
Expressed Ideation and Suicidal Behavior

Matthew K. Nock, Ph.D.
Department of Psychology
Harvard University



Funding provided by:
National Institute of Mental Health
American Foundation for Suicide Prevention

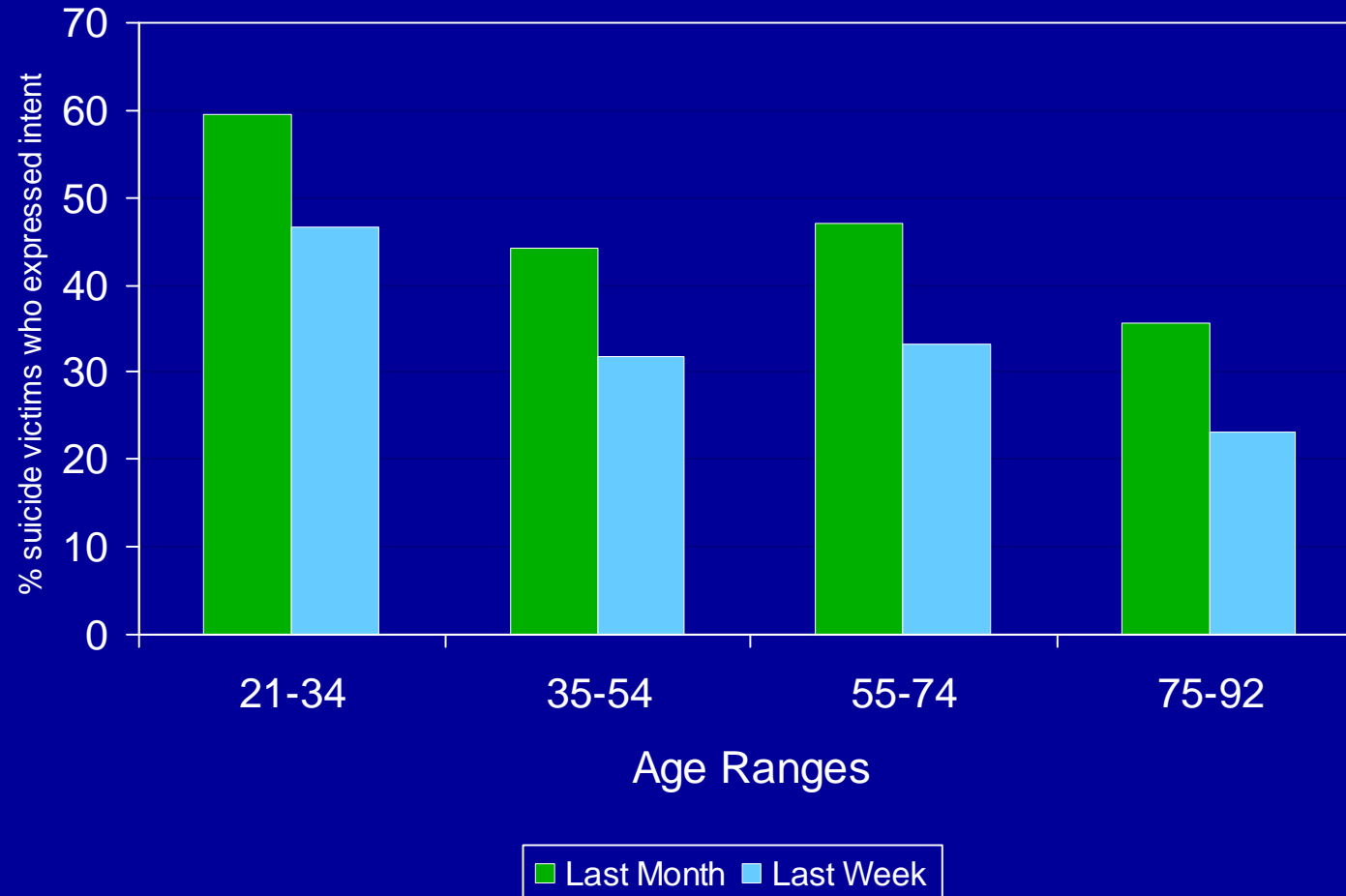
Outline

- (1) What percentage of cases of suicide death/attempt express prior ideation?
- (2) What percentage of people with suicide ideation make a subsequent suicide attempt?
- (3) Ideas for data collection

Verbal Expression of Suicide Ideation

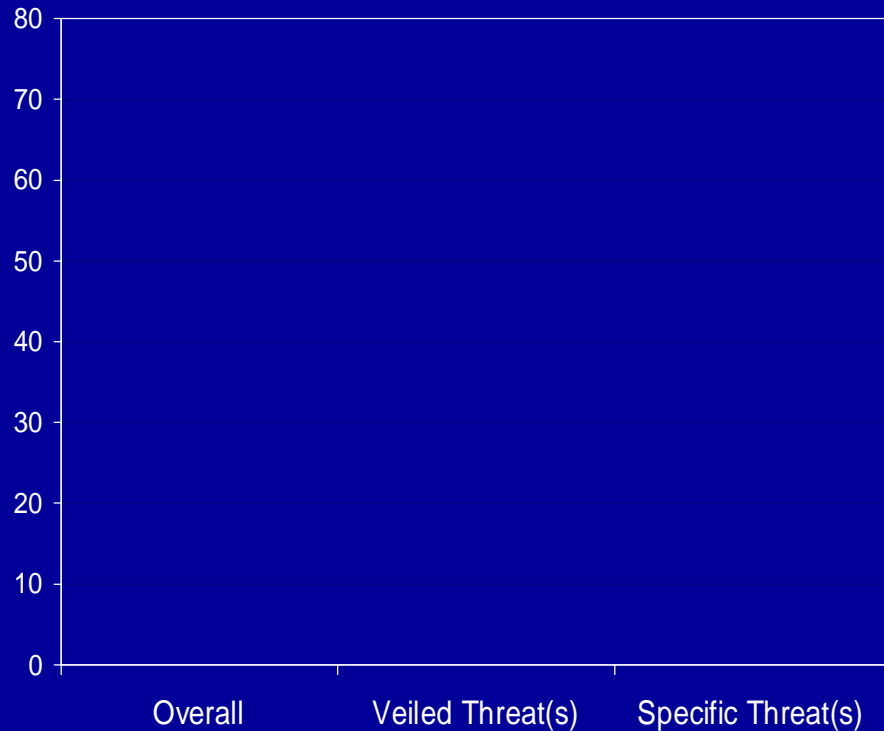
- Psychological autopsy studies
 - Cavanagh et al (2003):
 - Case series, median: 66% (range: 22-92%)
 - Case-controlled, median: 56% (range: 24-85%)
- Rates vary with definition of expression
 - Robins et al (1959):
 - Expressed suicide ideation in some form 69%
 - Stated intent to die by suicide 41%
 - “Better off dead” 24%
 - Dire prediction (“I won’t be here Thursday”) 16%

Expression of Intent Prior to Suicide: Age Effects

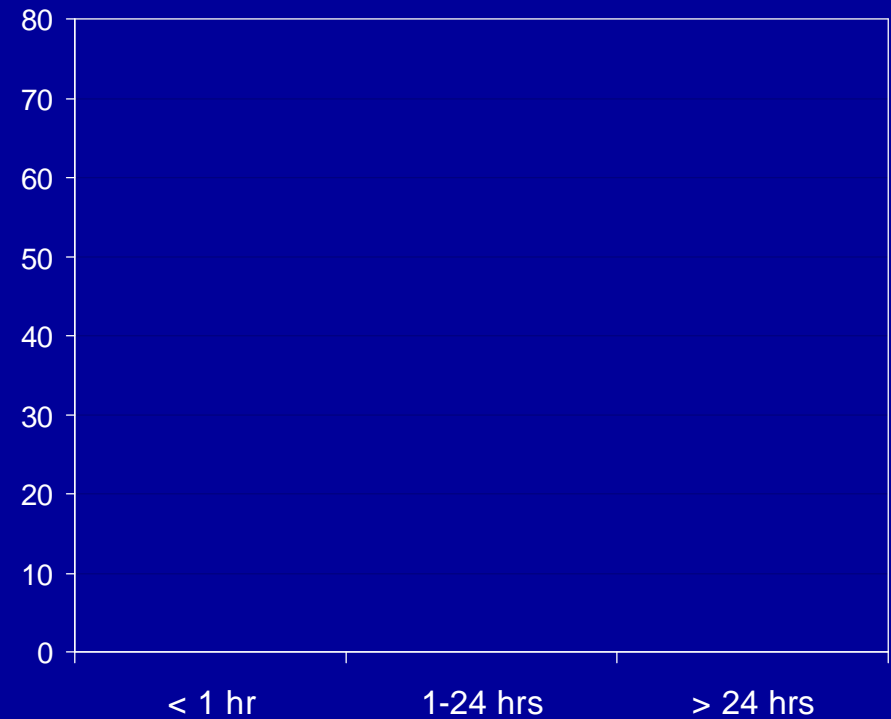


Expression of Ideation Prior to SA: Age Effects

Warning / Threats Prior to Attempt

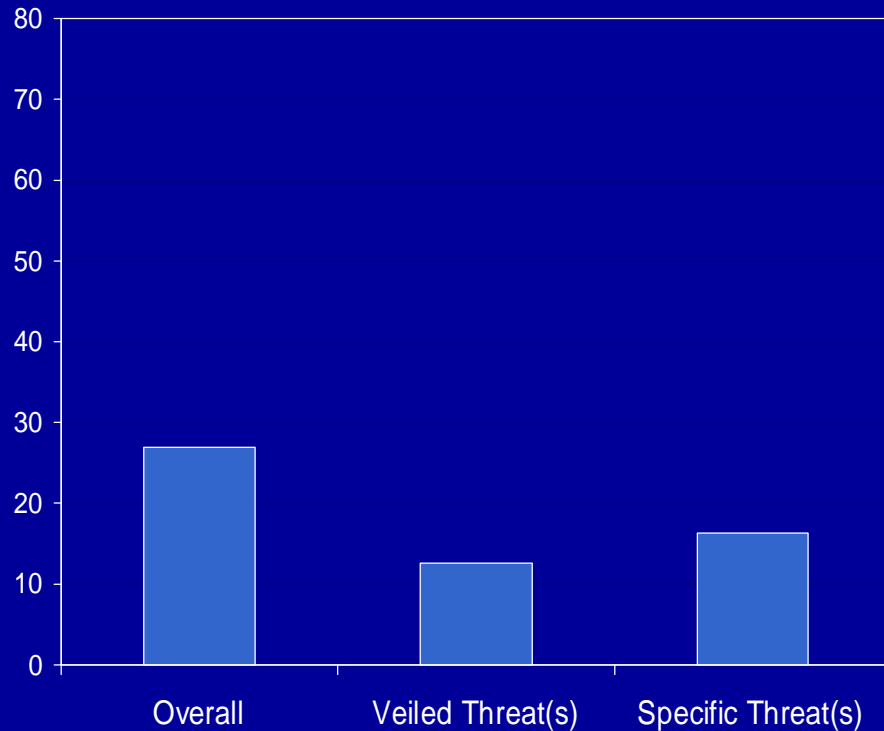


Planning Prior to Attempt

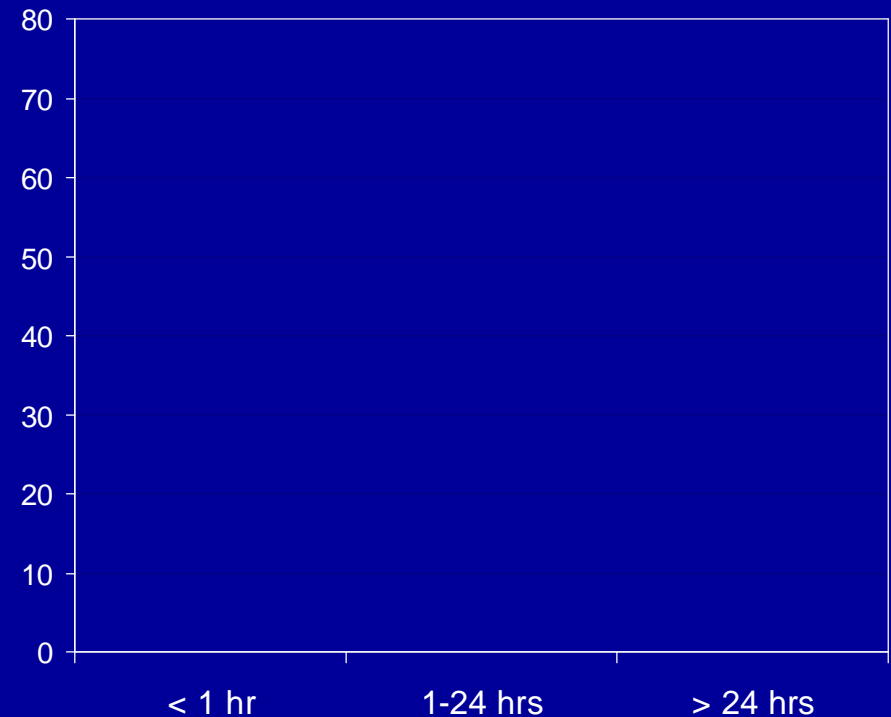


Expression of Ideation Prior to SA: Age Effects

Warning / Threats Prior to Attempt

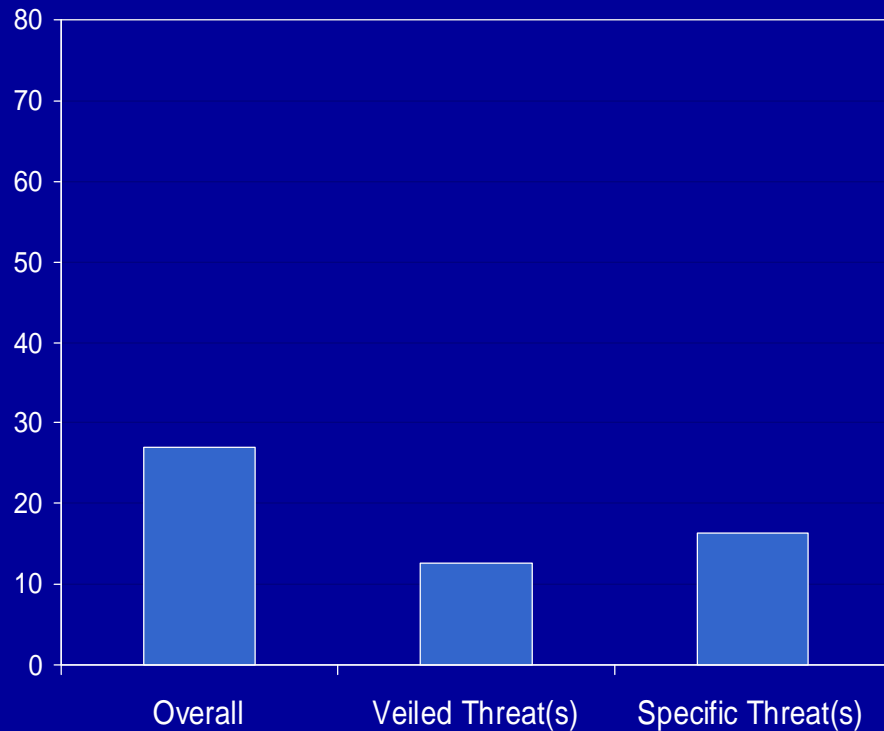


Planning Prior to Attempt

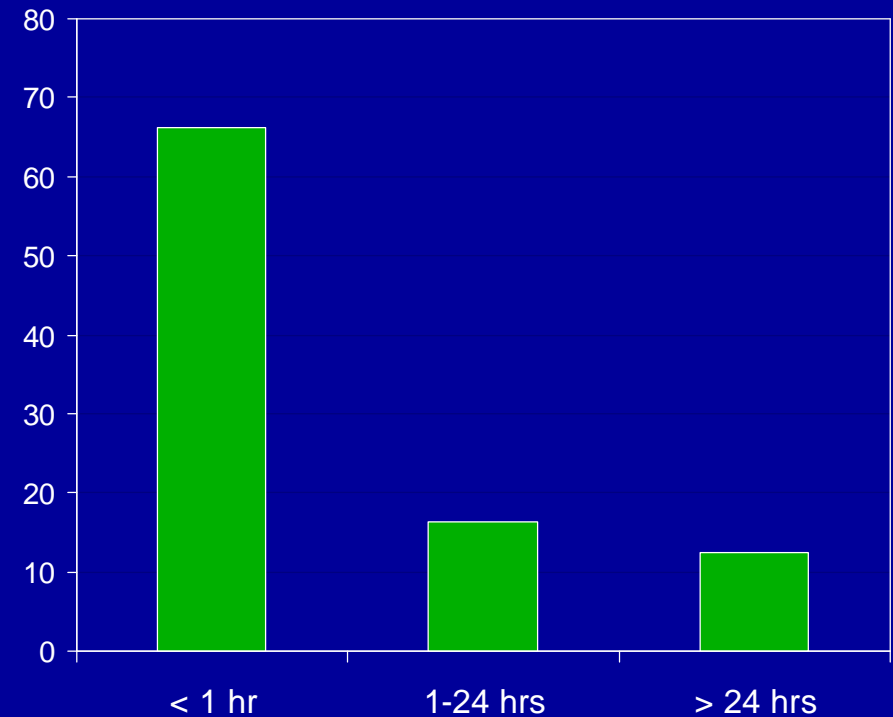


Expression of Ideation Prior to SA: Age Effects

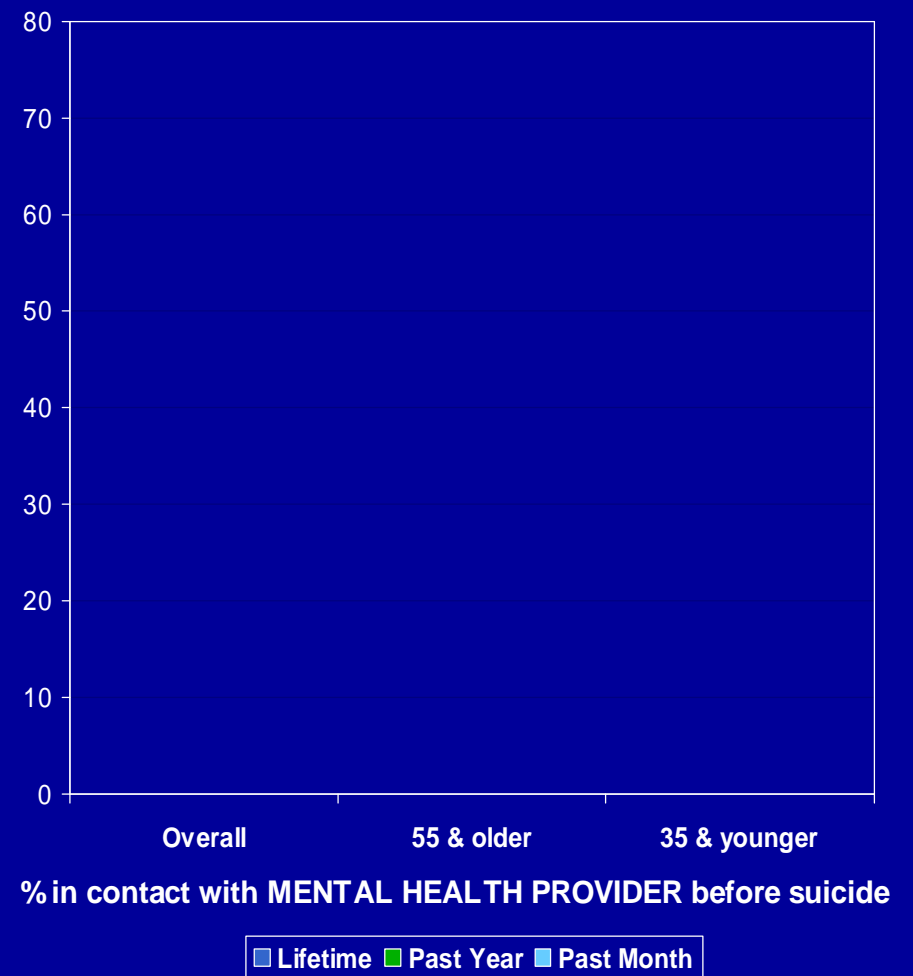
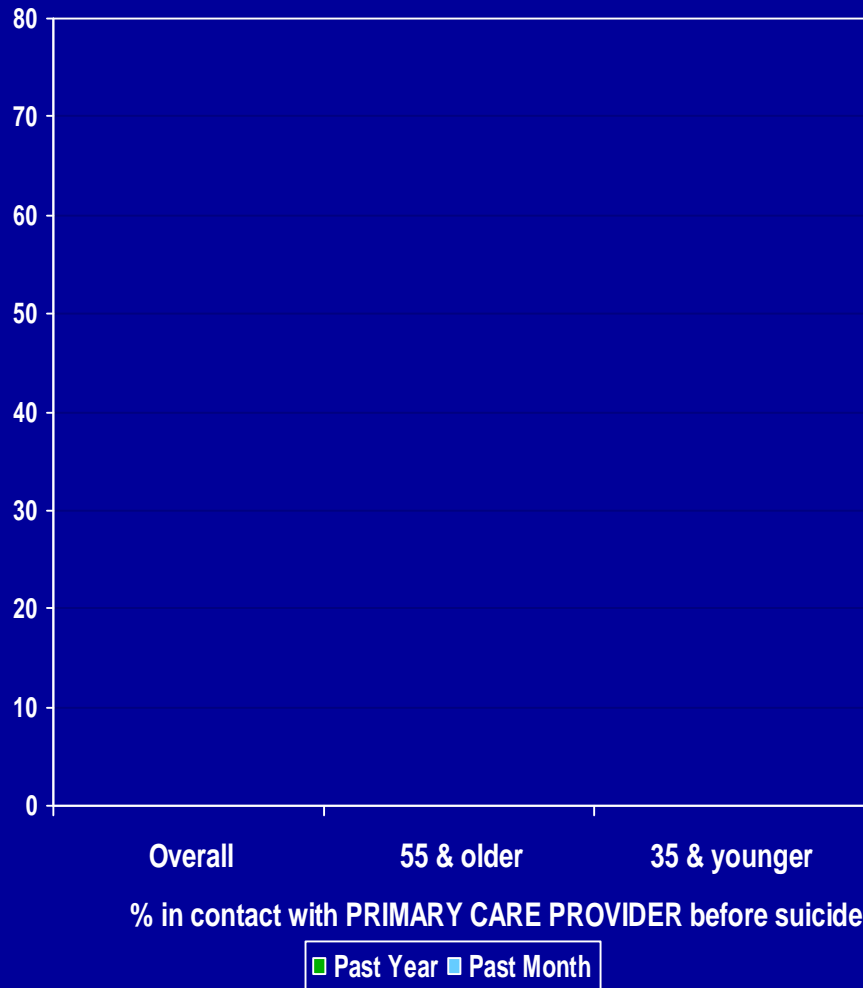
Warning / Threats Prior to Attempt



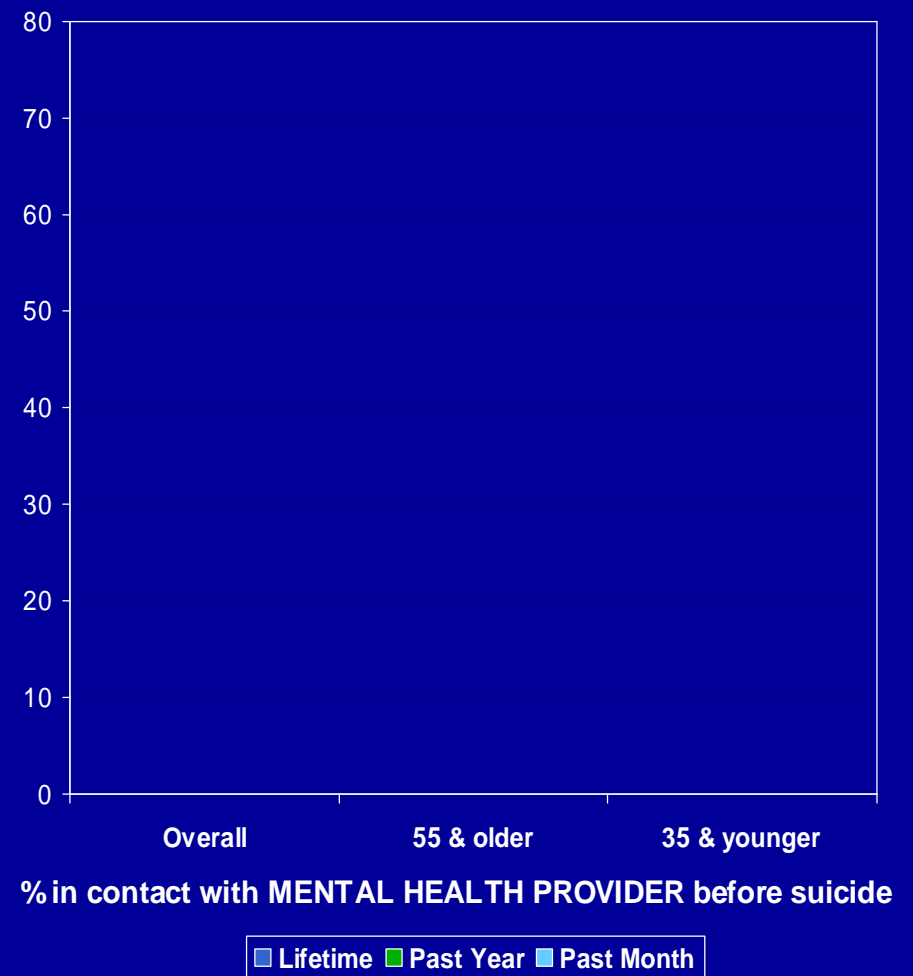
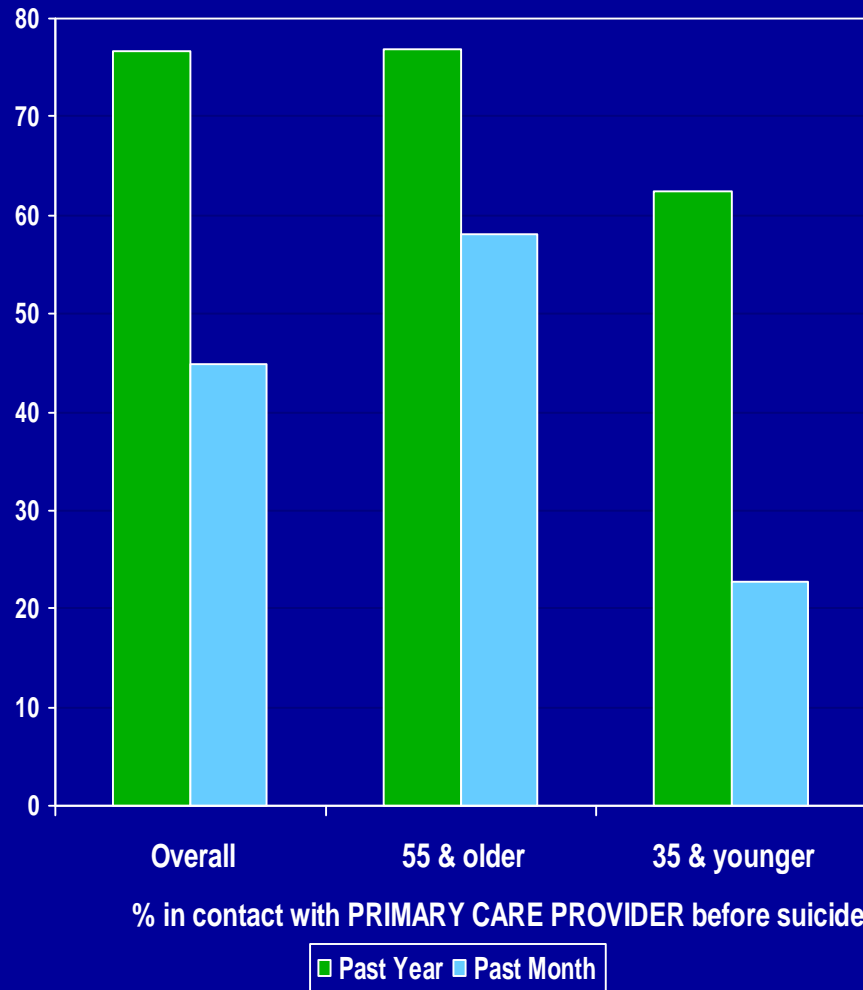
Planning Prior to Attempt



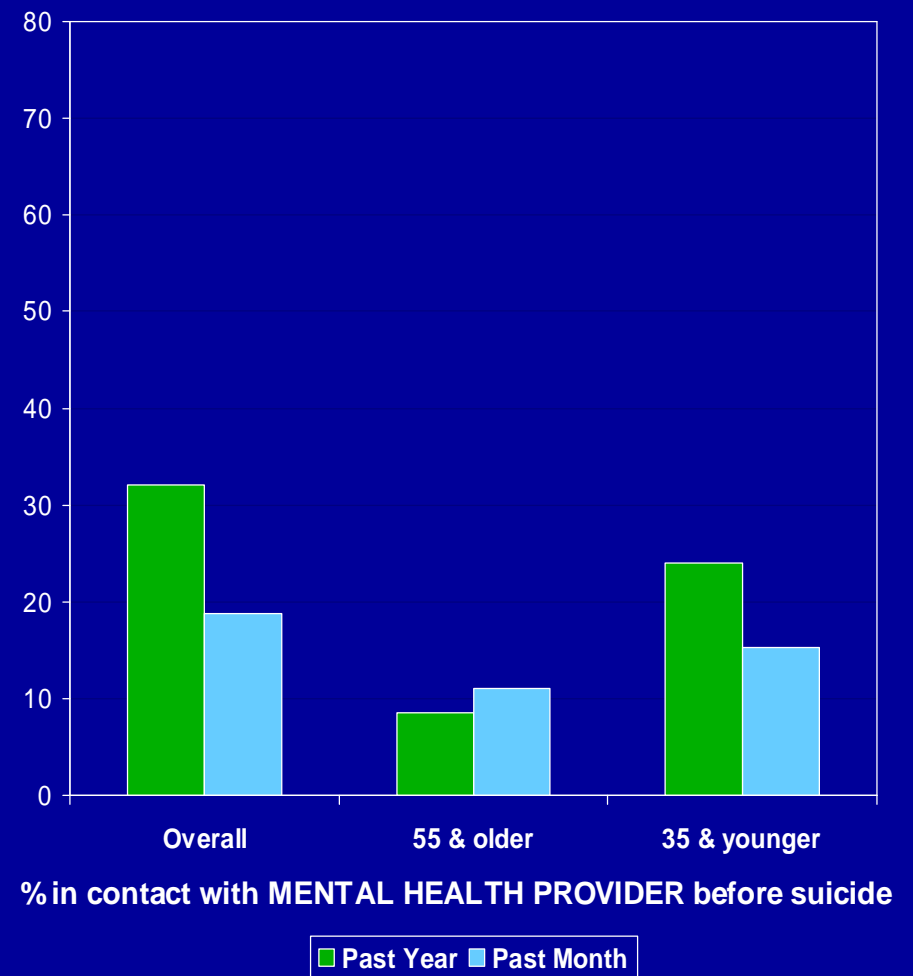
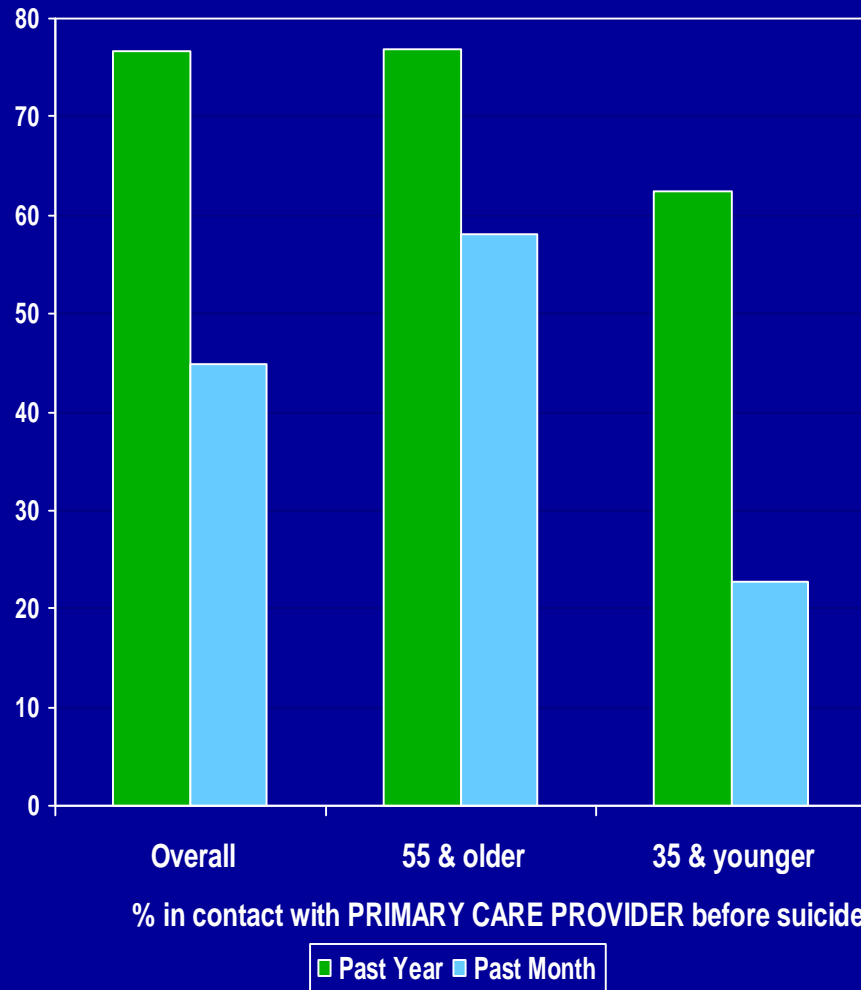
Contact with Health Professional Prior to Suicide



Contact with Health Professional Prior to Suicide



Contact with Health Professional Prior to Suicide



Outline

- (1) What percentage of cases of suicide death/attempt express prior ideation?
- (2) What percentage of people with suicide ideation make a subsequent suicide attempt?
- (3) Ideas for data collection

Prevalence of Suicide Ideation, Plan, Attempt

National Comorbidity Survey- Replication (Kessler et al)

	Lifetime	12-Month
Suicide Ideation	15.6%	2.6%
Suicide Plan	5.4%	0.7%
Suicide Attempt	5.0%	0.4%

Nock et al. (2008). British Journal of Psychiatry

Borges et al. (2006). Psychological Medicine

Rate of Transition from Suicide Ideation to Plan/Attempt

National Comorbidity Survey- Replication (Kessler et al)

	Lifetime	12-Month
SI à SP	34.5%	28.3%
SI à SA	31.8%	15.6%
SP à SA	54.4%	31.9%

Nock et al. (2008). British Journal of Psychiatry

Borges et al. (2006). Psychological Medicine

Predictors of Transition from Suicide Ideation to Attempt

NCS-R, WHO WMH (Kessler et al)

	Suicide Ideation	Attempts among Ideators
Depression (MDD)		
Anxiety (PTSD)		
Conduct (CD)		
Alcohol (Abuse/Dep)		
...		

Values are ORs from multivariate survival models predicting ideation in the total sample (column 1), and unplanned attempts among ideators (column 2) in the NCS-R. Models included 16 disorders— only 4 shown here.

Predictors of Transition from Suicide Ideation to Attempt

NCS-R, WHO WMH (Kessler et al)

	Suicide Ideation	Attempts among Ideators
Depression (MDD)	2.3*	
Anxiety (PTSD)	1.5*	
Conduct (CD)	1.5*	
Alcohol (Abuse/Dep)	1.8*	
...		

Values are ORs from multivariate survival models predicting ideation in the total sample (column 1), and unplanned attempts among ideators (column 2) in the NCS-R. Models included 16 disorders— only 4 shown here.

Predictors of Transition from Suicide Ideation to Attempt

NCS-R, WHO WMH (Kessler et al)

	Suicide Ideation	Attempts among Ideators
Depression (MDD)	2.3*	1.0
Anxiety (PTSD)	1.5*	2.4*
Conduct (CD)	1.5*	2.2*
Alcohol (Abuse/Dep)	1.8*	2.9*
...		

Values are ORs from multivariate survival models predicting ideation in the total sample (column 1), and unplanned attempts among ideators (column 2) in the NCS-R. Models included 16 disorders— only 4 shown here.

Summary: Expressed Ideation

Many express ideation and have contact with HCP/MHPs

- Express ideation prior to suicide: 56%-66%
- Visit health provider prior to suicide: 75% past year

However, most people with ideation do not attempt suicide

- Only 1/3 of those with ideation ever make an attempt
- 78% of those who die by suicide deny ideation/intent in last communication (Busch, Fawcett & Jacobs, 2003)

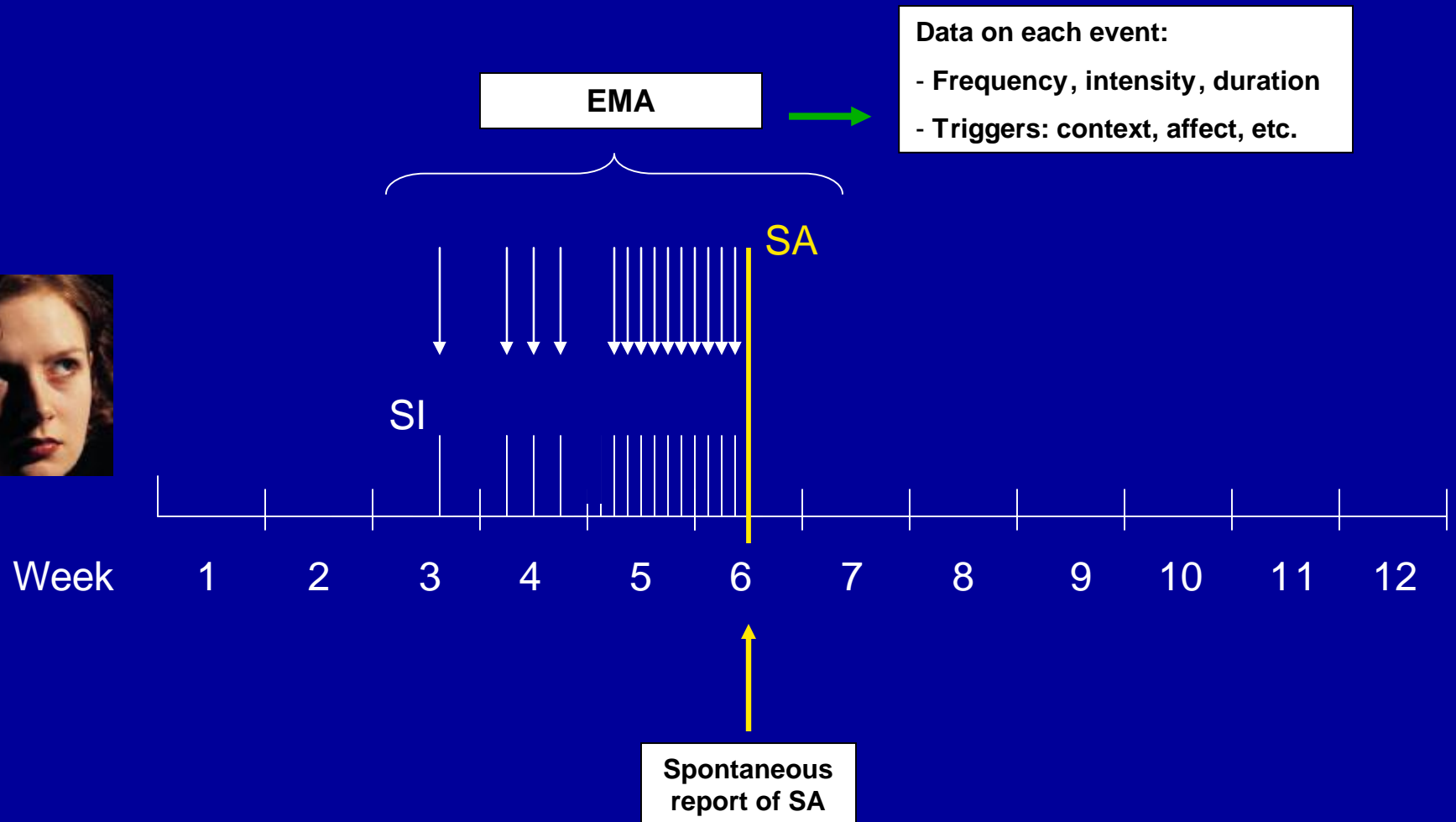
Outline

- (1) What percentage of cases of suicide death/attempt express prior ideation?
- (2) What percentage of people with suicide ideation make a subsequent suicide attempt?
- (3) Ideas for data collection
 - (a) Few prospective data on emergence of SI à SA
à Collect data closer to emergent events
 - (b) Current data rely on verbally expressed SI
à Collect data that do not rely on self-report

Collect Data Closer to Suicidal Events

- Weekly monitoring yields higher detection of suicidal (21% vs 9%) and nonsuicidal (18% vs. 2%) self-injurious events than spontaneous report (Brent et al, 2009)
- Real-time or daily monitoring can provide data for assessment and prediction of individual events
- Recent ecological momentary assessment (EMA) study with self-injurious adolescents shows feasibility of real-time data collection (Nock et al., in press)
 - $N=30$ for 2-weeks yielded data on:
 - 344 episodes of NSSI thoughts
 - 104 episodes of NSSI behaviors
 - 26 episodes of suicidal ideation

EMA of Suicide Ideation and Attempts



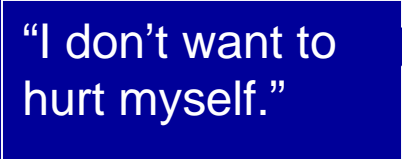
- Balance of science vs. practice

Collect Data on Unexpressed Ideation

- 34%-44% do not express ideation/intent
- 78% deny intent before killing themselves



I want to hurt myself.

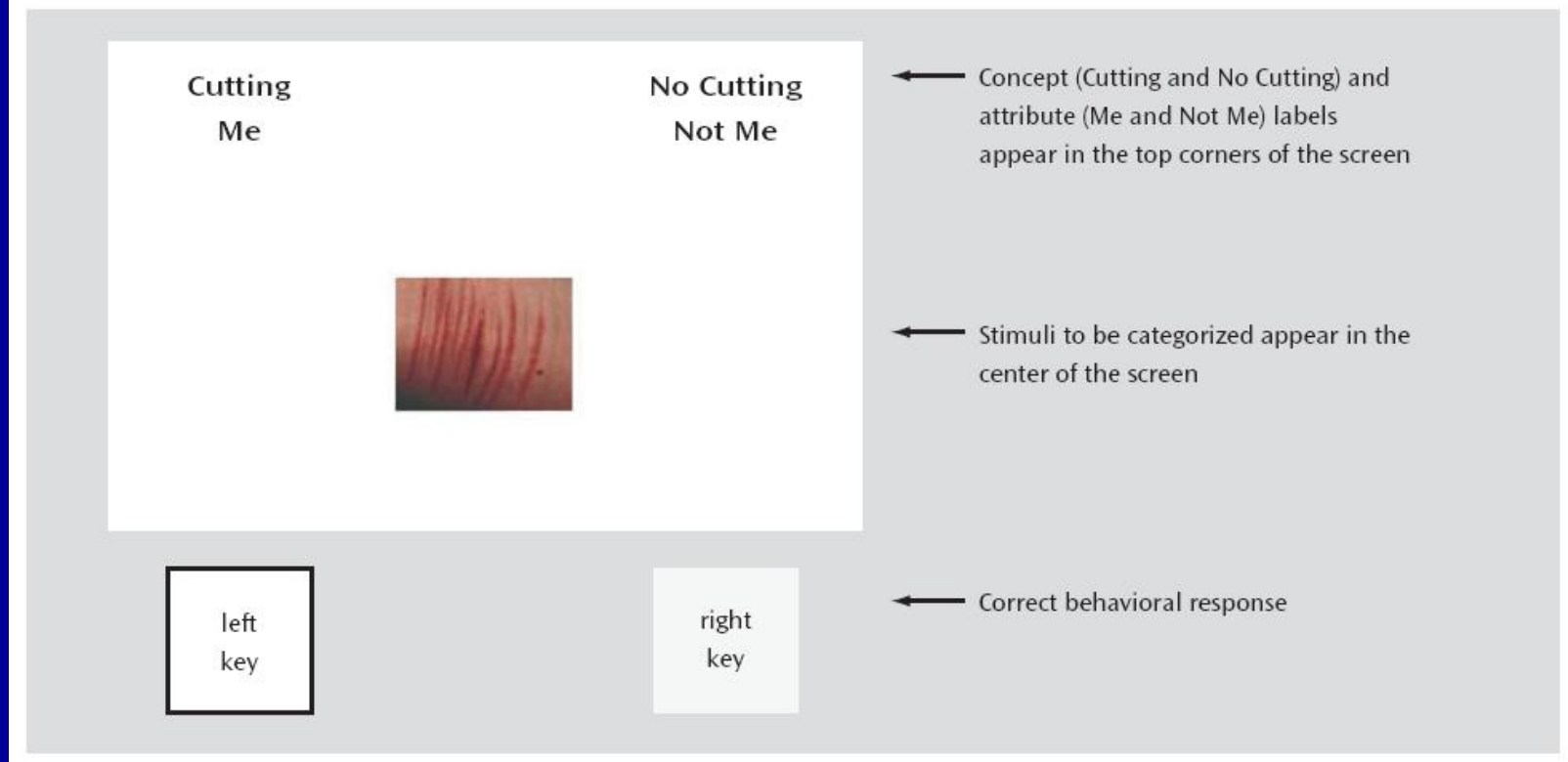


“I don't want to hurt myself.”

Measurement of Implicit Cognition

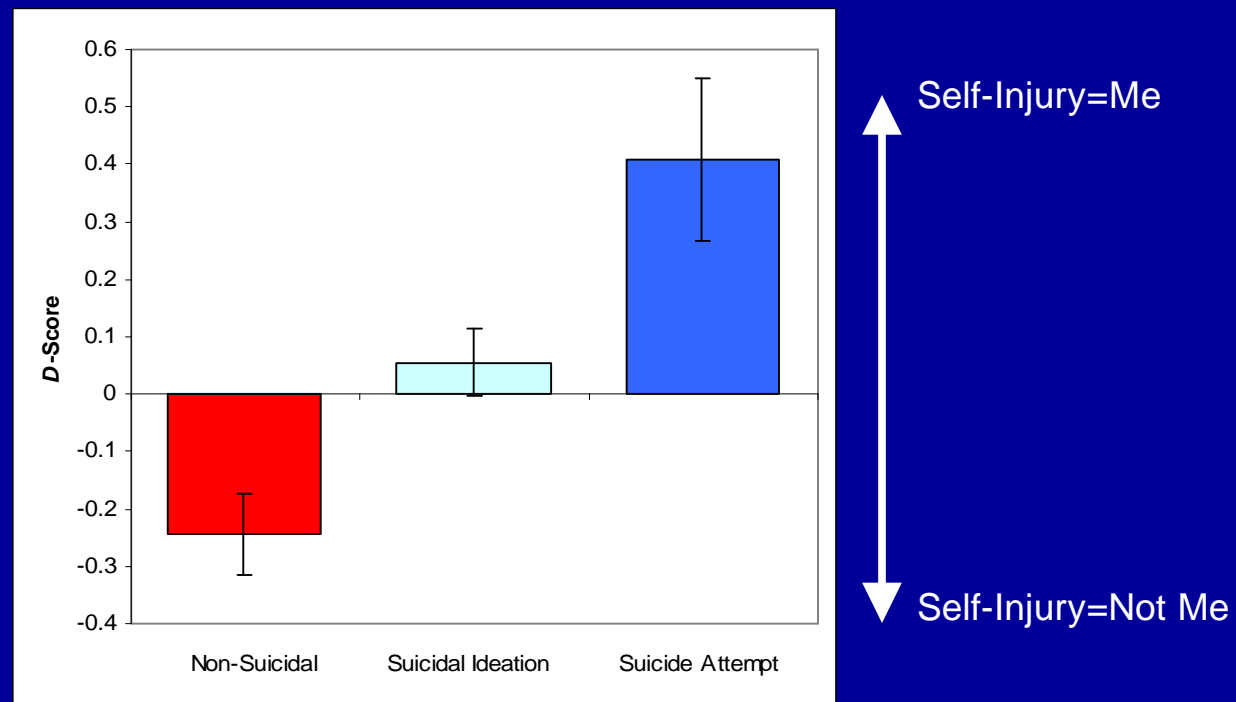
- Recently developed an IAT for thoughts of self-injury (SI-IAT) that measures strength of association between self-injury and oneself

FIGURE 1. Sample Stimulus From the Self-Injury Implicit Association Test^a



Self-Injury IAT

- Can the SI-IAT distinguish among non-suicidal ($n=38$), suicide ideators ($n=37$), and suicide attempters ($n=14$)?



$$F_{(2,85)}=13.23, p < .001$$

*Improved prediction of 6-month SI & SA beyond other BL factors

Conclusions & Directions

- Most suicide deaths are preceded by expressed ideation
- However, most with ideation do not make attempts, and most who die by suicide deny intent in last communication
- Need for: (1) more frequent assessments and (2) measures of unexpressed suicide ideation

Expressed Ideation and Suicidal Behavior

Matthew K. Nock, Ph.D.
Department of Psychology
Harvard University



Funding provided by:
National Institute of Mental Health
American Foundation for Suicide Prevention

**Electronic
Diary**

Thoughts

Characteristics
(Intensity,
Duration)

Context
(Who with? What
doing, feeling?)

Behaviors

Function
(Intended outcome
of behavior)

Alternate Behavior
(If not, what did
you do instead?)

Context: Lunchtime **i**

Think of doing any of these?

Check any/many	<input type="checkbox"/> Use alcohol
	<input type="checkbox"/> Use drug/pills
	<input type="checkbox"/> Spend impulsively
	<input type="checkbox"/> Binge eat
	<input type="checkbox"/> Purge
	<input type="checkbox"/> Unsafe sex
	<input type="checkbox"/> Other risky behavior

<< >>

Context: Alch. thoughts **i**

What were you doing?

Check any/many	<input type="checkbox"/> Listen to music
	<input type="checkbox"/> Already Eating
	<input type="checkbox"/> Resting
	<input type="checkbox"/> TV/Video
	<input type="checkbox"/> Socializing
	<input type="checkbox"/> Homework
	<input type="checkbox"/> Recreation
	<input type="checkbox"/> Using drugs
	<input type="checkbox"/> Drinking alcohol

<< >>

Context: When did it **i**

Why did you do it?

Check any/many	<input type="checkbox"/> To communicate
	<input type="checkbox"/> Rid thought/feeling
	<input type="checkbox"/> Feel something
	<input type="checkbox"/> Escape task/people
	<input type="checkbox"/> Other

<< >>

What predicts transition?

Daily Monitoring Self-Destructive Behaviors

	Thoughts	Behaviors
NSSI	344	104
Suicide	26	0
Alcohol use	103	42
Drug use	128	53
Binge	89	56
Purge	68	13
Impulsive spending	44	13
Risky sex	31	7
Other destructive	102	39
Total	935	327

N=30, two-week assessment period

Severity of Thoughts

“How intense was the thought?”

	NSSI Thought	Suicidal Thought
Very severe	21.4%	3.8%
Severe	27.3%	7.7%
Moderate	32.3%	53.8%
Mild	17.8%	30.8%

Duration of Thoughts

“How long did the thought last?”

	NSSI Thoughts	Suicidal Thoughts
<5 seconds	8.4%	0.0%
5-60 seconds	20.6%	11.5%
1-30 minutes	39.5%	46.2%
30-60 minutes	17.7%	15.4%
1-5 hours	11.0%	15.4%
>5 hours	2.6%	11.5%

What were you doing?

	NSSI Thoughts	Suicidal Thoughts
Socializing	28.2%	34.6%
Resting	22.1%	19.2%
Listen to music	14.8%	30.8%
Doing homework	14.2%	7.7%
TV/Video games	13.7%	7.7%
Recreational activities	12.2%	3.8%
Eating	11.9%	7.7%
Using drugs	3.5%	3.8%
Using alcohol	2.9%	0.0%

What were you feeling?

	NSSI Thoughts	Suicidal Thoughts
Sad	38.5%	57.7%
Overwhelmed	37.3%	46.2%
Scared	31.5%	30.8%
Angry	29.7%	50.0%
Self-hatred	28.0%	50.0%
Anger at another	26.8%	53.8%
Rejected	20.7%	46.2%
Numb	12.8%	23.1%
Happy	3.5%	0.0%

Collect Data Closer to Suicidal Events

Advantages:

- Scientific: Better understanding of nature, triggers, and consequences of suicidal events (may illuminate mechanisms through which SI/SA emerge)
- Clinical: Closer monitoring of suicidal events
- Practical: Low cost/effort and easily incorporated into clinical trials

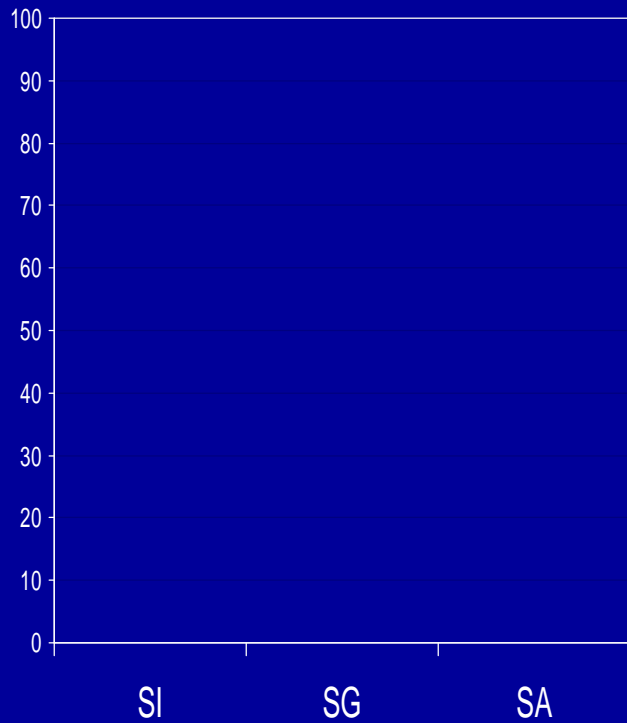
Collect Data on Unexpressed Ideation

Advantages:

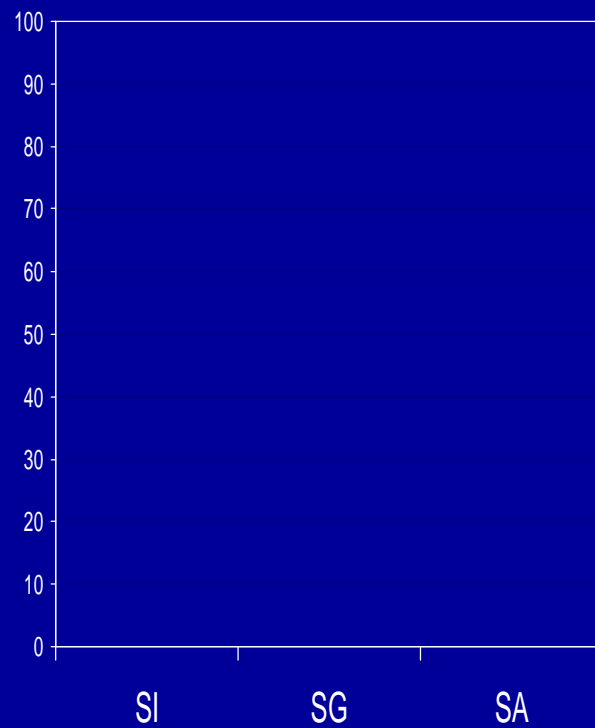
- Scientific: Increased understanding of cognitive states associated with suicidal behaviors
- Clinical: Improves the prediction of suicidal events
- Practical: Low cost/effort and easily incorporated into clinical trials

Contact with Health Professional

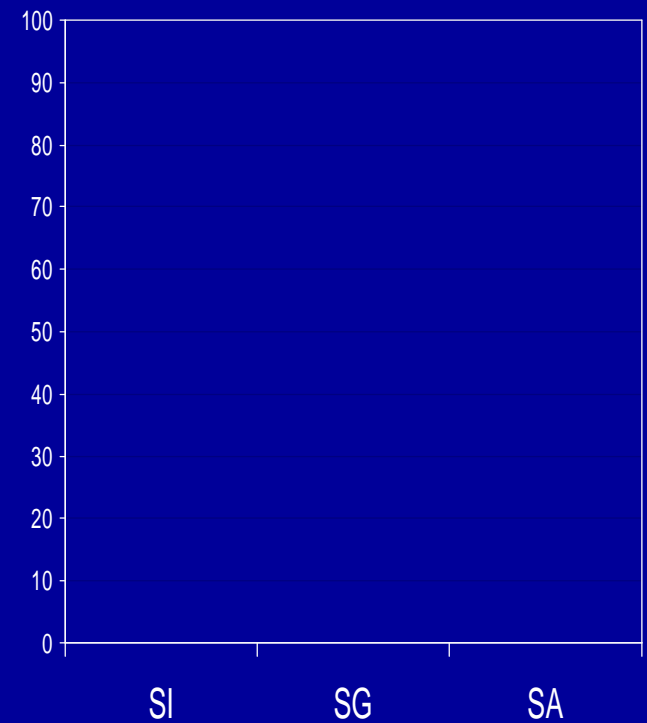
Any Treatment



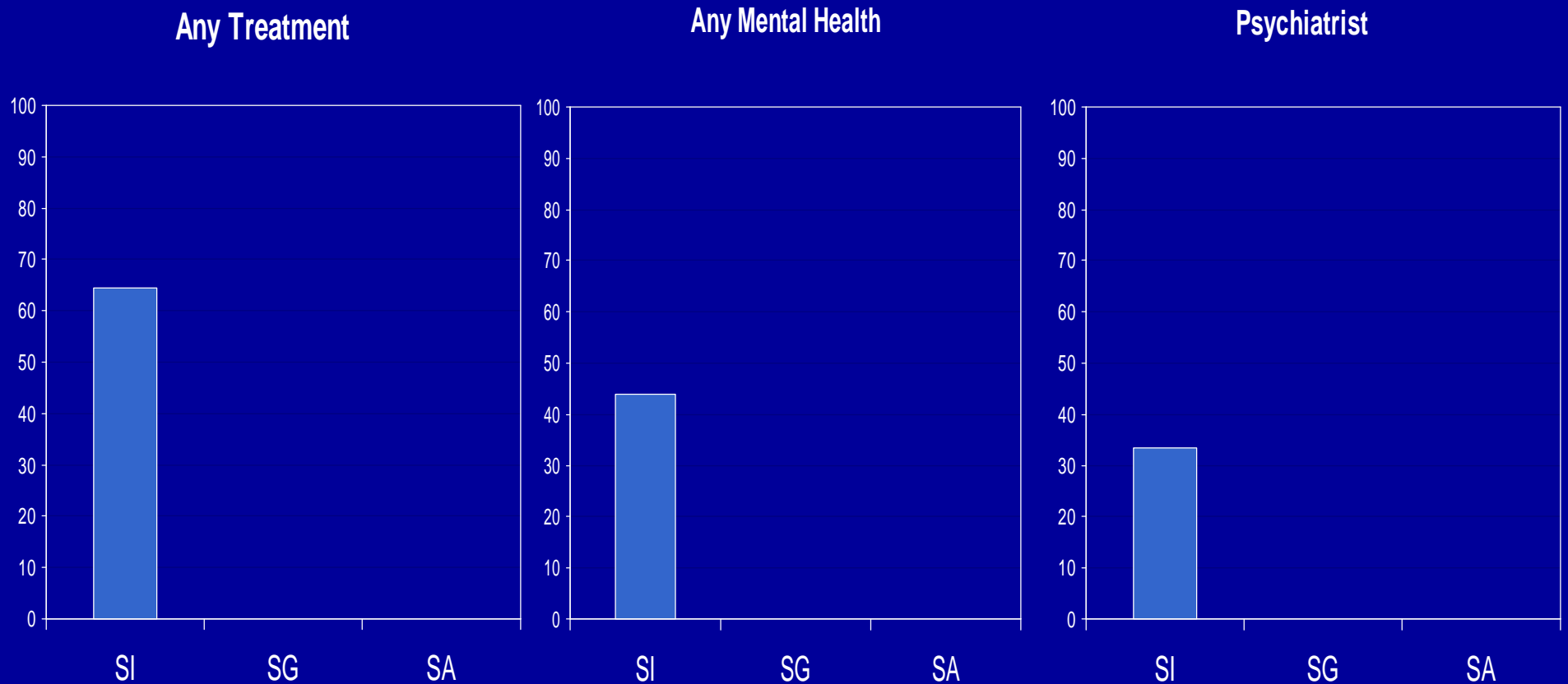
Any Mental Health



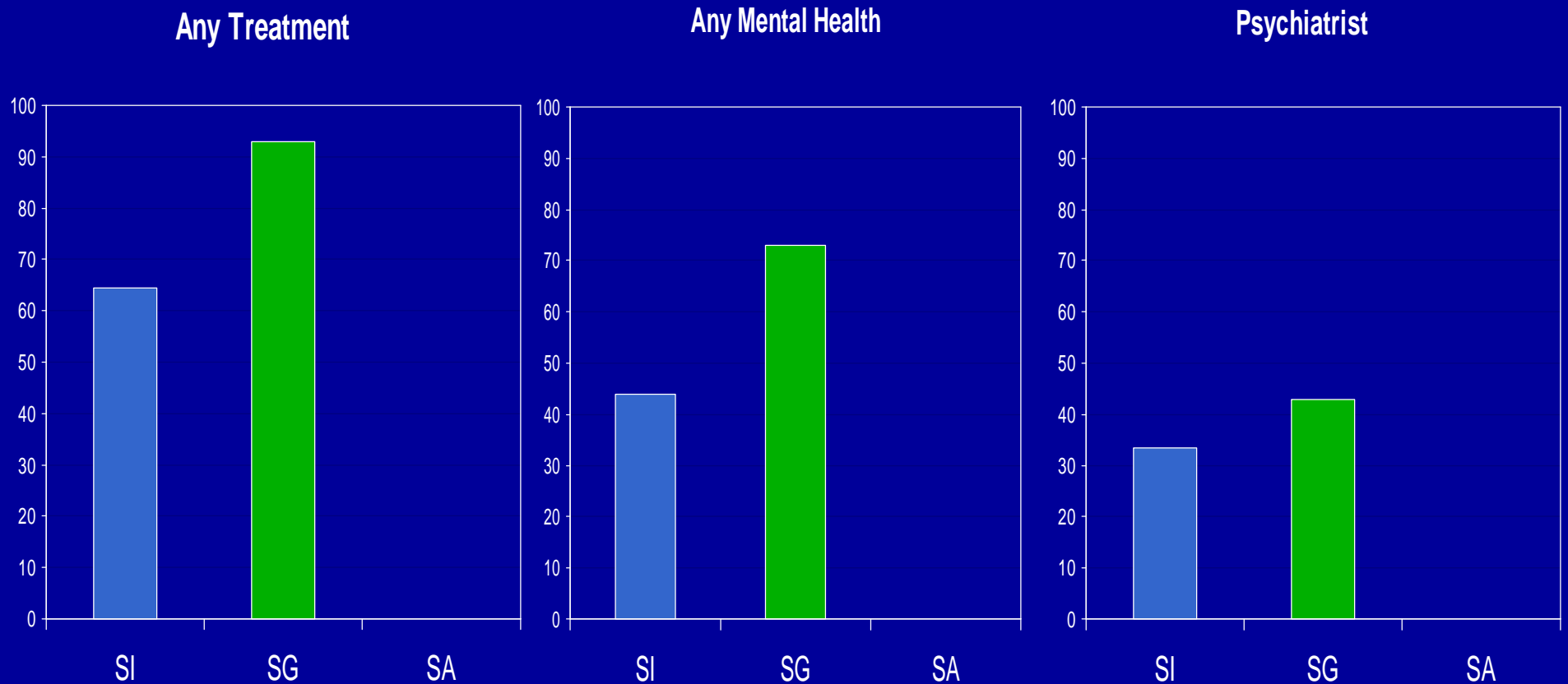
Psychiatrist



Contact with Health Professional

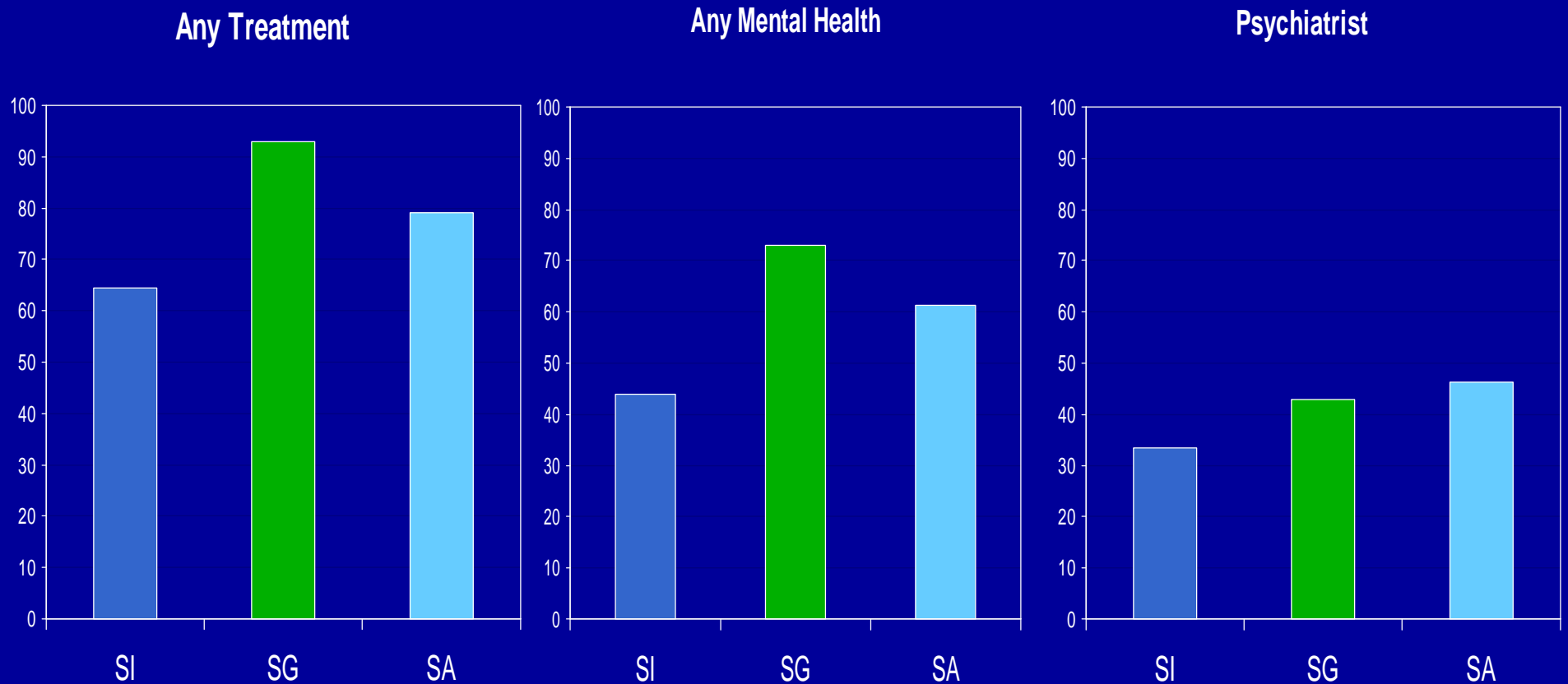


Contact with Health Professional



Kessler et al. (2005). JAMA

Contact with Health Professional



Collect Data That Do Not Rely on Verbal Expression

- Implicit cognitions are those not reliant on introspection
- Implicit Association Test (IAT) by Greenwald et al. 1998
- Uses reaction time to measure strength of association between concepts and attributes
 - Reliable and resistant to attempts to ‘fake good’ (Banse et al., 2001)
 - Sensitive to clinical change in treatment (Teachman & Woody, 2003)
 - Predictive of future behavior (Rudman & Lee, 2002)

Collect Data on Unexpressed Ideation

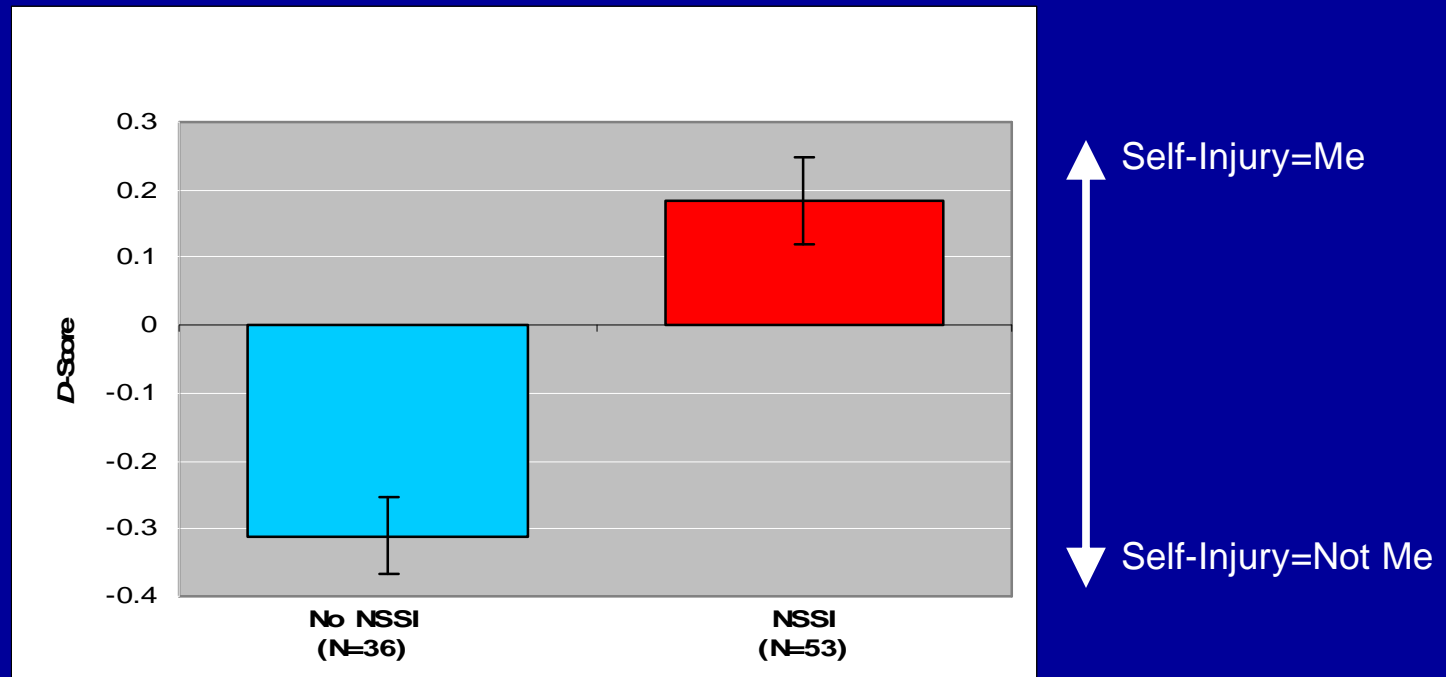
- Current assessment methods rely on explicit report
- Motivation to conceal self-injurious thoughts and intentions
- Highest rate of suicide death immediately post-discharge
(Qin & Nordentoft, 2005)
- Need method for assessing risk of SITB not reliant solely on explicit report

Frequency

	NSSI Thoughts	Suicidal Thoughts
Who had them?	93.3% (28/30)	33.3% (10/30)
Range	1-34 thoughts	1-8 thoughts
Mean	12.3 per person (0.9 per day)	2.6 per person (1.3 per week)

Self-Injury IAT

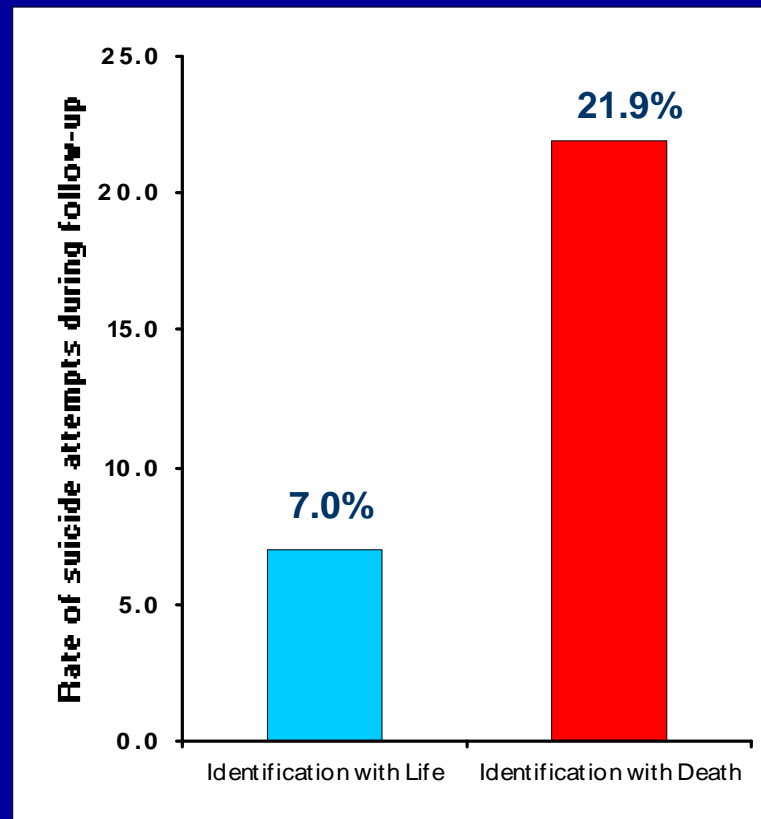
- Administered to adolescents with recent history of NSSI ($n=53$) vs. controls ($n=36$) in lab setting recruited from clinics and community



$t=5.60, d=1.20, p < .001$

Death Identification IAT

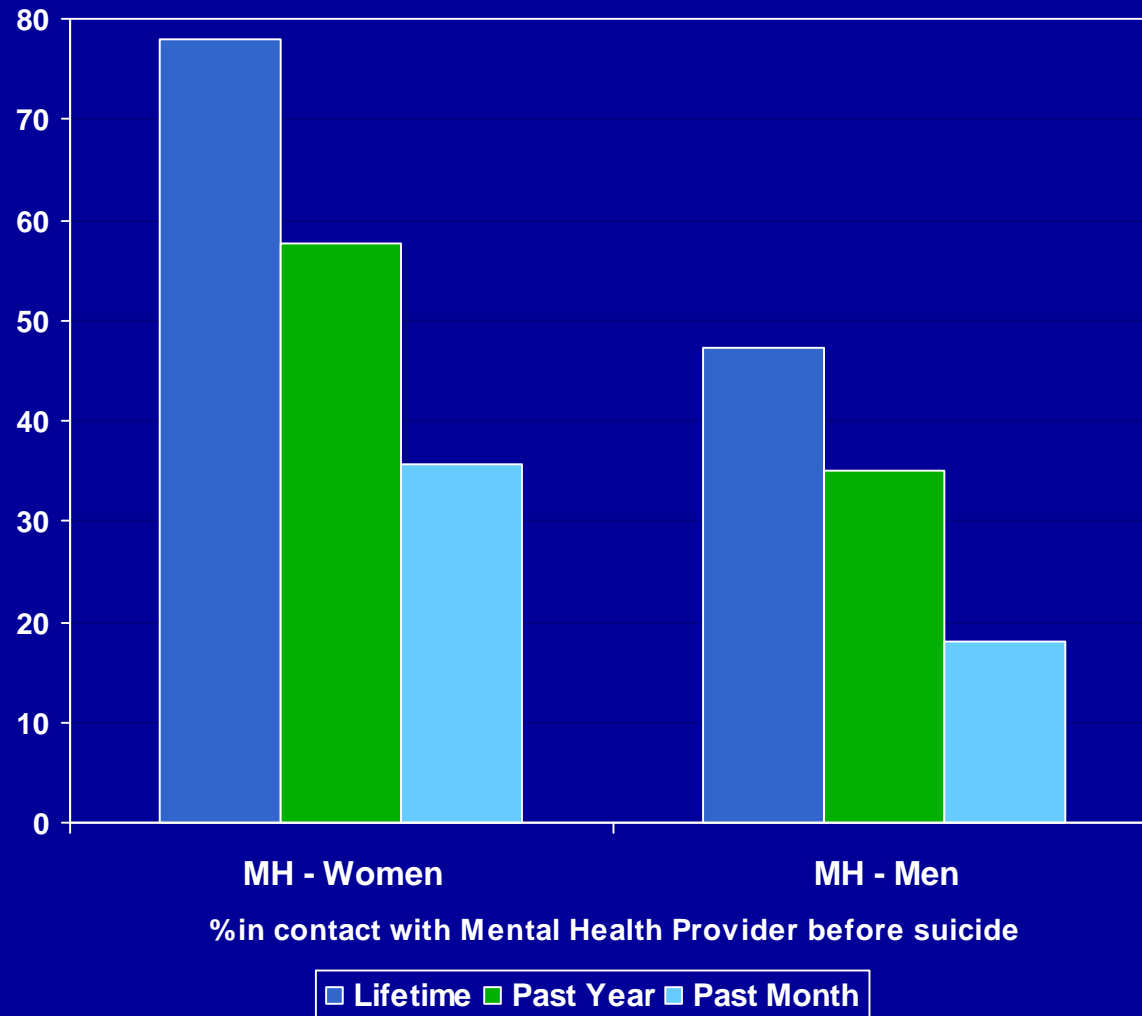
- Are those with a positive identification with death more likely to make a future suicide attempt ($N=157$ ER visitors)?



Likelihood ratio $X^2_{(1)}=5.32, p<.05$

*Improved prediction of 6-month SA beyond BL factors

Contact with Health Professional Prior to Suicide



Expression of Intent Prior to Suicide: Age Effects

