

Understanding the Utility of Presenting Problem Patterns for Individualizing Services

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ORC Macro



Background

- ▶ Children enter systems of care with a wide variety of presenting problems, both internalizing and externalizing
- ▶ Understanding the differences and similarities of presenting problems among these children will help identify service needs and plan appropriate services that meet these individual needs
- ▶ Exploring the influence of these presenting problem patterns on service use and outcomes will help inform service planning for effective individualized services



Research Questions

- ▶ What are the various patterns of presenting problems among children referred for services in systems of care?
- ▶ What influence do these presenting problem patterns have on service use?
- ▶ Are there differential clinical outcomes for children who exhibit the various patterns of presenting problems?



National Evaluation of the Comprehensive Community Mental Health Services for Children and Their Families Program

- ▶ Program initiated in 1993 by Center for Mental Health Services
- ▶ Five-year outcome-based evaluation
- ▶ A total of 96 communities have been awarded grants since program's inception



Methods

- ▶ Participants
 - Children 4 to 21 years old ($n = 13,497$) who were enrolled in the Comprehensive Community Mental Health Services for Children and Their Families Program
 - Children from 44 system-of-care communities funded in 1997, 1998, 1999, and 2000
- ▶ Data Collection Method
 - Caregiver report of presenting problems leading to referrals for system-of-care services
 - Follow-up data were collected at 6 months post-entry into services (and every 6 months up to 36 months)



Analysis Strategy

- ▶ Latent Class Analysis
 - Attempts to categorize different patterns of characteristics into a small number of mutually exclusive classes, with each class having a distinct probability of endorsing each characteristic
 - Assigns individuals to latent classes based on responses to observed indicators
 - Identifies clusters of individuals who are similar with regard to indicator responses



Categorized Presenting Problem Indicators

Suicidality Self-injury Suicide Attempt Suicide Ideation Depression-related Eating Disorders Sleep Disorders Somatic Complaints Sad Anxious Hyperactivity/Attention-related Hyperactive-impulsive Attentional Difficulties Conduct-related Physical Aggression Extreme Verbal Abuse Non-compliance Sexual Acting out	Delinquency-related Property Damage Theft Runaway Sexual Assault Fire Setting Cruelty to Animals Alcohol/substance Abuse Truancy Police Contact Adjustment-related Social Contact Avoidance Inappropriate Bowel Movements Poor Peer Interaction Over Dependence on Adults Bladder Difficulties Academic Problems Poor Self-esteem Other Threat to Life of Others Strange Behavior Other Problems
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Sample Characteristics (n = 13,497)

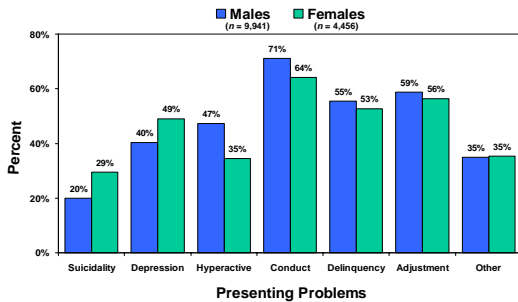
Gender	
Male	67.0%
Age	
Average	12.5 years
4 to 6 years	6.0%
7 to 11 years	28.7%
12 to 14 years	33.5%
15 to 18 years	30.9%
19 to 21 years	0.9%
Race/Ethnicity	
White, non-Hispanic	53.4%
Black, non-Hispanic	24.2%
Hispanic	8.7%
Family Income	
Below \$15,000	46.9%
\$15,000 or more	53.1%

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ns range from 10,956 to 13,497 due to missing data



Percentage of Children Endorsing Each Category of Presenting Problems by Gender for the Entire Sample (n = 13,497)



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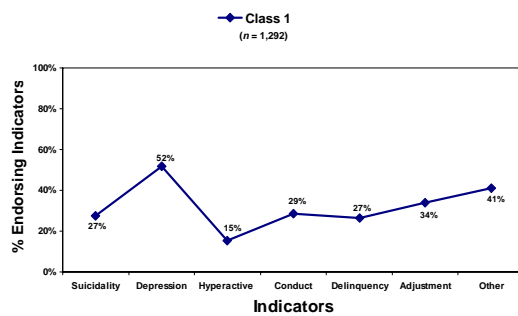
Model Fit Criteria For Males

Number of Classes	AIC	BIC	SSABIC	Entropy	VLMR LRT	LRM Adjusted LRT
1	80985.461	81035.227	81012.982	---	---	---
2	76582.742	76689.385	76641.717	0.727	$p < .0001$	$p < .0001$
3	76070.757	76234.276	76161.185	0.582	$p < .0001$	$p < .0001$
4	75801.892	76022.287	75923.775	0.540	$p = .0391$	$p = .0405$
5	75663.621	75940.893	75816.957	0.614	$p = .0760$	$p = .0780$

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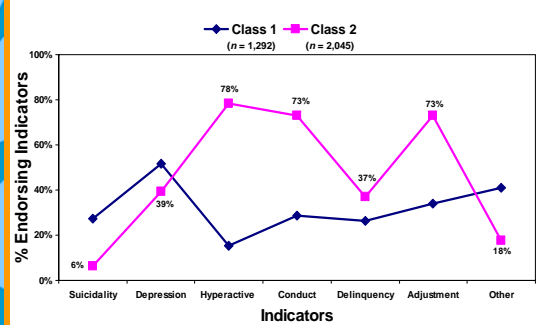
Profile for Class 1 Solution: Males



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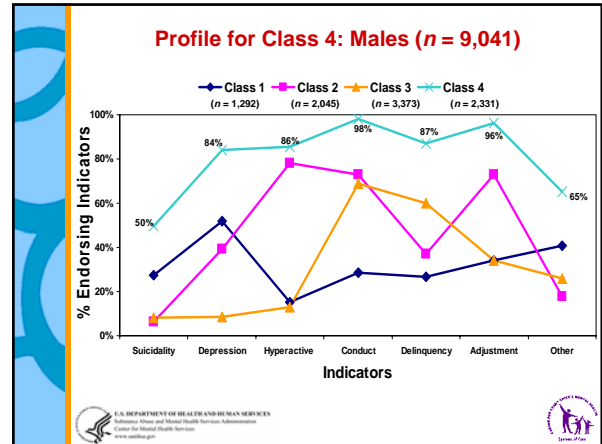
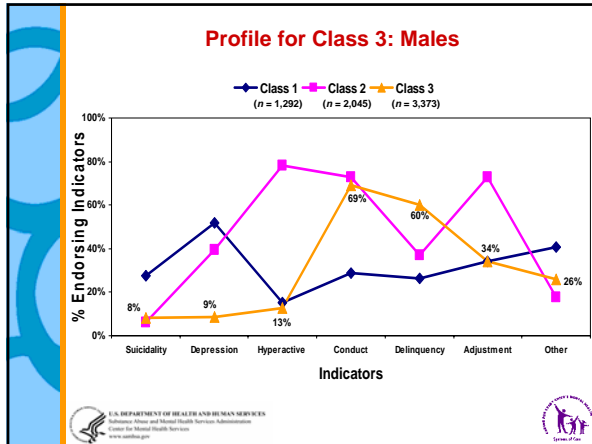


Profile for Class 2: Males



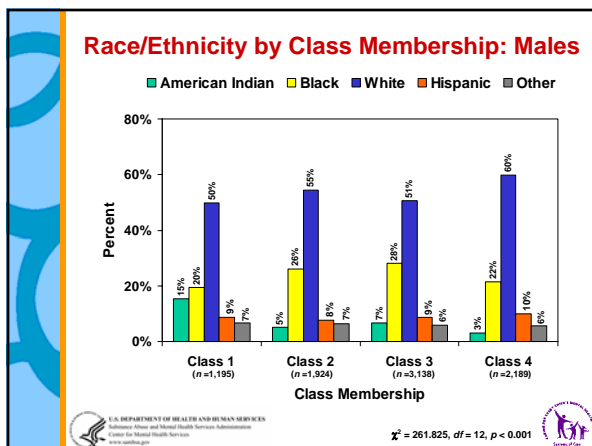
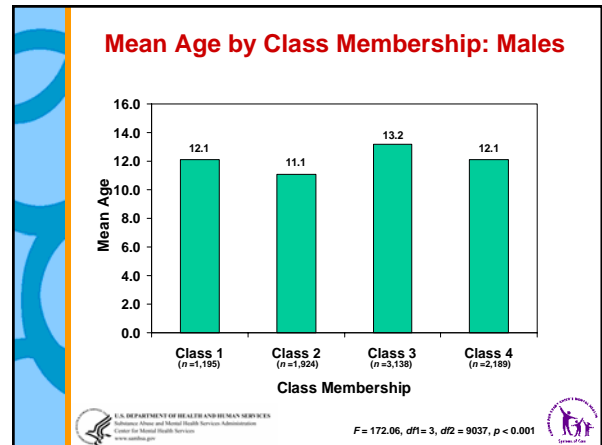
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Description of Classes For Males

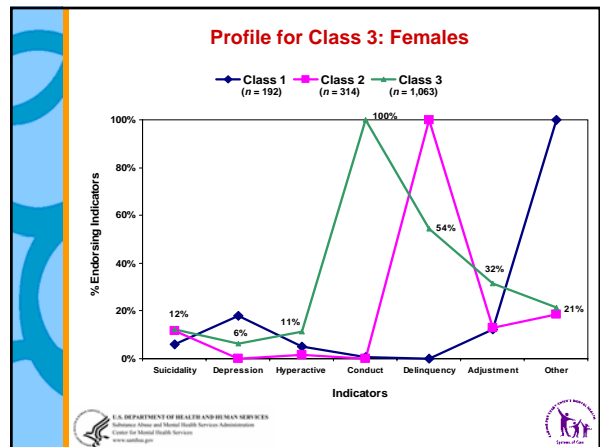
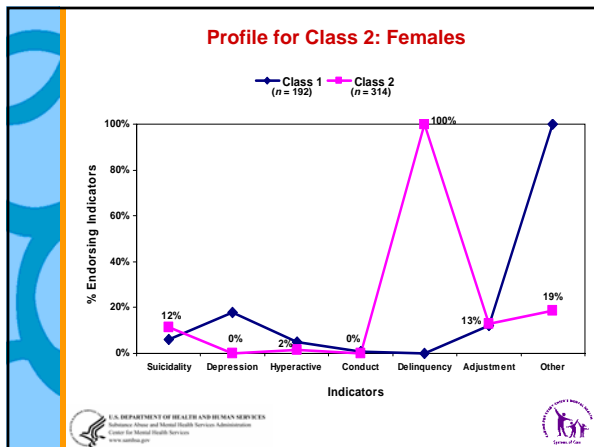
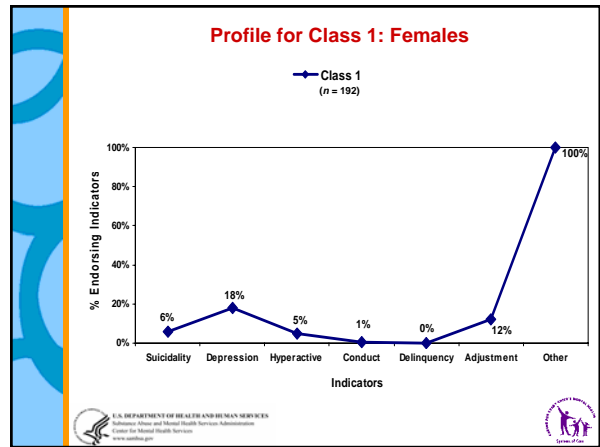
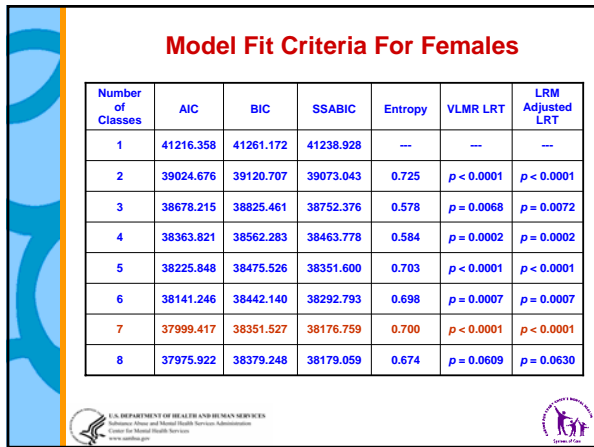
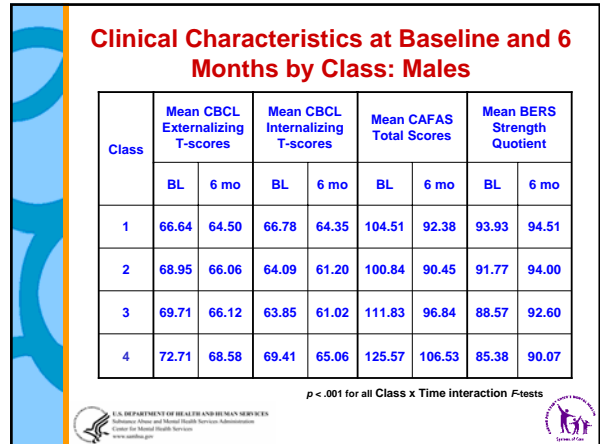
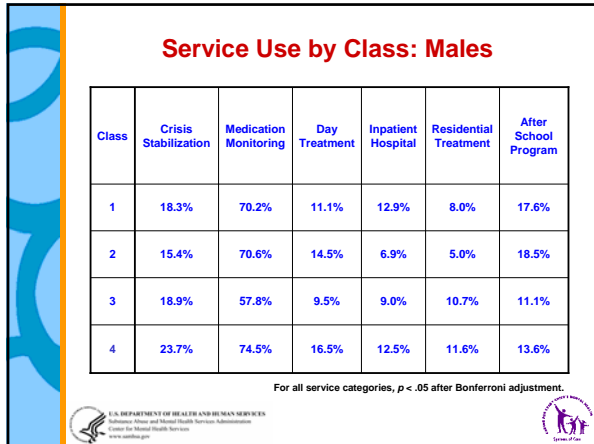
Class	%	Description
1	14.3	Depression with adjustment and other problems, lowest probability of endorsing conduct and delinquency problems
2	22.6	Hyperactive with conduct and adjustment problems, moderate probability of endorsing depression and delinquency
3	37.3	Conduct problems with delinquency, moderate probability of endorsing adjustment and other problems
4	25.8	Severe problems in most areas, including externalizing and internalizing problems, highest probability of endorsing all problems

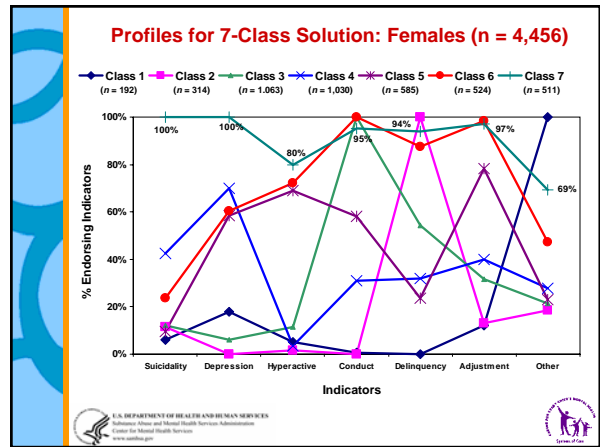
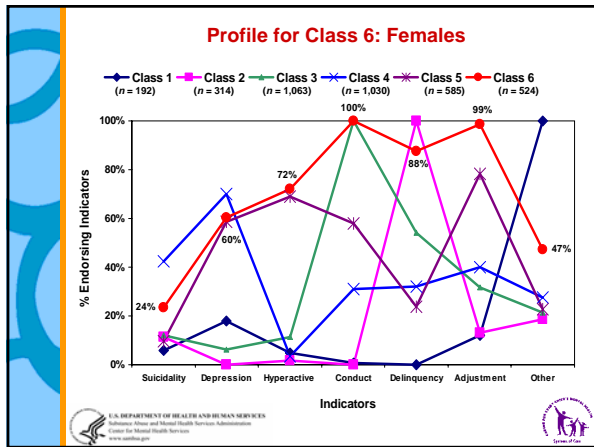
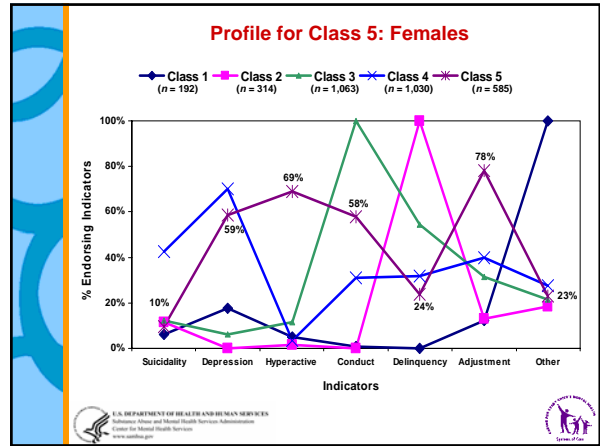
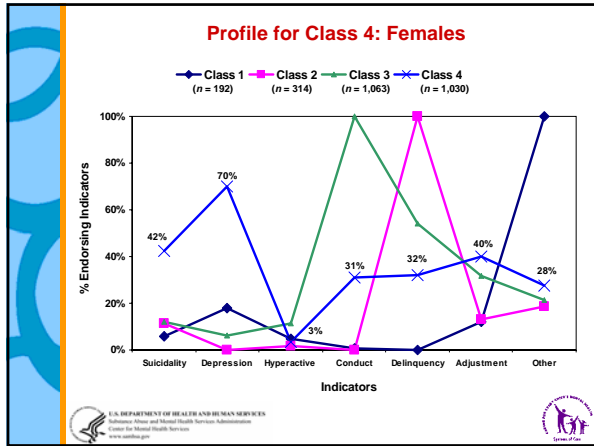


Clinical Characteristics at Entry into Services by Class: Males

Class	Mean CBCL Externalizing T-scores	Mean CBCL Internalizing T-scores	Mean CAFAS Total Scores	Mean BERS Strength Quotient
1	67.01	66.65	103.48	93.52
2	68.18	63.32	100.86	92.06
3	69.00	62.64	113.85	89.26
4	72.54	68.74	127.06	85.54

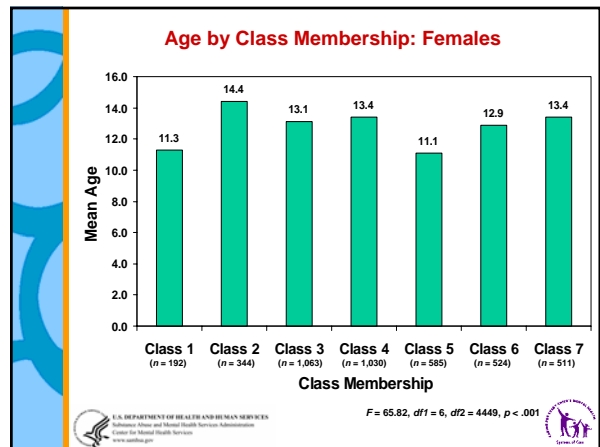
$p < .001$ for all F-tests

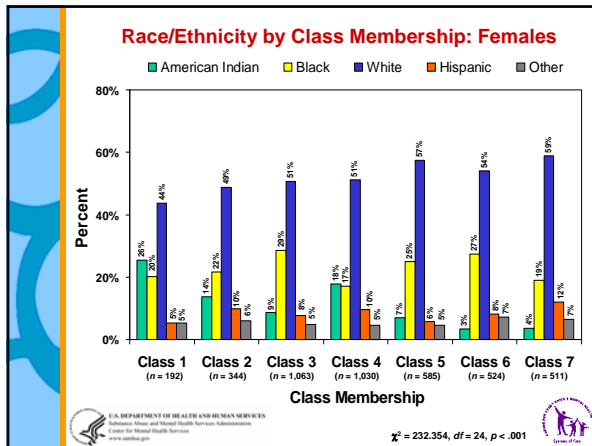




Description of Classes For Females

Class	%	Description
1	4.3	Other problems, including threat to life of others, strange behavior, and other problems (e.g., family issues/conflict, etc.)
2	7.0	Delinquency problems, low probability of endorsing all other problem categories
3	23.9	Conduct problems, moderate probability of delinquency and adjustment problems
4	23.1	Depression problems, moderate probability of suicidality, conduct, delinquency, adjustment, and other problems
5	13.1	Adjustment problems with hyperactive, depression, and conduct problems; low probability of suicidality, delinquency and other problems
6	11.8	Conduct problems with delinquency and adjustment, high probability of endorsing hyperactive problems, moderate depression and other problems
7	11.5	Severe problems in most areas, both internalizing and externalizing, highest probability of endorsing suicidality and depression problems





Clinical Characteristics at Entry into Services by Class: Females

Class	Mean CBCL Externalizing T-scores	Mean CBCL Internalizing T-scores	Mean CAFAS Total Scores	Mean BERS Strength Quotient
1	63.35	59.34	76.14	88.56
2	68.91	61.78	105.37	83.69
3	72.66	63.91	115.32	78.54
4	66.03	66.17	101.94	84.78
5	68.76	63.60	95.73	83.96
6	73.92	64.53	117.64	77.92
7	74.81	69.63	137.01	75.64

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$p < .001$ for all F-tests

Service Use by Class: Females

Class	Medication Monitoring	Group Therapy	Case Management	Family Therapy	Day Treatment	Residential Treatment	After School Program
1	42.9%	21.4%	68.3%	22.0%	4.8%	2.4%	21.4%
2	44.1%	30.9%	71.6%	27.9%	7.4%	8.8%	8.1%
3	56.6%	34.6%	74.4%	44.8%	13.3%	12.6%	10.3%
4	58.0%	26.8%	69.3%	36.6%	9.0%	6.7%	11.2%
5	69.0%	26.0%	76.3%	29.3%	12.1%	4.6%	23.0%
6	60.4%	34.4%	77.0%	34.4%	13.7%	12.6%	13.2%
7	72.6%	51.6%	87.2%	48.1%	23.3%	15.4%	10.9%

For all service categories, $p < .05$ after Bonferroni adjustment

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Clinical Characteristics at Baseline and 6 Months by Class: Females

Class	Mean CBCL Externalizing T-scores		Mean CBCL Internalizing T-scores		Mean CAFAS Total Scores		Mean BERS Strength Quotient ¹	
	BL	6 mo	BL	6 mo	BL	6 mo	BL	6 mo
1	64.47	62.36	61.22	58.17	79.53	69.30	88.83	89.59
2	70.92	66.85	64.35	61.86	109.12	97.65	81.69	84.39
3	73.00	69.11	64.95	61.85	113.23	95.59	77.97	82.46
4	66.46	63.99	66.74	62.57	104.17	83.38	84.30	87.27
5	68.35	65.87	63.89	61.02	97.02	84.04	83.52	85.34
6	73.95	71.07	64.15	62.48	116.12	102.57	77.51	81.06
7	75.29	71.16	70.08	65.47	136.41	101.96	76.40	81.03

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¹ F-test for Class x Time interaction, $p < .001$

- ### Limitations
- ▶ Export of class memberships for descriptive analyses ignores contribution of each case to other class memberships
 - ▶ Missing data at follow-up could impact generalizability of the findings for the sample as a whole
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- ### Summary
- ▶ Subgroups of children enter services with similar patterns of presenting problems that distinguish them from other subgroups
 - ▶ Some children had co-occurring problems in both internalizing and externalizing domains
 - ▶ Less heterogeneity among males' presenting problem patterns than females
 - ▶ Class membership is associated with differences in demographic and clinical characteristics
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Summary continued

- ▶ Classes for both males and females differed in use of medication monitoring, day treatment, residential treatment, and after school programs
- ▶ Classes for males (but not females) differed in use of crisis stabilization and inpatient hospitalization
- ▶ Classes for females (but not males) differed in use of group and family therapy and case management
- ▶ Outcomes at 6 months for males differed by class on all clinical outcomes examined, but only on BERS for females



Implications

- ▶ Differences in service use by class suggest SOC principle of individualized services is being realized in these communities
- ▶ Service planning should take into consideration factors associated with presenting problem patterns, such as age or gender
- ▶ Assessment of changes in outcomes should be specific to the particular pattern of presenting problems exhibited

