



Chronic Risk For Youth Suicidal Behavior

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Chronic Risk Factors include:

- Persistent individual psychological factors present from infancy & childhood
- Personality Traits (PT)
- Personality Disorders (PD)



Goals of this Talk are to....

- highlight associations between youth suicidal behavior and personality disorders (PDs) or personality traits;
- discuss risk for youth suicidal behavior imparted by PDs or traits;
- explore components of PDs with regard to etiological features of youth suicidal behavior;
- outline assessment of youth suicide risk, including identification of PDs and traits.



Rates of Youth Suicidality

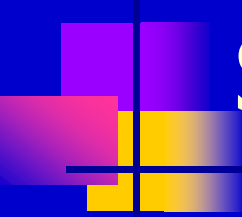
- Suicide is the third leading cause of death among adolescents and young adults.
- In 2005, 272 children, age 5 to 14 years, and 4,212 adolescents and young adults, age 15 to 24 years, committed suicide.
- Youth Risk Behavior Surveillance reported for 2007 a yearly rate of 14.5% high school students seriously considered attempting suicide and 6.9% attempted suicide.

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DSM-IV Criteria for Personality Disorder (PD)

- Enduring pattern of inner experience & behavior that deviates markedly from expectations of the culture. This pattern is manifested in two (or more) areas: cognition, affectivity, interpersonal functioning, & impulse control
- Enduring pattern is inflexible & pervasive across broad range of personal & social situations
- Leads to clinically significant distress or impairment
- Pattern is stable & long duration & onset traced back at least to adolescence or early adulthood
- Pattern not better accounted for as a manifestation or consequence of another mental disorder
- Not due to direct physiological effects of a substance or general medical condition



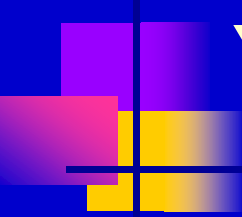
Associations between Youth Suicidal Behavior and PDs

- Persistent behavioral, emotional, cognitive states in childhood are associated with youth SB and may be components of certain childhood and adolescent PDs.
- PDs are associated with increased incidence and recurrence of youth SB. *Example: 43% male & 24% female youth suicides associated with Conduct Disorder.*
- Neurobiological features of suicidal behavior are similar to those of certain PDs and traits.



Personality Disorders among Youth Suicide Victims

- 10% to 42% youth suicide victims have PDs
- Common PDs among youth SVs:
Cluster B: antisocial, narcissistic, borderline,
Cluster A: schizoid,
Cluster C: dependent, avoidant
- 2.9-fold increased risk for suicide imparted by PDs;
8.5-fold risk imparted by Cluster B PDs (Brent et al, 1996)
- Risks imparted by PDs are independent of risks from Axis I disorders (Brent et al, 1996);
- *PDs increase risk for suicidality through effects of particular traits or dimensions.*



Personality Traits among Youth Suicide Victims

- Hopelessness, assaultiveness (Shaffer et al, 1996)
- Symptoms of conduct disorder antedate substance abuse which predate mood disorder (Shaffer et al, 1996)
- Impulsive-aggression (Brent et al., 1994)



PDs and Risk for Nonfatal Youth Suicidal Behavior

- Adol community sample assessed prospectively into early adulthood: Those with PDs had increased risk for suicide attempts & Axis I disorders in early adulthood (Johnson et al, 1999)
- Adol suicide attempters with PD were more likely to have recurrent suicide attempts (Hawton et al, 2003)
- Rates of PDs among youth suicide attempters are similar to those among youth SVs (Brent et al, 1993)
- PDs comorbid with affective disorders impart higher suicide risk than these disorders alone (Blumenthal, Kupfer, 1986) and have increased cognitive distortions, i.e., hopelessness (Marton et al, 1989)



Prediction of Psychopathology from Behavior Traits at Age 3 Yrs

- Dunedin longitudinal study of 3 year old children and followed to age 21 years
- Early behavioral traits are long-standing & predict later PDs, mood disorders, & suicidal behavior:
- Under-controlled children (impulsive, restless, distractible) more likely to have antisocial PD & 16.8-fold likelihood for suicide attempt at 21 years
- Inhibited children (shy, fearful, easily upset) more likely to be depressed & 6.5-fold likelihood for suicide attempt at 21 years

(Caspi, Moffitt, Newman, 1996)

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Unmasking Personality Traits: Subgroups of Suicidal Children

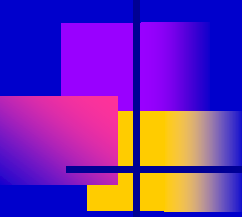
- Subgroups of suicidal inpatient children, 6-12 yo; Pfeffer et al, 1983
- Suicidal Only: Depressed, stable ego functions including good reality testing & good impulse control, become depressed with stressful events
- Suicidal-Assaultive: Aggressive, rages, violent behavior, ego deficits, parental suicidal behavior
- *These subgroups of suicidal children were similar to those described by Shaffer (1974):*
 1. *isolated-withdrawn*
 2. *impetuous-violent*

Unmasking PDs: Subgroups of Suicidal Adolescents

- Suicidal adol inpatients, 13-19 yo; Pfeffer et al, 1989:
- Suicidal only (36%): 42% Borderline PD
 - Past suicidality, Chronic depression & sub abuse
 - History of physical & sexual abuse
 - Recent school change
- Assaultive-Suicidal (8%): 40% Borderline PD
 - Chronic violence & antisocial behavior
 - Family violence
 - History of accidents

These subgroups distinguished by:

- 1. suicidality, affectivity, & family abuse*
- 2. antisocial behavior & family violence*



Towards Understanding Etiology of Suicidal Behavior

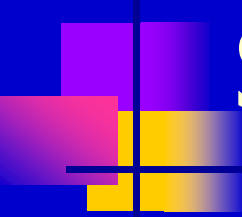
- Personality Traits may be related to etiological features of suicidal behavior.



Emotional Personality Traits Related to Youth Suicidality

- Anxiety-related trait: Harm-avoidance is partly under genetic control and is related to central serotonergic system among Cluster C but not Cluster B PDs
- Anger-related trait: Partly under genetic control.

Family Transmission of Suicidal Behavior



- Transmission of suicidality in families independent of psychopathology. Suggests that factors associated with suicidality may be more significant etiological risk factors for suicidal behavior than psychopathology. However, such factors may also be related to risk for certain psychopathologies, such as cluster B PD (Brent et al)



Family Transmission of Suicidality

- Family Transmission of Psychopathology: suicidality, violence, alcohol/substance abuse, antisocial personality disorder among parents/siblings (Pfeffer et al, 1994)
- Family Transmission of Impulsivity: stable vulnerability trait
- Aberrant parent-child attachment: Abuse, neglect (Evans, Hawton, Rodham, 2005)



Neurobiological Features of the Diathesis for Suicidal Behavior

- Stress-Diathesis Model (Mann, 2003):
- Diathesis is a predisposition to suicidality that is independent of psychiatric disorder. Diatheses are related to:
- Serotonergic (depletion causes increase aggression and impulsivity) and noradrenergic systems (cortical noradrenergic overactivity)
- Ventromedial prefrontal cortex: fewer presynaptic serotonin transporter sites & upregulation of 5-HT_{1A}. This brain region is involved in behavioral and cognitive inhibition that restrains expression of impulsivity & aggression.

Serotonin Indices & Suicidality in Children



- 75 inpatient children, 35 normal children (Pfeffer et al, 1998):
- Whole blood tryptophan content was significantly lower among suicide attempters than normal children or those with suicidal ideation.
- *Result suggests dysregulation of serotonergic function in suicidal children.*



Stressful Life Events & Suicidality

- Interpersonal losses: deaths of loved-ones, separations (Gould et al, 1996)
- Abuse: Sexual, Physical: (Brown et al, 1999; Evans et al, 2005; Fergusson et al, 1996)
- Legal and disciplinary problems (Gould et al, 1996)
- School/work problems (Gould et al, 1996)
- Life-event stress in childhood increases risk for suicide attempt in adolescence 1.7-fold (Pfeffer et al, 1993)



HPA Axis Dysregulation & Suicidal Behavior in Children

- Emotional stress in children may enhance cortisol secretion (Krieger, 1970)
- HPA axis major stress-related system (Pfeffer et al, 1991):
 1. Relations between childhood suicidal behavior and elevated basal plasma cortisol were independent of psychiatric disorders.
 2. High AM basal plasma cortisol predicted childhood suicidal behavior 7 weeks later
 3. Children with persistent suicidal behavior over a 7 week period had persistently elevated 4 PM plasma basal cortisol

These results are similar to those of cortisol hypersecretion & suicidal behavior in adults (Bunney et al 1969; Coryell, Schlessler, 1981; Banki et al, 1984)

Pathogenesis of PD and Suicidality in Youth

- Stress diathesis model: Genetic and developmental risk factors (diathesis) interact through unknown mechanisms with actual (stress-related) factors to create the conditions for suicidality.
- Example: Caspi et al, 2003: Dunedin prospective longitudinal study to evaluate why stressful experiences lead to depression in some people but not in others.
- Functional polymorphism of the promoter region of the serotonin transporter gene (5-HTT) moderated the influence of stressful life events on depression.
- Individuals with one or two copies of the short allele of the 5-HTT promoter polymorphism exhibited more depressive symptoms, MDD, and suicidal ideation or attempts in relation to stressful life events than individuals with two copies of the long allele.
- *This study provided evidence of a gene-by-environment interaction, in which an individual's response to environmental insults is moderated by genetic makeup.*

Pathogenesis of PD and Suicidality in Youth

- Gene candidate studies suggest that genetic vulnerability factors for psychiatric disorders & personality traits partly overlap with more specific factors predisposing to suicidal behavior.
- Personality traits are partly under genetic control and may be closer to the genetic effects than psychiatric disorders.
- Genes contributing to development of personality traits may be involved in transmission of vulnerability factors for suicidal behavior. An example of this is the overlap in characteristics of specific trait genetic factors for PD traits and suicidality, such as impulsivity (Baud, 2005).

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Assessment of Cognitive Personality Traits (PTs)



- Hopeless: Pessimistic, poor future orientation
- Poor self-efficacy: Helpless, low mastery, low sense of control, indecisive, hesitant
- Poor self-esteem: poor perceptions of self (physical, cognitive, interpersonal attributes), worthless, perfectionism, narcissism, inability to tolerate failure and imperfection



Assessment of Affective PTs

- Shy, Inhibited: Low tolerance for novelty, harm avoidance, prone to fear and anxiety
- Withdrawn: Isolated, inner preoccupations, lack of social activity seeking, prefers solitary activities.
- Low mood: sadness, low energy, low pleasure



Assessment of Behavioral PTs

- Under-controlled: impulsive, restless, distractible, irritable, aggressive
- Risk taking: sensation seeking, pleasure in going beyond limits without fear of danger



Clinical Implications

- PDs are risk factors for youth suicidal behavior.
- Cognitive, behavioral, and emotional components (traits) of PDs are identifiable and may be significant features of the underlying mechanisms involved in the stress-diathesis model of suicidal behavior.
- Clinical assessment of PDs and traits are essential in focusing intervention strategies to prevent youth suicidal acts.

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Conclusion

- PDs and personality traits are important features of developmental risk for youth suicidal behavior.
- Personality traits are important for identifying etiological features of youth suicidality.
- Assessment of PDs & traits aid planning treatments to reduce youth suicide risk.
- Development of effective treatments of PDs & traits are essential for youth suicide risk reduction.