Science and Suicide Prevention: Contributions, Challenges, and Controversies

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Advances, Concerns and Controversies

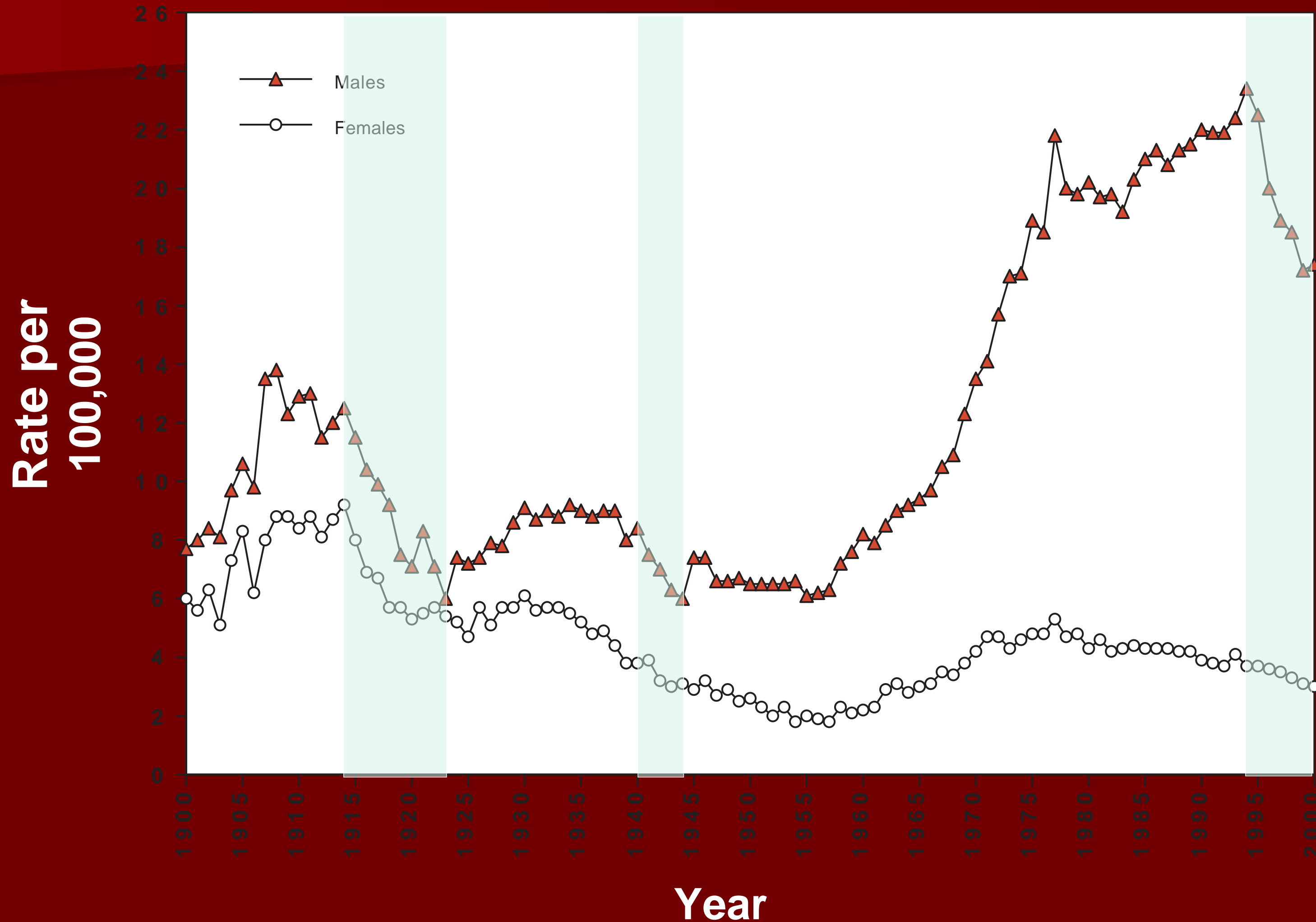
- Decline in suicide rates and FDA reclassification studies
  - Adolescent study completed
  - Adult in progress
- Consensus panel on warning signs
- Multiple attempters as distinct group
  - Acute versus chronic risk distinctions
  - Repeated attempts during treatment
- Patient agreements and informed consent
  - The question of death and attempt rates

Decline in Suicide Rate

- Only the third decline in past century
- What factors have made the most difference?
  - Education and training?
  - Improved approaches to assessment?
  - Medications?
  - Therapeutic interventions?

FLUCTUATIONS IN 20TH-CENTURY YOUTH SUICIDE RATES

— UNITED STATES, AGES 15–24 —



Anderson 2002, CDC Wonder 2002, USDHEW 1956, Vital Statistics U.S. 1954–1978

U.S. Food and Drug Administration
CENTER FOR DRUG EVALUATION AND RESEARCH

Warning Label

Suicidality in Children and Adolescents

Antidepressants increased the risk of suicidal thinking and behavior (suicidality) in short-term studies in children and adolescents with Major Depressive Disorder (MDD) and other psychiatric disorders. Anyone considering the use of [Insert established name] or any other antidepressant in a child or adolescent must balance this risk with the clinical need. Patients who are started on therapy should be observed closely for clinical worsening, suicidality, or unusual changes in behavior. Families and caregivers should be advised of the need for close observation and communication with the prescriber. [Insert established name] is not approved for use in pediatric patients. (See Warnings and Precautions: Pediatric Use) [This sentence would be revised to reflect if a drug were approved for a pediatric indication(s). Such as, [Insert established name] is not approved for use in pediatric patients except for patients with [Insert approved pediatric indication(s)]. (See Warnings and Precautions: Pediatric Use)]

Pooled analyses of short-term (4 to 16 weeks) placebo-controlled trials of 9 antidepressant drugs (SSRIs and others) in children and adolescents with major depressive disorder (MDD), obsessive compulsive disorder (OCD), or other psychiatric disorders (a total of 24 trials involving over 4400 patients) have revealed a greater risk of adverse events representing suicidal thinking or behavior (suicidality) during the first few months of treatment in those receiving antidepressants. The average risk of such events in patients receiving antidepressants was 4%, twice the placebo risk of 2%. No suicides occurred in these trials.

- **Clinical Worsening and Suicide Risk:** Patients and their families should be encouraged to be alert to the emergence of anxiety, agitation, panic attacks, insomnia, irritability, hostility, impulsivity, akathisia, hypomania, mania, other unusual changes in behavior, worsening of depression, and suicidal ideation, especially early during antidepressant treatment and when the dose is adjusted up or down. Families and caregivers of patients should be advised to observe for the emergence of such symptoms on a day-to-day basis, since changes may be abrupt. Such symptoms should be reported to the patient's physician, especially if they are severe, abrupt in onset, or were not part of the patient's presenting symptoms. Symptoms such as these may be associated with an increased risk for suicidal thinking and behavior and indicate a need for very close monitoring and possibly changes in the medication.

Problems and Implications

- Problems
  - No suicides across studies
  - Small number of adverse events
    - 176 (clinical arm) versus 88 (placebo arm)
  - Diagnostic questions (i.e. bipolar illness)
  - Brief duration of follow-up
- Possible Implications?
  - Reduced use of medications
  - Generalization of concerns to treatment in general

Prediction is hard, especially when you're talking about the future.

Yogi Berra

Advances in Assessing Risk: From Risk Factors to Warning Signs

- Problems with risk factors construct
  - Limited clinical and practical relevance
    - “acute risk” defined as 12 months
    - time periods range from 1 to 20 years
  - Fails to differentiate variable markers for near and long-term risk for suicide
  - Can result in confusion in understanding and application and risk categories
    - Perpetuating
    - Predisposing
    - Precipitating

Differentiating Risk Factors and Warning Signs

TABLE 1
Differentiating Warnings Signs and Risk Factors for Suicide

Characteristic Feature	Risk Factor	Warning Sign
Nature of Relationship to Suicide	Distal	Proximal
Definitional Specificity	Defined constructs (e.g., *DSM-IV* diagnosis)	Poorly defined constructs (e.g., behaviors such as buying a weapon)
Empirical Foundation	Empirically derived	Clinically identified/derived
Population	Population dependent (i.e., clinical samples)	Individually applied
Timeframe	Implies enduring or longer-term risk	Implies imminent risk
Nature of Occurrence	Static nature (e.g., age, sex, abuse history)	
Episodic or transient nature (i.e., warning sign resolves)		
Application Context	Can be individually explored and applied	Likely useful only within constellation
Implications for Clinical Practice	Limited implications for intervention	Specific intervention demanded
Experiential Character	Objective	Subjective
Intended Target Group	Experts and clinicians	Lay public and clinicians

Consensus Panel Recommendations

TABLE 2
Consensus Warning Signs for Suicide

Are you or someone you love at risk for suicide? Get the facts and take action.

Call 9-1-1 or seek immediate help from a mental health provider when you hear, say or see any one of these behaviors:

- Someone threatening to hurt or kill themselves
- Someone looking for ways to kill themselves: seeking access to pills, weapons, or other means
- Someone talking or writing about death, dying, or suicide

Seek help by contacting a mental health professional or calling 1-800-273-TALK for a referral should you witness, hear, or see anyone exhibiting any one or more of these behaviors:

- Hopelessness
- Rage, anger, seeking revenge
- Acting reckless or engaging in risky activities, seemingly without thinking
- Feeling trapped—like there's no way out
- Increasing alcohol or drug use
- Withdrawing from friends, family, or society
- Anxiety, agitation, unable to sleep, or sleeping all the time
- Dramatic changes in mood
- No reason for living; no sense of purpose in life

Warning Signs for Suicide

Warning Signs Seen as 'Prompts'

Mnemonic Fits on Wallet Cards:

I	Ideation
S	Substance abuse
P	Purposelessness
A	Anxiety
T	Trapped
H	Hopelessness
W	Withdrawal
A	Anger
R	Recklessness
M	Mood changes

Source: American Association of Suicidology

Warning Signs for Suicide

- **I Ideation –**
  - threats or talk of wish to hurt or kill self;
  - seeking access to firearms, available pills or other means to hurt or kill self;
  - talk or writing about death, dying or suicide
- **S Substance Abuse –** increasing alcohol or drug use
- **P Purposeless –** expressing no reasons for living; feeling burdensome
- **A Anxiety –** Agitation, restlessness, unable to sleep
- **T Trapped –** feeling that there is no way out; black or white thinking: *Life sucks, death is the option*
- **H Hopelessness –**
  - Communications describing sense of self as lacking value, others as not caring, and the future as unchanging;
  - use of absolute negative words: “things will *never* be any different,” “I *always* screw up,” “*Nobody* cares.”

- **W Withdrawal** –
  - from friends, family, society; sleeping all the time; anhedonia
- **A Anger** -
  - uncontrolled and excessive expressions of anger, rage, or homicidal ideation; statements re seeking revenge
- **R Recklessness** –
  - acting reckless; engaging in risky activities seeming without thinking
- **M Mood changes** –
  - dramatic shifts from typical mood state

Hirshfield's Perspective

"The physician must decide whether the risk is imminent (48 hours or less), short term (within days or weeks), or long term"

The risk of suicide is imminent "if the patient has expressed the intent to die, has a plan in mind, and has lethal means available"

(AAS Warning Signs!!)

Hirshfield, Robert (1998). The suicidal patient. Hospital Practice 33: 127-128.

Initial Findings: Warning Signs on the Internet

- Google search: "warning signs" and "suicide"
  - 183,000 hits
- Tabulation of 1st 50 of randomly selected 200 sites
  - 138 distinct warning signs
    - 63 were unique to one site
- Of 200 web sites sampled
  - *3266 warning signs*

Web Site Warning Signs

- Conclusions:
  - Lack of consensus
  - Inconsistent
    - Constellations
    - Descriptions
    - Application
  - Lack of empirical support
  - Are non-specific (e.g., "visiting or calling people one cares about"; "neurotransmitters")

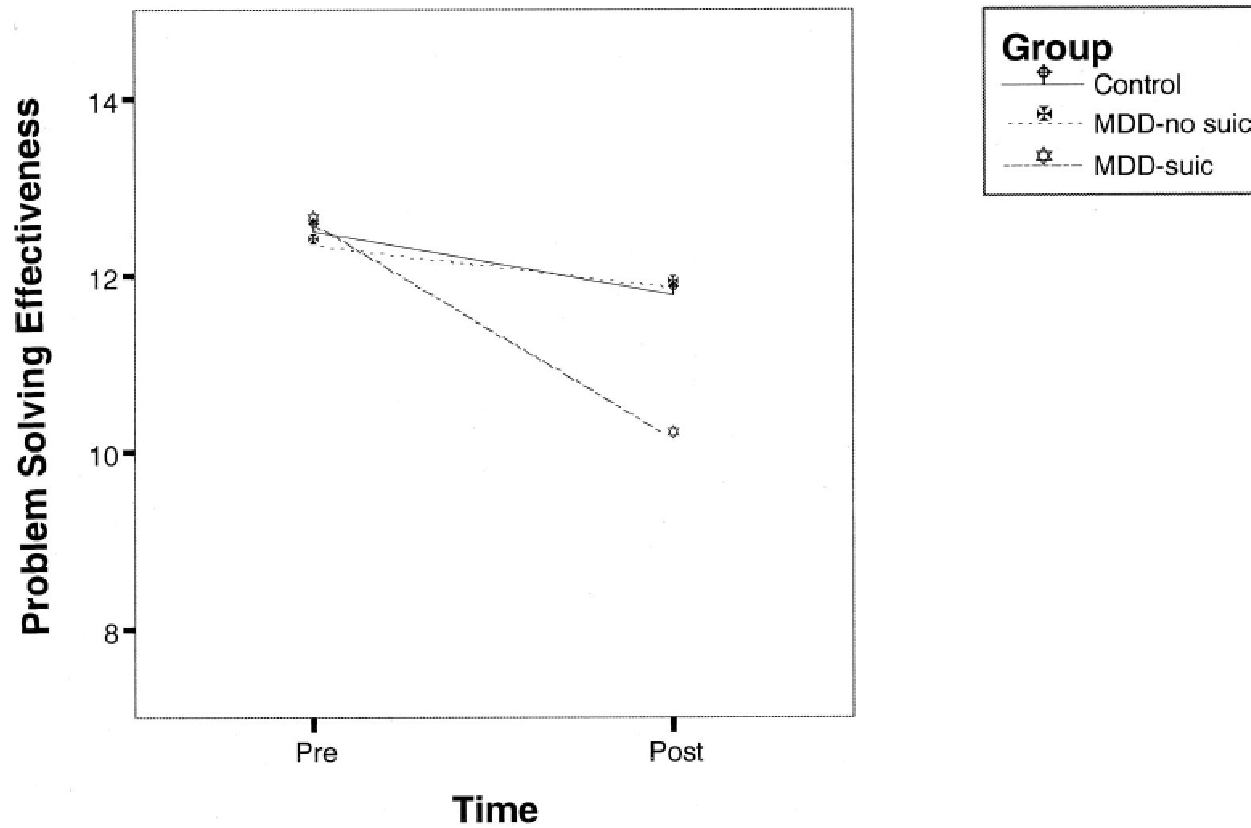
Initial Findings: Ease of Recall, Effectiveness, and Emotional Impact

- Improved awareness, recognition, likelihood to act without stigma
- As easy to recall as warning signs for heart attack, stroke and diabetes
- No significant emotional impact (heart attack, stroke, and diabetes)

Focus of Future Research: Impairment in Cognitive Fluency

- Understanding *mechanism of action*
- The construct of *cognitive fluency*
  - The ability to evaluate options and alternatives with flexibility and reason
- Impact of current warning signs
  - Impairment of cognitive fluency
    - Anxiety, ideation, purposelessness, substance abuse, anger, recklessness, mood changes
  - Need broad, well defined and operationalized construct

Williams et al, Journal of Abnormal Psychology, 2006



Implications for Science and Practice

- Uniform set of empirically-supported warning signs
- Application of clinically relevant time periods for imminent or near-term risk
  - Recognition that information needs to be useful and applicable in clinical context
- Recognition and understanding of variable nature of risk (critical assumptions)
  - High risk endures for limited periods of time
    - i.e. there are distinct "episodes" of risk
  - There are identifiable precursors to suicide and suicide attempts
  - There are potentially (and likely) different markers of acute and enduring (or chronic) risk for suicide
- Clear impact on education and training efforts
  - Clinical settings
  - Public health

Risk Factors for Suicide (OR's): The Question of Risk Resolution?

Qin & Nordentoft, 2005; Cheng et al, 2000, Shaffer et al, 2000

- Discharge from psychiatric hospitalization
  - Last week 278 x
  - Last month 133 x
  - Last year 34-61 x
- Prior attempt (adol) 22.5 x
- Substance abuse (adol) 7 x
- Firearm in home 5 x
- Chronic renal failure – dialysis 14.5 x
- On disability/unemployed 2-6 x

- Those at greatest risk following discharge:
  - Affective disorders (with symptom improvement)
  - Brief hospital stays
  - Limited external resources

Multiple Attempters as a Special High-Risk Group (in comparison to single attempters/ideators)

- Distinctive in every way
  - 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
  - Distinctive characteristics of crises

Low Thresholds for Crisis Triggering (internal vs. external)

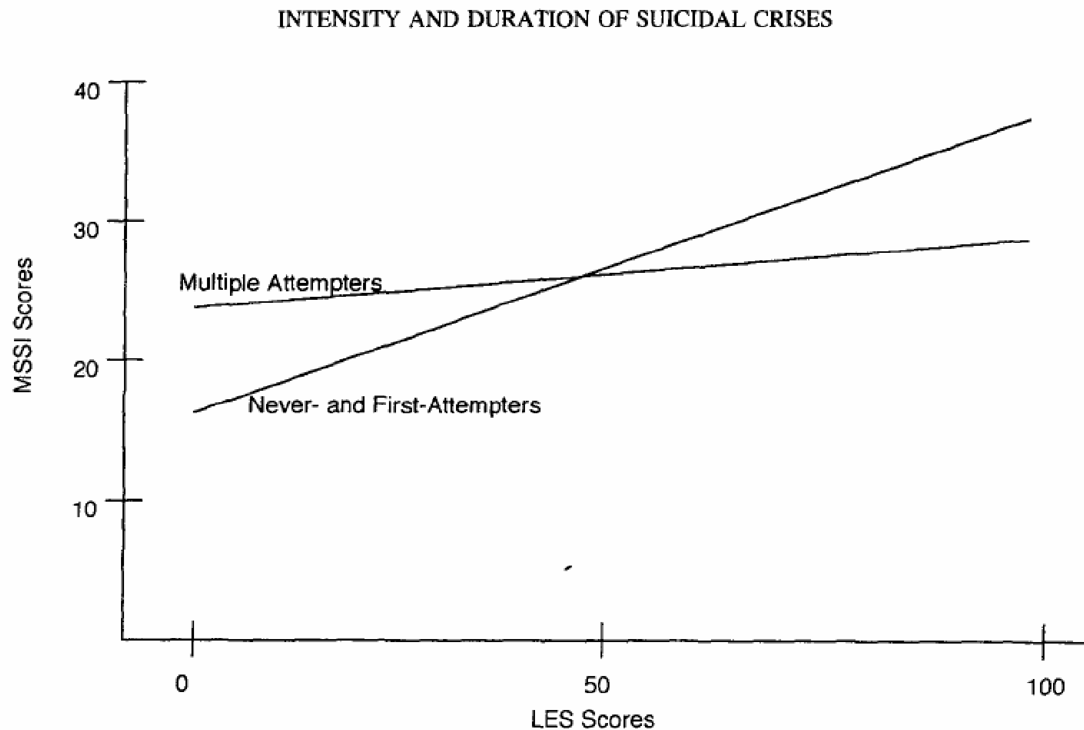


Figure 1. Regression lines for Modified Scale for Suicide Ideation (MSSI) scores as a function of Life Experiences Survey (LES) scores among never- and first-attempters and among multiple attempters.

Crisis duration is longer with clear precipitant

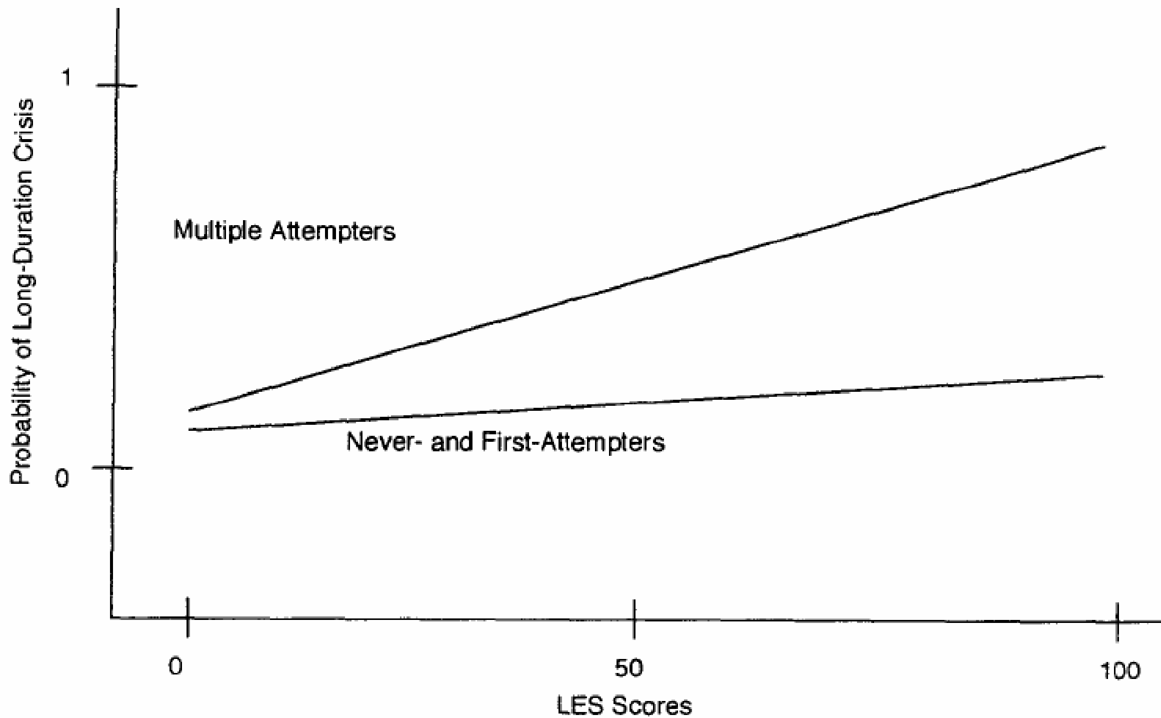
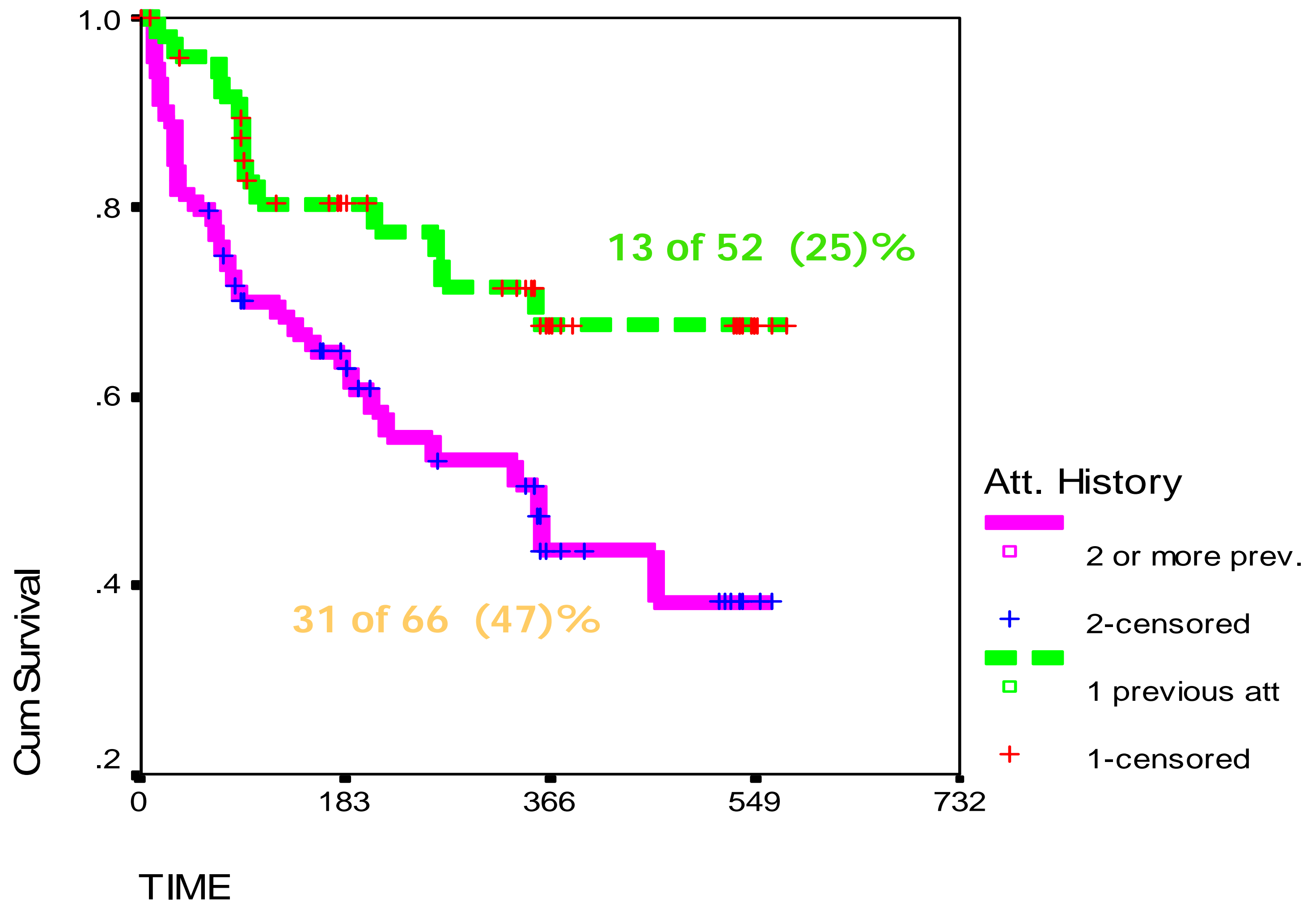
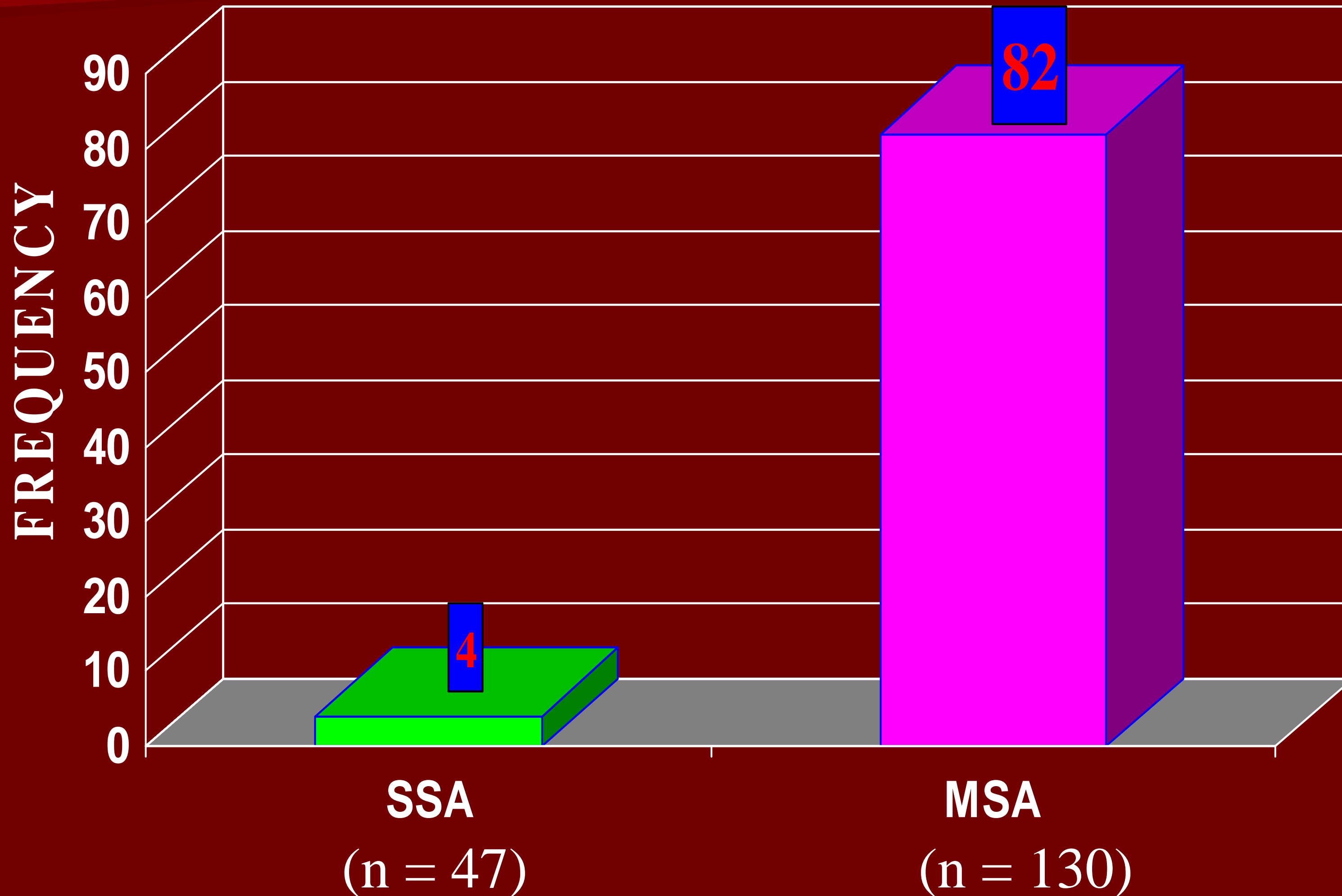


Figure 2. Regression lines for probability of long-duration crisis as a function of Life Experiences Survey (LES) scores among never- and first-attempters and among multiple attempters.

Survival Curves for Days until Subsequent Suicide Attempt for Patients with 1 previous versus 2 or more previous suicide attempts



Total Number of Subsequent Suicide Attempts by Single v. Multiple Attempters



(n = 47) (n = 130)

Suicide and Suicide Attempt Rates

- Bipolar Disorder
  - 25-50% suicide attempt
  - 10-20% suicide
    - *Goodwin FK, Jamison KR. Manic Depressive Illness. 1990.*
- Schizophrenia
  - 20-40% suicide attempt
    - Meltzer & Fatemi, 1995
  - 9-13% suicide
    - Caldwell & Gottesman, 1990
- Major Depression
  - 2% ever treated in outpatient setting will suicide
  - 4% ever treated inpatient setting will suicide
    - 7% of men with lifetime history will suicide
    - 1% of women with lifetime history will suicide
    - NIMH

Conclusions and Implications

- Risk Classification
  - Acute Risk (1 or fewer previous attempts)
    - Mild
    - Moderate
    - Severe (objective markers of intent, none stated)
    - Extreme (objective and subjective intent)
  - Chronic Risk (2 or more previous suicide attempts)
    - Low threshold for activation
    - Increased likelihood of subsequent attempt
- Informed consent and patient agreements
  - Nature of risk, acute versus long-term (chronic)
  - Expectations of risk in the treatment of high-risk populations
  - Standard of care

Agreements with Suicidal Patients: Expectations and Recognition of Risk

- How do they relate to informed consent?
  - Why don't we routinely quote death and attempt rates in informed consent statements?
- No-suicide contract
  - No-harm contracts
  - Safety agreements
  - Suicide prevention contract
  - *Means of gaining a patient's commitment to not act on suicidal or self-destructive urges and to inform clinicians of the status of those urges* (Miller, 1999)
  - *Agreement between the patient and clinician in which the patient agrees not to harm herself and/or seek help when in a suicidal state and she believes she is unable to honor the commitment*

An Empirical Foundation? A Review of the Literature

- A total of 21 articles identified
  - Frequency of use
  - Opinions (favorable, non-favorable)
    - Patients
    - Clinicians
  - Perceived utility
  - Potential problems, liability concerns

- Three useful empirical studies
  - Drew (2001)
    - Patients with no-suicide contracts more likely to engage in self-harm (retrospective chart review)
  - Kroll (2000)
    - 41% of clinicians using no-suicide contracts had patients die by suicide or make serious attempts while under an agreement
  - Kelly & Knudson (2000)
    - *No empirical evidence supports the effectiveness of no-harm contracts in preventing suicide.*

General Conclusions from the Literature

- Agreements routinely used
- No empirical evidence of effectiveness
  - Reducing targeted behaviors?
    - Direct and indirect markers of suicidality
  - Increasing use of emergency services?
  - Facilitating improved therapeutic relationship or general treatment outcomes?
- Not theoretically driven or related

Some Troubling Trends and Questions?

- Evidence of lack of formal training and theoretical models for use with suicidal patients
- Evidence of increasing use with those at higher risk
  - Despite a lack of data on effectiveness
- Evidence of high-rates of attempts/suicides while in use
  - 41% made an attempt, completed suicide

Areas of Identified Need

- Theoretical models driving use of contracts/agreements with patients
  - When is it used?
  - Why?
  - Updated?
  - Eliminated?
- What are the essential elements of an agreement?
- Differential impact across patient type?

- Outcome data re:
  - Impact on target behaviors
    - Suicidal
    - Use of crisis/emergency services
    - Other treatment targets?
  - Therapeutic alliance
  - Overall treatment process

Elements of a Good Agreement?

- Defined as a commitment to
  - Living
  - Treatment and care
- Incorporates common goals rather than restriction of freedom
  - Symptom reduction
  - Improved quality of life
- Incorporates a crisis management or response plan
- Is viewed as complimentary to informed consent
- Specifically identifies responsibilities
  - Patient
  - Clinician

- Includes behaviors for which the patient has demonstrated competence
- Is modified routinely
  - At request of patient or clinician
  - When indicated by clinical markers
- Is individualized

Commitment to Treatment Statement

- *I agree to make a commitment to the treatment process. I understand that this means I have agreed to be actively involved in all aspects of treatment including:*
- *attending sessions (or letting you know when I can't make it)*
- *voicing my opinions, thoughts, and feeling honestly and openly, whether negative or positive*

CTS (continued)

- *being actively involved* ***during*** *sessions*
- *completing homework assignments*
- *experimenting with new behaviors and new ways of doing things*
- *taking medication as prescribed*
- *implementing my crisis response plan.*

CTS (continued)

- *I also understand that, to a large degree, my progress depends on the amount of energy and effort I make. It it's not working, I'll discuss it with my therapist. In short, I agree to make a* ***commitment to living for…..***
- ***I also understand that we are working toward the common goals of:***
  - *Reducing my symptoms and upset*
  - *Improving my quality of life*

Crisis Response Plan

- *When I find myself making plans to suicide, I agree to do the following:*
  - *1. Use my hope box.*
  - *2. Review my treatment journal*
  - *3. Do things that help me feel better for about 30 minutes, including taking a bath, listening to music, and going for a walk*
  - *4. Repeat all of the above*
  - *5. If the thoughts continue,get specific, and I find myself preparing to do something, I call the emergency number XXX-XXXX*
  - *6. If I'm still feeling suicidal and don't feel like I can control my behavior, I go to the emergency room*

Informed Consent, Agreements and the Question of Risks?

- Mental Health professions in stark contrast to medical professionals in statement of risks of care/treatment
  - Medical procedures routinely incorporate risk estimates (e.g. oncology, surgery, medications)
- Expectations of risk for death and injury differ for mental health professionals?
  - Why?
  - Clear data to suggest risk of suicide and suicide attempt for those with identified disorders and pursuing treatment
  - Clearly relates to the standard of care and public expectations

What is an Accurate Statement of the Risk of Treatment?

- Should we say something like this:
  - *If you've experienced suicidal thoughts and/or engaged in suicidal behavior in the past (or are currently experiencing one or both of these problems), the possibility of a suicide attempt during outpatient care exists. Again, the rates of suicide and suicide attempts during outpatient treatment are difficult to estimate, but are relatively low for those with no or one previous suicide attempt, and noticeably higher for those with 2 or more previous suicide attempts. In particular, for individuals that have chronic problems involving suicidal behavior (e.g. repeated suicide attempts), one of the risks of outpatient psychotherapy is death (by suicide), although this is infrequent and relatively rare in outpatient care. We will talk more specifically about the issue of suicidal thoughts and behavior in our commitment to treatment agreement. In particular, we'll come to an agreement about how to address the emergence of suicidality in treatment, particularly the use of a crisis response plan.*