Mental Health Screening in a Pediatric Population at Various Ages

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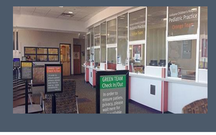

INTRODUCTION

- Approximately one in every five children and adolescents suffers from a major mental illness that results in significant impairment.
- A significant gap exists between the high prevalence of mental health concerns and patients receiving appropriate mental health services.
- Barriers to treatment include low rates of identification, lack of affordability and availability of treatment, and stigma associated with mental illness.
- Due to these concerns, implementing mental health screening programs in primary care is necessary to improve identification of children with behavioral and emotional health problems.
- Research has shown that families completing a mental health screener at well-child visits are more likely to discuss mental health concerns with their PCP.
- The purpose of the study is to examine the impact of mental health screening in pediatric primary care on the subsequent discussion and management of mental health concerns.
- It was hypothesized that a significant number of families across age groups would discuss mental health concerns with the PCP at the well-child visit and at a subsequent visit within 12 months. Furthermore, it was hypothesized that younger children would be more likely to follow-up on referrals to mental health services compared to older youth.

METHOD

- A systematic chart review of patient electronic medical records was conducted to gather demographic data, screening data, and treatment data.
- Charts of patients from the Strong Pediatric Practice who completed a mental health screening measure during an annual well-child visit over a 12-month period were reviewed.
- Participants:
  - 610 patients, ages 6-7, 11-12, and 16-17 participated in the study.
  - The majority of families in the study were from the underserved, urban population in city of Rochester.
- Measures
  - The Pediatric Symptom Checklist-17 (PSC-17) was used to measure symptoms of internalizing concerns, externalizing concerns, and attention concerns.
  - Parents completed the PSC-17-Parent Version, while youth ages 11-17 also completed the PSC-17-Youth Version.
- Positive symptom scores were defined as follows:
  - Total Score: $\geq$ 15
  - Positive Internalizing Score: $\geq$ 5
  - Positive Externalizing Score: $\geq$ 7
  - Positive Attention Score: $\geq$ 7
- Data Analysis Plan
  - Descriptive statistics were obtained to describe the demographic profile of pediatric patients who participated in the screening and the outcome of the mental health screening initiative.
  - Chi-squared analyses were conducted to compare the outcome variables gathered through chart review for the different aged groups of youth that participated in the mental health screening program.
  - Additionally, logistic regression was used to determine if clinically elevated screeners predicted various binary outcomes and whether age served as moderator of the relationship.

RESULTS

Table 1. Means and Standard Deviations for the Pediatric Symptom Checklist completed by Parents and Youth

	Parent Ratings								Youth Ratings							
	Total		Internalizing		Externalizing		Attention		Total		Internalizing		Externalizing		Attention	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
Ages																
6-7	9.86	6.47	1.50	1.93	4.08	3.24	4.06	2.80	--	--	--	--	--	--	--	--
11-12	9.86	7.09	2.32	2.33	3.80	3.18	3.74	2.84	8.82	5.51	2.14	1.91	3.37	2.64	3.29	2.24
16-17	7.86	6.83	2.21	2.42	2.92	3.05	2.73	2.56	6.51	5.16	1.87	2.16	2.07	2.16	2.60	2.18

Note. Total= Total score on the Pediatric Symptom Checklist as rated by parents; Internalizing= Internalizing score on the Pediatric Symptom Checklist as rated by parents; Externalizing= Externalizing score on the Pediatric Symptom Checklist as rated by parents. Attention=Attention score on the Pediatric Symptom Checklist as rated by parents.; Parent Ratings=PSC-17 completed by Parents; Youth Ratings=PSC-17 completed by Youth

Table 2. Screen Results of Study Sample as Reported by Parents and Youth

	Positive Rating				Negative Rating			
	Parents	%	Youth	%	Parents	%	Youth	%
Ages								
6-7	59	36%	--	--	104	64%	--	--
11-12	90	30%	52	17%	212	70%	250	83%
16-17	30	21%	21	15%	115	79%	124	85%
Total	179	29%	73	16%	431	71%	374	84%

Note. Positive Rating= positive score on Internalizing ($\geq$5), Externalizing ($\geq$7), or Attention Domains ($\geq$7); Negative Rating=negative score on Internalizing (<5), Externalizing (<7), or Attention Domains (<7); Parents=total n for youth with a positive rating by parents on Internalizing, Externalizing, or Attention Domains; Youth=total n for youth with a positive rating by youth on Internalizing, Externalizing, or Attention Domains %=percent within age category rated positive by parents/youth.

Table 3. Chi-Squared Analyses for Discussion Among Different Ages

Outcome Variables	Total Sample			Positive Rating by Parents			Positive Rating by Youth		
	N	%	χ^2	N	%	χ^2	N	%	χ^2
Disc			58.140**			17.889**			5.230*
6-7	58	36		37	63		-	-	
11-12	184	61		77	86		41	79	
16-17	115	79		29	97		21	100	
Disc-2			10.211**			10.735**			.852
6-7	31	21		20	37		-	-	
11-12	103	35		53	59		26	50	
16-17	53	36		9	30		8	38	

Note. Positive Rating by Parents= positive score on Internalizing ($\geq$5), Externalizing ($\geq$7), or Attention Domains ($\geq$7) as rated by parents on the PSC-17 Parent Version. Positive Rating by Youth= positive score on Internalizing ($\geq$5), Externalizing ($\geq$7), or Attention Domains ($\geq$7) as rated by youth on the PSC-17 Youth Version. Discuss =Discussed behavioral or emotional concerns with PCP at the visit?; Discuss 2 =discussed behavioral or emotional concerns with PCP at the next visit (within 12 months)? %=percent within age category for particular outcome variable

* p<0.05
**p<0.01

Table 4. Logistical Regression Predicting Likelihood of Discussion with PCP, Likelihood of Referral for Mental Health Services, Likelihood of Attendance for Subsequent Mental Health Services, and Likelihood of Prescription of Psychotropic Medication

	Discussion			Referral			Attendance		
Variable	B	SE	OR	B	SE	OR	B	SE	OR
6-7 year olds (reference)									
11-12 year olds	1.251**	0.245	3.495	-0.213	0.427	0.808	-0.496	0.380	0.609
16-17 year olds	2.421**	0.302	11.259	-0.536	0.569	0.585	-1.206*	0.541	0.299
Prior	1.445**	0.322	4.243	0.407	0.446	1.502	2.398**	0.330	11.004
Positive Parent Screen	1.600**	0.249	4.955	0.622	0.401	1.863	0.931*	0.335	2.536
Positive Youth Screen	0.709	0.379	2.032	-0.394	0.657	0.674	0.667	0.437	1.949
R^2	0.241			0.010			0.138		
Adjusted R^2	0.325			0.029			0.305		

Note. Discussion =Discussed behavioral or emotional concerns with PCP at the visit?; Referral=Referred to community behavioral health services?; Attendance= Attended community behavioral health services appointment?; Prior=Was the patient already in counseling services prior to the screener?; Positive Parent Screen= Positive rating by parents on Internalizing, Externalizing, or Attention Domains; Positive Youth Screen= Positive rating by youth on Internalizing, Externalizing, or Attention Domains.

* p<0.05
**p<0.01

DISCUSSION

- Descriptive statistics were consistent with previous research using the PSC-17.
- 29% of the total sample received a positive score on Internalizing, Externalizing, or Attention domains as rated by parents; whereas 16% of youth 11 years of age and older self-report resulted in a positive score.
- Correlations revealed small to moderate relationships between service outcome variables.
  - Discussion of behavioral or emotional concerns with PCP at the visit was associated with discussion of similar concerns at the next visit within the next 12 months (r=.453, p<0.01).
  - Older participants were more likely to discuss emotional and behavioral concerns with their PCP during the visit (r=.306, p<0.01).
- Chi-square analyses indicated that older youth (11-12 year olds and 16-17 year olds) were significantly more likely to discuss mental health concerns at the well-child visit and at a subsequent visit within the next 12 months for the total sample. In addition, youth who scored positive on the PSC-17 by either parent or youth-ratings were significantly more likely to discuss concerns at the well-child visit and at a subsequent visit.
- Logistical regression analyses revealed that 16-17 year olds were 11 times more likely to discuss their behavioral/emotional concerns with their PCP. However, 16-17 year olds were less likely to attend a community behavioral health services appointment compared to 6-7 year olds and 11-12 year olds.
- Prior history of counseling services was significantly associated with discussion of behavioral/emotional concerns with PCP and attendance at a community behavioral health services appointment.

FUTURE DIRECTIONS

- The findings suggest it is important to facilitate primary care discussions about mental health concerns with youth, especially younger children.
- While older youth were more likely to discuss mental health concerns with PCPs they were less likely than younger youth to follow-up on referrals in the community. Thus, providing integrated behavioral health care may help alleviate this gap in treatment for older youth.
- Brief parent interventions to address endorsed symptoms may also prove beneficial.
- Given the high rate of mental health challenges in the population, providing preventative strategies within primary care has significant potential.