p=0.19
Males, n (%)	1 (8.33%)	2 (10%)	6 (25%)	χ^2=2.50, p=0.33
Hard science major, n (%)	10 (83.33%)	12 (60%)	21 (87.5%)	χ^2=5, p=0.11
MD degree (vs DO), n (%)	1 (8.33%)	12 (63.16%)	12 (50%)	χ^2=9.27, p=0.01 DIPC > TAU DO > TAU
Weeks in medical school on mental health rotation, w (SD)	4.83 (2.33)	5.75 (1.74)	5.08 (1.95)	F=1, p=0.38
Completed mental health training (outside of medical school/ residency, n (%)	12 (100%)	19 (95%)	20 (83.33%)	F=3.32, p=0.21
Clinical rotations in primary care in medical school, n (%)	6 (100%)	20 (100%)	16 (100%)	
Did those primary care practice(s) have an embedded behavioral health provider on site	5 (83.33%)	10 (50%)	2 (12.5%)	χ^2=10.53, p=0.004 TAU > DIPC DO > DIPC
What type were they? Psychologists	2 (40%)	7 (70%)	2 (100%)	χ^2=2.55, p=0.48
What type were they? Social Workers	4 (80%)	9 (90%)	1 (50%)	χ^2=1.86, p=0.66
How likely are you to go into primary care? (1-10)	2.67 (3.78)	6.90 (3.38)	5.06 (3.71)	F=1.61, p=0.22
Would you be more likely to go into primary care pediatrics if it was an integrated practice with embedded behavioral health providers?	1 (16.67%)	16 (80%)	9 (56.25%)	χ^2=8.2, p=0.01 DO > TAU
Current residency year, n (%)				
PGY-1	5 (41.67%)	9 (45%)	13 (54.17%)	
PGY-2	2 (16.67%)	4 (20%)	5 (20.83%)	χ^2=1.17, p=0.89
PGY-3	5 (41.67%)	7 (35%)	6 (25%)	
Completed DBP rotation, n (%)	2 (33.33%)	4 (36.36%)	4 (25%)	χ^2=0.43, p=0.88

Measured Skills in Behavioral Health

Evidence-based Practice Parameter	Training as Usual (TAU)		Didactic Only (DO)		Didactic + Integrated Primary Care (DIPC)		Significance
	Pre (n = 12)	Post (n = 9)	Pre (n = 20)	Post (n = 17)	Pre (n = 24)	Post (n = 27)	
ADHD							
Evaluation	3.08	2.83	3.15	3.73	3.87	4.07	
Treatment	2.67	2.67	2.65	2.55	2.26	3.2	
Anxiety							
Evaluation	2.55	2.67	2.55	2.82	2.83	3.8	
Treatment	2.42	2.33	2.05	2.18	2.09	2.47	
Depression							
Evaluation	2.92	2.17	2.85	3.64	3.65	3.53	Time*DO (p=0.04)
Treatment	2.25	2.67	2.15	2.91	2.04	3.07	
Suicide							
Evaluation	2.17	2.4	2.6	2.64	2.52	2.47	
Treatment	2.1	2.2	2.2	2.45	2.22	2.6	

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

Self-Reported Knowledge in Behavioral Health

Evidence-based Practice Parameter	Training as Usual (TAU)		Didactic Only (DO)		Didactic + Integrated Primary Care (DIPC)		
	Pre (n = 12)	Post (n = 9)	Pre (n = 20)	Post (n = 17)	Pre (n = 24)	Post (n = 27)	
ADHD							
Evaluation	7.27	8.2	6.42	6.91	6.09	7.47	
Treatment	6.36	7.2	5.21	5.91	5.52	6.36	
Anxiety							
Evaluation	7.27	8.4	6.16	6.18	6.26	7	
Treatment	6.18	8	4.84	4.73	5.39	5.86	
Depression							
Evaluation	7.73	9.4	7.16	6.45	7.17	7.33	Time*DO (p=0.02)
Treatment	6.27	8.4	5.21	4.73	5.91	6.21	

Knowledge scores range from 1 (least confident in knowledge of evidence-based practices) to 10 (most confident in knowledge of evidence-based practice)

CONCLUSIONS

- Residents in DO and DIPC sites demonstrated improved "change scores" in more "Skills" categories than did TAU site
- This finding did not hold true in most "Knowledge" categories
- This finding may reflect a phenomenon in which trainees may overestimate their knowledge on a given topic when they receive less training/exposure (this has been widely replicated in much of the medical education literature; Dunning-Kruger Effect)
- Visual inspection of pre-post "change scores" indicates that the DIPC model is a promising approach to enhance BH learning
  - In absence of DIPC, focused didactic exposure is still beneficial
- More research/advocacy needed for yet another benefit that integrated BH may provide (in addition to access, value, costs)

Limitations

- No preexisting psychometric properties of the instrument
- Small sample size; pilot study; difficult to detect significant differences; must use caution to not overstate results
- Generalizability of these residents to those nationally is limited without controlling for other demographic, educational/training, and competency covariates