

Federal and Research Issues in Suicide Prevention

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Federal level

- 1999 Surgeon General's Call to Action
- 2000 National Strategy
- 2005 Garrett Lee Smith Act
- 2006 SAMHSA Action Alliance

Challenges of Suicide Research-AFSP

- Suicide is not a single “illness” but a fatal complication of different disorders:
 - Depression
 - Bipolar illness
 - Schizoaffective disorder
 - Anxiety disorders, including PTSD
 - Alcoholism and other substance abuse
 - Adjustment disorders (particularly youth and teens)
 - Personality disorders (BPD)
 - Personality traits (e.g. impulsivity, aggression, etc.)

Challenges...

- Suicide is a behavior, influenced and shaped by different forces:
 - Biological
 - Psychological
 - Social
 - Cultural

Challenges...

- Those doing suicide research use different approaches, methods, and language.
 - Procedures for determining “suicide death” vary across the country (e.g. requirement of a suicide note)
 - “Deliberate self-harm” vs. suicide attempt
 - “Suicidal ideation”, “preoccupation”, frequency? intensity? duration?

Challenges...

- With 11 suicides for every 100,000 people, an enormous sample is needed to have enough suicides to reach valid conclusions.
- Suicide attempts are a risk factor for a suicide death, but a weak predictor: 1 of 10 attempters dies by suicide.
- Suicidal persons are commonly prevented from participating in research by IRBs.

Types of Suicide Research-AFSP

- Neurobiological studies (chemical influences)
- Genetic studies (gene influences)
- Epidemiological studies (risk and protective factors)
- Treatments/Interventions (meds, therapies, ECT, alternative approaches, school/community)
- Instrument development (new assessments)

R-13 Meeting: University of Rochester's Center for the Study of Prevention of Suicide

- This was the final meeting of the five year R-13 scientific consensus process organized by the University of Rochester's Center for the Study of Prevention of Suicide. It was sponsored by a grant from NIMH, NIAAA, NIDA, NINR, CDC, and SAMHSA. This series of meetings has been devoted to developing a clearer understanding of the fundamental issues involved in developing public health approaches to reducing the mortality and morbidity associated with suicide and attempted suicide.
- The past meetings dealt sequentially with prevention efforts in children and adolescents, elders, men in their middle years, and women. This year's two-day meeting was devoted to “reviewing ‘the state of the field’ and broadly considering what we know and defining next steps to drive the field forward.”

Public health and population oriented approaches for suicide prevention

- There was a lot of movement early on (late 90's and early 00's), but generally things have stopped in the suicide prevention movement from a governmental perspective-largely due to loss of Satcher. Little attention paid to National Strategy any longer.
- We know lots about risk factors over lifespan. They don't prevent suicide.
- In Hong Kong there is a huge contagion effect-could be elsewhere too.
- Just finding the suicide gene will not end suicide. This is due to risk factors from environment (families, work, stress, etc.).
- A lot has happened in state regulatory efforts. Movement for screening has begun.

Public health and population oriented approaches for suicide prevention

- There is a significantly increased need for a collaborative effort to prevent suicide (between non-profits individually and between the government and research).
- There is a strong connection between suicide and homicide, in particular domestic violence and suicide, but the society sees this separately. Efforts need to be made to help the public understand this link.
- The PROSPECT study, clearly one of the most important done, says resolutely that treating depression is not enough to prevent suicide.
- We need to disentangle cultural and social influences, as well as individual influences to move the field forward.
- Suicide prevention needs to be community owned, it is their core responsibility.

Cultural and social contributions to suicide prevention

- Messaging is important. Some hit certain cultures wrong, some are offended, others turned away.
- The field needs to look more at cultural diversity in the US (southern US states now 1/3 Hispanic).
- The field needs to recognize and accept different ways non-white culture handles suicide and mental illness. This is also particularly true for the research. Most studies have been done on white population, or done by white researchers, both trying to get into other cultures. Process is not yielding good results.
- Agencies and Boards need more diversity-otherwise field continues to push Caucasian beliefs.
- We must recognize not all cultures view medical model as appropriate for them, their families, or their cultures for healing.

Pharmacotherapy-indicated clinical interventions

- Bipolar disorder-lithium and depakote. Only mental health related medicine found to have some protective, preventive benefits to prevent suicide.
- Schizophrenia-antipsychotics. Clozapine has mixed protective and not-protective effects.
- Antidepressants-cyclics, MAOI's, anti-anxiety meds. Today, generally studies find 30% of adults respond to a placebo, only 50-65% respond to antidepressants. Some studies have found no difference between antidepressants and placebo.
- Field is questioning why exposure to antidepressants are up, but there has not been a reduction in suicide rates.
- In terms of age, there is a tendency for adolescents on SSRIs to have increased rates of attempts. There appear to be only limited benefits to antidepressants for youth and some inherent risks. For adults there does not seem to be an increase in suicide (yet, waiting on FDA investigation results). There also is no evidence for a decrease in suicide rates.
- FDA black box labeled antidepressants for youth, studies underway for adults.

The US uses the Standard Mortality Ratios for understanding and predicting suicide

■ Depression	2035
■ Bipolar	1505
■ Mood disorder NOS	1610
■ Schizophrenia	845
■ Dysthymia	1212
■ Prior suicide attempts	4070
■ All means	3836

Psychotherapy-indicated clinical interventions

- Very little research in this area
- Almost no evidence whatsoever that therapy in any psychological realm of intervention prevents suicide.
- Current research funded by government in process. Results to be published soon. Results are disparaging and damaging to field-very little clinical effect at preventing suicide. Help/preventing suicide may come from case management services at a far higher rate than anything else (i.e. personal connection more than therapeutic intervention may be the only thing that may help).

Creating scientifically based prevention efforts in diverse ethnic and social groups

- African Americans are a large part of the population. Research and programs, practices have ignored this part of the population.
- All of the warnings signs that have been developed were done so as culturally developed warning signs, they don't apply to non-white cultures.
- There are at least 50 million un or underinsured people in US. We should not keep telling all of these people to go see the doctor because they can't pay the bill.
- There are significant media messaging issues around ethnic and cultural differences that are not looked at by those non-profits doing media messaging.

Youth and Young Adults

- School-based suicide awareness curriculum in the 80's-90's was too basic (1 class, tell them warning signs, show a video).
- We need to screen now for all mood disorders, ideation, prior attempts, and substance abuse. (Currently only TeenScreen and SOS approved.)
- Teens are not using hotlines, it's mostly adults that do. Teens using computers.
- Media, education are a big issue and area of concern, in particular around contagion. However, limited study/research exists (Austria, Asia) suggesting a contagion effect does exist.
- There does appear to be a maladaptive coping strategy for teens which may be part of the contagion/copy cat suicides.
- Post-partum depression is now the #1 cause of deaths of young women in the UK.

Youth and Young Adults

- There are many, many questions about risk factors and their implications. Need to focus on protective factors.
- Youth with bipolar disorder have a 25% greater risk of death by suicide.
- Need to look into ratings and ratings systems. The treatment of adolescents with antidepressants and their feeling better does not equal a drop in suicide risk. There is a need for better assessments and better methods of predicting risk.
- Garrett Lee Smith Act: there is still a stigma around suicide and a need for data. The government wants data that is lacking. We need to recognize GLS funding for what it is, a first step. There is a need for federal commitment to expand policy, training, and research in.
- There is a need to raise awareness, but should be done through advocacy right now until there is research into media's effects.
- Norming is a problem. Public awareness and education may normalize suicide. Need to reduce fear and isolation for youth. Pairing faces with suicide is dangerous.

Men in their middle years (20-54)

- Years of life lost is significant, as is financial effects on family and economy.
- Suicide is 4th leading cause of death for this age group.
- Need to look at and talk about protective factors, stay away from risk factors. They have been done too much and will always be there. Protective factors are the best shot at preventing suicide. Medical illnesses learned this long ago.
- There is a very high rate of correlation between domestic violence and suicide. Families and family members who have witnesses or experienced violence have a higher risk of suicide.
- There is a need for more randomized control trials of research for this population.

Women

- Primarily a problem in the young adult/child rearing age (highest rates of suicide in this age group). 19th leading cause of death. Biggest issue is in years of potential life lost (6th vs. 4th for men).
- However, using the Odds Ratios, women are only higher for ideation, not behaviors or attempts.

- Women

- 35-54 rates high

- 36% guns

Men

75-85 rates high

55% guns

Women

- 36% poisoning
 - 17% suffocation
 - Race and culture are a big factor in looking at prevention efforts.
 - We know little about women and suicide. High rates of mental illness, high rates of alcohol abuse, high rates of aggression and violence in life. Most are higher educated. Lower risk if pregnant or living at home with a child.
 - The more a woman suffers in a domestic violent relationship the higher likelihood of her suicide.
 - Need to move beyond depression. Increase awareness (suicidal behaviors are present with serious repercussions for girls and women); need interventions beyond depression (too much focus on diagnosis and just depression); need to look at methodology for future research studies to expand cultural and ethnic diversity.
- 20% suffocation
17% poisoning

Elders

- Move away from risk factors because they all have them. Look more toward protective factors (living alone, serious illness, independence, social interaction, etc.).
- Stair-model for later life suicide is new thinking in prevention.
- Research needs to reconsider where it finds seniors.
- Research now looking into if there is a neurobiologic process for senior suicide, what gender differences are there, and what is the role of social factors in suicide.
- Field needs to address assisted/rational suicides. No research, evidence-based practices for anything around this issue in the field.

R-13 Summary and Future Directions

- Need to move from depression and psychiatric illnesses because the numbers don't support program efforts here.
- Need to move toward protective factors and away risk factors because it may be the best way to prevent suicide (stair model).
- All groups need more culturally, racially, and ethnically sensitive awareness, education, and use in research.
- The NCSP needs to step up to the plate and do something for the field.
- National Strategy is gathering dust-for many reasons-who will look at this?
- There's been lots of research in the last 10 years, but there remain many gaps in our knowledge.
- There is likely not a suicide gene, but rather a number of factors that go into a suicide.

New information following R-13

STAR*D

- Sequenced Treatment Alternatives to Relieve Depression project
- 7 year, \$34.8 million, NIMH
- 4,041 patients (18-75 years of age) diagnosed with major depression with the HAM-D
- 4 treatment approaches: Celexa; Wellbutrin, Zoloft, Effexor or CT; Remeron or Nortriptyline, Lithium or thyroid hormone; Parnate

STAR*D

- Major depression is very common in clinical practice; associated with a number of environmental factors; and suicide attempts.
- The only difference between chronic and non-chronic depression was level of disability (effect of symptoms was the same).
- Women had earlier onset (24.3 vs. 26.5 years)
- Older patients reported more gastrointestinal problems

Bipolar Disorder

- Decreased risk of suicides and attempts during long-term lithium treatment found among meta-analysis of 31 studies, Baldessarini et al. *Bipolar Disorders*, 2006

The Genetic Basis for Suicidal Behavior Philippe Courtet, MD, Ph.D
Psychiatric Times, August 2005

- Roy and Segal (2001) reported an increased concordance for suicide in MZ and DZ twins (18% vs. 0.7%)
- Schulsinger et al. (1979) reported a six fold higher rater of suicide in biological relatives

Table

Serotonin-Related Candidate Genes Investigated in Suicidal Behavior

Gene	Studies
Tryptophan hydroxylase (TPH1)	In two meta-analyses: association in whites (Bellivier et al., 2004; Rujescu et al., 2003)
Monoamine oxydase A (MAOA)	Few studies
Serotonin transporter gene (5-HTTLPR)	Meta-analysis: this functional polymorphism is associated with suicidal behavior (Lin and Tsai, 2004)
Receptor 5-HT _{1A}	Few studies
Receptor 5-HT _{1B}	Few studies
Receptor 5-HT _{2A}	Meta-analysis: no association (Anguelova et al., 2003)

Source: Courtet P (2005)

Genetic summary...

- “Suicidal behavior is probably a complex hereditary disorder determined by the action of several genes interacting with environmental factors.”
- The jury is still out...genes definitely play a role in suicidal behavior (particularly around aggression, anxiety, etc.) but to what degree, exactly how, and which ones is not yet known.

Other Therapies

- Repetitive Transcranial Magnetic Stimulation
rTMS (“electrodeless electrical stimulation”),
Mark George, MD--may increase cerebral blood
flow and neuronal excitability
- Vagus Nerve Stimulation-mixed research results
- Ketamine controversy (not approved for
depression)
- Non-conventional biological treatments

Table 1**Representative Nonconventional Biological Treatments
of Depressed Mood**

Natural Product	Comments
St. John's wort	<ul style="list-style-type: none">• 300 mg tid of 0.3% hypericin extract• Caution against concurrent use with protease inhibitors or anticoagulants
S-adenosyl-L-methionine (SAME)	<ul style="list-style-type: none">• 400 mg bid to 800 mg tid alone or in combination with antidepressants• Best bioavailability if taken before meals• Caution: Monitor for agitation• Caution: Avoid in patients with bipolar disorder
5-hydroxytryptophan (5-HTP)	<ul style="list-style-type: none">• 200 mg to 600 mg daily alone or in combination with antidepressants• Caution: Monitor for serotonin syndrome when used in combination with an SSRI• Moderately sedating and better tolerated at bedtime
Omega-3 essential fatty acids	<ul style="list-style-type: none">• 1 g/day to 9 g/day EPA fraction most effective• Preliminary findings suggest efficacy alone or in combination with conventional antidepressants• Caution: May prolong bleeding time when taken with aspirin• Caution: Certain brands may cause hypervitaminosis A
Folate	<ul style="list-style-type: none">• 800 µg to 5 mg• Improves mood when used alone• Improves response to conventional antidepressants• May enhance antidepressant effect of SAME
Vitamin B ₁₂	<ul style="list-style-type: none">• 1 mg/day• Improves mood and enhances energy when used alone• May enhance antidepressant effect of SAME
Acetyl-L-carnitine (ALC)	<ul style="list-style-type: none">• 500 mg/day to 2 g/day in divided doses• Note: Only studies on depressed mood in elderly or elderly demented• Note: Possibly effective in mild dementia (mechanism of action believed to involve correcting cholinergic neurotransmitter deficit in Alzheimer's disease)

EPA=eicosapentaenoic acid

Source: Lake J (2005)

Non-conventional summary...

- “Many complementary and alternative treatments probably achieve beneficial clinical results by improving feelings of well-being and enhancing mind-body health in general.”
- Many non-conventional treatment modalities have been validated by consistent positive results from controlled double-blind studies.

James Lake, MD, Psychiatric Times, Nov. 2005

Childhood adversity factors associated with elevated risk for suicidal behavior

Childhood maltreatment or victimization

Bullying, school violence, criminal victimization

Physical abuse

Psychological abuse, verbal abuse, or scapegoating

Sexual abuse

Problematic parenting or family environment

Affectionless or overprotective parenting

Chronic or severe conflict with family members

Harsh physical punishment

Parent-child attachment difficulties

Poor communication with family members

Childhood adversity factors associated with elevated risk for suicidal behavior

Socioeconomic hardships

Change in residence

Educational and occupational problems

Low parental educational aspirations

Poverty

Parental unemployment

Other childhood adversities

Difficult relationships with friends and peers

History of mental disorder or suicide attempts

History of suicidal behavior among family members

Parental or familial psychopathology

Parent marital dysfunction

Legal or disciplinary problems

Loss of parent/caregiver due to death or separation

Conclusions

- Suicide is a highly complex problem
- Significant funding efforts are needed in the field of suicide and suicide prevention
- There are promising areas of study, but little \$\$ support