

Suicide History and the Mortality from Cardiovascular Disease and Un-nature Causes

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BACKGROUND

- Suicide is one of the top public health concerns in the United States.
- One million adult reported a suicide attempt in the last year in the US
- Third leading cause of death among 25-44 age group
- Individuals who attempted suicide are at higher risk for subsequent death from completed suicide
- Overall mortality is increased among suicide attempter. Yet, no specific cause has been identified.

OBJECTIVES

- To examine the prospective association between history of suicidal behavior and:
 - 1) Over all mortality
 - 2) Specific-cause mortality including: Cardiovascular Diseases (CVDs), unnatural causes, and suicide/homicide mortality.

METHODS

- 6,293 Participants of NHANES-III (aged 17-39 Yr) were followed from 1988-1994 through 2006
- Participants were categorized into: (1) No suicide history (reference) (2) Suicidal ideation (3) Attempted suicide
- ICD9 and ICD10 were used to determine the specific cause of death from the data of the National Health Index.
- The covariates included: Gender, age, Socioeconomic Status (SES), race/ethnicity, education, smoking, drinking, marital status.
- Cox proportional hazard regression used to estimate the hazard ratio (HR) of overall mortality and specific causes of mortality for each group after adjustment for potential confounders.

RESULTS (BASELINE)

- Mean age was 27 Yr.
- At the baseline: 345 participants reported attempted suicide, while 765 reported suicidal ideation.
- Attempted suicide was twice in women as in men
- Attempted suicide was associated with other factors including lower income, lower education, heavy smoking, heavy drinking, cancer and Major Depressive Disorders (MDD) at the baseline.

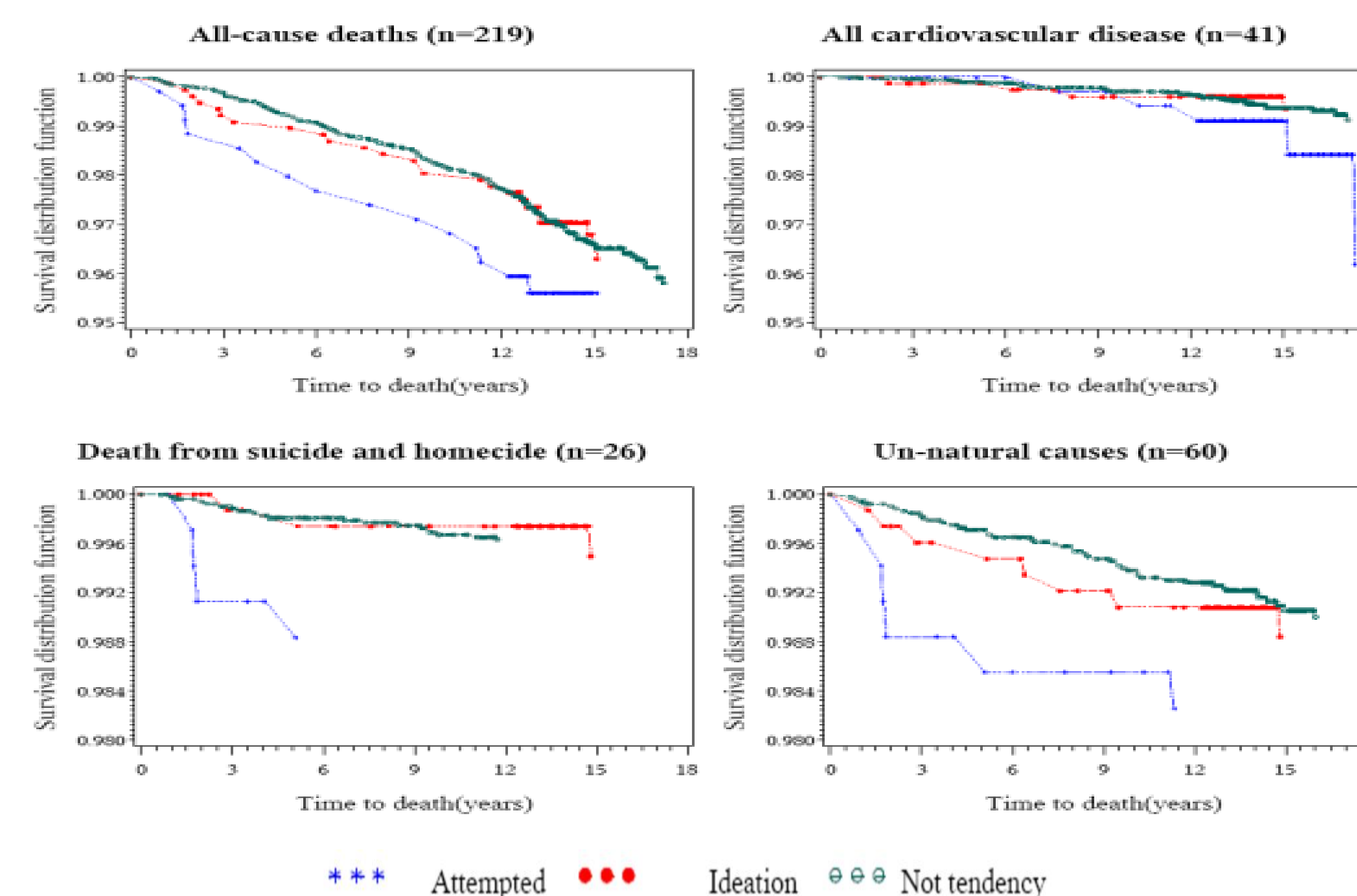
RESULTS

- After follow-up, 219 death cases were accumulated. CVDs accounted for 41 cases, while unnatural causes and suicide/homicide accounted for 60 and 26 cases respectively.
- HR for CVDs mortality for attempted suicide group was 2.68 (1.01-7.09) before adjusting for MDD.
- HR for suicide/homicide mortality for attempted suicide group was 3.99 (1.28-12.4) after controlling for covariates and 5.08 (1.58-16.3) after controlling for MDD.
- Overall mortality did not show significant association with suicidal behavior after adjusting for confounding factors.

Hazard Ratios

Cause of Mortality	Suicide status	Adjusted for age and sex	for all variables except MDD	for all variables including MDD
All causes	Attempt	1.99 (1.23-3.21)	1.54 (0.95-2.51)	1.52 (0.92-2.52)
	Ideation	1.01 (0.66-1.54)	0.99 (0.65-1.50)	0.97 (0.63-1.50)
CVDs	Attempt	3.20 (1.23-8.31)	2.68 (1.01-7.09)	2.27 (0.79-6.51)
	Ideation	0.90 (0.32-2.55)	0.95 (0.35-2.70)	0.87 (0.30-2.35)
Suicide-homicide	Attempt	5.10 (1.70-15.2)	3.99 (1.28-12.4)	5.08 (1.58-16.3)
	Ideation	1.25 (0.37-4.24)	1.21 (0.35-4.14)	1.35 (0.39-4.65)
Un-natural	Attempt	2.72 (1.15-6.42)	2.02 (0.84-4.88)	2.08 (0.82-5.27)
	Ideation	1.29 (0.61-2.73)	1.18 (0.55-2.51)	1.19 (0.55-2.59)

Survival Curves



DISCUSSION

- Young adults who have attempted suicide are at higher risk of subsequent death from Cardiovascular disease and suicide/homicide causes.
- The risk increases mainly in the first several years of follow-up for deaths from completed suicides, homicides or other un-nature causes, but throughout the entire period of follow-up for the deaths from CVDs in spite that the increase was relatively small.
- The composition of the current study population (a relatively young and healthy household) and a long follow-up might dilute the increased risk mainly occurring at the first several years and resulted in a weaker association compared with previous reports

IMPLICATIONS

- The current study, together with previous reports, supports the recommendation that a history of attempted suicide can be a reliable indicator calling for effective and timely interventions.
- Excessive mortality from non-suicidal causes after attempted suicide highlights the importance of a comprehensive intervention among attempters for both chronic effects of the suicide behaviors themselves, and CVDs and accidental injuries.

STRENGTH AND LIMITATIONS

- Strength: Population-based study with large young-age population
- Limitation: The small number of total deaths prevented further stratification and reduced the precision of the estimates

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