The VISN 2
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Suicide Prevention: The Evidence and the Gaps in the Published Literature

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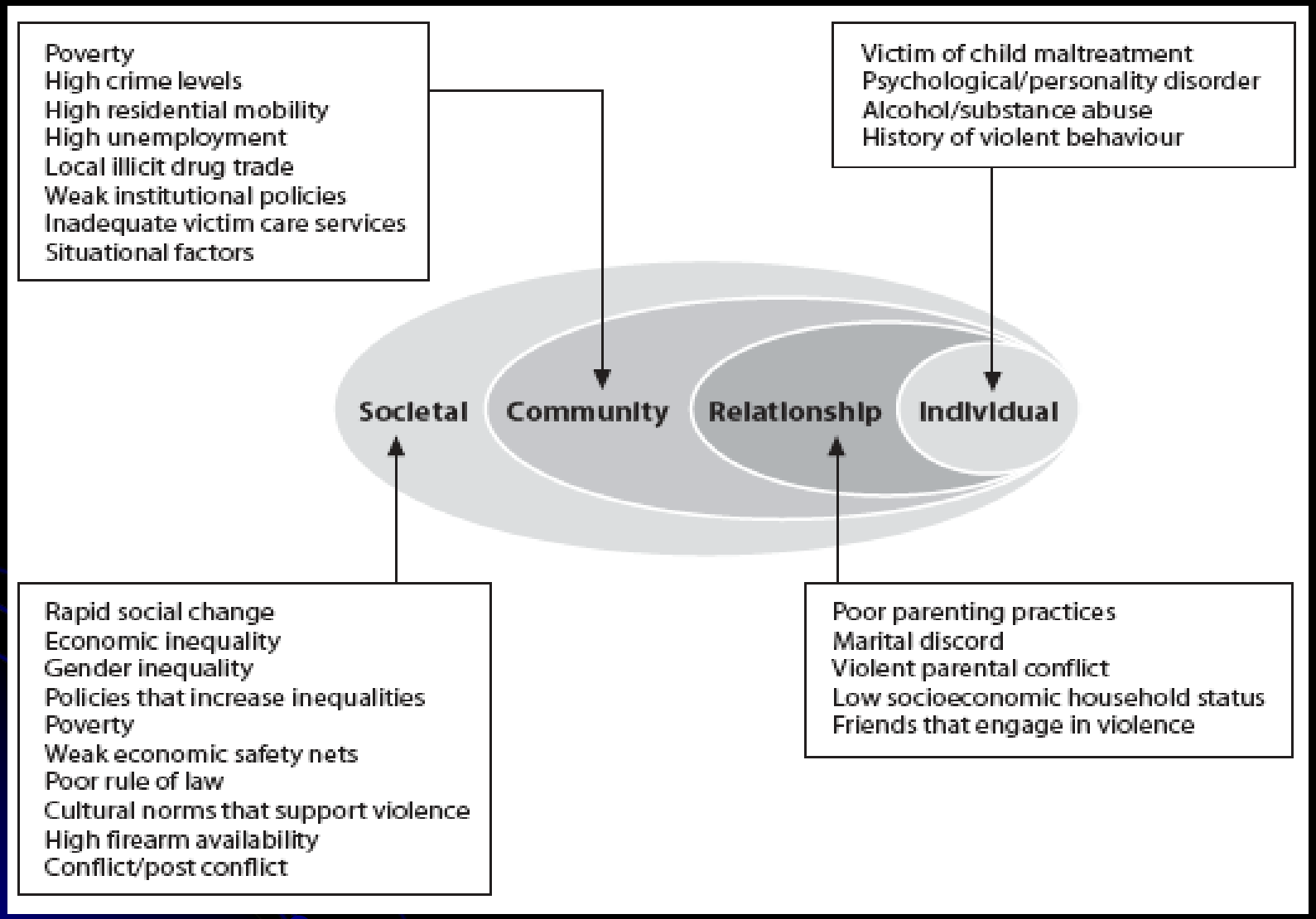
Ecological model showing shared risk factors for sub-types of interpersonal violence



From: "Preventing Violence: A
World Report on Violence and

Efforts to Predict Who Will Die by Suicide

Why we know so little about suicide prevention - from the Clinical Viewpoint

- Clinicians - No existing algorithms to determine when a Veteran is a risk at any given moment in time
- We have suggestive, but not sufficient evidence, to conclude which medications work for suicidal individuals
- We have suggestive, but not sufficient evidence, to conclude that brief interventions may work for some suicidal individuals
- We have suggestive, but not sufficient, evidence, to conclude, which psychotherapies work for suicidal individuals
- We have suggestive, but not sufficient evidence, to conclude that hospitalization may prevent suicide

Why we know so little about suicide prevention - from a Prevention Science Viewpoint

- **Researchers do not typically use a common language among themselves or with clinicians.** Suicidal behavior exists along a continuum from thinking about ending one's life, to developing a plan, to non-fatal suicidal behavior, to actually ending one's life.

Defining Suicidal Behaviors

- *CDC release of Surveillance*: *Uniform Definitions and Recommended Data Elements*. Current CDC definitions of suicidal behaviors are below:
- Suicide ideation: Thoughts of harming or killing oneself. The severity of suicidal ideation can be determined by assessing the frequency, intensity, and duration of these thoughts.

Defining Suicidal Behaviors

- Suicide attempt: A non-fatal, self-inflicted estructive act with explicit or inferred intent to die
- Suicide: Fatal self-inflicted destructive act with explicit or inferred intent to die
- Self-inflicted injuries: Refers to suicidal and non-suicidal behaviors such as self mutilation

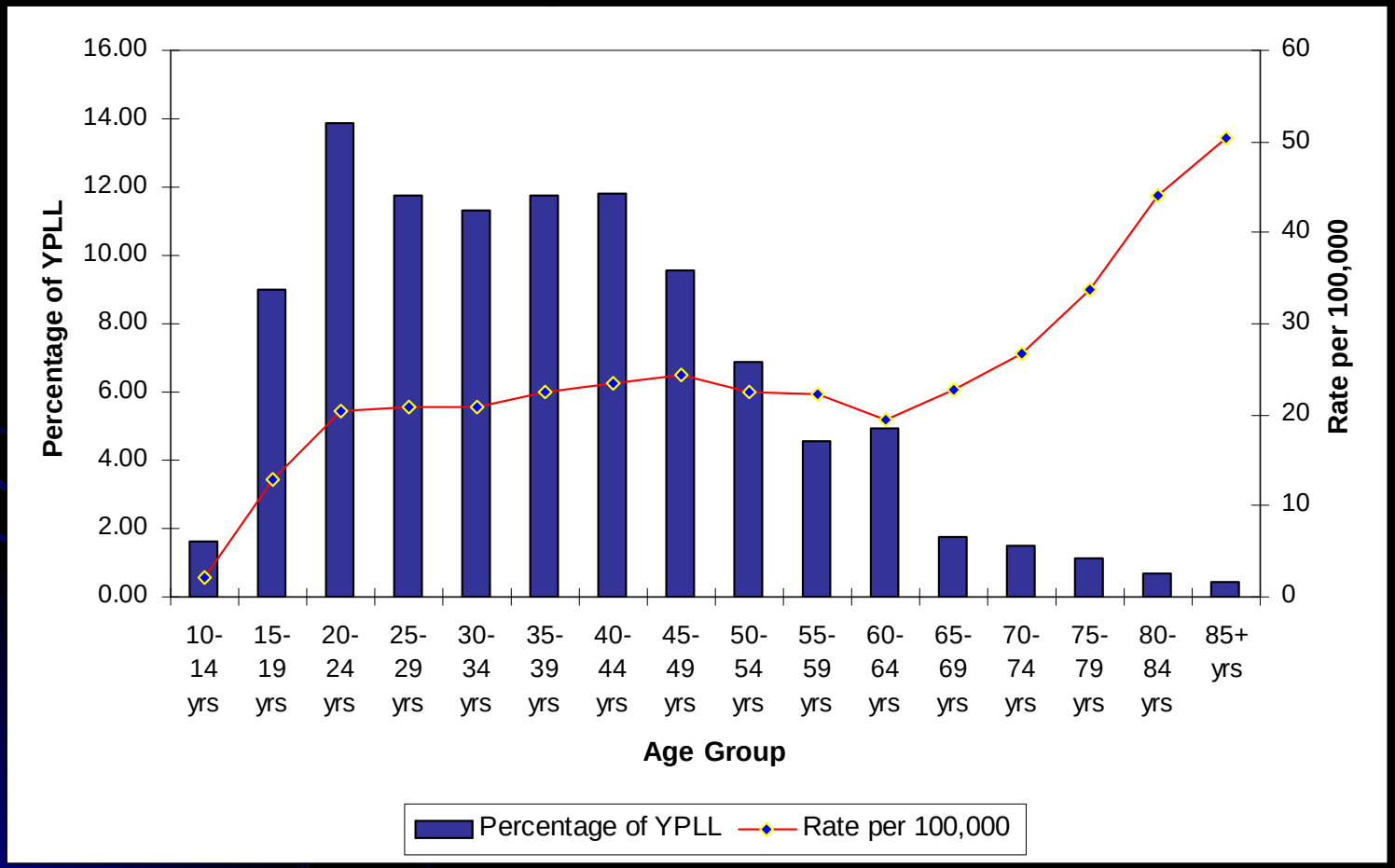
Rare Outcome

- **Suicide is relatively infrequent.** Although suicide accounts for 1.4% of all deaths in the US, and is the 11th leading cause of death for all ages, when studying any group over a period of time, the numbers of actual suicides will be low (overall, about 1 death per 10,000 individuals per year).

Rare Outcome

- Only very large studies conducted over long periods of time can accumulate enough observations to allow for meaningful comparisons.

Years of Potential Life Lost: 2002 (Knox and Caine, 2005)



Are Suicide Clusters Real?

- **Suicides often appear to occur in clusters.** Suicides often occur in close proximity, particularly in close communities or after media attention (Copycat behavior; also called the Werther effect, referring to a wave of suicides in late 18th century Europe that followed the publication of Goethe's novel The Sorrows of Young Werther).

Are Suicide Clusters Real?

- What appears to be an apparent spike or epidemic of suicide may not be so after careful analysis.

Reactive versus preventive approaches to apparent suicide clusters

- **Crosby et al: Community readiness to respond to apparent clusters may be of greater importance than proving statistical evidence of a cluster**
- **Requires knowledge of promising or effective programs or interventions**

Reliability of Suicide Rates

- **Official suicide rates are fraught with inaccuracies**.
- There are regional differences in how suicides are defined and how ambiguous cases are classified.
- Additionally, there are regional differences in the background and training of the coroner or medical examiner that prounces the cause of death, as well as differences in the extent to which cases are investigated.

Variation in Reporting

- In some areas of the country, religious traditions, life insurance policies, or legal sanctions may lead to under-reporting
- Increased openness to discussing mental illness and suicide may cause an increase in reported rates without a true increase in suicide.

Exclusion Criteria in Research

- **Patients at risk for suicide are often excluded from clinical research studies**. Because clinical researchers are mandated to reduce risk to human research subjects, it has been routine practice to exclude from clinical research studies patients deemed to be at high risk for injury or harm.
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Strategies for Preventing Suicide

- Universal Strategies:

  (1) Multi-level community based interventions;

  (2) Education and awareness for the general public and/or professionals

  - Primary Care Physicians
  - General Public
  - Community or Organizational
  - Gatekeepers

Strategies for Preventing Suicide

- Selective Strategies

(1) Behavioral therapeutic treatment of high risk individuals;
  (1) Psychotherapy
    (1) Alcoholism Programs
    (2) Cognitive Behavior Therapy

(2) Pharmaco-therapeutic treatment of high risk individuals;

(3) Restricting access to lethal means

Strategies for Preventing Suicide

- Indicated Strategies

(1) Follow-up of individuals treated in ER or hospital settings for suicidal behaviors

(2) Screening tools for at-risk individuals

(3) Peer support programs

Strategies for Preventing Suicide: Multi-level Community based interventions:

- Bellanger et al (2007, 2004) Multi-level population program implemented in regions in France
- **Strategy: Population Strategy included primary, secondary and tertiary prevention.**
- **Design**: Quasi-experimental design between regions in France with and without regional suicide prevention programs
- **Results**: Suicide mortality rates decreased sharply in 11 regions that implemented such programs compared to 11 regions with did not implement the programs

Strategies for Preventing Suicide: Multi-level Community based interventions:

- Hegerl et al (2006) Multi-level program implemented in Nuremberg
- **Strategy**: Population strategy included public campaigns about depression, cooperation with community facilitators, support for high risk groups
- **Design**: Quasi-experimental design using before and after relative risk of suicide in Nuremberg compared with a neighboring control region.
- **Results**: Intervention region experience a significant 24% reduction in suicidal acts (completed suicides + suicide attempts) compared to the control region (increase of 7.1%).

Strategies for Preventing Suicide

- Oyama et al (2004a, 2004b, 2006a, 2006b) Multi-level program implemented in Uri town, Japan for elderly residents
- **Strategy**: Population strategy included group activity, psycho-education and self-assessment of depression.
- **Design**: Quasi-experimental design using before and after relative risk of suicide in Uri compared with a neighboring reference town.
- **Results**: The risk in the intervention town was reduced by 76% for elderly females; there were no changes in risk for males in the intervention town or in the reference town for either gender.

Strategies for Preventing Suicide: Multi-level Community based interventions:

- Knox et al (2003) Multi-level population based program implemented in Air Force for active duty population
- **Strategy**: Population strategy included 11 Initiatives, including leadership involvement, professional and community education and awareness, integration of services for mental health and changes in policies to support cultural change.
- **Design**: Quasi-experimental using before and after relative risk of suicide pre-intervention time period compared to post-intervention time period
- **Results**: There was a 33% relative risk reduction in risk of suicide and related outcomes in the post-intervention period compared to the pre-intervention period.

Strategies for Preventing Suicide: Multi-level Community based interventions:

- Dedic G, Panic M. (2007) Suicide prevention program in the Army of Serbia and Montenegro.
- **Strategy**: Population strategy included education about suicide risk factors, motivation for military duty; tranining to soldiers about maladjustment and substance abuse.
- **Design**: Population size not reported; program implemented in December 2003.
- **Results**: The annual suicide rate for the Ugoslav Army for the years 1999-2003 was 13/100,000; declining in the post-implementation period to 5/100,000 in 2004

Strategies for Preventing Suicide: Multi-level Community based interventions:

- Rozanov et al (2002) Successful model of sucide prevention in the Ukraine military environment

- **Strategy**: Education for general military population and military professionals, including training seinarys for commanders, officers and basic soldiers
- **Design**: Pre/Post design comparing suicide rates in the years 1988-1999 (pre-implementation) and rates in 2000 and 2001 (post-implementation)
- **Results**: Total suicide rate in the pre-implementation period was 32.6 per 100,000. The rate for 2000 was zero and 16.7 per 100,000 for 2001.

Strategies for Preventing Suicide: Selective Interventions:

- Beautrais et al (2006) Firearm legislation and reductions in firearm-related deaths in New Zealand
- **Strategy**: Analysis of impact of more restrictive firearms legislation on suicides
- **Design**: Retrospective analysis of a national suicide data 8 years before and 20 years following introduction of legislation
- **Results**: Findings suggest that fire-arm related suicides significantly decreased following legislation to restrict ownership and access to firearms, particularly among youth.

Strategies for Preventing Suicide: Selective Interventions:

- Hawton et al (2001) Effects of legislation restricting pack sizes of paracetamol on self-poisoning in the United Kingdom
- **Strategy**: Analysis of impact of more restrictive firearms legislation on suicides
- **Design**: Retrospective analysis of a national suicide data 8 years before and 20 years following introduction of legislation
- **Results**: Findings suggest that fire-arm related suicides significantly decreased following legislation to restrict ownership and access to firearms, particularly among youth.

Strategies for Preventing Suicide: Selective Interventions:

- Ilgen et al (2007) Substance use-disorder treatment and a decline in attempted suicide during and after treatment.
- **Strategy**: Analysis of US Veterans entering substance abuse treatment programs (residential or outpatient).
- **Design**: Comparison of the suicide attempt rate in the previous 12 months prior to program entry, during treatment, and at 12 months follow-up.
- **Results**: Residential treatment associated with a lower rate of suicide than outpatient treatment, even when baseline suicidality was controlled for.

Strategies for Preventing Suicide: Selective Interventions:

- Unutzer et al (2006) Reducing suicidal ideation in depressed primary care patients.
- **Strategy**: Multi-site trial in the US (including VA clinics) providing a collaborative care manager to primary care physicians to reduce suicidal ideation in depressed older patients.
- **Design**: RCT of treatment (assignment to depression care manager) or control.
- **Results:** No completed suicides were reported in either group. Suicidal ideation (the outcome) was significantly decreased in the treatment group at all follow-up periods up to 24 months.

Strategies for Preventing Suicide: Indicated Interventions:

- Aoun (1999) Follow-up of high risk individuals by a suicide intervention counselor in rural Western Australia
- **Strategy**: Intensive outreach to individuals identified as being at-risk or having attempted suicide
- **Design**: Implementation of program in one district in Hungary for one year compared to a neighboring district used as a control
- **Results**: No impact on referrals for depressive disorders, prescriptions of antidepressants by GPs, or the suicide rate; increase in referrals for panic disorders

Strategies for Preventing Suicide: Indicated Interventions:

- Motto JA, Bostrom AG (2001) A randomized controlled trial of post-crisis suicide prevention.

- **Strategy**: Intensive outreach to individuals admitted to a psychiatric hospital for depression or suicidal state.
- **Design**: All patients were offered a post-discharge therapy; randomization to a contact or no-contact group. Patients in contact group received short personalized letters for a total of 24 contacts over 5 years.
- **Results**: Survival analysis showed statistically significant differences in suicide rate in the contact group for the first two years, but not not later.

Summary of what we know - restricting lethal means

- Large number of studies on restricting access to firearms - many on the same data sets comparing suicide rates before and after implementation of laws restricting access to firearms.

- A variety of methodological issues were present in all the analyses - including addressing statistical fluctuations over longer periods of time; controlling for the effect of potentially unknown confounders such as changes in the unemployment rate.

- Results - mixed with some apparent protective effect n some groups

- Issue of method substitution in some studies

Summary of what we know - restricting lethal means

- Number of studies in the UK suggest that UK restrictions on paracetamol is associated with a reduction in suicide rates.
- Studies in other countries result equivocal results.
- In a well cited study, Krietman studied deaths due to asphyxiation by domestic gas in the UK after changes in gas from coal to natural gas that lowered the carbon monoxide content in the late 1950s. Kreitman reported a decline in carbon monoxide poisoning deaths that was significant for both genders and all age groups.

Summary of what we know - multifaceted interventions

- Supported by consistent evidence
- Not yet reported which components are the causal agent(s)

Summary of what we know - Safety Planning

- Promising brief intervention based on work by Barbara Stanley, Greg Brown and Glenn Currier
- Safety Plan Treatment Manual to Reduce Suicide Risk: Veteran Version
- VA Safety Plan Form
- VA Safety Plan: Brief Instructions

vaww.mentalhealth.va.gov

Gaps

- How much more evidence is needed for promising strategies and interventions (for example: multi-component strategies such as the Air Force)

- What are new or improved suicide prevention strategies (for example: hot lines, outreach programs, peer counseling, new counseling approaches) that show promise for military personnel and Veterans?

- How to achieve the balance between identifying and treating high risk individuals and improving overall mental health of military personnel and Veterans?

Gaps

- Need for randomized controlled trials
- High quality observational studies
- Improvements in accuracy in research studies in how sucidality is assessed

Gaps

- Will we ever be able to predict suicide?
- What about those individuals at “moderate” risk?
- What about those individuals at “low” risk?
- What do we need to know about individuals in transition within the military and from the military to the VA?