

Understanding Suicide as a Public Health Issue

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Matthew Macaluso, D.O. has conducted clinical trials research as principal investigator for the following pharmaceutical companies over the last twelve months:

Acadia, Allergan, Alkermes, AssureRx/Myriad, Boehringer-Ingelheim, Eisai, Lundbeck, Liva Nova, Janssen, Neurim, Otsuka, SAGE pharmaceuticals, Suven

All clinical trial and study contracts were with and payments made to the the University of Alabama at Birmingham.

From April 2019 to June of 2020, Dr Macaluso was a member of the speaker bureau for Janssen pharmaceuticals (Spravato/esketamine).

Dr Macaluso has also received royalties from Springer Nature for his work as co-editor of the textbook titled Antidepressants: From Biogenic Amines to New Mechanisms of Action. This book was published in May of 2019.

Terminology

- From the Latin "self murder"
- Self inflicted death
- Suicide attempt—self injurious behavior with nonfatal outcome
- Para-suicidal behavior—self mutilation
- Aborted suicide attempt

Suicide

- Suicidal ideation—thoughts of wanting to die
- Suicidal intent—subjective expectation and desire to end one’s life
- Suicidal plan

Incidence and Prevalence

- 250,000 suicide attempts annually in the United States
- 35,000 persons commit suicide annually in the United States
- Suicide rate 14.5 per 100,000 in US (2017)
- Scandinavia: highest rate in the world (25/100,000)
- Spain/Italy: lowest rate in the world

Alabama Data

- Suicide is the 11th leading cause of death in Alabama
- 834 Alabamians died by suicide in 2017
- 17.1 suicides per 100,000 population in Alabama
- Alabama has higher suicide rates than the national average since 1990

<https://cdn4.creativecirclemedia.com/mountaineagle/files/20201003-092311-phpAIUaN9.pdf>

Suicides in Alabama (2016)

County	Suicide Rate per 100,000
Elmore	44.3
Morgan	26.9
Calhoun	26.5
Lauderdale	25.7
Madison	25.3
Baldwin	23.5
Mobile	23.1
Shelby	23.0
Montgomery	21.8
Jefferson	21.7
Tuscaloosa	21.3
Cullman	20.1
Etowah	19.5
Marshall	19.1
Lee	18.2
St. Clair	17.9
Walker	16.9
Chambers	16.6
Jackson	14.7
Autauga	14.1
Blount	13.3
Coffee	12.7
DeKalb	12.5
Talladega	11.6
Escambia	10.8
Houston	10.7
Limestone	9.6

National rate: 14 per 100,000

**with available data*

20 of 27 counties* exceed the national rate

2009 VA Data

Males: 38.3 suicides per 100,000 population

Females: 12.8 suicides per 100,000 population

Military sexual trauma (MST) increases the risk

Greatest risk among those wounded multiple times or hospitalized for wounds

<https://www.ptsd.va.gov/professionals/oc-occurring/2009-suicide.asp>

Most Common Methods (nationally)

- Firearms (51.6%)
- Suffocation/hanging (22.6%)
- Poisoning (17.9%)

American Association of Suicidology

Trends in the Data

- Men commit suicide 3X more than women
- Women attempt suicide 4X more than men
- Men use more lethal methods (i.e. hanging)
- Rates increase with age
- Medical illness is a strong risk factor
- Most rapid rise among adolescents

American Association of Suicidology

Other Associated Risk Factors

- Race—risk lower in nonwhites, higher in Native Americans
- Religion—lowest in Catholics, Muslims, Jews
- Having young children is protective for women
- Marital status
 - Rate twice as high among singles
 - 4-5X increase risk among widowed, separated/divorced

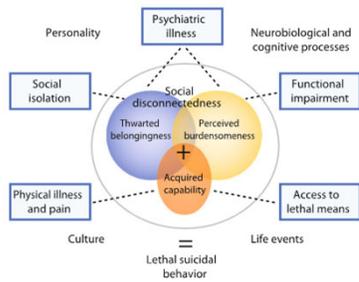
Older Adults

- Older adults make up 12% of the population
- Older adults account for 18% of deaths by suicide
- Older adults attempt less, but complete more often
- 65 and over: 15 suicides/100,000
- 75 and over: 17 suicides/100,000

American Association for Marital and Family Therapy

Older Adults

- Suicide among older adults may be underreported by as much as 40%
- High rates of completed suicide due to use of more lethal methods: firearms, hanging, drowning
- Death by suicide often mislabeled in older adults
- Doubles suicides (spouse and partner) occurs most commonly among elderly



Current Psychiatry Reports. June 2011, Vol 13, Issue 3, pp. 234-241

Anxiety Disorders

- Attempts made by 20% of patients with panic disorder and social phobia
- 1% of patients who commit suicide had a diagnosis of panic disorder
- Concomitant depression increases risks
- Some studies show preexisting anxiety as an independent risk factor

Mood Disorders

- 50% of all persons who commit suicide are depressed
- 15% of depressed patients commit suicide
- Patients with mood disorders accompanied by panic attacks are at highest risk
- Bipolar disorder—mixed features highest risk

Neurocognitive Disorders

- Haw and colleagues concluded that more research is needed to understand the relationship between neurocognitive disorders and suicide
- Most literature suggests a link between receiving a dementia diagnosis and suicide
- Rates vary by type of dementia (major neurocognitive disorder)

Haw C, Harwood D, Hawton K. Dementia and suicidal behavior: a review of the literature. *Int Psychogeriatr*. 2009;21:440-53.

Schizophrenia

- Early in course of illness
- 4,000 complete suicide per year in US
- 10% of persons who commit suicide have schizophrenia
- Prominent delusions are high risk
- Command hallucinations are high risk

Suicide risk in older adults with schizophrenia

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Suicidal behavior in the older patient with schizophrenia

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Abstract

Little is known about treating elderly suicidal patients with schizophrenia. The purpose of this article is to review the literature dealing with this population and to discuss what is required to advance this field. Most available studies from middle-aged and older individuals suggest that risk factors include hopelessness, lower quality of life, past traumatic events, depressive symptoms, lifetime suicidal ideation and past attempts; it is not clear whether these findings are generalizable to geriatric populations. Although little treatment research has been performed in older suicidal patients with schizophrenia, an integrated psychosocial and pharmacologic approach is recommended. In addition, one recent study augmented antipsychotic treatment with an SSRI (i.e., citalopram) in a sample of middle-aged and older individuals with schizophrenia with sub-syndromal depression; in that study, serotonin selective reuptake inhibitor

Substance Use Disorders

- Suicide rate 20X higher for heroin dependent patients
- Alcohol dependence increases risk of suicide
- 2/3 of alcohol dependant patients who complete suicide also had mood disorders

Do Substance Use Disorders Increase Suicide Risk?

- People with substance use disorders are at **four to seven** times greater risk for death by suicide (Conner et al., 2019; San Too et al., 2019).
- SUDs may contribute more risk among women in veteran populations (Bohnert et al., 2016), but not the general population (Conner et al., 2019).
- However, other mental disorders and risk factors may explain the increased risk (Bohnert et al., 2016).
 - These numbers decrease when we account for other psychiatric disorders and other risk factors (e.g., job loss)

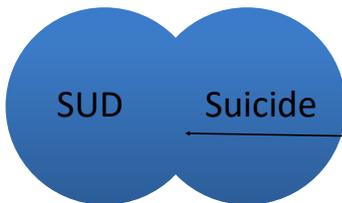
Which SUDs Contribute Most Risk?

Data are limited; less data on stimulant and cannabis

- **Alcohol use disorder:** 3 times risk (Darvishi et al., 2015)
- **Sedative use disorder:** 4-12 times risk (Bohnert et al., 2016)
- **Opioid use disorder:** 2-8 times risk (Bohnert et al., 2016)

Possible Explanations

- If we understand the *why*, may be able to target our prevention efforts.



Shared Psychological and Social Factors

- Relationship dysfunction
- Occupational and financial stressors
- Comorbid psychiatric illnesses (depression, bipolar disorder, borderline personality disorder)
- History of childhood sexual abuse

Bohnert et al., 2016; Yudelis-Flores et al., 2015

Example: Suicide in the context of opioid transitions

VA patients whose opioid treatment for pain was stopped were at greater risk for death, including suicide (Oliva et al., 2020)



Example: Acute Alcohol Intoxication

- 34% of suicide decedents have a nonzero level of alcohol in their blood at time of death (Anestis et al., 2015).
- Some theorists believe that alcohol intoxication can amplify existing mood (tears in the beer effect) and increase risk (e.g., Hufford, 2001).
- Additionally, people may become more aggressive, fearless, or impulsive as a result of drinking, enabling them to attempt suicide (Wolford-Clevenger et al., 2015; 2018).

PTSD and Suicide

- Higher levels of intrusive memories can predict relative risk for suicide
- Some studies show a link between suicide, PTSD and either antisocial personality or depression
- When controlled for co-morbidities, PTSD appears to increase the risk for suicide

<https://www.ptsd.va.gov/professional/fo-occurring/ptsd-suicide.asp>

Personality Disorders

- Patients with PD have 7X increased risk
- BPD associated with parasuicidal behaviors
- BPD patients with high impulsivity at increased risk
- Incarcerated APD patients with high risk
- Prisoners have highest suicide rate of any group

Interview Techniques

- Conflicting data on rating scales
- Some evidence supports semi-structured interviewing
- “Identify modifiable, treatable risk and protective factors”—APA treatment guidelines
- The US Preventive Task Force does not recommend universal screening in primary care
- Therapeutic alliance a protective factor

Intervention Trials

- Increased connectedness decreased suicide in older adults in two studies
- Both studies were more than 10 years long and used telephone-based outreach and support
- Japanese studies used health education, volunteer and peer support activities

De Leo D, Della Buona M, Dwyer J. Suicide among the elderly: the long term impact of a telephone support and assessment intervention in northern Italy. *Br J Psychiatry*. 2002;181:226-9.

Oyama H, Sakashita T, Ono Y, Goto M, Fujita M, Kasita J. Effect of community-based intervention using depression screening on elderly suicide risk: a meta-analysis of the evidence from Japan. *Community Ment Health J*. 2008;44:311-20.

PROSPECT Trials

- Intervention used a collaborative care model of care managers, algorithm guided medication management, and interpersonal therapy
- Results showed decrease in suicidal ideation over a two year period
- The collaborative model improved social connectedness

Alexopoulos GS, Reynolds CF, III, Bruce ML, et al. Reducing suicidal ideation and depression in older primary care patients: 24-month outcomes of the PROSPECT study. *Am J Psychiatry*. 2008;165:1174-1180. doi:10.1176/appi.ajp.2008.165.11.1174. This article received 2-year notices of a collaborative care model designed to reduce suicidal ideation among older adults and represents one of the largest and most well-designed clinical trials for the prevention of late-life suicidality.

Psychopharmacology

- Lithium
 - Decreases suicide risk in bipolar patients
- Clozapine
 - Decreases suicide risk in schizophrenic and schizoaffective patients
- Esketamine
 - FDA indication for suicidality

Spotlight
 ADHD
 Contraception
Clinical See All
 Allergy
 Cardiology
 Diabetes
 Gastroenterology
 Geriatric Medicine
 Infectious Disease
 Neurology
 Psychiatry
 Pulmonology
 Rheumatology
Video Series
 Vaccines

FDA Approves Esketamine for Depressive, Suicidal Symptoms

August 3, 2020
 Karen Kunkovits

Related Topics

The fast-acting therapy has been long-discussed for its unique benefits to severe patients—as well as notable concerns surrounding its administration.

This week, the US Food and Drug Administration (FDA) approved the supplemental New Drug Application (sNDA) for esketamine nasal spray (SPRAVATO) for the treatment of depressive symptoms in adults with major depressive disorder and acute suicidal ideation or behavior.

The approval, granted to Janssen Pharmaceutical Companies, makes esketamine the first and only intranasal therapy to offer the opportunity in reducing depressive symptoms within 24 hours of administration.

The sNDA approval is based on a pair of identical phase 3 clinical trials assessing esketamine plus comprehensive standard of care. The standard of care included initial patient hospitalization, newly initiated or optimized oral antidepressant therapy, and twice-weekly treatment visits for 4 weeks.

In that time period, patients received esketamine 84 mg or placebo nasal spray.

<https://www.hcplive.com/view/fda-approves-esketamine-depressive-suicidal-symptoms>

Rapid Reduction of Major Depressive Disorder Symptoms in Adult Patients at Imminent Risk for Suicide: ASPIRE II, a Phase 3 Randomized Study of Esketamine Nasal Spray

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 Janssen Research & Development, LLC, Titusville, NJ



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UAB THE UNIVERSITY OF ALABAMA AT BIRMINGHAM.

Thank you!

Full references available upon request
