Measuring Implementation of Mental Health Services in Schools: Comparing two models

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A System of Care for Children's Mental Health: Expanding the Research Base

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- Little is known about what constitutes mental health services in schools on a national basis
- Various models have been proposed
- The current investigation compares two models of school based mental health services

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Two models described today:

- School owned and operated mental health services
- School contracts with mental health center

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- These two models were operating in "SED Centers" in a large urban school district
- Both served middle – high school students
- 20% of youth with SED served in centers
- On average youth SED served in environments where 66% to 75% of day is self contained

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- Describe the therapist in each model
- Describe the teachers in each model
- Describe the students, the services they receive and their outcomes

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Therapist Characteristics	School-Owned	Contracted
Number of Therapists	3 Full Time	2 Full Time
Average Years in Counseling Profession (*SD*)	16 Years (6.0)	21 Years (1.4)
Highest Level of Education		
BS	1	0
MS	2	2
Number of Interns Working on Degrees/Licensure	4 Part Time 1 Full Time	0
Therapy Procedures Checklist – (Approach most often used)		
Behavioral Orientation	0	0
Cognitive Orientation	2	0
Psychodynamic Orientation	2	0
Eclectic	4	2

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Teacher Characteristics	School-Owned	Contracted
Number of Teachers	15	16
Average Years Teaching (*SD*)	8 Years (8.6)	9 Years (7.0)
Average Years Teaching Special Education (*SD*)	6 Years (8.7)	8 Years (6.9)
Years at Current School (*SD*)	6 Years (8.1)	3 Years (3.9)
Highest Level of Education		
BA/BS	10 (67%)	7 (44%)
MA/MS	5 (33%)	9 (56%)

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Student Characteristics (cont.)	School-Owned (*N* = 56)	Contracted (*N* = 59)
Number of Students Enrolled in the Study (% Eligible)	56 (56/64 = 88%)	59 (59/9=64.8%)
Average Age of Students Enrolled in Study (*SD*)	13.8 (1.3)	15.1 (1.6)
Race/Ethnicity (%)		
Black	20 (36%)	43 (73%)
White	22 (39%)	5 (8%)
Hispanic	7 (12%)	5 (8%)
Other	7 (12%)	6 (10%)
Poverty (%)		
Above Poverty Level	36 (64%)	25 (42%)
At or Below Poverty Level	20 (36%)	31 (52%)
Missing	0 (0%)	3 (5%)

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Student Characteristics	School-Owned (*N* = 56)	Contracted (*N* = 59)
Strengths and Difficulties Questionnaire (Pre-Test)		
Mean (*SD*)	19.7 (7.1)	20.3 (6.5)
Abnormal Range (%)	35 (62%)	44 (75%)
Borderline Range (%)	11 (20%)	6 (10%)
Normal Range (%)	10 (18%)	9 (15%)
Brief Impairment Scale (Pre-Test)		
Mean (*SD*)	26.6 (10.5)	23.9 (10.2)
Clinical Range (%)	50 (89%)	52 (88%)
Normal Range (%)	6 (11%)	7 (12%)

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School Mental Health Services	School-Owned (*N* = 56)	Contracted (*N* = 59)
Number of Students Enrolled in the Study who Received Any MH Services From the School	52 (93%)	27 (46%)
Of Students Enrolled in Study (n, %):		
Received Individual Therapy	48 (92%)	27 (100%)
Received Small Group Therapy	30 (58%)	12 (44%)
Received Psych-Ed. Therapy	11 (21%)	1 (4%)
MH Services Family Member Only	26 (50%)	10 (37%)
MH Services Family + Student	21 (40%)	10 (37%)
Received Case Management Ser.	41 (79%)	16 (29%)

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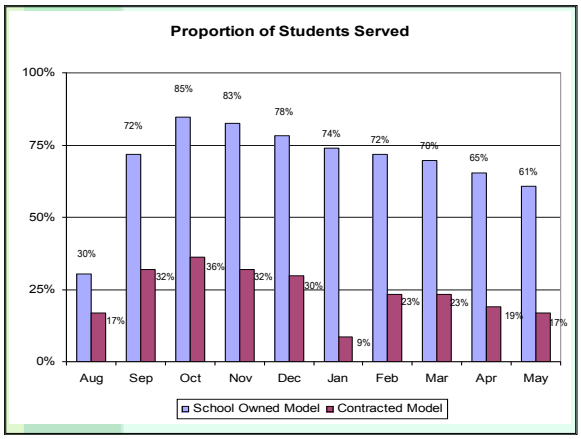

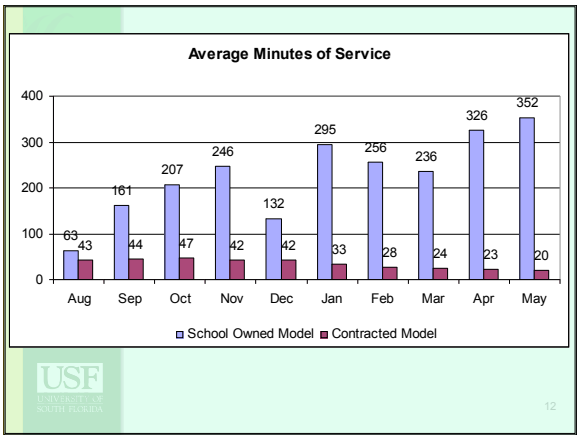

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School Mental Health Services	School-Owned	Contracted
	Average Minutes (*SD*)	Average Minutes (*SD*)
Minutes of Services Provided		
Individual Therapy n=48	1,141 (1048)	494 (645)
Small Group Therapy n=30	170 (182)	120 (102)
Psycho-Educational Therapy n=11	650 (550)	30 (N/A)
MH Service Family Member n=26	95 (52)	105 (127)
MH Service Family + Student n=21	105 (90)	162 (123)
Case Management Services n=41	236 (274)	158 (195)
All Services n=52	1,565 (1230)	741 (928)
	26 hours	12 hours

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Student School Withdrawals	School-Owned (*N* = 56)	Contracted (*N* = 59)
Formally Withdrew from the School During the School Year (n, %)	27 (48%)	39 (66%)
Positive Reason (e.g., returned to neighborhood school, graduated)	3 (11%)	10 (26%)
Negative Reason (e.g., dropped out, jail, RTC)	6 (22%)	13 (33%)
Neutral Reason (e.g., whereabouts unknown, switch to another center)	18 (67%)	16 (41%)
Attendance for Those Who Withdrew		
Mean	85 Days	55 Days
SD	37	31
n	13	27

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Results of Regression Analyses on Outcomes	Did Amount of Mental Health Minutes Predict Change?	Did School Predict Change?
Change in SDQ	No	No
Change in BIS	No	Approaching (p = .06)
Attendance	Yes	Approaching (p = .06)
Change in Math Achievement	No	No
Change in Reading Achievement	No	No

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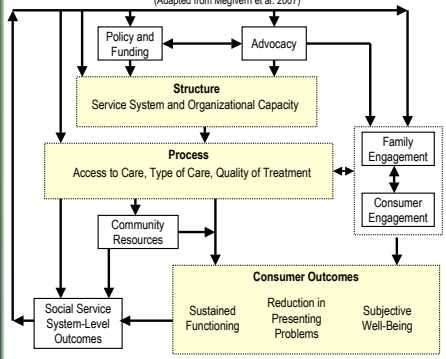
Model of Influence on Quality of Care in Mental Health Services
(Adapted from Megivern et al. 2007)



More Information

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NIDRR

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The Role of Special Education in Understanding School-based Mental Health: Understanding Academic Achievement

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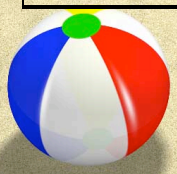
Model	Hypothesis	Directionality of Influence
1	Poor grades-aggression	Poor grades----------> Aggression
2	Aggression-poor grades	Aggression----------> Poor grades
3	Reciprocal causation	Academic failure <------> ED
4	Spurious relationship	Underlying factors-------> ED and academic failure



Research on the Academic Functioning of Children with ED

Review of Academic Functioning Research on Children with ED (N=65)

Category	% Data Sets Reported
Gender	79%
Age	87%
IQ	81%
Race	34%
SES	34%
Placement Setting	10%
Academic Content	
Reading Recognition	97%
Arithmetic	86%
Written Expression	53%
Reading Comprehension	19%
Oral Expression	3%
Science, History, etc.	1%

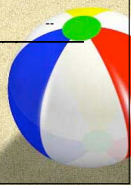
Review of Academic Functioning Research on Children with ED (Cont'd)

Category	% Data Sets Reported
Assessment Measures	
Standardized Tests	93%
CBM	2%
Other	5%
Comparison to Other Groups	
No disability	17%
Other groups	36%
No comparison	47%

Trout, A. L., Nordness, P. D., Pierce, C. D., & Epstein, M. H. (2003). Research on the status of children with emotional and behavioral disorders: A review of the literature from 1961 to 2000. *Journal of Emotional Behavioral Disorders, 11*, 198-210.

Academic Status of Students with ED

	Grade level[a]		Year		
Subject area	Below	At	<1 Behind	1-2 Behind	>2 Behind
Reading	8	2	2	4	2
Arithmetic	8	1	--	2	2
Written expression	2	--	--	--	--
Other	2	--	--	--	--



Summary of Effect Sizes (N=25)

Subject Area	
Reading	-.61
Math	-.81
Spelling	-.81
Written Expression	-.46
Age	
12 years or more	-.82
Less than 12 years	-.60
Setting	
General education	-.54
Self-contained class	-.83
Separate school	-.62
Residential	-1.49

Reid, R., Gonzalez, J. E., Nordness, P. D., Trout, A., & Epstein, M. H. (2004). A meta-analysis of the academic status of students with emotional/behavioral disturbance. *Journal of Special Education, 38*, 130-143.

Review on the Academic Functioning of Children in Out of Home Care (N=29)

Characteristics	% Reported in Data Sets
Age (M=12.9)	86%
Special Education Status (25% disabled)	69%
IQ (M=87.9)	44%
Gender	89%
Race/Ethnicity	64%
SES	22%
Placements	28%
Academic Content	
Reading Not Specified	18%
Reading Comprehension	9%
Math Not Specified	8%
Math Calculation	11%
Math Reasoning	8%
Writing	9%
Spelling	6%
Other	31%

Child Functioning: Standardized Scores

Average	32%
Low Average	54%
Low	14%

Child Functioning: GPA (N=9)

Below 2.0	56%
Between 2.1 and 3.0	33%
Above 3.0	11%
M=2.36	

Trout, A. L., Hagaman, J., Casey, K., Reid, R., & Epstein, M. H. (In Press). The academic status of children in out-of-home care: A review of the literature. *Children and Youth Services Review*.

Results: Academics (*N* = 127)

Woodcock Johnson III: Tests of Achievement (WJ-III)

WJIII Subscales	*M* (*SD*)	*ES* (*d*)
Reading Fluency	91.11 (13.33)	-.63
Math Calculation	91.38 (12.21)	-.63
Spelling	98.68 (14.28)	-.09
Writing Fluency	94.40 (15.67)	-.37
Passage Comprehension	91.14 (11.61)	-.67
Applied Problems	90.96 (8.82)	-.76
Academic Knowledge	86.56 (12.18)	-.99

M = 100, *SD* = 15

Future Research

1. Larger, more diverse samples (e.g., race/ethnicity, gender, SES)
2. Longitudinal studies
3. Inclusive settings
4. Dependent Measures (gold standard measures)
5. Specific academic skills
   a. Specific skills (e.g. automaticity, fluency, mastery)
   b. Advanced academic domains (e.g., science, reading comprehension)
6. Marker variables to describe students
   a. gender
   b. Age
   c. Grade level
   d. Geographic location
   e. Race/ethnicity
   f. Placement settings
   g. SES
   h. Primary language
   I. Educational history
   j. Educational placement
   k. Physical and health status

Intervention Research on Academic Functioning of Children with ED

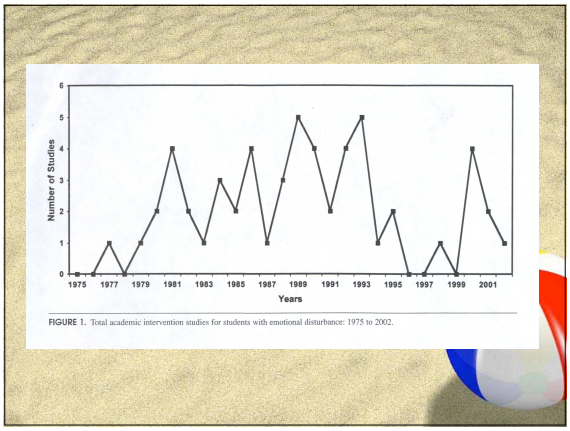


FIGURE 1. Total academic intervention studies for students with emotional disturbance: 1975 to 2002.

Research on Interventions to Improve Academic Functioning of Children with E.D. (55 studies)

Characteristic	
Sample	
Total N	358
Per study	6.5
Age	
5-11 years	33%
12 and up	44%
Mixed	18%
Not reported	5%
Gender	
Reported	44%
Not reported	56%
Race	
Reported	13%
Not reported	87%
SES	
Reported	9%
Not reported	91%
IQ	
Reported	42%
Not reported	58%

Research on Interventions

Study Characteristics	
Setting	
General education	7%
Special education	21%
Special self-contained	31%
Separate school	14%
Other	27%
Research Design	
Single subject	80%
Group	20%

Research on Interventions

	Total	
Intervention Type		
Teacher-mediated	44%	
Child-mediated	33%	
Peer-mediated	20%	
Combination	4%	
Treatment focus		
Basic Reading	15%	
Reading Comprehension		7%
Reading Not Specified	15%	
Written Expression	11%	
Math Circulation		23%
Math Reasoning		1%
Math Not Specified	7%	
Other	22%	
Length (Sessions)	21.8	
Length (Min. per session)	32.2	

Research on Interventions

Interobserver Agreement		
Reported	75%	
Not Reported		25%
Social Validity		
Reported	31%	
Not Reported		69%
Fidelity		
Reported	27%	
Not Reported		73%
Generalization/Maintenance		
Reported	45%	
Not Reported		55%

Mooney, P., Epstein, M. H., Reid, R., & Nelson, J. R. (2003). Statistics of and trends in academic intervention research for students with emotional disturbance. Remedial and Special Education, 24, 273-287.

Academic Follow-up (n = 52)

Woodcock Johnson III: Tests of Achievement (WJ-III)

WJIII Subscales	Year One *M* (*SD*)	Year Two *M* (*SD*)	*ES* (*d*)
Reading Fluency***	91.58 (14.45)	96.17 (16.20)	1.38
Math Calculation**	92.79 (12.17)	96.48 (13.21)	.82
Spelling*	98.83 (15.01)	100.79 (13.22)	.61
Writing Fluency*	94.65 (16.01)	98.42 (14.40)	.72
Passage Comprehension	91.54 (11.89)	93.42 (12.39)	.53
Applied Problems	91.90 (9.12)	92.10 (9.75)	.07
Academic Knowledge***	85.27 (13.65)	88.56 (12.01)	1.01

M= 100, *SD*= 15

*$p < .05$, **$p < .01$, ***$p < .001$

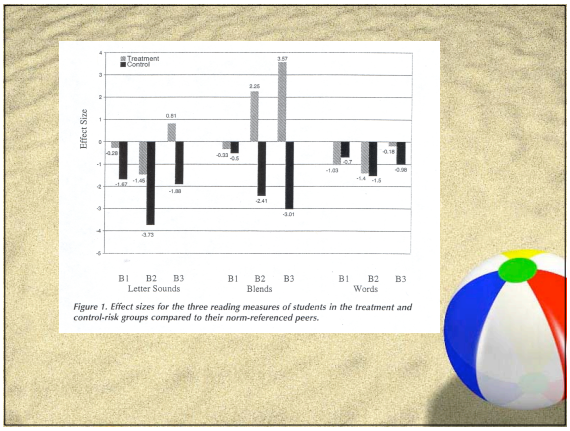


Figure 1. Effect sizes for the three reading measures of students in the treatment and control-risk groups compared to their norm-referenced peers.

Intervention Research: Future Directions

1. More studies, larger samples
2. Characteristics
   a. Females
   b. Racial/ethnic diversity
   c. SES
   d. Marker variable system
3. Designs and Quality
   a. Single subject-pilot studies
   b. Group research-efficacy and effectiveness studies
   c. Social validity, treatment fidelity, and generalization
4. Focus
   a. Higher order reading (i.e., comprehension) and math (i.e, reasoning, problems)
   b. Research in language, science, learning strategies
5. Independent variables
   a. Effective instructional practices
   b. Curriculum design-manualized programs
6. Directionality of Change
   a. Academic to Behavior
   b. Behavior to Academics