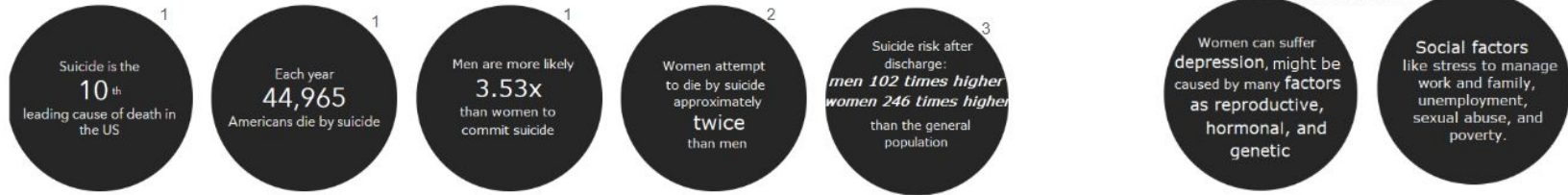


Technology to prevent the suicides of women in the U.S

Francihelena Uzcategui



Female suicides in the U.S



Research Question: How can we use modern health information to prevent women's suicides?

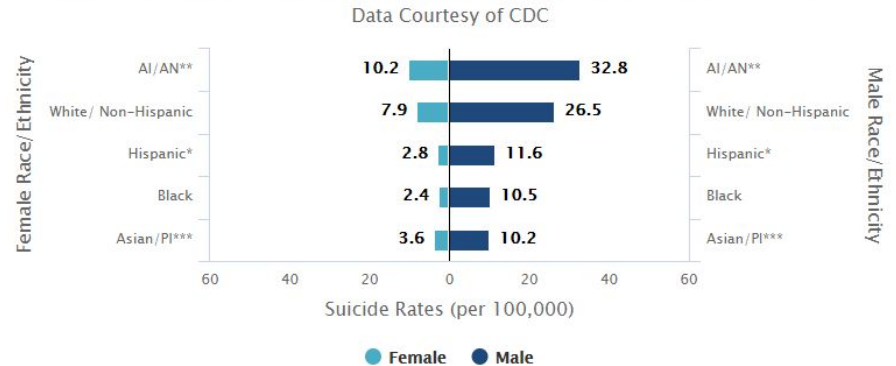
Hypothesis: Evidence of the effectiveness of Technology to prevent suicides of women in the U.S.

Scope for analysis:

- Crisis telephone helpline and intervention services
- Electronic Health Records (EHRs)
- Suicide Implicit Association Test (IAT)

Methods of Analysis: Exploratory Analysis

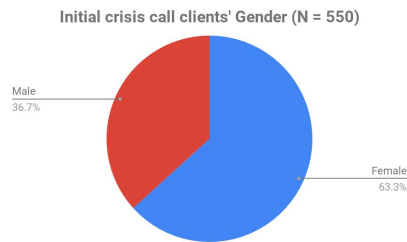
Suicide Rates for Males and Females by Race/Ethnicity in the United States (2016)



Source: Table 3-Suicides Rates.(9)

Crisis telephone helpline

National Suicide Prevention Lifeline network across U.S-2009-2011 ⁽⁵⁾



Source: Table 1-Follow-up with Callers to the National Suicide Prevention Lifeline: Evaluation of Callers' Perceptions of Care. ⁽⁵⁾

According to the pie chart, more than half of the people who participated in the first call were women.

The same report⁽⁵⁾ presents that women are more likely to evaluate the first call and to answer the follow-up questionnaires than men. It means that women received more support sessions than men.

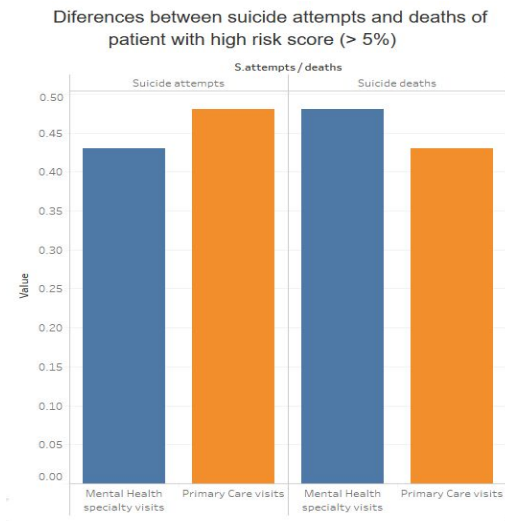
Specifically, for every four men, five women believe the call stopped her suicide. Also, for every two men, three women think the follow-up keep them safe.

Electronic Health Records (EHRs)

Kaiser Permanente network among CO, HI, OR, CA, WA, Henry Ford health system (Detroit), and HealthPartners Institute (Minneapolis) - 2009-2015 ⁽⁶⁾

The model predicts suicide attempts and suicide deaths within the next 90 days after the patient's visit.

The research included 2,960,929 patients older than 13 years old, and highlights a high percentage of women- 62%.



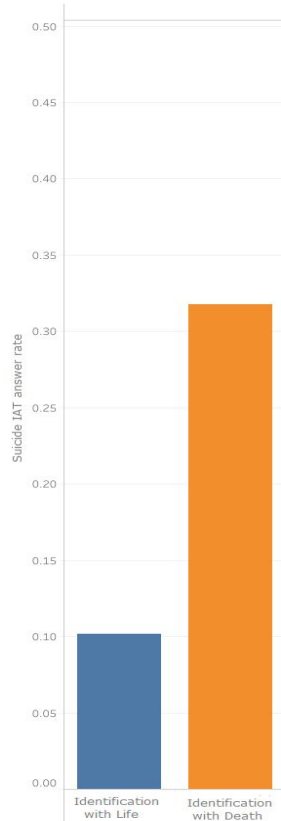
Source: Results-Predicting Suicide Attempts and Suicide Deaths Following Outpatient Visits Using EHRs. ⁽⁶⁾

A visit to either a mental health specialist or a primary care physician with a risk score higher than 5%, represents a stronger predictor of suicide, as shown in the bar chart above.

Suicide Implicit Association Test (IAT)

Suicide and Self-Injury-Related Implicit Cognition: A Large-Scale Examination and Replication (7)

Suicide IAT answers rate among patients
with high risk of suicide attempts



Suicide Implicit Association Test analyzes subconscious thoughts linked to suicidal behavior, using words referred to life and death as well. For accurate results short time responses are crucial to avoid filter thoughts.

Results of Suicide IAT in patients discharged from psychiatric emergency departments can be observed in the bar graph.

Patients with faster responses to death words have three times higher rate of suicide attempts within the next six months, being this time period of higher risk for such patients.

Conclusions: The analyzed research papers are useful and hopeful tools to predict Suicide. Allowing to confirm our hypothesis. Technology helps to predict women's Suicide in the US, however the time gap to predict Suicide is still too long, between 3 months, 6 months and 1 year.

Future actions: Due to time constraints, further investigation regarding Mobile Treatment Apps couldn't be conducted. The interest in such subject relays in its potential effectivity to complement better and more effective ways of combating situation compromising the integrity of women's health.

Data constraints: Despite being a relevant topic for public interest, the publicly available data for this project is very limited. There are few studies and data collectors in the field and most of them are relatively recent and private. The sensitive nature of the subject restrains the openness to share the data to preserve anonymity and avoid premature or biased findings. In consequences, access is only limited to very few sources willing to share some data, in most cases for a fee.

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Works Cited

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- 8) Matthew Nock ; *Computing in Mental Health Workshop, CHI 2016*; 08/04/2018; <https://goo.gl/jTiUvw>
- 9) National Institute of Mental Health, *Suicides rates*; 08/05/2018; <https://goo.gl/mZyn1G>

Tools used: MS Excel, Python - Pandas and Numpy, and Tableau.