The Society for Clinical Child and Adolescent Psychology (SCCAP): Initiative for Dissemination of Evidence-based Treatments for Childhood and Adolescent Mental Health Problems

With additional support from Florida International University and The Children’s Trust.
Keynote
Suicide risk Assessment & Formulation in Children and Adolescents: An Evidence-Based Approach

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US Suicides by Age

Youth Suicide and Suicide Attempts

Suicide: 3rd leading cause of death among youth 10 – 19 years

Suicide Attempts: National Youth Risk Behavior Survey (YRBS) of High School Students

In Past Year:

- 13.8%; seriously considered suicide attempt
- 6.3%; made one or more suicide attempts
- 1.9%; were medically treated for a suicide attempt
Youth Suicide Risk Assessment and Formulation

- Understand Suicide Risk Factors
- Collect Pertinent and Accurate Information
- Complete Risk Formulation
Understand Suicide Risk Factors

1. How We Study Suicide Risk Factors

2. Youth Suicide Risk Factors
   - Individual
   - Family
   - School / Community / Social Context

3. Summary
How We Study Suicide Risk Factors

- Population-Based Epidemiologic Studies
  - National Mortality Data – Examine by sociodemographic characteristics
  - Psychological Autopsy Studies
    - Study all suicides in defined demographic area
    - Construct detailed case histories
  - Nationally Representative Community-Based Studies
How We Study Suicide Risk Factors

Clinical Descriptive Studies

- Clinic/Hospital Patient samples
- Study risk within groups defined by diagnosis, setting (e.g., inpatient), suicide attempt status
- Less “representative” & generalizable
- Highly relevant to clinical practice
Adolescent Risk Factors
Suicide Attempts and Suicide

- Individual
- Family
- School/Community/Social Context
Youth Suicide Risk Factors

Suicide Attempts and/or Suicide

- Individual
  - Demographic Risk Factors
  - History of Suicide Attempt / Multiple Attempts
  - Psychiatric Disorder / Psychopathology
  - History of Sexual / Physical Abuse
  - Psychological Characteristics
  - Sexual Orientation – GLB
  - Exposure to Suicide
Youth Suicide Risk Factors

**Suicide Attempts and/or Suicide**

- **Family**
  - Family History of Suicide
  - Family Psychiatric History
  - Family Cohesion / Support

- **School / Community / Social Context**
  - Social Integration / Isolation
  - Perceived Social Support
  - Bullying
  - Availability of Means
Individual Risk Factors

Demographic-Gender

- Youth Risk Behavior Surveillance data from 2009
  - High school students- past 12 months
- Females are at greater risk for:
  - Suicide Ideation: 17.4% of females; 10.5% of males
  - Suicide Plan: 13.2% of females; 8.6% of males
  - Suicide Attempt: 8.1% of females; 4.6% of males

Individual Risk Factors

Demographic - Gender

- Suicide Rate higher among males than females
  - 10-14 years
    - Males 1.5 per 100,000
    - Females 0.7 per 100,000
  - 15-19 years
    - Males: 11.6 per 100,000
    - Females: 3.0 per 100,000

When are Suicidal Thoughts most common?

- Oregon Adolescent Depression Project (OADP): Approximately 16 Years
  - 14 years: 14.6%; 15 years: 16.8%
  - 16 years: 22.5%
  - 17 years: 20.1%; 18 years: 21.0%

- Youth Risk Behavior Survey (YRBS):* 10th Grade
  - 9th grade: 18.1%
  - 10th grade: 22.0%
  - 11th grade: 18.3%; 12th grade: 18.4%

*Data taken from YRBS 1999
Individual Risk Factors

Demographic - Age

- Suicide rate increases across child and adolescent years
  - 10-14 years
    - 1.1 deaths per 100,000 per year
  - 15-19 years
    - 7.4 deaths per 100,000 per year
  - 20 – 24 years
    - 12.7 per 100,000 per year

American Indian/Alaskan Native adolescents have suicide rate higher than the national average
- 10-14 years: 5.1 per 100,000
- 15-19 years: 22.7 per 100,000

White adolescents have suicide rate approx. 1.5X that of Black adolescents

Individual Risk Factors

Suicide Attempts

- Suicide Plan: rates higher among Hispanic (12.2%) than white (10.3%) and black (9.8%) students
- Suicide Attempt: rates higher among black (7.9%) and Hispanic (8.1%) than white (5.0%) students

Suicide Rates by Age, Race, and Gender - United States

Source: National Center for Health Statistics, 2006
2008 Suicide Rates by State

National Rate = 11.8

CDC WISQARS website http://www.cdc.gov/injury/wisqars/index.html
Individual Risk Factors

Severity of Suicidal Ideation

Severity of ideation increases likelihood of suicide attempt during next year (OADP)

- High baseline ideation: 16.7% attempts
- Moderate baseline ideation: 6.7%
- Mild baseline ideation: 2.8%
- No baseline ideation: 0.3%
Individual Risk Factors
Frequency/Severity of Suicidal Ideation

- Frequent thoughts of suicide best predictor of suicide attempt (Kienhorst et al., 1990: 9,393 students; Netherlands)

- Most suicide attempters report history of suicidal ideation (Oregon Adolescent Depression Project; OADP; Lewinsohn et al., 1996)
  - 87.8% females
  - 87.1% males
History of suicide attempts common among adolescents who die by suicide

- 44% (Brent et al.; 1988)
- 34% (Marttunen et al., 1992)
- 1/3 (Shaffer & Craft, 1999)

Hospitalized adolescent suicide attempters had higher suicidal ideation scores (SIQ-JR) than a non-psychiatric sample (Reynolds, 1988)
Individual Risk Factors
*History of Multiple Suicide Attempts*

- In community prospective study, multiple attempts predicts re-attempts (Miranda et al., 2008)

- Multiple attempters have significantly more serious past attempts compared to single attempters (Lewinsohn, Rohde, & Seeley, 1996)

- In community study of 16,000 adolescents, multiple attempts assoc. with health risks (Rosenberg et al., 2005):
  - Heavy alcohol use/hard drug use
  - Sexual assault, Violence
Individual Risk Factors

Psychiatric Disorder

Seven psychological autopsy studies (Published since 1985; N = 21 to 133 suicide victims)

Psychiatric Disorders present in 90%-98%

- Affective disorders (35%-76%)
- Substance abuse (26%-66%)
- Conduct disorder (17%-28%)

Affective Disorder more common in females; Substance abuse more common in males

Individual Risk Factors

Depressive Disorder

- 85% report significant suicidal ideation; 32% attempt suicide by late adolescence
- Past suicide attempt and current depressive disorder strongest predictors of future suicide attempt
- 1/2 adolescent male suicide victims and 2/3 female suicide victims suffered from depressive disorder
Individual Risk Factors

Alcohol / Substance Use

- Adolescents with alcohol abuse/dependence nearly 7X more likely to attempt suicide than others (OADP; Andrews & Lewinsohn, 1992)
- Alcohol abuse predicts eventual suicide in 5-yr follow-up of hospitalized attempters (Kotila, 1992)
- Recent alcohol ingestion common in suicide (28%, Hoberman & Garfinkel, 1988; 51%, Marttunen et al., 1991)
- Delaying or preventing alcohol and drug abuse can forestall more serious illnesses and increased risk for suicide. [Center for Substance Abuse Treatment (2008). Substance abuse and suicide prevention: Evidence and implications - a white paper (Vol. DHHS Pub. No. SMA-08-4352)]
Individual Risk Factors

History of Sexual / Physical Abuse

- Risk of suicide attempt increases with severity of childhood sexual abuse: (Fergusson, Horwood, & Lynskey, 1996)
  - 2.9X for contact abuse
  - 11.8X for abuse involving intercourse

- Controlling for age, sex, individual and parental psychiatric disorders, risk for suicide attempt increased in adolescence and young adulthood (Johnson et al., 2002)
  - 5.1X for childhood physical abuse
  - 7.2X for childhood sexual abuse
Individual Risk Factors

*Psychological Characteristics*

- Psychological autopsy studies of completed suicide
  - 43.4% adolescents displayed antisocial behavior during year (Marttunen et al., 1992)
  - 70% adolescents had hx antisocial behavior (Shafii et al., 1985)

- Aggressive-Impulsive behavior associated with increased risk of suicidal behavior (Apter, Plutchik, & van Praag, 1993; McKeown et al., 1998)
Individual Risk Factors
Gay, Lesbian, Bisexual (GLB) Youth

General Population Surveys
(Garofalo et al., 1998; Remafedi et al., 1998; Bagley & Tremblay, 2000)

- 42% GLB Youth: Suicidal Ideation past year
- 28% GLB Youth: Suicide Attempt past year
- GLB Youth 2-3X more likely to attempt, 4-7X more likely to have an attempt requiring medical care, and 8X more likely to be multiple (4+) attempters

Unique Risk Factors

- Stigmatization, discrimination
- Double Bind: Disclosure vs. Nondisclosure
Individual Risk Factors

*Exposure to Suicide*

- Suicide victims more likely to have history of sibling/friend attempt or suicide (Shafii et al., 1985)

- Suicide clusters:
  - 1-2% of teenage suicides occur in clusters (estimates range <1% to 13% by state/year) (Gould, Wallenstein, & Kleinman, 1990)

- Mass media, television, and fictional dramatizations of suicide followed by significant increases in number of suicides (Gould, 2003)
Family Risk Factors: Family History of Suicide

Family history of suicide:
- 2.6 times more likely to die by suicide than others (Qin P., Agerbo E., & Mortensen PB, 2002)
- Even when controlling for poor parent-child relationships and parental psychopathology (Brent et al., 1996; Gould et al., 1996)

Suicide victims more likely to have family history of ideation, attempt, threat, or suicide (Shafii et al., 1985)
Family Risk Factors

Family Psychiatric History

- 1-Year Longitudinal Study of Suicidal Adolescents
- Survival analyses to examine time-to-attempt
- 352 adolescents, 13-17 yrs, psychiatrically hospitalized
  - 72% female; 86.5% Caucasian
  - Mean age = 15.6 years (SD = 1.3)
  - 11% public assistance; broad range parental education

Family Risk Factors

Family Psychiatric History

- Adolescents TWICE as likely to make suicide attempt if at least one biological parent with history of significant mental health problem (23% vs. 10%)

- Incidence of attempts higher for adolescents with histories of multiple suicide attempts, more severe suicidal thoughts, more severe functional impairment

- Adjustment for these adolescent factors had almost no effect on estimated parent history effect – remained significant
Family Risk Factors

Family Cohesion / Support

In clinical studies, family environment is predictor:

- Family dysfunction related to severity of suicidal thoughts – mediated by psychopathology
  (Prinstein et al., 2000)

- Suicidal adolescent inpatients with mood disorders: less family support than non-suicidal inpatients with mood disorders and non-patients
  (King, Segal, Naylor, & Evans, 1993)

- Suicidal adolescent inpatients with less family support more likely to attempt suicide in next 6 months
  (King et al., 1995)
School/Community/Social Context

Social Integration and Social Isolation

- Interpersonal conflict/loss is most common precipitant of suicide (Martunnen et al., 1993)

- Interpersonal conflict/loss and legal/disciplinary problems relate to suicide attempts (Brent et al. 1996)

- In large national longitudinal study (ADD Health; Bearman & Moody, 2004):
  - social isolation and intransitive friendships predicted suicidal ideation for girls
  - tightly networked school community protective against suicide attempts for boys.
Social Connectedness and Outcomes Following Hospitalization

Study Aims:

Determine if post-hospitalization changes in connectedness with family, peers, non-family adults predict suicide attempts, severity of suicidal ideation, and depression across 12-months.

Sample:

- 338 psychiatrically hospitalized, suicidal adolescents
- 13-17 years; 71% female; mean age = 15.6 years (SD = 1.3)

[Czyz, Liu, & King (in press). Social connectedness and one-year trajectories among suicidal adolescents following hospitalization, *JCCAP*.]
Social Connectedness and Outcomes Following Hospitalization

- Design – Longitudinal – 12 months

- Measures
  - DISC-IV suicide items; Suicidal Ideation Questionnaire- JR (SIQ-JR)
  - Children’s Depression Rating Scale-Revised (CDRS-R)
  - Perceived Emotional/Personal Support Scale (PEPSS)

- Results
  - Improvements in Peer Connectedness: Lower likelihood of suicide attempt across 12 months; Less severe depression (boys and girls) for initial 3 months only, Less severe suicidal ideation (girls)
  
  - Improvements in Family Connectedness: Less severe depression across 12 months.
School/Community/Social Context:

**Bullying**

- Bullying after age 8:
  - Males: being a bully (4.7X) or bully-victim (11.8X) have greater odds of suicidal behavior
  - Non-significant after controlling for conduct symptoms
  - Females: frequently victims 4.7X more likely than non-victims to have suicidal behaviors

School/Community/Social Context:

*Availability of Means - Firearms*

- Firearms used by 66.4% male suicide victims; 48.3% female suicide victims (McIntosh, 2000)

- Availability of firearms in home differentiates adolescent suicide victims (74.1%) from hospitalized suicidal adolescents (33.9%) (Brent et al., 1998)

- Keeping firearms locked, unloaded, with ammunition locked in a separate location all have a protective effect for suicide attempts and unintentional injuries. (Grossman et al., 2005)
Family Cohesion: students with high degree of mutual family involvement 3.5 to 5.5X less likely to be suicidal

– Controlled for depression and life stress
  (Rubenstein et al, 1989, 1998)

Means Restriction: Firearm restriction / locking may prevent suicides
  (Berman and Jobes, 1995; Garland & Zigler, 1993)
Collect Pertinent and Accurate Information

- Ascertain background and acute risk factors
- Focus closely on suicidal ideation and intent; previous history of suicide attempt
- Conduct mental status exam
- Inquire about availability of means
- Obtain information from parents and collateral sources
Ascertain Suicidal Ideation and Intent

- Manage emotional reactions to suicidal youth
  - Strive for collaborative, nonadversarial stance
  - Communicate that problem resolution is key

- Be familiar with suicide assessment tools, and understand appropriate use

- Conduct functional/behavioral analysis of suicidal behavior
Parent-Adolescent Agreement
Adolescents’ Suicidal Thoughts and Behaviors

Research Aims

– Examine extent to which psychiatrically hospitalized adolescents and their parents agree about presence of suicidal thoughts, plans, attempts

– Explore what predicts adolescent-only and parent-only reported suicidal thoughts and behaviors

Parent-Adolescent Agreement
Adolescents’ Suicidal Thoughts and Behaviors

- **Extent of Parent-Adolescent disagreement**
  - 37% parents unaware of suicidal thoughts
  - 59% parents unaware of suicide plans

- **Predictors of Adolescent- Only Endorsement**
  - Suicidal Thoughts: Parent hx mental illness, Adolescent with fewer internalizing symptoms
  - Suicide Plans: Lower adolescent perceived family support, Less Parental distress
  - Suicide Attempts: Lower perceived family support
Suicidal Ideation and Impulses

Clinically Useful Instruments (somewhat)

- Suicidal Ideation Questionnaire - Junior
  - Self-report; 15-item, 7-point frequency scale (SIQ-JR; Reynolds, 1988)
  - Excellent psychometric properties
  - Evidence of predictive validity
    - Suicide attempts in American Indian adolescents (Keane et al., 1996)
    - Post-hospitalization suicide attempts in adolescents (King et al., 1995)
Suicidal Ideation Questionnaire-JR

Recent Findings

Sample: 691 psychiatrically hospitalized, suicidal adolescents, 12-17 years

Method:
- Exploratory factor analysis with randomly selected ½ sample
- Construct factor model
- Confirmatory factor analysis with other ½ sample
- Examine predictive validity of full scale and factors for boys and girls at 6 and 12 month follow-up
Suicidal Ideation Questionnaire-JR

Recent Findings from Psychometric Study

- Total scores and factor scales ONLY had predictive validity for girls
  - No scale differences in sensitivity/specificity
  - Active Ideation scale (range = 0-18); 1 point increase --- 11.9% increase in likelihood of attempt over 12 months

- Findings re: gender and prediction consistent with community-based prospective study (Lewinsohn et al., 2001)

- Not idiosyncratic to instrument – challenge as male adolescents much higher suicide rate
Suicidal Ideation and Impulses
Clinically Useful Instruments

Beck Hopelessness Scale (BHS)
- Self-report, 20-item true/false scale (Beck et al., 1974; Beck & Steer, 1988)
- Evidence of predictive validity
  - Higher scores associated with treatment drop-out in adolescents (Brent et al., 1997)
  - Higher scores predict suicide attempts (among adolescents with prior history of attempt; Goldston et al., 2000)
Suicidal Ideation and Attempt Severity

Clinically Useful Instruments

- Columbia Suicide Severity Rating Scale (C-SSRS)
  - Interview format (Posner et al., 2007, 2011)
    - Assesses suicidal ideation along a spectrum: “wish to be dead” to “suicide intent with a specific plan”
    - Details actual, interrupted, aborted attempts, preparatory acts, and self-injurious behavior
  - Assesses for previous week and lifetime (or since last interview)
Suicidal Ideation and Attempt Severity

Clinically Useful Instruments

C-SSRS: Increasingly being used to assess suicidal behaviors in research, including treatment trials

- Determine extent to which intense affect predicted future suicidal behavior (Hendin, Al Jurdi, Houck, Hughes, & Turner, 2010)

- Assess suicidal behavior after beginning use of anti-depressants in adolescents (Emslie, Ventura, Korotzer, & Tourkodimitris, 2009)
Mental Status

**Warning Signs of Imminent Risk**

- Threatening to hurt/kill self or talking of wanting to hurt/kill self
- Seeking access to firearm, pills, or other means
- Talking/writing about dying or suicide, when out of ordinary for youth
- **Additional warning signs:**
  - Hopelessness, rage/uncontrolled anger, recklessness, feeling trapped, increased alcohol/drug use, social withdrawal, anxiety/agitation, no reason for living
Complete Risk Formulation

- Risk Factors
- Current Suicidal Ideation/Impulses
- Mental Status

Risk Formulation
Suicidal Risk: A Developmental Model

Depression, Other Mental, Substance Use Disorder

Interpersonal Loss, Conflict, Isolation

Psychological Vulnerability

Psychache Hopelessness

Schema for Suicidal Coping, High Impulsivity

Schema: Nonsuicidal Coping

Risk of Suicidal Behavior

Avail. Means
Risk Formulation

- Integrate and prioritize information
  - Warning signs of imminent risk?
  - Examples of moderate/high suicide risk status
    - Plans and preparation for suicide attempt
    - History of multiple suicide attempts plus current alcohol/drug abuse or significant hopelessness
Summary

- Risk factors include individual, family, school/community and broader social level factors.
- Risk factors are complex and transactional.
- Clinical prediction of risk for a low base rate behavior requires:
  - Complex clinical judgments
  - Repeated assessments
  - Understanding of distal and proximal risk factor
For more information, please go to the main website and browse for workshops on this topic or check out our additional resources.

**Additional Resources**

**Online resources:**
1. Suicide Prevention Resource Center website http://www.sprc.org/

**Books:**

**Peer-reviewed Journal Articles:**

**Other Resources:**
Keynote: Suicide Risk Assessment and Formulation in Children and Adolescents: An Evidence-Based Approach

Books:

Websites:
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Selected Peer Reviewed Journal Articles:


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**Other Resources:**


