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.
Donna’s story

Pathway to acute services

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

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.”

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

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

“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

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

Measures of stress / distress in administrative data sources
Administrative records

Cleaned De-identified Linked

Administrative data

Schools

Hospital Episodes Statistics
The ECHILD Database: in a nutshell

Brings together health and education data for all children & young people in England

The ECHILD Database is DE-IDENTIFIED

Linked data for 14.7 million pupils

Information from birth to age 24

Pathway to acute services

Donna’s story

12 yrs (Year 8) 14 yrs (Year 10) 16 yrs (Year 12)
High achieving “A-student” Persistent abdominal pain GP visits
Increasing school absence A&E attendances Hospital admission
Not attending school Hospital admission

Absence

KS2

Never disclosed
Informal help seeking
Deaths
Hospitalisations
GP & community mental health
Never disclosed
What we looked at
- emergency admission where the **main reason** was a stress-related code (based on literature review & clinical input), or self-harm was recorded

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

**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

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.
Do these conditions have a physical or mental health basis?

- Chickenpox: 1.1
- Abdominal pain: 2.9
- Tiredness: 3.5
- Tremor: 2.9
- Anxiety: 4.1
- Drug use: 3.3
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

HES APC Codes
- British (White)
- Irish (White)
- Any other White background
- White & Black Caribbean (Mixed)
- White & Black African (Mixed)
- White & Asian (Mixed)
- Any other Mixed background
- Indian (Asian or Asian British)
- Pakistani (Asian or Asian British)
- Bangladeshi (Asian or Asian British)
- Any other Asian background
- Chinese (other ethnic group)
- Caribbean (Black or Black British)
- African (Black or Black British)
- Any other Black background
- Any other ethnic group

Our Groupings
- White British
- White Other
- Mixed White-Black
- Mixed Other
- Indian
- Pakistani
- Bangladeshi
- Asian Other
- Black Caribbean
- Black African
- Black Other
- Other

Broad Groupings
- White
- Mixed
- Asian
- Black
- Other
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?
• stress presentations accounted for **31% of all emergency hospital admissions** (aged 11-17y)

• **8% girls & 4% 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

In a single academic year:

- No SRP admission: 98.8%
- Any SRP: 1.2%

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

- Somatic/pain-related (only): 59%
- Self-harm (only): 29%
- Externalising (only): 4%
- Mental health-related (only): 2%
- Multiple types of stress presentations: 7%

N pupils = 2,905,505
Years 7-11 (aged 11-16y)
### Who is affected? – Schools & pupils

<table>
<thead>
<tr>
<th>School Year</th>
<th>Number of schools</th>
<th>Mean pupils per school / year</th>
<th>% pupils affected</th>
<th>% schools affected</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>3,474</td>
<td>184</td>
<td>0.9%</td>
<td>73%</td>
</tr>
<tr>
<td>8</td>
<td>3,470</td>
<td>179</td>
<td>1.1%</td>
<td>77%</td>
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<tr>
<td>9</td>
<td>3,457</td>
<td>177</td>
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<td>7-11</td>
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In a single academic year:

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

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- 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…

Intraclass correlation (ICC) of 1.7%*
### Who is affected? – Schools & pupils

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

**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
Rates of SRP Admissions by Age

$N = 96,484$
Trends in Repeat Admissions

N = 70,843
Trends in Duration of Admissions

$N = 96,484$
Trends in Types of SRPs Recorded

- Proportion of SRP Admissions - Psychosomatic: $N=74,871$ (A)
- Proportion of SRP Admissions - Internalising: $N=14,346$ (B)
- Proportion of SRP Admissions - Externalising: $N=7,402$ (C)
- Proportion of SRP Admissions - Self-Harm: $N=30,103$ (D)
Trends in Types of SRPs Recorded

Proportion of SRP Admissions - Thought Disorders

N=523
Number of Recorded Diagnoses during Admissions

N = 96,484
## Overarching trends

<table>
<thead>
<tr>
<th></th>
<th>Somatic</th>
<th>Internalising</th>
<th>Externalising</th>
<th>Self-Harm</th>
<th>&gt;1 Diagnoses</th>
</tr>
</thead>
<tbody>
<tr>
<td>White British, White Other, Mixed White-Black, Mixed Other</td>
<td>↓</td>
<td>↑</td>
<td>↑</td>
<td>↑</td>
<td>↑</td>
</tr>
<tr>
<td>Indian, Pakistani, Bangladeshi, Asian Other, Black African</td>
<td>↑</td>
<td>↓</td>
<td>↓</td>
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</tr>
<tr>
<td>Black Caribbean</td>
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<tr>
<td>Black Other Other</td>
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</tbody>
</table>
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)

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)

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

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

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?