Stress and mental health presentations in secondary school-aged young people

Presented by:

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Today's seminar

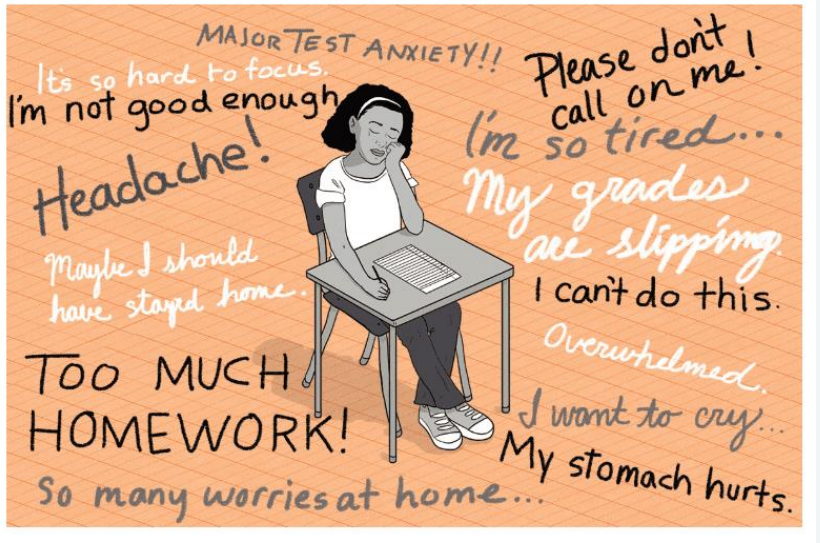
- What are 'Stress-Related Presentations' (SRPs)?
- What we can learn from admin data
- Methods - What we did; i) schools, ii) inequalities
- Results - What we found; i) schools, ii) inequalities
- Summary of key findings
- Where do we go from here?

Do these conditions have a physical or mental health basis?

- Chickenpox
- Abdominal pain
- Tiredness
- Tremor
- Anxiety
- Drug use

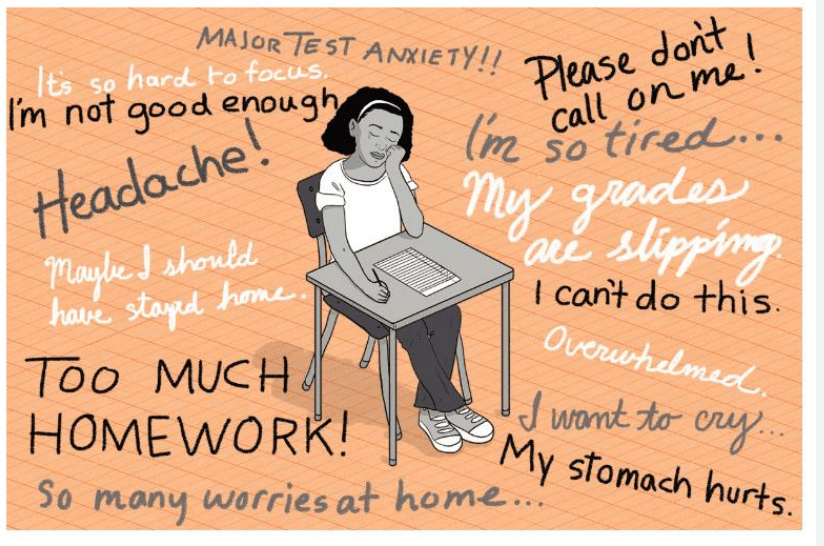
What do we mean by Stress Related Presentations?

- Mental health difficulties often look different in youth vs adulthood
- Adults build skills to identify & express feelings of sadness or worry
- Young people more often experience physical, emotional & behavioural manifestations of stress & distress:
  - irritability
  - disruptive behaviours
  - school refusal
  - withdrawal
  - difficulty sleeping
  - poor concentration
  - unspecific physical complaints
    (e.g. stomach aches & headaches)
- Variation by age & sex



What do we mean by Stress Related Presentations? (continued)

- Often the underlying concern & symptoms will resolve quickly, without the need for additional support.
- However, prolonged, recurrent or more severe symptoms ***may*** indicate the need for mental health support.
- Young people experiencing escalated distress often present in acute care settings.



Pathway to acute services

Donna's story

High achieving "A-student"
Persistent abdominal pain
Sleep problems
GP visits
Increasing school absence
A&E attendances
Hospital admission
Not attending school
Hospital admission

12 yrs (Year 8)
14 yrs (Year 10)
16 yrs (Year 12)

No abnormal medical findings

"The patient & her parents believed the pain stemmed from an organic cause, despite reassurance that organic factors had been ruled out."

Geist R Medically unexplained symptoms in young people: the doctor's dilemma. *Paediatr Child Health*. 2008;13(6):487-91

thebmj

What should we say to patients with symptoms unexplained by disease? The "number needed to offend"

Jon Stone, Wojtek Wojcik, Daniel Durrance, Alan Carson, Steff Lewis, Lesley MacKenzie, Charles P Warlow, Michael Sharpe

Diagnostic labels [for leg weakness]	Number needed to offend (95% CI)*
Symptoms all in the mind	2 (2 to 2)
Hysterical symptoms	2 (2 to 3)
Psychosomatic symptoms	3 (2 to 4)
Medically unexplained symptoms	3 (3 to 5)
Depression associated symptoms	4 (3 to 5)
Stress related symptoms	6 (4 to 9)
Chronic fatigue	7 (5 to 13)
Functional symptoms	9 (5 to 21)

Most offensive

Less offensive

"Diagnostic labels have to be not only helpful to doctors but also acceptable to patients."

Why do research on stress presentations?

- Mental health in young people as an urgent issue: 1 in 6 may have a mental disorder, but only a minority receives treatment
- Opportunities for support often missed or delayed
- Increased pressure on acute care services – untherapeutic for the young person & inefficient for the health system

Rationale: Effective early intervention for stress & early manifestations of distress should improve long-term mental health outcomes

The role of schools in mental health & care pathways

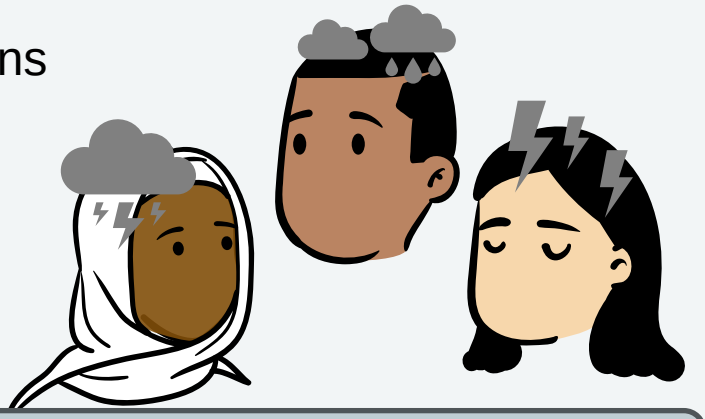
- Schools can be a source of support & a source of stress
- Schools theoretically well placed (but under-resourced) to recognise and respond to early signs of mental illness
- MHSTs and other community care initiatives may help to relieve the bottleneck into accessing CAMHS both through prevention & early intervention

The role of inequalities in mental health & pathways to mental health care

- Discrimination, bias, stereotyping as well as a lack of cultural sensitivity or awareness of cross-cultural differences impact both the likelihood of young people experiencing mental health difficulties as well as differential experiences of mental health care

- Racial discrimination has been consistently associated with poorer physical and mental health outcomes

- Perceptions of discrimination and microaggressions have been associated with increased somatic, thought problem, externalising as well as internalising symptoms



Hackett et al (2020). Racial discrimination and health: a prospective study of ethnic minorities in the United Kingdom. *BMC public health*, *20*(1), 1-13. Wallace, et al (2016). Cumulative effect of racial discrimination on the mental health of ethnic minorities in the United Kingdom. *American journal of public health*, *106*(7), 1294-1300. Cave, et al (2020). Racial discrimination and child and adolescent health in longitudinal studies: A systematic review. *Social science & medicine*, *250*, 112864. Slopen et al (2016). Discrimination and sleep: a systematic review. *Sleep medicine*, *18*, 88-95. Tao, X., & Fisher, C. B. (2022). Exposure to social media racial discrimination and mental health among adolescents of color. *Journal of youth and adolescence*, 1-15.

The role of inequalities in mental health & pathways to mental health care

- Minoritised young people more likely to be referred to mental health services through more adverse pathways
- Black and Asian young people are more likely to be referred to inpatient and emergency services, rather than outpatient mental health supports
- Additional barriers may impede receipt of treatment and reduce the likelihood of remaining in treatment

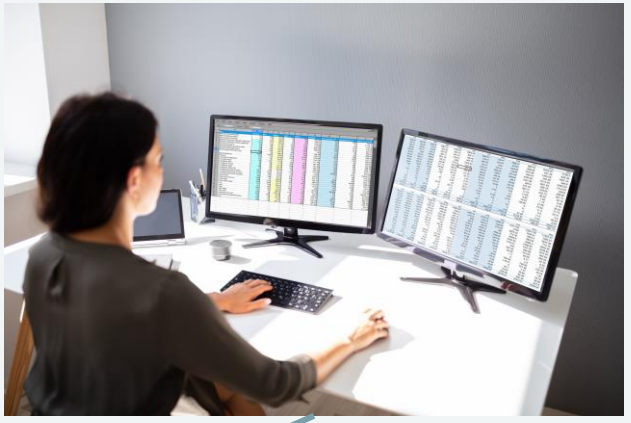
Edbrooke-Childs, J., & Patalay, P. (2019). Ethnic differences in referral routes to youth mental health services. *Journal of the American Academy of Child & Adolescent Psychiatry*, *58*(3), 368-375. Chui, Z., et al (2021). Inequalities in referral pathways for young people accessing secondary mental health services in south east London. *European child & adolescent psychiatry*, *30*(7), 1113-1128. NHS Race & Health Observatory (2022). Ethnic Inequalities in Healthcare: A Rapid Evidence Review.

Measures of stress / distress in administrative data sources

Administrative records

Schools

Administrative records

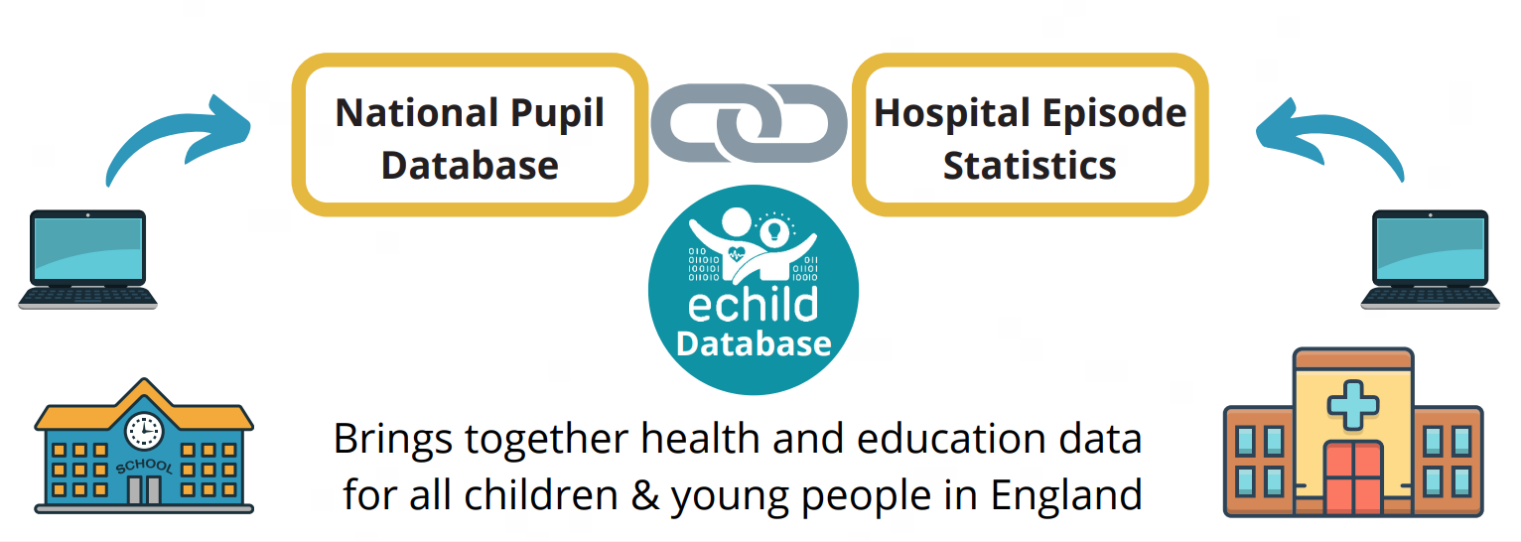


Hospital Episodes Statistics

Cleaned
De-identified
Linked

Administrative data

The ECHILD Database: in a nutshell



The ECHILD Database is **DE-IDENTIFIED**

Linked data for **14.7 million pupils**

Mc Grath-Lone et al., 2022. International Journal of Epidemiology.

Pathway to acute services

Donna's story

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Persistent abdominal pain

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GP visits

Increasing school absence

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KS2

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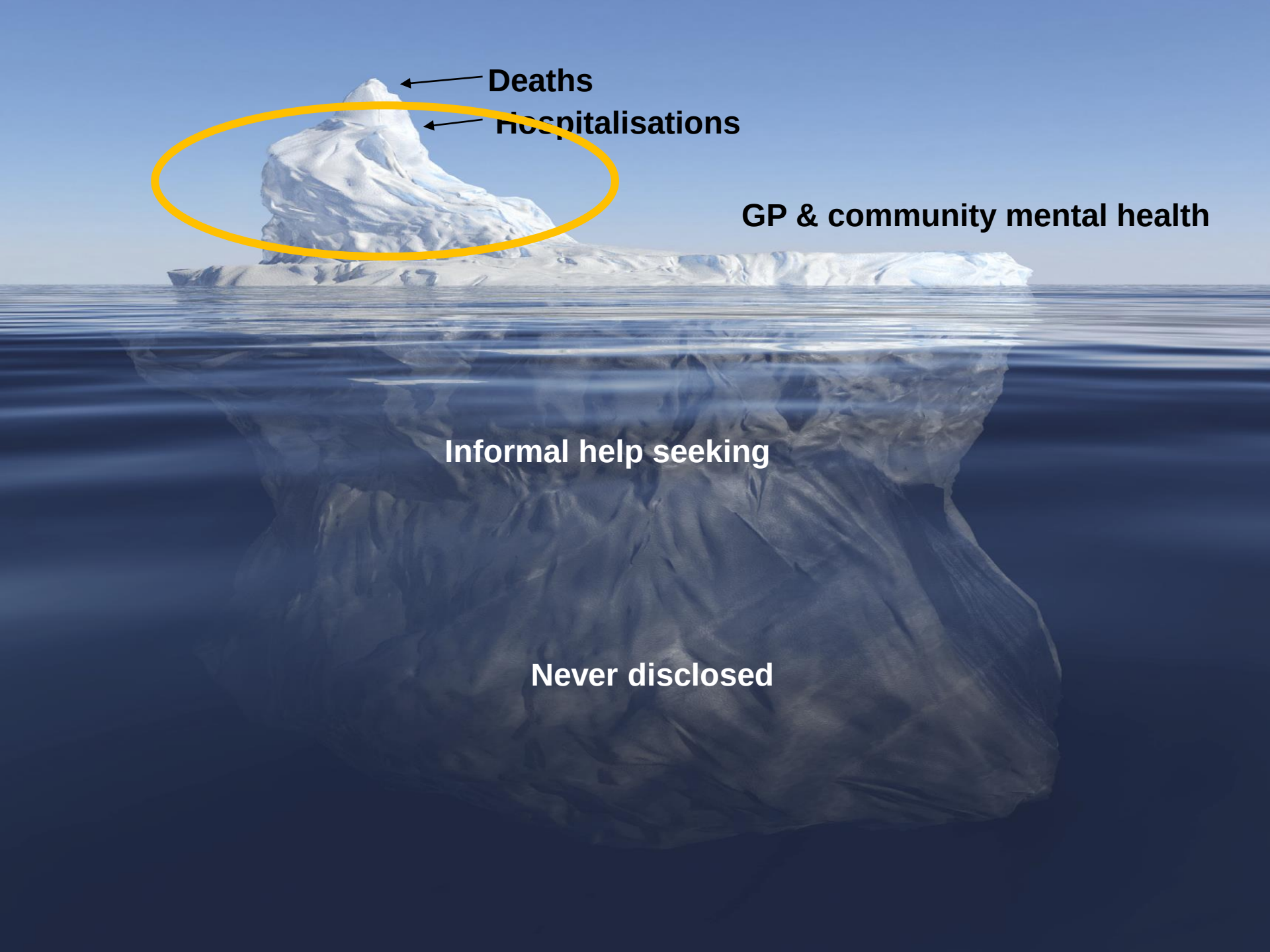
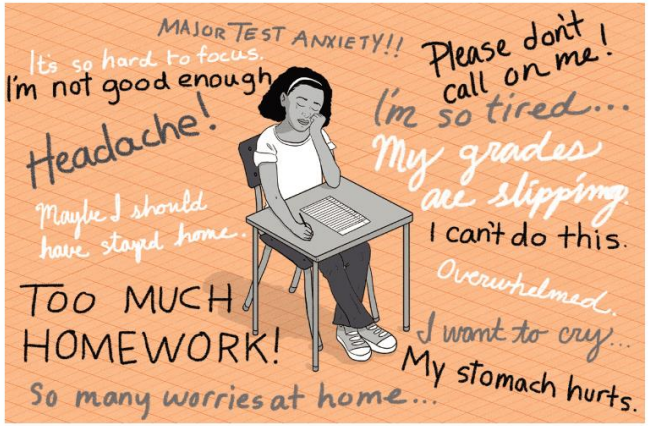

Deaths
Hospitalisations
GP & community mental health
Informal help seeking
Never disclosed

What we looked at

Stress-related hospital admissions

- emergency admission where the **main reason** was a stress-related code (based on literature review & clinical input), or self-harm was recorded



Groupings adapted by Sorcha Ní Chobhthaigh from: **Blackburn *et al.*, Hospital admissions for stress-related presentations among school-aged adolescents during term time versus holidays in England: weekly time series and retrospective cross-sectional analysis. *BJPsych Open* 2021.**

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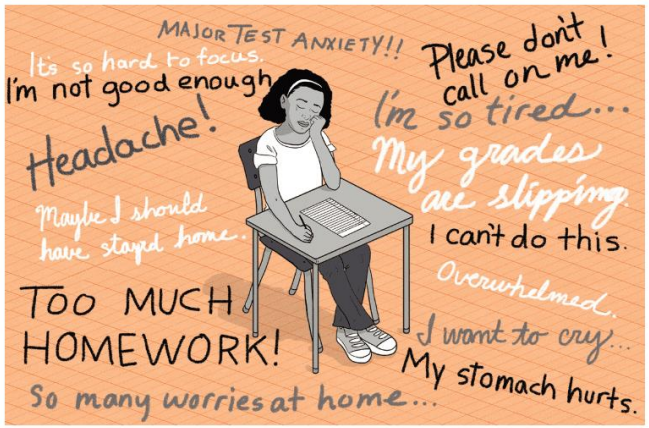

Medical & surgical exclusions

Somatic & pain-related symptoms

E.g. unexplained; abdominal pain, headache, breathlessness, fainting or fatigue

Self-harm behaviours

E.g. self-cutting, self-poisoning

Internalising

E.g. anxiety, depression, eating disorders

Externalising

E.g. disruptive behaviour, substance misuse

Thought disorders

E.g. symptoms of psychosis, schizophrenia

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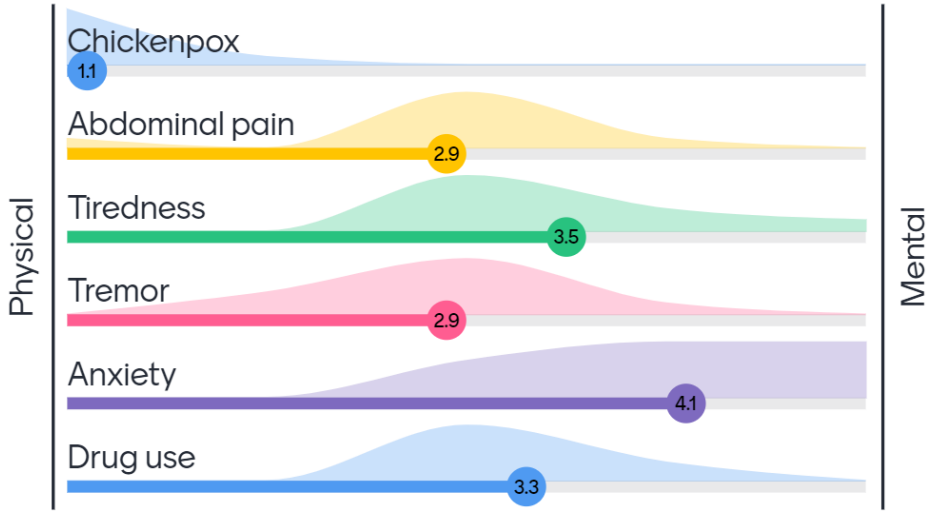
Menti Results

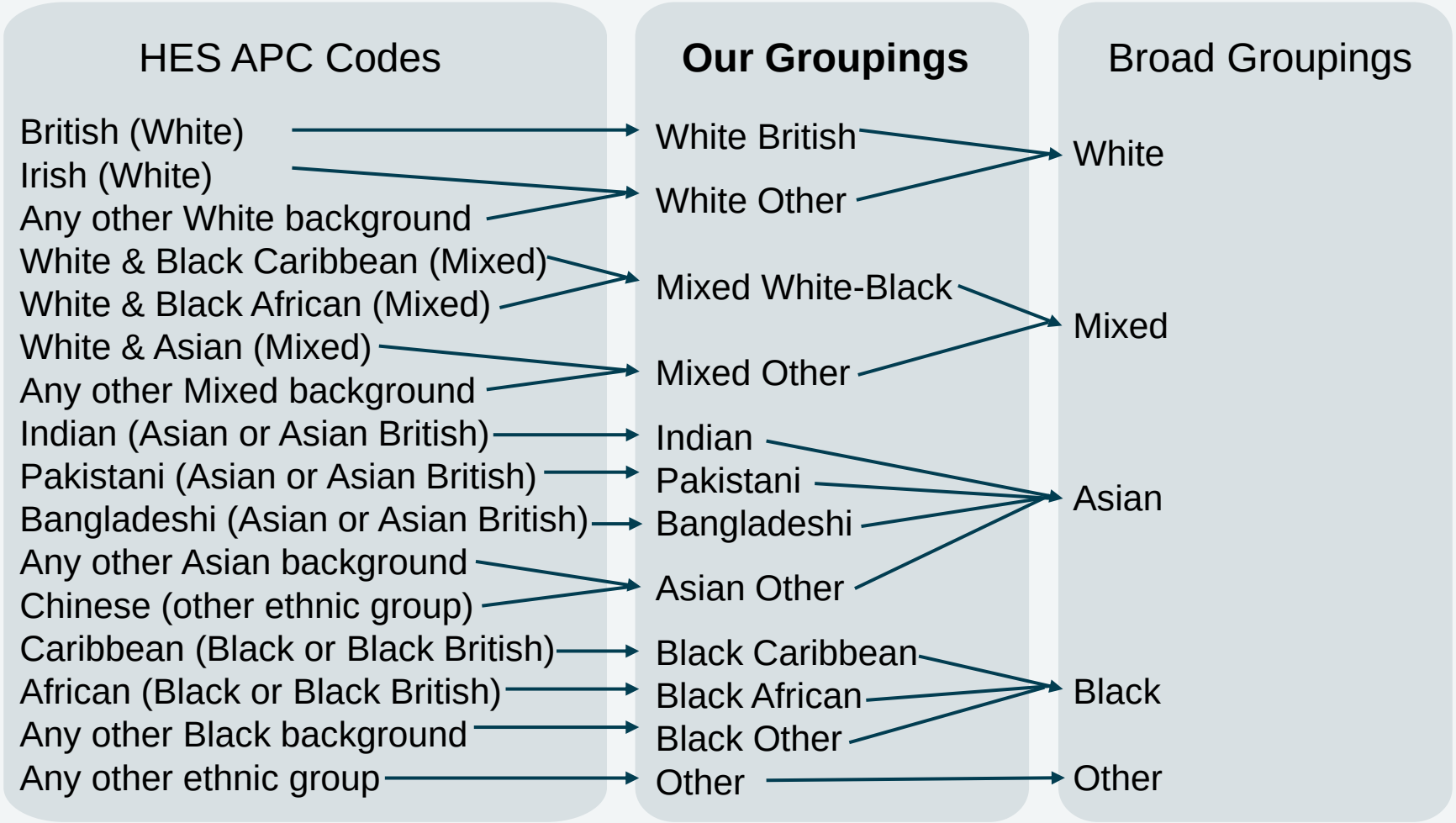
Do these conditions have a physical or mental health basis?



Inequalities

- ‘Ethnicity’
  - Proxy (imperfect substitute) for lived experience of individuals from minoritized ethnic groups living in a White-British majority country
    - ‘Ethnicity’ is not a risk factor, but differential treatment based on race/ethnicity is
  - The variable ‘ethnicity’ in UK administrative data includes both ‘race-based’ ("White”) and ‘ethnicity-based’ (“Pakistani”) identifiers.
    - The socially constructed classification ‘race’ relies on someone’s actual or perceived physical appearance and ancestry
    - The social construct ‘ethnicity’ is based on characteristics such as language, traditions, values, belief systems, cultural factors, ancestral origin, religion, and geographic territory.

‘Ethnicity’ categories



What we found

School timing (term vs holiday) & characteristics

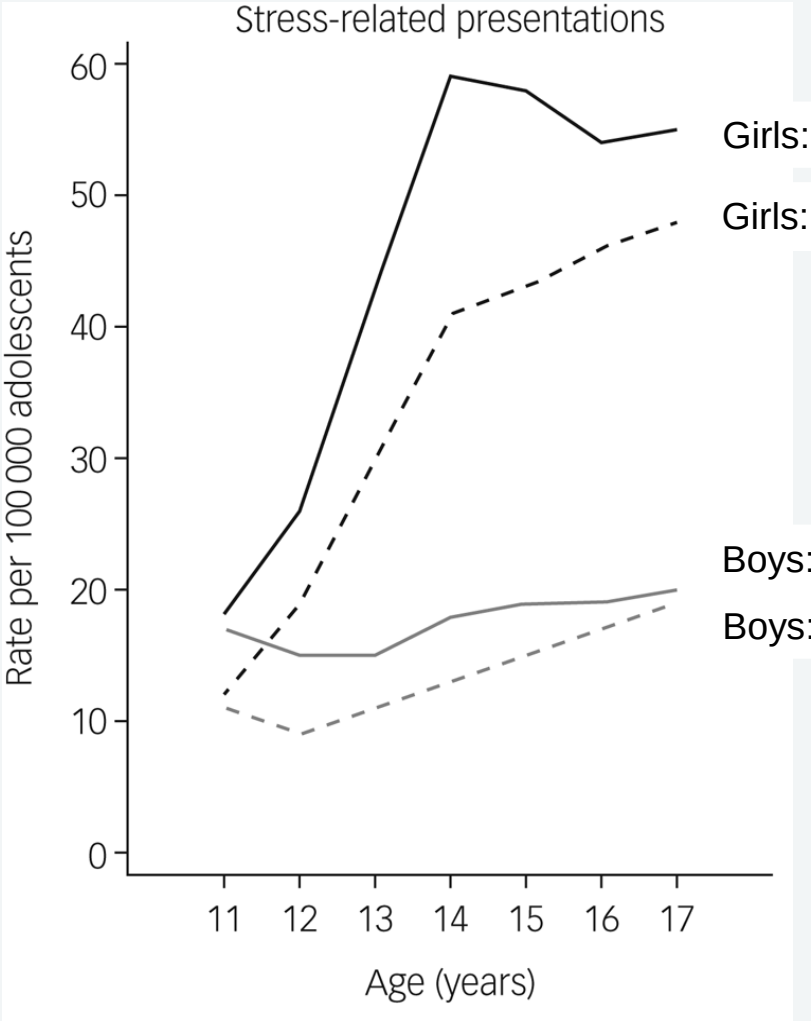
In this study we asked : ***do schools influence mental health?***

Q1. Are rates of stress-related hospital admissions in secondary school aged CYP higher in **term times than holiday times**?

Q2. **Who (schools & pupils) is at greatest risk** of stress-related admissions?

Burden & timing of stress-related presentations

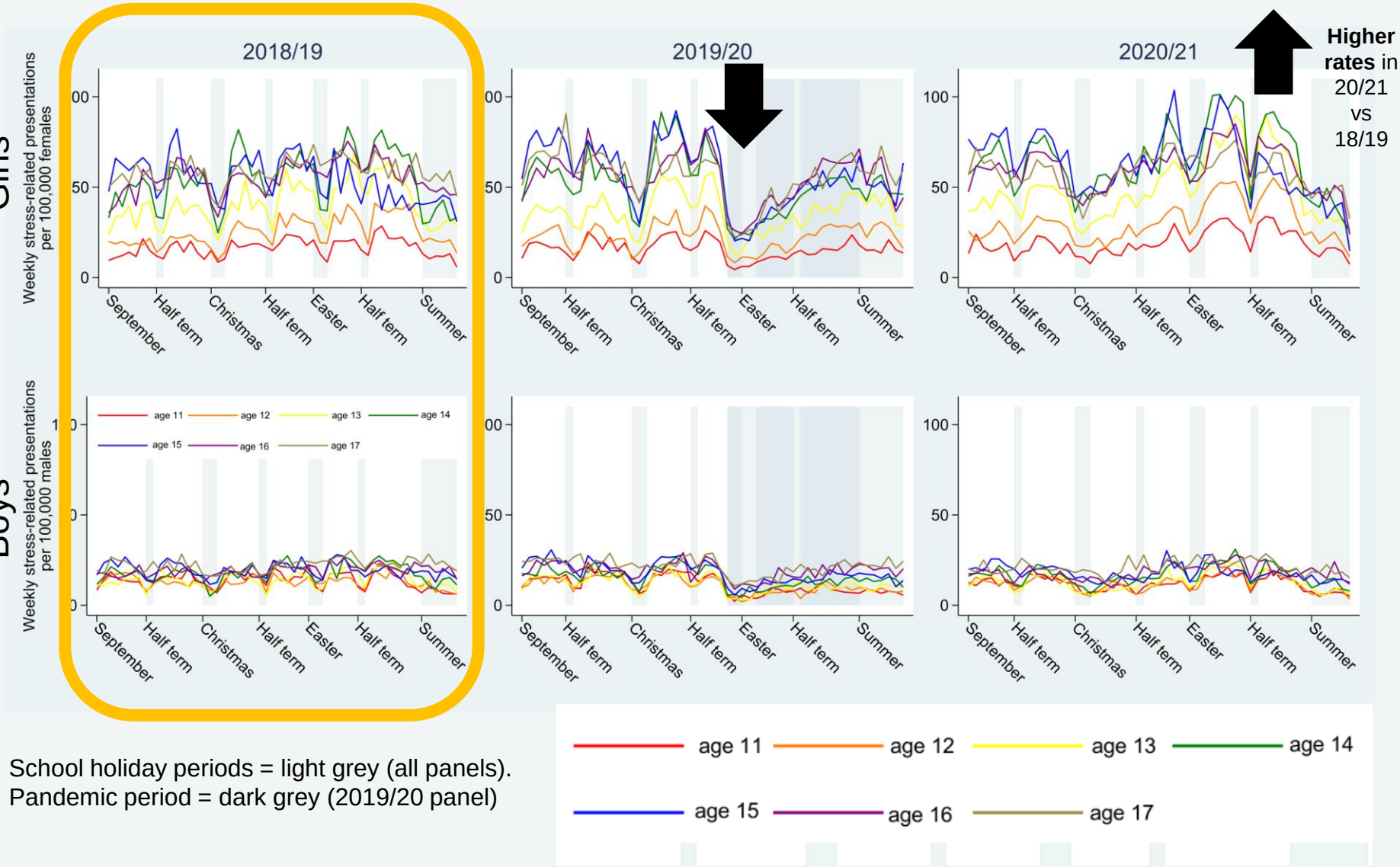
- stress presentations accounted for **<u>31%</u> of all emergency hospital admissions** (aged 11-17y)
- **<u>8%</u> girls** & **<u>4%</u> boys** were admitted with a stress presentation aged 11-17y
- Higher term time rates may be due to school stress &/or schools influencing healthcare contact



Blackburn *et al.*, Hospital admissions for stress-related presentations among school-aged adolescents during term time versus holidays in England: weekly time series and retrospective cross-sectional analysis. *BJPsych Open* 2021.

Impact of lockdown & school closures on stress presentations

Weekly rates of hospital admissions with stress-related presentations

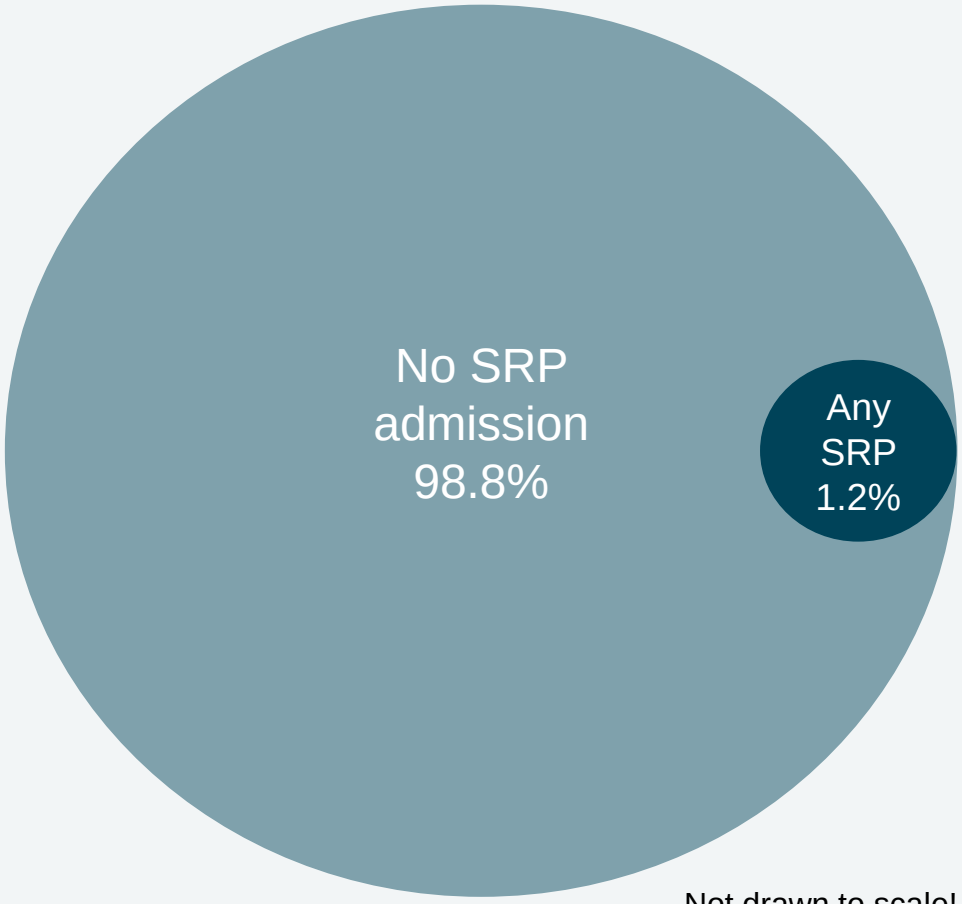


School holiday periods = light grey (all panels).
Pandemic period = dark grey (2019/20 panel)

Blackburn, R. et al. (2022). COVID-19-related school closures and patterns of hospital admissions with stress-related presentations in secondary school-aged adolescents: Weekly time series. *BJPsych, 221*(5), 655-657. doi:10.1192/bjp.2022.113

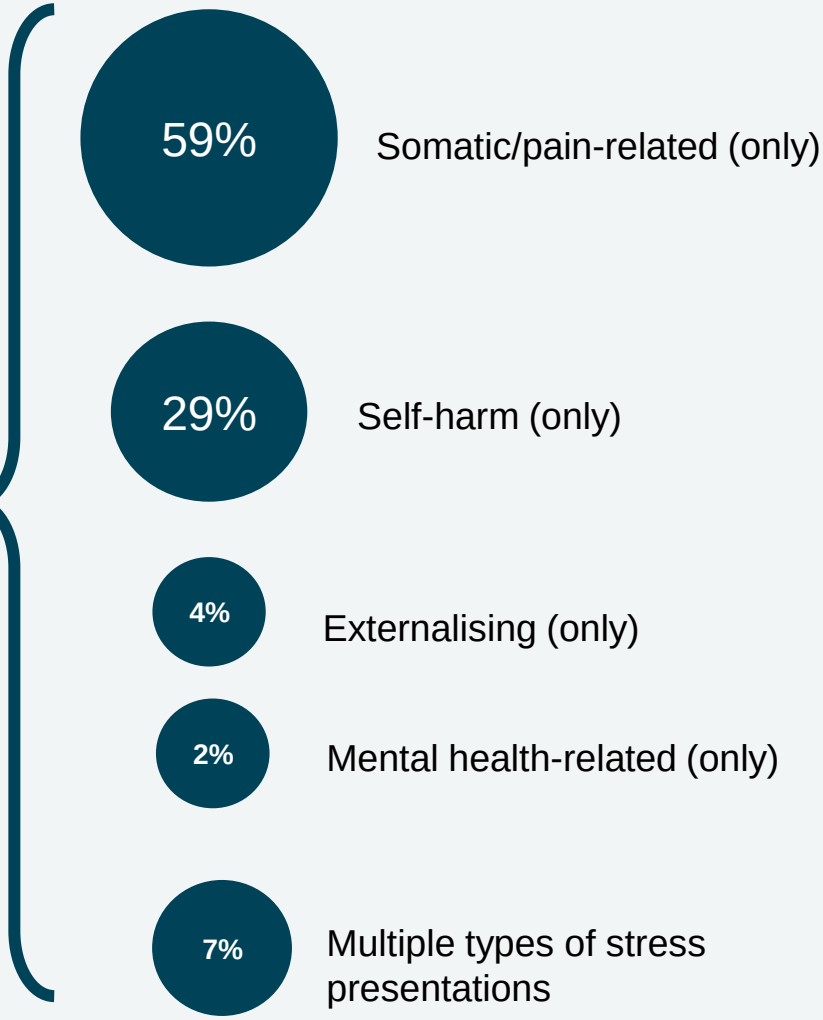
Pupils with stress-related presentations in 2018/19

In a single academic year:



Not drawn to scale!

Of the 35,542 pupils (1.2%) with SRPs



N pupils = 2,905,505
Years 7-11 (aged 11-16y)

Who is affected? – Schools & pupils

Schools & pupils in 2018/19 N = 2,907,075			Stress presentations in 2018/19 N = 39,605	
School Year	Number of schools	Mean pupils per school / year	% pupils affected	% schools affected
7	3,474	184	0.9%	73%
8	3,470	179	1.1%	77%
9	3,457	177	1.4%	84%
10	3,557	168	1.8%	88%
11	3,528	160	1.7%	86%
7-11	3,893	747	1.3%	96%

In a single academic year:

- On average 11 (1.3%) pupils per school were admitted with a stress-related presentation

Who is affected? – Schools & pupils

Schools & pupils in 2018/19 N = 2,907,075			Stress presentations in 2018/19 N = 39,605		Stress presentations before 2018/19 N = 82,666	
School Year	Number of schools	Mean pupils per school / year	% pupils affected	% schools affected	% pupils affected	% schools affected
7	3,474	184	0.9%	73%	1.0%	78%
8	3,470	179	1.1%	77%	1.9%	91%
9	3,457	177	1.4%	84%	2.7%	95%
10	3,557	168	1.8%	88%	3.9%	98%
11	3,528	160	1.7%	86%	5.0%	99%
7-11	3,893	747	1.3%	96%	2.8%	99%

In a single academic year:

- On average 11 (1.3%) pupils per school were admitted with a stress-related presentation
- 22 (2.8%) pupils per school had a personal history of being admitted with a stress-related presentation
- Almost all schools included at least one pupil with a stress-related presentation

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intraclass correlation (ICC) of 1.7%*

In a single academic year:

- On average 11 (1.3%) pupils per school were admitted with a stress-related presentation
- 22 (2.8%) pupils per school had a personal history of being admitted with a stress-related presentation
- Almost all schools included at least one pupil with a stress-related presentation
- School effects accounted for a relatively small part of the variation in stress-related presentations – most explained by differences in pupil characteristics…

Who is affected? – Schools & pupils

Characteristics in multi-level model (pupils nested in schools)		Association with odds of SRP admission
School	Type (Academy, Free, Independent, LA, Special)	LA ↑, Special ↓
	Religious	--
	Higher % female	↓
	Higher % SEND pupils	↑
	Larger school size	--
	Larger year size	--
	Higher % absence	↑
	Higher % excluded	--
	Urban setting	--
	School region	Some regional variation
Pupil	Ever excluded	↑
	Persistent absence (>10%) in prior year	↑
	SEND provision	↑
	Ever free school meals	↑
	Older school year (7-11)	↑
	Ethnic group	Ethnic minorities ↓
	Deprivation (quintile)	--
	Ever contact with Children's Social Care	↑
	Chronic health condition	↑
	Personal history of a SRP admission	↑

Actionable for schools

Key points: pupil characteristics more strongly associated with stress-related presentations than school characteristics, but some are actionable for schools

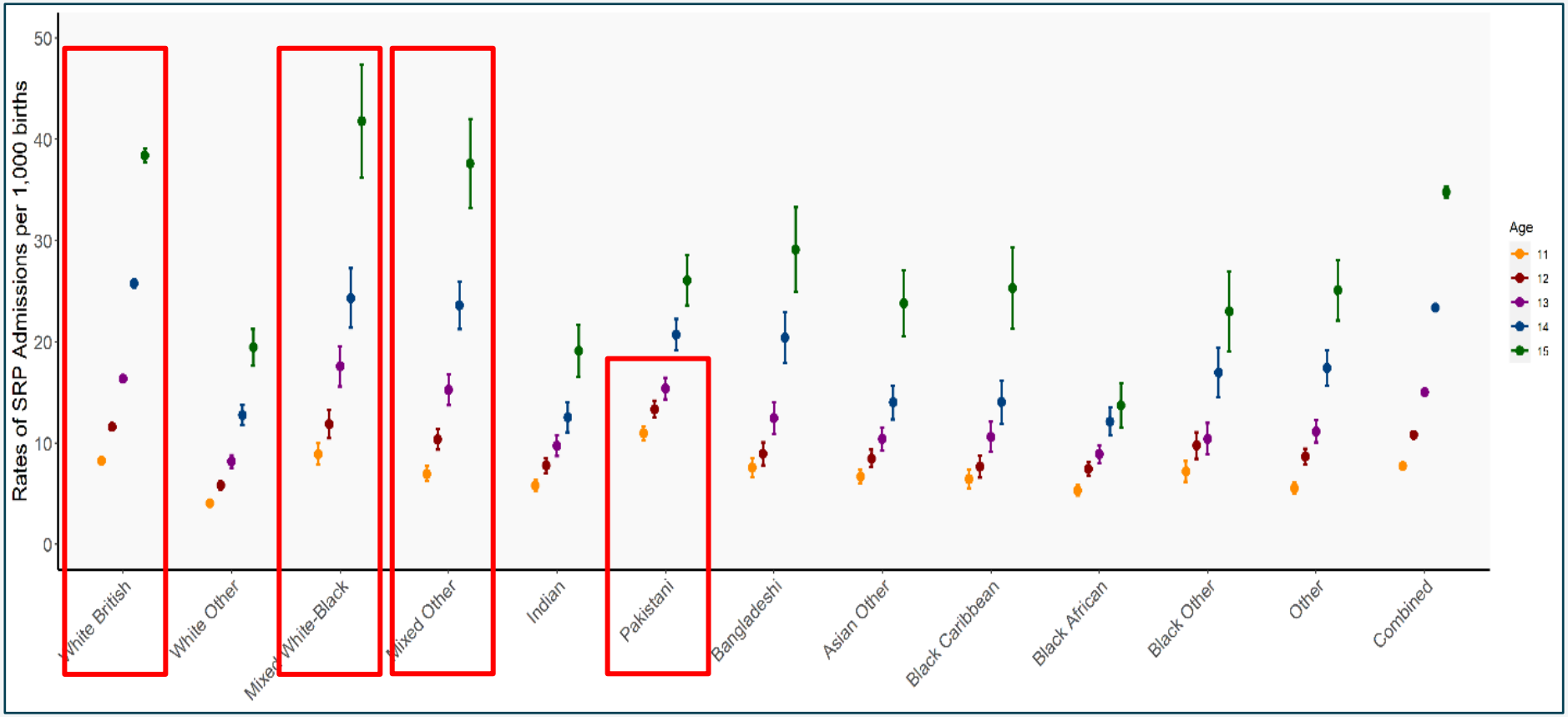
Blue highlighted cells indicate characteristics with the greatest magnitude of association with SRP admissions

Focus: Inequalities

- Addressing the gap in research on stress experienced by and healthcare use among minoritised young people in the UK, we aimed to explore whether there are systematic differences based on race and ethnicity in hospital admissions for stress-related presentations (SRPs)
  - Rates of SRP admissions
  - Distribution of repeat admissions
  - Duration of admissions
  - Types of SRPs

Rates of SRP Admissions by Age

N = 96,484



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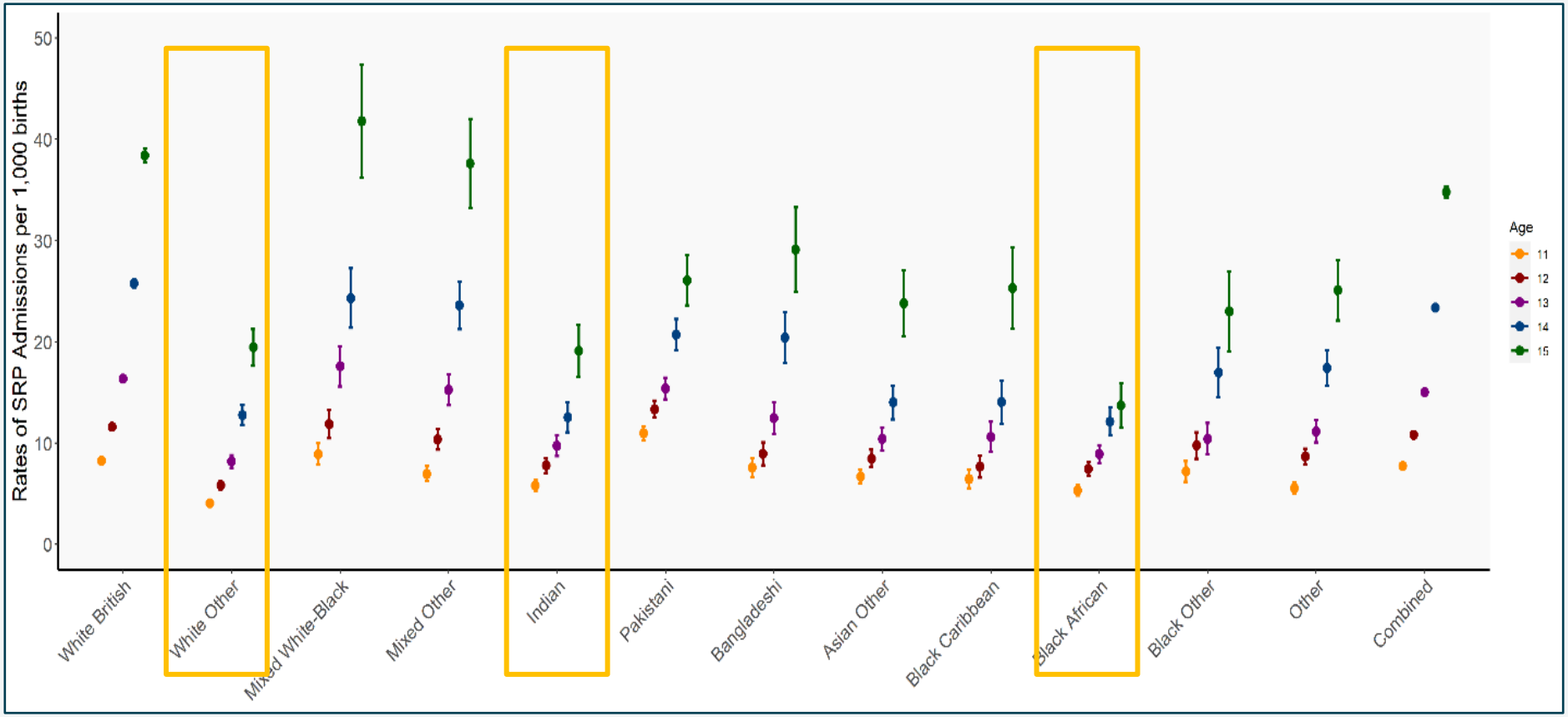
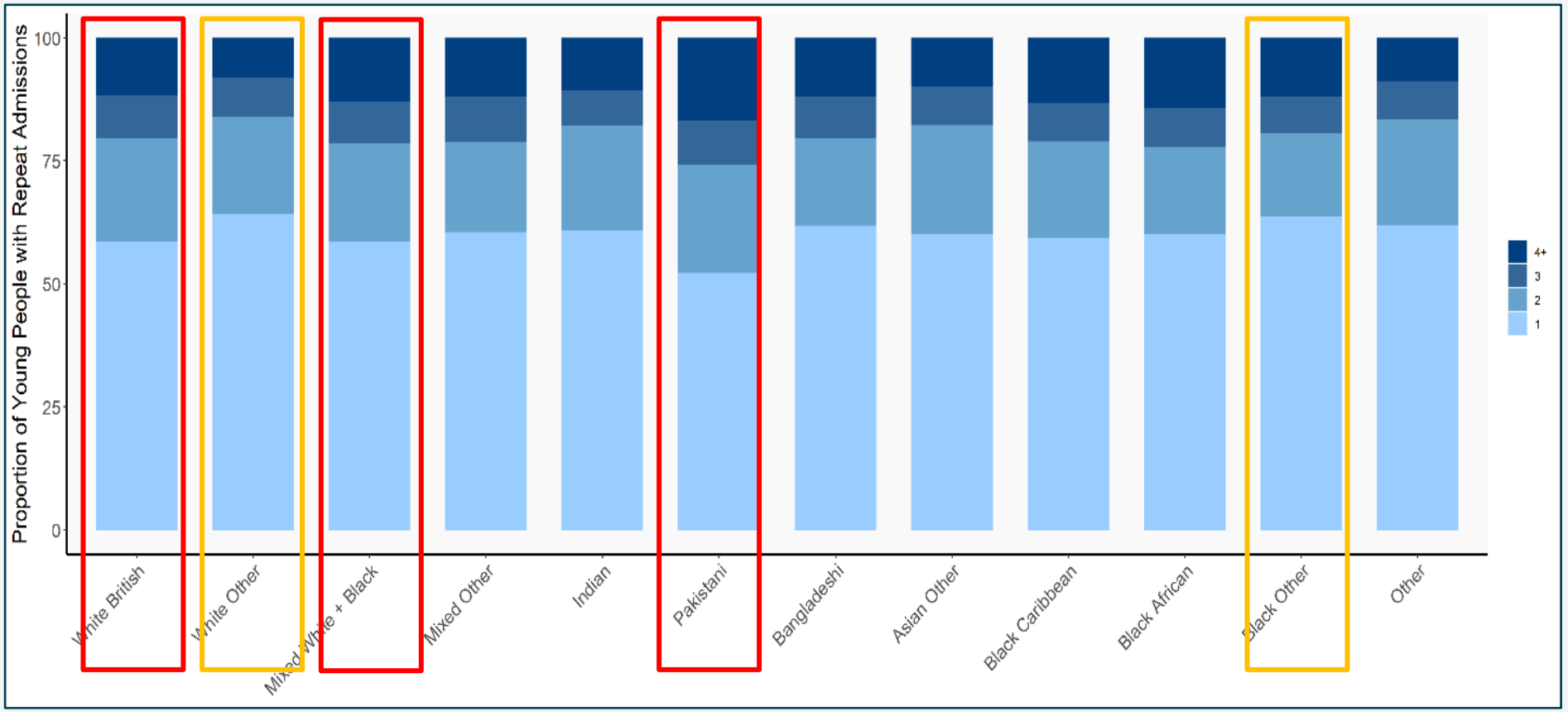


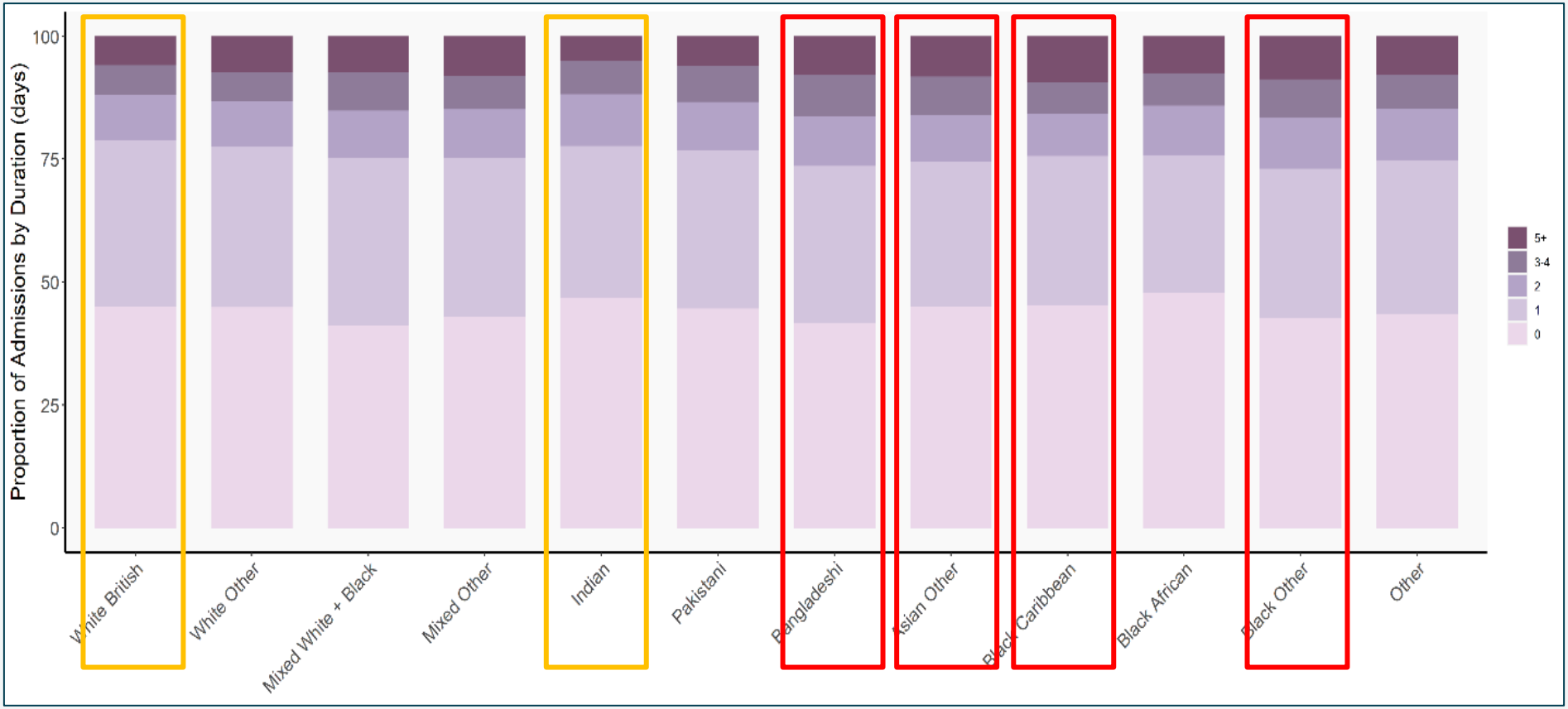
Trends in Repeat Admissions

N = 70,843

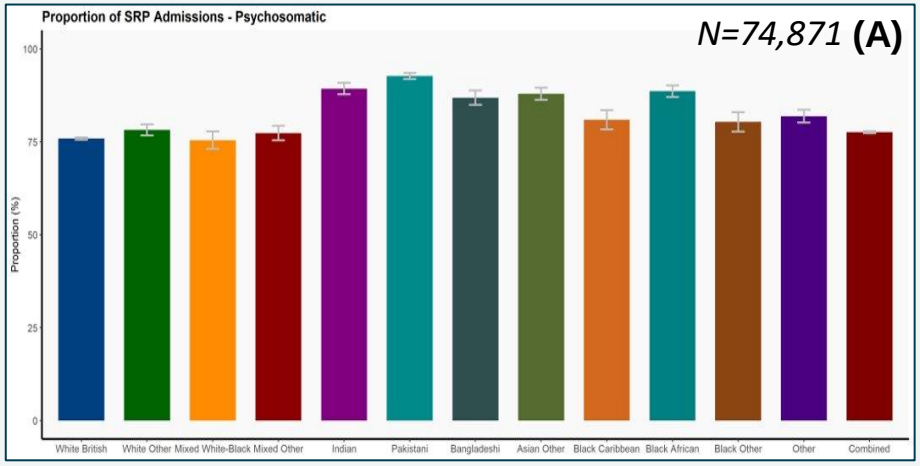


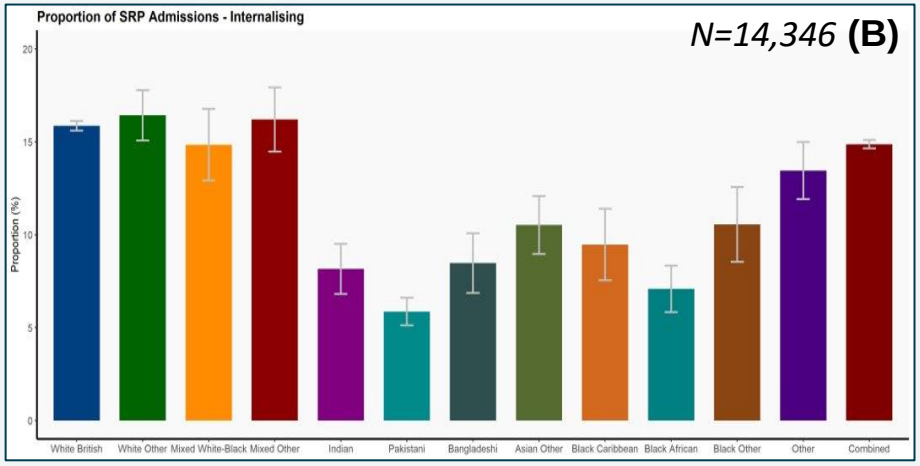
Trends in Duration of Admissions

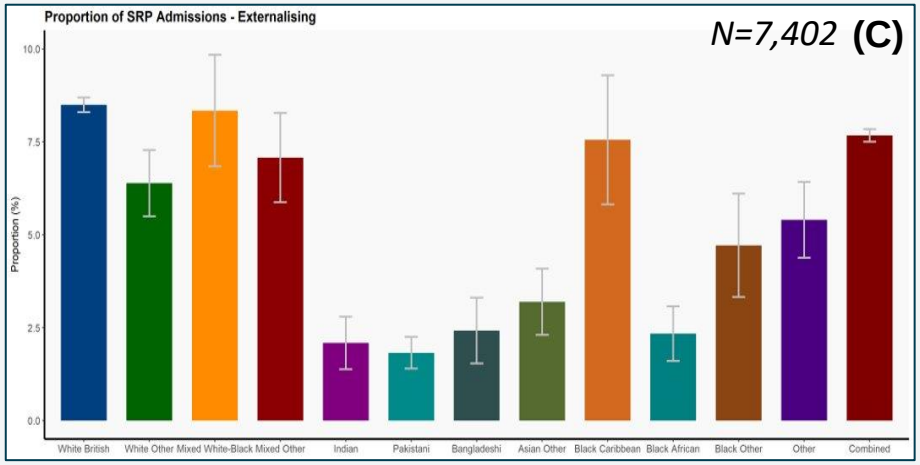
N = 96,484

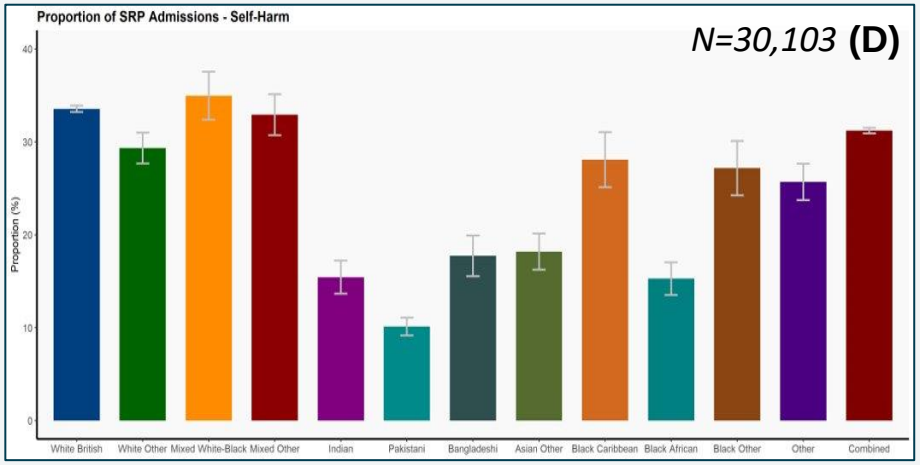


Trends in Types of SRPs Recorded









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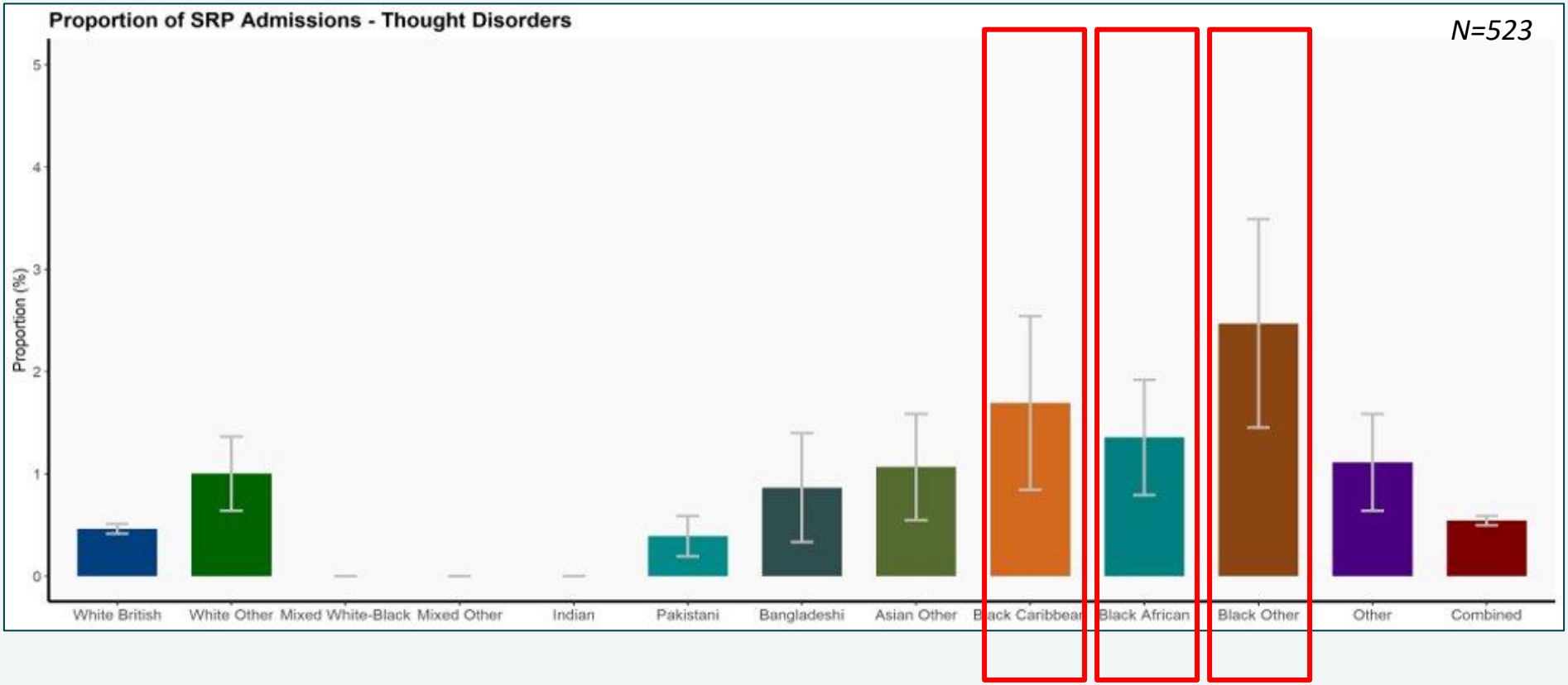
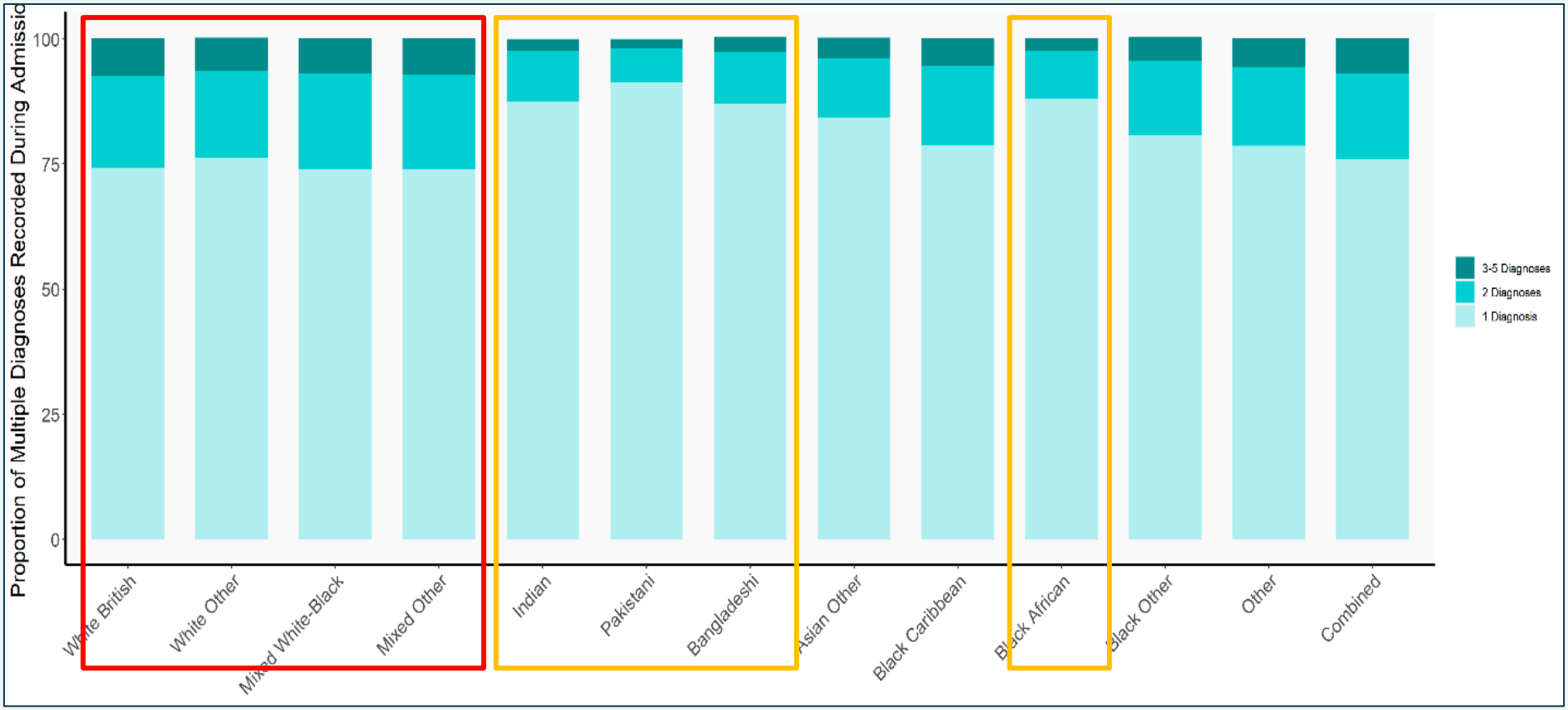
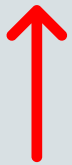
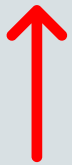
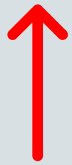
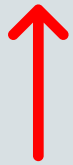
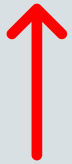


Number of Recorded Diagnoses during Admissions

N = 96,484



Overarching trends

	Somatic	Internalising	Externalising	Self-Harm	>1 Diagnoses
White British, White Other, Mixed White-Black, Mixed Other					
Indian, Pakistani, Bangladeshi, Asian Other, Black African					
Black Caribbean					
Black Other Other					

Summary of main findings

Do schools influence adolescent mental health?

- Evidence of term time peaks in stress presentations
- Almost all schools affected:

In an average school:
- 11 admitted with SRPs
- 22 have a history of admissions

- Limited evidence of school effects on stress presentations
- But school responses (supportive or punitive) to pupil absence & exclusion likely to influence pupil stress
- Complex relationships between pupil characteristics, school policies, school attendance & pupil stress/distress – mixed methods & longitudinal approaches needed

Key take-aways: Inequalities

- Our findings indicate inequalities in **rates** and **differential experiences** of emergency admissions to hospital for stress-related presentations based on race and ethnicity

- Differential pathways and potential bias in triage, assessment and treatment likely contributes to inequalities in admissions
  - Context of differences in exposure to stress-inducing socio-political risk factors, discrimination and cautious help-seeking behaviours as a result of previous health and education system failures

Where do we go from here?

Socio-Political Context

- Accessing Mental Health support
  - Legal & policy context
  - Role of schools in prevention and early intervention

- Advocacy
  - Support families facing structural challenges, including affordable housing, nutritious food and accessible healthcare as well as marginalisation

- Equality
  - Addressing discrimination including class, race, ethnicity, religious, sexuality-based discrimination
  - Implementing anti-racism framework (e.g. NHS England Patient and Carer Race Equality Framework)

Education Act 2011. Children and Families Act 2014. Equality Act 2010. Dept for Education & Dept of Health (2015). Special Education Needs Code of Practice. Dept for Education (2018). Mental health and behaviour in schools. Hassen, et al (2021). Implementing anti-racism interventions in healthcare settings: a scoping review. *International journal of environmental research and public health*, *18*(6), 2993. NHS England (2023). Patient and carer race equality framework. National Education Union (2022). Anti-racism charter: Framework for developing an anti-racist approach. Castillo et al (2019). Community interventions to promote mental health and social equity. *Current psychiatry reports*, *21*, 1-14.

School climate - health promotion targets for schools

In Schools

- Culture & Leadership
  - Increasing student participation & opportunities for empowerment
  - Diversify range of support roles (e.g. peer educators)
  - Adapt trauma-informed principles (Safety, trustworthiness, choice, collaboration, empowerment, cultural consideration)
  - Prioritise physical activity, arts, creative outlets, community engagement

- *Safer* spaces
  - Provide alternative spaces during break times (e.g. quiet, supervised spaces)
  - Establish peer support programs or mentorship initiatives where older students can support younger ones

- Identifying Mental Health difficulties
  - Challenge misconceptions and reframe perspectives (attention-seeking = connection-seeking)

Reed, et al (2021). Co-production as an emerging methodology for developing school-based health interventions with students aged 11–16: systematic review of intervention types, theories and processes and thematic synthesis of stakeholders' experiences. *Prevention Science*, *22*(4), 475-491. Dodd, et al (2022). School-based peer education interventions to improve health: a global systematic review of effectiveness. *BMC public health*, *22*(1), 2247. The National Child Traumatic Stress Network (2017) Creating, Supporting, and Sustaining Trauma-Informed Schools: A System Framework. Pulimeno et al (2020). School as ideal setting to promote health and wellbeing among young people. Health promotion perspectives, 10(4), 316.

In Schools

- Implementing classroom strategies
  - Incorporate mindfulness and relaxation techniques into the daily routine
  - Provide spaces for quiet reflection or relaxation
  - Integrate movement breaks into the school day
  - Increase time spent outside the classroom and in community (e.g. school garden, community partnerships)

- Learning & Assessment
  - Encourage a growth mindset by emphasizing the value of effort and resilience over grades
  - Provide workshops/seminars on time management, organizational skills and learning styles, goal setting
  - Allow for alternative assessment methods & focus on constructive comments that guide improvement

Mettler et al (2023). Mindfulness-based programs and school adjustment: A systematic review and meta-analysis. *Journal of school psychology*, *97*, 43-62. Phan et al (2022). Mindfulness-based school interventions: A systematic review of outcome evidence quality by study design. *Mindfulness*, *13*(7), 1591-1613. Yeager & Dweck (2023). Mindsets and adolescent mental health. *Nature Mental Health*, *1*(2), 79-81. Van Genugten et al (2017). Effective self-regulation change techniques to promote mental wellbeing among adolescents: a meta-analysis. *Health psychology review*, *11*(1), 53-71.

Working with Children & Families

- Be mindful of Structural Barriers
  - Foster a non-blaming environment that avoids blame, judgment or reinforces harmful stereotypes.
  - Acknowledge the strengths and capabilities of family members in navigating challenges, despite ongoing adversity

- Empower Parents & Pupils
  - Conduct workshops for parents on recognizing and responding to different stress-related presentations
  - Provide information and seminars on supports available through school, local authority, mental health and community services
  - Facilitate connections between families to share experiences and strategies for supporting children's well-being
  - Encourage collective advocacy and facilitate co-production efforts in transforming school policy, culture and supports

Bearman et al (2022). Testing the impact of a peer-delivered family support program: a randomized clinical effectiveness trial. *Psychiatric services*, *73*(7), 752-759. Richard et al (2022). Scoping review to evaluate the effects of peer support on the mental health of young adults. *BMJ open*, *12*(8), e061336. Gudka et al (2023). Parent-carer experiences using a peer support network: a qualitative study. *BMC Public Health*, *23*(1), 2007. Castillo et al (2019). Community interventions to promote mental health and social equity. *Current psychiatry reports*, *21*, 1-14. Farooq et al (. 'Understanding our family': Co-producing empowering & non-blaming stories with families in a CAMHS inpatient unit (2023). *The Child & Family Clinical Psychology Review, 8*

Looking ahead…

Research vision:

linked data to support pragmatic evaluations & trials of school-based interventions to help fill evidence gaps & monitor impact

Thank you for listening!

This work was produced using statistical data from the Office for National Statistics (ONS). The use of the ONS statistical data in this work does not imply the endorsement of the ONS in relation to the interpretation or analysis of the statistical data. This work uses research datasets which may not exactly reproduce National Statistics aggregates. This presentation has been cleared for publication by ONS (STATS15011).

The ECHILD Database uses data from the Department for Education (DfE). The DfE does not accept responsibility for any inferences or conclusions derived by the authors. This work uses data provided by patients and collected by the National Health Service as part of their care and support. Source data can also be accessed by researchers by applying to NHS Digital.

We thank all the children, young people, parents and carers who contributed to the ECHILD project. We gratefully acknowledge all children and families whose de-identified data are used in this research.

Questions for you to consider

1. What would be helpful to know? What would you like to know more about?
2. How can we use this data to inform tools and resources?
3. What's one way you could action this new knowledge in your practice ?