YOUTH SUICIDE: 2011 UPDATE

Lanny Berman, Ph.D., ABPP
President, International Association for Suicide Prevention

World Suicide Prevention Day
IASP Seminar
September 10, 2011
Hong Kong
Adolescent Suicide Assessment and Intervention

American Psychological Association, 2006

Research summation to 2005

Alan L. Berman, PhD
David A. Jobes, PhD
Morton M. Silverman, MD
Youth Suicide

- "Young people emerged as the most commonly-researched target group in both the review of published literature and the review of funded grants." (Pirkis et al, 2006: Identifying Research Priorities to be Addressed in the Area of Suicide Prevention)
  - **Youth were a focus of 28%** of all studies accessed, 1999-2006

- US National Library of Medicine Pub Med database
  - >400 references for “adolescent suicide” in 2010.
Youth Suicide: Global Trends

- More than 80% of published research on suicide comes from developed countries.

- Significant methodological limitations
  - Few case-controlled studies
  - Over-reliance on clinical samples
  - Mixed samples of youth who ideate and youth who attempt; poor operational definitions to classify samples
Suicide Rates, 10-19 year olds, Hong Kong, 1996-2008

Data from Hong Kong Census and Statistics Department
Beware Media Hype based on a Single Year’s Data

“Hong Kong youth suicide cases soar”

Asian Correspondent.com, Jan 14, 2010
Male Suicide Rates, Hong Kong, 1995-2006, 15-24 year olds

WHO Mortality Data
Female Suicide Rates, Hong Kong, 1995-2006, 15-24 year olds

WHO Mortality Data
Epidemiology: Rural Youth Suicide

- In most all countries (and, notably, in Australia, USA, China), youth suicide rates are higher in rural/remote areas compared to urban areas.

Why?
...and how might causative explanations frame prevention programming?
A Dozen Hypotheses-- The following risk factors are associated with residence in rural areas:

- Low population density
  Greater social and geographic isolation
- Lower socio-economic status [low educational attainment, poorer economic conditions (more agricultural work, higher unemployment)]
- More accepting attitudes toward suicide? (Renberg et al, 2008)
- Culture of individualism/frontier mentality/negative attitudes toward help-seeking
More hypotheses

- Greater availability of modal methods?
  (firearms in US, pesticides in China)
- Higher proportion of at risk demographic groups
  [Unmarried, males, indigenous peoples (in US, Canada)]
- Greater stigma associated with mental disorders
  Less tolerance of deviant behavior
- Lower rates of mental health service utilization?
  (Renaud et al, 2009)
  Fewer available services and fewer health professionals per capita
And yet more hypotheses

- Higher rates of interpersonal violence?
- Less sophisticated death certification systems (e.g. coroner versus medical examiner in US).
- Lower rates of nonfatal suicide attempts, thus similar overall prevalence of suicidal behaviors.
  - “Attempts” are more lethal
- Higher substance use, especially binge drinking?
Risk Factors for Youth Suicide

- Psychopathology
- Prior suicidal or self-injurious behavior
- Parental/familial problems
- Personality traits and Cognitions
- Poor coping skills
- Social/interpersonal isolation/alienation
- Contagion
- Means Availability
Table 2
Mental Disorders in Cases of Suicide in Young People

<table>
<thead>
<tr>
<th>Disorder</th>
<th>No. diagnoses</th>
<th>% cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mood disorders</td>
<td>376</td>
<td>42.1</td>
</tr>
<tr>
<td>Substance-related disorders</td>
<td>365</td>
<td>40.8</td>
</tr>
<tr>
<td>Disruptive behavior disorders</td>
<td>186</td>
<td>20.8</td>
</tr>
<tr>
<td>Personality disorders</td>
<td>104</td>
<td>11.6</td>
</tr>
<tr>
<td>Adjustment disorder</td>
<td>97</td>
<td>10.9</td>
</tr>
<tr>
<td>Anxiety/somatoform disorder</td>
<td>68</td>
<td>7.6</td>
</tr>
<tr>
<td>Schizophrenia</td>
<td>44</td>
<td>4.9</td>
</tr>
<tr>
<td>Other DSM Axis I diagnoses</td>
<td>42</td>
<td>4.7</td>
</tr>
<tr>
<td>Other psychotic disorders</td>
<td>21</td>
<td>2.3</td>
</tr>
<tr>
<td>Organic mental disorders</td>
<td>4</td>
<td>0.4</td>
</tr>
<tr>
<td>No diagnosis</td>
<td>102</td>
<td>11.4</td>
</tr>
</tbody>
</table>

Note: The excludes all cases where suicidal behavior
The Epidemiology of Depression?

- 20% of adults and 50% of children and adolescents report sub-syndromal sx’s (during recall periods b/w 1 week and 6 months)
Substance Abuse and Suicidal Behaviors in Adolescence

- **Heavy substance users:**
  - 4x increase in completed suicide
  - 31-75% have suicide ideation

- **Suicide attempters:**
  - 10x increased substance use
  - As many as 50% have + blood alcohol at time

- **Suicide completers:**
  - 70% used drugs frequently
  - 50% have + blood alcohol at autopsy
  - Up to 75% fit criteria for drug or alcohol use disorder
Comorbidity

- 91% of suicide attempters had a minimum of 1 mental disorder
- 79% were comorbid or multi-morbid
- 45% had 4+ diagnoses
- Those with >3 diagnoses were 18x more likely to attempt than those with no diagnoses (OR = 18.4)

Based on modified version of Composite International Diagnostic Interview (M-CIDI), N = 3,021 (ages 14-24)

(Wunderlich et al, 1998)
Comorbidity

- Among teens (ages 13-17) screening positive in an emergency department for depression plus alcohol abuse, more than 90% also reported severe suicide ideation and/or a recent suicide attempt. They also reported significantly more impulsivity than controls.

(King et al, 2009)
<table>
<thead>
<tr>
<th>Suicide Attempts</th>
<th>Non-Suicidal Self-injury</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Motive</strong>: Unendurable psychological pain</td>
<td><strong>Motive</strong>: Unpleasant affect; dissociation; body alienation</td>
</tr>
<tr>
<td><strong>Intent</strong>: End pain by death; interpersonal change</td>
<td><strong>Intent</strong>: Relief; to feel alive; alteration of consciousness</td>
</tr>
<tr>
<td><strong>Lethality</strong>: Low to High</td>
<td><strong>Lethality</strong>: low</td>
</tr>
<tr>
<td><strong>Cognitive constriction</strong>: Extreme</td>
<td><strong>Cognitive constriction</strong>: Minimal</td>
</tr>
<tr>
<td><strong>Hopelessness</strong>: Core Issue</td>
<td><strong>Hopelessness</strong>: Minimal</td>
</tr>
<tr>
<td><em>Increased risk of suicide</em></td>
<td><em>Increased risk of suicide</em></td>
</tr>
</tbody>
</table>
If There is a History of Attempt

- Prior nonfatal suicidal behavior increases risk of future attempt and death by suicide. Risk is particularly increased if prior attempt:
  - was recent.
  - was repetitive
  - led to patient expressing regret for not having died.
    - Assess consequent affect state
  - did not lead to a positive and constructive outcome, (e. g. a positive therapeutic alliance and/or a good therapeutic experience).
  - was thwarted (by another) or aborted (by patient), but would have been of high lethality, if acted upon.
Multiple Attempters are a Special High-Risk Group

- Greater likelihood to have diagnosis, co-morbidity, personality disorder
- Younger at time of first attempt (greater chronicity)
  - Lower lethality first attempt (raises question about intent, function of behavior)
  - More impulsive
  - More likely to be associated with substance abuse
- Greater symptom severity
  - Anxiety, depression, hopelessness, anger, suicidal ideation (frequency, intensity, specificity, duration, intent)
- More frequent histories of trauma, abuse
- Have greater vulnerability or susceptibility to be suicidal at times of increased stress
  - Rudd (2006)
### Most Common Family Risks

<table>
<thead>
<tr>
<th>Risk</th>
<th>Cases</th>
<th>Controls</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Family history</strong> of suicidal behavior</td>
<td>17%</td>
<td>5%&lt;sup&gt;2&lt;/sup&gt;</td>
</tr>
<tr>
<td><strong>Parental psychopathology</strong></td>
<td>68%</td>
<td>32%&lt;sup&gt;1&lt;/sup&gt;</td>
</tr>
<tr>
<td>Parent-child relationships – conflict</td>
<td>39%</td>
<td>20%&lt;sup&gt;1&lt;/sup&gt;</td>
</tr>
<tr>
<td>poor communication</td>
<td>30%</td>
<td>12%&lt;sup&gt;2&lt;/sup&gt;</td>
</tr>
<tr>
<td>Parental divorce</td>
<td>48%</td>
<td>33%&lt;sup&gt;2&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

<sup>1</sup>Brent et al., 1994;  <sup>2</sup>Gould et al., 1996

Teens who had run away from home are 3x more likely to report suicide ideation or suicidal behaviors than those who had not.

**Treatment Tip:** In addition to treating the at risk youth, family therapy may be indicated.
The Case of Annie D (1)

- **October 20:** 13 y.o. female admitted to ED post-OD of 20-30, Paracetamol tablets.
- Precipitating event: Conflict with parents over clothing she wears and music she listens to.
- “Better to die than to deal with current problems”
- Hx of anxiety and oppositional-defiant behavior; Hx of anger control problems
- Current sx of depression; grades declining this year and recent in-school detentions
- Makes suicidal threats when angry when demands not met
- Family hx for depression/anxiety (father, older sister)
Annie D (2)

- Transferred from the ED to inpatient psychiatry.
- Dxsof Adjustment disorder w/ depressed mood, and hx of social anxiety.
- Discharged after 3 days -- She was remorseful about her suicide attempt and denied further SI; referred to an outpatient psychiatrist whom she saw three days later, then in weekly, then bi-weekly sessions.
- He diagnosed her as having Adjustment disorder NOS; Oppositional-defiant disorder, and Borderline personality traits, noting ongoing problems with anger and impulsivity; and that she historically made suicidal threats when her demands were not met.
Annie D (3)

- In her weekly sessions she consistently denied having SI. He prescribed an SSRI and a mood stabilizer, but three weeks after prescribing it he learned that her family had not filled the Rx for the mood stabilizer.
- At times, Annie missed her appointment because of one or another problem her parent(s) had in getting her to treatment.
- One night, 15 days after her last appointment, Annie became upset and angry at her parents over the choices offered for dinner, went to her room, sprayed herself with hairspray, and set herself on fire.
Genetic/biological Risk Factors

- Suicidal behavior runs in families (independent of Axis I or Axis II Dxs)
  - Family transmission of aggression, violence, underlying mental disorder, and impulsivity
  - *Family hx of suicidal behavior is as strong a risk factor as is major depression*
- Monozygotic vs. Dizygotic twins
- Adoptive vs. Biological parents
- Serotonin metabolites (e.g., CSF 5HIAA)
  - Only in 16+ year olds
Personality Traits and Cognitive Factors

- Cognitive inflexibility
  - Perfectionism
- Pervasive hopelessness
- Poor distress tolerance
- Perceived burdensomeness
- Negativism, nihilism

Suicidal Belief System
Characterized by Pervasive Hopelessness
"My life is hopeless"

- Unlovability
  "I don't deserve to live"
- Hopelessness
  "I can't solve this"
- Poor Distress Tolerance
  "I can't stand the pain anymore"
- Perceived Burdensomeness
  "Everyone will be better off if I'm gone"
Common Precipitating Stressors – Hong Kong

- Academic – Performance anxiety
- Social
- Financial...
More Important: Poor Coping Skills

- Greater dysregulation
- More impulsivity
- More aggressive, explosive
- More avoidant
- Poor interpersonal problem-solving
  - More rigid, inflexible; More emotional lability
Poor Attachments

- More conflict-laden
  - More fights, arguments

- Dysfunctional groups
  - Marginality
  - Insecure attachments

- More disrupted attachments
  - School suspension
  - School dropout
  - Legal/disciplinary problems
  - Lonely/isolated
Bullying (Kim et al, 2008: Int J Adol Med & Health)

Review of 37 case-comparison studies from 16 countries*

- **Victim of Bullying**
  - Increased risk of SI (OR Range: 1.4-5.6) [12/15 studies]
  - Increased risk of SA and SIB (OR Range: 1.5-5.4) [12/13 studies]
  - Dose-Response relationship: frequent victimization increased risk

- **Perpetrators**
  - Increased risk of SI (OR Range: 1.4-9.0) [8/10 studies]
  - Increased risk of SA and SIB (OR Range: 2.3-9.9) [2/4 studies]

- **Victim-Perpetrators**
  - Increased risk of SI (OR Range: 1.9-10.0) [5/5 studies]

* Prior hx of suicidality considered as a covariant in only 1/37 studies

- Increased risk of attempt, self-injurious behavior, and/or ideation also generally found in victims of bullying in special populations: juvenile offenders, LGB, LD, drug abuse...
Youth Suicide Prevention

- **Cyberbullying**
  - Youth who experienced cyberbullying more likely to attempt suicide (Hinduja & Patchin, *Archives of Suicide Research*, 2010)

- **The role of the Internet**
  - Internet search activity was positively correlated with both intentional self-injury and completed suicide among youth (McCarthy, *Journal of Affective Disorders*, 2010)
  - Half of 90 dedicated Internet suicide sites encouraged, promoted, or facilitated suicide (Biddle et al, *British Medical Journal*, 2008)
Suicide Attempts And Sexual Minority Status (LGBTQQI) In Teens

<table>
<thead>
<tr>
<th>AUTHOR</th>
<th>N</th>
<th>CONTROLS</th>
<th>AGE</th>
<th>OR ATTEMPT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Garafolo et al, 1999</td>
<td>3,365</td>
<td>MA ‘95 YRBS</td>
<td>HS</td>
<td>2.28***</td>
</tr>
<tr>
<td>Faulkner &amp; Cranston, 1998</td>
<td>3,054</td>
<td>MA ‘93 YRBS</td>
<td>HS</td>
<td>2.5***</td>
</tr>
<tr>
<td>Fergusson et al, 1999</td>
<td>1,265</td>
<td>Christ Church Cohort</td>
<td>21</td>
<td>6.2***</td>
</tr>
<tr>
<td>Feldman et al, 2000</td>
<td>161</td>
<td>MECA</td>
<td>14-17</td>
<td>3.4***(b)</td>
</tr>
<tr>
<td>Remafedi et al. 1998</td>
<td>653</td>
<td>MN Ad Hlth</td>
<td>MS&amp;HS</td>
<td>7.1***males</td>
</tr>
<tr>
<td>Van Heeringen &amp; Vincke 2000</td>
<td>396</td>
<td>Belgian School</td>
<td>15-27</td>
<td>6.2***females</td>
</tr>
<tr>
<td>Russell &amp; Joyner, 2001</td>
<td>11,940</td>
<td>Add Health study</td>
<td>7-12 grades</td>
<td>2.4***</td>
</tr>
<tr>
<td>Eisenberg &amp; Resnick, 2006</td>
<td>2,255</td>
<td>MN</td>
<td>9-12 grades</td>
<td>2.1-2.4***</td>
</tr>
</tbody>
</table>

b (disorders associated with suicide)

**There is no empirical data linking sexual minority status to deaths by suicide**
SUICIDE AND CHILD ABUSE

- Sexual abuse is a significant antecedent of suicide attempts (OR = 9.4), particularly among women. The effect appears to be mediated by affective symptoms. (Bebbington et al, 2009)
- Physical or sexual abuse differentiated single-episode self-harmers from adolescents with self-harm thoughts only. (Madge et al, 2011)
- Child sexual abuse promotes suicide and non-suicidal self-injury. (Maniglio, 2011)
- By the time they were 14 years old, 77% of the suicide group had been exposed to abuse, physical and/or sexual violence. (Seguin et al, 2011)
- OR = 4.26 for history of sexual abuse among Taiwanese high school students who deliberately self-harmed. (Tsai et al, 2011)
Acute Risk Factors (If present, these increase risk in the near-term)

- Suicide Ideation (Threatened, Communicated, planned, or Prepared for)
- Current Self-Harm Behavior
- Recent Suicide Attempt
- Excessive or Increased Use of Substances (alcohol or drugs)
- Psychological Pain (acute distress in response to loss, defeat, rejection, etc.)
- Recent Discharge from psychiatric hospitalization
Acute Risk Factors (If present, these increase risk in the near-term)

- Anger, Rage, Seeking Revenge
- Aggressive Behavior
- Withdrawal from Usual Activities, Supports, Interests, School or Work; Isolation (e.g. lives alone)
- Anhedonia
- Anxiety, Panic
- Agitation
- Insomnia
- Persistent Nightmares
- Suspiciousness, Paranoia (ideas of persecution or reference)
- Severe feelings of confusion or disorganization
Acute Risk Factors (If present, these increase risk in the near-term)

- Command Hallucinations Urging Suicide
- Intense affect states (e.g. desperation, intolerable aloneness, self-hate...)
- Dramatic Mood Changes
- Hopelessness, Poor Problem-solving, Cognitive Constriction (thinking in black and white terms, not able to see gray areas, alternatives...), Rumination
- Perceived Burdensomeness
- Feeling Trapped, Like There is No Way Out (other than death); Poor Problem-Solving
- Sense of Purposelessness or Loss of Meaning; No Reasons for living
- Negative or mixed attitude toward help-receiving
- Negative or mixed attitude by potential caregiver to individual
- Recklessness or Excessive Risk-Taking Behavior, Especially if Out of Character or Seemingly Without Thinking of Consequences, Tendency toward Impulsivity
Acute Risk Factors

- Observed in the last 12 months
- Evidence base - not specific to youth
Youth Suicide Prevention

- Increase resiliency or protective factors?
  - Little to no data on increasing protective factors among indicated populations
  - No evidence that protective factors protect under the press of acute risk
Contagion

- Up to 5% of youth suicides occur in clusters
- Imitative suicides; copycat suicides
  - Index event is a model
- Media attention produces a dose-response effect
  - Adolescent suicides 10x more likely to be exposed to suicide in the media and 5 x more likely to be exposed to suicidal behaviors by friends than psychiatric controls (Portzky et al, 2009)
- Celebrity suicides
  - Produce a non-specific loss of hope
Youth Suicide Prevention: Treatment

- Youth at risk are notoriously reluctant to seek (and to receive offered) help
  - Wilson et al (Journal of Youth and Adolescence, 2010): The higher the level of SI and general psychological distress, the greater the avoidance of seeking help
  - High rates of non-adherence
    - Very few youth who died by suicide were found to have been positive for prescribed antidepressants
      - Dudley et al (Australasian Psychiatry, 2010) – 9/574 (1.6%) youth suicides (6 studies) had recent exposure to SSRIs.
Suicide Prevention: Means Restriction

- “…restricting access to lethal means [was] found to prevent suicide.”
  
  (Mann et al., *JAMA*, 2006)

- Paracetamol (UK)
- Insecticide poisoning (India, Sri Lanka, China)
- Charcoal (Hong Kong)
- Firearms (USA, Australia, Canada)
- Bridges (World-wide)

- In most developed countries, hanging* is the leading method of suicide by the young. These deaths occur, for the most part, in the home.

- Can we prevent suicides by hanging (other than in institutional settings like hospitals)?

* hanging, strangulation, and suffocation
Youth Suicide in Hong Kong: Leading Method
Evidence-based Prevention Programs

- National Registry of Evidence-based Programs and Practices

$N = ?$
Evidence-based Prevention Programs

- US National Registry of Evidence-based Programs and Practices

\[ N = 12 \]

(9 of which are youth suicide prevention programs)

www.sprc.org
Youth Suicide Prevention

- **School-based (and University) Prevention**
  - Lower risk youth versus those who have dropped out or been expelled, those who attend alternative schools.

- **Few alternative site-specific prevention program examples**
  - 63% of completers (ages 13-21, N = 151) had contact with Juvenile Court System
    - (Gray et al, 2002)
Youth Suicide Prevention

- Most prevention programs are focused on universal populations; very few are directed toward indicated (high risk) populations.
  - For example, substance abusing youth and the role of acute intoxication (binge drinking) among vulnerable youth.
- *Among adults, substance abuse predicts medical non-adherence, but no parallel study among youth.*
Youth Suicide Prevention

- Primary care practices (GPs, pediatricians...) are ideal settings for early detection and intervention
- Yet, few PCPs have been trained to screen for suicidality among youth
  - Wintersteen (*Pediatrics*, 2010) found that a brief training program increased rates of inquiry about suicide risk, case detection, and referral to outpatient behavioral health care
Youth Suicide Prevention

- A few clinical research studies still in the wings:
  - Safety Planning: -- Effectiveness of and adherence to safety plans with/by youth
  - Suicide Ideation -- Relative frequency of active versus passive SI among youth suicide completers
  - Inpatient Hospitalization -- effectiveness as a treatment intervention with youth at risk
  - Continuity of Care – follow-up to “caring letters” (Motto et al) and “postcards from the EDge” studies (Carter et al) with adolescent populations/parents/new media
  - Youth suicide clusters – prevention versus chasing the white rabbit
Contact Information

berman@suicidology.org
Thank You!

唔該(哂)!