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Public health approaches to suicidality: good thoughts, best practices, and critical issues

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Disclosure

- **Bruffaerts lab joint effort**
  - dr. Wouter Voorspoels, dr. Leontien Jansen, dr. Rozemarijn Jeannin, Franco Gericke, Laura Van Eldere, Claudio Yurdadön

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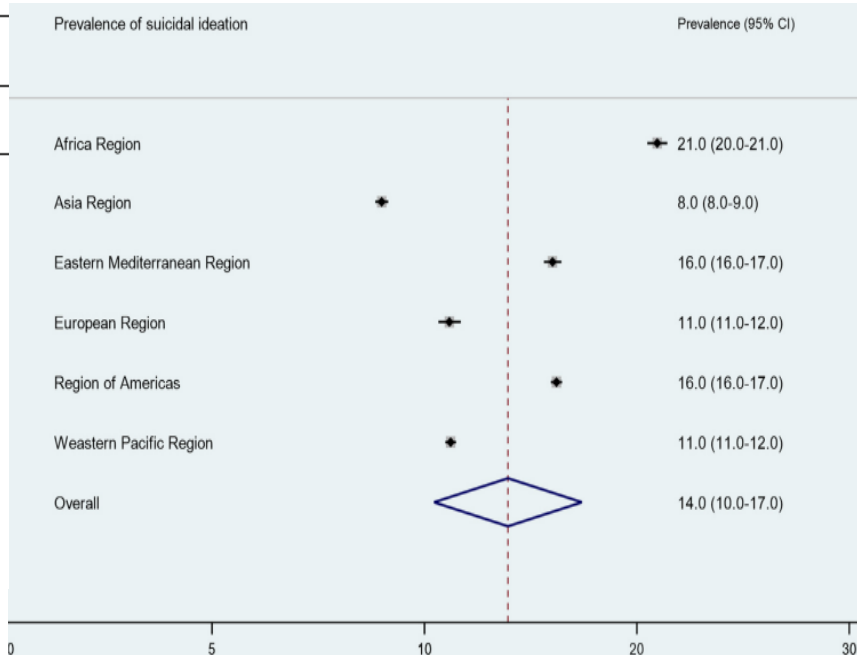
The basics: prevalence between 2-3%

Rank	5-9	10-14	15-24	25-34	35-44	45-54	55-64
1	Unintentional Injury 685	Unintentional Injury 881	Unintentional Injury 15,117	Unintentional Injury 31,315	Unintentional Injury 31,057	Malignant Neoplasms 34,589	Malignant Neoplasms 110,243
2	Malignant Neoplasms 382	**Suicide 581**	Homicide 6,466	**Suicide 8,454**	Heart Disease 12,177	Heart Disease 34,169	Heart Disease 88,551
3	Congenital Anomalies 171	Malignant Neoplasms 410	**Suicide 6,062**	Homicide 7,125	Malignant Neoplasms 10,730	Unintentional Injury 27,819	COVID-19 42,090
4	Homicide 169	Homicide 285	Malignant Neoplasms 1,306	Heart Disease 3,984	**Suicide 7,314**	COVID-19 16,964	Unintentional Injury 28,915
5	Heart Disease 56	Congenital Anomalies 150	Heart Disease 870	Malignant Neoplasms 3,573	COVID-19 6,079	Liver Disease 9,503	CLRD 18,816
6	Influenza & Pneumonia 55	Heart Disease 111	COVID-19 501	COVID-19 2,254	Liver Disease 4,938	Diabetes Mellitus 7,546	Diabetes Mellitus 18,002
7	CLRD 54	CLRD 93	Congenital Anomalies 384	Liver Disease 1,631	Homicide 4,482	**Suicide 7,249**	Liver Disease 16,151
8	Cerebro-vascular 32	Diabetes Mellitus 50	Diabetes Mellitus 312	Diabetes Mellitus 1,168	Diabetes Mellitus 2,904	Cerebro-vascular 5,686	Cerebro-vascular 14,153
9	Benign Neoplasms 28	Influenza & Pneumonia 50	CLRD 220	Cerebro-vascular 600	Cerebro-vascular 2,008	CLRD 3,538	**Suicide 7,160**
10	**Suicide 20***	Cerebro-vascular 44	Complicated Pregnancy 191	Complicated Pregnancy 594	Influenza & Pneumonia 1,148	Homicide 2,542	Influenza & Pneumonia 6,295

- Global estimates of 2-3% 12m and 6-9% LT STB
- 3-to-4-fold higher in younger *and* older persons

	n	Prevalence %
Lifetime		
Suicidal ideation	25	22.32
Broad	15	25.65
Narrow	13	15.30
Suicide plan(s)	8	6.14
Suicide attempt(s)	21	3.22
12-month		
Suicidal ideation	19	10.62
Broad	10	16.13
Narrow	11	6.72
Suicide plan(s)	8	2.98
Suicide attempt(s)	14	1.18



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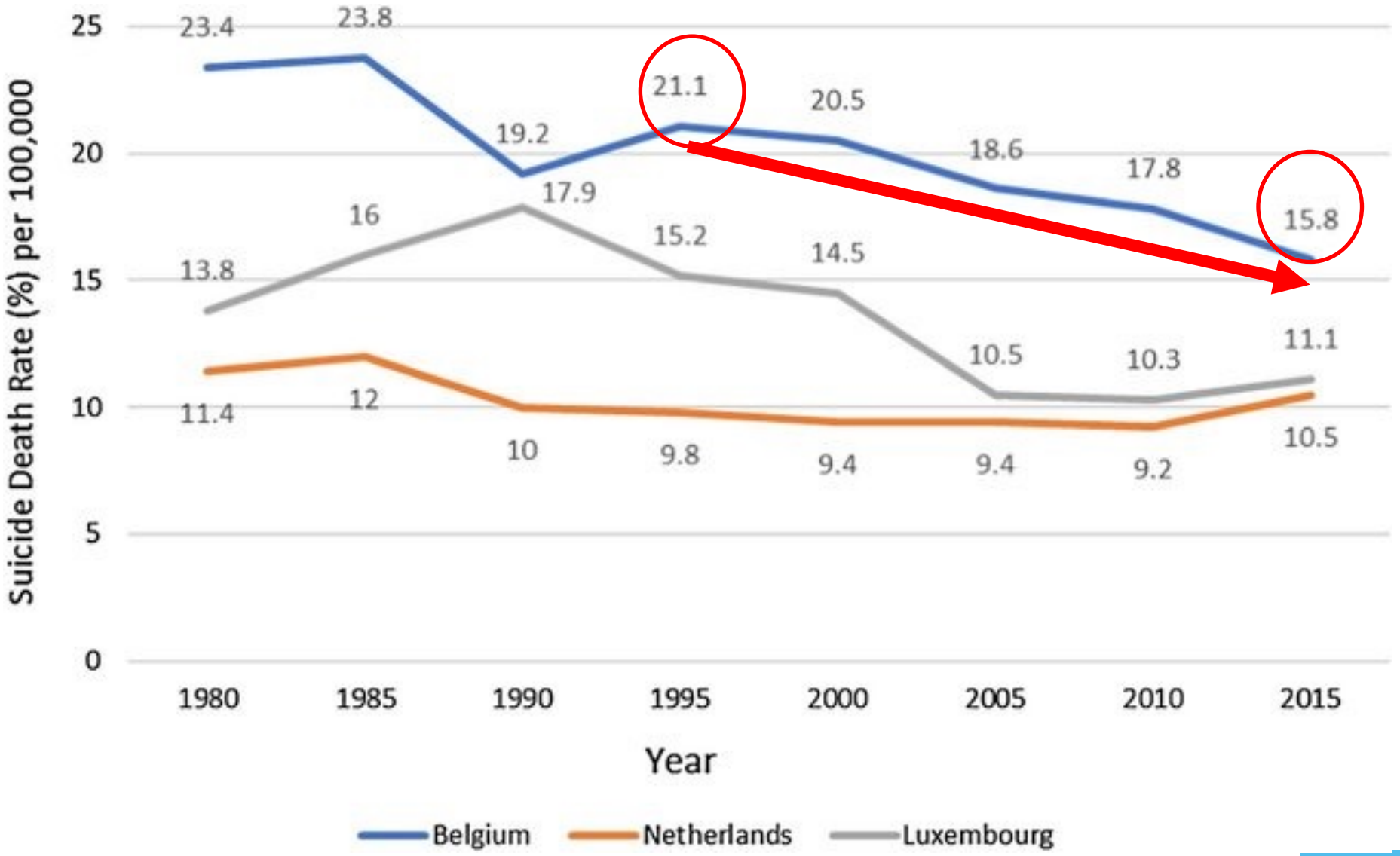
Castillejos et al., 2021; Nock et al., 2008; Borges et al., 2012; Quarshie et al., 2020; Mortier et al., 2020; Biswas et al., 2020; Bartels et al., 2002



Proulx & Savage, 2020

PREVALENCE

53

Study estimates incidence of suicidal ideation and suggests factors that put people at risk

Gunnell D, Harbord R, Singleton N, *et al.* Factors influencing the development and amelioration of suicidal thoughts in the general population—cohort study. *Br J Psychiatry* 2004;**185**:385–93.

This article contains extra text on the EBMH website

METHODS

Design: Cohort study.

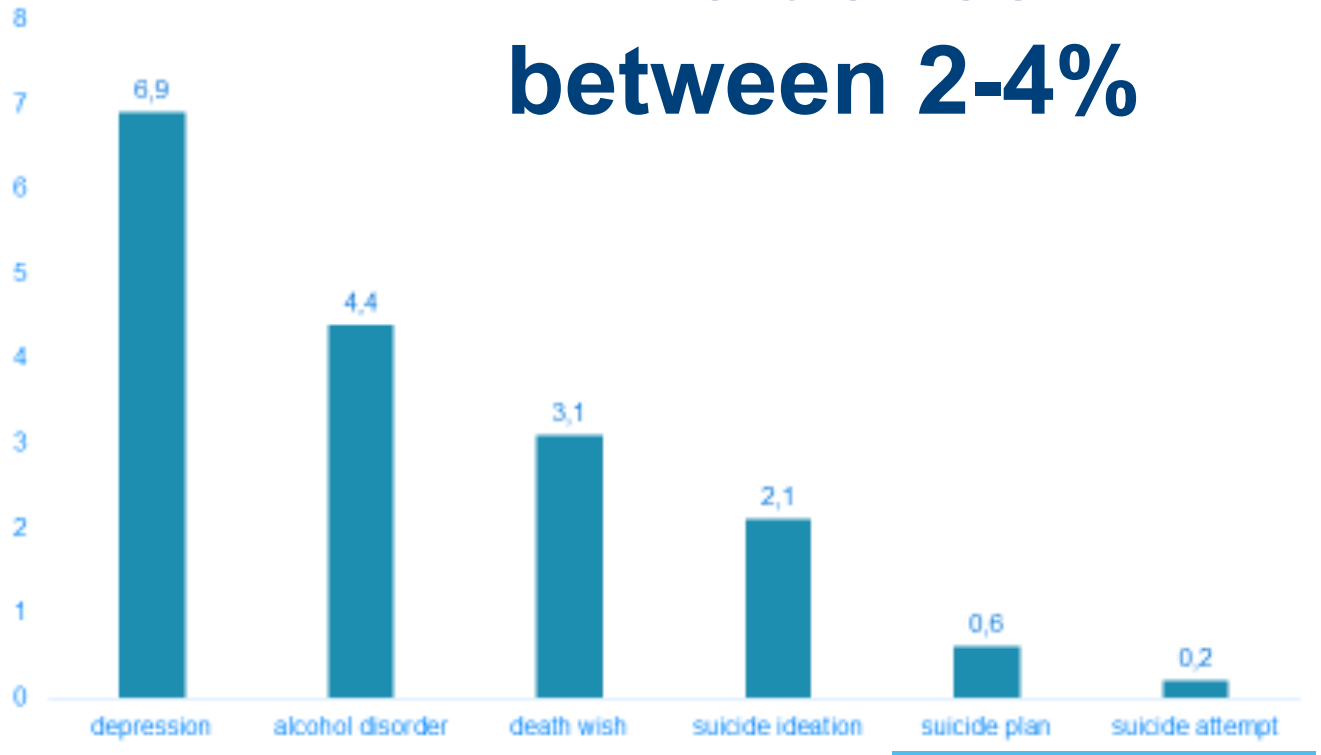
Setting: A sample of people from the second National Psychiatric Morbidity Survey, which randomly selected people living in private households in the UK: initial interviews between March and September 2000; follow up interviews after 18 months.

Population: 3561 people (all people with a Clinical Interview Schedule–Revised (CIS–R) score above 5 and a 20% random sample of people with a CIS–R score below 5) in initial interview; 2404 of these people in follow up interview included in analysis.

Assessment: People were questioned on presence of suicidal thoughts, defined as positive response to "Have you ever thought of taking your life, even if you would not really do it?" They were also questioned on their age, gender, baseline CIS–R score, marital status, size of primary support group, life events, occupational social class, weekly income, housing tenure, employment status, and substance misuse.

Outcomes: Incidence of suicidal thoughts; recovery from suicidal thoughts.

The basics: incidence between 2-4%



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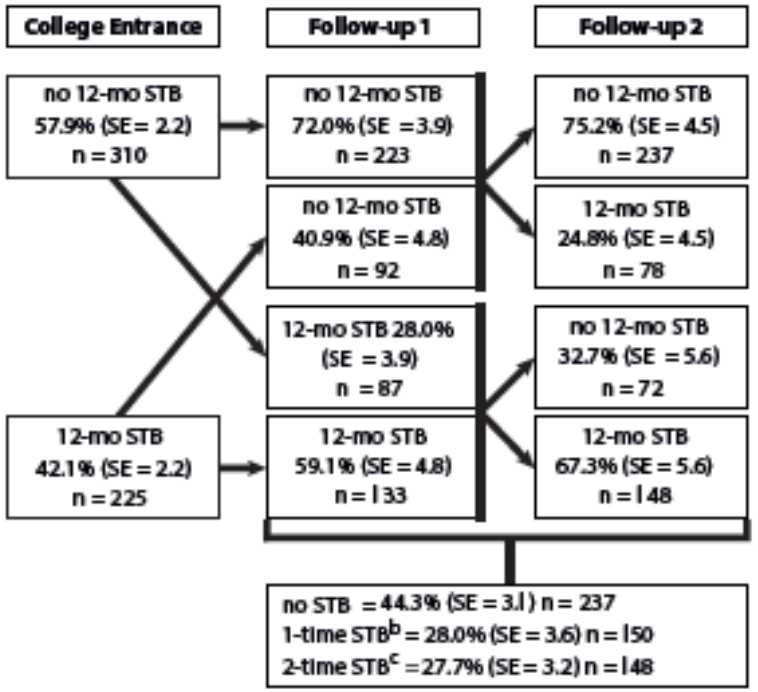
ten Have et al., 2009; Eisenberg et al., 2005; Mortier et al., 2017; Ebert et al., 2018; Benjet et al., 2022; Harbord et al., 2004

The basics: persistence between 60-80%

Predictor (2005)	Any depression (2007)	Any anxiety (2007)	Eating disorder (2007)	Self-injury (2007)	Suicidal thoughts (2007)	Any disorder (2007)
Depression	**2.81**	1.62	**1.83**	1.14	1.18	**1.81**
			(1.11,3.02)	(0.69,1.88)	(0.61,2.26)	**(1.22,2.68)**
Anxiety	0.78	**3.09**	1.00	0.99	0.85	1.17
	(0.36,1.72)		(0.46,2.12)	(0.32,2.29)		
Eating disorder	1.45	**1.84**	**13.44**	**1.59**	1.65	**4.48**
	(0.94,2.25)	**(1.03,3.28)**			(0.89,3.06)	**(2.15,6.37)**
Self-injury	1.25	1.45	1.18	**4.71**	1.58	**2.04**
	(0.72,2.17)	(0.72,2.91)	(0.66,2.10)			**(1.31,3.19)**
Suicidal thoughts	1.95	**2.85**	0.66	1.21	**3.29**	**4.11**
	(0.82,4.61)	**(1.06,7.64)**	(0.25,1.74)	(0.51,2.88)		**(2.53,11.06)**
Therapy	0.60	0.73	0.74	1.03	1.22	0.71
	(0.33,1.12)	(0.34,1.56)	(0.42,1.30)	(0.59,1.81)	(0.62,2.38)	
Medication use	1.16	1.51	1.17	1.09	**2.14**	**1.79**
	(0.60,2.24)	(0.70,3.27)	(0.65,2.13)	(0.59,2.01)	**(1.07,4.31)**	**(1.09,2.92)**
Perceived need	**2.01**	**2.07**	**1.75**	**1.92**	**4.40**	**2.58**
	(1.31,3.07)	**(1.16,3.71)**	**(1.15,2.66)**	**(1.25,2.93)**	**(2.35,8.24)**	**(1.86,3.59)**

Each column represents a separate regression, with the dependent variable listed at the top and independent variables on the left. Model controls for gender, student nationality, sexual preference, race, degree program, and age. Significant predictors in bold.



[a]Proportions indicate the number of participants that report (no) 12-month STB within the group where the arrow originates from. Groups with (no) 12-month STB in follow-up 1 were grouped together to calculate proportions in follow-up 2 (as indicated by the vertical bars).
[b]Reporting 1-time 12-month STB during 2-year follow-up.
[c]Reporting 2-time 12-month STB during 2-year follow-up.

~6/10 for those w/mental disorders;
~8/10 for those with suicidality

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Patton et al., 2014; Zivin et al., 2009; Mortier et al., 2017

The crucial assumption:

they *do* seek help, don't they?

12-month treatment rates for suicidal people around the globe

BJPsych | The British Journal of Psychiatry (2011) 199, 64–70. doi: 10.1192/bjp.bp.110.084129

Treatment of suicidal people around the world†

R. Bruffaerts, K. Demyttenaere, I. Hwang, W.-T. Chiu, N. Sampson, R. C. Kessler, J. Alonso, G. Borges, G. de Girolamo, R. de Graaf, S. Florescu, O. Gureje, C. Hu, E. G. Karam, N. Kawakami, S. Kostyuchenko, V. Kovess-Masfety, S. Lee, D. Levinson, H. Matschinger, J. Posada-Villa, R. Sagar, K. M. Scott, D. J. Stein, T. Tomov, M. C. Viana and M. K. Nock

Background
Suicide is a leading cause of death worldwide; however, little information is available about the treatment of suicidal people, or about barriers to treatment.

Aims
To examine the receipt of mental health treatment and barriers to care among suicidal people around the world.

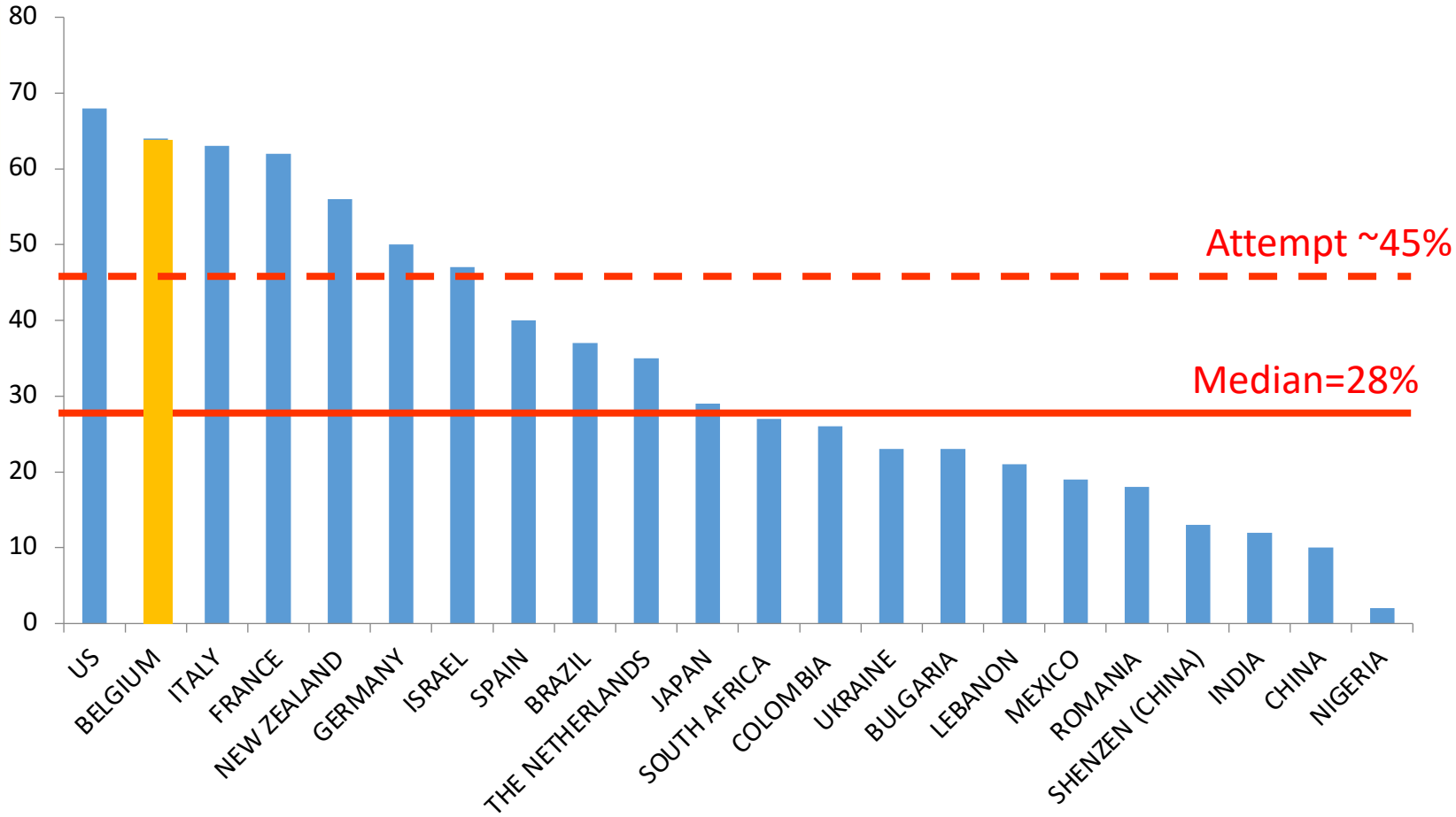
Method
Twenty-one nationally representative samples worldwide (*n*=55 302; age 18 years and over) from the World Health Organization's World Mental Health Surveys were interviewed regarding past-year suicidal behaviour and past-year healthcare use. Suicidal respondents who had not used services in the past year were asked why they had not sought care.

Low perceived need was the most important reason for not seeking help (58%), followed by attitudinal barriers such as the wish to handle the problem alone (40%) and structural barriers such as financial concerns (15%). Only 7% of respondents endorsed stigma as a reason for not seeking treatment.

Conclusions
Most people with suicide ideation, plans and attempts receive no treatment. This is a consistent and pervasive finding, especially in low-income countries. Improving the receipt of treatment worldwide will have to take into account culture-specific factors that may influence the process of help-seeking.

Declaration of interest

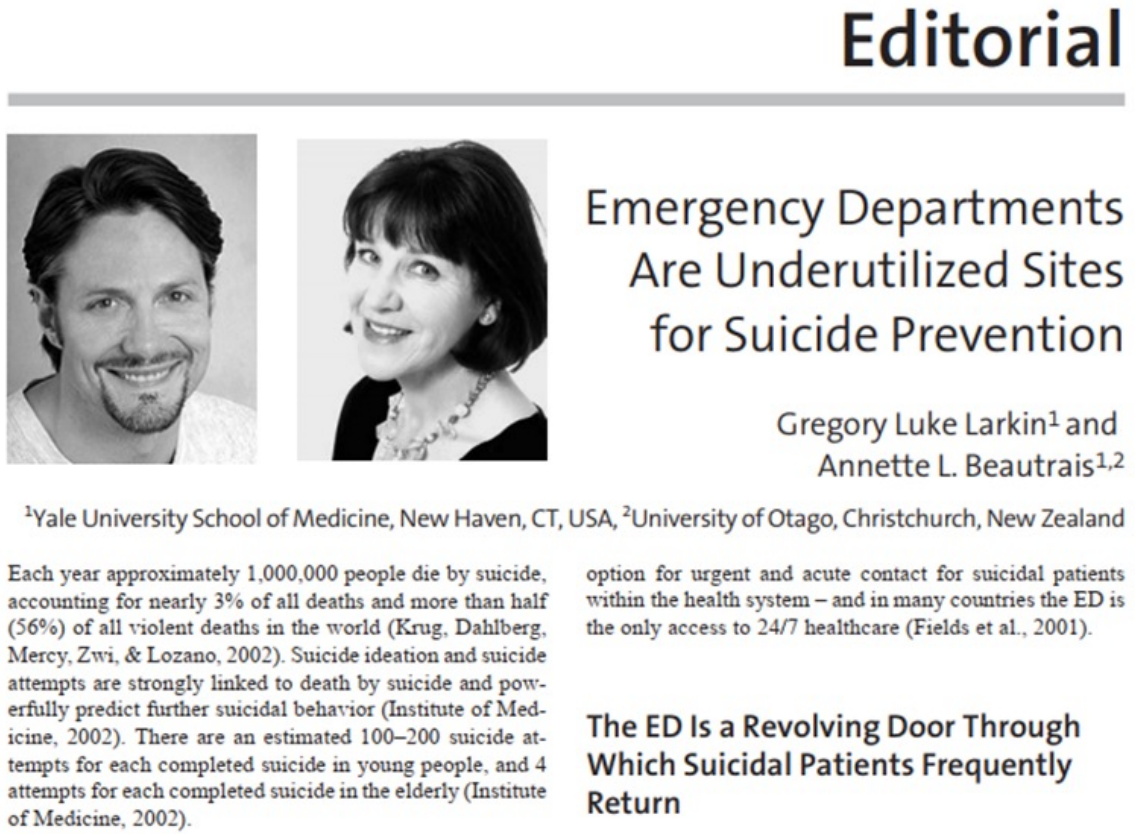
Persistent high unmet need



Bruffaerts et al., 2011

Nonetheless interesting … they *do* seek help…

- General treatment rates for STB are 2/3 in Belgium (albeit lower treatment coverage for suicide attempts)
- Those who are seeking treatment mostly do so in low-threshold settings, such as primary care, and, more importantly, emergency rooms
- 10% of all ER referrals to some extent related to STB



Editorial

Emergency Departments Are Underutilized Sites for Suicide Prevention

Gregory Luke Larkin[1] and Annette L. Beautrais[1,2]

[1]Yale University School of Medicine, New Haven, CT, USA, [2]University of Otago, Christchurch, New Zealand

Each year approximately 1,000,000 people die by suicide, accounting for nearly 3% of all deaths and more than half (56%) of all violent deaths in the world (Krug, Dahlberg, Mercy, Zwi, & Lozano, 2002). Suicide ideation and suicide attempts are strongly linked to death by suicide and powerfully predict further suicidal behavior (Institute of Medicine, 2002). There are an estimated 100–200 suicide attempts for each completed suicide in young people, and 4 attempts for each completed suicide in the elderly (Institute of Medicine, 2002).

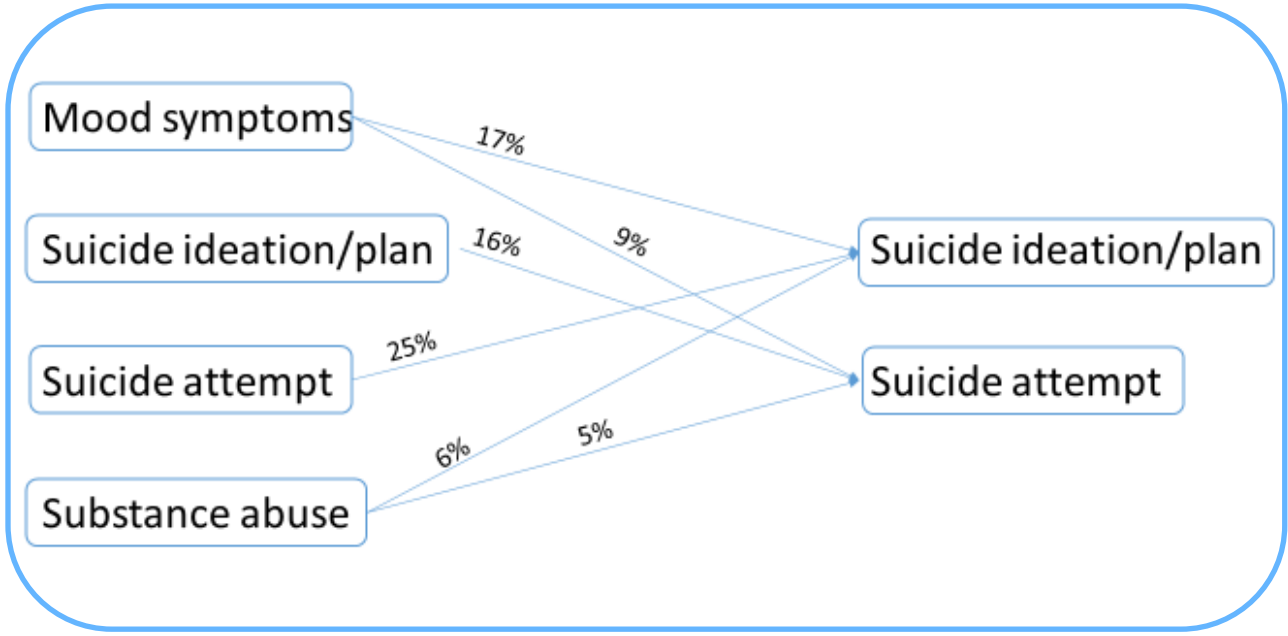
option for urgent and acute contact for suicidal patients within the health system – and in many countries the ED is the only access to 24/7 healthcare (Fields et al., 2001).

The ED Is a Revolving Door Through Which Suicidal Patients Frequently Return

Bruffaerts et al., 2012; Jollant et al., 2020; Schmidt et al., 2018; Larkin & Beautrais, 2010

TRUSTER-study : Treatment Understanding in Suicidality-related Transitions in the Emergency Room

- ER UZLeuven, N~54,000 referrals (2003-2023)
- How many patients make a transition towards a more severe form of STB?
- **Persistence and transitions!**
  - From mood to ideation/plan to attempt
  - 1/5 makes this transition <1 month



Yurdadön et al., in revision

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TRUSTER-study : Treatment Understanding in Suicidality-related Transitions in the Emergency Room

Pathways to mental health services for young people: a systematic review

Kathleen MacDonald[1,2] · Nina Fainman-Adelman[1,2] · Kelly K. Anderson[3,4] · Srividya N. Iyer[1,2]

Received: 9 May 2018 / Accepted: 30 July 2018 / Published online: 22 August 2018

Abstract

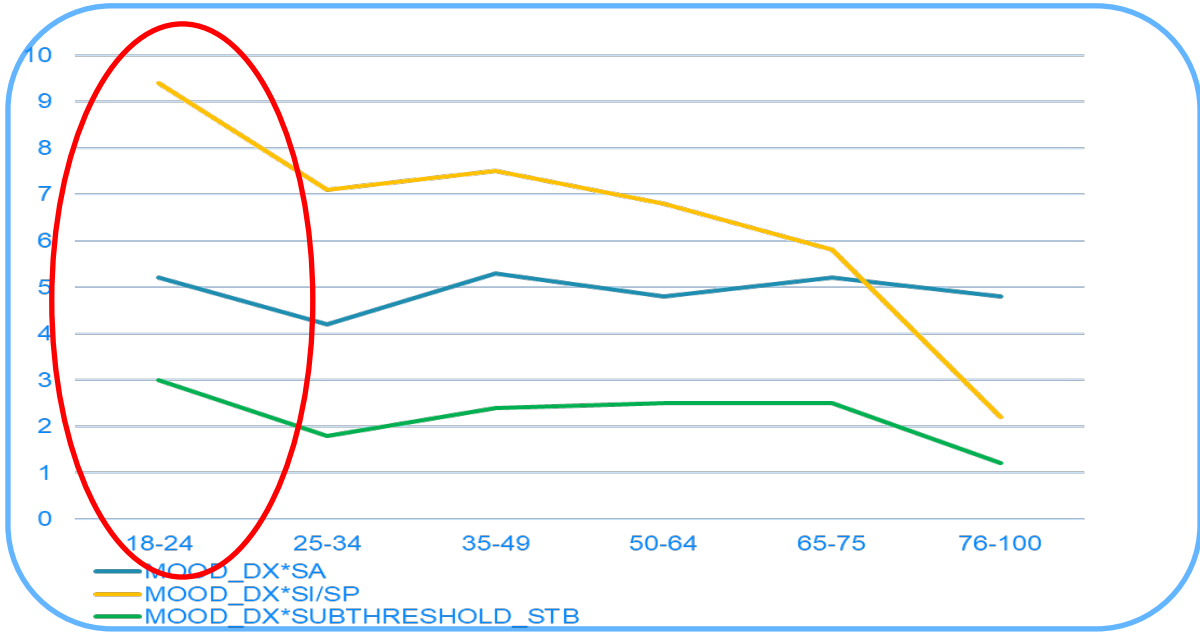
Purpose While early access to appropriate care can minimise the sequelae of mental illnesses, little is known about how youths come to access mental healthcare. We therefore conducted a systematic review to synthesise literature on the pathways to care of youths across a range of mental health problems.

Methods Studies were identified through searches of electronic databases (MEDLINE, PsycINFO, Embase, HealthSTAR and CINAHL), supplemented by backward and forward mapping and hand searching. We included studies on the pathways to mental healthcare of individuals aged 11–30 years. Two reviewers independently screened articles and extracted data.

Results Forty-five studies from 26 countries met eligibility criteria. The majority of these studies were from settings that offered services for the early stages of psychosis, and others included inpatient and outpatient settings targeting wide-ranging mental health problems. Generally, youths' pathways to mental healthcare were complex, involved diverse contacts, and, sometimes, undue treatment delays. Across contexts, family/carers, general practitioners and emergency rooms featured prominently in care pathways. There was little standardization in the measurement of pathways.

Conclusions Except in psychosis, youths' pathways to mental healthcare remain understudied. Pathways to care research may need to be reconceptualised to account for the often transient and overlapping nature of youth mental health presentations, and the possibility that what constitutes optimal care may vary. Despite these complexities, additional research, using standardized methodology, can yield a greater understanding of the help-seeking behaviours of youths and those acting on their behalf; service responses to help-seeking; and the determinants of pathways. This understanding is critical to inform ongoing initatives to transform youth mental healthcare.

Keywords Youth mental health · Mental health services · Pathways to care · Help-seeking behaviour · Treatment delays



- Attention for specific demographic groups?
- **Emerging adults (18-24)**
  - More ideation/plan than attempt
  - Early intervention in the suicidal process

Jansen et al., in preparation

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TRUSTER-study : Treatment Understanding in Suicidality-related Transitions in the Emergency Room

nature aging

PERSPECTIVE

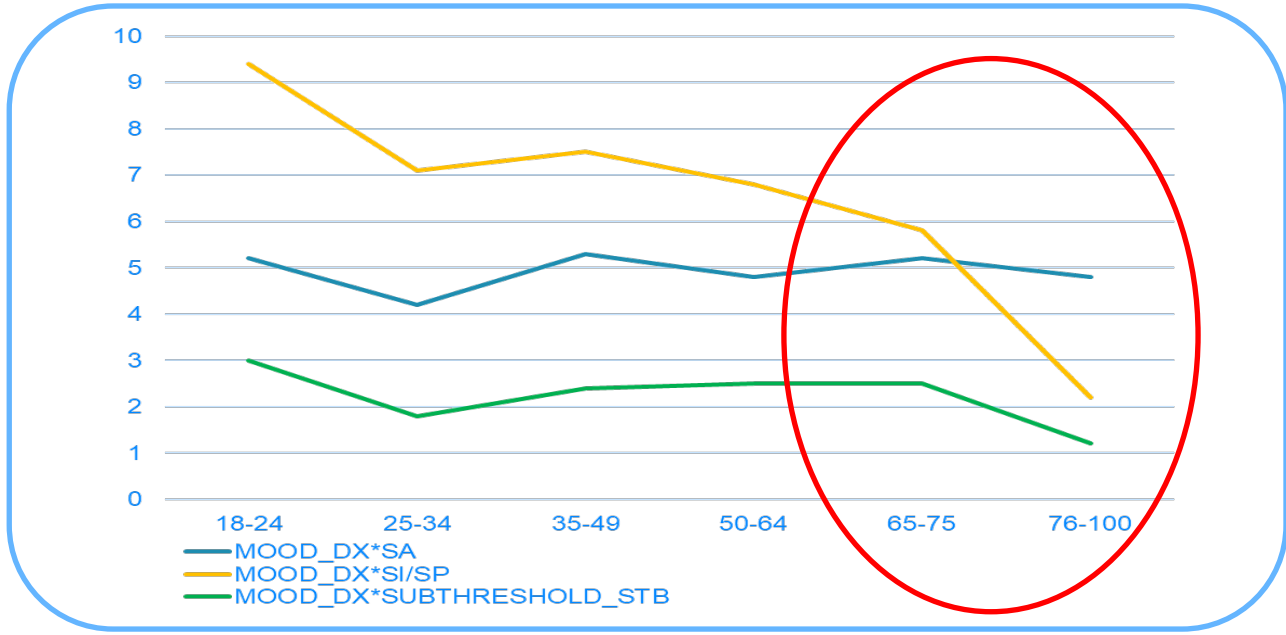
https://doi.org/10.1038/s43587-021-00160-1

Check for updates

Late-life suicide in an aging world

Diego De Leo[1,2]

Suicide is an important problem among older adults and in particular older men. Risk factors for suicide in older adults include the loss of a loved one, loneliness and physical illness. Suicide in older adults is often attributed to the development of depression due to bereavement or loss of physical health and independence. However, suicide prevention in old age requires avoiding overly simplistic therapeutic approaches. This Perspective discusses the impact of social determinants of health, cultural narratives and the coronavirus disease 2019 (COVID-19) pandemic on suicide among older adults and proposes strategies for a multifaceted approach to suicide prevention.



- Attention for specific demographic groups?
- **Elderly persons (65+)**
  - More attempt than ideation/plan
  - Late intervention in the suicidal process, although patients attend the ER frequently

Jansen et al., in preparation

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The crucial assumption:

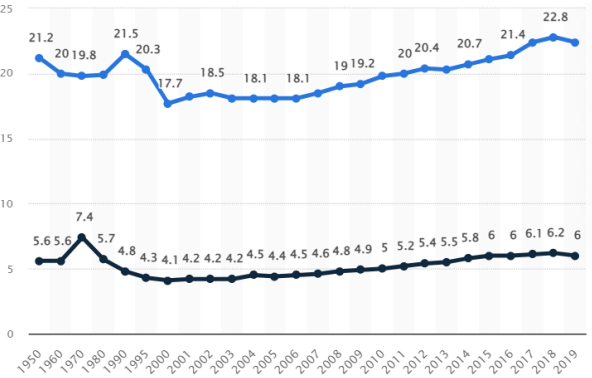
we know the risk factors, don’t we?

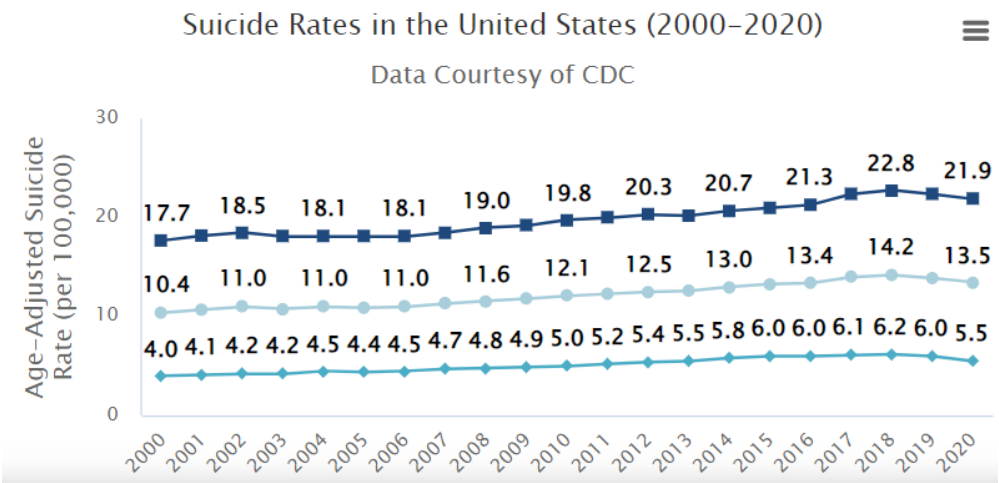
Matthew Nock, ~~a~~ the professor of psychology at Harvard and ~~a~~ the leading suicide researcher. "The suicide rate now is the same it was literally 100 years ago," he said. "So just if we're being honest, we're not getting better." Kayana Szymczak for The New York Times

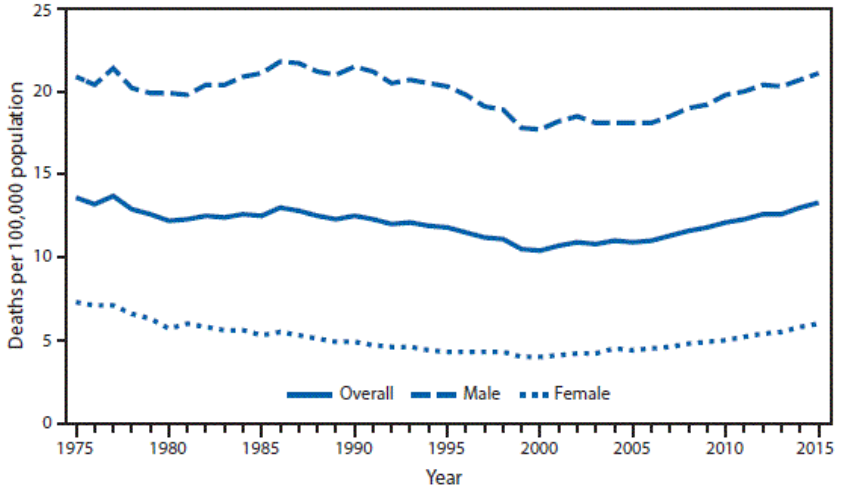
The New York Times | https://www.nytimes.com/2022/09/30/health/suicide-predict-smartphone.htm

"How come that, despite the increased number of studies, the prevalence of suicidal thoughts and behaviors isn't significantly decreasing?"

Sept. 30, 2022 Updated 12:27 p.m. ET







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Barry, 2022; CDC, 2017; 2022; Elflein, 2022

Risk factor analyses pays off…

Significant reduction of mortality by better detection, treatment, and prevention

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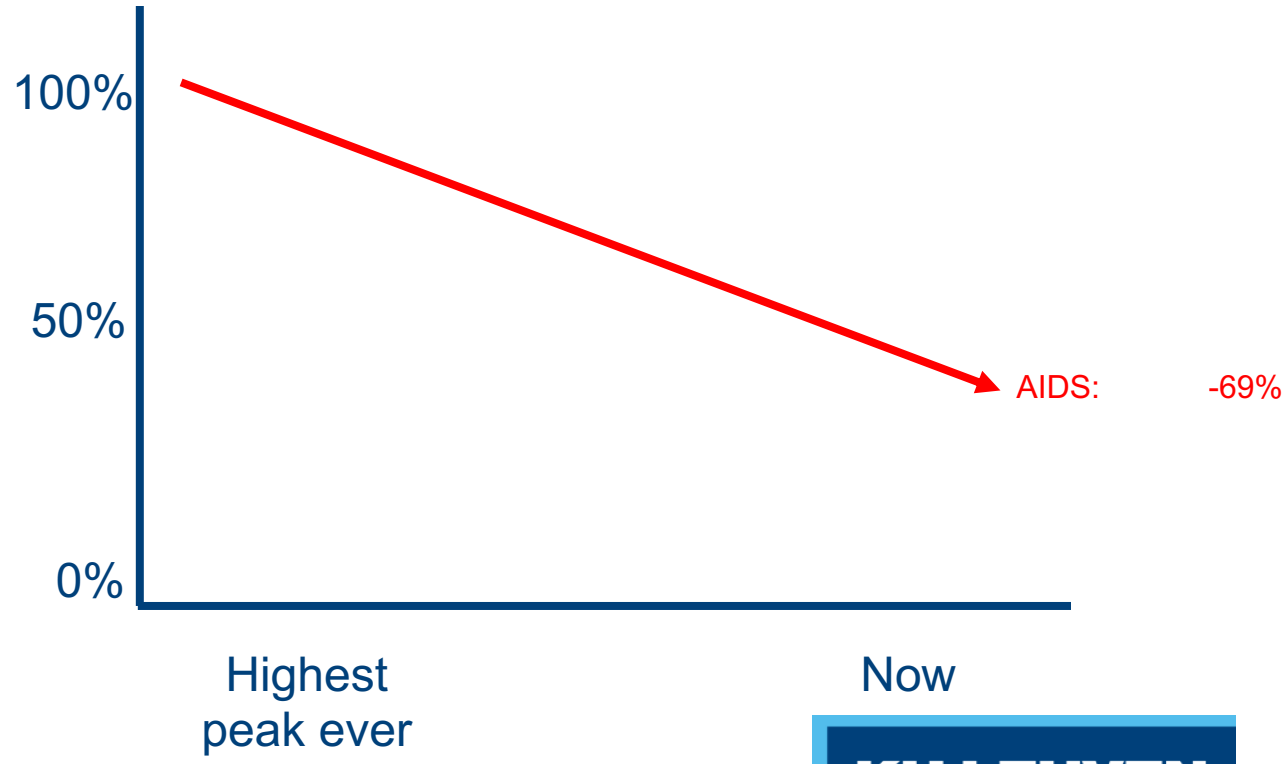

Greenwald & Dunn, 2009; Insel, 2012

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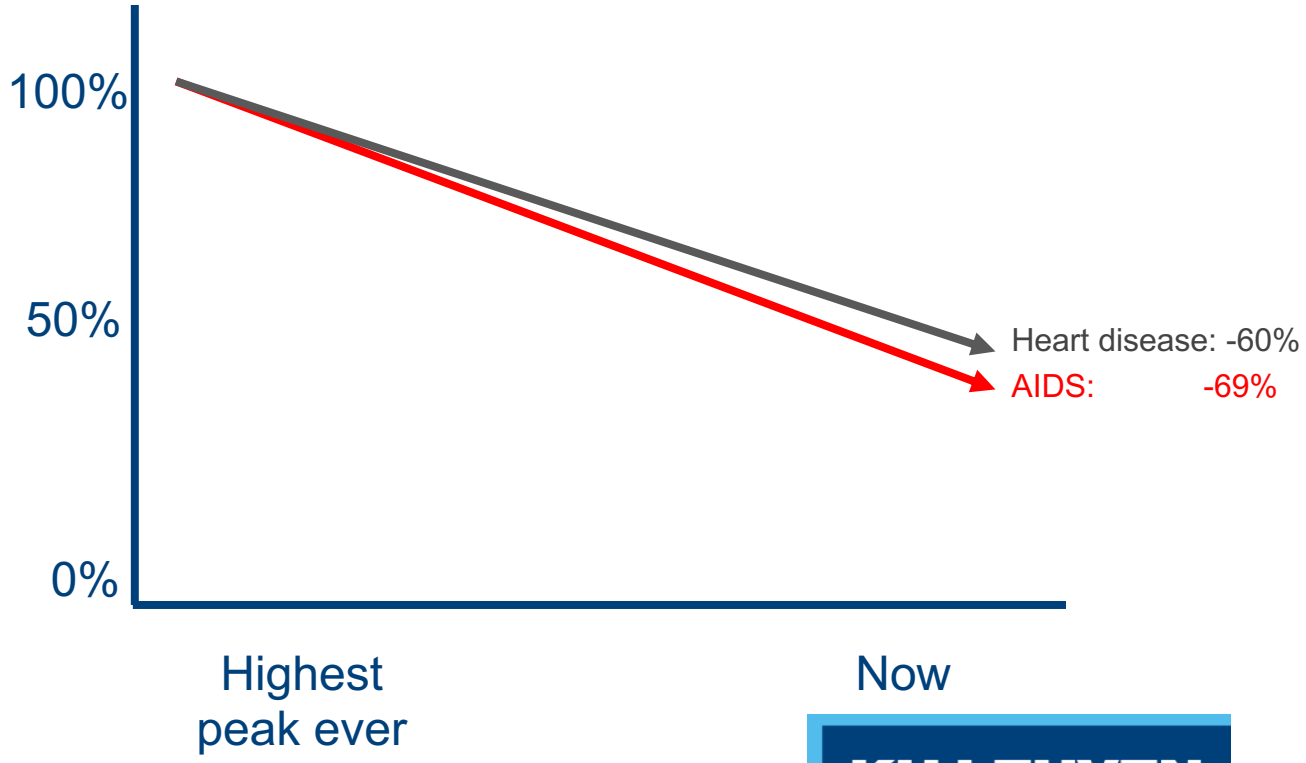
Risk factor analyses pays off…

Significant reduction of mortality by better detection, treatment, and prevention



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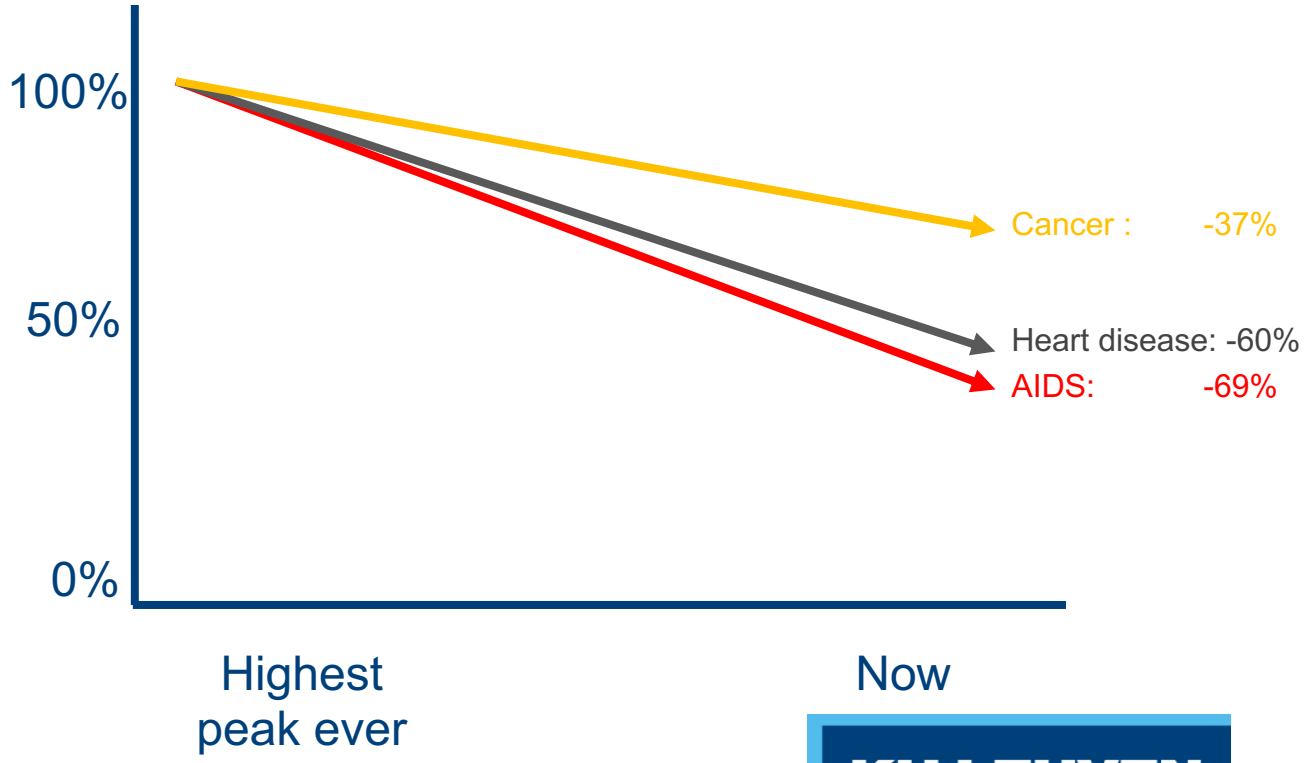

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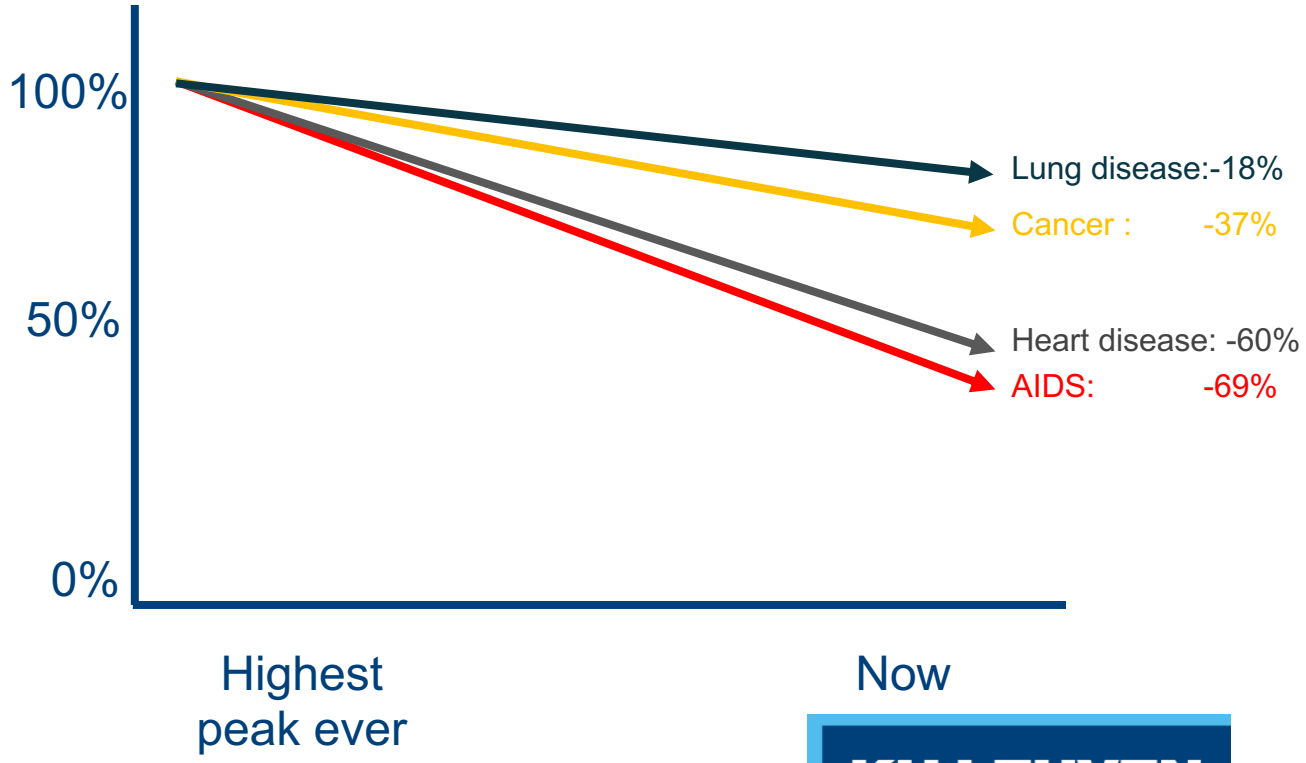

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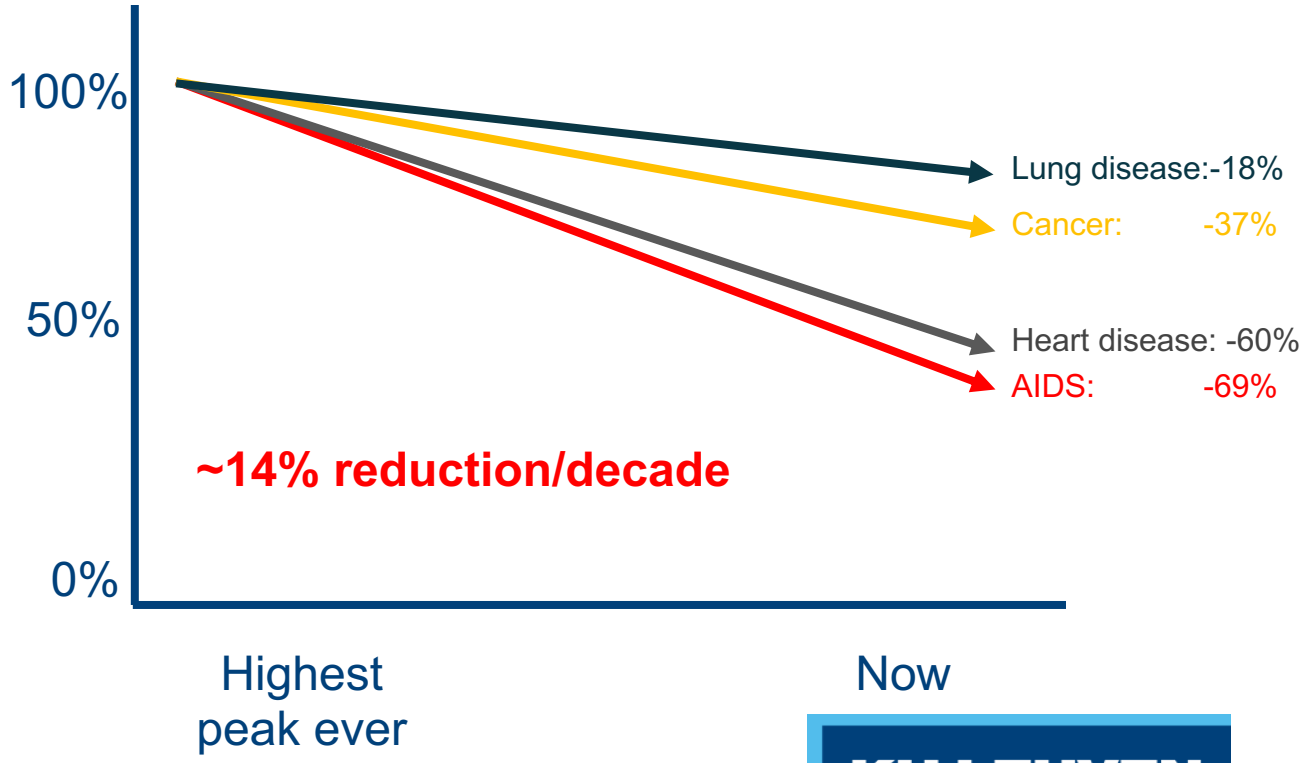
Risk factor analyses pays off…

Significant reduction of mortality by better detection, treatment, and prevention



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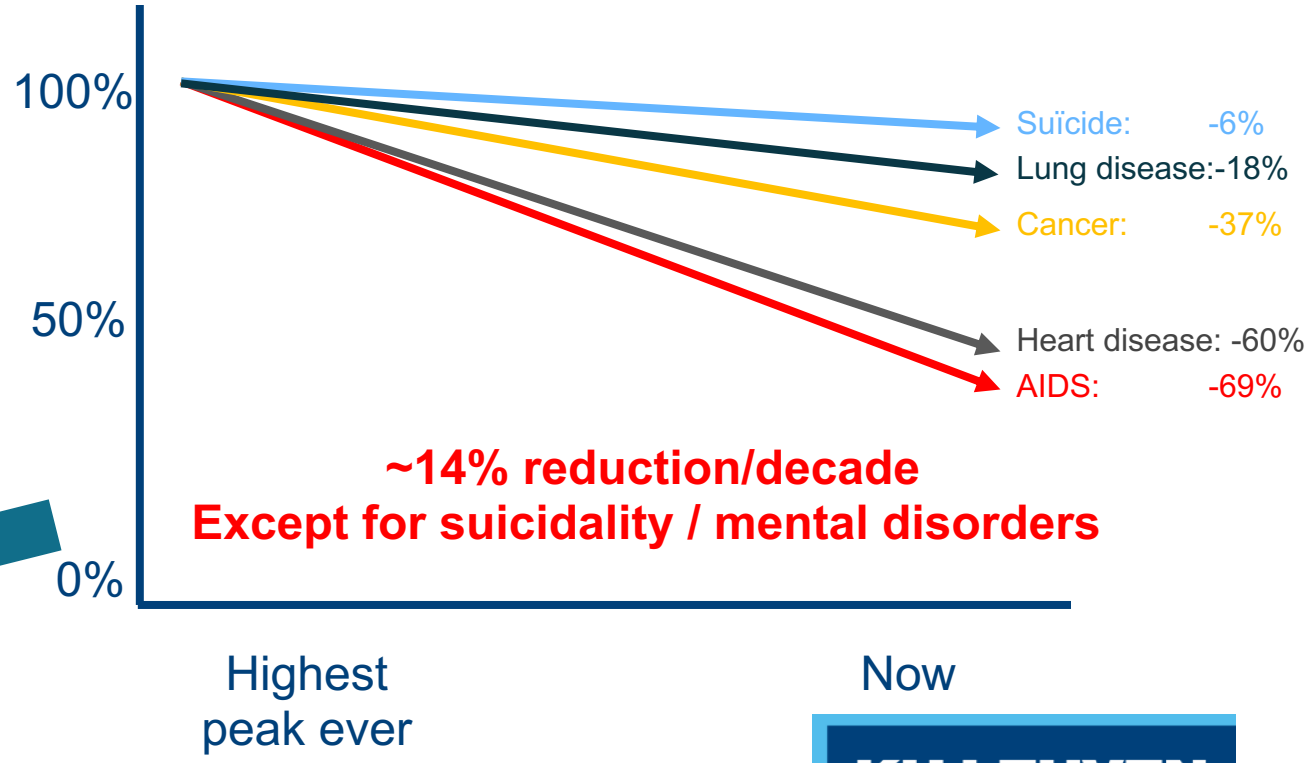
But how about suicidality ?

Significant reduction of mortality by better detection, treatment, and prevention



WHY??

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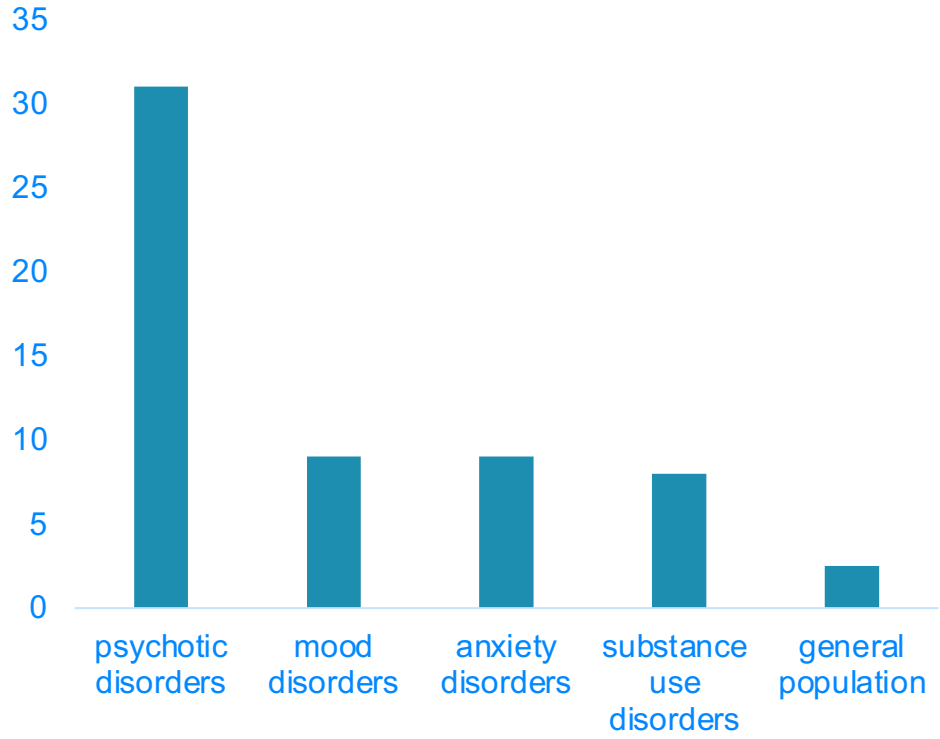
Risk factors commonly studied – all non specific

- Prior suicidality — OR up to 18
- Female gender, LGBTQ+, age, living alone, social-economic status — OR~2-8
- Mental disorders — OR~4-7
- Childhood adversities — OR~2.4
- Parental psychopathology — OR~1.7
- War and trauma — OR~1.6
- Physical conditions — OR~2.4
- Altitude of residence — OR~1.2
- Being alone / no connectedness — OR~1.5



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Stayermman, 2012; Nock et al., 2008; 2009; Borges et al., 2012; Scott et al., 2015; Gureye et al., 2013; Brown et al., 2021

	Lifetime attempt OR (95%CI)	Lifetime ideation OR (95%CI)	Lifetime plan among lifetime ideators OR (95%CI)	Planned attempts OR (95%CI)	Unplanned attempts OR (95%CI)
Physical abuse	**3.3 (2.7-4.0)***	**2.7 (2.4-3.0)***	0.9 (0.7-1.2)	1.3 (0.9-1.9)	1.1 (0.8-1.6)
Sexual abuse	**4.6 (3.7-5.7)***	**3.4 (2.9-4.0)***	1.2 (0.9-1.5)	1.3 (0.9-1.9)	1.3 (0.9-1.9)
Neglect	**2.9 (2.3-3.5)***	**2.3 (2.0-2.6)***	1.3 (1.0-1.7)	**1.5 (1.0-2.2)***	1.1 (0.7-1.7)
Parent died	**1.7 (1.4-2.0)***	**1.4 (1.3-1.6)***	1.0 (0.8-1.2)	1.2 (0.8-1.7)	1.1 (0.7-1.5)
Parent divorced	**2.2 (1.8-2.6)***	**1.7 (1.5-1.9)***	0.9 (0.7-1.2)	1.4 (0.9-2.2)	**1.5 (1.0-2.1)***
Other parent loss	**2.0 (1.6-2.5)***	**1.7 (1.5-1.9)***	0.9 (0.7-1.1)	1.1 (0.7-1.7)	1.5 (1.0-2.2)
Family violence	**2.0 (1.6-2.5)***	**1.7 (1.5-1.9)***	1.0 (0.8-1.2)	1.0 (0.7-1.5)	1.3 (0.9-1.9)
Physical illness	**2.5 (2.0-3.1)***	**2.0 (1.7-2.3)***	1.1 (0.8-1.4)	1.2 (0.7-2.0)	1.4 (0.9-2.1)
Financial adversity	**1.3 (1.0-1.7)***	**1.3 (1.1-1.6)***	**0.7 (0.5-1.0)***	1.1 (0.6-2.2)	1.1 (0.7-1.9)

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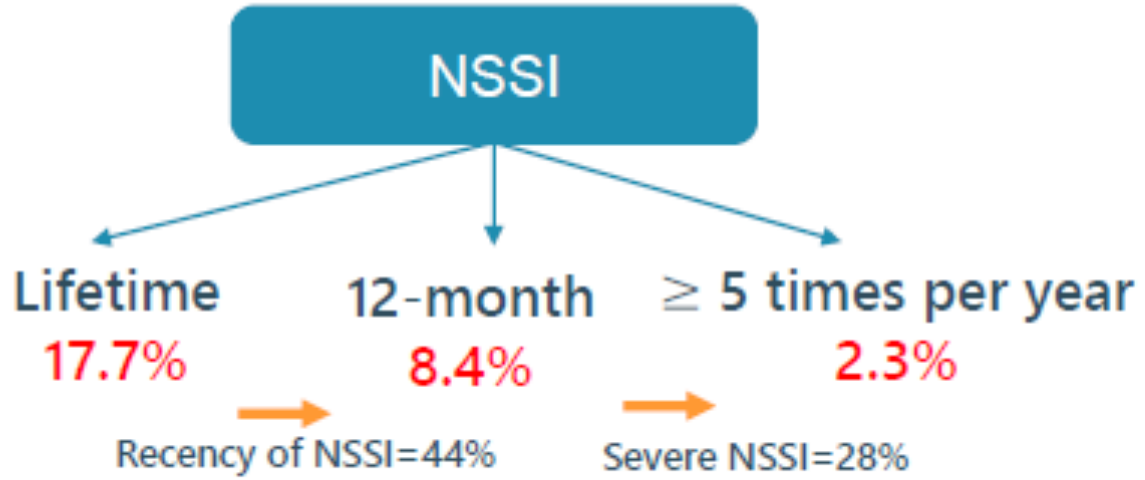
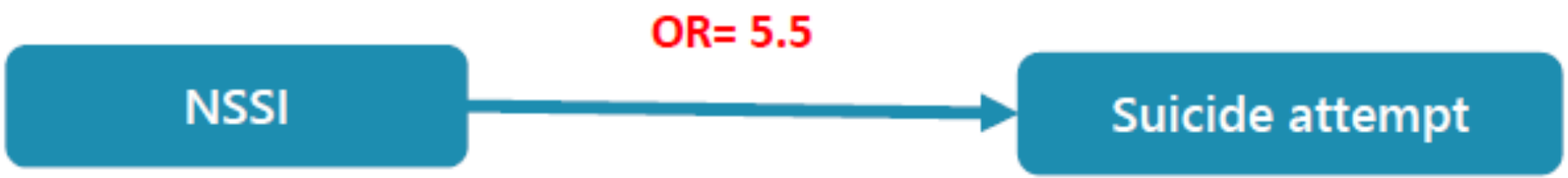
Bruffaerts et al., 2010

What is the prevalence of NSSI among first year college students worldwide?





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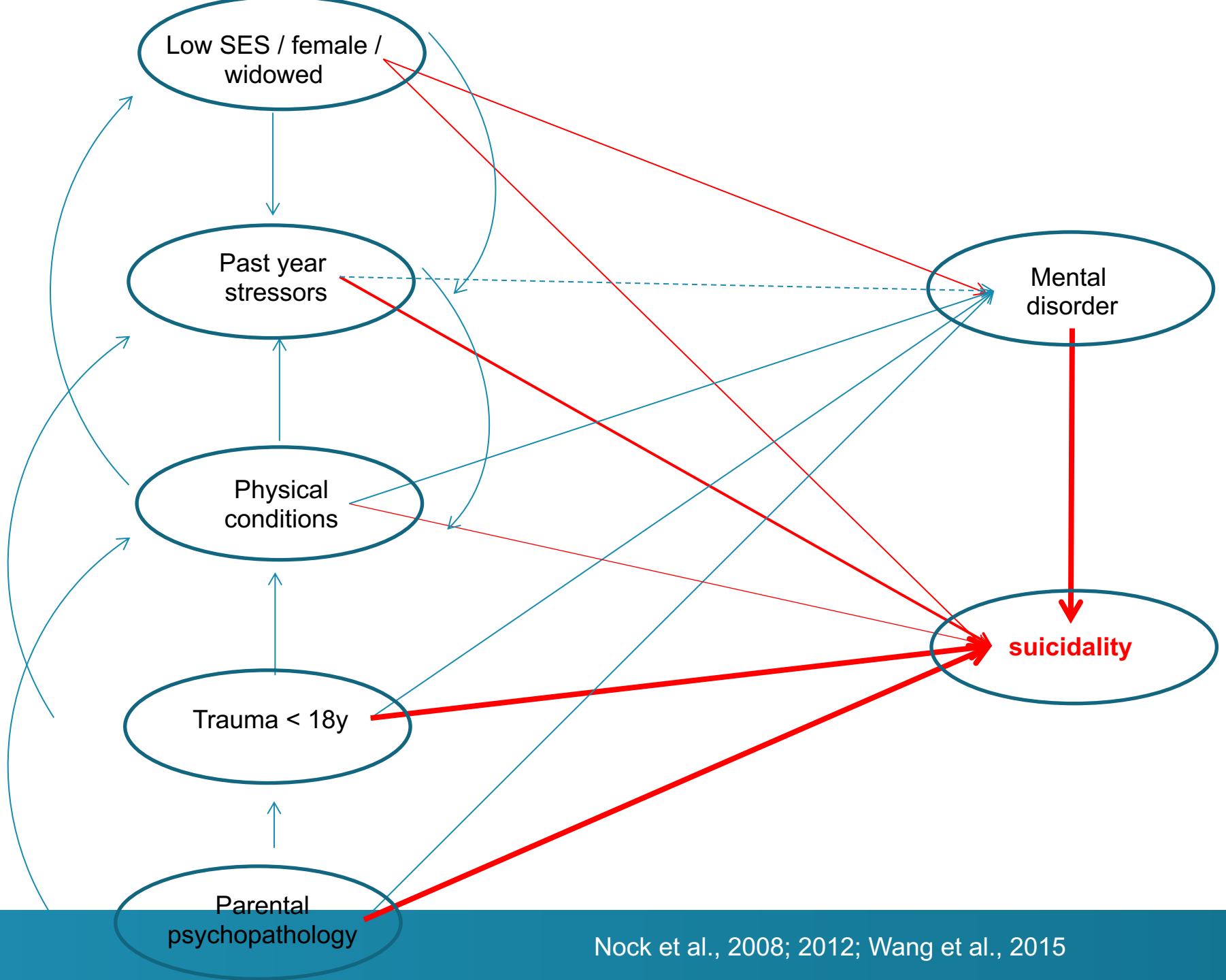
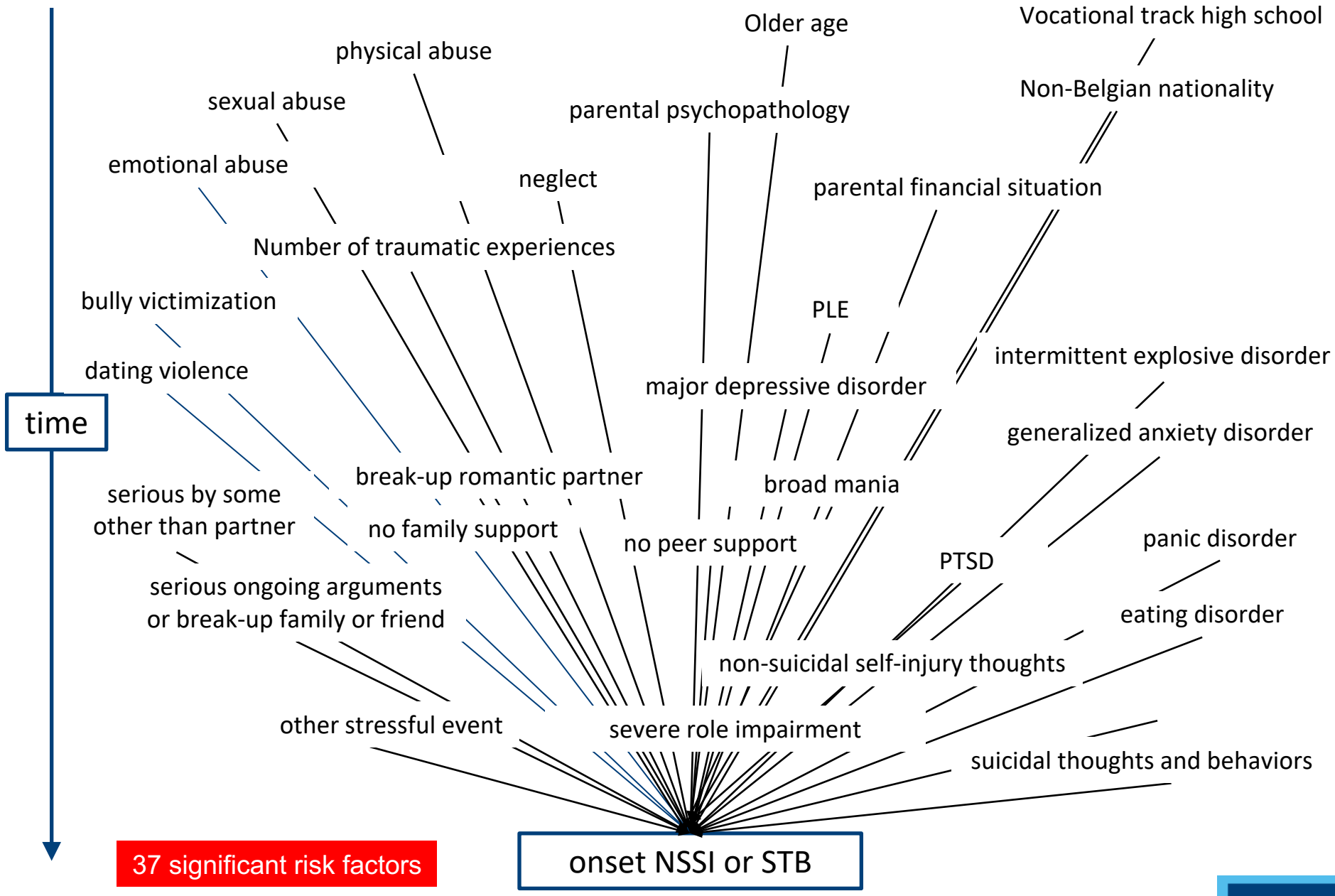
Kiekens et al., 2020



Nock et al., 2008; 2012; Wang et al., 2015



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Kiekens et al., 2019; Mortier et al., 2016; Ebert et al., 2019

Top Five Subcategory Predictors (in Terms of Weighted Odds Ratio Magnitude) Across Each STB Outcome

Rank	Subcategory	*wOR*	(CIs)	Number of effect sizes
	Top 5 suicide ideation subcategories			
1	Prior suicide ideation	3.55	(2.64, 4.78)	22
2	Hopelessness	3.28	(1.49, 7.22)	6
3	Depression (diagnosis)	2.45	(1.39, 4.34)	11
4	Abuse history (any kind)	1.93	(1.59, 2.33)	16
5	Anxiety (diagnosis)	1.79	(1.34, 2.40)	25
	Overall wOR (all effect sizes)	*1.50*	*(1.47, 1.54)*	*572*
	Top 5 suicide attempt subcategories			
1	Prior NSSI	4.15	(2.89, 6.92)	8
2	Prior suicide attempt	3.41	(2.71, 4.30)	42
3	Screening instrument	2.51	(1.82, 4.36)	10
4	Axis II diagnosis (any kind)	2.35	(1.88, 2.93)	40
5	Prior psychiatric hospitalization	2.32	(1.58, 3.39)	14
	Overall wOR (all effect sizes)	*1.51*	*(1.49, 1.54)*	*1281*
	Top 5 suicide death subcategories			
1	Prior psychiatric hospitalization	3.57	(2.81, 4.53)	31
2	Prior suicide attempt	2.24	(1.69, 2.97)	19
3	Prior suicide ideation	2.22	(1.45, 3.41)	10
4	Socioeconomic status (lower)	2.20	(1.32, 3.67)	10
5	Stressful life events	2.18	(1.63, 2.93)	23
	Overall wOR (all effect sizes)	*1.50*	*(1.46, 1.56)*	*912*

… but also not in high-risk clinical samples …

After obtaining these category-level results, we speculated that these broad categories may have concealed a few powerful subcategories of risk factors. For example, although internalizing psychopathology as a whole is not a strong STB risk factor, it may be that depression, posttraumatic stress disorder, or similar subcategories stand out as especially powerful risk factors. Results did not support this hypothesis. Even the top five most powerful risk factor subcategories were weak in absolute sense (see Table 4). Across all outcomes, only four of these subcategories exceeded a weighted mean odds ratio of 3.0 (three were prior STBs, one was prior psychiatric hospitalization) and few were significantly different the rest of the top five. Taken together, these findings indicate that, *at least within the narrow methodological limits of the existing literature*, there is no evidence that any known risk factors—broad or specific—approach what many might define as clinical significance.

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Franklin et al., 2017

Denial and non-disclosure

- "No problem!"
  - 22-40% endorses "no I don't think there's a problem" after suicide attempt
  - 50-58% does not think that there's any problem when engaged in non-suicidal self-injury

denial

- Non-disclosure among psychiatric patients
  - 50% of suïcides in contact with specialized healthcare in the week before death, only 2% overt risk

stigma

- Stigma
  - "I am a failure" & "I am a burden to others"

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Appleby et al., 1999; Joiner et al., 2009

Ambivalence towards life and death

- Wish to die / wish to live
- 1/3 hospitalized patients after suicide attempt
- Social support buffers ambivalence

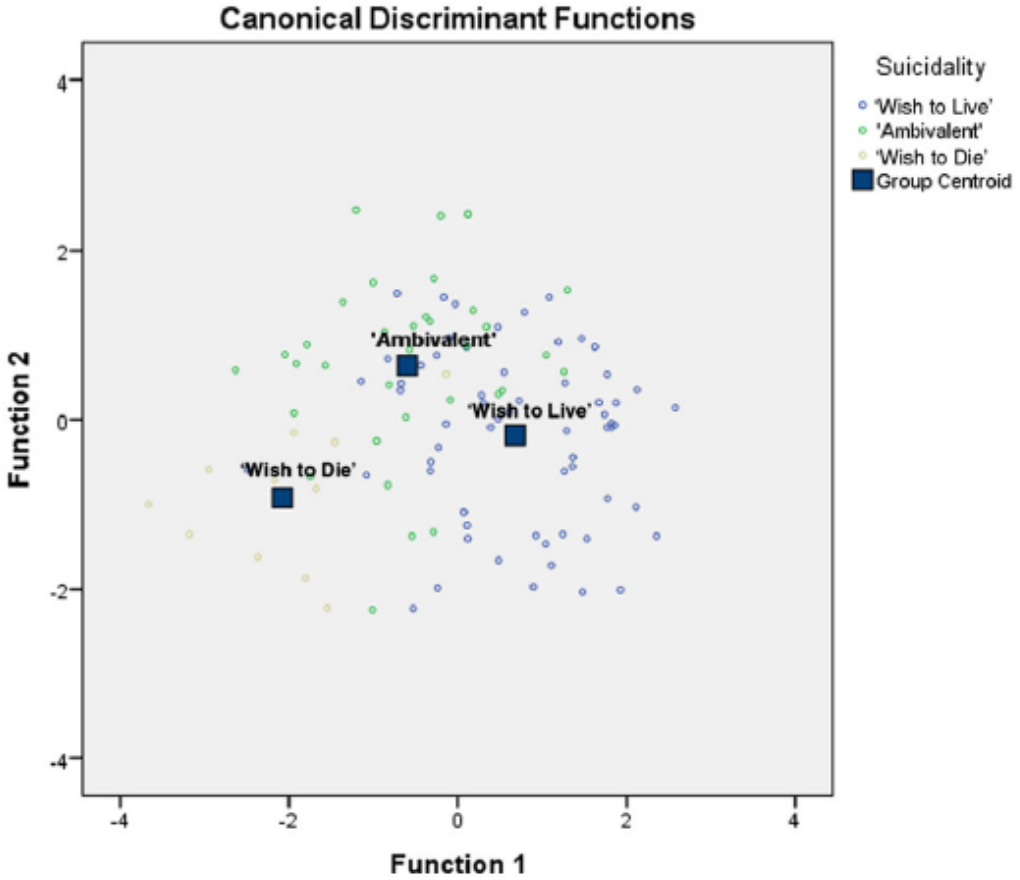


Figure 1 Plots of three group centroids on two discriminant functions derived from risk factors in a two-dimensional space.

Bonnewyn et al., 2016; Husky et al., 2016

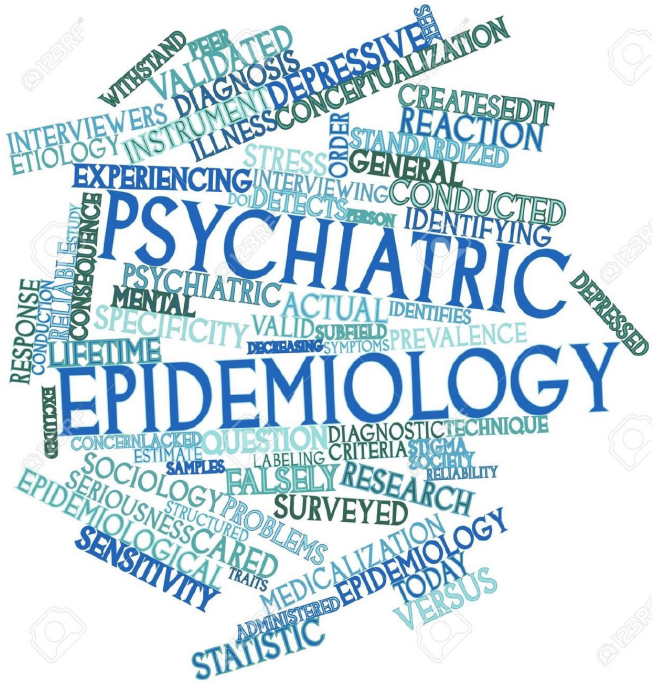
Disease / Disconnectedness / Depression / Disability / Deadly Means

Daily experiences

« *Des réactions normales à une situation irréversible, désespérée, vécue comme intolérable* »

(de Beauvoir, *La Vieillesse*, 1970)

Suicidal thoughts and behaviors



We must turn to the question what could be done to improve *population* mental health

The pending question :

is there a public health model for suicidality, at all?

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RESEARCH ARTICLE

Hot Idea or Hot Air: A Systematic Review of Evidence for Two Widely Marketed Youth Suicide Prevention Programs and Recommendations for Implementation

Yifeng Wei MA[1]; Stan Kutcher MD, FRCPC[2]; John C. LeBlanc MD, FRCPC[3]

Abstract

Introduction: Youth suicide is highly related to mental disorders. While communities and schools are marketed to with a plethora of suicide prevention programs, they often lack the capacity to choose evidence-based programs. **Methods:** We conducted a systematic review of two youth suicide prevention programs to help determine if the quality of evidence available justifies their wide spread dissemination. We searched Medline, PsycINFO, EMBASE, CINAHL, the Cochrane Library, Campbell Collaboration SPECTR database, SocIndex, Sociological Abstracts, Social Services Abstracts, ERIC, Social Work Abstracts, Research Library, and Web of Science, for relevant studies. We included studies/systematic reviews/meta-analysis that evaluated the effectiveness, cost-effectiveness, and/or safety of Signs of Suicide (SOS) and Yellow Ribbon (YR) suicide prevention programs that target adolescents. We applied the Office of Justice Program What Works Repository (OJP-R) to evaluate the quality of the included studies as effective, effective with reservation, promising, inconclusive evidence, insufficient evidence, and ineffective. Two SOS studies were ranked as "inconclusive evidence" based on the OJP-R. One SOS study was ranked as having "insufficient evidence" on OJP-R. The YR study was ranked as "ineffective" using OJP-R. We only included studies in peer-reviewed journals in English and therefore may have missed reports in grey literature or non-English publications. **Results:** We cannot recommend that schools and communities implement either the SOS or YR suicide prevention programs. Purchasers of these programs should be aware that there is no evidence that their use prevents suicide. **Conclusions:** Academics and organizations should not overstate the positive impacts of suicide prevention interventions when the evidence is lacking.

Persisting without Evidence is a Problem: Suicide Prevention and Other Well-Intentioned Interventions

John D. McLennan MD, MPH, PhD[1]

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EDITORIAL

Suicide Prevention Strategies: Adventures in the Grey Zone

- Critical appraisal against suicide prevention programs
  - Growth in suicide prevention programs did not lead to reduction of suicides
  - >5,000 *suicide apps* without much evidence of effectiveness
  - *False hope*

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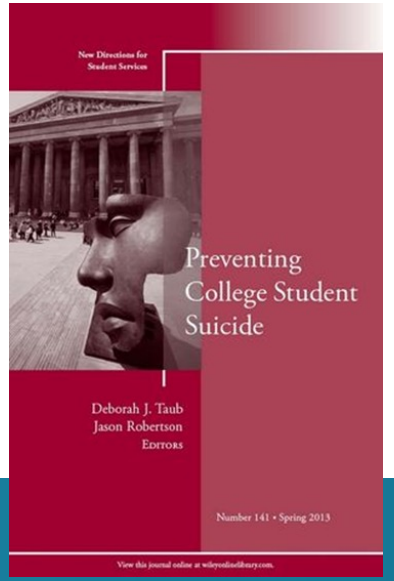
Changing the paradigm

- *Public health model* vs. *individual clinical model*
- *Prevention* and *treatment model*
- *"Preventing suicide starts at home, in schools, and in communities, not when someone (…) enters a therapist's office"* (Whitlock, Wyman & Barreira, 2012, p.4)



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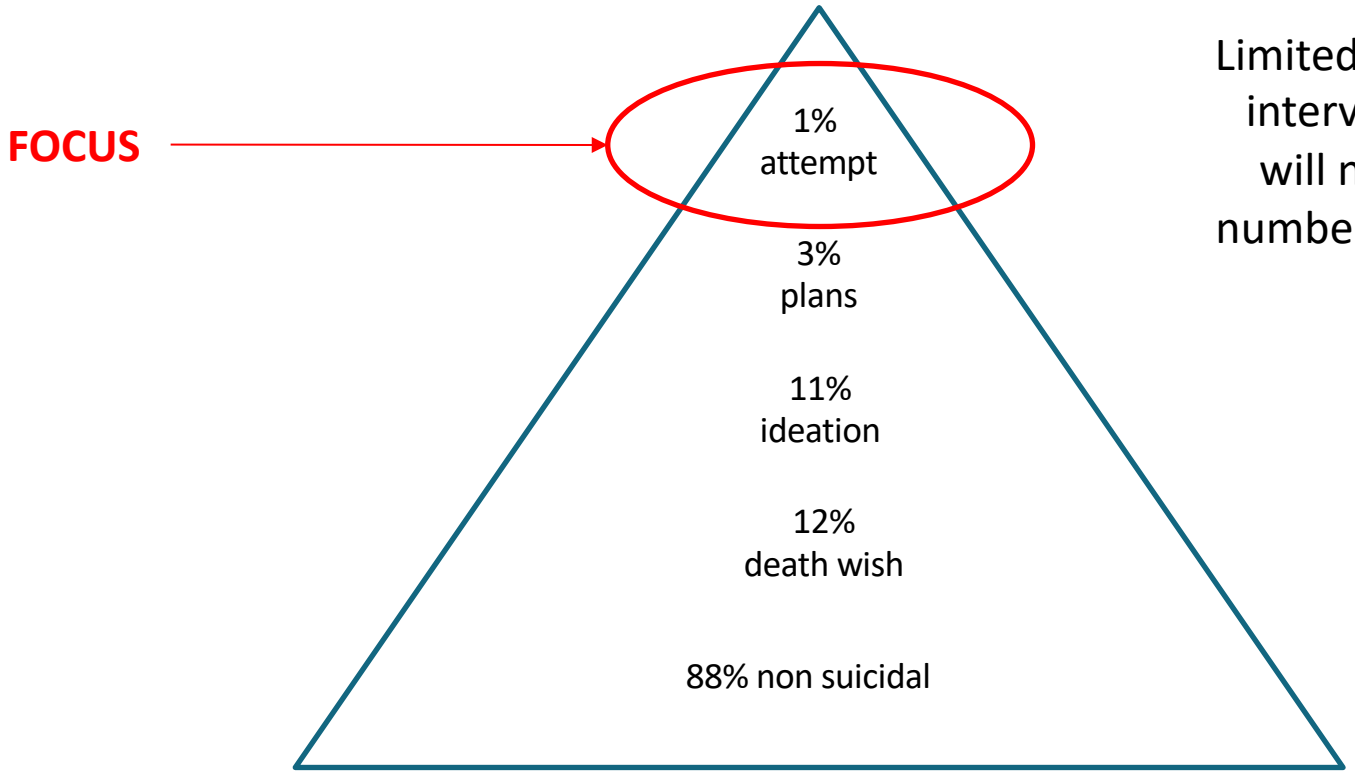
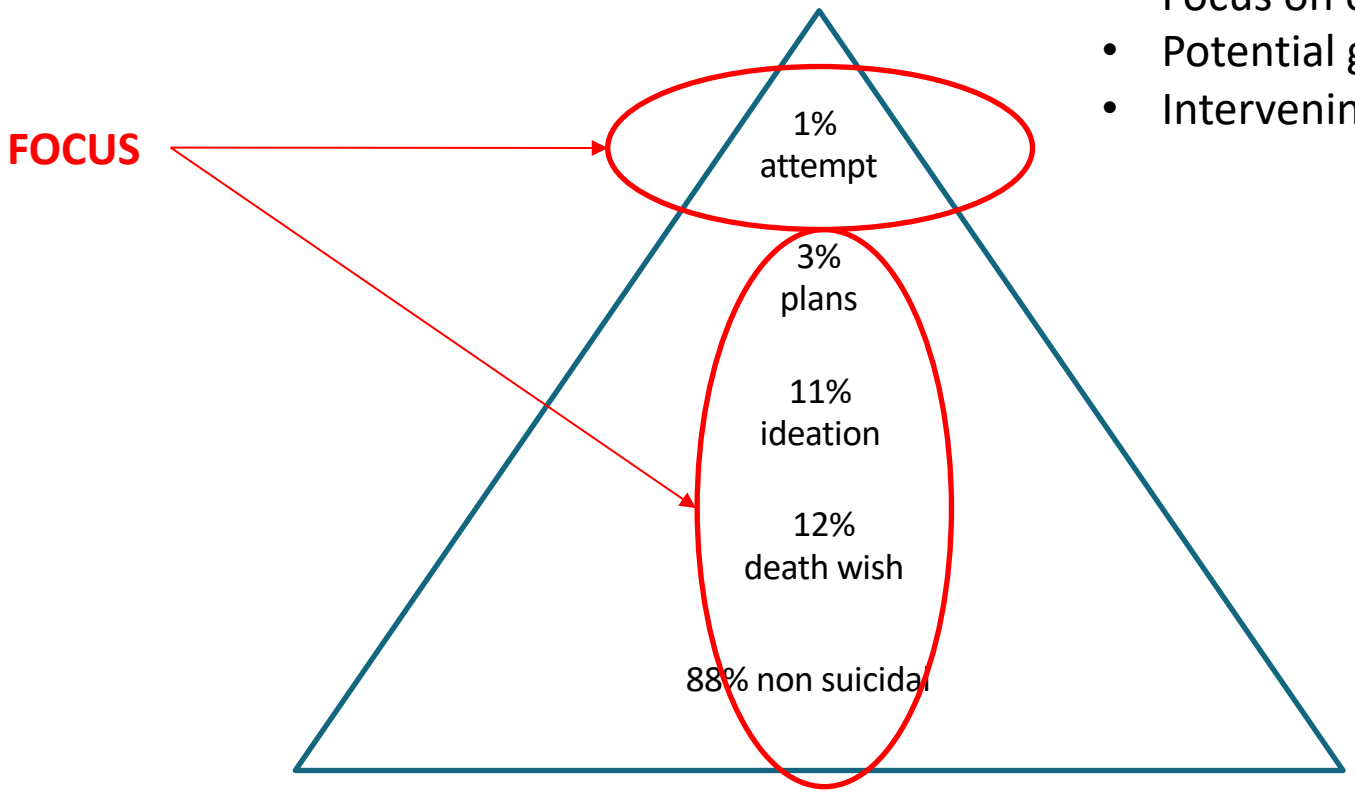


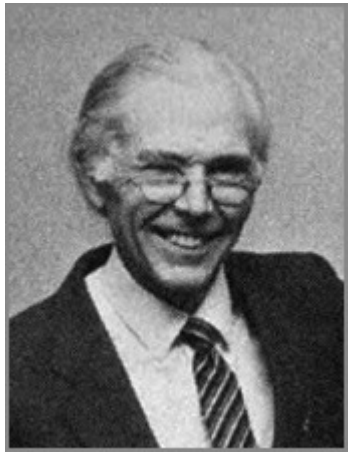
Limited societal gain: a 100% effective intervention for suicide attempters will not lead to a reduction of the number of persons with suicide plans

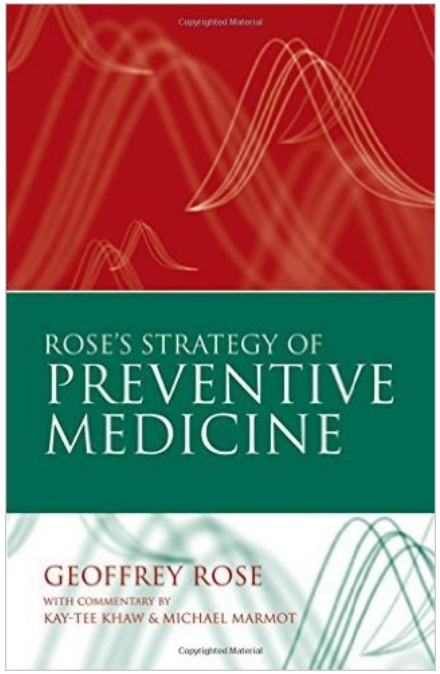


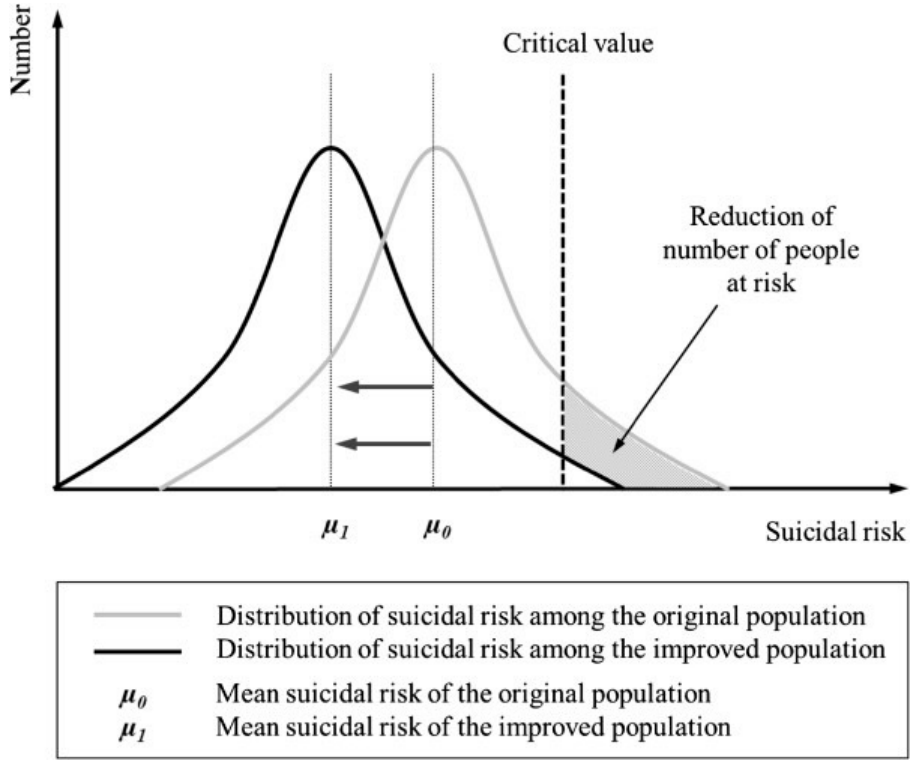
- Focus on every stage of the suicidal process
- Potential greater societal gain
- Intervening in the suicidal process

Focus on modifiable & proximal factors that mark the transition from one stage to a more severe stage

The Rose theorem







"...a large number of people at small risk may give rise to more cases of disease than a small number who are at high risk"

- Not the high risk but the population mean as a focus
- Focus on general wellbeing
- Stronger resilience, personal strenght, connectedness
- Skills training, treatment

Rose et al., 2003; Siu Fai Yip et al., 2014

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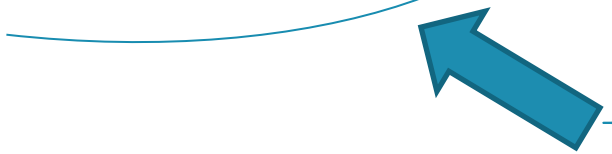
Prevention = strenghtening wellbeing & intervening at (very) early stages of emotional problems

- Educational campaigns, screening, and connectedness *for the entire population*
- + resilience-increasing & skills enhancing programs *for those at low risk*
- + gatekeeping & e-treatment *for those at medium risk*
- + treatment *for those at high risk*



Attitude change
Leadership
Lead by example

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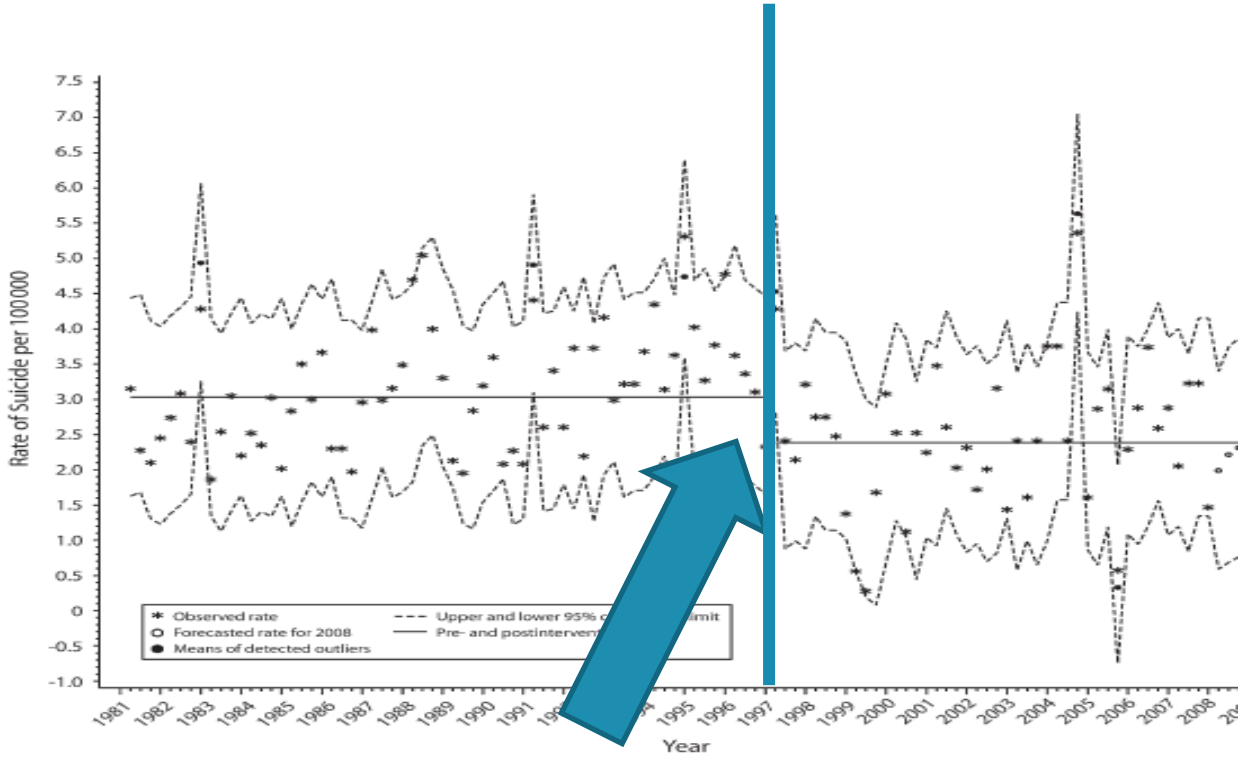
Proof of concept: the US Air Force Suicide Prevention Program



A Markov chain model for studying suicide dynamics: an illustration of the Rose theorem

Paul Siu Fai Yip[1,2*], Bing Kwan So[3], Ichiro Kawachi[4] and Yi Zhang[1]

Abstract

Background: High-risk strategies would only have a modest effect on suicide prevention within a population. It is best to incorporate both high-risk and population-based strategies to prevent suicide. This study aims to compare the effectiveness of suicide prevention between high-risk and population-based strategies.

Methods: A Markov chain illness and death model is proposed to determine suicide dynamic in a population and examine its effectiveness for reducing the number of suicides by modifying certain parameters of the model. Assuming a population with replacement, the suicide risk of the population was estimated by determining the final state of the Markov model.

Results: The model shows that targeting the whole population for suicide prevention is more effective than reducing risk in the high-risk tail of the distribution of psychological distress (i.e. the mentally ill).

Conclusions: The results of this model reinforce the essence of the Rose theorem that lowering the suicidal risk in the population at large may be more effective than reducing the high risk in a small population.

Keywords: An illness and death model, Markov chain model, Suicide, Rose theorem

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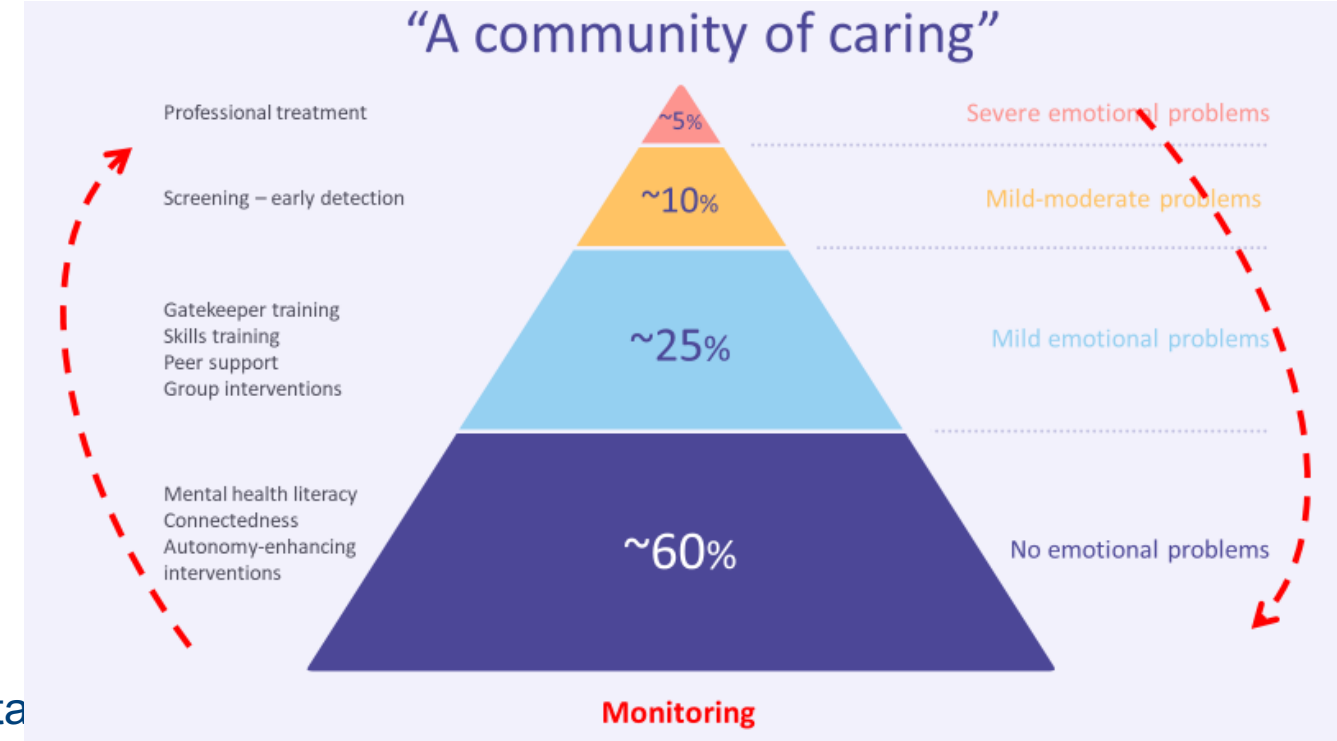
Knox et al., 2003; 2004; 2006; 2010; 2014; Siu Fai Yip et al., 2013

Public health model for suicidality

- **Don’t wait until someone becomes suicidal**
  - Creates high unmet need
  - Has no predictive value!

- **Public mental health model**
  - Be careful using the term “suicide prevention”
  - Stepping outside the common psychiatric places
  - Development of clinical guidelines and standards-of-care on the micro and the meso-level
  - Who society approach : specific intervenions per strata



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