

# Suicide in Young People



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# Why Suicidality in Teens is so Important!

- A leading cause of death
- Suicide attempts are the most common reason for seeking psychiatric care in the mid teens
- Although attempts rarely predict a later suicide at this age they are nearly always associated with an impairing disorder

# Leading Causes of Death in 15- to 19-Year-Olds

— UNITED STATES, 2000 —



CAUSE	# OF DEATHS
Accidents	6573
Homicide	1861
<b>Suicide</b>	<b>1574</b>
Cancer/Leukemia	759
Heart Disease	372
Congenital Anomalies	213
Lung Disease	151
Stroke	60
Diabetes	40
Blood Poisoning	36
HIV	36

1631



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# Definitions



# Suicide Spectrum



- Suicidal ideation
- Suicidal threats
- Suicidal gestures
- Deliberate self harm
- Suicide attempts
- Serious suicide attempt
- Interrupted attempt

# Non-Suicidal Self-Harm

- Self-cutting, repetitive and stereotypical
- To relieve distress/anger, pain, loneliness rather than to die
- Often co-occurs with suicidal behavior

# Models



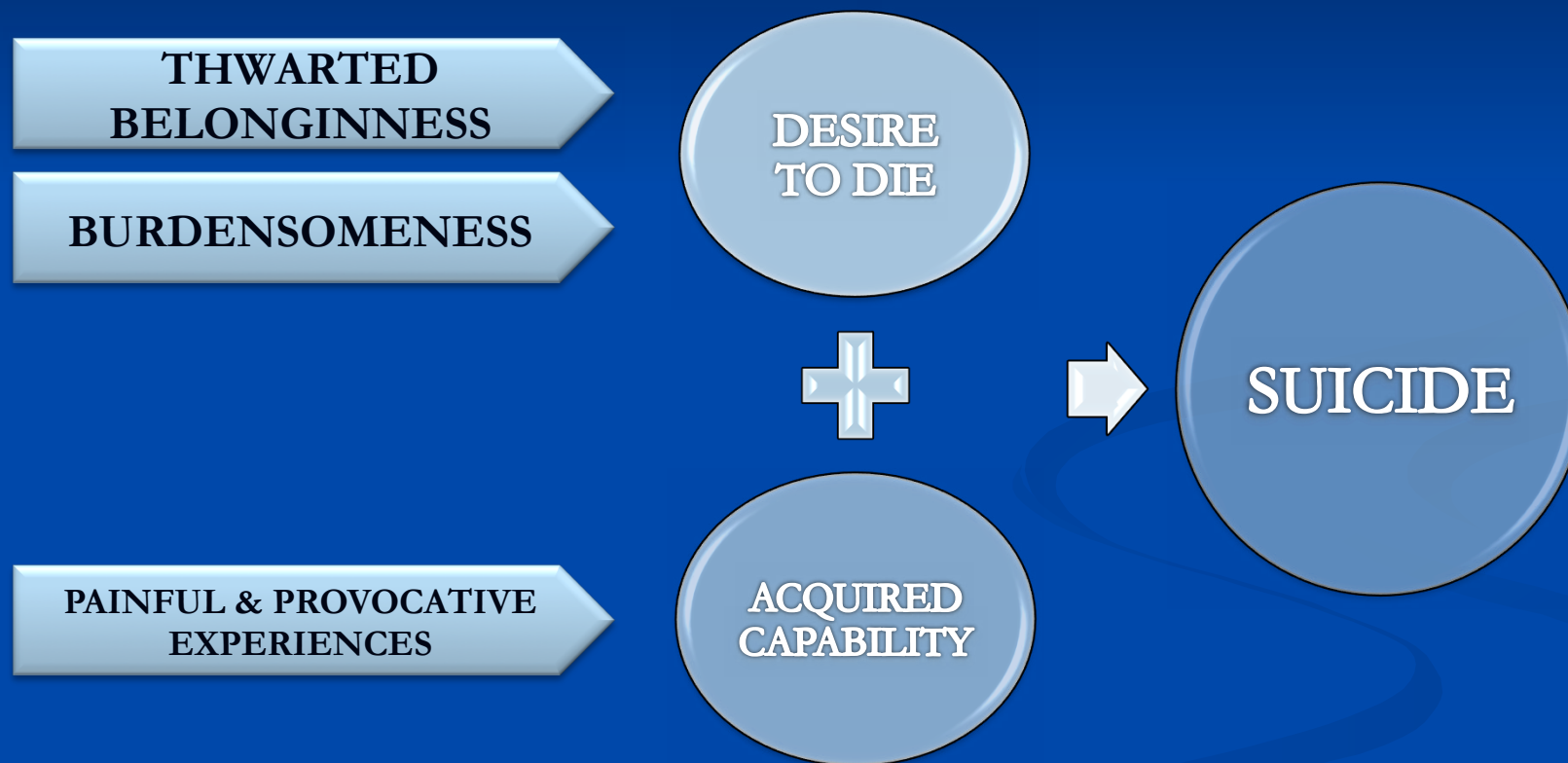
- Grand Theories (Freud, Klein, Meninger)
- Mental Pain (Schneidman)
- Escape theories (Baumeister)
- Motivational (O'Connor)
- HRB Spectrum (HRB)
- Impulsive Aggression and Serotonin (Brent and Mann)

# Interpersonal theory

- Perceived burdensomeness, thwarted belongingness and acquired capability are risk factors for suicide
- All are necessary and sufficient
- Both factors act over and beyond internalizing psychopathology

Joiner et al 2009

# The interpersonal theory of suicide (IPTS)- Overall



Joiner, 2005; Van Orden et al., 2010

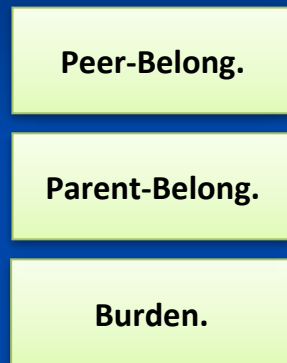
# IPTS examination - the study

- Israeli adolescents 14-18 years (n=1285)
- Self-report measures
- Two follow ups: 3-months, 12-months
- Data analysis: Linear and logistic regressions, *mediation analyses*



# Hypothesized model

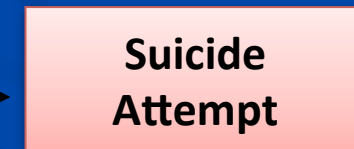
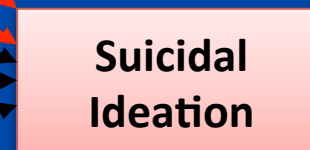
## INTERPERSONAL



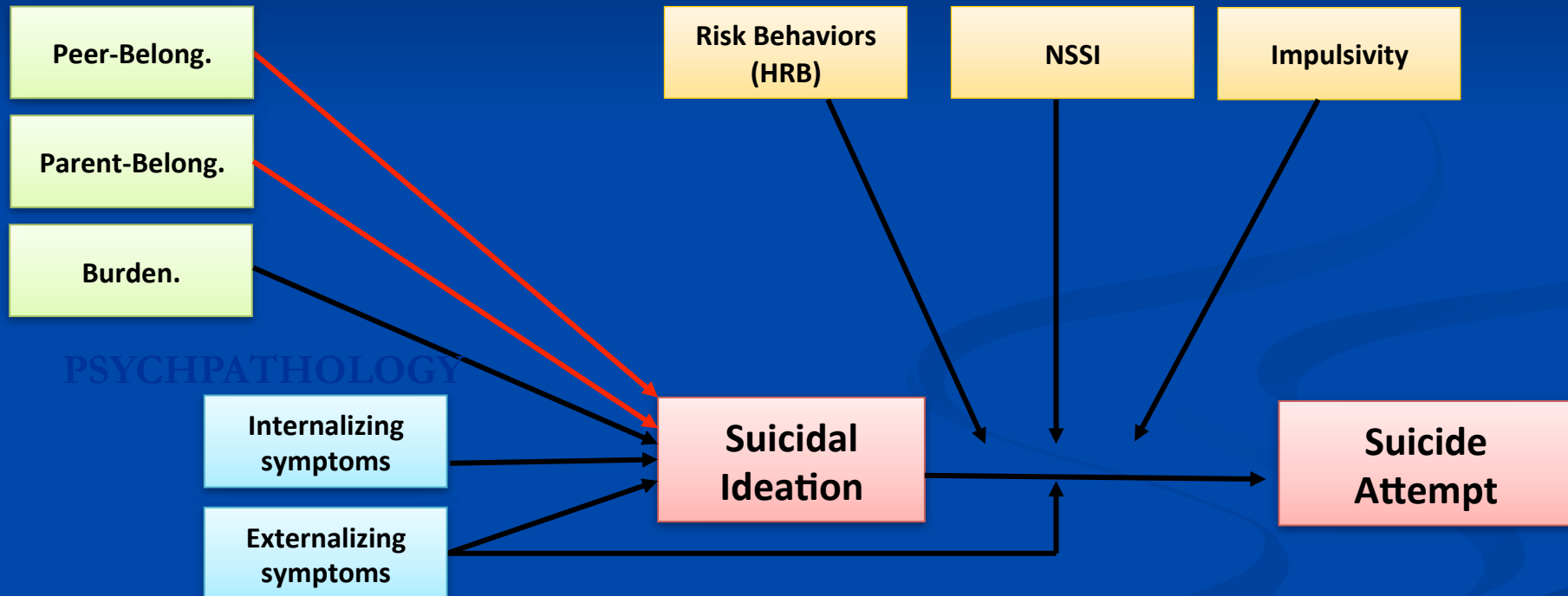
## ACQUIRED CAPABILITY



## PSYCHOPATHOLOGY

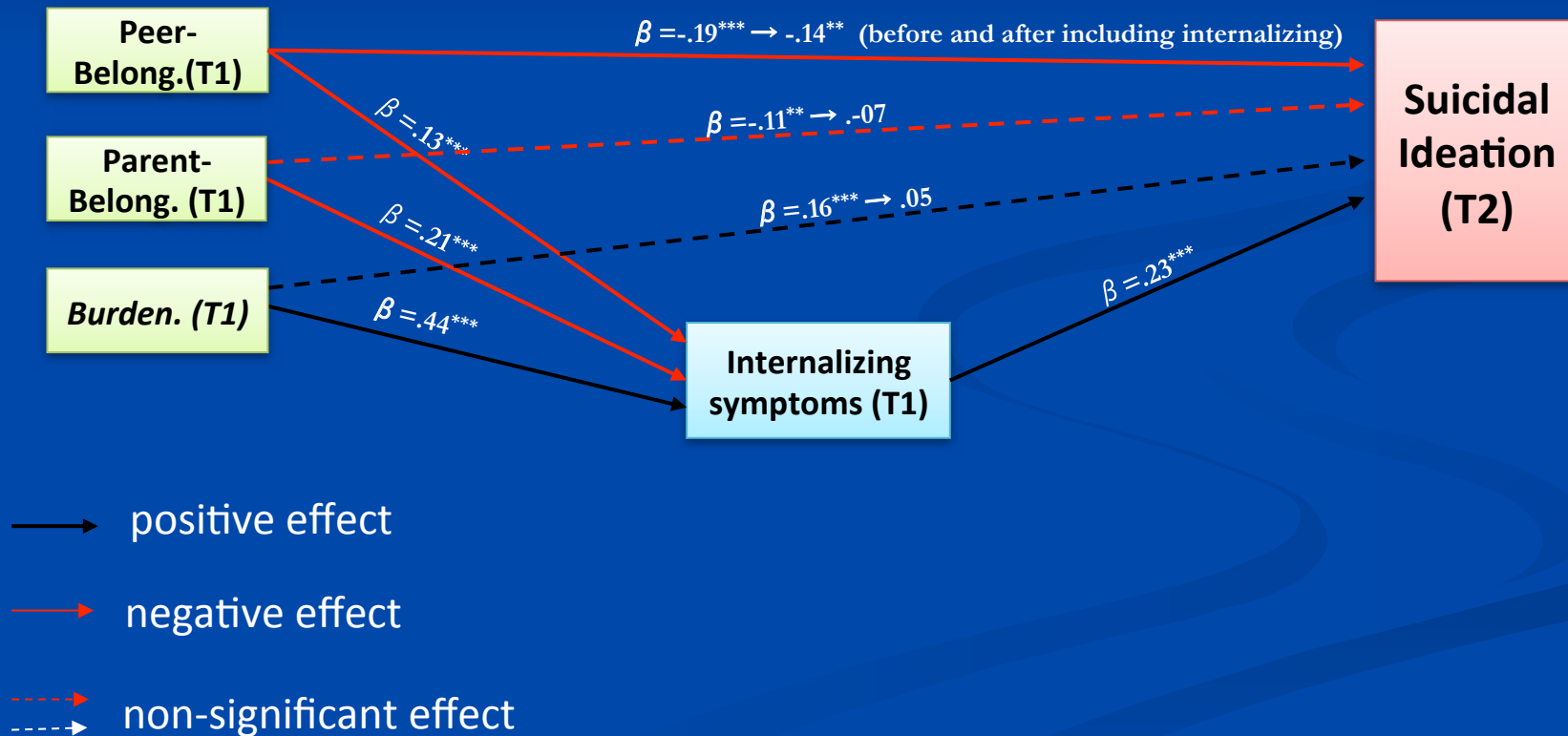


- positive association
- negative association

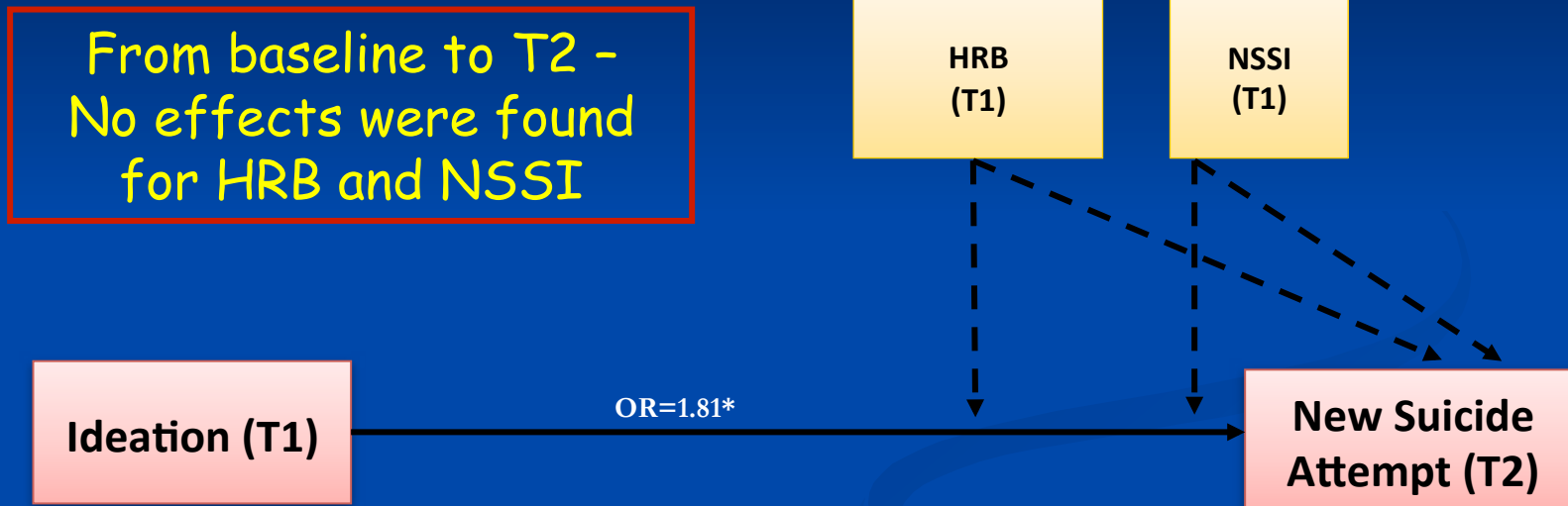


# Study Results (1)

Only peer-belonging predicted ideation after including internalizing psychopathology



# Study Results (2)

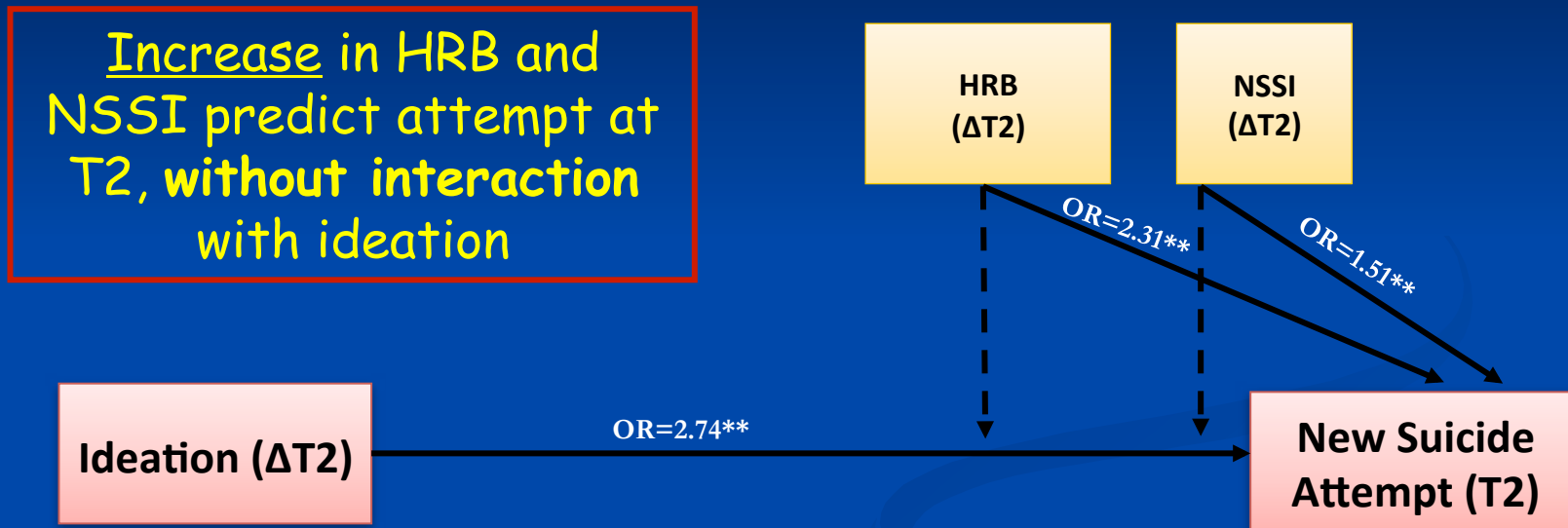


- positive effect
- - - - -> non-significant effect

# Study Results (3)

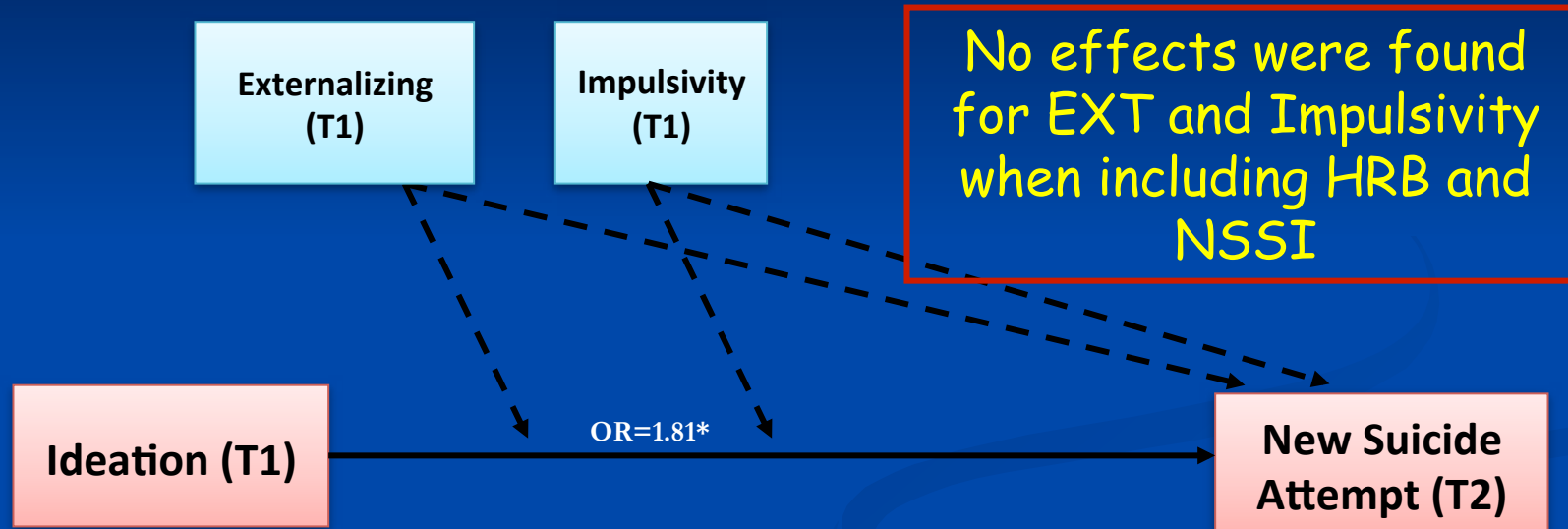


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- positive effect
- - - - -> non-significant effect

# Study Results (4)



————→ positive effect  
-----→ non-significant effect

# Findings (1)



- Poor peer relationships are important predictor for SB over and beyond INT
- Poor peer relations are more crucial to SB among youth than poor parental relations
- Interpersonal problems in general confer risk for suicide via their impact on INT symptoms severity, and not directly



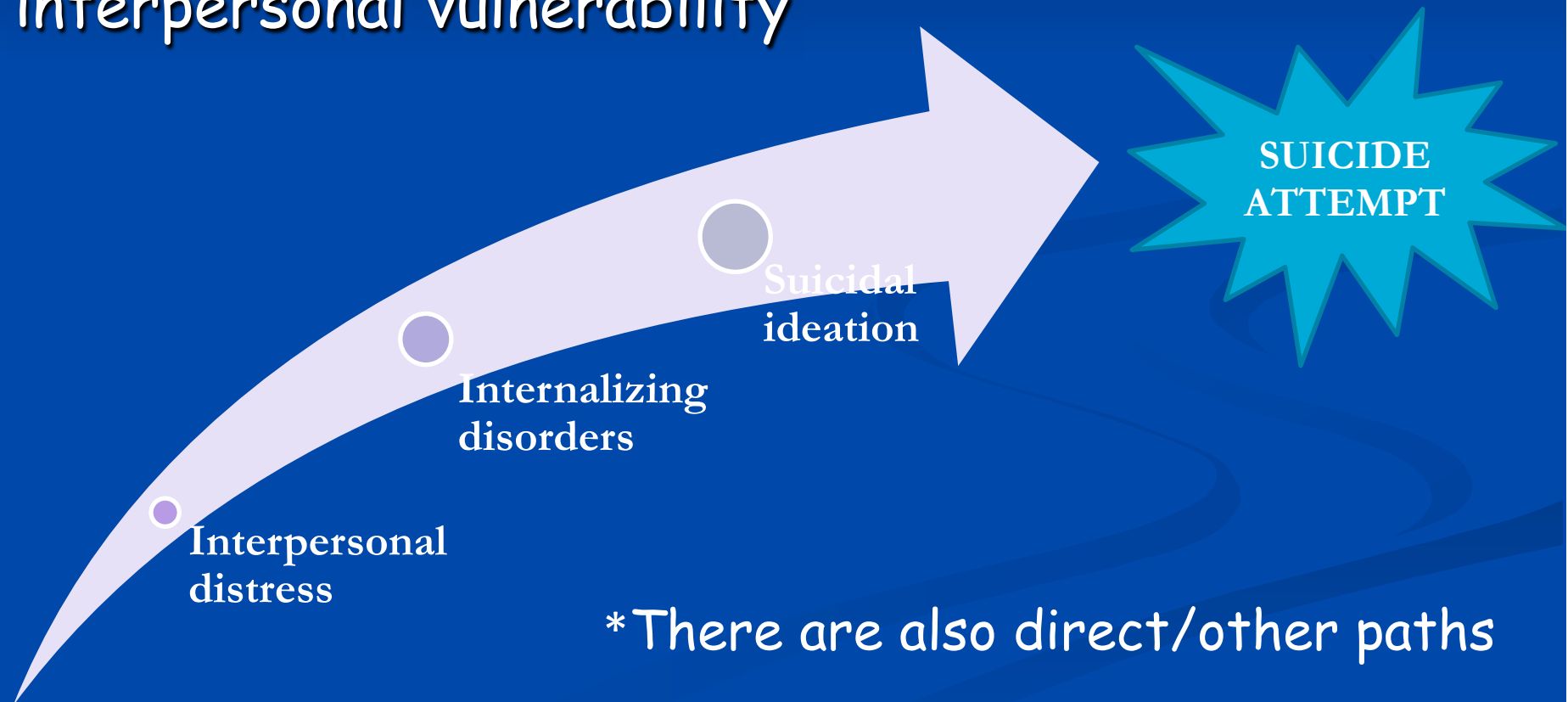
# Findings (2)



- HRB/NSSI and SB co-vary over time
- Recent increases in HRB/NSSI indicate a greater risk for SB
- This is independent from levels of suicidal ideation
- EXT and impulsivity may be related to SB via their relationship with other self-harm behaviors

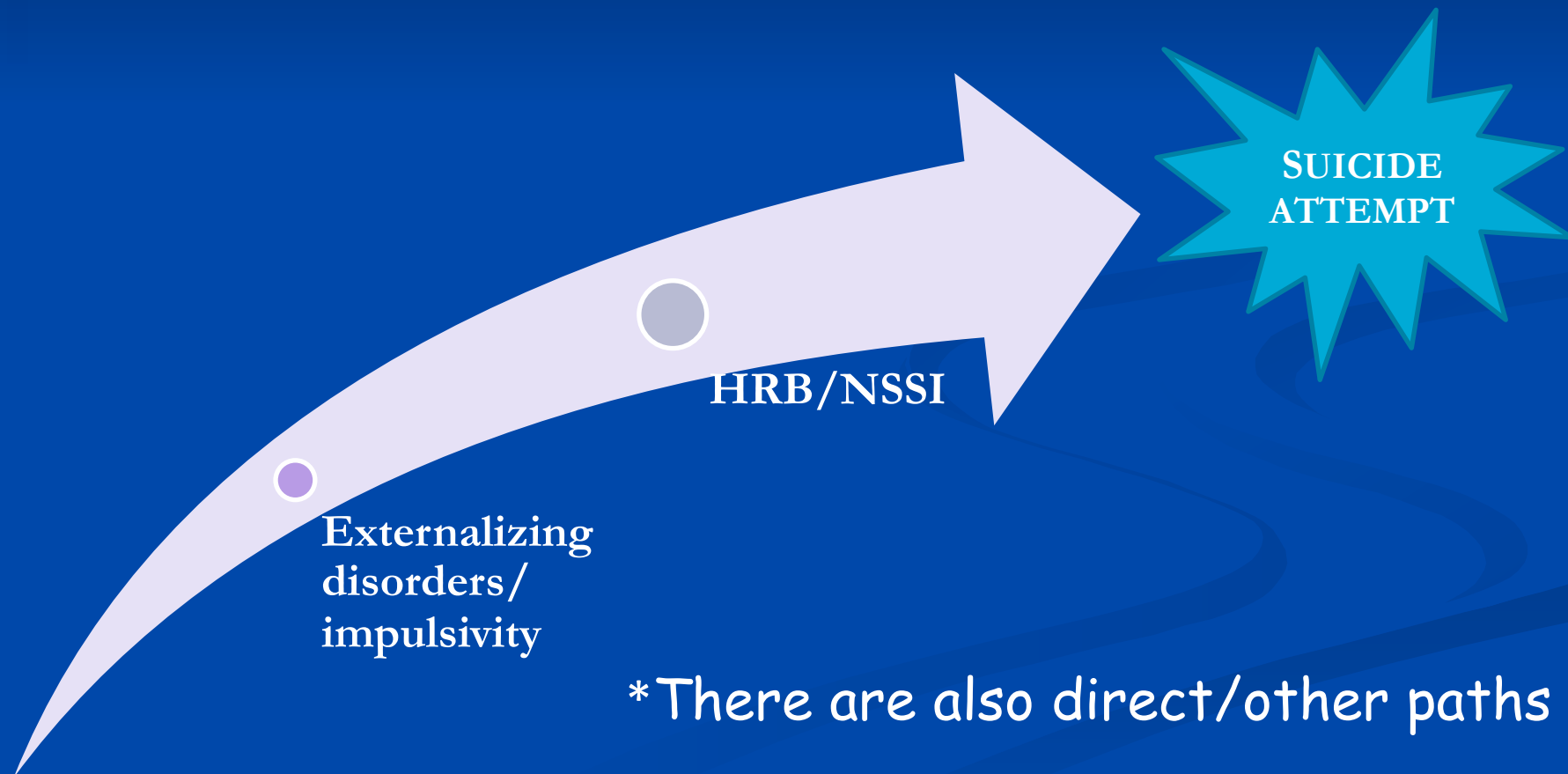
# Our study supports two pathways for SB in adolescents

- The primary pathway: Internalizing/interpersonal vulnerability



\*There are also direct/other paths

- The secondary (independent) pathway:  
impulsive self-harm/acting out vulnerability



\*There are also direct/other paths



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# Epidemiology

## Suicide rates in the age group 15-19 years in WHO European region



**High suicide rate**  
11 (Croatia) to 24 (Kazakhstan)

**Lower-middle suicide rate**  
4 (United Kingdom) to 7.6 (Bulgaria)

**Upper-middle suicide rate**  
8.1 (Czech Republic) to 10.8 (Switzerland)

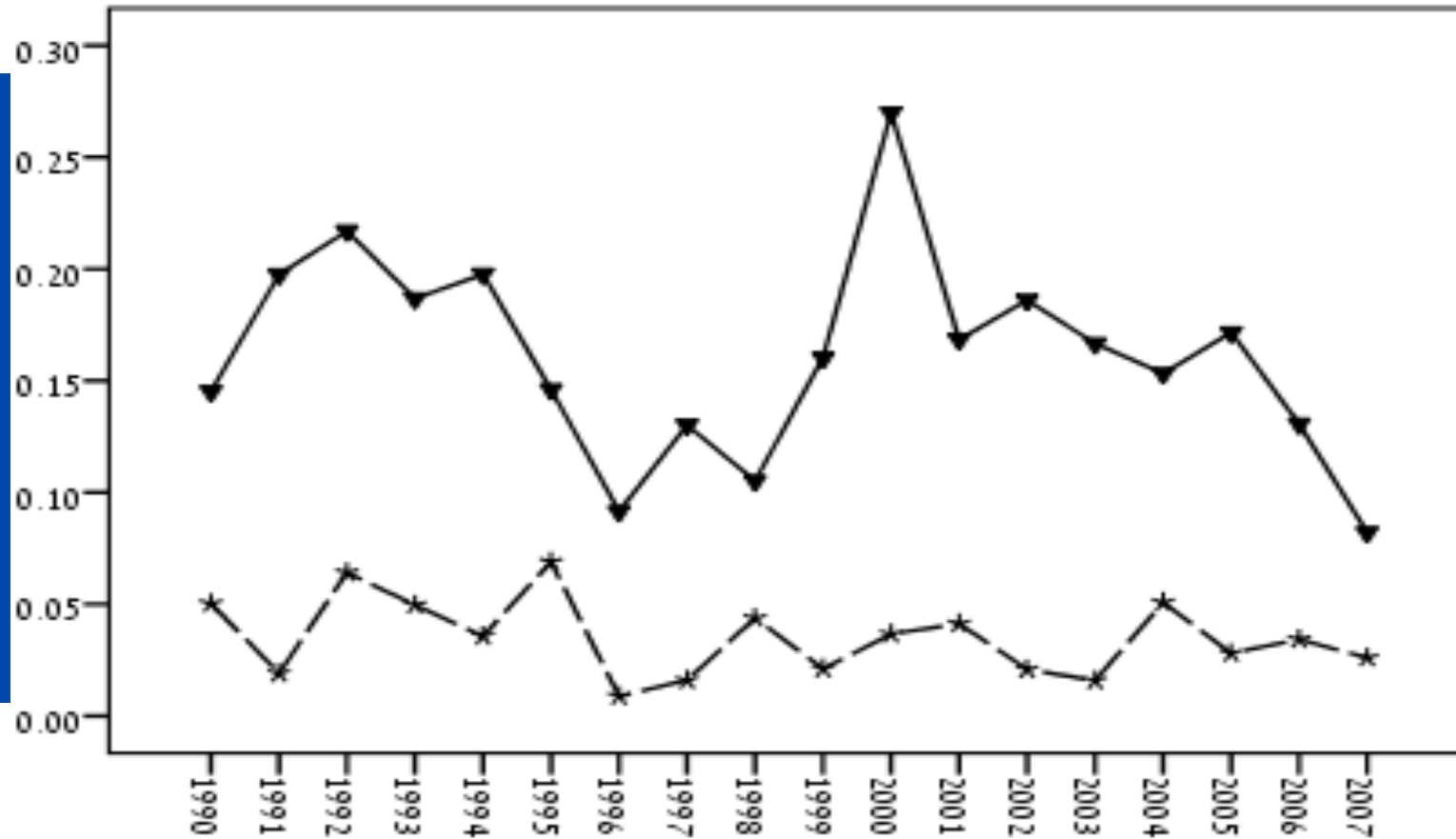
**Low suicide rate**  
0.01 (Malta) to 3.8 (Spain)

**Data not available**  
for 15-19 years

# Completed vs. Attempted Suicide Holon-Bat Yam (WHO-EURO)



Proportion of completed suicide  
from suicidal behavior



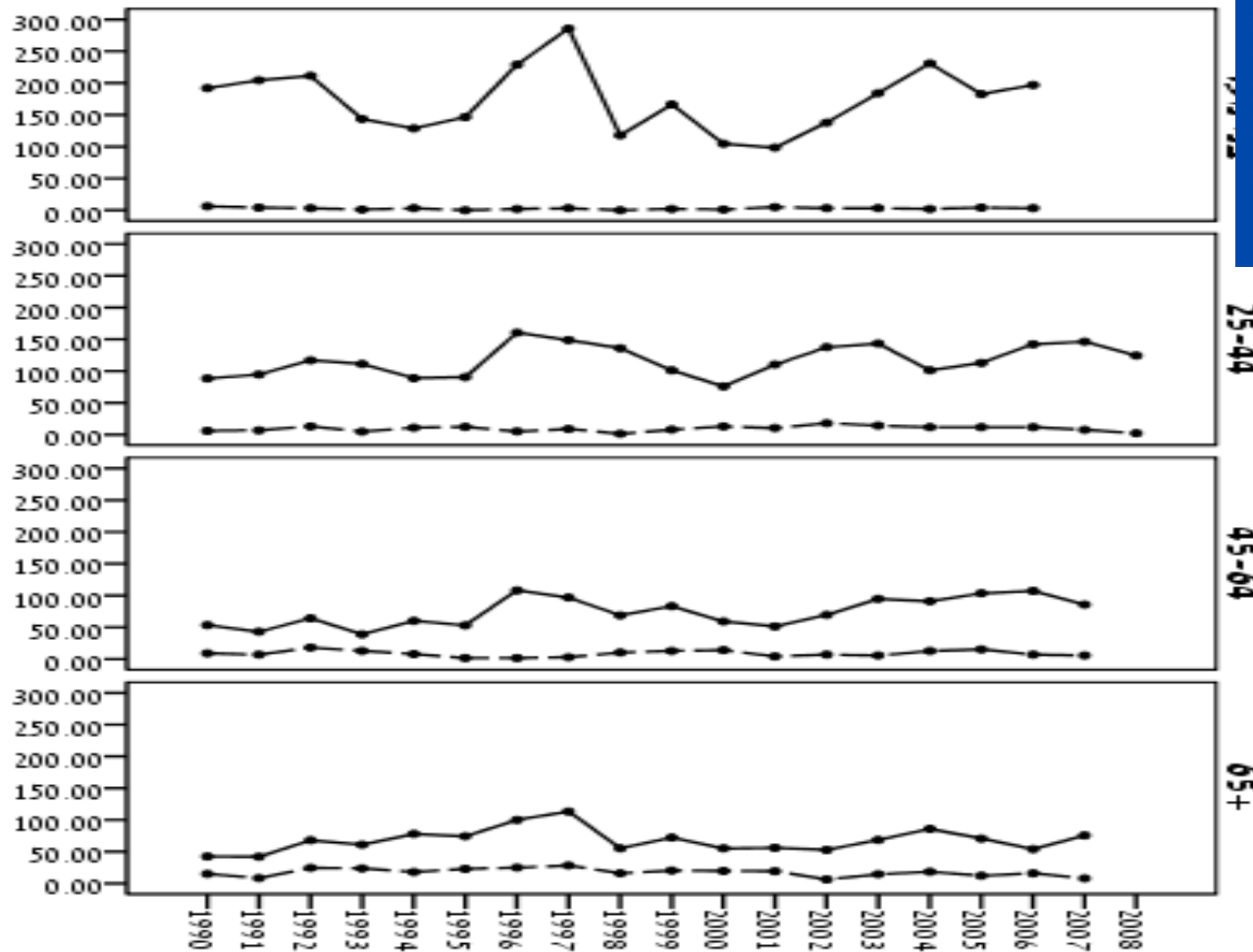


# Completed vs. Attempted Suicide Holon-Bat Yam (WHO-EURO)



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Rate to 100,000



adolescents

25-44

45-64

65+

Age

Years



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# Three sets of personality constellations

- Narcissism , perfectionism and the inability to tolerate failure
- Impulsive and aggressive characteristics combined with over sensitivity
- Hopelessness often related to underlying depression

# Features of psychological post mortem soldiers

- Strong narcissistic and perfectionist patterns
- Schizoid traits in personality
- High self - expectations and hopes
- Termed by being private/isolated people

Apter et al, 1993,2008

# Case



Jonathan was a 20 year old officer when he killed himself

His family was achievement oriented and had high moral standards

Their ideals stressed controlling one's emotions and living up to high standards.

Jonathan was a natural leader and popular with his teachers and peers

In the army he excelled and was selected as an instructor for new recruits

His superior commended him for his ability to perform under stress

# Case



He became totally involved in his new duties

His platoon of trainees did rather well, although their overall performance rating was only average

Following the course ceremony Jonathan went to his room and shot himself

# The Impossible Situation

Levi et al 2010,2012,2013

SEVERE MENTAL PAIN

+

COMMUNICATION DIFFICULTY

=

HIGH RISK FOR SUICIDE



# Phase I : Assessment of Suicidality

Main Predictor: Mental Pain

Specific Predictors: BDI

Differentiates Between Attempters and  
Non-Attempters

# Phase II :

## Assessment of Lethality

Main Predictor: Communication Element

- Specific predictors  
Self disclosure, schizoid and Loneliness contribute 30% to variance in lethality
- Mental Pain Element (include BDI, BHS) did not contribute to the variance of lethality scale

# Assessment of Suicide Intent

## Objective

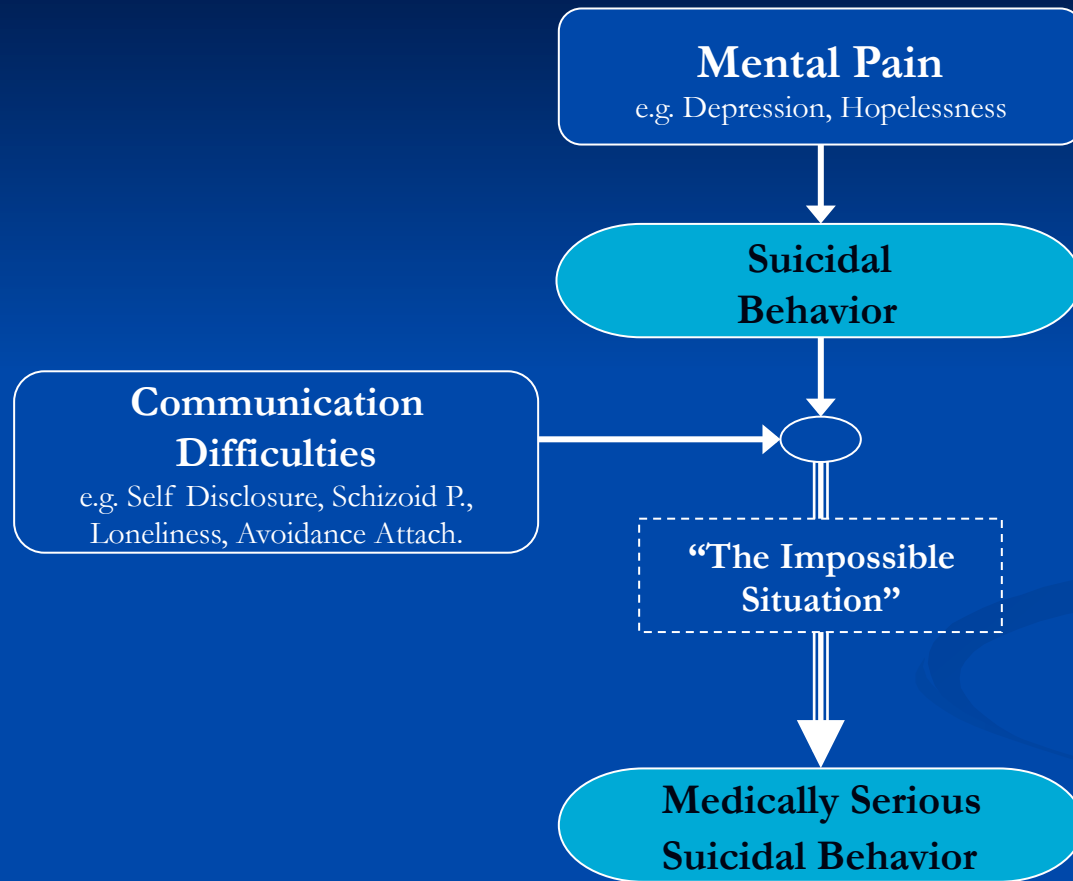
Main Predictor - Self disclosure

## Subjective

Main Predictor - Depression

## More results:

- Strong relation between Lethality and Objective SIS
- Weak relation between Lethality and Subjective SIS





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# The Impulsive Aggressive Constellation

The wish to die; the wish to kill  
and the wish to be killed  
(Freud 1929, Meninger, 1933)

# Case material

Deborah had always been impulsive and oppositional from an early age. At about the age of 11 she developed anorexia nervosa probably as a result of her being an accomplished dancer in a ballet troop. With the onset of adolescence she developed very severe bulimia.

# Case material



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Her first admission to a psychiatric unit was occasioned by a suicide note, which she wrote to her teacher at school. In the unit she was "an impossible patient". By the time she was 22 she had made over 100 suicide attempts.

She received all kinds of psychosocial and biological therapies but to no avail, although with age (now 25) there is some tempering of her emotional instability.





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# "Serotonin-related anxiety/aggression stressor precipitated depression"

Apter and Van Praag (1997)

Certain individuals faced with relatively minor life stressors react with anger and anxiety and develop a secondary depression often accompanied by suicidal behavior





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# Demoralization - Hoplessness Constellation



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# Case material - ("The case of Ellen West")

- Daughter of wealthy Jewish parents who had great control over her.
- Her father interfered twice when she became engaged
- When she finally married it was to a cousin
- From age 19 she developed the fear of becoming fat and by 21 had developed Anorexia Nervosa.
- She was hospitalized but this only increased her suicidal thoughts.
- She was discharged from the sanatorium at the request of her family.

## Case material - ("The case of Ellen West")

- On the third day after returning home she appeared to be a changed person
- She ate and enjoyed a walk with her husband.
- That evening she took a lethal dose of poison.

# Correlation Insight / Depression in Schizophrenia (Schwarz, 2007)

	CDSS	HOPELESS- NESS	SUICIDAL BEHAVIOR
Total insight	-0.67 ***	-0.60 ***	0.74 ***
Insight - psychosis	-0.7 ***	0.80 ***	0.76 ***



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# Psychology

# Selected Psychological Characteristics

- Dysfunctional Attitudes
- Rumination/Distraction (Catalan et al., 2013)
- Autobiographical Memory (Arie et al., 2008)

# Selected Psychological Characteristics

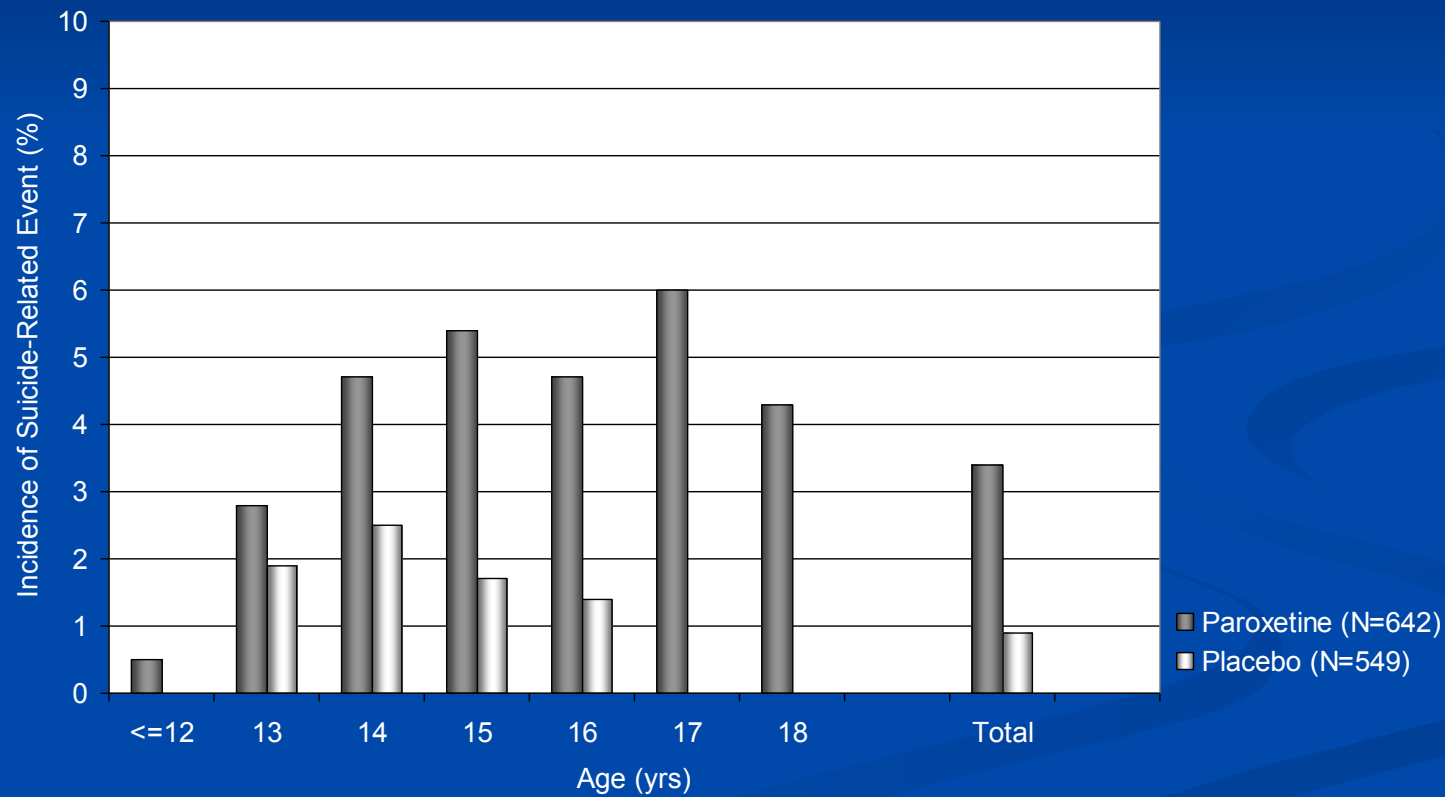
- Appraisal/Reappraisal (Carthy et al.,2010)
- Emotional Regulation (Carthy et l., 2013)
- Metacognition and Insight (Schwartz et al. 2007)
- Decentering (Mark Williams)

# Treatment of Adolescent Depression (TADS) (n = 439)

TREATMENT AE'S	% RECOVERED	95%CI	SUICIDAL
PLACEBO	34%,	26-44%	4
CBT	43%	34-52%	5
FXT	61%	51-70%	9
CBT + FXT	71%	62-80%	6



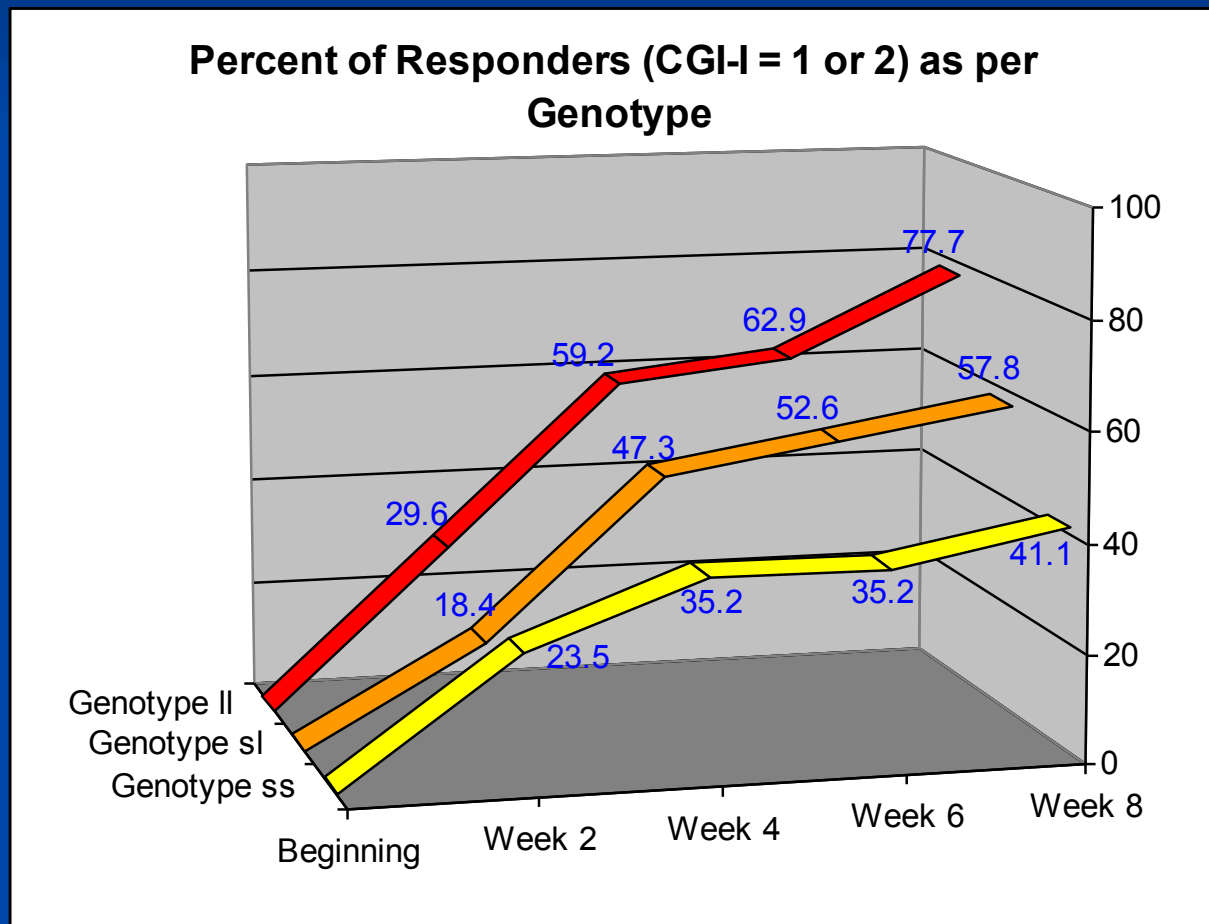
# Incidence of Suicide-Related AEs by Paroxetine Treatment and Age



Apter et al., 2005

# Pharmacogenetic Data

- Response rate ( $CGI \leq 2$ ) for the different genotypes.  
P = 0.048 at week 8



Kronenberg  
et al., 2008

# Suicidality: 5-HTR<sub>1DB</sub>

Agitation, motor	5-HTR <sub>1DB</sub>			P
Genotype	cc	gc	gg	<b>0.043</b>
Total Number	7	33	44	
Experienced	4	10	7	
Percent	57.1%	30.3%	15.9%	

Agitation, psychological	5-HTR <sub>1DB</sub>			P
Genotype	cc	gc	gg	0.045
Total Number	7	33	44	
Experienced	2	6	2	
Percent	28.5%	18.1%	4.5%	

# 5-HTR<sub>1Dβ</sub>



- 5-HTR<sub>1Dβ</sub> gene knockout mice display increased aggressive response to intruders and impaired impulse control (Brunner 1999; Bouwknecht 2001)
- As yet no direct association to suicidality in humans (Stefulj, 2004)



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# Prevention



# Rarity of Specific Warning Signs

(N=114)

	N	%
<b>NONE</b>	<b>82</b>	<b>72</b>
Definite plans (e.g., changed will, disposed of pets)	13	11
Partial preparation	11	10
Unusual or unique act possibly associated with suicide	8	7



# Many Attempts, Few Suicides

— UNITED STATES, AGES 15-19, 2007 —

*Rates/100,000*

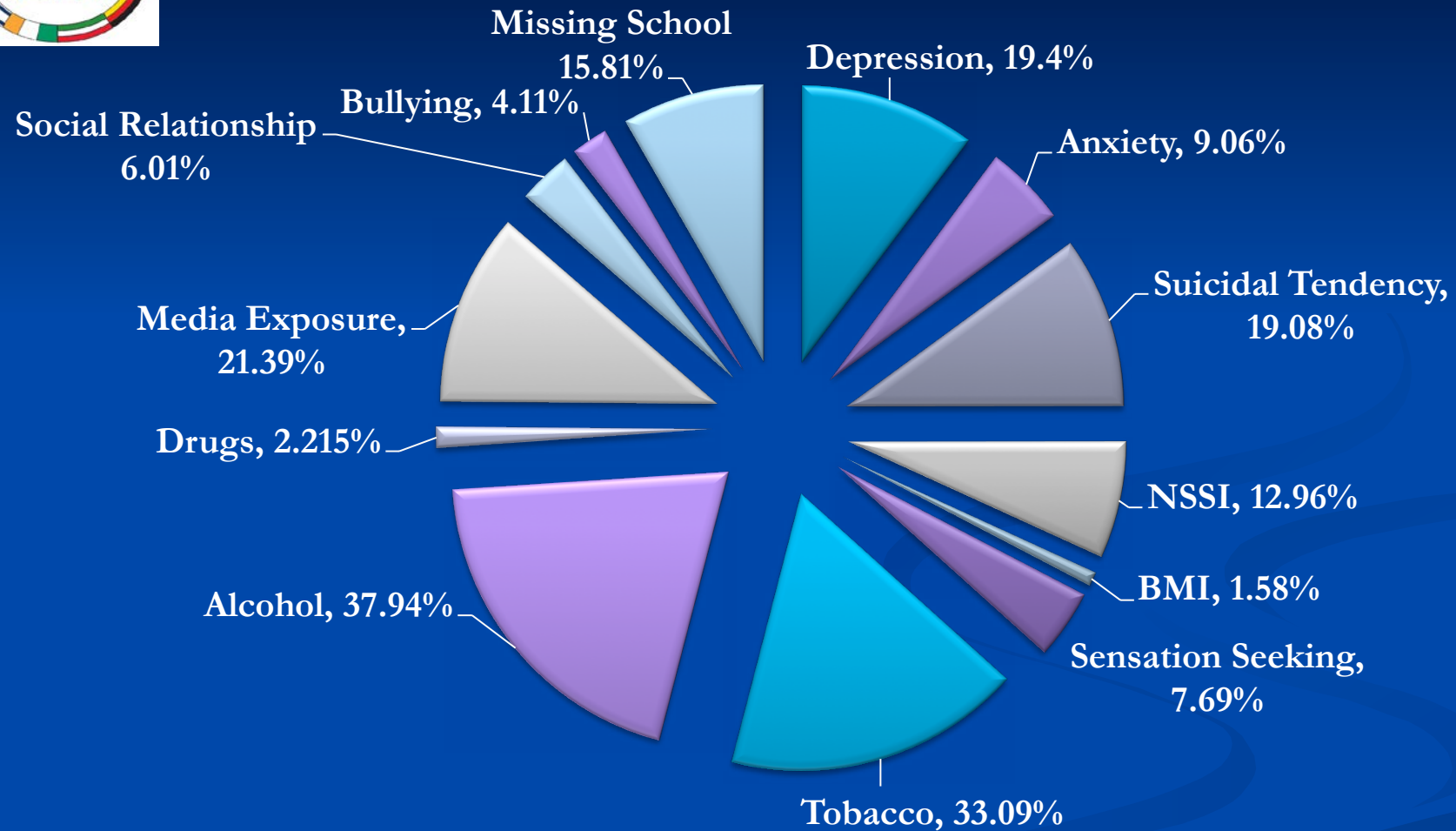
	DEATHS*	ATTEMPTS**	RATIO
Males	11.11	4,600	1:414
Females	2.49	9,300	1:3,735

\*CDC, NCIPC 2005 (WISQARS) (cited 07/08/2010); \*\*CDC MMWR (YRBS) 2008



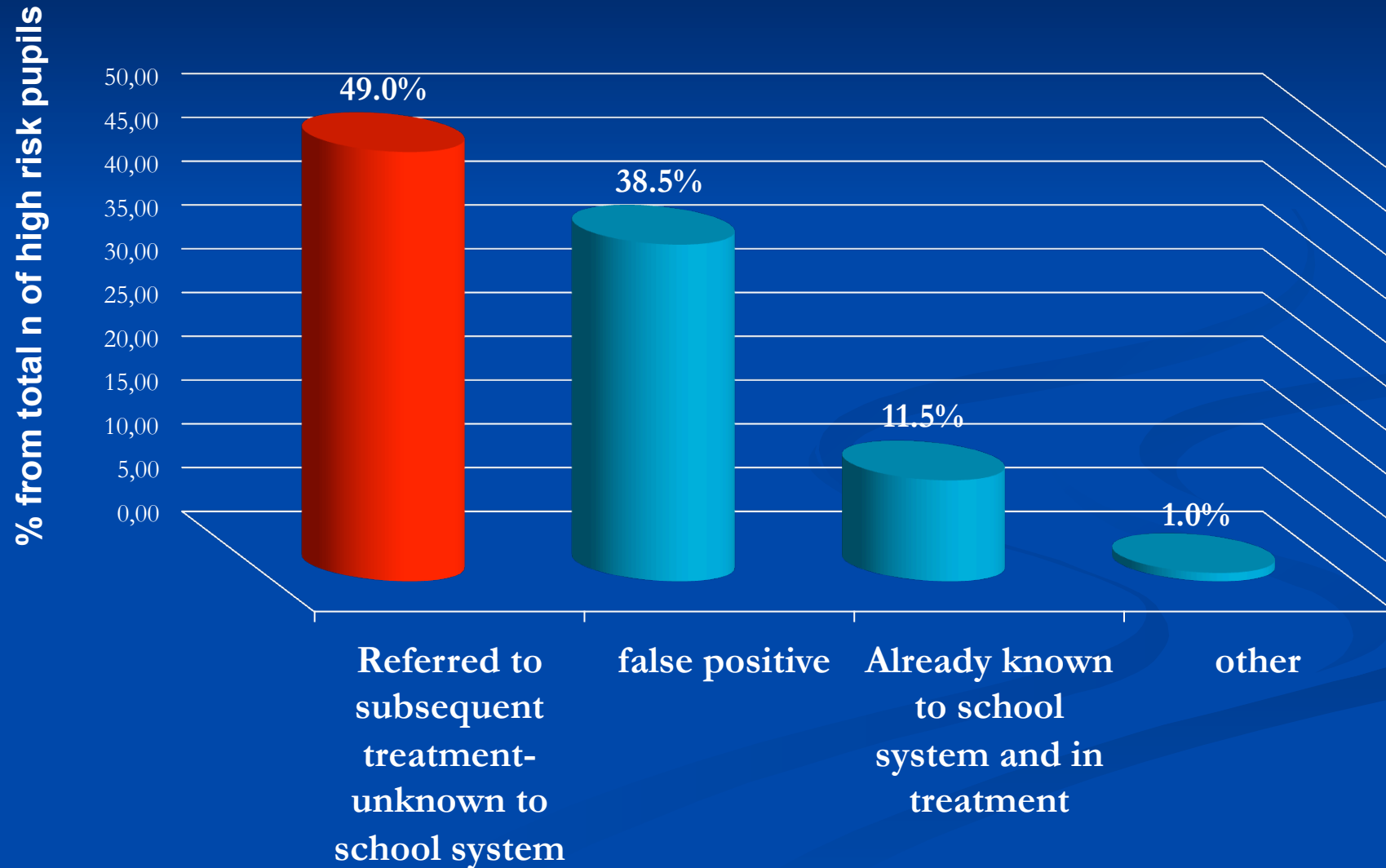


# At Risk Pupils Identified by Screening\* In Screen Arm Only





## SEYLE Results (Israel): Referral of high risk for suicide subjects (n=104)



# Short/full screening



Higher rate of true-positive cases in the two-question screening compared to the full-screening.

Screening Method (n= total of identified pupils)	Referrals (%)
“Full Professional Screening “ (n=230)	32 (13.9%)
“Two-question Screening “ (n=104)	63 (60.6%)

# Conclusions



- Adolescent suicide is a major public health problem
- Adolescent suicide is a heterogeneous problem depending on context and setting
- Dramatic epidemiological shifts may provide clues for understanding suicide in young people
- Inability to ask for help may be an important factor in lethality and a potential focus for prevention

# Conclusions (2)



- Integration of learning theory and eastern philosophy may provide insights for new forms of therapies
- The biology of adolescent suicide may be different from adults -more familial and more serotonergic
- Active detection with pin point screening and early treatments of childhood internalizing disorders might be a major strategy in the prevention of suicide