Health Education England

MRCPsych General Adult Module

Self Harm and Suicide

Developing people for health and healthcare

GA Module: Self Harm and Suicide

Aims and Objectives

- Aims
  - The overall aim is to give an overview of suicide and self harm

- Objectives:
  - By the end of the session, trainees should have
  - Developed an understanding of various facets of self-harm and suicide (aetiology, epidemiology, neurobiology, genetics)
  - Developed an understanding of surveys and develop skills for critically appraising surveys.

GA Module: Self Harm and Suicide

To achieve this

- Case Presentation
- Journal Club
- 555 Presentation
- Expert-Led Session
- MCQs

- Please sign the register and complete the feedback

Self harm and Suicide:

Aetiology and Epidemiology

NHS
Health Education England

Contents

- Definitions; and problems with suicide research
- Epidemiology of suicide
- National Confidential Inquiry in to Suicide (and Homicide)
- Epidemiology of Self-Harm
- Psychological theories of suicide
- Neurobiological theories of suicide
- Reference and further reading
- MCQs

NB- assessment and management are covered in Semester 3

Definitions

NHS
Health Education England

Suicide

Dictionary definition

The action of killing oneself intentionally

Suicide

In coroner's court

A coroner can now issue a conclusion of **suicide** on the **balance of probabilities**. Other options are an **open verdict** or **narrative verdict**.

Self-harm

Dictionary definition

The practice of deliberately wounding oneself (usually without the intent to kill oneself)

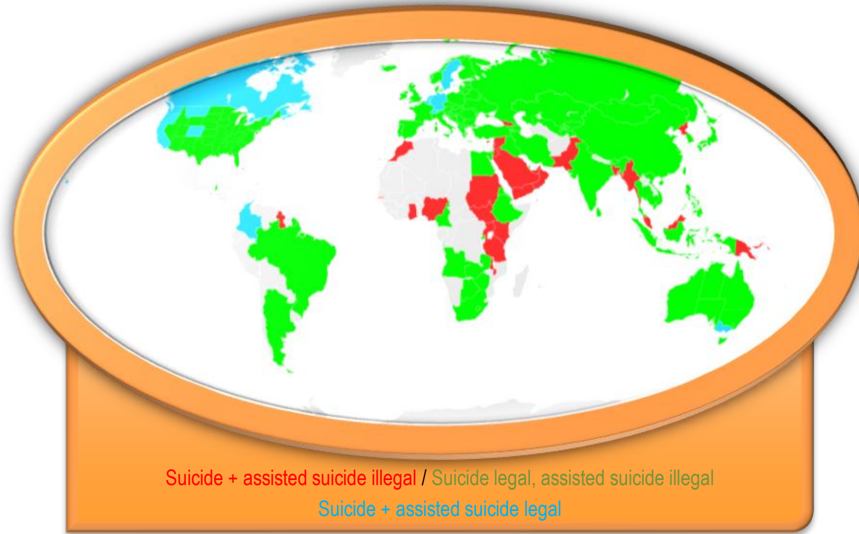
Parasuicide

Non Suicidal Self Injury

Self-Injury

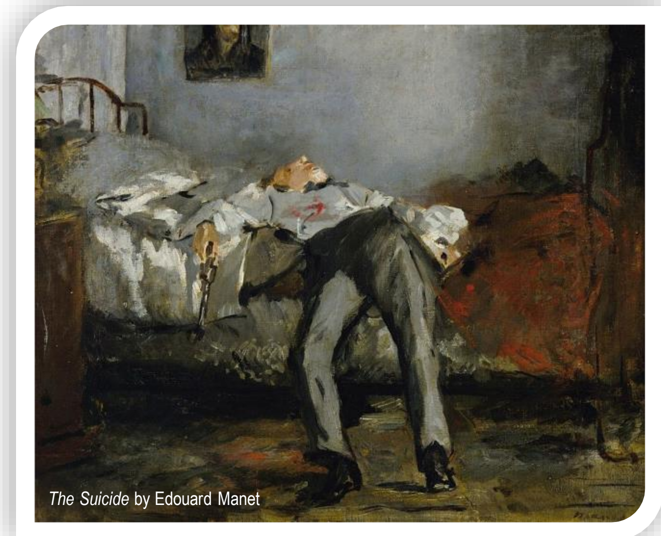
Self-mutilation

Troubling Terminology



- Historically suicide believed to be a sin in religious context
- Laws developed to criminalise suicide
- In many countries it remains illegal

- Suicide decriminalised in the UK in 1961
- Phrase 'commit suicide' relates to previous illegality of the act
- Has various negative moral and historical implications
- Phrase now used: 'completed suicide'



The Suicide by Edouard Manet

Epidemiology of Suicide

The problem with stats

Health Education England

- The deceased can never testify as to their intent
- Coroner's verdicts previously had a 'high bar' for suicide
- Definitions of suicide vary
- Countries where it is illegal may report lower rates

- It is therefore highly likely that suicide rates are an **underestimation**

WHO Suicide Prevention

https://www.who.int/mental_health/prevention/suicide/suicideprevent/en/

The WHO source data globally to provide estimates of suicide statistics. They are probably the most accurate source of data regarding suicide internationally.

National Confidential Enquiry into Suicide and Safety in Mental Health

https://sites.manchester.ac.uk/ncish/

The NCISH report compiled through the University of Manchester provides the most accurate data on UK suicides and is updated regularly.

Global Suicide Rates

NHS
Health Education England

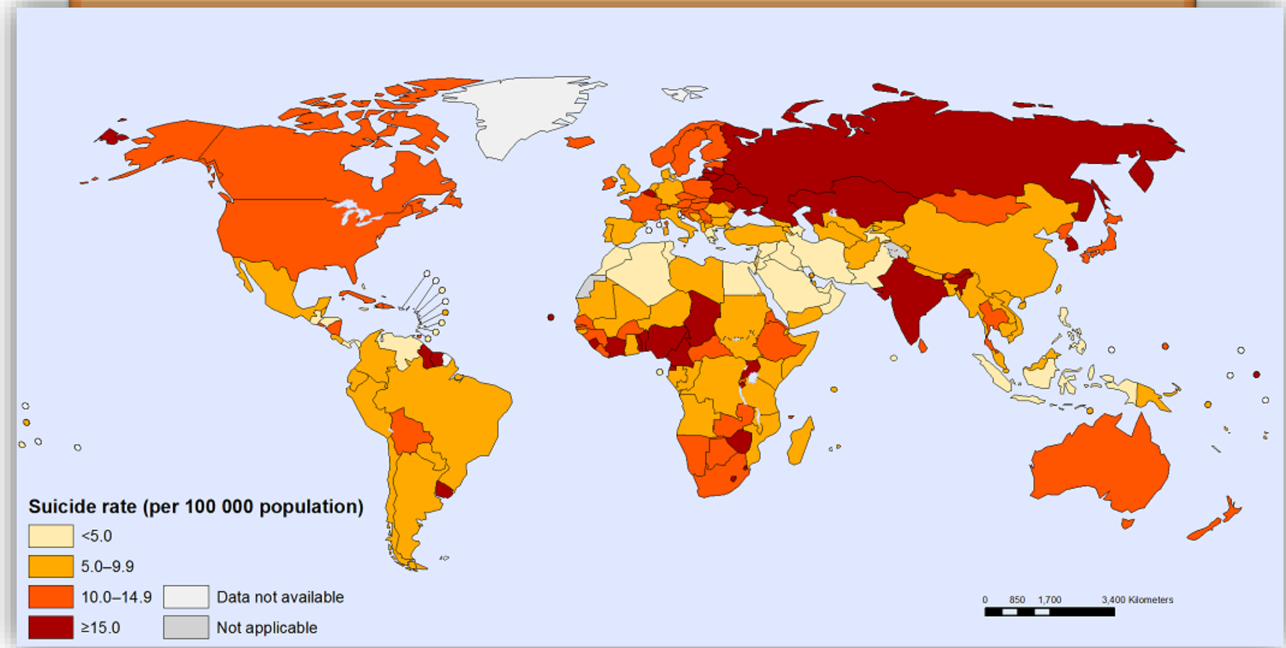
800,000
People die by suicide every year

Every 40 secs
Another person dies by suicide

1.4%
Of all deaths

79%
Of all suicides occur in middle- and low-income countries

Suicide rate per 100,000 population



10.7 Global average suicides per 100,000 population

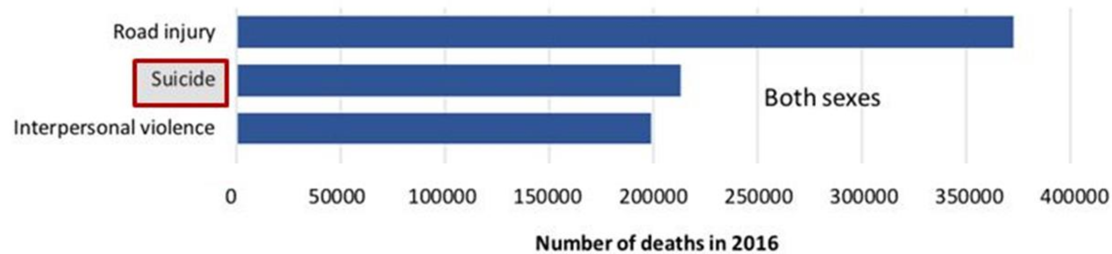
Europe + South East Asia
Highest suicide rates per 100,000 population

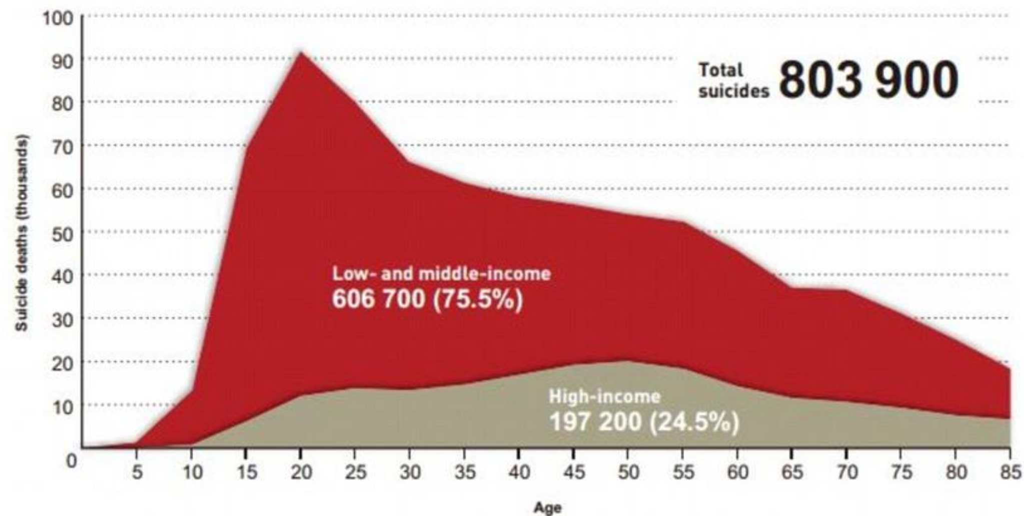
https://www.who.int/mental_health/prevention/suicide/estimates/en/

Global Suicide in Youth

NHS
Health Education England

Suicide is the **second** leading cause of death in **15-29 year olds**





https://www.who.int/mental_health/prevention/suicide/estimates/en/

Global Suicide Facts

NHS
Health Education England

Most common methods: **hanging**, **self-poisoning with pesticides**, **firearms**

More common in: **police**, **firefighters**, **first-line responders**, **army**, **prisoners**, **high-security hospital patients**

Most significant risk factor: **previous suicide attempt**

Bachmann S (2018) Epidemiology of suicide and the psychiatric perspective. Int J Environ Res Public Health
https://www.who.int/mental_health/prevention/suicide/estimates/en/

Suicide and Mental Illness

NHS
Health Education England

Rates of suicide in mental health patients **10 x higher** than general population

53.7% of all MH patient suicides were diagnosed with depression

45.3% of **inpatient MH patient suicides** were diagnosed with schizophrenia and organic mental disorders

32% of **outpatient MH patient suicides** were diagnosed with depression

5-14%
Suicide rate in all patients with schizophrenia

12-19%
Suicide rate in *inpatients* with depression

2.5-6%
Suicide rate in all patients with anxiety disorders

3-9%
Suicide rate in all patients with borderline personality disorder

1.2%
Suicide rate in all patients with anorexia nervosa

Bachmann S (2018) Epidemiology of suicide and the psychiatric perspective. Int J Environ Res Public Health
Bertolote JM et al (2003) Suicide and mental disorders: do we know enough? BJPsych
Kostro K et al (2014) The current status of suicide and self-injury in eating disorders: a narrative review. Journal of Eating Disorders
https://www.who.int/mental_health/prevention/suicide/estimates/en/

NHS
Health Education England

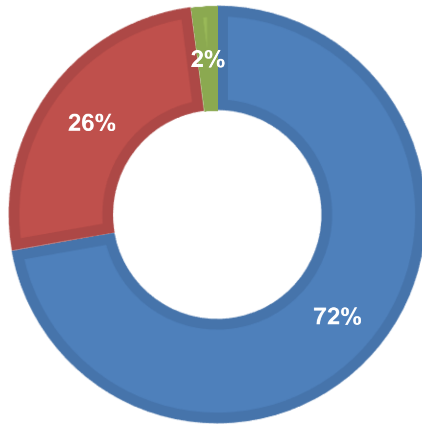
National Confidential Inquiry into Suicide and Safety in Mental Health

Data from United Kingdom 2006-16

Key Findings

Health Education England

Total Suicides: 2006-2016 UK

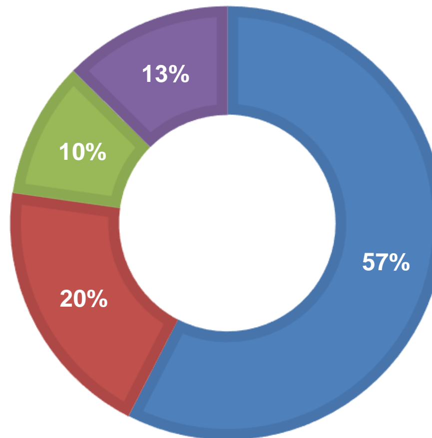


64,570 suicides

17,931 MH patients suicide

1,371 MH inpatient suicide

Methods: 2016 England



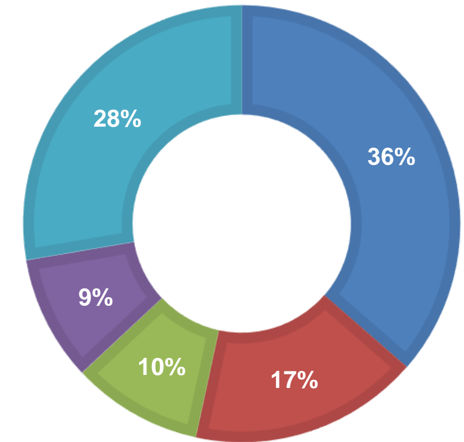
2,406 hanging/strangulation

824 self-poisoning

425 Jumping

526 Other

Diagnosis: 2006-16 England



4,802 depressive illness

2,245 schizophrenia

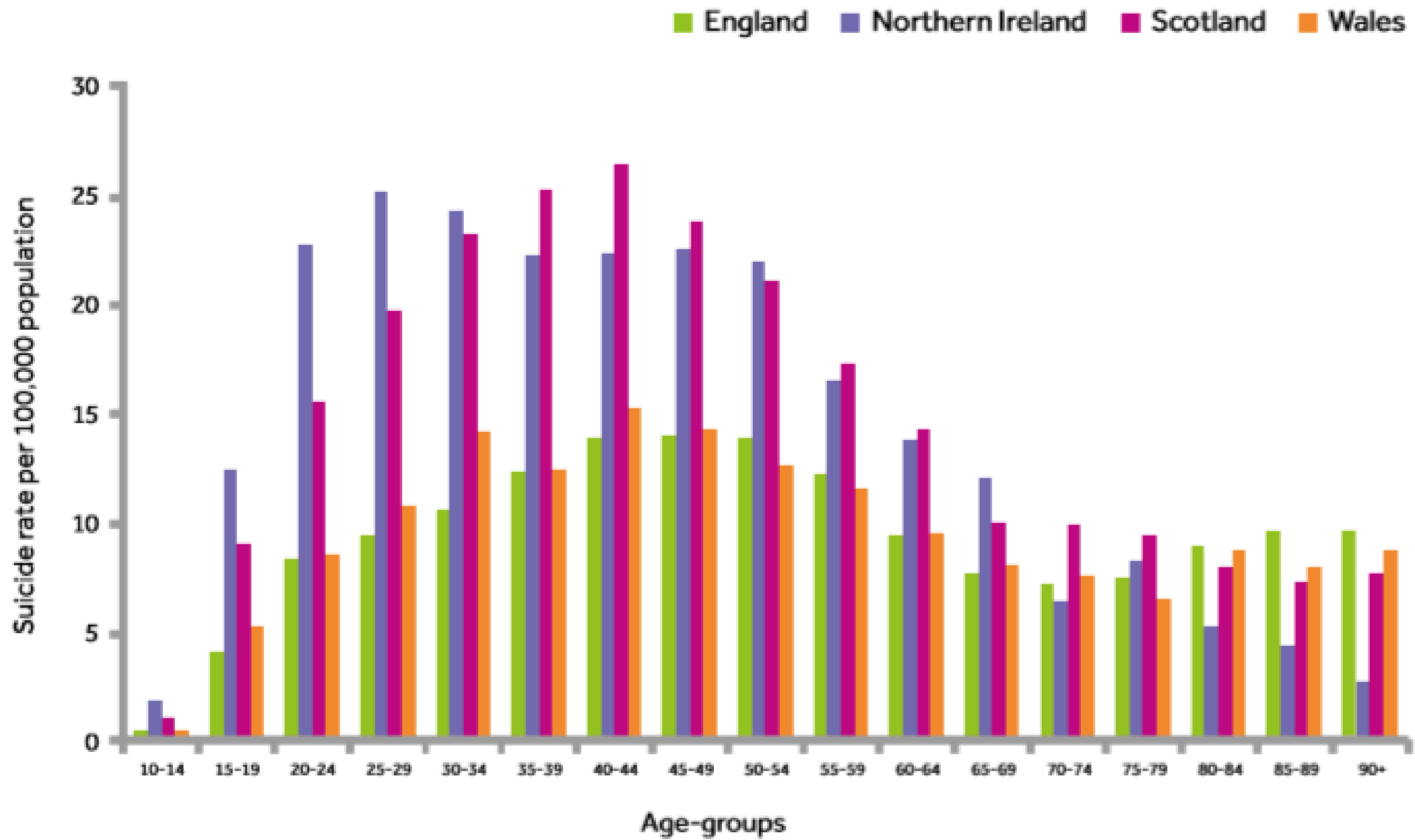
1,275 personality disorder

1,224 bipolar disorder

https://sites.manchester.ac.uk/ncish/

Key Findings

NHS Health Education England

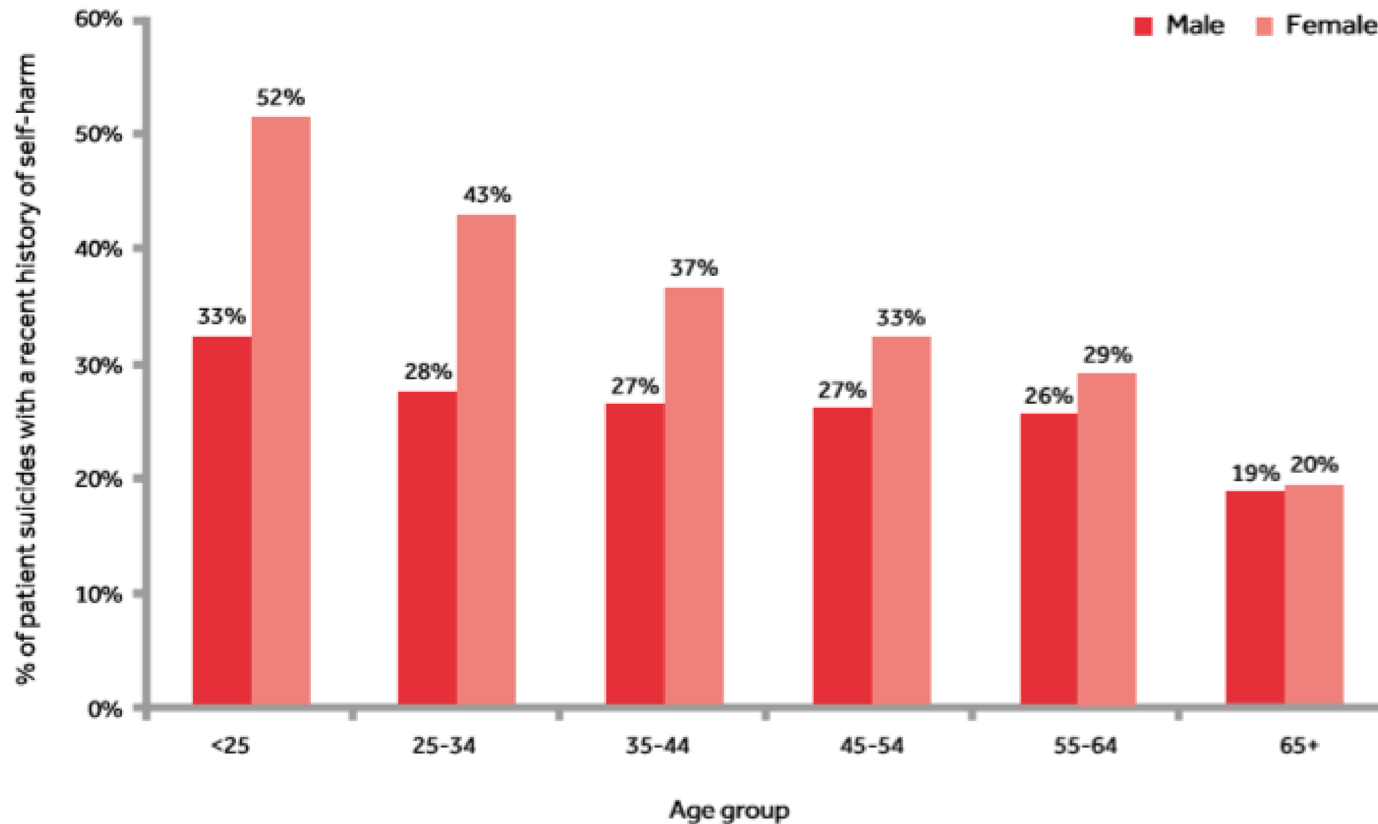


https://sites.manchester.ac.uk/ncish/

Key Findings

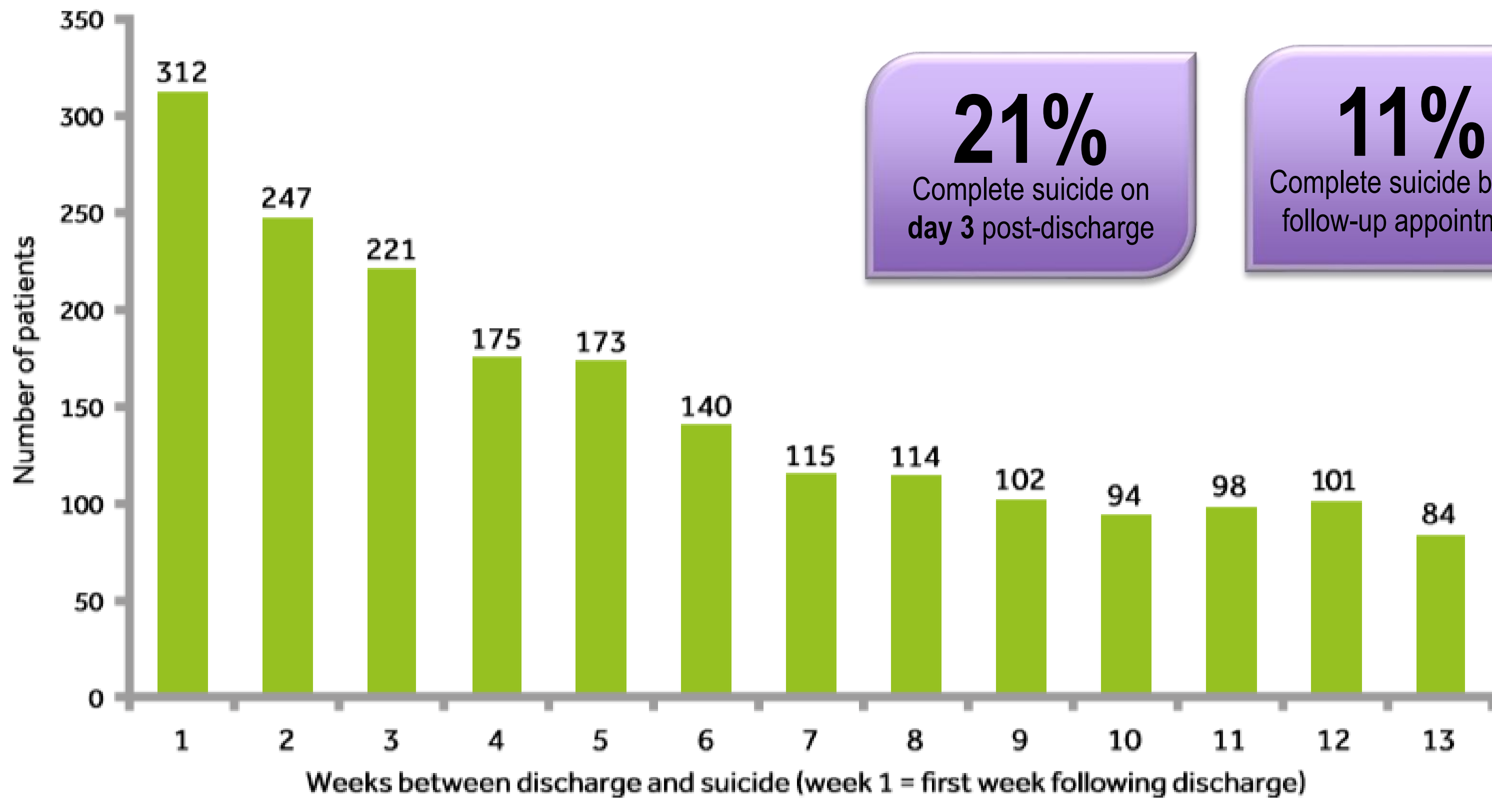
Health Education England

Proportion of suicides with recent (<3 month) history of DSH



Key Findings

NHS
Health Education England



Key Findings

NHS
Health Education England

Female patients have specific **risk profile**

39%
Contact with MH services

74%
Self-harm

15%
Personality Disorder

Young people have **common antecedents**

25%
Bereaved (9% by suicide)

19%
Bullied

30%
Physical health conditions

56% of completed suicides have **comorbid alcohol/substance misuse**

NCISH recommendations shown to reduce suicide rates

Icons made by Freepik from www.flaticon.com is licensed by CC 3.0 BY

Epidemiology of Deliberate Self-Harm

Self Harm Epidemiology

Health Education England

Suicide attempts are **30 x** more common than suicides

Incidence of **adolescent** self harm is **increasing**

Estimated **14-39%** of general population engage in DSH

Prevalence data difficult to calculate as **59.4%** do not have contact with services following DSH

Adolescence (2011-14)		Primary Care (2001-13)		Emergence Dept (2000-07)
37.4 /10,000 Incidence in females	**12.3** /10,000 Incidence in males	**17.9** /10,000 Incidence in females	**12.3** /10,000 Incidence in males	**36-44** /10,000 Incidence (non-gender specific)

Bachmann S (2018) Epidemiology of suicide and the psychiatric perspective. Int J Environ Res Public Health

Carr MJ, et al (2016) The epidemiology of self-harm in a UK-wide primary care patient cohort, 2001-2013. BMC Psychiatry. 16: 53

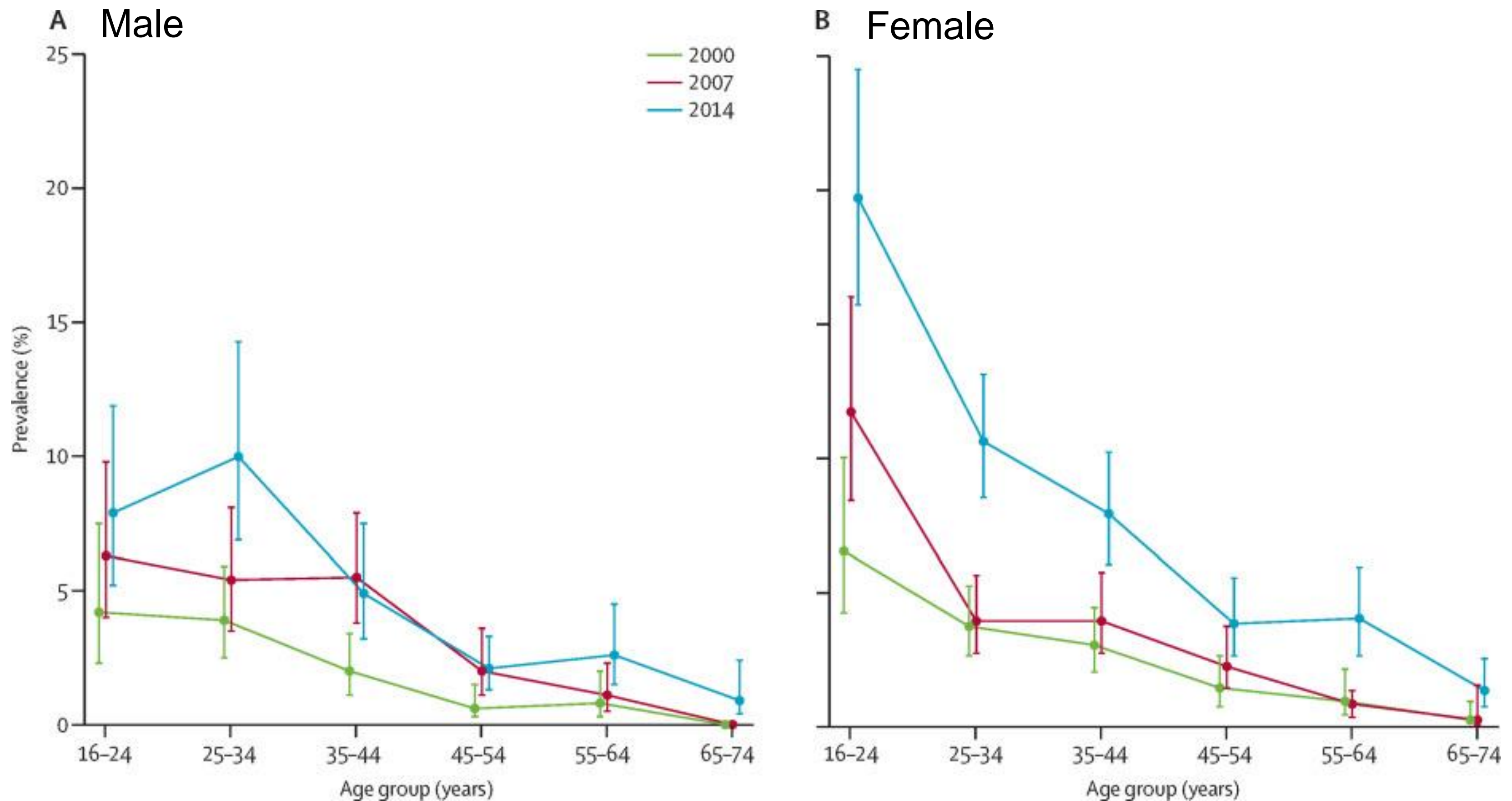
Bergen H, et al (2010) Epidemiology and trends in non-fatal self-harm in three centres in England: 2000-2007. BJPsych 197(6): 493-8

McManus S, et al (2019) Prevalence of non-suicidal self-harm and service contact in England, 2000-14: repeated cross-sectional surveys of the general population. The Lancet; 6(7): 573-81

Self Harm Epidemiology

NHS
Health Education England

Prevalence of DSH **decreases** over the lifespan



McManus S, et al (2019) Prevalence of non-suicidal self-harm and service contact in England, 2000-14: repeated cross-sectional surveys of the general population. The Lancet Psychiatry; 6(7): 573-81

Self Harm Epidemiology

Health Education England

Risk of repetition:

1 in 6
Repeats within 1 year

1 in 4
Repeats within 4 years

Risk of suicide:

1 in 200 to 1 in 40
Complete suicide within 1 year

1 in 15
Completes suicide within 9 years or more

Owens, et al (2002) Fatal and non-fatal repetition of self harm: Systematic review. BJPsych 181(3): 193-9

The Psychology of DSH

NHS
Health Education England

Reasons given for DSH
To die
Escape from unbearable anguish
To obtain relief
To change behaviour of others
To escape from a situation
To show desperation to others
To elicit help
To get back at others/make them guilty

Factors associated with repetition of DSH
Previous attempt(s)
Personality disorder diagnosis
Alcohol/substance abuse
Previous psychiatric treatment
Unemployment
Lower socioeconomic status
Criminal record
History of violence
Age 25-54
Single, divorced or separated

Cowen P, et al (2012) Shorter Oxford Textbook of Psychiatry, 6th Ed

NHS
Health Education England

The psychology of suicide

The Psychology of Suicide

NHS
Health Education England

- Suicidal ideation is common (9.2% lifetime prevalence)
- **But only 1/3 of those with SI go on to make a suicide attempt**
- *What is it that makes a person move from ideation to action?*

- A number of **risk factors** for suicide have been identified
- But the vast majority of people with those risk factors **do not** go on to make a suicide attempt
- *Why do risk factors lead to suicide attempts in some but not others?*

- *Most psychological models in current research based on stress-diathesis:*

Pre-existing vulnerability (diathesis) + **Stress → Suicidal behaviour**

O'Connor RC & Nock MK (2014) The psychology of suicidal behaviour. The Lancet Psychiatry 1(1): 73-85

Psychological Theories (1)

NHS
Health Education England

Theory		Premise
Cubic model of suicide	*Shneidman (1985)*	Combination of press (stress), pain (psychache) and perturbation result in suicide risk
Diathesis-stress-hopelessness model of suicidal behaviour	*Schotte & Clum (1987)*	Cognitive vulnerability (eg social problem-solving) accounts for the association between stress and suicide risk
Suicide as an escape from self	*Baumeister (1990)*	Main motivation of suicide is to escape from painful self-awareness
Clinical model of suicidal behaviour	*Mann, et al (1999)*	Stress-diathesis model, wherein suicide risk is caused by psychiatric disorder (stressor) and diathesis (tendency to experience more suicidal ideation/impulsivity)
Suicidal mode as cognitive behavioural model of suicidality	*Rudd, et al (2001)*	Based on ten principles of cognitive theory, the model describes the cognitive, affective, behavioural and physiological system characteristics associated with the development of suicide risk
Arrested flight model	*Williams (2001)*	Suicide risk is increased when feelings of defeat and entrapment are high and the potential for rescue (eg social support) is low

O'Connor RC & Nock MK (2014) The psychology of suicidal behaviour. The Lancet Psychiatry 1(1): 73-85

Psychological Theories (2)

NHS Health Education England

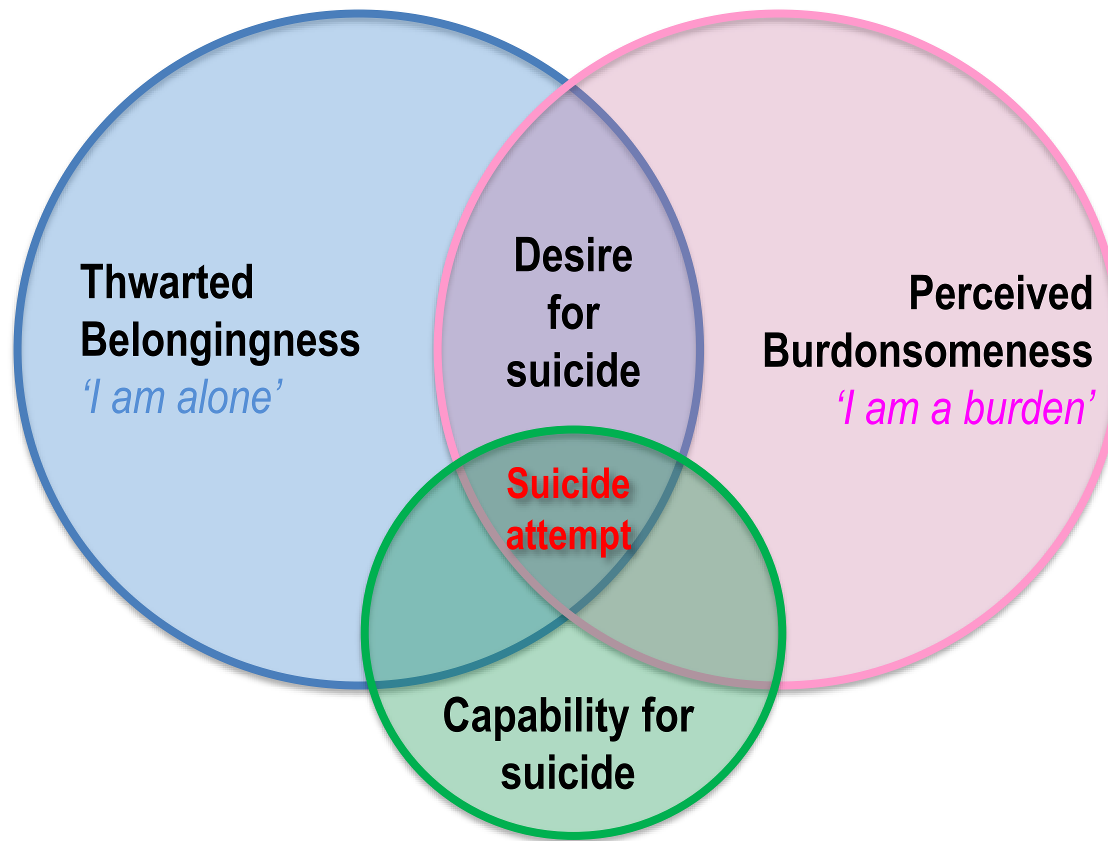
Theory		Premise
Interpersonal-psychological model	*Joiner (2005)*	Suicidal desire is caused by high levels of burdonsomeness, and thwarted belongingness; desire is probably translated into suicidal behaviour when capability is high
Schematic appraisal model of suicide	*Johnson, et al (2008)*	Appraisal model which proposes risk is caused by the interplay between biases in information processing, schema and appraisal systems
Cognitive model of suicidal behaviour	*Wenzel & Beck (2008)*	Diathesis-stress model with three constructs: dispositional vulnerability factors, cognitive processes associated with psychiatric disturbance, and cognitive processes associated with suicidal acts
Differential activation theory of suicidality	*Williams, et al (2008)*	Associative network model, in which the experience of suicidal ideation or behaviour during a depressive episode increases the likelihood that it will re-emerge during subsequent episodes
Integrated motivational-volitional model of suicidal behaviour	*O'Connor (2011)*	Diathesis-stress model, specifying components of the premotivational, motivational (ideation and intent formation) and volitional (behavioural enaction) phases of suicidality

O'Connor RC & Nock MK (2014) The psychology of suicidal behaviour. The Lancet Psychiatry 1(1): 73-85

Interpersonal Theory

NHS
Health Education England

- Two factors (burdonsomeness and thwarted belongingness) lead to desire for suicide. When capability of suicide is added this leads to suicide attempt

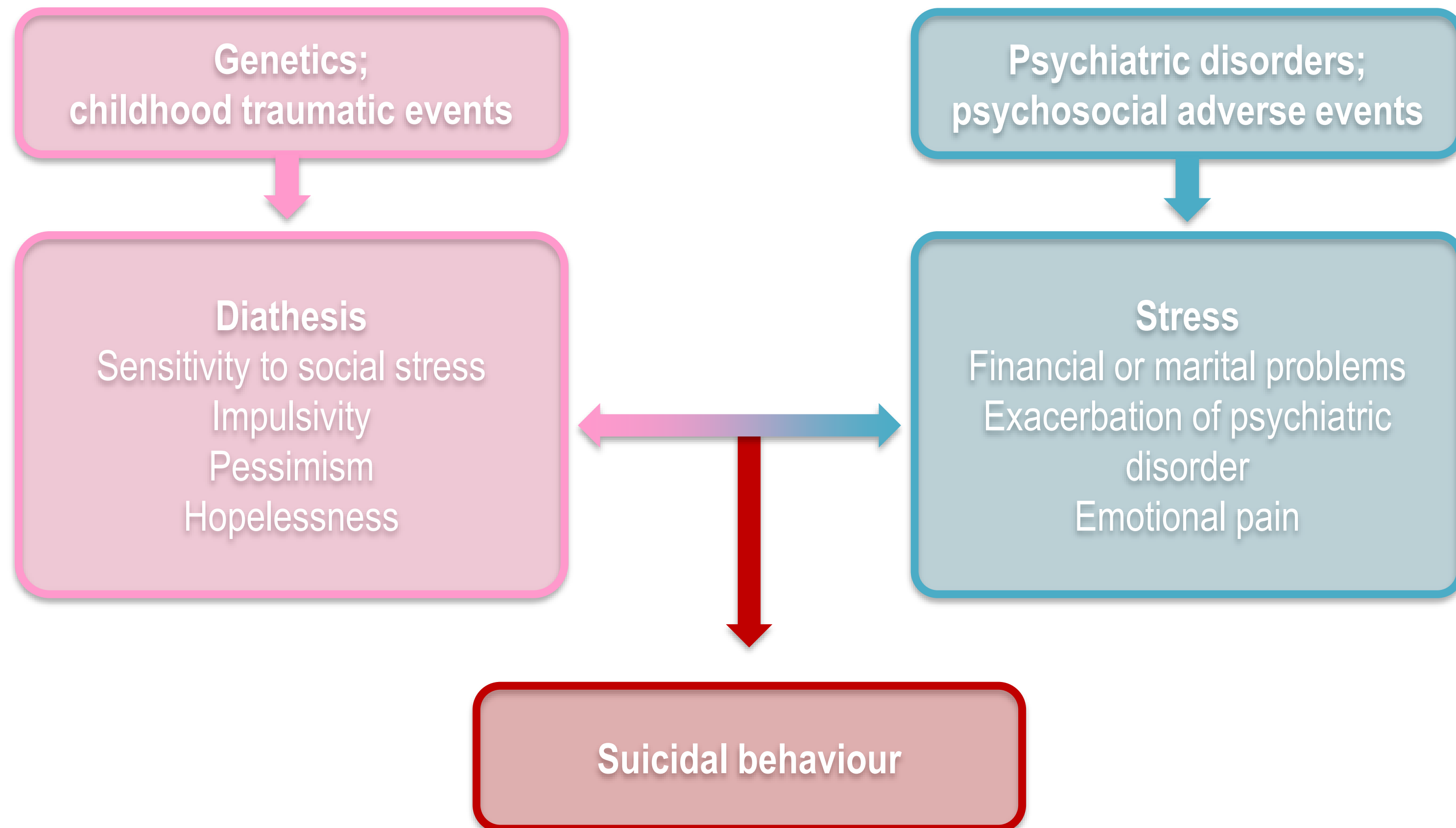


O'Connor RC & Nock MK (2014) The psychology of suicidal behaviour. The Lancet Psychiatry 1(1): 73-85

Stress-Diathesis Model

NHS
Health Education England

- Susceptibility (diathesis) to stress and exposure to stressors leads to suicidal action

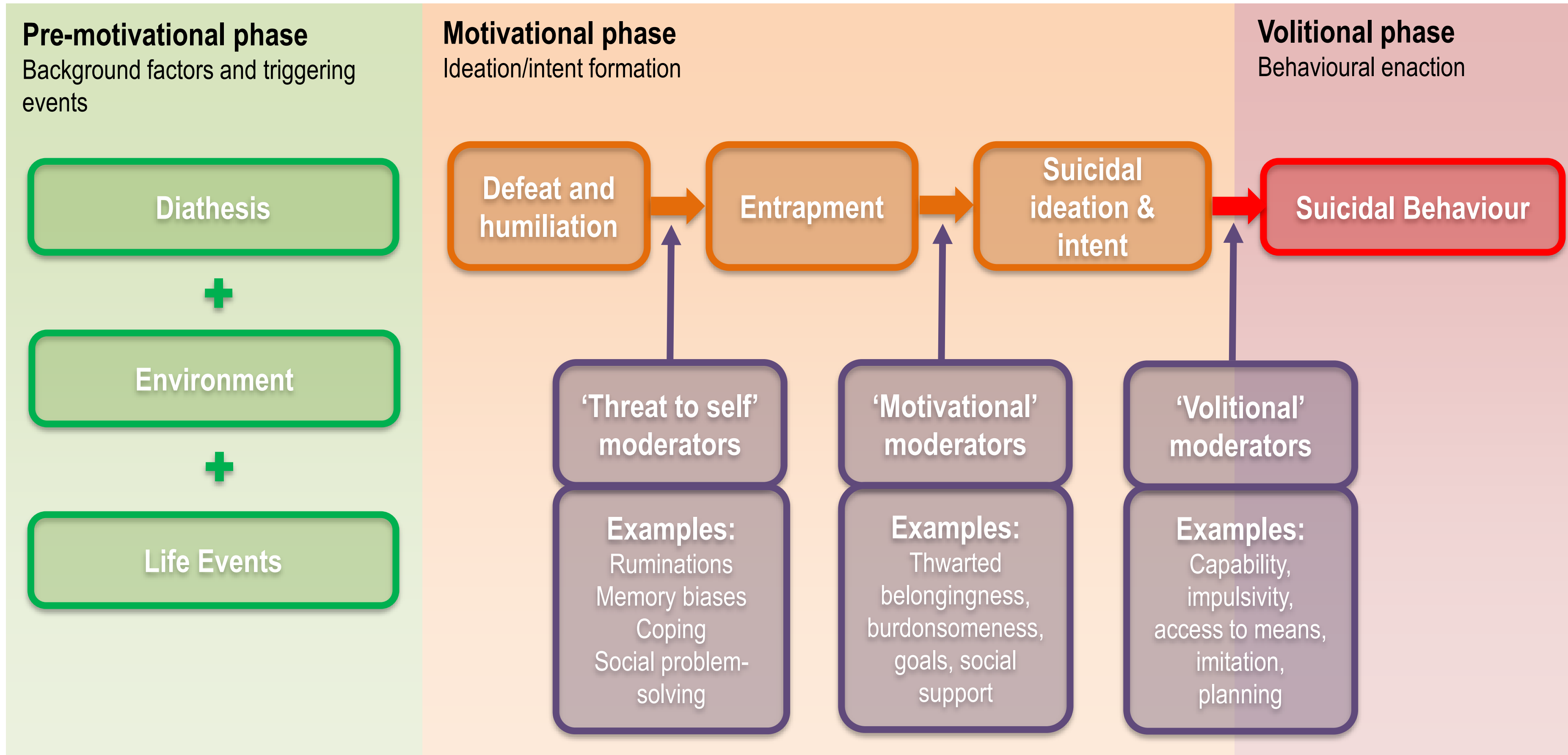


Van Heerigen K & Mann JJ (2014) The neurobiology of suicide. Lancet Psychiatry 1(1): 63-72

Integrated motivational-volitional model

NHS
Health Education England

- This uses the stress-diathesis model but separates into pre-motivational, motivational and volitional (action) phases



O'Connor RC & Nock MK (2014) The psychology of suicidal behaviour. The Lancet Psychiatry 1(1): 73-85

Key Psychological factors

NHS
Health Education England

Personality and individual differences	Cognitive factors	Social factors	Negative life events
Hopelessness	Cognitive rigidity	Social transmission	Childhood adversity
Impulsivity	Rumination	Modelling	Traumatic adult life events
Perfectionism	Thought suppression	Contagion	Physical illness
Neuroticism & Extraversion	Memory biases	Assortative mixing	Interpersonal stressors
Optimism	Belongingness / burdonsomeness	Exposure to deaths by suicide of others	Psychophysiological stress response
Resilience	Fearlessness about injury / death	Social isolation	
	Pain insensitivity		
	Problem-solving and coping		
	Agitation		
	Implicit associations		
	Attentional biases		
	Future thinking		
	Goal adjustments		
	Reasons for living		
	Defeat and entrapment		

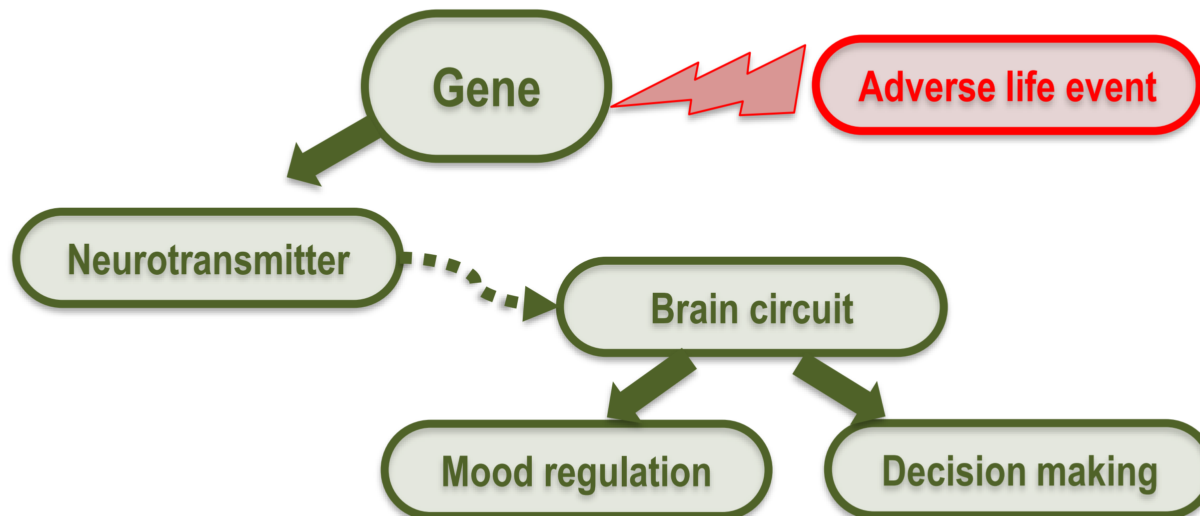
O'Connor RC & Nock MK (2014) The psychology of suicidal behaviour. The Lancet Psychiatry 1(1): 73-85

Neurobiology of Suicide

NHS
Health Education England

- Neurobiology of suicide relates to the stress-diathesis model
- Specifically, what accounts for the vulnerability (diathesis)
- It is thought genetic predisposition and/or epigenetic modifications play a part
- 50% of risk for suicide/suicide attempts is heritable

- Childhood adversity is strongly linked to suicide
- It is thought these early life experiences cause epigenetic modifications to the brain



Van Heeringen K, Mann JJ (2014) The neurobiology of suicide. The Lancet Psychiatry 1(1): 63-72
Salloum, NC (2017) Suicidal behaviour: A distinct psychobiology? American Journal of Psychiatry 12(1): 2-4

Neurobiology of Suicide

Health Education England

Theories:

Defective transmission of **Serotonin**

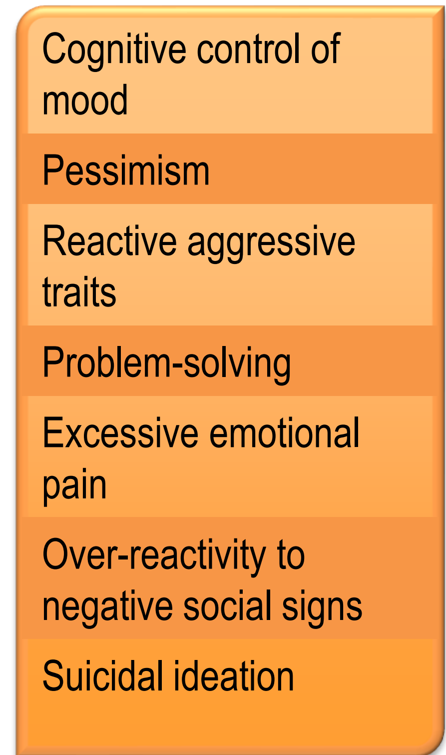
Hypothalamic-pituitary-adrenal axis (stress response system)
Elevated or blunted cortisol levels implicated

Neuroinflammation
Evidence of elevated pro-inflammatory IL-6 and other signs of inflammation on post-mortem

Kynurenine Pathway
High levels of neurotoxic Quinolinic acid formed from the main metabolic pathway for degradation of tryptophan

Neuroplasticity
Increased neuronal loss and decreased neurogenesis

Impact:

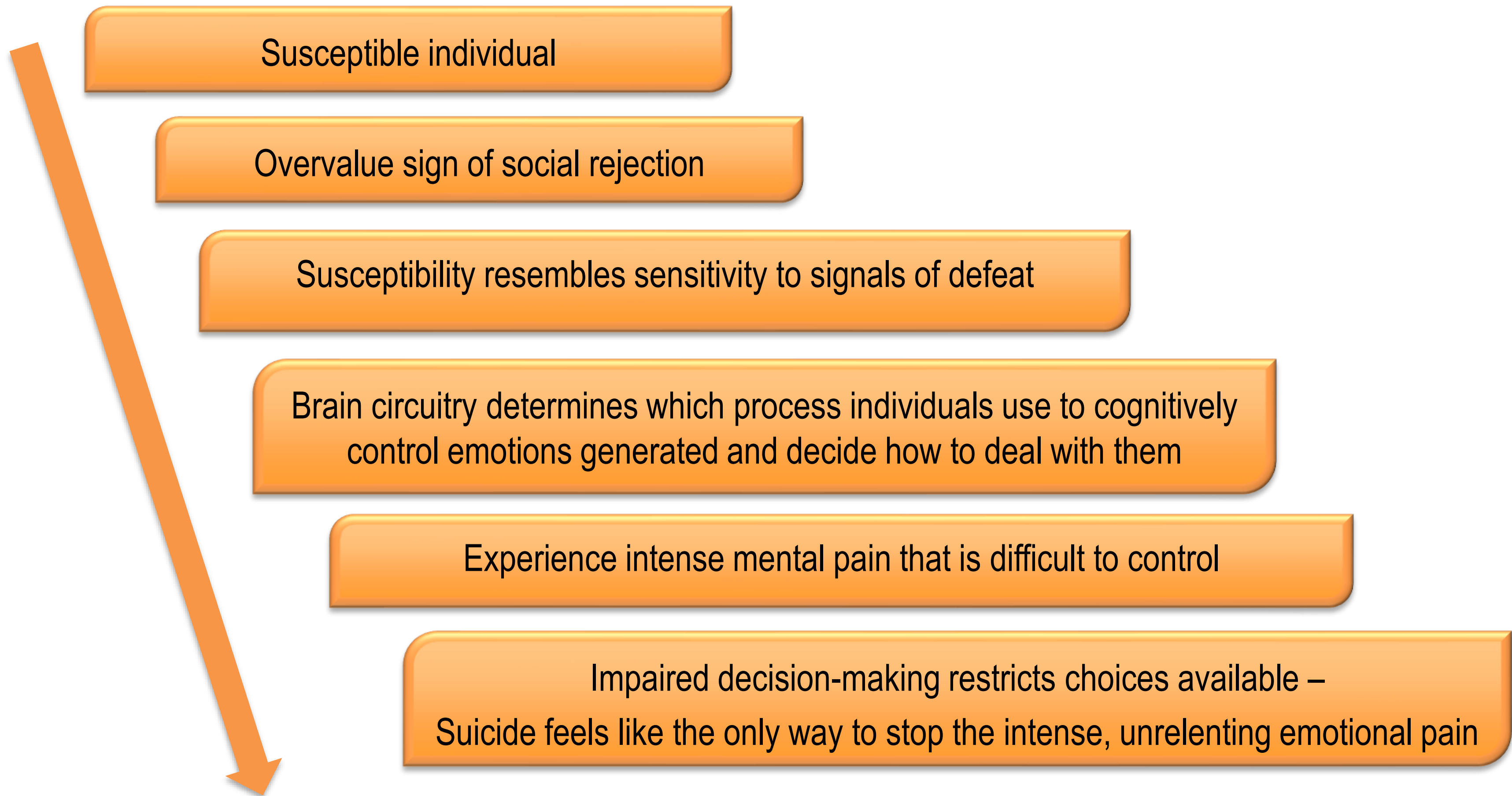


Van Heeringen K, Mann JJ (2014) The neurobiology of suicide. The Lancet Psychiatry 1(1): 63-72
Salloum, NC (2017) Suicidal behaviour: A distinct psychobiology? American Journal of Psychiatry 12(1): 2-4

Neurobiology of Suicide

NHS Health Education England

- But how does impairment of those cognitive processes lead to suicide?



Van Heeringen K, Mann JJ (2014) The neurobiology of suicide. The Lancet Psychiatry 1(1): 63-72
Salloum, NC (2017) Suicidal behaviour: A distinct psychobiology? American Journal of Psychiatry 12(1): 2-4

References

NHS
Health Education England

World Health Organisation Suicide Data:
https://www.who.int/mental_health/prevention/suicide/estimates/en/

National Confidential Enquiry (UK Data):
https://sites.manchester.ac.uk/ncish/

Epidemiology:
Bertolote JM et al (2003) Suicide and mental disorders: do we know enough? BJPsych
Kostro K et al (2014) The current status of suicide and self-injury in eating disorders: a narrative review. Journal of Eating Disorders
Bachmann S (2018) Epidemiology of suicide and the psychiatric perspective. Int J Environ Res Public Health
Carr MJ, et al (2016) The epidemiology of self-harm in a UK-wide primary care patient cohort, 2001-2013. BMC Psychiatry. 16: 53
Bergen H, et al (2010) Epidemiology and trends in non-fatal self-harm in three centres in England: 2000-2007. BJPsych 197(6): 493-8
McManus S, et al (2019) Prevalence of non-suicidal self-harm and service contact in England, 2000-14: repeated cross-sectional surveys of the general population. The Lancet Psychiatry; 6(7): 573-81
Owens, et al (2002) Fatal and non-fatal repetition of self harm: Systematic review. BJPsych 181(3): 193-9

Psychology and Neurobiology of Suicide:
Cowen P, et al (2012) Shorter Oxford Textbook of Psychiatry, 6th Ed
O'Connor RC & Nock MK (2014) The psychology of suicidal behaviour. The Lancet Psychiatry 1(1): 73-85
Van Heeringen K, Mann JJ (2014) The neurobiology of suicide. The Lancet Psychiatry 1(1): 63-72
Salloum, NC (2017) Suicidal behaviour: A distinct psychobiology? American Journal of Psychiatry 12(1): 2-4

Health Education England

GA Module: Self Harm and Suicide

Questions

Discussion

GA Module: Self Harm and Suicide

MCQs

1. What is the single strongest predictor of completed suicide?

A. Mental illness
B. Previous self-harm
C. Recent bereavement
D. Having a neurodegenerative physical illness
E. Family history of suicide

GA Module: Self Harm and Suicide

MCQs

2. A patient is refusing life-saving treatment for severe blood loss after cutting her wrists. Under the law in England and Wales, whose responsibility is it to assess capacity to make a decision to refuse treatment?

A. A consultant psychiatrist
B. A clinical psychologist
C. Any psychiatrist who is approved under Section 12(2) of the Mental Health Act
D. The clinician proposing the treatment
E. The duty AMHP (Approved Mental Health Professional)

GA Module: Self Harm and Suicide

MCQs

3. What proportion of completed suicides have alcohol or substance comorbidity?

A. 9%
B. 32%
C. 56%
D. 70%
E. 87%

GA Module: Self Harm and Suicide

MCQs

4. There is RCT evidence for reduction in suicide risk with which of the following medications?

A. Aripiprazole
B. Sodium valproate
C. Buspirone
D. Topiramate
E. Lithium

GA Module: Self Harm and Suicide

MCQs

5. Completed suicides in the UK are most likely to use which method?

A. Firearms
B. Jump from a height
C. Self-poisoning
D. Hanging/strangulation
E. Self-immolation

GA Module: Self Harm and Suicide