The State of the Science in Adolescent Treatment Research: Issues in Blending Research and Practice

Lessons from the Clinical Trials Network

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Adolescent Substance Use Disorder: Developmental Context, Domains of Risk

- **Individual**
  - **Genetic; temperment; behavioral disinhibition**
  - **Comorbidity**
    - **Early intervention prevent SUD? (CD, ADHD, Affective, LD, Anxiety)**
  - **SUD impedes development (poor coping skills; alexithymic)**
- **Family**
  - **Attachment disorder; family disruption, abuse/neglect, poor monitoring; parental/sibling SUD**
- **Peers**
  - **CD, SUD**
- **School**
  - **Poor motivation, achievement, learning disorders, ADHD**
- **Community**
  - **Criminal, drug subculture**

Emerging Causal Model

- Early behavioral disinhibition /affective dysregulation
- Late childhood/early adolescence
  - Interplay of neurohormonal / comorbidity/ family & other psychosocial factors modulate motivation/SUD vulnerability
    - Change gene expression
    - Receptors &“brain reward” –under construction
- Adolescence
  - Puberty/neuroendocrine changes
    - Greater vulnerability & reactivity to stressors
    - Exacerbates pre-existing dysregulation & risk--predicts progression to SUD after experimentation

Assessment of Adolescents with SUD

- **Assessment**
  - **Comprehensive, multidimensional, lifespan approach/developmental timeline**
    - **Developmental milestones/ major events**
    - **Comorbidity-onset, relationship to SUD, diagnostic validity of assessments**
    - **Family assessment**
    - **Functional analysis-context, domains of risk, developmental features are different from adults**

Evidence-Based Treatments for Adolescents Lag Behind Adult Studies

- Efficacious Treatments for Adolescent SUD
  - **Psychotherapies for SUD**
    - **Family Therapies (eg. structural-strategic; functional; community-based multisystemic; multidimensional FT)**
    - **Cognitive-Behavioral (individual > group)**
    - **Behavioral (operant; PMT)**
    - **Motivational Enhancement/ I2 step-adjunctive**
  - **Pharmacotherapies for SUD**
    - **No adequately powered randomized controlled trials in adolescents for substitution, antagonist, aversive, anticraving pharmacotherapies**

Adolescent SUD and Comorbidity Efficacy Trials Issues for CTN

CD + SUD

- **Psychotherapy (behavioral; family-based; community-based-MST)**
- **Pharmacotherapy—no randomized controlled trials (RCTs) with adequate power**

ADHD + SUD

- **Psychotherapy –none**
- **Pharmacotherapy --One RCT; treats ADHD not SUD; use non-abuse potential medications; need safety & efficacy data in adolescents**

Affective Disorders + SUD

- **Depression + SUD**
  - **Pharmacotherapy-SSRIs have most empirical support (fluoxetine, paroxetine); One RCT efficacy trial w/ fluoxetine underway (moi)**
  - **Psychotherapy-IPT and CBT have efficacy for depression/anxiety disorder in non-SUD adolescents**
- **Bipolar-1 RCT; decreased substance use with mood stabilization**

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A Good Marriage vs "Shotgun" Wedding

- "Shotgun" Wedding: university-based researchers tell community treatment programs what to do
- Good Marriage: marry "real world" community treatment program priorities to the state of the science ; bidirectionally co-develop clinical trials agenda; identify science-based treatments ready for "blending"

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- Community treatment program priorities
  - **Interventions should target the most common adolescent substance dependencies--cannabis, alcohol, nicotine**
  - **Interventions should target the most common comorbidities --depression, ADHD, PTSD and inform how best to integrate treatment of SUD and comorbid disorders**
  - **Feasible, flexible, acceptable, practical, cost – effective, sustainable training and implementaion of science-based psychotherapies for adolescent SUD: CBT, family-based, behavioral, motivational, multisystemic, group vs individual**

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- Community treatment program priorities (con't)
  - Interventions improving treatment engagement and retention
  - Enhancing interface with juvenile justice system
  - Develop pharmacotherapies for adolescent SUD and comorbid disorders—practical and low abuse potential; improve SUD/psychiatric treatment interface
  - Other?…..

Conclusion

- Several empirically-based psychotherapies (family-based, CBT, behavioral, motivational) have sufficient scientific readiness for CTN stage trials/blending/transportability
- Marry CTP-identified clinical priorities to treatment modalities with scientific readiness to guide adolescent protocol development in CTN….otherwise it'll be a "shotgun wedding"
- What else?