

# Manner and Leading Causes of Death for Midlife Women with a Psychiatric Diagnosis

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## BACKGROUND/SIGNIFICANCE

- Adults with mental illness, on average, die 25 years earlier than those without
- Adults with mental illness are more likely to have chronic conditions
  - Midlife adults (ages 50-64) may be more vulnerable, as nearly 50% have two or more chronic conditions
- Women are twice as likely to attempt suicide or to have a serious mental illness compared to men
- Previous studies have focused on younger adults and midlife men
- Less is known about potentially preventable deaths in midlife women with mental illness

## PURPOSE

To examine differences in manner of death and leading causes of death among midlife women with a psychiatric diagnosis documented on the death certificate

## METHODS

### Data source and sample

- Mortality data for midlife women (50-64 years) who died in Minnesota between 2011 and 2017 (n=16,447)

### Measures

- Psychiatric Diagnoses: Anxiety disorders, affective disorders (bipolar & depression), and non-mood psychotic disorders (e.g., schizophrenia) as documented by ICD10 contributing cause codes

### Outcomes

- Manner of Death: Natural, accident, homicide, suicide, & undetermined as documented by certifier of death

### Analysis

- Summary statistics, cross-tabulations, and percentages
- Prevalence ratios (PR) evaluated with nonlinear post-estimation commands and Z-tests

## RESULTS

### Overall

- 4% of midlife women had any mental illness documented at death, varying from 0% of homicides to 41% of suicide deaths.

### Manner of death

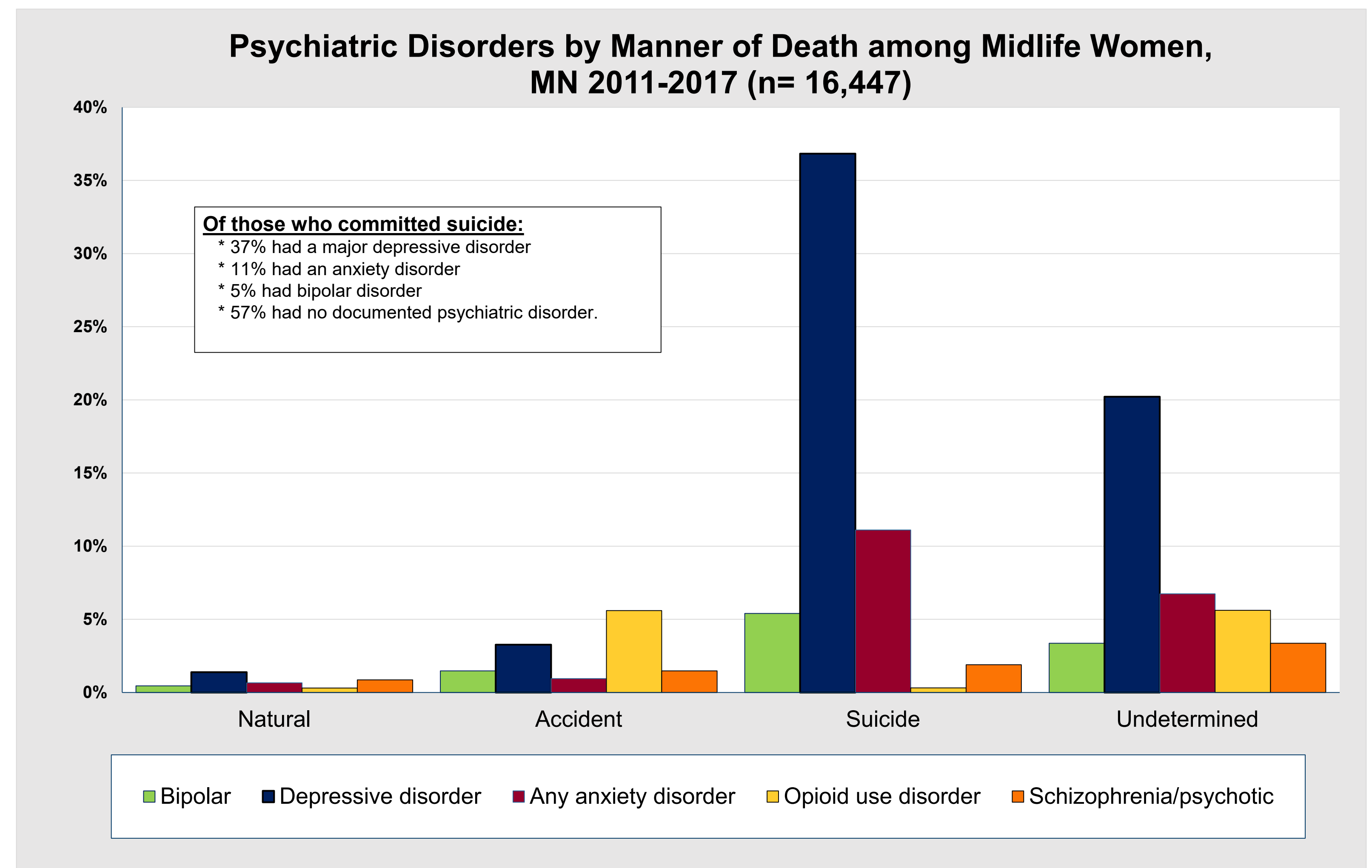
- Midlife women with mental illness were more likely to die by suicide (PR=14.5, CI=12.2-16.8), accidents (PR=2.1, CI=1.5-2.6), or undetermined manner (PR=10.0, CI=6.6-13.3) compared to natural causes

### Leading causes of death

- Leading causes of death in women with mental illness were suicide (28%), other diseases (20%), cancer (13%), CVD (12%), and other accidents not involving motor vehicles (8%).
- Leading causes of death in midlife women with no documented mental illness were cancer (37%), CVD (21%), other diseases (16%), other accidents not involving a motor vehicle (6%), and liver disease (4%) with only 2% due to self-harm.

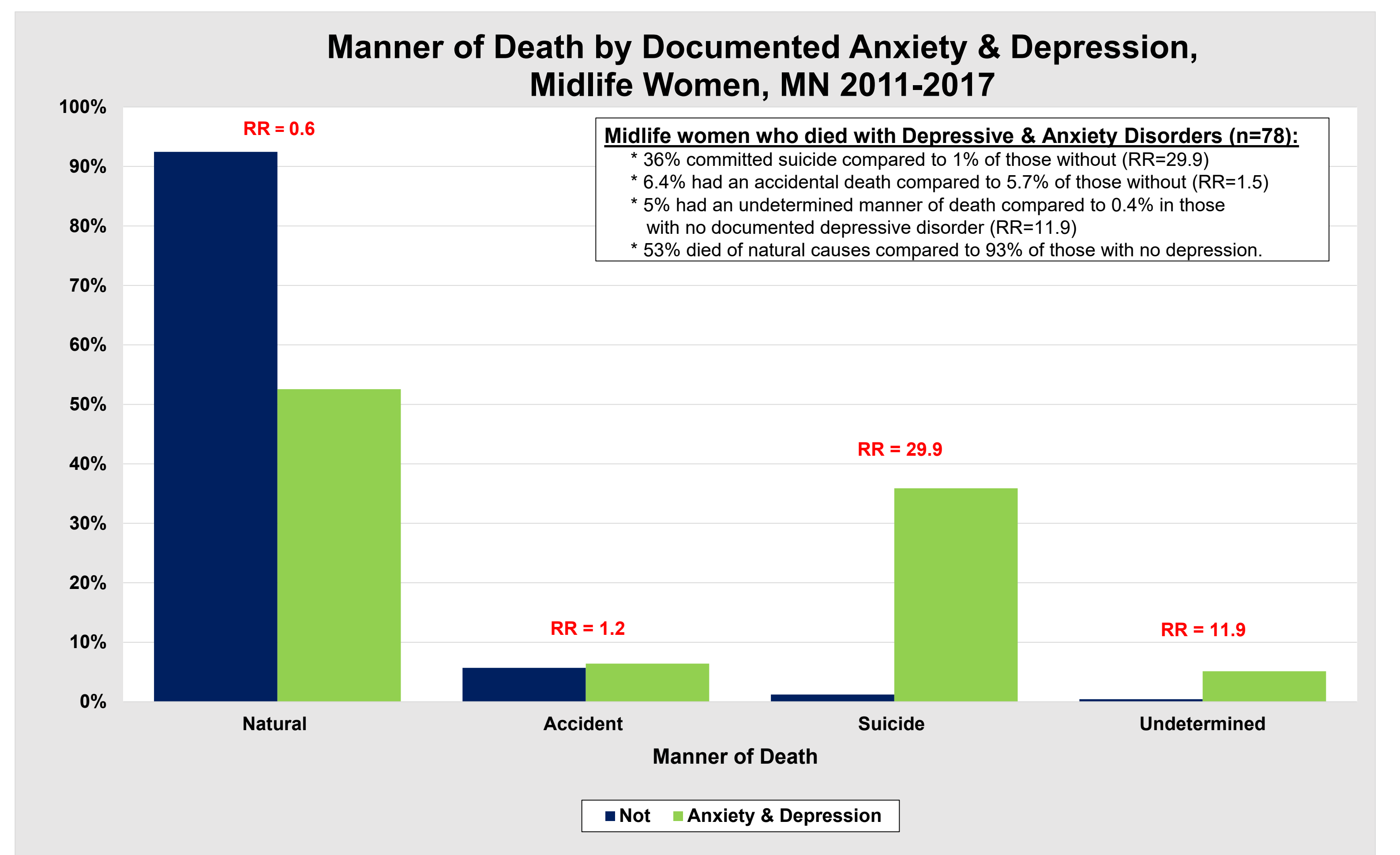
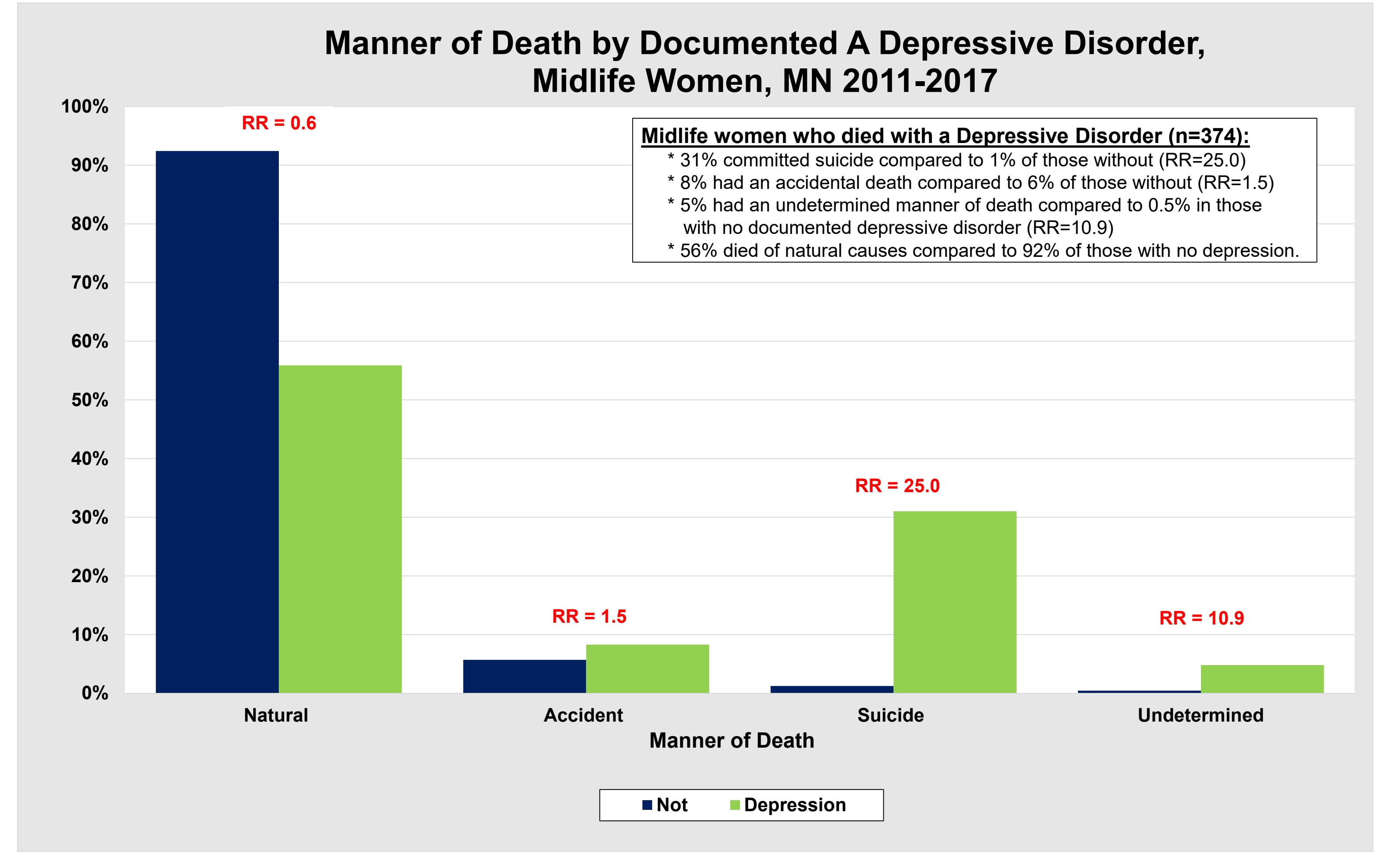
**Table 1. Rate of selected psychiatric diagnoses documented as contributing cause of death by manner of death among midlife women (50-64 years), MN 2011-2017**

	Natural (15,062)	Accident (947)	Suicide (315)	Undetermined (89)
Any affective disorder	1.8%	4.8%	41.3%	23.6%
Bipolar	0.5%	1.5%	5.4%	3.4%
Depressive disorder	1.4%	3.3%	36.8%	20.2%
Any anxiety disorder	0.7%	1.0%	11.1%	6.7%
Psychoactive substance use	5.2%	27.9%	12.7%	27.0%
Opioid use	0.3%	5.6%	0.3%	5.6%
Schizophrenia/Psychotic disorders	0.9%	1.5%	1.9%	3.4%
No (above) psychiatric diagnosis	97.1%	93.9%	57.5%	70.8%



**Table 2. Leading causes of death by percent and rank among midlife women (50-64 years) with any mental illness and no mental illness.**

Cause of Death	Any Mental Illness		No Mental Illness	
	Percent	Rank	Percent	Rank
Cancer	12.8%	3	37.1%	1
CVD	11.5%	4	21.3%	2
Other diseases	19.8%	2	15.5%	3
Other accidents (no MVA)	7.9%	5	5.6%	4
Liver diseases/cirrhosis	3.0%	8	4.1%	5
Chronic lower resp. disease	7.2%	6	3.7%	6
Diabetes	4.7%	7	3.6%	7
Suicide	27.9%	1	2.3%	8
MVA	0.4%	13	1.7%	9
Ill defined	0.0%	17*	1.4%	10
Other External	2.5%	9		
Influenza/pneumonia	0.9%	10		



## DISCUSSION

- Midlife women with mental illness documented at death were significantly more likely to die by suicide compared to those without.
- Midlife may be a critical window of opportunity for identifying and treating mental illness when women access care for chronic disease management.

### Strengths

- Strengths of this study lie in the inclusion of all deaths in Minnesota and examination of midlife women with mental illness, a population not well studied.

### Weaknesses

- Weaknesses include the likely underreporting of psychiatric illness at the time of death, which leaves an incomplete picture of the manner, causes, and magnitude of preventable deaths for midlife women with mental illness.