Development of a school-based intervention for ADHD

Postdoctoral fellowship proposal

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Attention deficit/hyperactivity disorder (ADHD)

- Associated with poor outcomes
- Social, occupational, health, mental health, education
- Estimated £670 million annual cost (2010)

- Medication effective but adherence poor and long term outcomes not comparable to non-ADHD peers
- Parent training
School-based interventions

- Plenty of studies
- Systematic reviews
- Varied design
- Poor quality ratings
Current best evidence

Current best evidence (Daily Report Card) includes:
- Contingency management
- Adapted based on theories of ADHD
- Functional Behavioural Analysis

Additional strategies:
- Multiple strategies and flexibility
- Multi-component
- Short-term

In the classroom (academic) context:
- In classroom (academic)
- Self-regulation (academic)
- One to one delivery (academic)

Adapted based on theories of ADHD.
Fellowship project

Develop a school-based intervention for ADHD

- Use intervention mapping to develop a theory- and evidence-based intervention
- Refine and adapt this prototype intervention in a multiple baseline case-series study
ADHD toolkit

- Online training module (teachers, parents)
- Child activity
- Functional behaviour analysis
- Link observed behaviour to ADHD-related outcome (each outcome has a module)
- Implement Daily Reward Card
- Choose strategies to implement from selected module
- Evaluate change in behaviour
Behaviour
- Fidgets
- Running around
- Can't sit still
- Can't stay in room
- Rocking
- In and out of seat
- Always on the go

Module

Hyperactivity

Conduct
- Aggressive
- Swearing
- Bullied
- Bullying

Social
- Problems with friendships

Academic
- Incomplete work
- Poor marks

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Aims for stage 1

1. Identify and synthesise existing evidence for interventions that have targeted the toolkit outcomes
2. Refine theory and create logic models of change in order to select strategies for inclusion in the toolkit
3. Produce version 1 of the ADHD toolkit
## Intervention mapping

1. **Analysis of the problem (needs assessment)**
2. **Detailed mapping of current behaviour, ideal outcome behaviour and behaviour change needed to get from current to ideal**
3. **Specify behaviour change techniques to use**
4. **Specify practical strategies and design intervention**
5. **Plan for adoption, implementation and sustainability of the intervention**
6. **Generate an evaluation plan**

<table>
<thead>
<tr>
<th>Stakeholder workshops</th>
<th>Logic models, co-created.</th>
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<tbody>
<tr>
<td>Informed by theories</td>
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- **Stakeholder workshops**
- **Draw on existing literature for strategies where possible, co-create new strategies informed by steps 1-3 where needed**
- **Case series study**

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Children with ADHD

ADHD symptoms

Individual needs

Behaviour associated with symptoms in school context e.g. disruptive, not staying in seat, daydreaming

Manifestation in classroom

Poor engagement with teaching and learning activities

Negative teacher and peer interactions

Poor study skills

Inability to organise work and study effectively

Curriculum and knowledge gaps

Lack of progress

Outcomes

Poor academic outcomes

CONTEXT

INTERVENTION

A: Support school-based difficulties

Behaviour modification

Self-regulation

Relationships

Study skills

C: Regular education

Delivered in classroom

Teacher delivers

B: Needs of children with ADHD

Personalisation

Intensity

Improved academic outcomes
Skill building
Aims for stage 2

- Develop a toolkit that is feasible and acceptable to implement in the school setting
- Assess whether the toolkit is perceived as useful by intended users
- Develop methods to evaluate the toolkit

- Assess whether ADHD symptoms show evidence of change in response to the toolkit interventions (is it likely to be effective?)
- Identify suitable outcome measures to assess core symptoms, child and teacher wellbeing
- Develop and test a framework for costing the toolkit, and for assessing cost-effectiveness in a future definitive trial
Child with ADHD
Receives toolkit

Head teacher or senior leadership team

Consent to school participation
Nominate mental health lead

Mental health lead
(e.g. Special educational needs co-ordinator (SENCo), educational psychologist)

Identifies teachers working with children with ADHD
Co-ordinates toolkit use with teachers, reviews delivery

Teacher
Delivers toolkit

Teacher

TA

Teacher

Teaching assistant (TA)
Delivers toolkit

Child with ADHD
Receives toolkit

Child with ADHD

Child with ADHD

Child with ADHD

Child with ADHD

Child with ADHD
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**Key**

- Baseline
- Intervention
- Follow-up
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<th>Time period (school terms)</th>
<th>2020-2021</th>
<th>Baseline (begins Spring 2022)</th>
<th>Term prior to intervention</th>
<th>Intervention term</th>
<th>Follow-up term</th>
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Notes: Baseline may be multiple terms so term shown would be repeated until the term prior to intervention start. Each school term will vary in length so these are approximate data collection points. Preparatory stages include the online training module, child strengths activity, functional behaviour analysis to identify two core behaviours that will be the target of the toolkit, and operationalise Daily Report Card goals.
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<th>School</th>
<th>Teacher/Teaching Assistant interviews</th>
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References


School context

Child with untreated ADHD

Peers

Staff

Family

Peer relationship problems

Low socioeconomic status

Poor GCSE results

Crime

Poor mental health

STDs and pregnancy

Accidents

Teacher mental health problems

Disruptive behaviour

Substance use

Teacher burn-out and stress

Time

INATTENTION

HYPERTACTIVITY

IMPULSIVITY

Co-occurring disorders

Time