

Prevalence and Comorbidity of Major Internalizing and Externalizing Problems among Adolescents and Adults Presenting to Substance Abuse Treatment

Ya-Fen Chan, PhD,
Michael L. Dennis, PhD,
Chestnut Health Systems, Bloomington, IL

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Background

- Substance use disorders are highly intertwined with a wide variety of psychological and behavioral difficulties.
- The National Comorbidity Study (NCS) estimates that among those with at least one mental disorder, 45% had past-year comorbidity (Kessler et al., 2005).
- National Epidemiologic Survey on Alcohol and Related Conditions (NESARC) states that among those with a past-year substance use disorder in the community, 20% had an independent mood disorder and 18% had an anxiety disorder in the same year.

Background

- Adolescents with a substance use disorder are at a 6-fold greater risk for co-occurring disorders than those without a substance use disorder (Kandel et al., 1999).
- In clinical settings, Diamond et al. reported 72% of adolescent marijuana users endorsed two or more psychiatric syndromes at intake.
- The most common form of psychopathology observed in substance dependent adolescents includes conduct disorder, ADHD, major depressive disorder, anxiety disorder and post traumatic syndrome disorder (Crowley & Riggs, 1995; Clark et al., 1997; Shane et al., 2003).

Background

- Three primary dimensions of disorders are (Achenbach et al,1978; Dennis et al., 2003; Krueger et al.,1998; 1999; Volleberg et al., 2001) :
 - 1) substance use disorders (e.g., abuse, dependence, other substance induced health or psychiatric problems),
 - 2) internalizing disorders (e.g., depression, anxiety, somatic disorder, traumatic distress, suicide),
 - 3) externalizing disorders (e.g., attention deficit, hyperactivity, conduct and other impulse control disorders).
- Internalizing disorders tend to onset over the life course and the prevalence generally increases with age.
- Externalizing disorders typically onset in childhood or adolescence and decrease with age.

Objective

- To examine the prevalence of co-occurring internalizing and externalizing problems and to investigate its relationship with substance dependence by age in a treatment-seeking population of adolescents and adults with substance use problems

Data Source and Study Population

- Data were pooled from 77 substance abuse treatment studies.
- Study sample consisted of 4,939 adolescents and 1,958 adults; 66.9 % were male, 45.4% were Caucasians, and the mean age was 20.1 (standard deviation=9.1).
- Participants were categorized into five age groups: age <15 (n=916, 13.3%), 15-17 (n=4014, 58.3%), 18-25 (n=676, 9.8%), 26-39 (n=784, 11.4%) and 40+ (n=496, 7.2%).

Assessment

- Intake measures assessing past-year substance use, internalizing, and externalizing problems were gathered using the Global Appraisal of Individual Needs (GAIN).
- Substance Problem Scale: 16 symptom items for assessing substance abuse, substance dependence, and problems related to substance use. (alpha of 0.90 for adolescents, 0.92 for adults).
- Internal Mental Disorders Scale: 43 symptom items for assessing general psychological distress that includes depressive symptoms, somatic symptoms, anxiety/fear symptoms, traumatic distress, and homicidal/suicidal thoughts. (alpha of 0.90 for adolescents, 0.96 for adults).
- Behavioral Complexity Scale: 33 symptom items for assessing ADHD symptoms and conduct problems. (alpha of 0.90 for adolescents, 0.96 for adults).

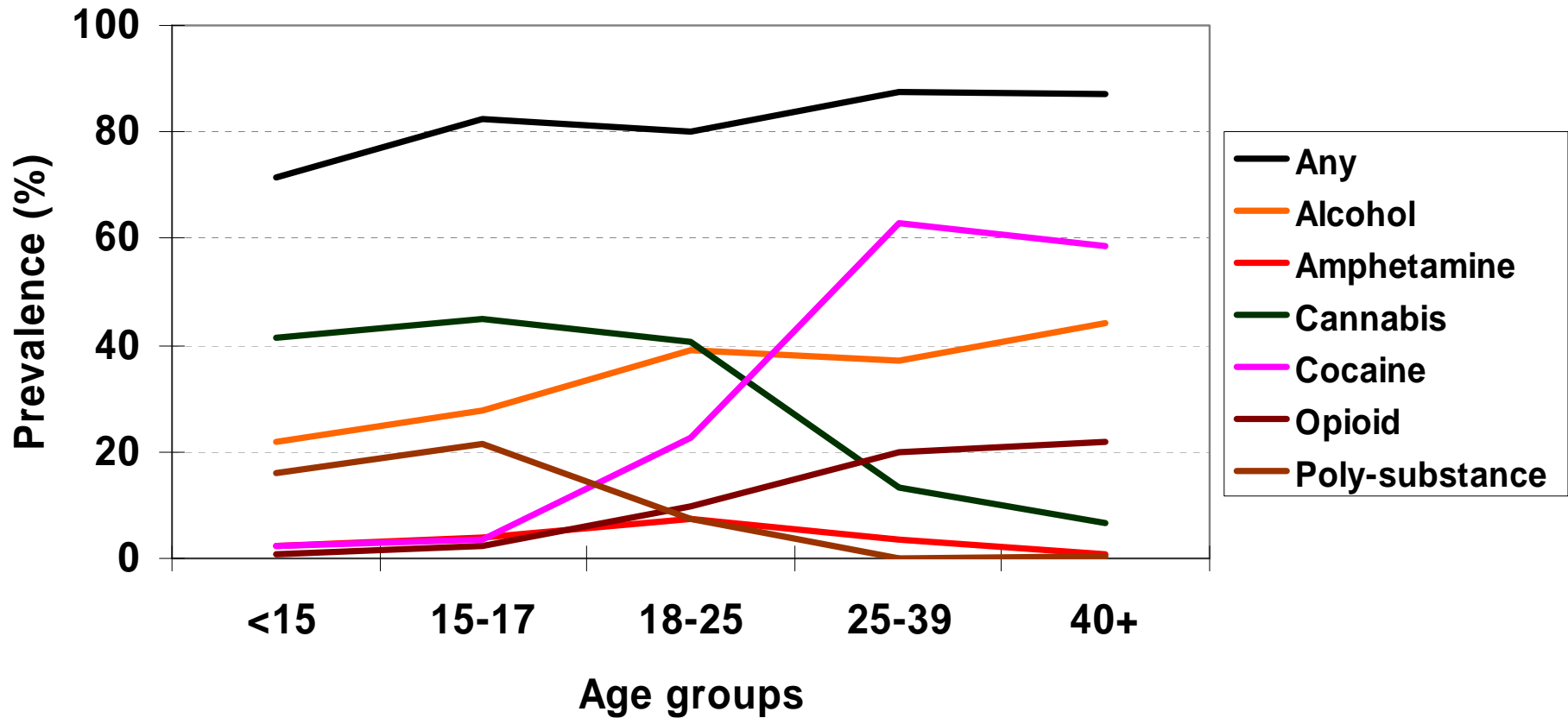
Assessment

- Past-year substance use problems:
Abuse and dependence of alcohol, amphetamine, cannabis, cocaine, hallucinogen, inhalants, opioids, sedatives, PCP, poly-substance
- Past-year co-occurring problems:
 1. Internalizing problems -- depression, anxiety, traumatic distress
 2. Externalizing problems -- ADHD, conduct disorder

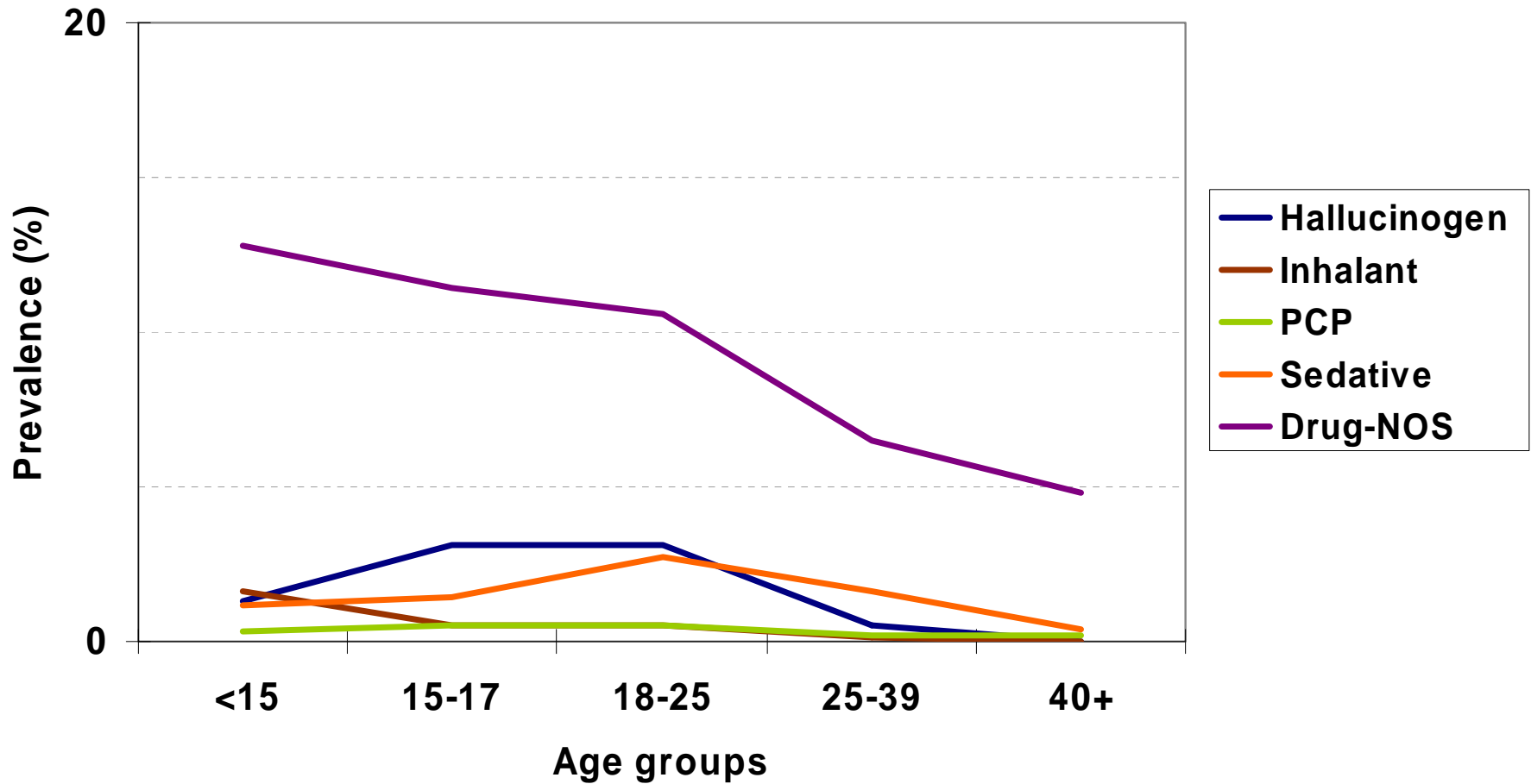
Analytical Plan

- Exploratory: Chi-square test, Fisher exact test
- Logistic regression analysis: estimate the strength of association with past year substance dependence and co-occurring problems across age groups

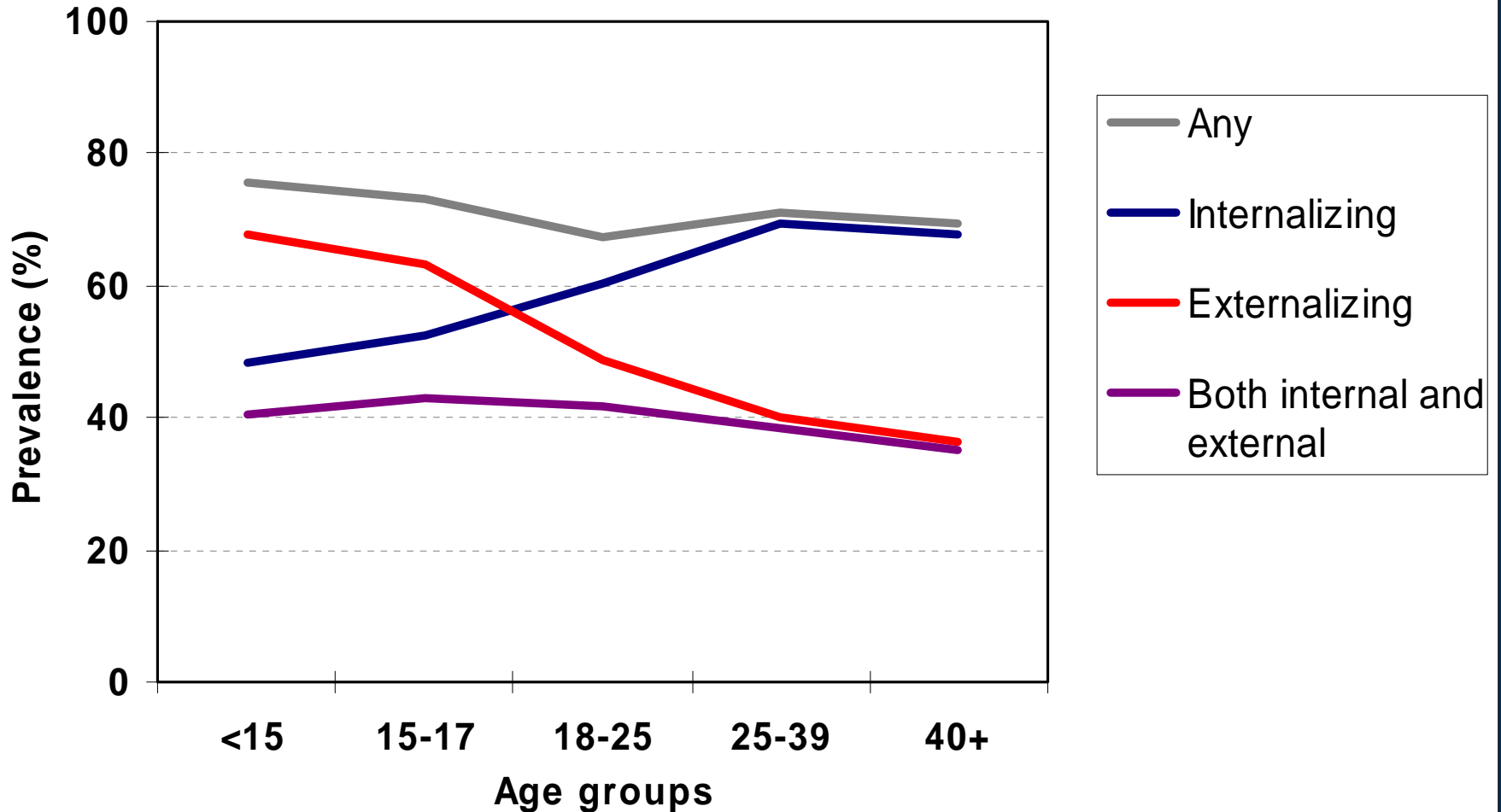
Prevalence of specific substance use problems (abuse and dependence) by age groups



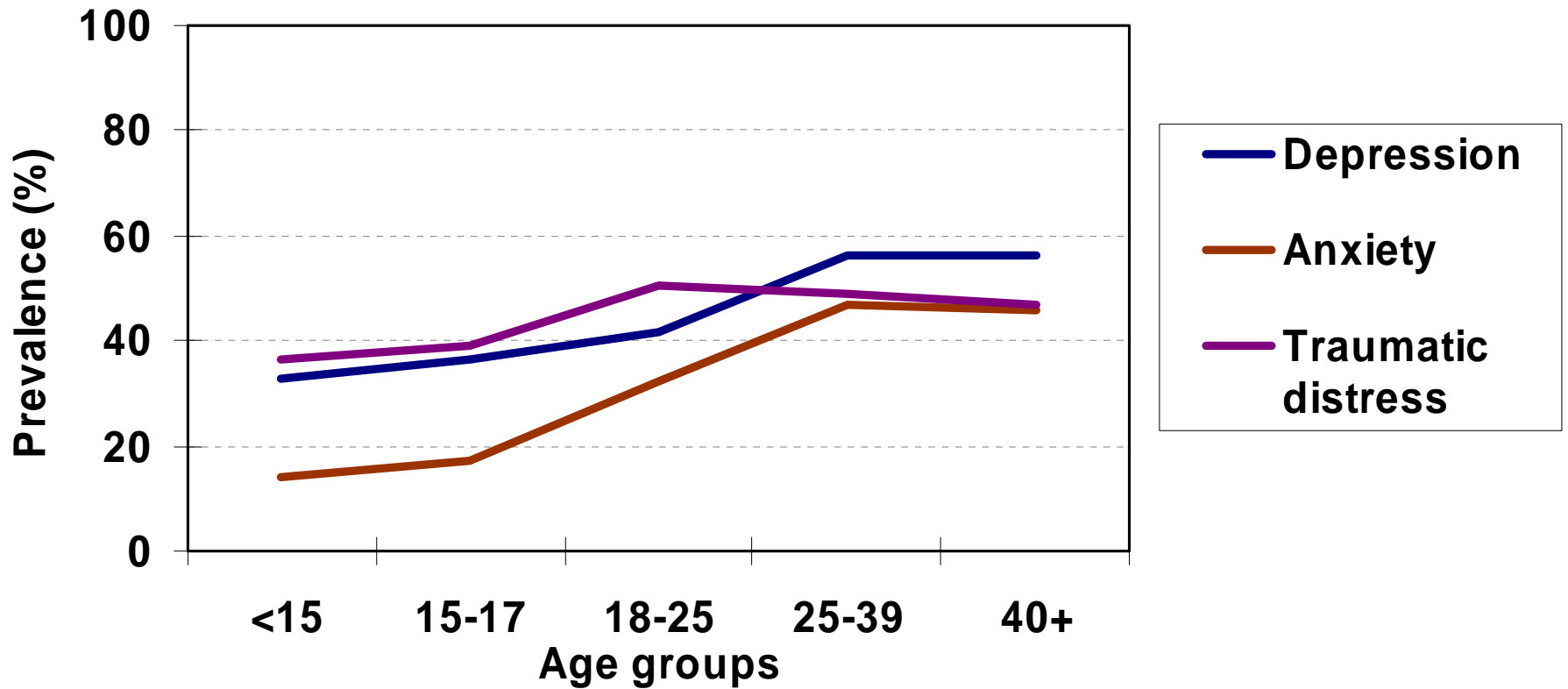
Prevalence of specific substance use problems (abuse and dependence) by age groups



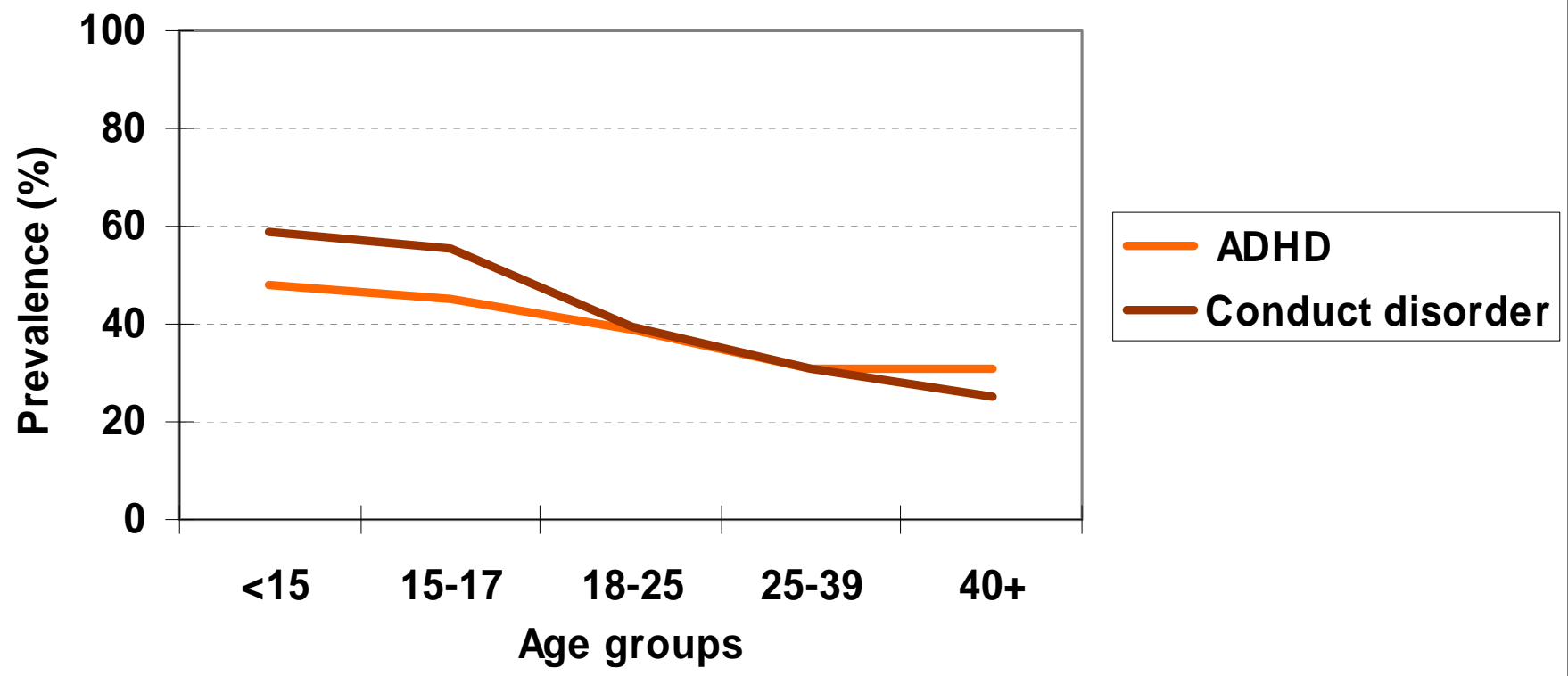
Prevalence of co-occurring problems by age groups



Prevalence of internalizing problems by age groups



Prevalence of externalizing problems by age groups



Prevalence and Odds Ratio of the Association of Past-year Dependent Status and Co-occurring Problems

Past-Year Substance Abuse Problems	Past-Year Co-occurring Problems				
	Age <15	Age 15-17	Age 18-25	Age 26-39	Age 40+
	Any co-occurring problems				
Dependence	89.9	88.1	84.1	78.7	77.9
No Dependence	63.9	54.6	40.3	41.7	39.6
Odds Ratio (95% CI)	4.8 (3.3,7.1)	5.9 (5.0, 7.0)	7.7 (5.4, 11.3)	5.8 (3.9, 8.6)	5.3 (3.3, 8.5)
	Having both internalizing and externalizing problems				
Dependence	60.7	61.1	59.1	43.9	42.4
No Dependence	24.1	21.0	14.0	17.2	9.0
Odds Ratio (95% CI)	4.8 (3.6, 6.6)	5.7 (4.9, 6.6)	8.8 (5.8, 13.2)	4.5 (2.8, 7.1)	7.4 (3.7, 14.7)

Prevalence and Odds Ratio of the Association of Past-year Dependent Status and Internalizing Problems

Past-Year Substance Abuse Problems	Past-Year Internalizing Problems				
	Age <15	Age 15-17	Age 18-25	Age 26-39	Age 40+
	Any Internalizing problems				
Dependence	69.2	69.8	76.7	77.1	76.3
No Dependence	31.4	31.8	34.5	40.5	38.7
Odds Ratio (95% CI)	5.0 (3.7, 6.8)	4.9 (4.3, 5.7)	6.0 (4.2, 8.5)	5.6 (3.8, 8.2)	5.1 (3.2, 8.2)
	Depression				
Dependence	52.7	52.7	55.5	64.0	66.4
No Dependence	16.5	16.2	19.5	25.9	25.8
Odds Ratio (95% CI)	5.6 (4.1, 7.8)	5.6 (4.8, 6.6)	4.6 (3.2, 6.7)	5.7 (3.8, 8.6)	6.5 (3.9, 10.8)

Prevalence and Odds Ratio of the Association of Past-year Dependent Status and Internalizing Problems

Past-Year Substance Abuse Problems	Past-Year Internalizing Problems				
	Age <15	Age 15-17	Age 18-25	Age 26-39	Age 40+
	Anxiety				
Dependence	24.6	26.1	44.7	51.9	53.1
No Dependence	6.0	6.3	12.4	27.0	19.8
Odds Ratio (95% CI)	4.6 (3.0,7.2)	4.9 (4.0, 6.1)	5.2 (3.3, 8.0)	3.4 (2.2, 5.0)	5.0 (2.9, 8.4)
	Traumatic Distress				
Dependence	50.6	51.5	63.7	54.2	52.9
No Dependence	25.2	23.9	28.9	28.4	26.1
Odds Ratio (95% CI)	2.9 (2.2, 3.9)	3.3 (2.9, 3.8)	4.0 (2.8, 5.6)	3.3 (2.2, 4.8)	3.2 (2.0, 5.2)

Prevalence and Odds Ratio of the Association of Past-year Dependent Status and Externalizing Problems

Past-Year Substance Abuse Problems	Past-Year Externalizing Problems				
	Age <15	Age 15-17	Age 18-25	Age 26-39	Age 40+
	Any Externalizing Problems				
Dependence	81.3	79.5	66.6	45.5	44.0
No Dependence	56.6	43.8	19.8	18.5	9.9
Odds Ratio (95% CI)	3.2 (2.4, 4.4)	4.8 (4.2, 5.5)	8.4 (5.7, 12.2)	4.3 (2.8, 6.8)	7.1 (3.7, 13.7)
	ADHD				
Dependence	63.6	61.0	54.7	34.5	38.0
No Dependence	35.7	26.2	13.3	16.1	8.1
Odds Ratio (95% CI)	3.0 (2.2, 3.9)	4.2 (3.6, 4.8)	7.9 (5.2, 12.0)	3.1 (1.9, 4.9)	7.3 (3.5, 15.1)

Prevalence and Odds Ratio of the Association of Past-year Dependent Status and Externalizing Problems

Past-Year Substance Abuse Problems	Past-Year Externalizing Problems				
	Age <15	Age 15-17	Age 18-25	Age 26-39	Age 40+
	Conduct Disorder				
Dependence	74.2	72.2	55.5	37.0	30.7
No Dependence	45.9	35.9	14.0	8.6	7.2
Odds Ratio (95% CI)	3.4 (2.5,4.5)	4.5 (3.9, 5.1)	8.2 (5.4, 12.4)	7.4 (4.0, 13.5)	5.2 (2.4, 11.1)

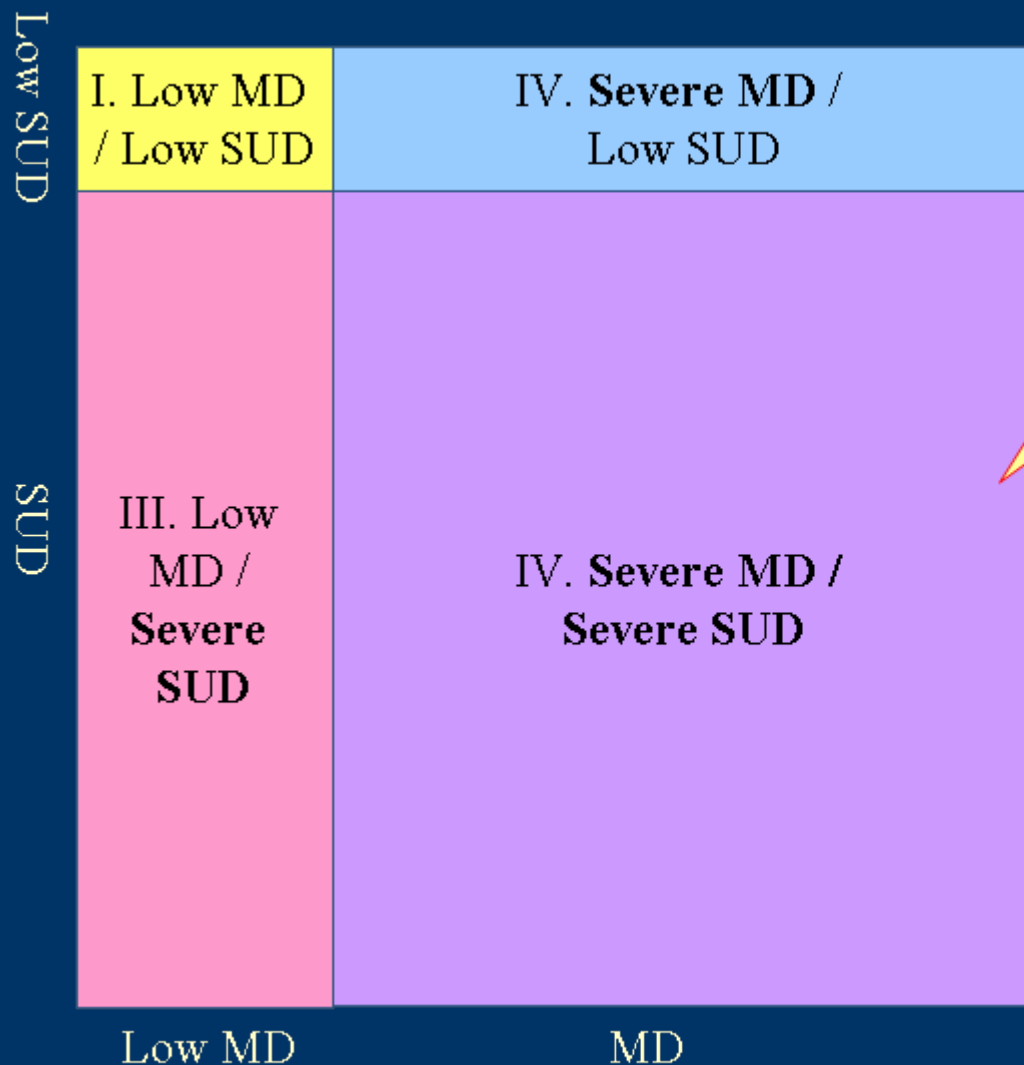
The Quadrants of Care Model of a System of Care

Low SUD	<p>I. No/Low Severity Mental Disorder (MD) and No/Low Severity Substance Use Disorders</p>	<p>II. Severe Mental Disorder (MD) and No/Low Severity Substance Use Disorders (SUD)</p>
SUD	<p>III. No/Low Severe Mental Disorder (MD) and Severe Substance Use Disorders (SUD)</p>	<p>IV. Severe Mental Disorder (MD) and Severe Substance Use Disorders (SUD)</p>
	Low MD	MD.

- I. **Low MD / Low SUD:**
Treated in primary care, student assistance programs
- II. **Severe MD / Low SUD:**
Treated in mental health treatment system
- III. **Low MD / Severe SUD:**
Treated in substance abuse treatment system
- IV. **Severe MD / Severe SUD:**
Often under served by above and end up in emergency rooms, state hospitals and/or detention/jail – new programs needed

Source: NASMHPD and NASADAD (1999) and CSAT (2005) Tip 32

Actual Services Needed



The Problem is that if we go by actual diagnosis, the vast majority of the patients are actually in the fourth quadrant

Moreover, youth in all four groups show up in all systems of care

This is why we need to make an integrated system of care

Conclusions

- Co-occurring mental health problems are the norm, not the exception; with 78-90% endorsing for an internalizing or externalizing problem and 42%-61% endorsing for both.
- Patterns of substance use and mental health problems are heterogeneous and vary by age.
 - Rates of internalizing problems generally increased with age, but, the rates of externalizing problems decreased with age.
 - Dependent younger and older adults were at elevated risk for ADHD and conduct disorder prior to treatment entry.

Conclusions

- Comorbidity is associated with the more severe form of substance use; with higher co-occurrence of both internalizing and externalizing problems among dependent clients.
- The magnitude of comorbidity with substance dependence was greater for internalizing problems for adolescents, while it was greater for externalizing problems for adults.
- Prevalence of substance dependence outnumbered abuse in all age groups, but went up with age.
- Prevalence of a specific substance use problem varied by age groups: alcohol, cocaine and opioid use were more prevalent in adults than in adolescents, while cannabis, alcohol, poly-substance, and other drug use not otherwise specified (NOS) were more common in adolescents and young adults.

Implications and for future research

- Early screening for co-occurring problems in treatment is recommended to identify individuals who suffer from other treatable mental health problems.
- Future research is needed to elucidate the nature of and factors associated with co-occurring problems among individuals with substance use problems.
- Further work is warranted to focus on improving standardized and efficient assessment tools for mental health problems and evaluate referral and linkage to mental health treatment.

Strengths and Limitations

■ Strengths

- Large sample including participants from a variety of treatment settings and levels of care
- Use same assessment for each participant

■ Limitations

- The semi-structured assessment was administered by trained interviewers based on participant's self-report
- Diagnostic impression; disorders such as panic disorder, personality disorders and psychotic disorders were not included; relaxation of age onset for ADHD and conduct disorder
- Not a random sample

Thank You!!

