Epidemiology of self-harm

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ACAMH, London, 2019

NSSI: history

- Herodot: 5th century BC „history“, 6th.book
- Bergmann: 1846
- Channing: The case of Helen Miller: 1876
- *"Needle-girls," etc.—A peculiar type of self-mutilation is the habit sometimes seen in hysteric persons of piercing their flesh with numerous needles or pins. Herbolt of Copenhagen tells of a young Jewess from whose body, in the course of eighteen months, were extracted 217 needles. […] Andrews removed 300 needles from the body of an insane female. […]There is another report of a woman who swallowed great numbers of pins. On her death one pound and nine ounces of pins were found in her stomach and duodenum. There are individuals known as "human pin-cushions," who publicly introduce pins and needles into their bodies for gain's sake.* Anomalies and Curiosities of Medicine (Gould & Pyle, 1896)

NSSI: history

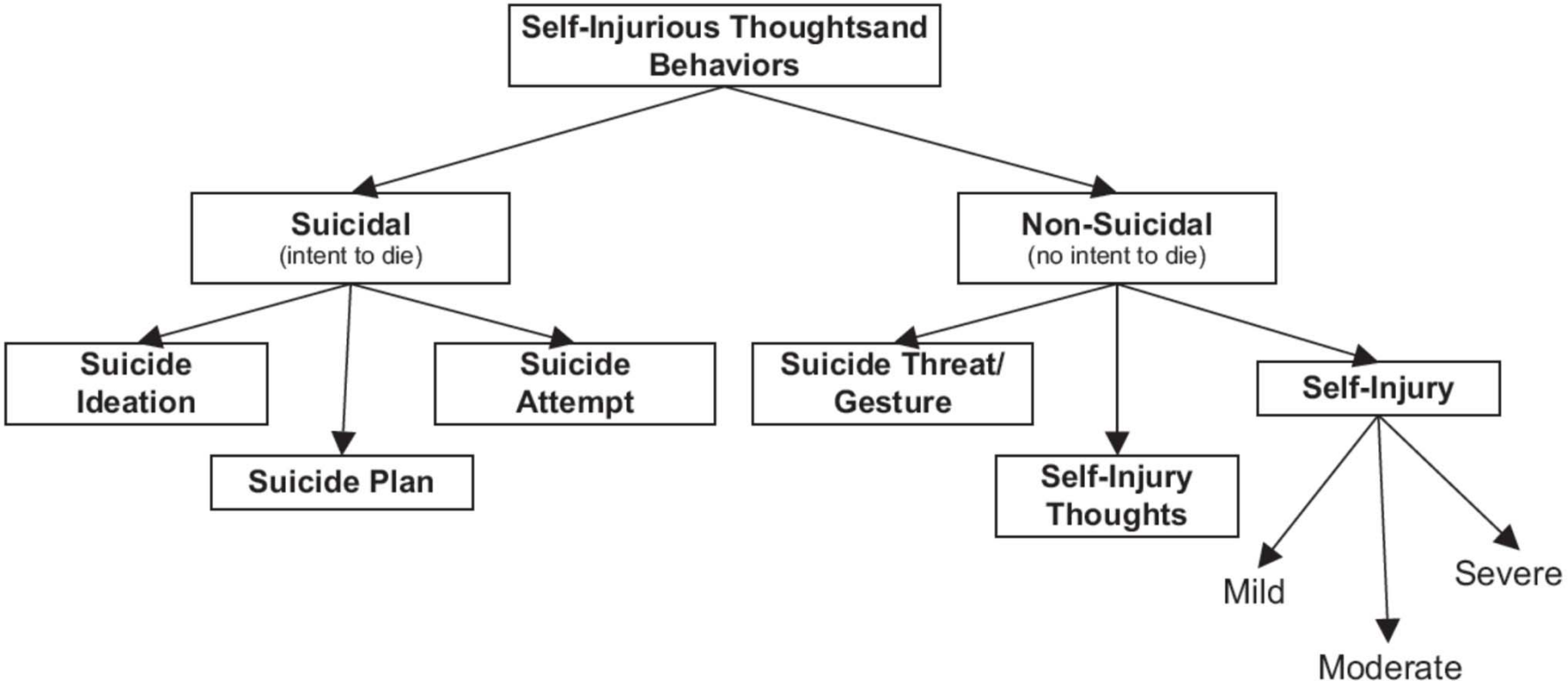
- Menninger: „Man against himself“: 1938
  - Neurotic self-mutilation
  - Religious self-mutilation
  - Self-mutilation in psychotic patients
  - Self-mutilation in organic diseases
  - Self-mutilation in customary and conventional forms
- Graff & Mallin: „Wrist cutter syndrome“: 1967
- Pattison & Kahan: „Deliberate Self Harm Syndrome“: 1983
- Favazza: Major, moderate, stereotype: 1992
- Muehlenkamp: Self-Injury syndrome: 2005

Non-Suicidal Self-Injury: Definition

- NSSI is most commonly described as
- **deliberate, direct destruction or alteration of body tissue**
- **without conscious suicidal intent**.
- NSSI is deemed **socially unacceptable,**
- **direct, repetitive** and leads to minor or moderate harm.

Lloyd-Richardson et al. 2007

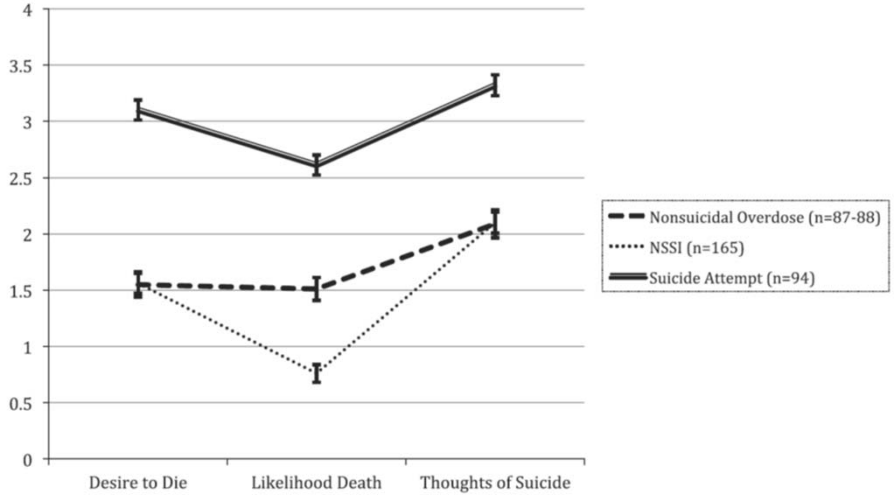
NSSI



Nock, 2010

Problem of nonsuicidal overdoses

- Intentional overdoses: the person states that they had no intention of dying from the overdose
- Online study (recruitment from web forums, n=183, ≥18y; mAge: 25.16; NSSOD: 45.3%)
  - NSSI in 96.51%, 79,07% suicide attempt
  - OTC (74.4%) & prescription drugs (76.7%)
- Nonsuicidal overdoses: similar age of onset (16.76) as suicide attempts (15.73)
- similar to NSSI: desire to die and suicidal thoughts
- Unique: reported likelihood of dying



Fox et al., 2016

(Deliberate) Self-harm

"The term 'self-harm' is used to describe all intentional acts of selfpoisoning (e.g., overdoses) or self-injury (e.g., self-cutting), ***irrespective of degree of suicidal intent or other types of motivation.*** *Thus it includes acts intended to result in death ('attempted suicide'), those without suicidal intent (e.g., to communicate distress, to temporarily reduce unpleasant feelings), and those with mixed motivation"*

Hawton et al., 2015

Nonsuicidal self-harm

Deliberately harming oneself in any way without suicidal intention

McManus et al., 2019

DSM 5: Nonsuicidal Self-Injury

- In the **last year**, the individual has on **five or more days**, engaged in intentional **self-inflicted damage to the surface of his or her body** […] for purposes **not socially sanctioned** […], with the expectation that the injury will lead to only minor or moderate physical harm.

- The **absence of suicidal intent** is either reported by the patient or can be inferred […]The behavior is not of a common and trivial nature […].

APA, 2013

DSM 5: Nonsuicidal Self-Injury

Summary of *DSM-5* (APA, 2013) Criteria for Nonsuicidal Self-Injury Disorder.

A. In the last year, the individual has on 5 or more days engaged in NSSI that was severe enough to cause minor or moderate damage, but without suicidal intent

B. The individual engages in NSSI with one or more of the following expectations:

1) to obtain relief from a negative feeling or cognitive state
2) to resolve an interpersonal difficulty
3) to induce a positive feeling state.

C. NSSI is associated with at least one of the following:

1) interpersonal difficulties or negative feelings or thoughts immediately precede engagement in NSSI
2) a period of preoccupation with NSSI precedes the NSSI
3) NSSI urges or thoughts occur frequently even if not acted upon.

D. The behavior is not socially sanctioned or restricted to picking a scab or nail biting

E. NSSI causes significant distress or impairment in important areas of functioning

F. NSSI does not occur exclusively in a state of psychosis, delirium, or intoxication and cannot be accounted for by another medical or psychological disorder

APA, 2013; summary by Selby et al., 2015

Pro-/Con-debate

- Enhancing communication: everybody talks about the same thing (science, clinicians, patients)
- No automatic label as BPD
- Treatable condition
- More research: enhancing therapy
- Relevant for prognosis (suicidality)
- Prefix „non-suicidal“ is misleading
- Non-suicidal self-poisoning is not included
- Methods change over time
- Risk of stigmatizing

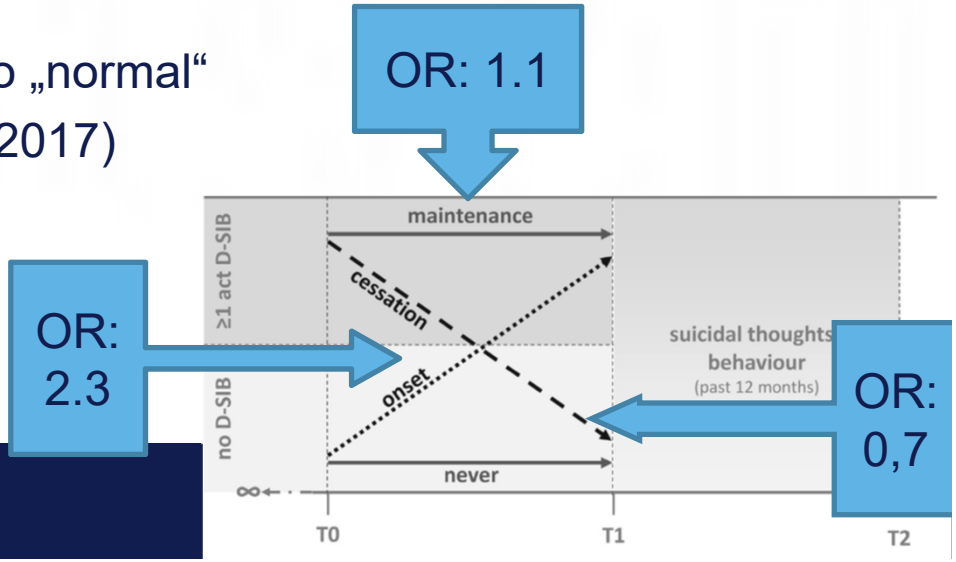
Wilkinson, 2012, Plener et al., 2012; Kapur et al., 2013

NON-suicidal???

- Meta-analysis SITB in all age groups (Ribeiro et al., 2016):
  - Later suicide attempts: OR: 2,1
  - Later suicide: OR: 1,5
  - NSSI specifically: later suicide attempt: OR: 4,27

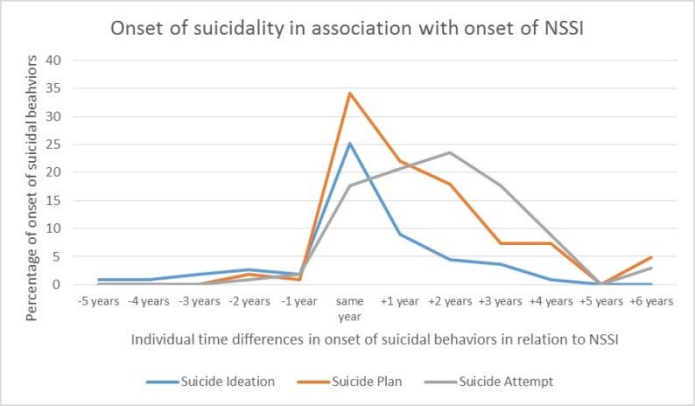
- Meta-analysis SITB: 12-26years (Castellvi et al., 2017):
  - suicide: OR: 22,53
  - Suicide attempt: OR: 3,48
- Youth with SITB/NSSI: higher risk for:
  - Later suicidal ideation: OR: 2,95 (Coppersmith et al., 2017)
  - Suicide atempt: HR: 2,00 (Chesin et al., 2017)

- BUT: stopping NSSI in youth: return to „normal“ baseline(n=506) (Koenig et al., 2017)



Timing: NSSI & suicidality

N=111, age: 12-19y; f: 65.8%



Mage at start

- NSSI: M=12.5 years (SD=2.3)
- Suicide attempt: 13.9 (SD=2.1)

N=106 outpatients and 174 inpatients

Behaviors:

Suicide ideation: 88.7%/ 96.6%
NSSI: 79.2%/ 83.9%
Suicide attempt: 39.6%/ 39.1%

Temporal pattern:

- Thoughts of NSSI (13.4/ 12.7)
- suicidal ideation (13.4/12.7)
- NSSI (14/12.7)
- suicide plans (14.3/13.8)
- suicide attempts (15.2/14.3)

Suicidal ideation starts 4-6 months before NSSI

NSSI starts 3-6 months before a suicide attempt

Groschwitz et al., 2015; Glenn et al., 2017

Self-harm and suicide

- UK: Follow-up on 40.346 patienten with „self harm“ (2000-2010) in 2012
  - 2704 deaths: 12,9% suicide, 6,1% probable suicide(19%)
  - Suicide: 1,6% : 49 times higher risk than in general population (conservative estimate)

- USA: Medicaid sample:
  - 1-year Follow-up of 61.296 patients with „self-harm“
- Suicide rate: 439,1/100.000 py: 37,2 times higher than in controls without „self-harm“
- Suicide rate increased in 30d following „self-harm“

Hawton et al., 2015; Olfson et al., 2017

Meta-Analysis: NSSI

- Systematic review (n=52 studies from adolescents: 2005-2011)
  - Lifetime prevalence NSSI: 18%
  - Lifetime prevalence DSH: 16%
  - No increase in prevalence

- Meta-Analysis up to 2012 (n=128 prevalence rates)
  - Lifetime prevalence:
    - adolescents: 17.2% (8.0-26.3)
    - Young adults: 13.4% (4.5-22.3)
    - adults: 5.5% (1.7-16.3)

    - No increase in prevalence (after adjustment for methodological factors)

Muehlenkamp et al., 2012; Swannell et al., 2014

Self-harm: Meta-Analysis

- Self-harm prevalence from community based studies 1990-2015 in 12-18y olds (n=172 datasets, 261 publications, 597,548 participants from 41 countries)
- Overall self-harm lifetime prevalence: 16.9% (4.1%-39.3%)
  - DSH: 11.4%; NSSI: 22.9%
- Past year self-harm prevalence: 13.0%
  - DSH: 9.0%; NSSI: 18.6%

- ♀>♂: RR1.72

- Most common type: cutting

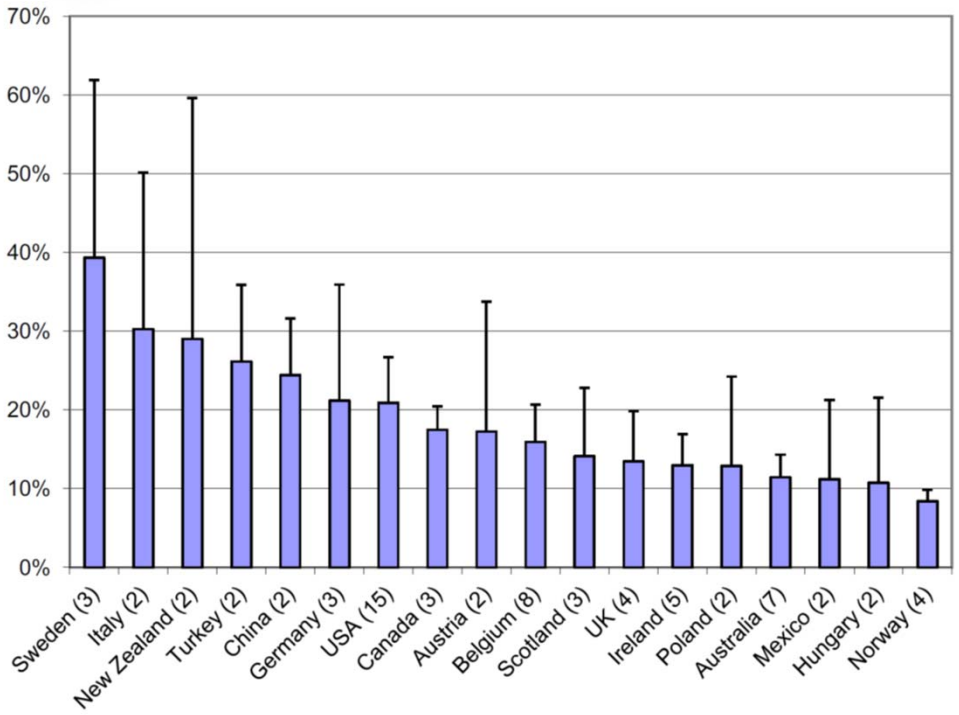
- 1-2 episodes: 47%

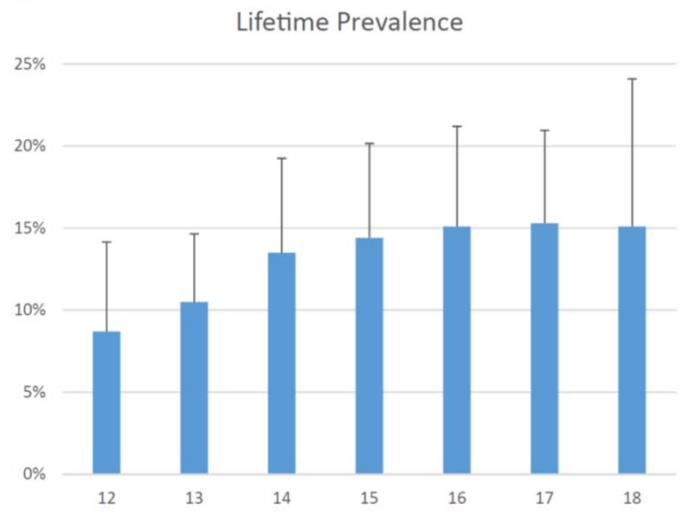
- Most frequent reason: relief from thoughts or feelings

- Suicidal ideation: RR: 4.97, suicide attempt: RR: 9.14

Gillies et al., 2018

Self-harm: Meta-Analysis

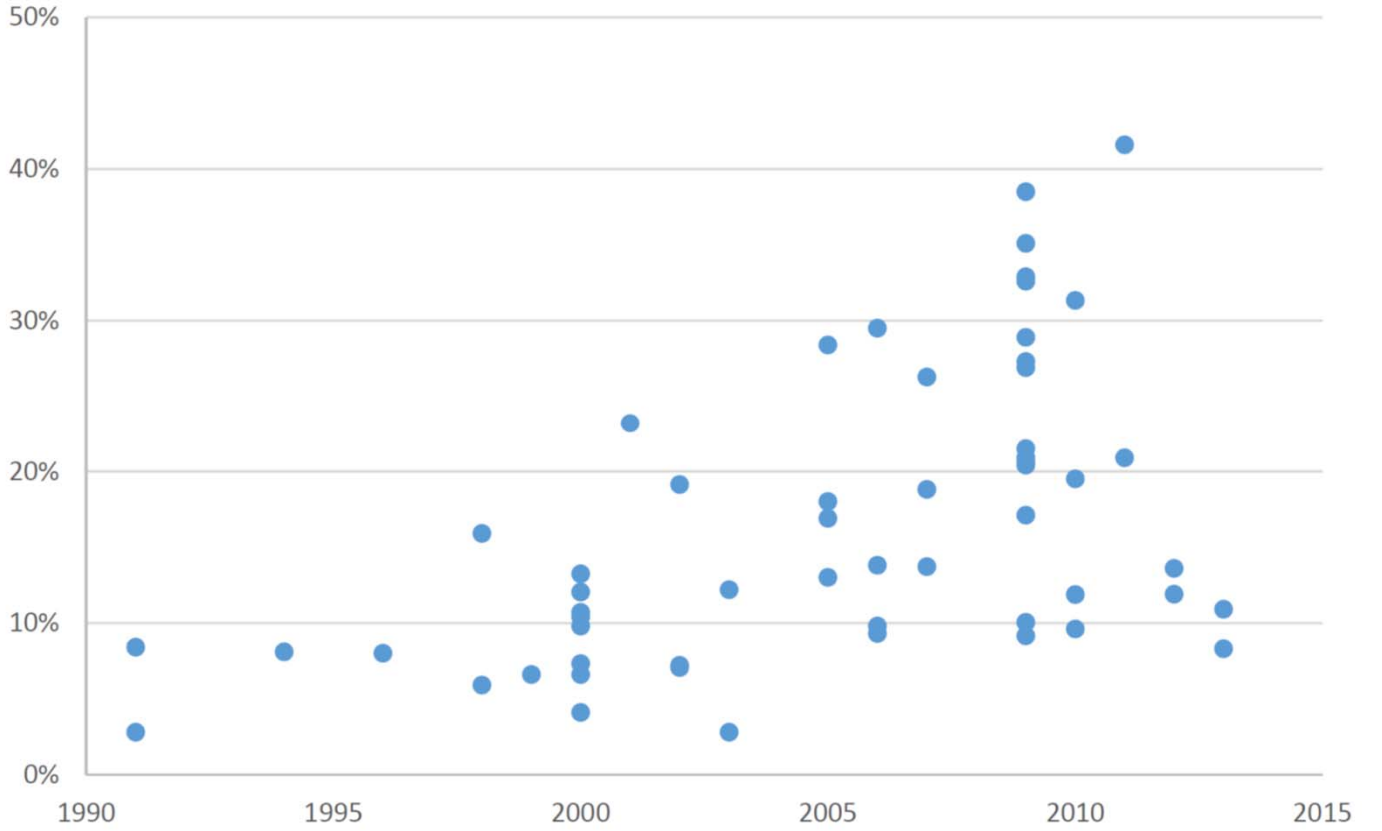




Mean starting age: 12.81

Gillies et al., 2018

Self-harm: Meta-Analysis



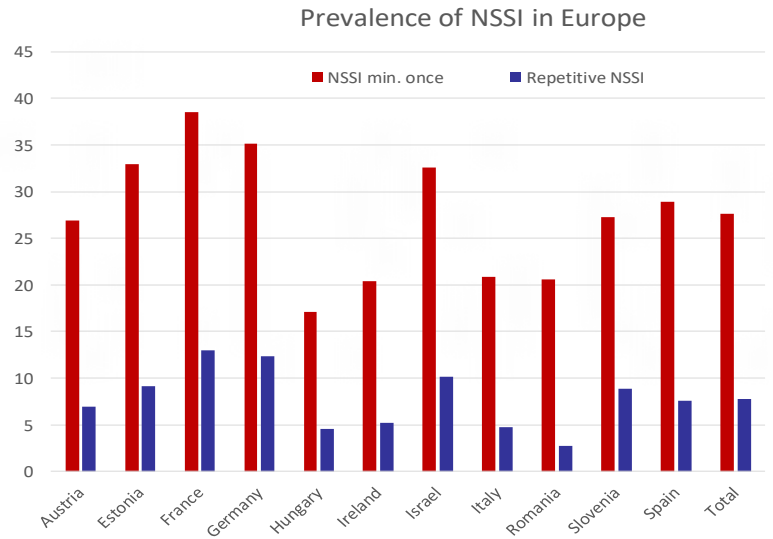
Increasing rates 1990-2015

Gillies et al., 2018

Europe: SEYLE Study

- Comparison of „direct self-injurious behavior“
- 11 European countries, n=12.068 (mean age: ~ 15)
- Lifetime prevalence: 27,6%
- 7,8% repetitive D-SIB

country	Lifetime prevalence	occasional	repetitive ≥ 5x
France	38,5%	25,6%	13%
Germany	35,1%	22,9%	12,3%
Estonia	32,9%	23,7%	9,1%
…..			
Austria (7)	26,9%	20,0%	6,9%



Brunner, Kaess et al., 2014

USA & Germany : NSSI

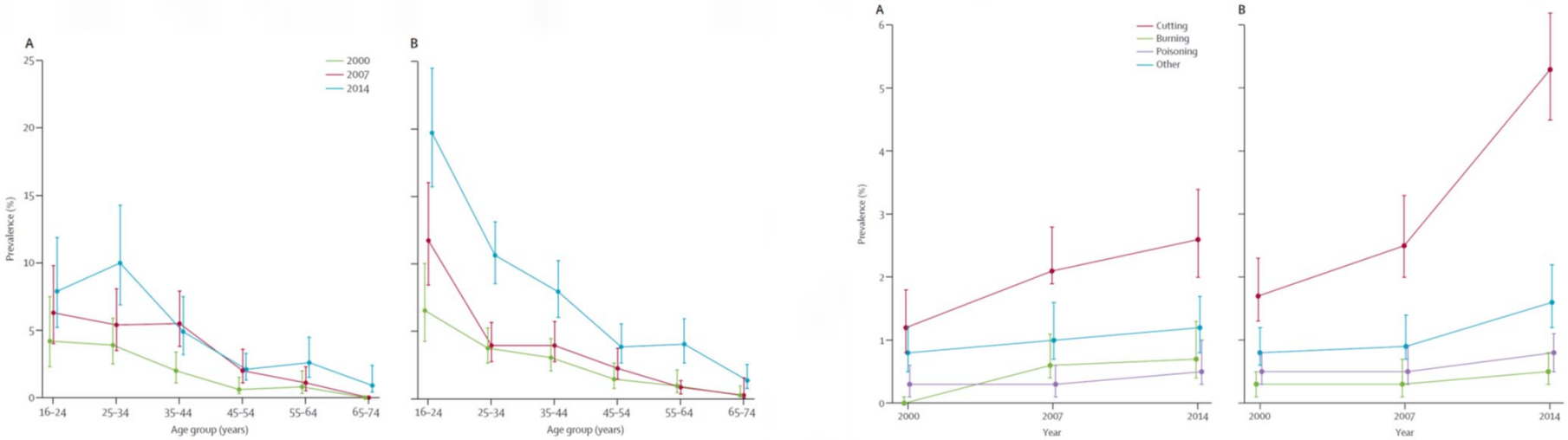
- USA:
  - Representative sample of adolescents
  - 2015 CDC Youth Risk Behavior Surveillance System
    - 11 US States (n=64,671, 14-18y)
  - 12m prevalence rates:
    - ♂: 6.4%-14.8%
    - ♀ : 17.7%-30.8%
  - Declining 12m prevalence with age

- Germany:
  - Representative sample (n=10,638, mean age: 14.91)
  - 12m prevalence of NSSI: 17.8%
  - Higher rates of adolescents with migration background

Monto et al., 2018; Donath et al., 2019

UK general population: nonsuicidal self-harm

- UK:
  - Adult Psychiatric Morbidity Surveys: 2000 (n=7243), 2007 (n=6444), 2014 (n=6477): 16-74 y: household interviews
  - Lifetime NSSH: 2.4% (2000) – 3.8% (2007)- 6.4% (2014)
  - Most notable increase: f: 16-24y (8.5% - 19.7%)



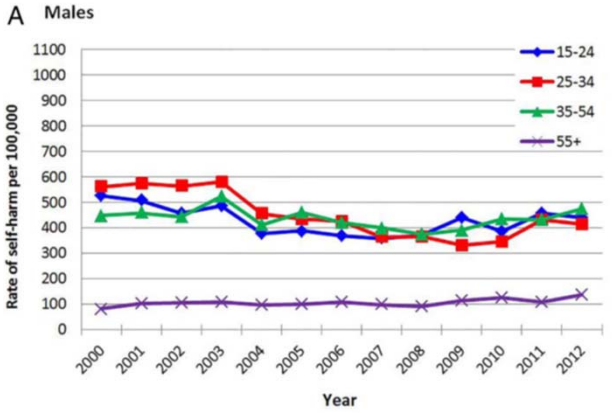
- Scotland:
  - Interview study: n=3,508 (18-34y)
  - Lifetime NSSH: 16.2%, age of onset of NSSH: 16.5y

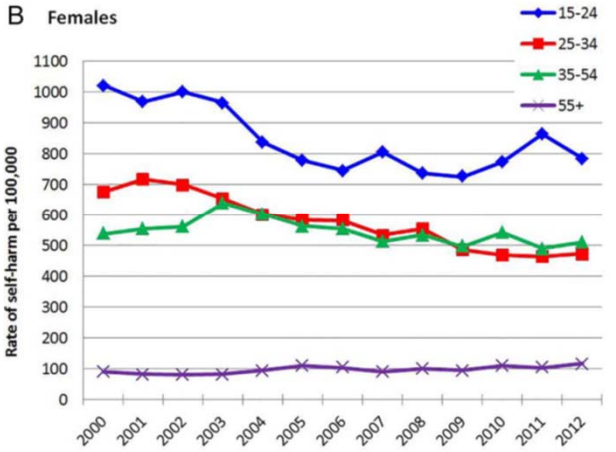
McManus et al., 2019; McManus & Gunnell, 2019; O´Connor et al., 2019

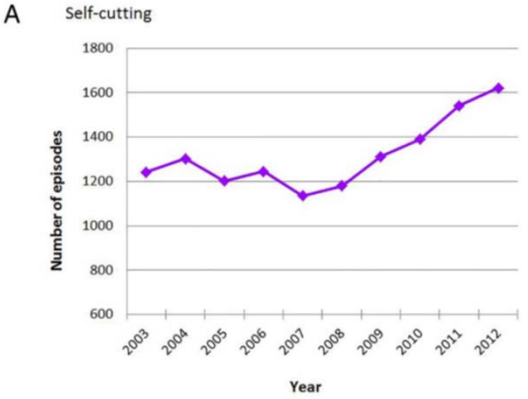
UK: self-harm

- Multicentre Study of Self-harm in England
- data from hospital records or specialist assessment (2000-2012): three cities
- ♀ : declining rates: IRR: 0.98
- ♂ : first decline (IRR: 0.98), increase since 2008: IRR: 1.05
- Over 75%: self-poisoning
- Increase in self-injury in latter years
- Self-poisoning alone: 74.6%
- Self-injury alone: 21.0%
- Combination: 4.4%

	n (%)		
	Males	**Females**	**Total***
All episodes	34 932 (41.4)	49 421 (58.6)	84 353
Individuals	20 285 (43.1)	26 738 (56.8)	47 023
Individuals by age group (years)			
15–24	6482 (32.0)	11 585 (43.3)	18 067 (38.4)
25–34	5373 (26.5)	5790 (21.7)	11 163 (23.7)
35–54	6906 (34.0)	7678 (28.7)	14 584 (31.0)
55+	1524 (7.5)	1685 (6.3)	3209 (6.8)



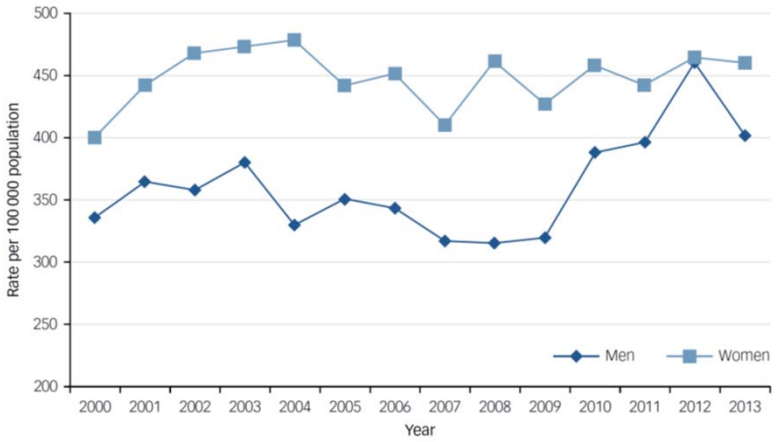




Geulayov et al., 2016

UK: self-harm: midlife

- Multicentre Study of Self-harm in England
- Midlife: 40-59 years: data from hospital records or specialist assessment (2000-2013)
- 26% of self-harm presentations
- ♂ : Incidence rates increased (after 2008): IRR: 1.07
- ♀ : relatively stable: IRR: 1.00
- 12 montsh repetition: 25% (m, f)
- FU suicide: m: 2.8%, f: 1.2%



Variable (all cases)	Men, *n*(%) (*n* = 5886)	Women, *n*(%) (*n* = 6715)	Odds ratio (95% CI)	*P*
Method of harm				
Self-poisoning only	4628 (78.6)	5829 (86.8)	0.56 (0.51–0.61)	<0.01
Self-injury only	1055 (17.9)	747 (11.1)	1.74 (1.58–1.93)	<0.01
Self-poisoning and self-injury	203 (3.5)	139 (2.1)	1.69 (1.36–2.10)	<0.01
Method of injury[a]				
Cutting or stabbing	767 (61.3)	648 (73.4)	0.57 (0.48–0.69)	<0.01
Jumping from a height	53 (4.2)	32 (3.6)	1.18 (0.75–1.83)	0.48
Hanging or asphyxiation	148 (11.8)	54 (6.1)	2.06 (1.49–2.85)	<0.01

Clements et al., 2019

Methods of Self-harm

- Ireland: self-harm presentations to hospital ED (2010-2016): National Self-Harm Registry Ireland
- 65,690 self-harm presentations (n=46,661 individuals)

- Most common methods:
  - Intentional drug overdose: 68.3%
  - Self-cutting: 23.8%
  - Attempted hanging: 6.6%

- Highest risk of repetition: <15y

- Increased repetition rate:
  - Minor self-cutting (adj. HR: 1.38)
  - Severe self-cutting
  - Multiple drugs overdose
  - Self-harm by blunt object

Cully et al., 2019

Epidemiology: NSSI DSM-5 criteria

- Psychiatric patients
  - Adult psychiatric patients (n= 571;US): 11%
  - Adolescent psychiatric patients (n=198, US; n=125, Germany): 50%
  - Adolescent psychiatric patients (n=110, Switzerland): 37%

- Community
  - Swedish adolescents (n=3060): 6,7%
  - Systematic review: adolescent community samples: 1,5-5,6%
  - Adult representative sample (n=2509; Germany): 0,3% (Criterion A)

Selby et al., 2012; Glenn & Klonsky, 2013; Kaess et al., 2013; In-Albon et al., 2013; Zetterqvist et al., 2013; Zetterqvist 2015; Plener et al., 2016

Course of NSSI

Age of onset

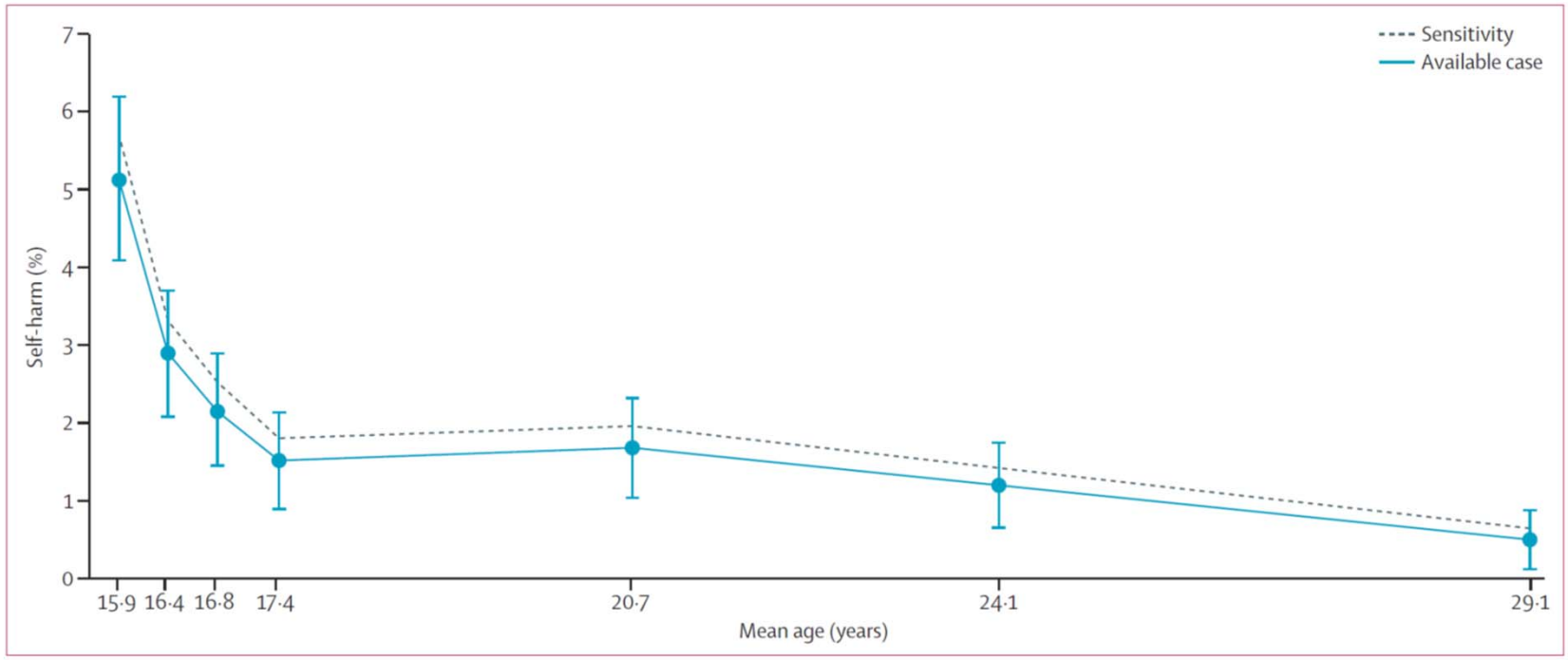
- N=957 (Mage: 20.7) with ≥1 lifetime NSSI event
- Average age of onset: 13.9y (range: 5-27y)
- Average #of NSSI acts: 172 (range: 1-20.000), 10/ last year

- Earlier age (12years):
  - NSSI frequency ↑ (most informative split: 11y)
  - NSSI methods ↑ (most informative split: 16y)
  - NSSI-related hospital visits ↑ (most informative split: 10y)

Ammerman et al., 2018

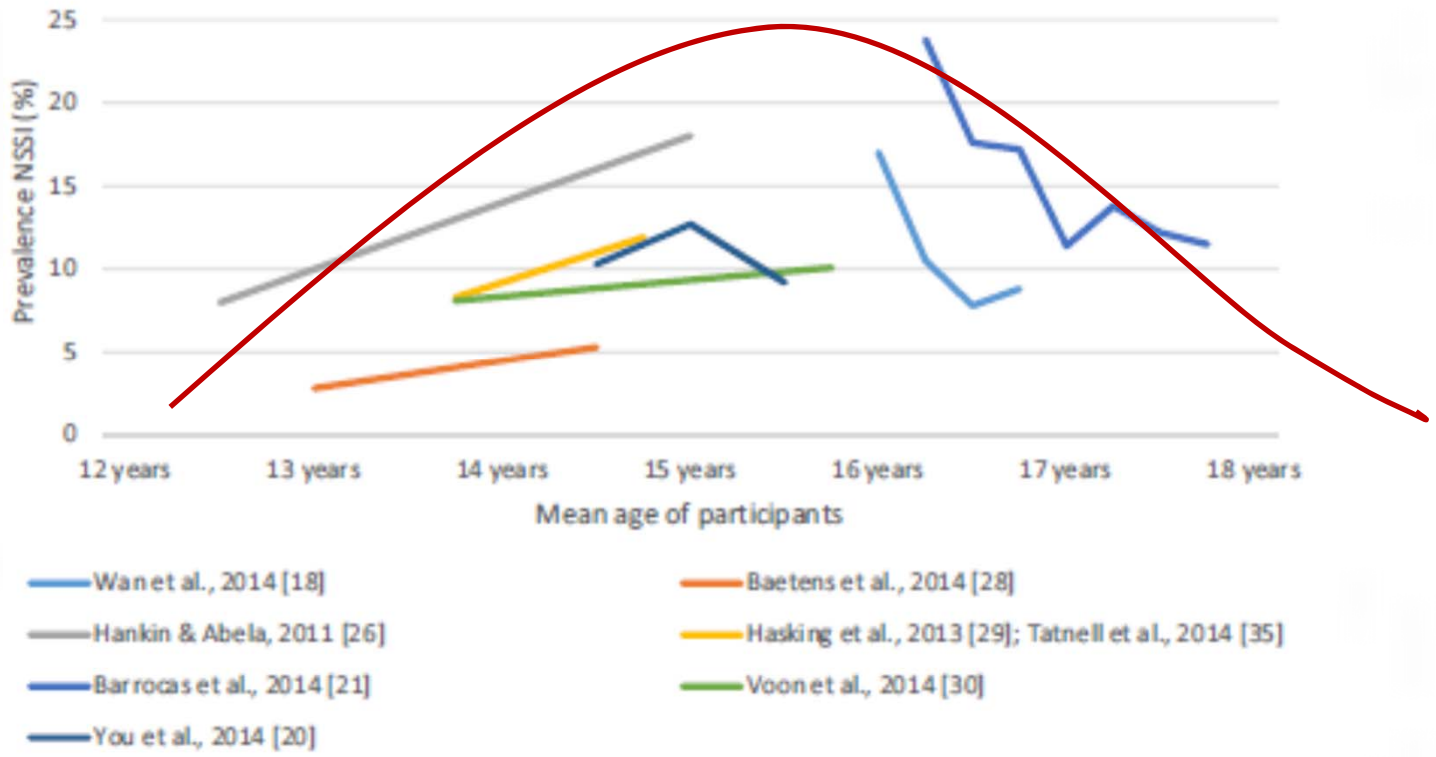
Self-harm: course

- Australian cohort study (n=1802)
- 7 FU waves (15.9y-29y)
- Any self-harm: 5.1%-0.5%



Moran et al., 2012

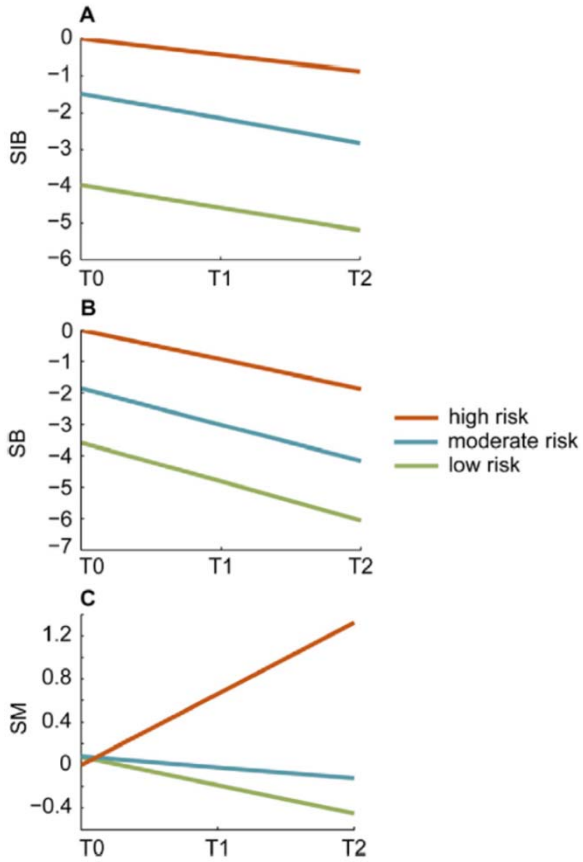
NSSI: Course

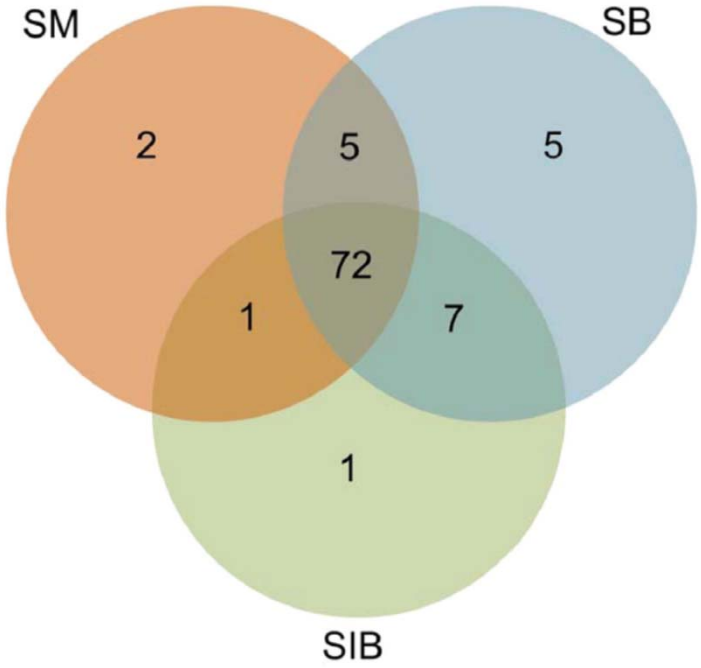


Plener et al., 2015

NSSI: Course

- N=513, 15-17a, 2 year FU
- SIB, substance misuse, suicidal behavior
- High risk: 80-90% overlap: 77,4% all 3 high risk clusters



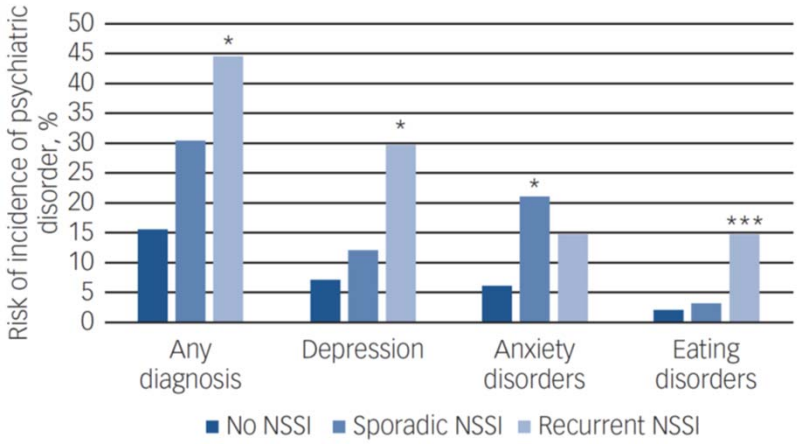


Nakar et al., 2016

Cutting once: does it matter?

- N=945, age 14: FU to age 17
- Sporadic NSSI: once
- Recurrent NSSI:≥2 times/year

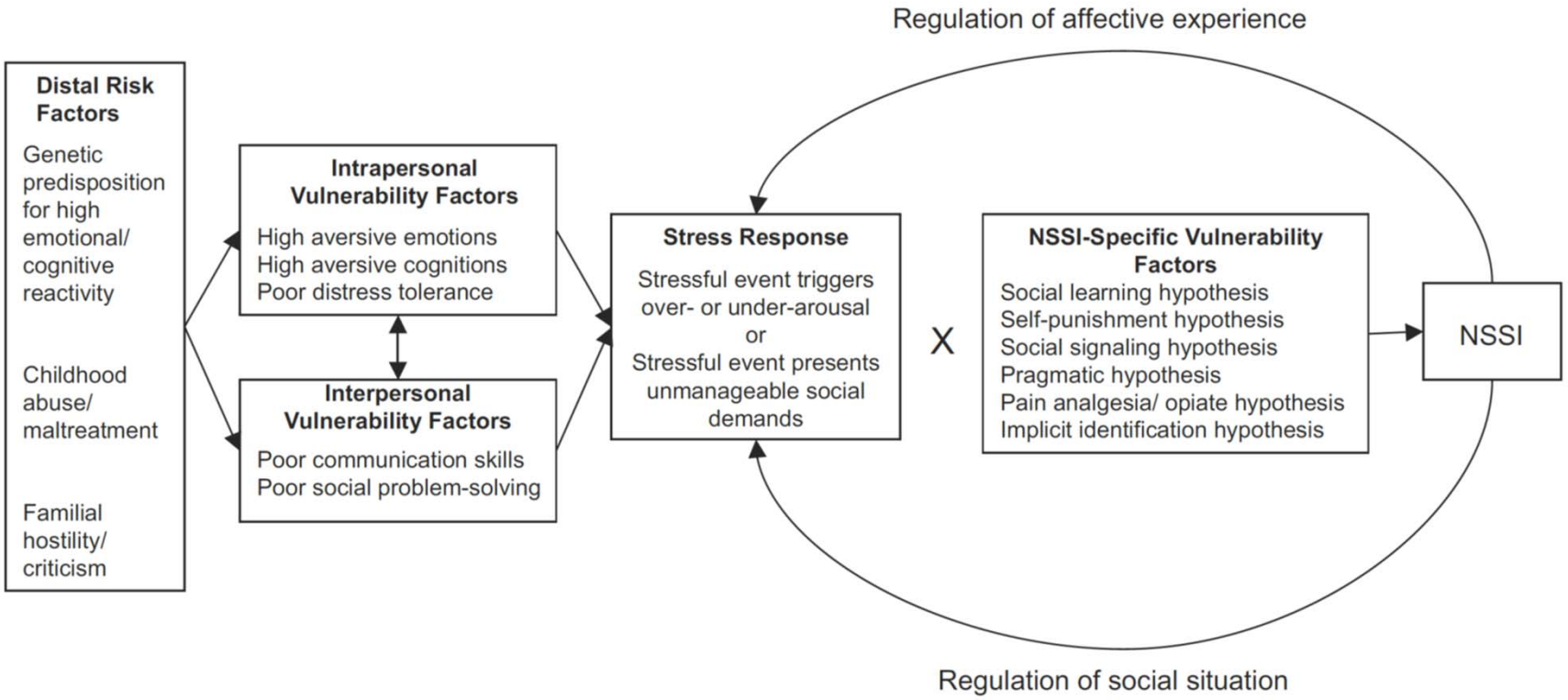
- Recurrent NSSI: predictor for:
  - total disorders (OR: 2.93)
  - depression (OR: 2.79)
  - eating disorders (OR: 9.96)



- Sporadic NSSI: predictor for anxiety disorders (OR: 2.93)

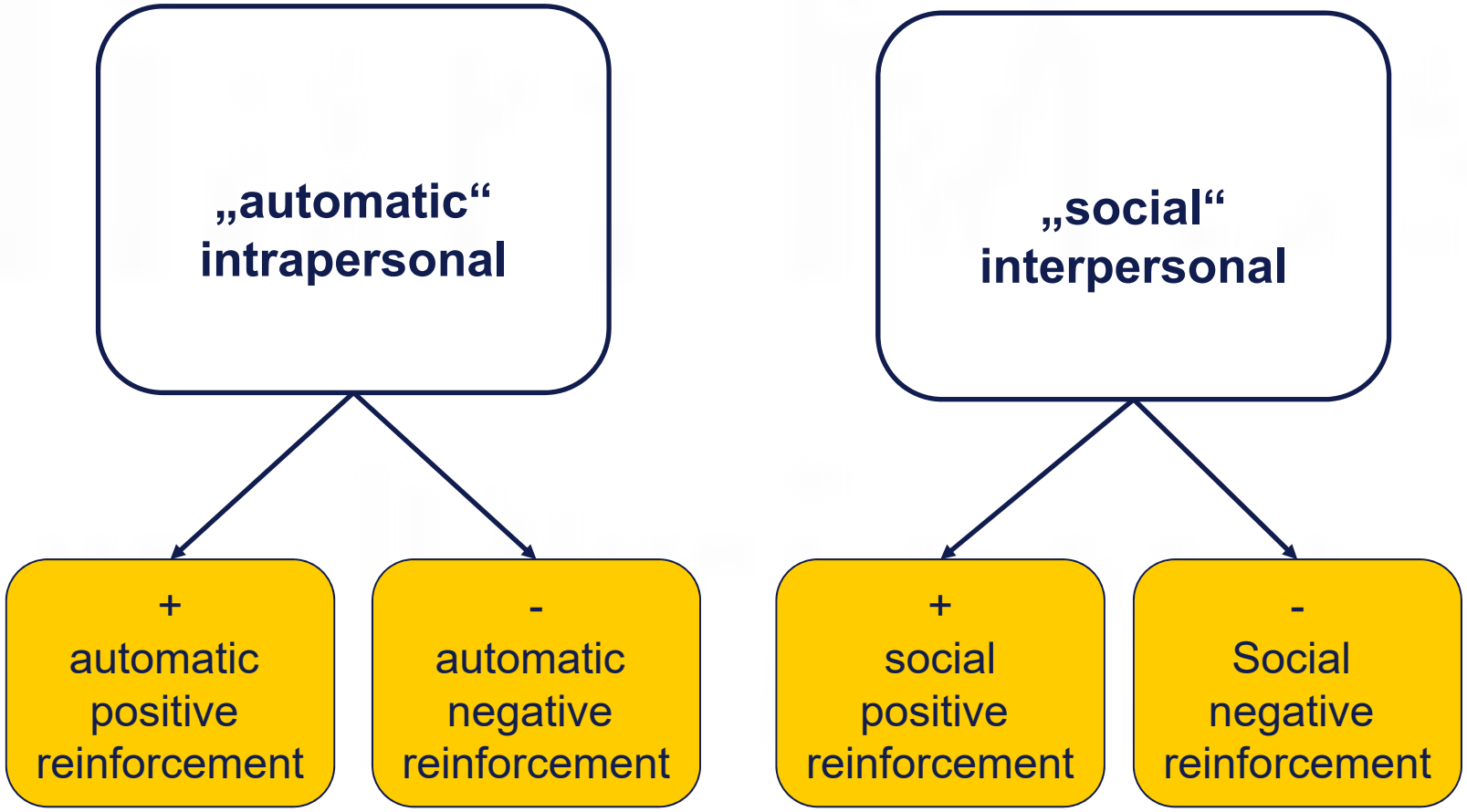
Wilkinson et al., 2018

Integrated theoretical model of NSSI



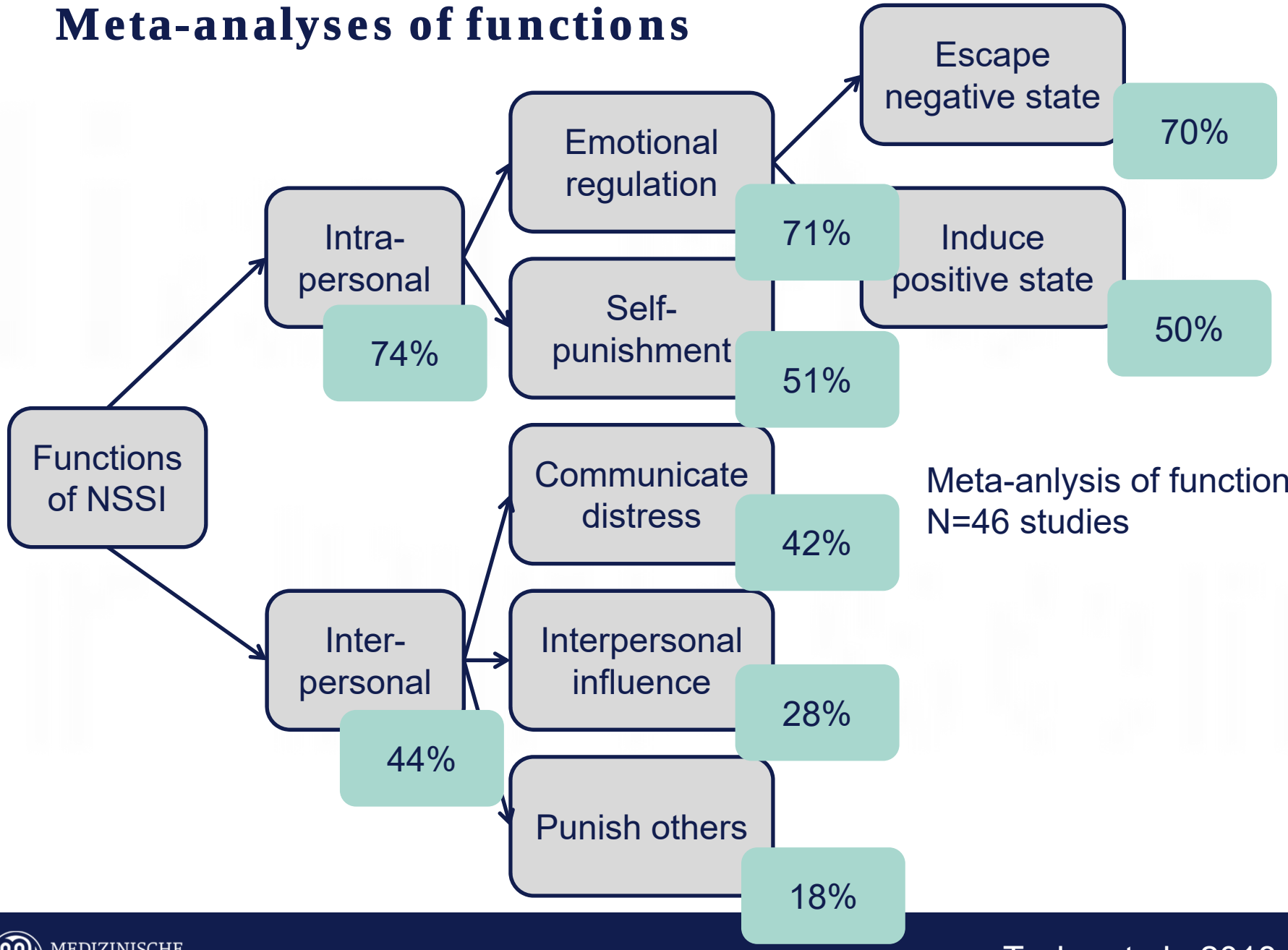
Nock, 2010

Four function model



Nock & Prinstein 2004, 2005

Meta-analyses of functions



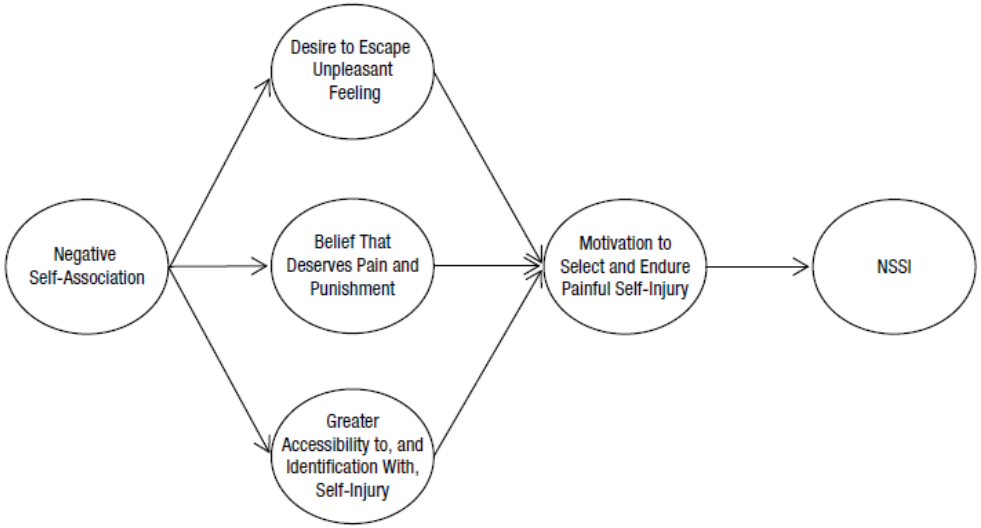
Meta-anlysis of functions:
N=46 studies

Taylor et al., 2018

Benefits and barriers model

- Lack of exposure or awareness
- Desire to avoid physical pain
- Aversion to NSSI stimuli
- Social norms
- Positive view of the self

Barriers

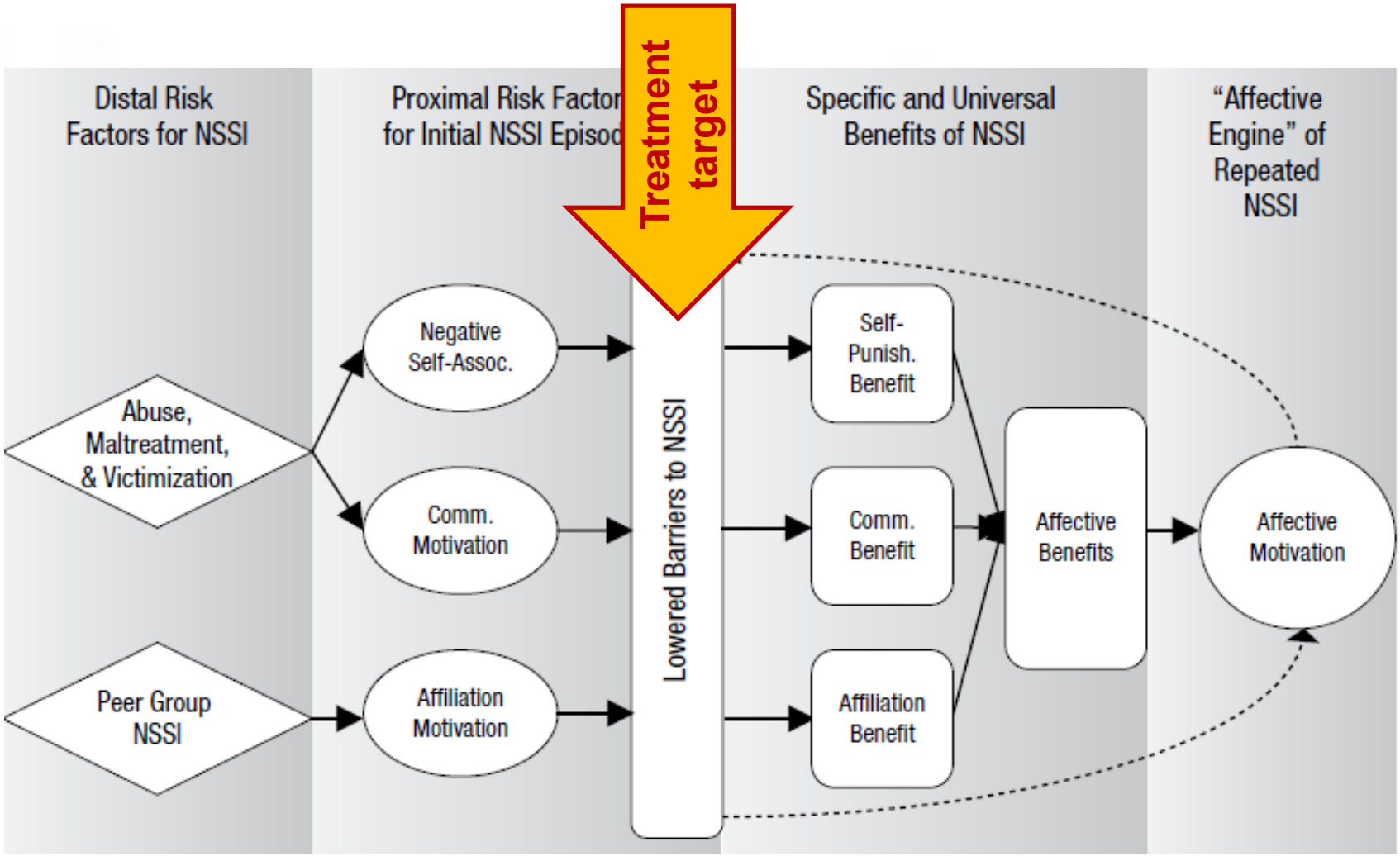


Benefits

- Affect↑
- Gratifies self-punishment desires
- Provides peer support affiliation
- Communicates distress or strenght

Hooley & Franklin, 2018

Benefits and barriers model



Hooley & Franklin, 2018

Discussion

- Tremendous increase in our knowledge about NSSI in the past 10 years: what it is and what it isn´t
- Unresolved issues in terminology hinder comparison (treatment research!)
- Non-suicidal self-poisoning not implemented
- What we could gain:
  - improved communication by joint understanding
  - promotion of research
  - better assessment and treatment (including early identification of those at risk for BPD)

Welcome to Vienna

Conference of the

ISSS

INTERNATIONAL SOCIETY FOR THE STUDY OF SELF-INJURY

26th-27th of June 2020

Vienna

www.itriples.org