



Welcome!

Science Talks | with The Association for Child and Adolescent Mental Health: Suicide Prevention and Awareness

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WORKING TOGETHER TO PREVENT SUICIDE WORLD SUICIDE PREVENTION DAY 2019: WEBINAR

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**World Federation of Science Journalists, Association
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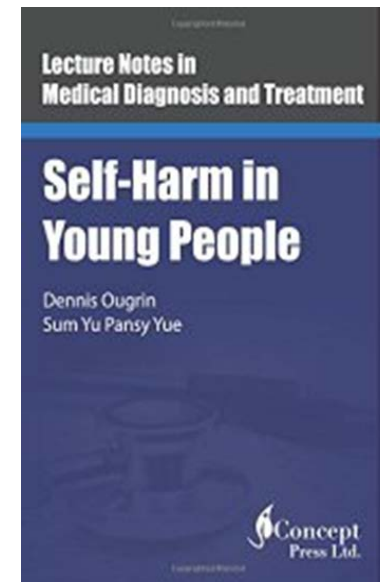
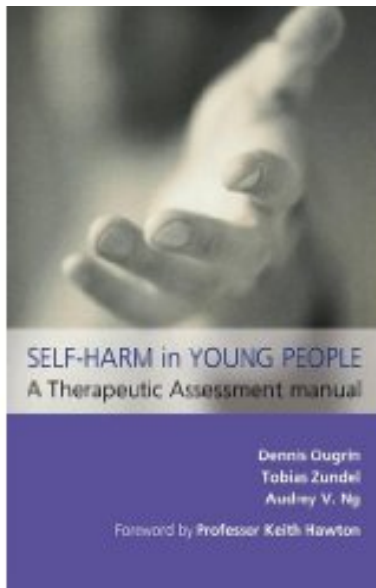
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Presentation Goals

1. Scope of Problem
2. Risk Factors
3. Treatment & Care Delivery
4. Nationwide Suicide Prevention



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Scope of Problem & Risk Factors



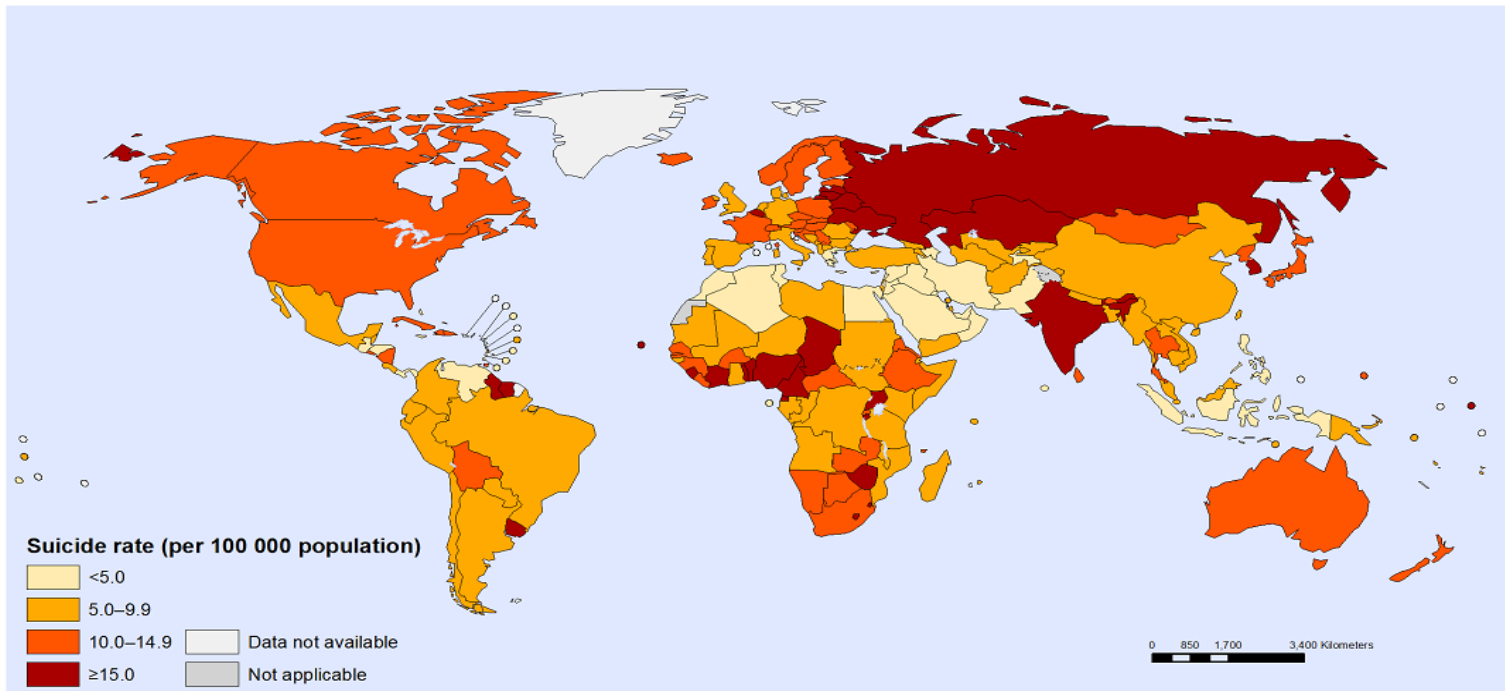
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Suicide worldwide

Age-standardized suicide rates (per 100 000 population), both sexes, 2016



The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement.

Data Source: World Health Organization
Map Production: Information Evidence and Research (IER)
World Health Organization



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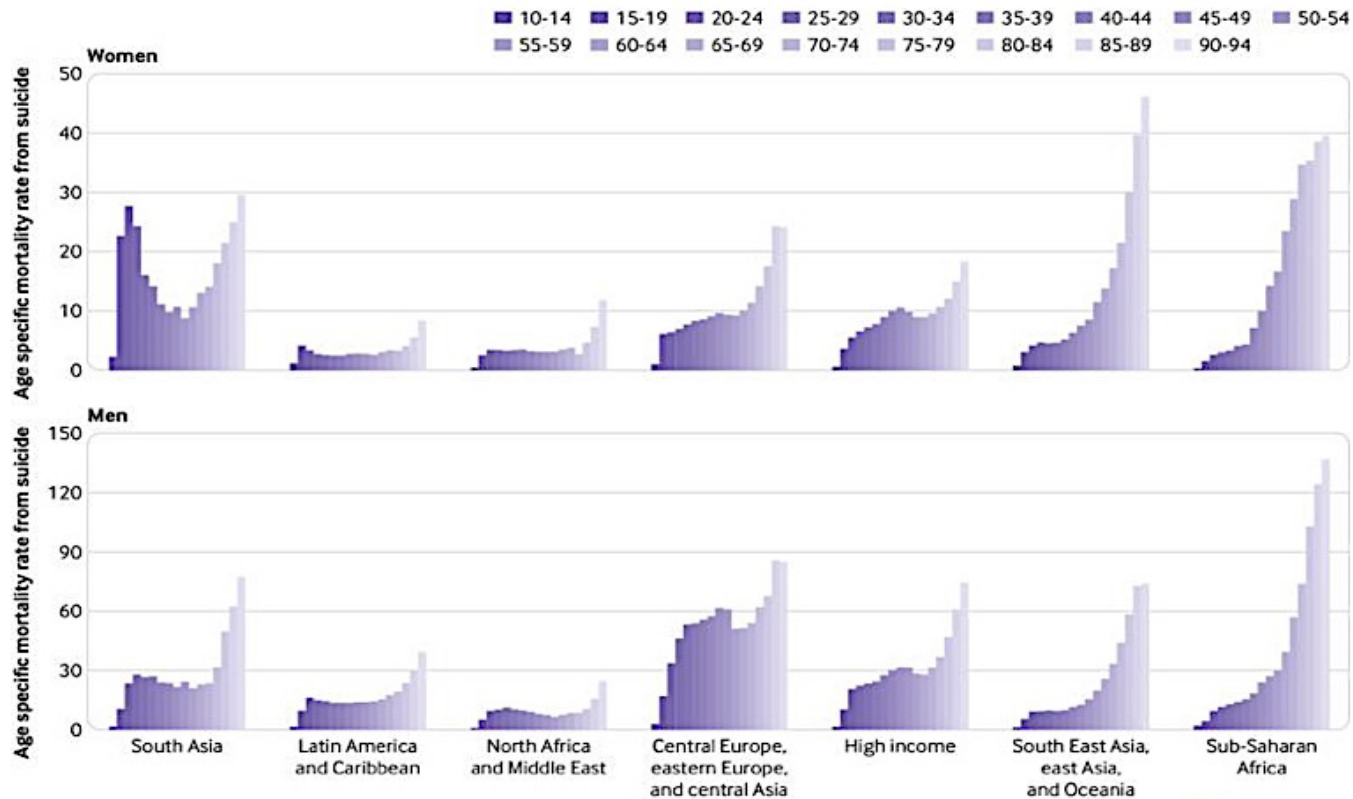
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females

Age specific mortality rate from suicide by Global Burden of Disease super region and five year age groups for women and men, 2016.



Mohsen Naghavi BMJ 2019;364:bmj.i94



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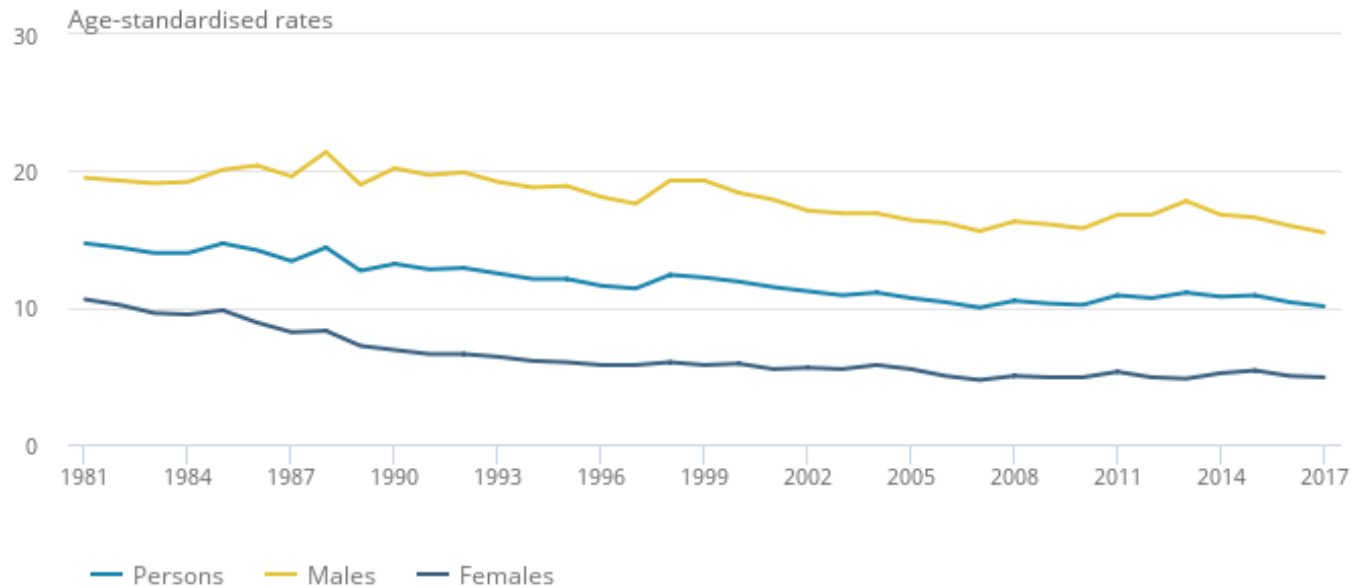
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Suicides in the UK (ONS, 2018)

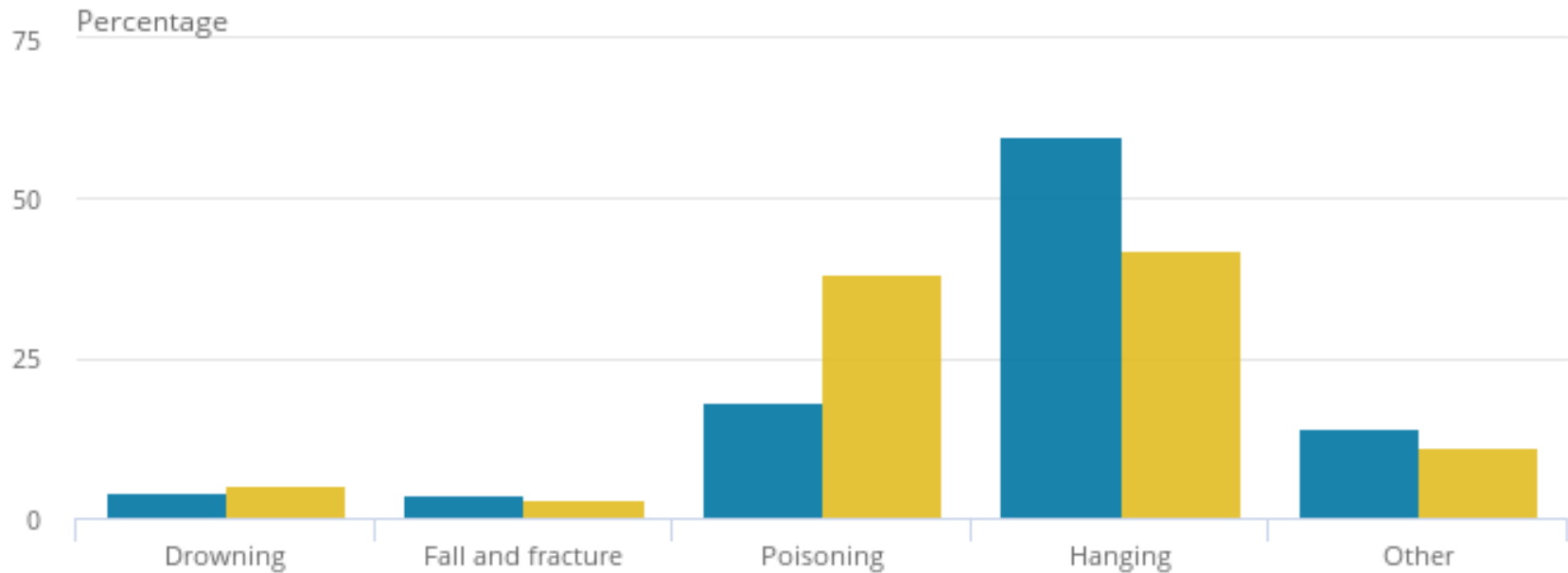
Figure 1: Age-standardised suicide rates by sex, for the UK, registered between 1981 and 2017



N= 5,821 , 10.1/100,000

Method (ONS, 2018)

Figure 8: Proportion of suicides by method and sex, UK, registered in 2017



Prevalence of self harm in school pupils in countries participating in the Child and Adolescent self harm in Europe (CASE) study by gender (Hawton et al 2006)

country	self harm meeting		study criteria	
	previous year (%)		lifetime (%)	
	females	males	females	males
England	10.8	3.3	16.9	4.9
Ireland	9.1	2.7	13.5	4.9
The Netherlands	3.7	1.7	5.9	2.5
Belgium	10.4	4.4	15.6	6.8
Norway	10.8	2.5	15.3	4.3
Hungary	5.9	1.7	10.1	3.2
Australia	11.8	1.8	17.1	3.3



Risk factors for completed suicide (Hawton et al, 2012, The Lancet)

- Male sex
- Low social status
- Restricted educational achievement
- Parental mental disorder
- Family history of suicidal behaviour
- Interpersonal difficulties
- Mental disorder
- Drug and alcohol misuse
- Hopelessness

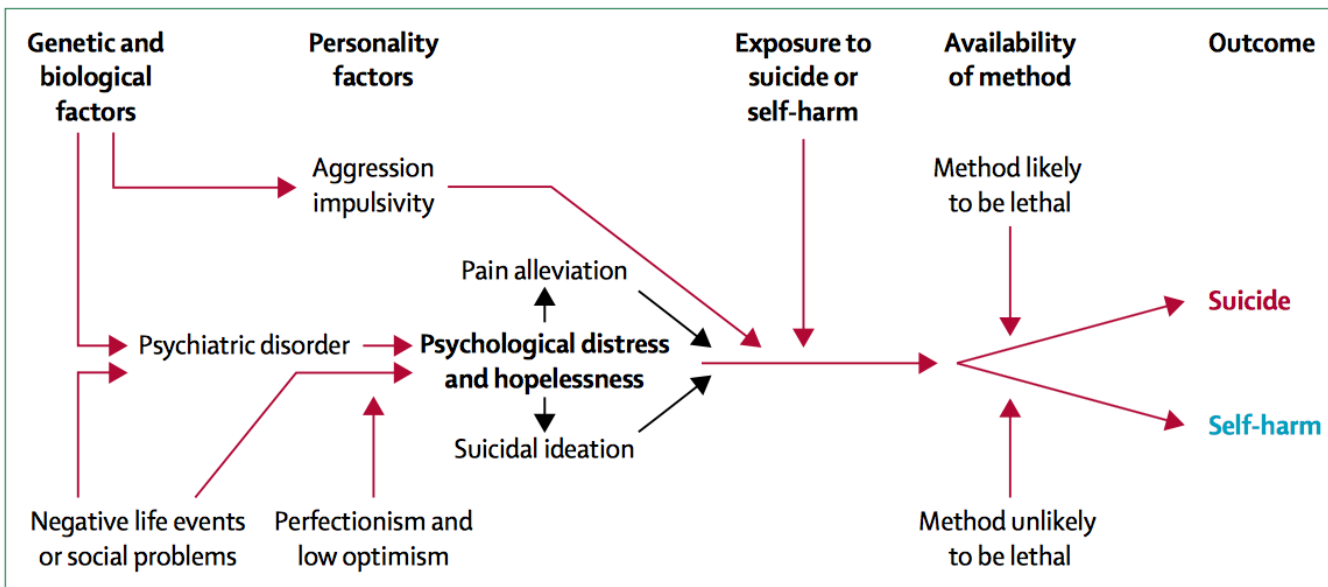


Figure 2: Key risk factors for adolescent self-harm and suicide

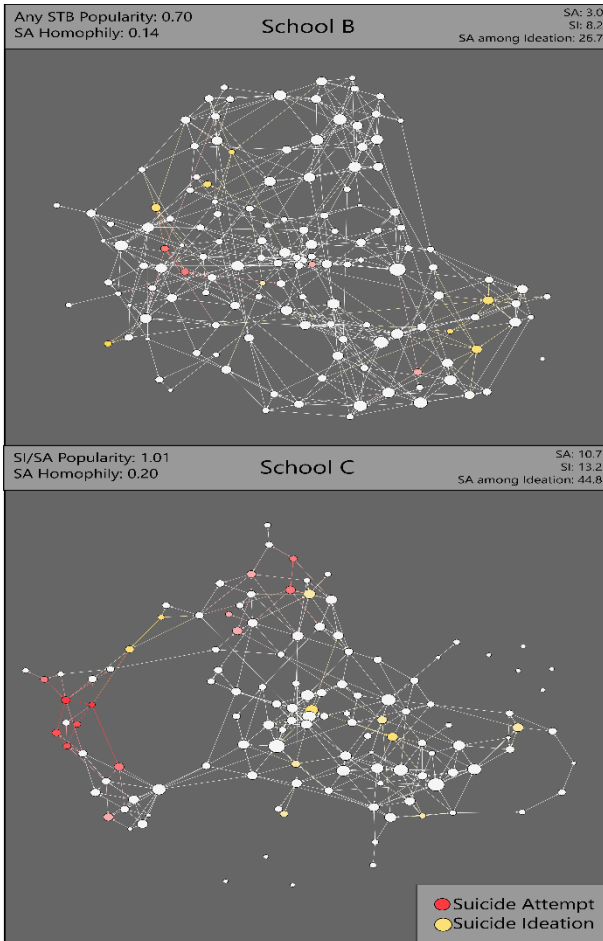
Transition from suicidal thinking to suicide attempts (Mars et al, 2018)

- presence of psychiatric disorders
- female gender
- lower IQ
- higher impulsivity
- higher intensity seeking
- lower conscientiousness
- a greater number of life events
- body dissatisfaction
- hopelessness
- exposure to self-harm in both friends and family OR 5.26, 95% CI: 3.17-8.74.
- smoking OR 2.54, 95% CI 1.61-4.02
- non-cannabis drug use OR 1.8 95% CI 1.18-2.75



high schools: implications for network-informed suicide prevention

Wyman, P.A., Pickering, T.A., Pisani, A.R., Rulison, K., Schmeelk-Cone, K., Hartley, C., ... & Valente, T., JCPP, 2019



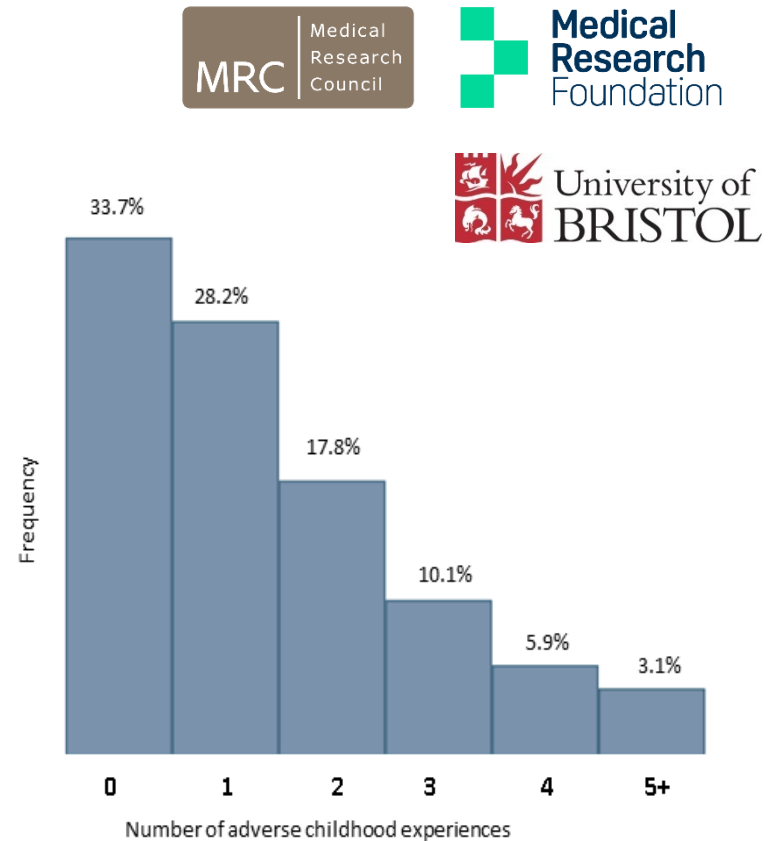
- **School networks could provide the relationship network structure that will potentially prevent suicidal behaviour**
- **FINDINGS: Lower peer network integration and cohesion in schools had higher rates of suicidal ideation (SI) and suicide attempts (SA)**
- **Suicidal attempts increased with two factors:**
 1. **Student isolation**
 - 10% more students isolated from adults led to 20% higher SA rate on average
 2. **Popularity of student and clustering on network**
 - Higher relative to non suicidal peers

Figure shows differing social influence of suicidal youth in two schools. Darkness of shading reflects clustering of students with suicidal thoughts/behaviours (STB). Nodes are sized by in-degree (i.e., popularity). In School B, students with STB are relatively less popular vs. no STB compared to School C. Additionally, students with SA cluster less in School B vs. C. School B has lower SA rates than School C.

Pathways between early life adversity and adolescent self-harm: the mediating role of inflammation in the Avon Longitudinal Study of Parents and Children (ALSPAC)

Russell et al., JCPP 2019

- For every additional type of adversity a child experienced they were at a:
 - 11% higher risk of self-harm at age 16
 - 22% higher risk of having attempted suicide.



- Found no evidence that children with ACEs have a more active immune system
- Concluded inflammation is not likely to be a good biomarker to detect children at risk of later self-harm or to target with pharmacological treatments.



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Predicting 3-Month Risk for Suicide Attempts in Pediatric Emergency Department Patients

PIs: Cheryl King, Jacqueline Grupp-Phelan, David Brent

FROM: Emergency Department Screen for Teens at Risk for Suicide (ED-STARS) Collaborative Project, funded by National Institute of Mental Health

CONDUCTED IN COLLABORATION WITH: Pediatric Emergency Care Applied Research Network (PECARN)

Aim: Identify predictors of suicide attempts during 3-month follow-up

Sample: 2,104 adolescents, ages 12-17, recruited from 13 pediatric Eds

Design: Baseline and 3-month telephone follow-up assessments

Findings: 104 adolescents (4.9%) reported a suicide attempt by 3-months

Best Multivariable Prediction model: Past week suicidal ideation, lifetime severity of SI, lifetime history of suicidal behaviour, & school connectedness



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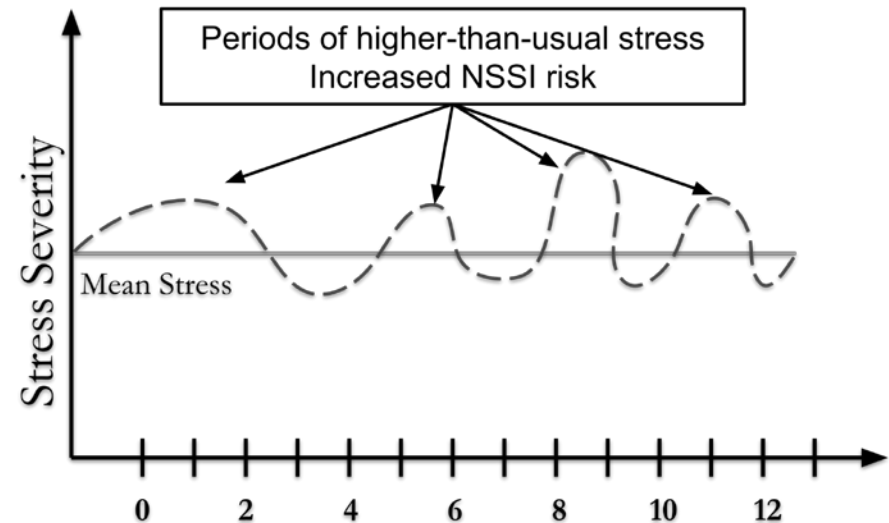
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Within-Person, Stress-threshold Model of NSSI

Traditional Research: higher levels of stress compared to others in the sample = NSSI risk

Stress-Threshold Model: periods of increased risk, relative to a person's own average = NSSI risk

Clinical Implication: repeated measures of stress can help identify periods of enhanced risk, for a specific adolescent

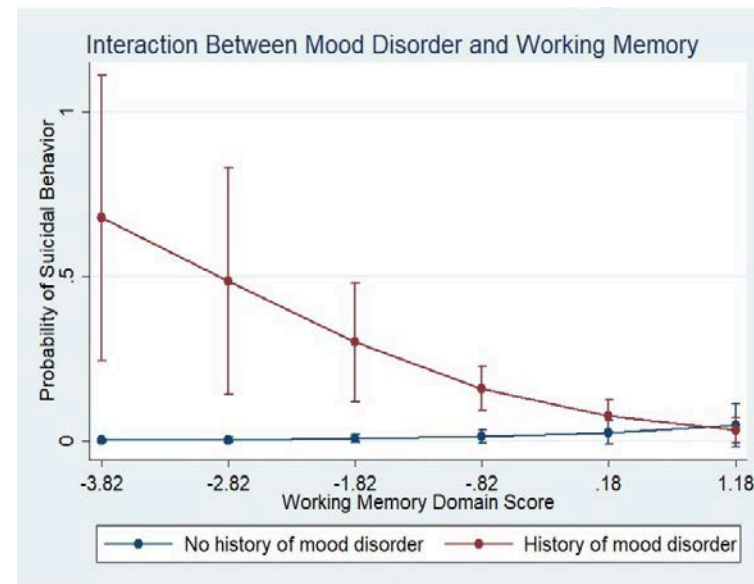


Childhood Maltreatment, Neuropsychological Function and Suicidal Behaviour

- Examined the effects of the interactions of known risk factors for suicidal behaviour, namely childhood maltreatment, neuropsychological dysfunction and psychopathology, on suicidal behaviour.

Findings:

- Maltreatment was associated with increased risk of suicidal behaviour.
- Moderation analyses found that adaptive neuropsychological functioning was not protective against childhood maltreatment's effect on suicidal risk.
- Lifetime history of mood disorder was strongly associated with suicidal behavior.
- Higher scores in working memory and executive function were associated with protection against suicidal behaviour even in the presence of mood disorder



Treatment & Care Delivery

Reaching for Zero

- While not every suicide can be prevented, we can reach for zero and suicides can be prevented.
- Nationwide suicide prevention strategies can and do work.
- We have an evidence base to guide us in reducing suicide rates. Implementation is a challenge for now and the future.



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Treatment: What did we know before JCPP Special Issue?

- Meta-analysis, 19 RCTs, 2,176 youths, through May 2014. Small statistically significant effect for therapeutic interventions vs. TAU for reducing self-harm across diverse interventions. Effect primarily for NSSI, no significant overall effect on SAs⁵
- 3 RCTs show that CBT with **strong combined individual and family component** lead to reduced **suicide attempt rate** relative to comparator conditions: I-CBT; SAFETY; DBT.¹⁻³
- 2 separate demonstrations that DBT is effective for decreasing self-harm in adolescents.³⁻⁴

Esposito-Smythers C, Spirito A, Kahler CW, Hunt J, Monti P. Treatment of co-occurring substance abuse and suicidality among adolescents: a randomized trial. *J Consult Clin Psychol*. 2011 Dec;79(6):728-39.

²Asarnow JR, Hughes JL, Babeva KN, Sugar CA. Cognitive-Behavioral Family Treatment for Suicide Attempt Prevention: A Randomized Controlled Trial. *J Am Acad Child Adolesc Psychiatry*. 2017 Jun;56(6):506-514.

³McCauley E, Berk MS, Asarnow JR, Adrian M, Cohen J, Korslund K, Avina C, Hughes J, Harned M, Gallop R, Linehan MM. Efficacy of Dialectical Behavior Therapy for Adolescents at High Risk for Suicide: A Randomized Clinical Trial. *JAMA Psychiatry*. 2018 Aug 1;75(8):777-785. doi:10.1001/jamapsychiatry.2018.1109.

⁴Mehlum L, Tørmøen AJ, Ramberg M, Haga E, Diep LM, Laberg S, Larsson BS, Stanley BH, Miller AL, Sund AM, Grøholt B. Dialectical behavior therapy for adolescents with repeated suicidal and self-harming behavior: a randomized trial. *J Am Acad Child Adolesc Psychiatry*. 2014 Oct;53(10):1082-91.

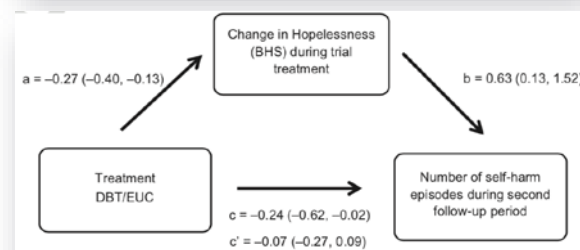
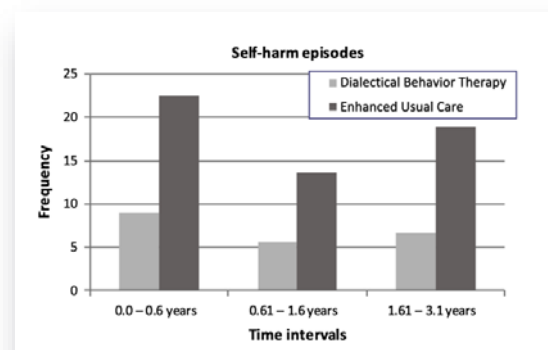
⁵Ougrin D, Tranah T, Stahl D, Moran P, Asarnow JR. Therapeutic interventions for suicide attempts and self-harm in adolescents: systematic review and meta-analysis. *J Am Acad Child Adolesc Psychiatry*. 2015 Feb;54(2):97-107.



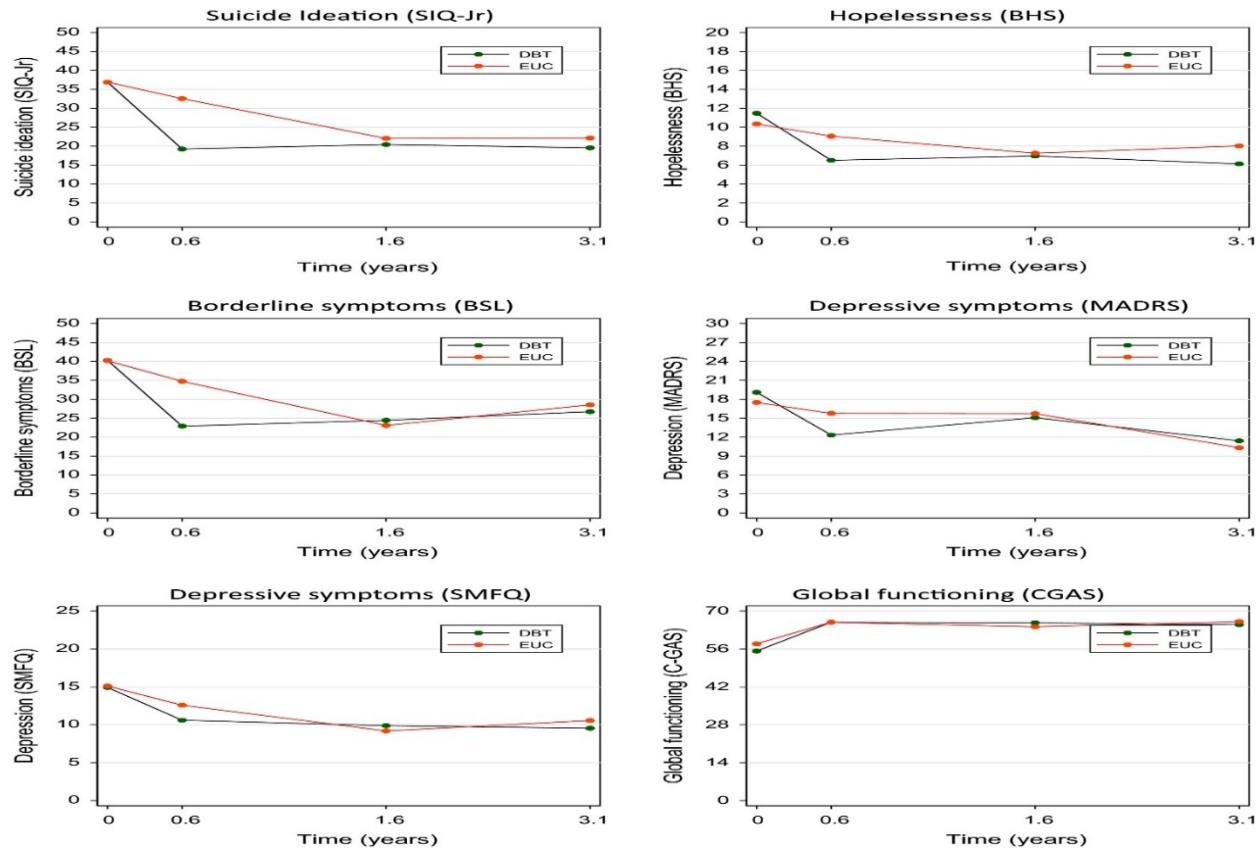
Long term effectiveness of dialectical behavior therapy versus enhanced usual care for adolescents with self-harming and suicidal behavior

Lars Mehlum,¹ Ruth-Kari Ramleth,¹ Anita J. Tørmoen,¹ Egil Haga,¹ Lien M. Diep,¹ Barbara H. Stanley,^{1,2} Alec L. Miller,³ Bo Larsson,⁴ Anne M. Sund,^{4,5} and Berit Grøholt¹

- 3-year follow-up of RCT with suicidal and self-harming adolescents (N=77) with BPD features having received DBT-A or Enhanced usual care
- All treatments delivered at Child and Adolescent outpatient clinics in Oslo, Norway
- DBT-A participants had a persistently stronger long-term reduction in self-harm behavior over all follow-up intervals
- Reduction in hopelessness during the active treatment phase was a mediator of the long-term reduction in frequency of self-harm



Both Groups Improved Over Time



From, Mehlum L, Ramleth RK, Tørmoen AJ, Haga E, Diep LM, Stanley BH, Miller AL, Larsson B, Sund AM, Grøholt B. Long term effectiveness of dialectical behavior therapy versus enhanced usual care for adolescents with self-harming and suicidal behavior. *J Child Psychol Psychiatry*. 2019 May 25.

Treatment of Suicidal & Self-Injurious Adolescents with Emotional Dysregulation: CARES

- 2 Site Study of DBT vs. Individual and Group Supportive Therapy (Multiple PI)
- Seattle: Linehan & McCauley
- Los Angeles: Berk & Asarnow
- Statistician: Robert Gallo

NIMH MH093898



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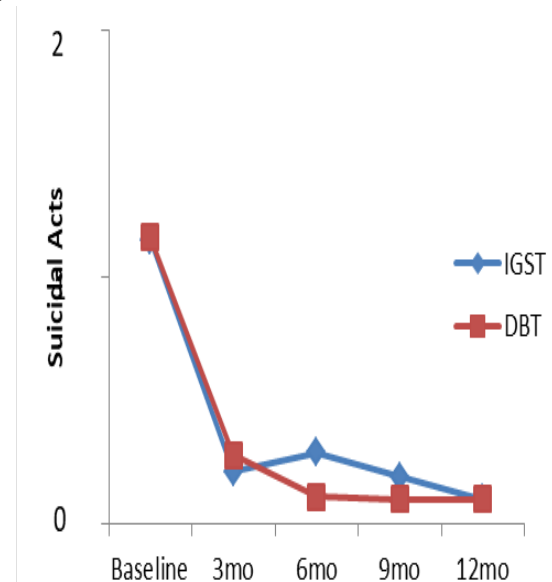
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Greater Reduction in Suicide Attempts Among DBT vs. IGST Youths: 6 Months

OR 0.30; 95% CI 0.10, 0.91, $p < .05$

	IGST	DBT
0	78.5%	90.3%
1	13.9%	8.3%
≥ 2	7.7%	1.4%



Generalized linear mixed-effects model for ordinal data (Hedeker & Mermelstein, 2000).

Data From: McCauley E, Berk MS, Asarnow JR, Adrian M, Cohen J, Korslund K, Avina C, Hughes J, Harned M, Gallop R, Linehan MM. Efficacy of Dialectical Behavior Therapy for Adolescents at High Risk for Suicide: A Randomized Clinical Trial. *JAMA Psychiatry*. 2018 Aug 1;75(8):777-785.



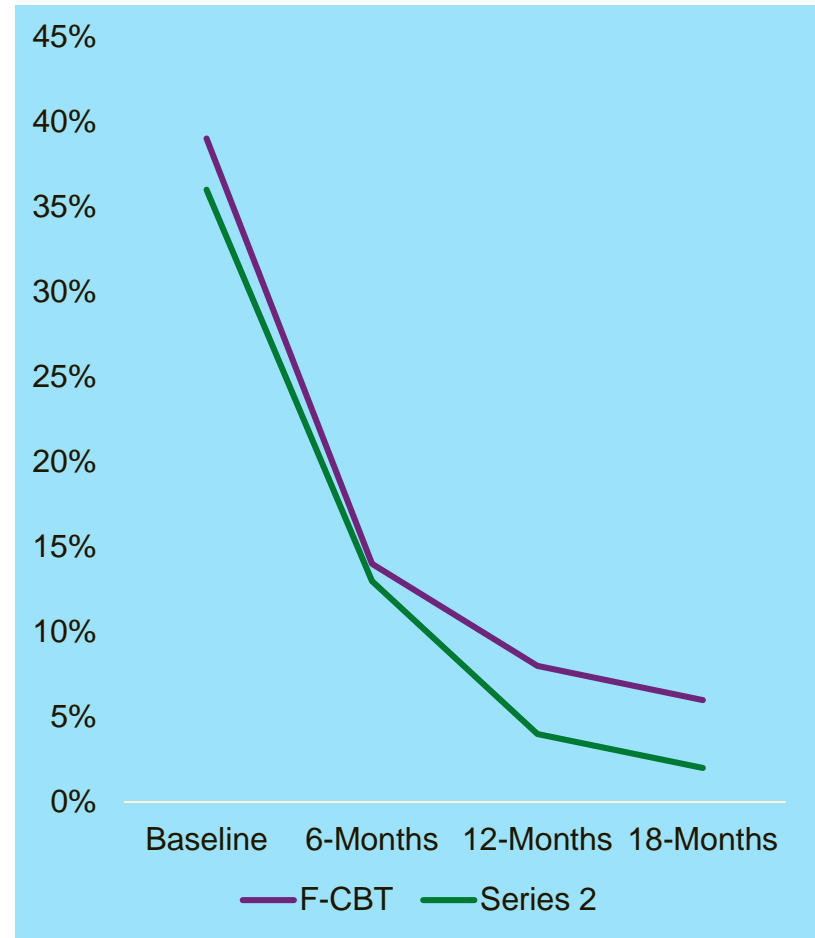
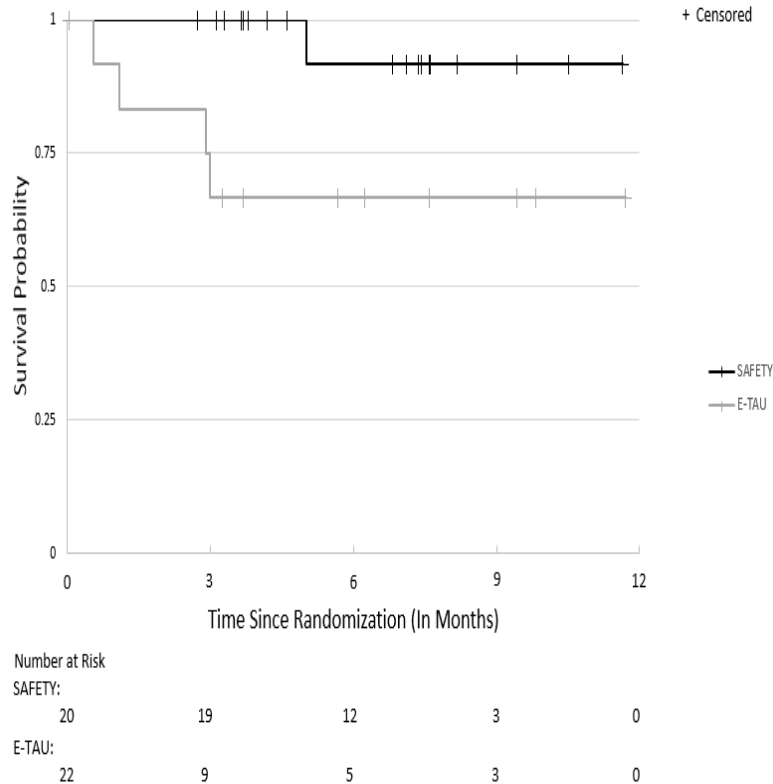
DBT: higher rates of clinically significant change (Absence of SH)

	6-Months	12-Months
IGST	27.6%	32.2%
DBT	46.5%	51.2%
Difference	18.9%	19%
$\chi^2(1)=$	6.67, p=.011	6.44, p=0.012

Data from: McCauley E, Berk MS, Asarnow JR, Adrian M, Cohen J, Korslund K, Avina C, Hughes J, Harned M, Gallop R, Linehan MM. Efficacy of Dialectical Behavior Therapy for Adolescents at High Risk for Suicide: A Randomized Clinical Trial. JAMA Psychiatry. 2018 Aug 1;75(8):777-785.



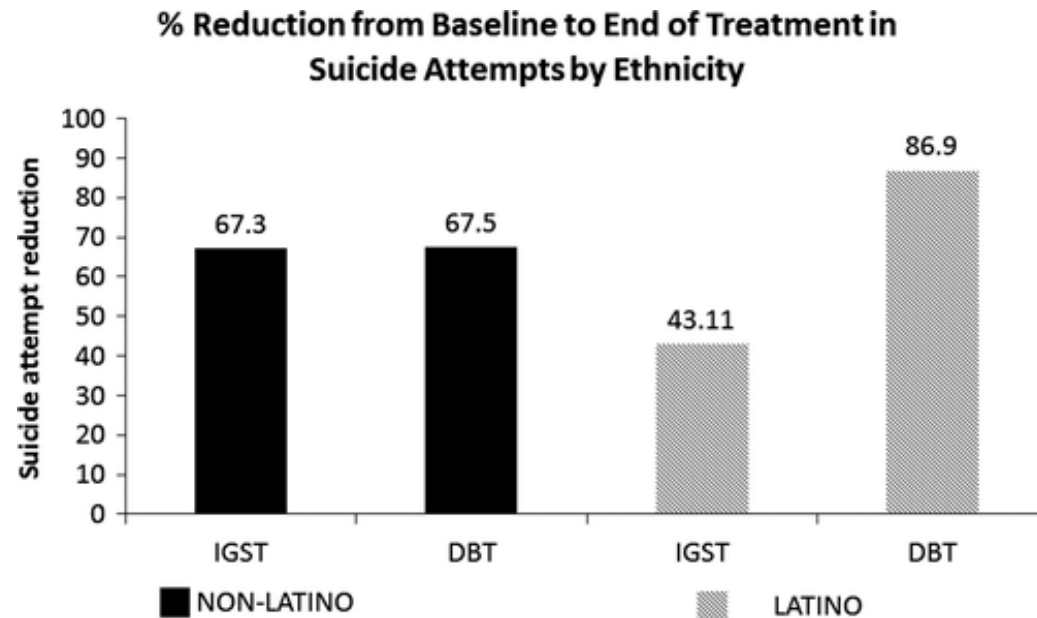
Independent Replication Needed!



Asarnow, J. R., Hughes, J. L., Babeva, K. N., & Sugar, C. A. (2017). Cognitive-behavioral family treatment for suicide attempt prevention: a randomized controlled trial. *Journal of the American Academy of Child & Adolescent Psychiatry, 56*(6), 506-514.

Esposito-Smythers, C., Wolff, J. C., Liu, R. T., Hunt, J. I., Adams, L., Kim, K., et al. (2019). Family-focused cognitive behavioral treatment for depressed adolescents in suicidal crisis with co-occurring risk factors: a randomized trial. *Journal of Child Psychology and Psychiatry.*

Personalizing Treatment: Can we Match Youths to Treatments That Will Be Most Beneficial?



Adrian, M., McCauley, E., Berk, M. S., Asarnow, J. R., Korszund, K., Avina, C., et al. (2019). Predictors and moderators of recurring self-harm in adolescents participating in a comparative treatment trial of psychological interventions. *Journal of Child Psychology and Psychiatry*, First published: 30 July 2019, DOI: (10.1111/jcpp.13099)



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Prevention Can Save Lives

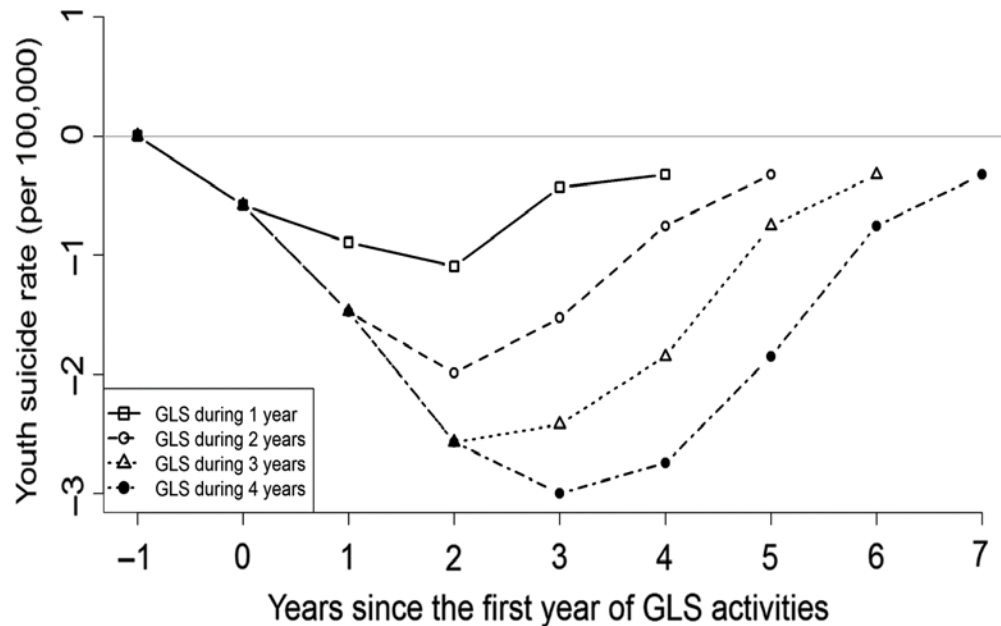
Garrett Lee Smith Memorial Program (GLS): Suicide Mortality Outcomes for State & Tribal Program

1. **An estimated 882 deaths avoided/lives saved between 2007 and 2015 through implementation of GLS program.**
2. Total impact was stronger with longer periods of implementation
3. Program effects faded when programs were discontinued
4. Importance of persistent implementation and continued funding of comprehensive, community-based youth suicide prevention programs, like the GLS program

Godoy Garraza L, Kuiper N, Goldston D, McKeon R, Walrath C. Long-term impact of the Garrett Lee Smith Youth Suicide Prevention Program on youth suicide mortality, 2006-2015. *Journal of Child Psychology and Psychiatry*, First published: 08 May 2019, DOI: (10.1111/jcpp.13058) [Epub ahead of print]



Long-term impact of the Garrett Lee Smith Youth Suicide Prevention Program on youth suicide mortality, 2006–2015. Estimated effect of GLS on youth suicide mortality rate per 100,000 following the start of program activities in counties exposed to GLS activities during one, two, three, and four consecutive years (Year 0: first year of GLS activity)

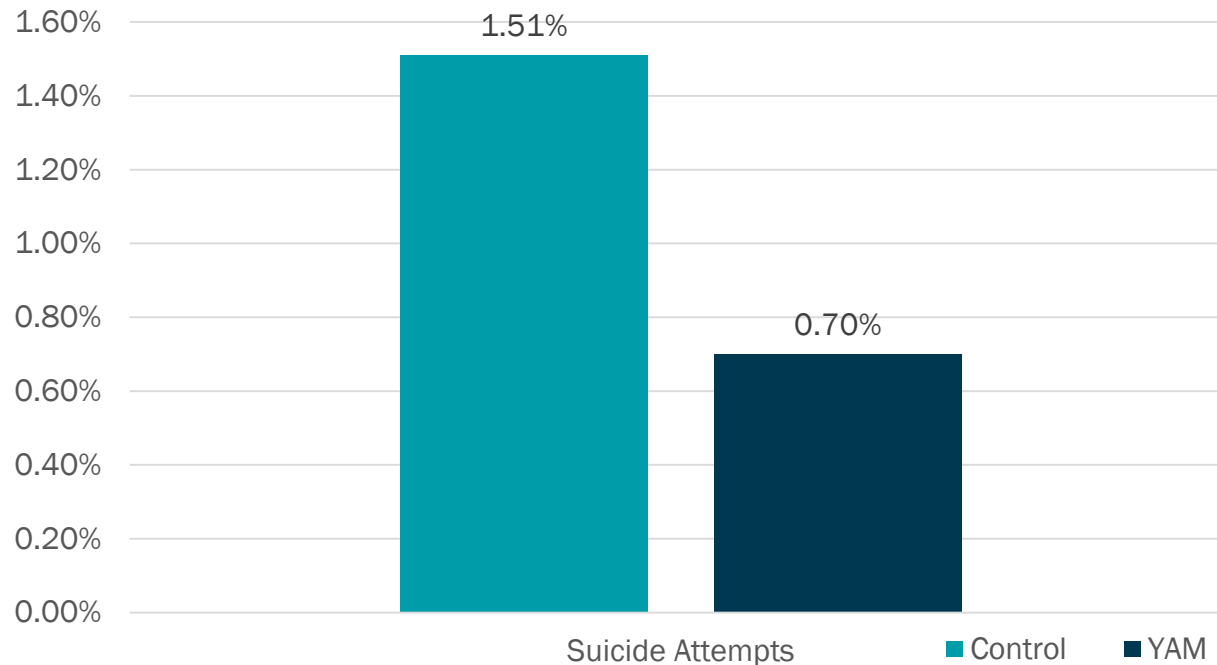


Godoy Garraza L, Kuiper N, Goldston D, McKeon R, Walrath C. Long-term impact of the Garrett Lee Smith Youth Suicide Prevention Program on youth suicide mortality, 2006-2015. *Journal of Child Psychology and Psychiatry*, First published: 08 May 2019, DOI: (10.1111/jcpp.13058) [Epub ahead of print] . N=481 exposed counties; N=851 non-exposed counties



School- Based Preventive Interventions Can Make a Difference: Saving & Empowering Young Lives in Europe (SEYLE) Study

Youth Aware of Mental Health Intervention Led to Lower Rate of Incident Suicide Attempts Relative to Control Condition



From: Wasserman, D., Hoven, C. W., Wasserman, C., Wall, M., Eisenberg, R., Hadlaczky, G., et al. (2015). School-based suicide prevention programmes: the SEYLE cluster-randomised, controlled trial. *The Lancet*, 385 (9977), 1536-1544.



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School- Based Preventive Interventions Can Make a Difference: Saving & Empowering Young Lives in Europe (SEYLE) Study, Barzilay & WELYE Consortium, Journal of Child Psychology & Psychiatry, 2019.

Without Preventive Intervention: Who Attempts Suicide Over 12 Months?

- Previous SA
- SI- 12 months earlier
- Deliberate Self Injurious Behavior- 12 months earlier
- Health risk behavior- 12 months earlier
- SI + HRB
- SI + D-SIB
- Baseline predictors most important for predicting a repeat SA in youths who made prior SAs
- More similar patterns were seen for youths with no history of SAs who did and did not make attempts during the follow-up



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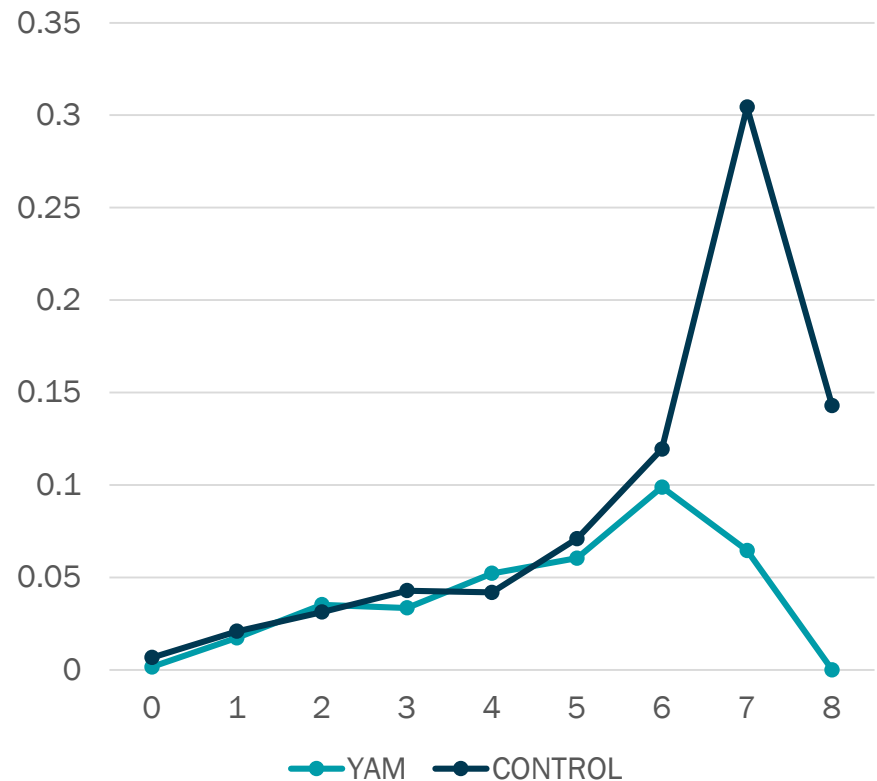


School-Based Suicide Prevention Interventions May Weaken Effects of Risk Factors: SEYLE

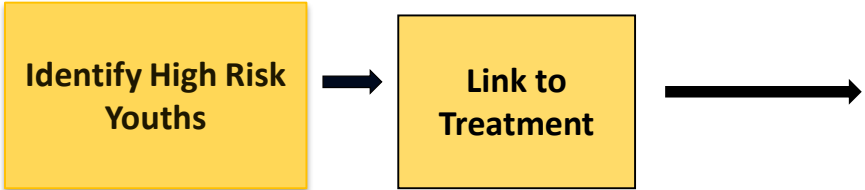
Multinational Study of Adolescents

- Health risk behaviors and self-injury predicted repeated suicide attempts among control/no-intervention group
- Three SEYLE interventions attenuated the combined effect of ideation and self-injury on likelihood of suicide attempts
- Youth Aware of Mental Health program (YAM) diminished the direct effect of health risk behaviors on the likelihood of suicide attempts

Rate of suicide attempts during 1-year follow-up as a function of number of risk behaviors reported at baseline among YAM/CONTROL groups



Process of Care: Suicide Prevention Services



- Therapeutic Assessment
- SAFETY-Acute/FISP
- Motivational Enhancement
- Schedule follow-up appointment or supported referral
- Caring contacts
- Trouble shoot barriers to care

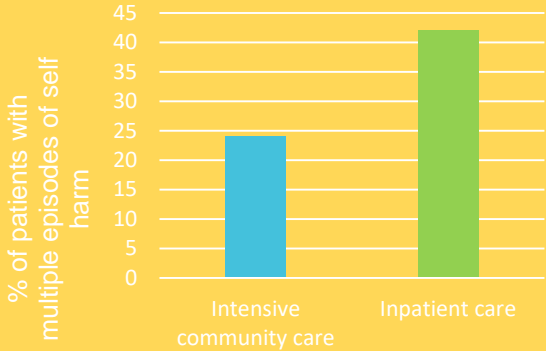
When Safe

Outpatient Evidence-Based Treatment

As Needed Intensive Community Care

When Unsafe

Hospital/Inpatient



From: Ougrin, D., Corrigan, R., Poole, J., et al. (2018). Comparison of effectiveness and cost-effectiveness of an intensive community supported discharge service versus treatment as usual for adolescents with psychiatric emergencies: a randomised controlled trial. *The Lancet Psychiatry*, 5(6), 477-485.

Newspaper coverage of suicide and initiation of suicide clusters in teenagers in the USA, 1988-96: a retrospective, population-based, case-control study

**Gould MS, Kleinman MH, Lake AM, Forman J, Midle JB
Lancet Psychiatry. 2014, Jun;1(1):34-43.**

Associated with increased risk of suicide cluster:

- front-page placement
- headlines containing word suicide or description of the method used
- detailed descriptions of the suicidal individual and act



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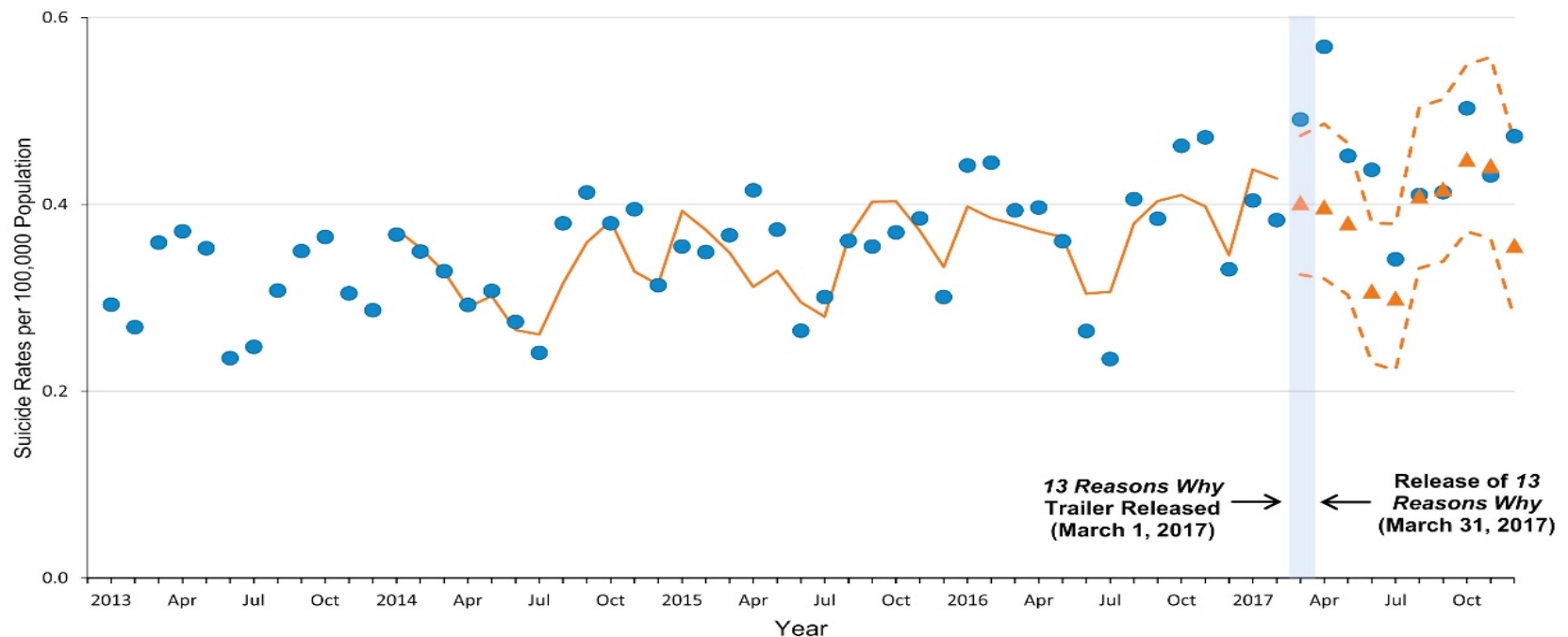
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13 Reasons Why: Environmental Exposure that Permeated Culture

1. Time series studies showing increased rates of suicide deaths and ED visits for suicidal episodes following release.
 - Bridge JA, Greenhouse JB, Ruch D, Stevens J, Ackerman J, Sheftall AH, Horowitz LM, Kelleher KJ, Campo JV. Association Between the Release of Netflix's 13 Reasons Why and Suicide Rates in the United States: An Interrupted Times Series Analysis. *J Am Acad Child Adolesc Psychiatry*. 2019 Apr 28.
 - Niederkrotenthaler, T., Stack, S., Till, B., Sinyor, M., Pirkis, J., Garcia, D., et al. Association of increased youth suicides in the United States with the release of 13 Reasons Why. *JAMA Psychiatry*. 2019 May 29,
 - Cooper MT Jr, Bard D, Wallace R, Gillaspay S, Deleon S. Suicide Attempt Admissions From a Single Children's Hospital Before and After the Introduction of Netflix Series 13 Reasons Why. *J Adolesc Health*. 2018 Dec;63(6):688-693.

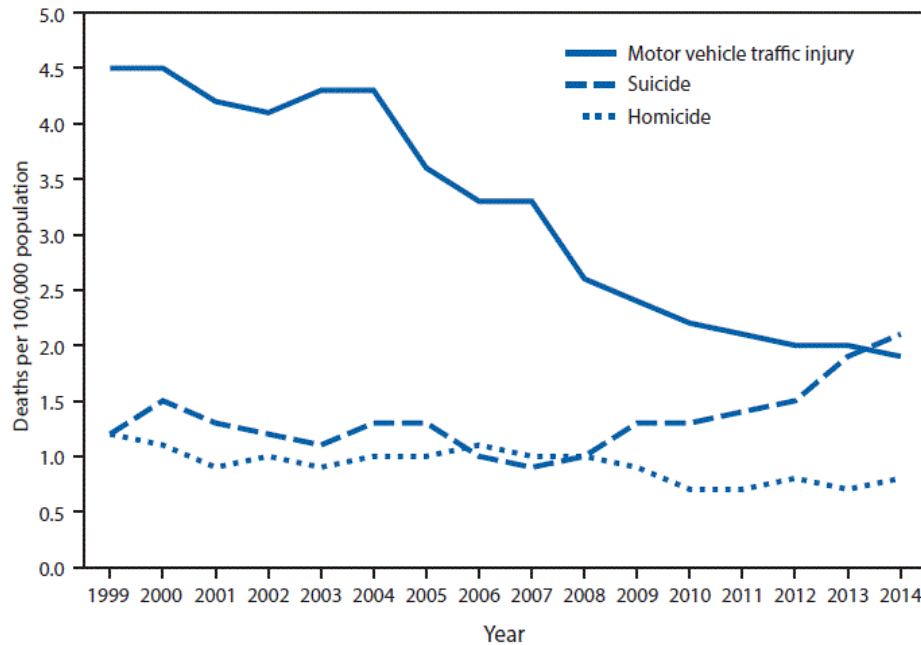


Release of 13 Reasons Why associated with significant increase in monthly suicide rates among U.S. youth ages 10-17 years



From: Bridge JA, Greenhouse JB, Ruch D, Stevens J, Ackerman J, Sheftall AH, Horowitz LM, Kelleher KJ, Campo JV. Association Between the Release of Netflix's 13 Reasons Why and Suicide Rates in the United States: An Interrupted Times Series Analysis. *J Am Acad Child Adolesc Psychiatry*. 2019 Apr 28.

Comparison with Declines in Other Leading Causes of Death: Decline in Deaths from Motor Vehicle Traffic Injuries



QuickStats: Death Rates for Motor Vehicle Traffic Injury, Suicide, and Homicide Among Children and Adolescents aged 10–14 Years — United States, 1999–2014. MMWR Morb Mortal Wkly Rep 2016;65:1203. DOI: [http://dx.doi.org/10.15585/mmwr.mm6543a8external icon](http://dx.doi.org/10.15585/mmwr.mm6543a8external%20icon). <https://www.cdc.gov/mmwr/volumes/65/wr/mm6543a8.htm>
Differences in death rates for suicide and motor vehicle accidents are not statistically different, $p < .05$.

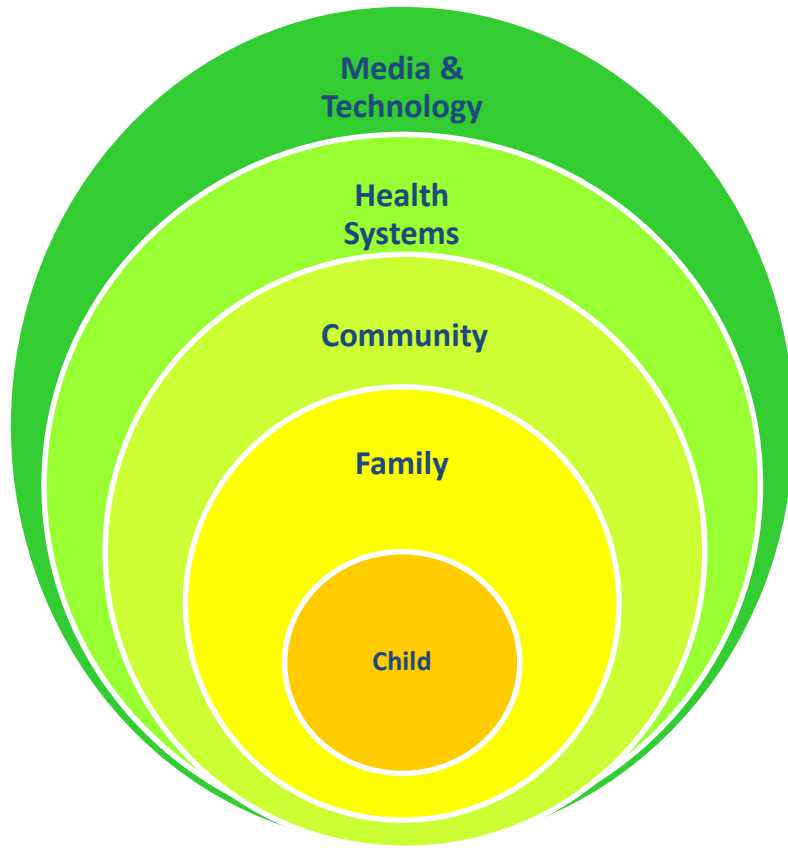


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SAFETY: Can Families, Communities, Media Function Like Protective Seatbelts?



Thank You!

Thank you for attending! We encourage you to provide feedback on your experience. A survey will be sent to you and we ask for your candid comments so that we can continue to improve our education services for journalists.



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