



University
of Glasgow

Development and evaluation of a mindfulness-based intervention for incarcerated young men in Scotland

Professor Stewart Mercer
Dr Sharon Simpson

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Project background

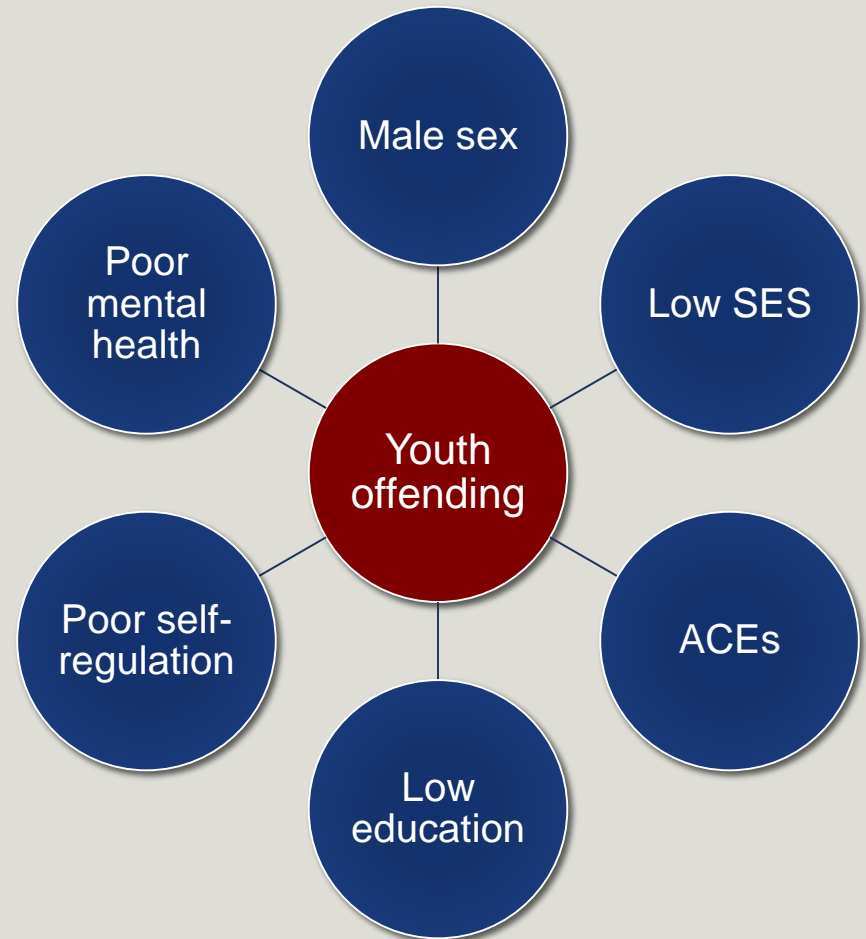
- Two years of research funded by the Scottish Government Justice Department
 - To develop and evaluate a bespoke mindfulness course tailored for incarcerated young men
 - Based at HMYOI Polmont in Scotland – National Holding Facility
 - Houses ~ 700 inmates aged 16-21
 - Largest in UK
- Multi-disciplinary research team included
 - Professor Stewart Mercer (Primary Care)
 - Professor Sally Wyke (Sociology)
 - Dr Alastair Wilson (Psychiatry)
 - Myself (Psychology)

Overview

- Introduction to youth offending
- Introduction to mindfulness
- Research objectives
- Methods
- Results
 1. Course development
 2. Recruitment, retention and attendance on the course
 3. Feasibility of data collection and potential effectiveness
 4. Participants experiences
- Summary

Youth Offending

- Global public health concern
- Multifactorial aetiology
- Characteristic risk profile
 - Male gender
 - Socio-economic deprivation
 - Adverse childhood experiences (ACEs)
 - Educational underachievement
 - Poor self-regulation skills
 - Complex mental health problems



‘What works to reduce re-offending?’

- Punitive approaches don't...
- Rehabilitative approaches do...
 - Cognitive behavioural therapy (social learning theory)
 - Risk-Need-Responsivity
 - No interventions can work in isolation



What is mindfulness?

Ancient tradition (2,500 years old) with roots in Buddhism

Translation of two Pali words;

Sati – Awareness

Samprajanya – Clear comprehension

Modern definition

“paying attention in a particular way: on purpose, in the present moment, and nonjudgementally” (Kabat-Zinn, 1994)

“An approach for increasing awareness and responding skillfully to mental processes that contribute to emotional distress and maladaptive behaviours” (Bishop, 2004)

Mindfulness-Based Stress Reduction

- **Group Programme** (n = 12 - 30)
- **Format** 8-weeks, for 2 ½ hours per week, day retreat week 6
- **Content**
 - Meditation techniques: body scan, sitting practice and mindful movement
 - Psycho-education on habitual reactive stress patterns
 - Compassion practice
- **Home-practice** 30-40 minutes per day
- **Reflection** Participants can:
 - Share experiences
 - Learn from others
 - Connect with others
 - Witness the 'sameness' of human problems

Mindfulness-Based Cognitive Therapy

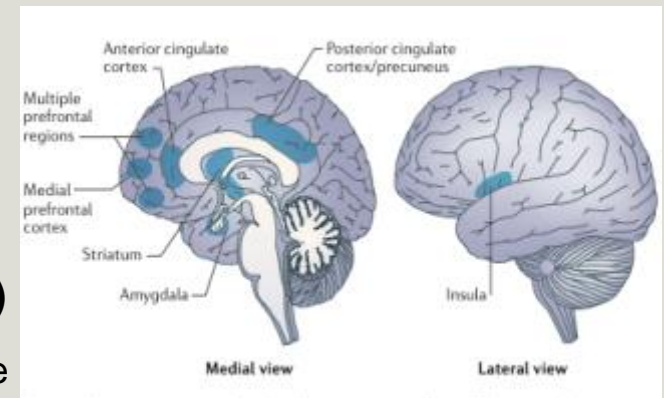
- Similar format to MBSR
- Greater emphasis on cognitive elements
- Orientated towards recurrent depression
 - Negativity bias
 - Rumination on recurrent negative thoughts
- In the UK, recommended by the NICE guidelines (3 or more episodes of depression)
 - Most effective in patients with early adverse childhood experiences

How does mindfulness work?

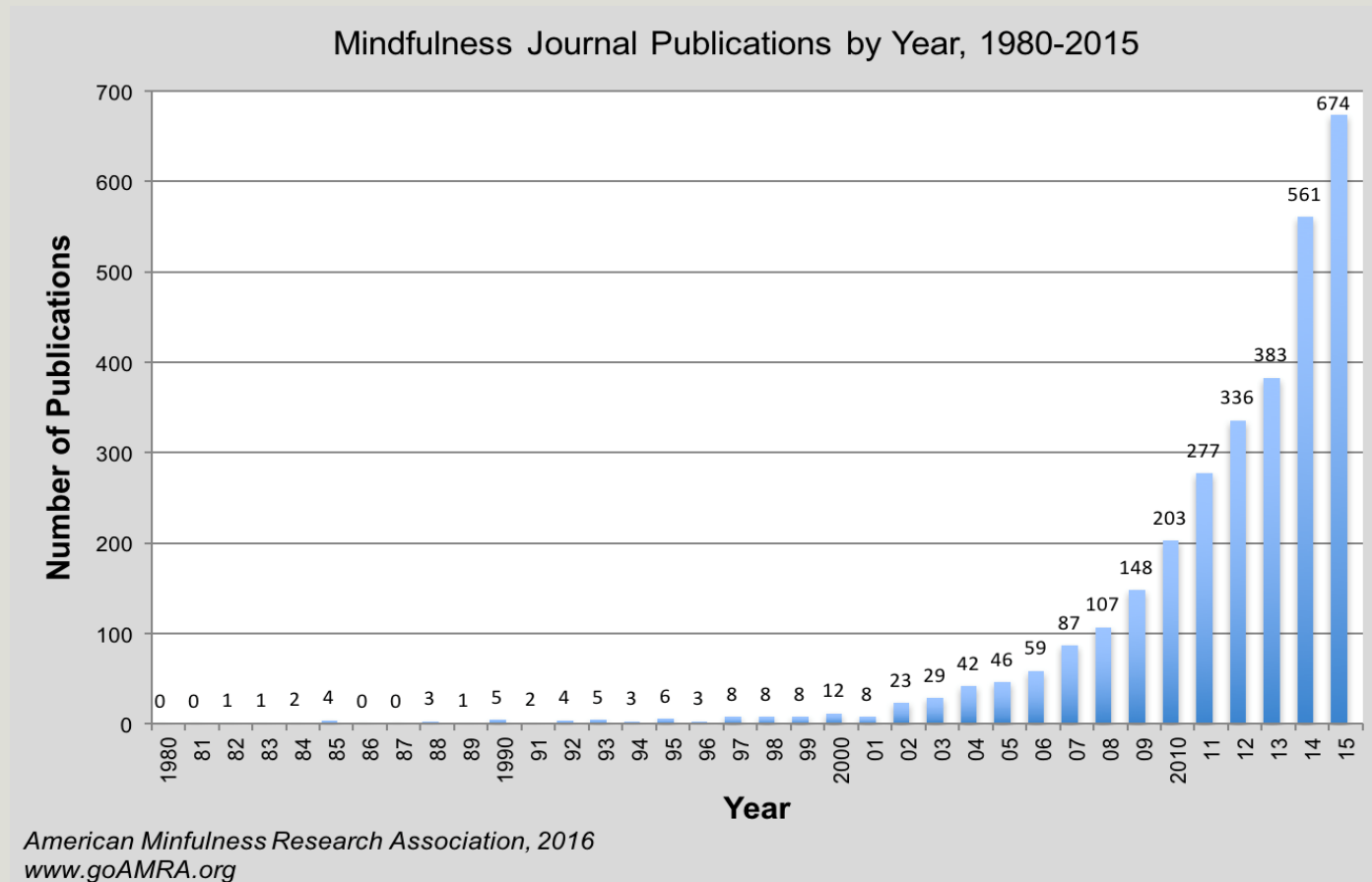
Buddhist, psychological and neuroscientific models

Holzel et al. (2011)

1. **Attention regulation (anterior cingulate cortex & pre-frontal cortex)**
 - Ability to sustain and switch attention
2. **Body Awareness (insular cortex)**
 - Awareness of visceral and somatic sensations
3. **Emotion regulation (Fronto-limbic network)**
 - Ability to reappraise, tolerate, extinguish, or reconsolidate emotional experiences
4. **Change in perspective (default mode network)**
 - Detachment from a 'static' sense of self



Research into mindfulness



Levels of evidence

Multiple systematic reviews and meta-analyses have reported that mindfulness is an effective treatment for:

- Anxiety (Grossman et al., 2004; Hofmann et al., 2010)
- Stress (Chiesa & Serretti, 2009)
- Depression (Teasdale et al., 2002; Kuyken et al., 2008)

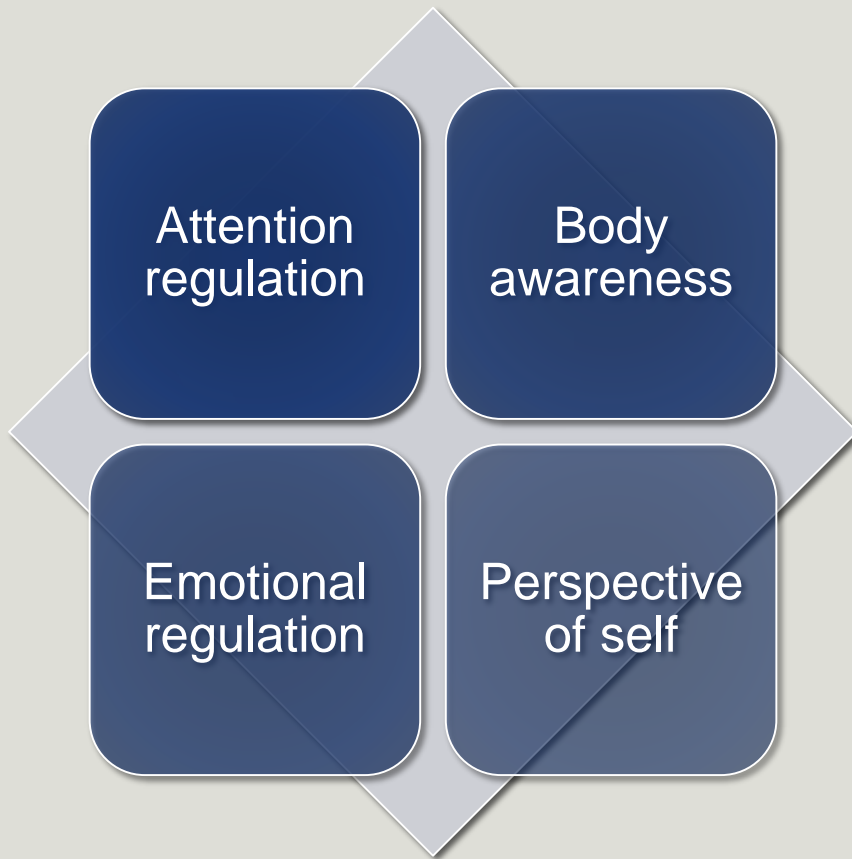
RCT evidence suggests potential effective for people with:

- History of trauma (Kuyken et al., 2015)
- Addictive behaviours and substance misuse (Witkiewitz et al, 2005;2013)

Limitations:

- Methodological quality of most studies relatively low
- Most studies centred on feasibility work (not many longitudinal studies)
- Small sample sizes
- Limited number of randomised trials/ lack of control group or active comparator group

Why mindfulness?



- Common problems for incarcerated young men
 - Difficulties with attention regulation
 - Difficulties with emotion regulation
 - Poor self-image
 - Poor mental health

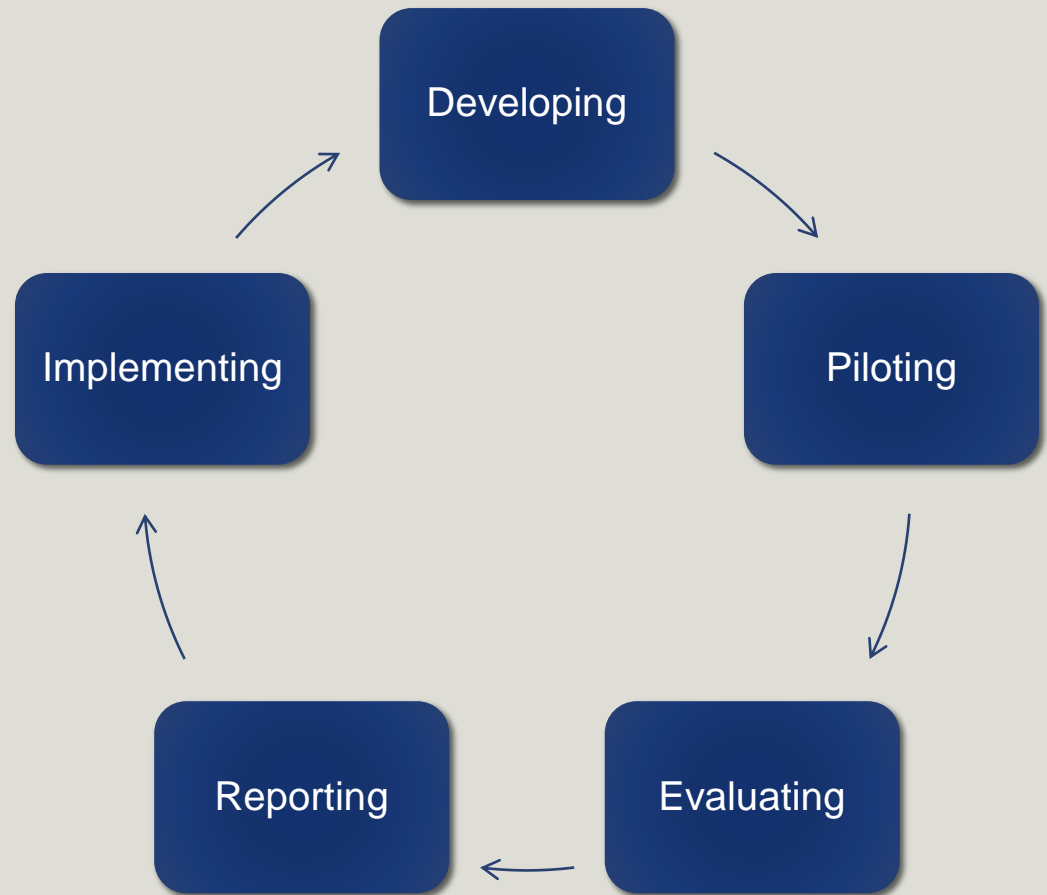
Research study objectives

1. Develop a bespoke mindfulness based course
2. Determine feasibility of recruitment and retention
3. Investigate feasibility of data collection (baseline, post, follow-up) and assess potential effectiveness
 - a. Impulsivity – BIS-11, TCS
 - b. Mental health – GHQ-12
 - c. Inner resilience – SOC-13
 - d. Emotional regulation – DERS
 - e. Mindfulness – MAAS, CAMM
4. Explore the young mens' experiences of the course

Methods

MRC guidance for developing and evaluating complex interventions (2008)

- Mindfulness – multiple active components
 - Body scan
 - Breath awareness
 - Mindful-movement
 - Psycho-education



MRC suggests multiple methods

- Mixed-methods pre-post study design
 1. Scoping review
 2. Exploratory pre- post- study, with 7 consecutive courses
 - a. Feasibility of quantitative data collection
 - b. Suitability of measures (readability etc)
 - c. Assessment of potential effectiveness (unpowered) on key participant report outcomes
 3. Up to 1hr long semi-structured qualitative interviews with young men (n=20), prison staff (n=4), MBSR teacher (n=1)
 - a. Rapid appraisal (RA) techniques between courses
 - b. In depth thematic analysis for experience overall

Results 1: Developing the course

Mindfulness-Based Interventions for Young Offenders: a Scoping Review

Sharon Simpson¹ • Stewart Mercer¹ • Robert Simpson¹ • Maggie Lawrence² • Sally Wyke³

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Abstract

Youth offending is a problem worldwide. Young people in the criminal justice system have frequently experienced adverse childhood circumstances, mental health problems, difficulties regulating emotions and poor quality of life. Mindfulness-based interventions can help people manage problems resulting from these experiences, but their usefulness for youth offending populations is not clear. This review evaluated existing evidence for mindfulness-based interventions among such populations. To be included, each study used an intervention with at least one of the three core components of mindfulness-based stress reduction (breath awareness, body awareness, mindful movement) that was delivered to young people in prison or community rehabilitation programs. No restrictions were placed on methods used. Thirteen studies were included: three randomized controlled trials, one controlled trial, three pre-post study designs, three mixed-methods approaches and three qualitative studies. Pooled numbers ($n = 842$) comprised 99% males aged between 14 and 23. Interventions varied so it was not possible to identify an optimal approach in terms of content, dose or intensity. Studies found some improvement in various measures of mental health, self-regulation, problematic behaviour, substance use, quality of life and criminal propensity. In those studies measuring mindfulness, changes did not reach statistical significance. Qualitative studies reported participants feeling less stressed, better able to concentrate, manage emotions and behaviour, improved social skills and that the interventions were acceptable. Generally low study quality limits the generalizability of these findings. Greater clarity on intervention components and robust mixed-methods evaluation would improve clarity of reporting and better guide future youth offending prevention programs.

Keywords Incarcerated • Mindfulness • Meditation • Offending • Scoping review

• Scoping review findings

- Broad ranging international literature on the topic, mostly from the USA (12/13; 92%)
 - Multiple study types ($n=13$)
 - Only 3 RCTs
 - Pooled numbers ($n=842$), comprised mainly male adolescents ($n=833$; 99%); age range 14-23
 - Heterogenous interventions (Vipassana, MBA, MBSU, CBT/MM)
 - Over 17 different outcome measures used
 - Range of improvements reported in mental health, self-regulation, problematic behavior, substance use, quality of life and criminal propensity.
 - Quality generally low
-
- No clear optimal MBI for incarcerated young men

Results 1: Developing the course

- **Optimising the course**

- As no optimal MBI, we started with Mindfulness-Based Stress Reduction (MBSR) (Kabat-Zinn, 1990)
 - Weekly 2.5 hour sessions for 8 weeks
 - Core MBSR components (minus day retreat)
 - One teacher
 - Maximum 10 participants per course
- Feedback sought following each course
- Subsequent course content/delivery modified based on rapid appraisal findings from previous iteration

Issues with standard MBSR

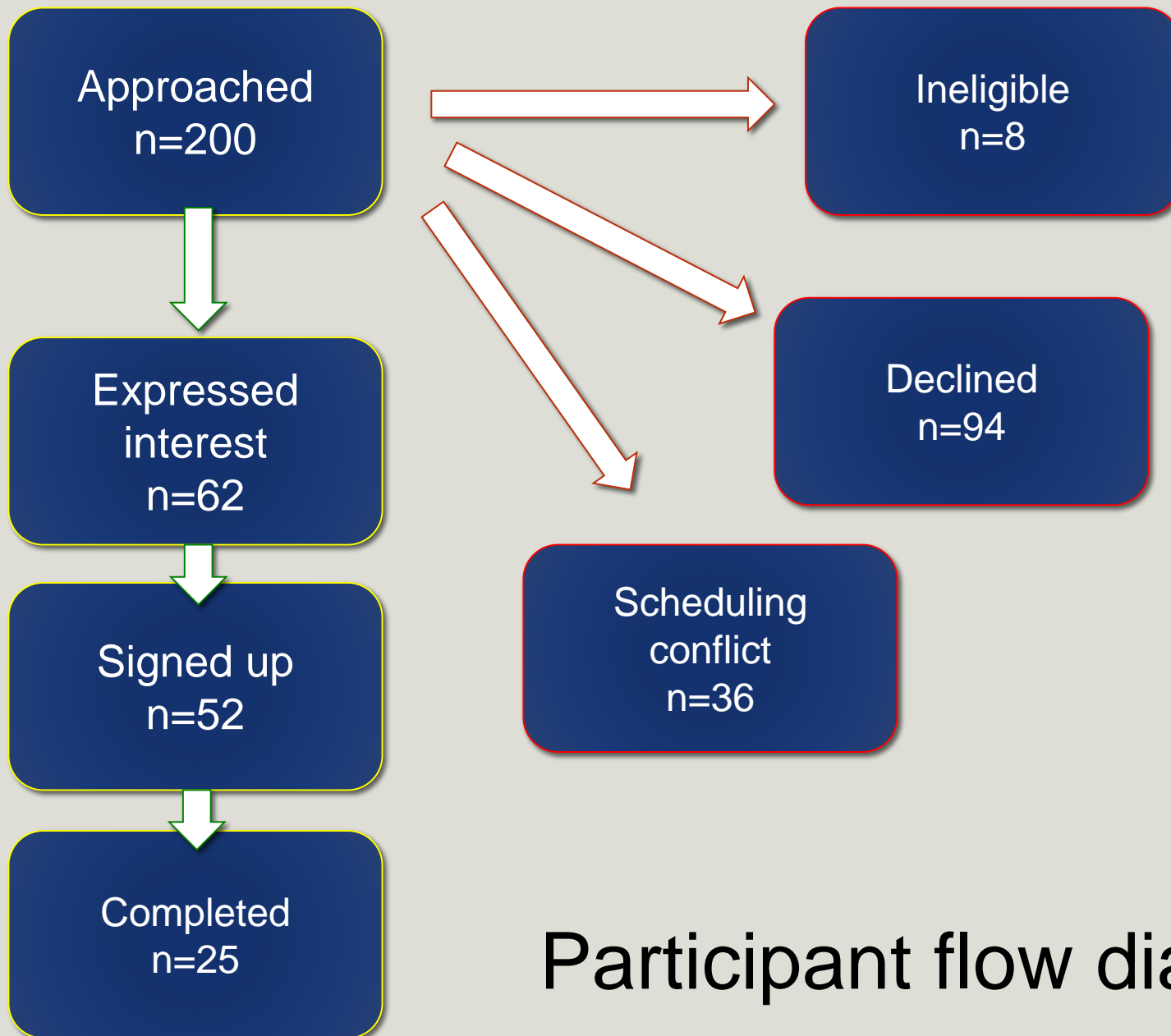
1. Course felt too short
2. Recurrent problems with disruptive behaviour
3. Longer practices poorly received
4. Relevance of content questioned by young men
5. Young men hyper-vigilant and restless
6. Course intensity felt too much for young men
7. Other courses provide snacks to sustain interest
8. Sustained engagement poor – not goal orientated
9. Young men did not complete forms or record home practice
10. No incentive/reward for young men from taking part

Modifications made to MBSR

1. Lengthened course duration - 10 week course
2. Tightly structured sessions with group agreements
3. Shortened sessions and practices
4. Psycho-educational material made less abstract and more relevant to the young men
5. Facilitating relaxation
6. Institution of regular breaks
7. Provision of snacks for the young men
8. '100-minute challenge'
9. Removal of MBSR forms and home practices
10. Certification on completion

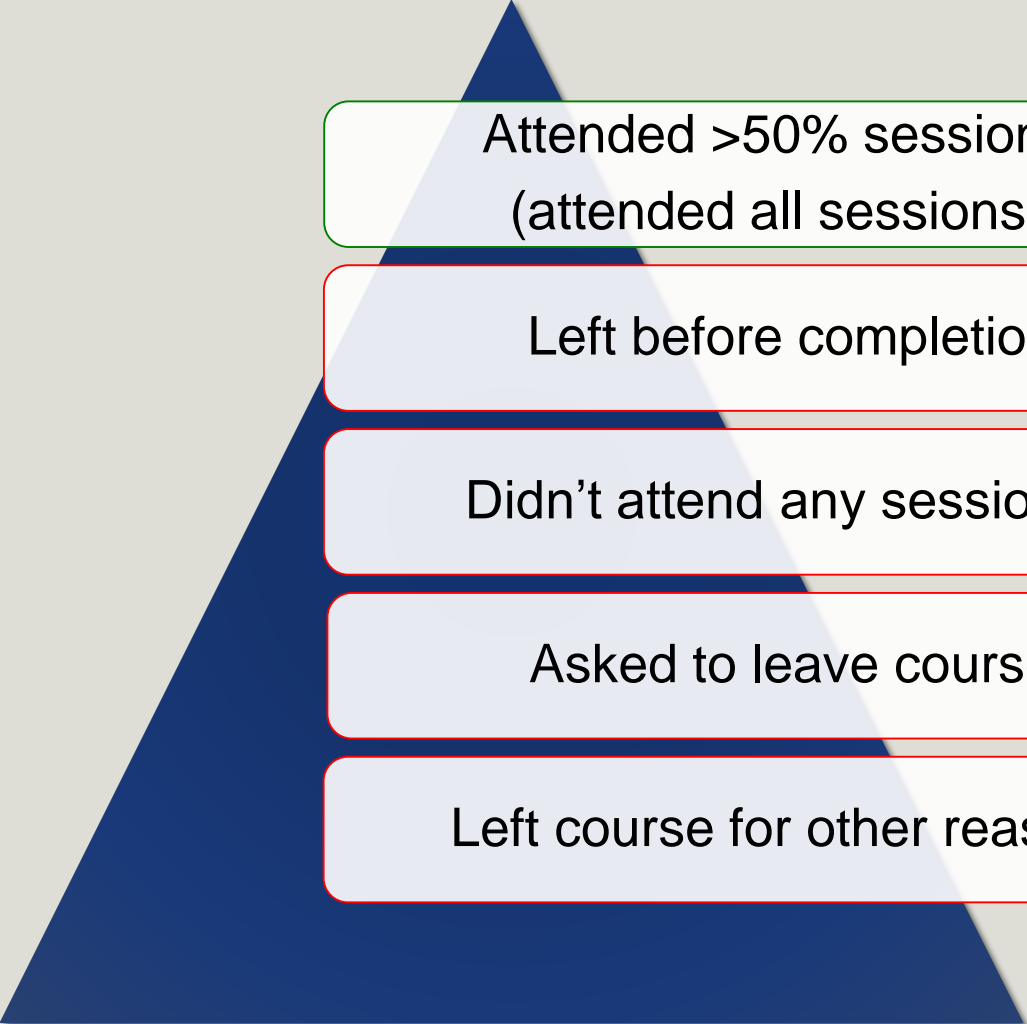
Results 2: Recruitment and retention

- **Recruitment challenges and strategies trialed**
- Multiple challenges
 - Recurrent organisational mishaps
 - Low interest from the young men
 - Low interest from prison staff
- Various recruitment strategies trialed; no optimal approach
 - 'Recruitment managers'
 - Formal invitation to take part letter to each inmate
 - Taster sessions
 - Rebranding the course as 'Inner strength training'



Participant flow diagram

Course attendance and completion



Attended >50% sessions n=25
(attended all sessions n=10)

Left before completion n=7

Didn't attend any sessions n=12

Asked to leave course n=5

Left course for other reasons n=3

Why were recruitment, retention, and attendance so challenging?

- Recurrent organisational/scheduling problems
- Low status versus other courses in the institute
 - Established programmes given priority by prison staff
 - No clear incentive to take part
 - Relevance of course not clear to young men
- Stigma of attending course associated with psychology department

Results 3: Feasibility of data collection

Outcome measure completion

Baseline
92%

Post
course
75%

Follow up
45%

Missing data low (0-8%)

Results 3: Feasibility of data collection

- **Suitability of outcome measures**

- Measure readability age appropriate (Flesch-Kincaid 7-11; MAAS – 16+)
- Exploring the data further suggested young men were filling the forms in in a meaningful way
 - Internal consistency generally good (range 0.70 - 0.93)
 - In agreement with published data
 - Correlations between measures were in expected directions (significant medium to strong relationships)
 - Potential redundancy in research pack

Results 3: Feasibility of data collection

- **Potential effectiveness**

- Impulsivity

- TCS Effect size (ES) 0.72, $p=0.001$
- BIS-11 ES 0.50, $p=0.001$

- Mental Wellbeing (GHQ-12) ES 0.50, $p=0.003$

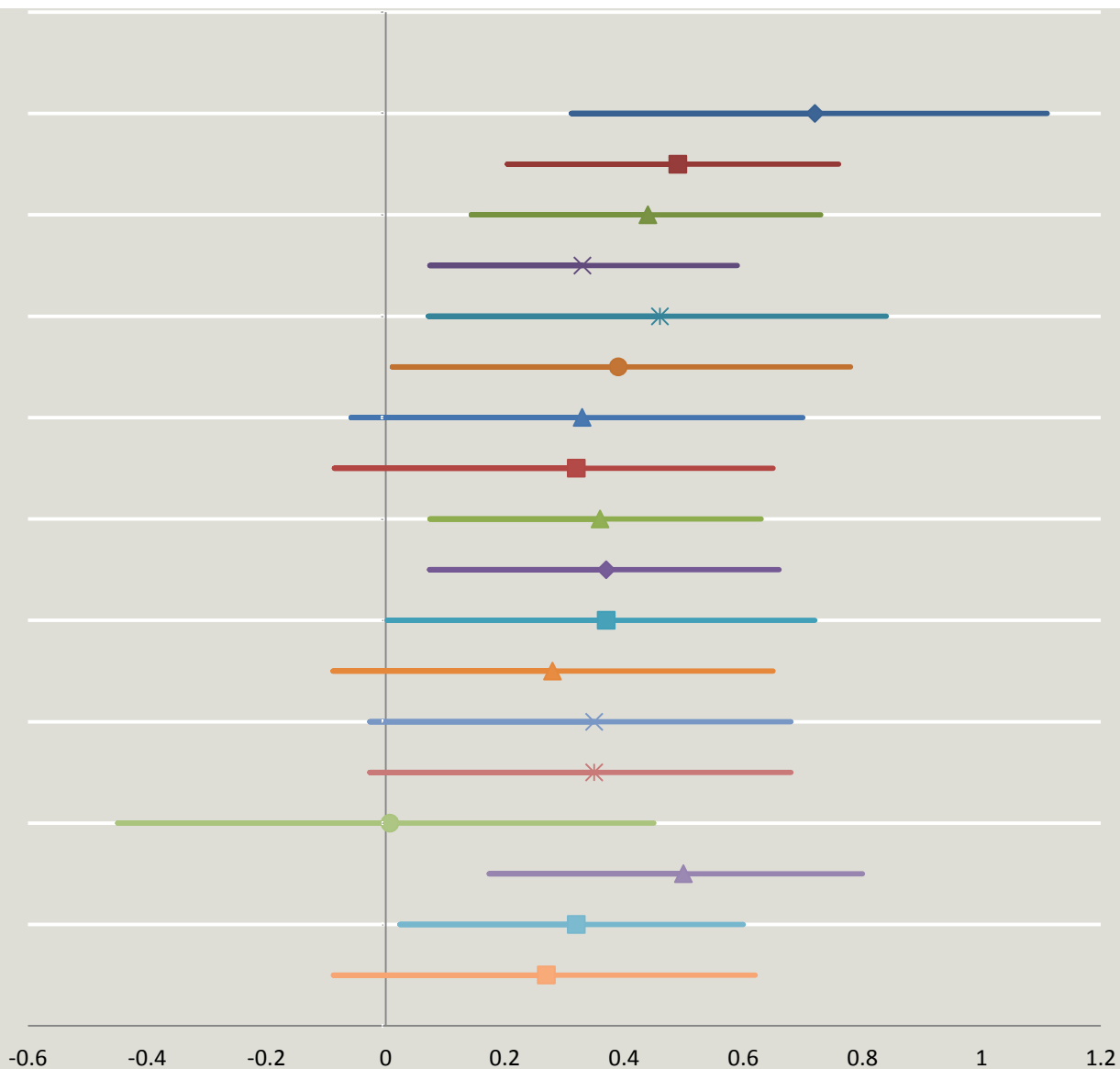
- Inner Resilience (SOC-13)

- Meaningfulness ES 0.35: $p=0.03$

- Mindfulness

- CAMM ES 0.32, $p=0.03$
- MAAS ES 0.27, $p=0.13$

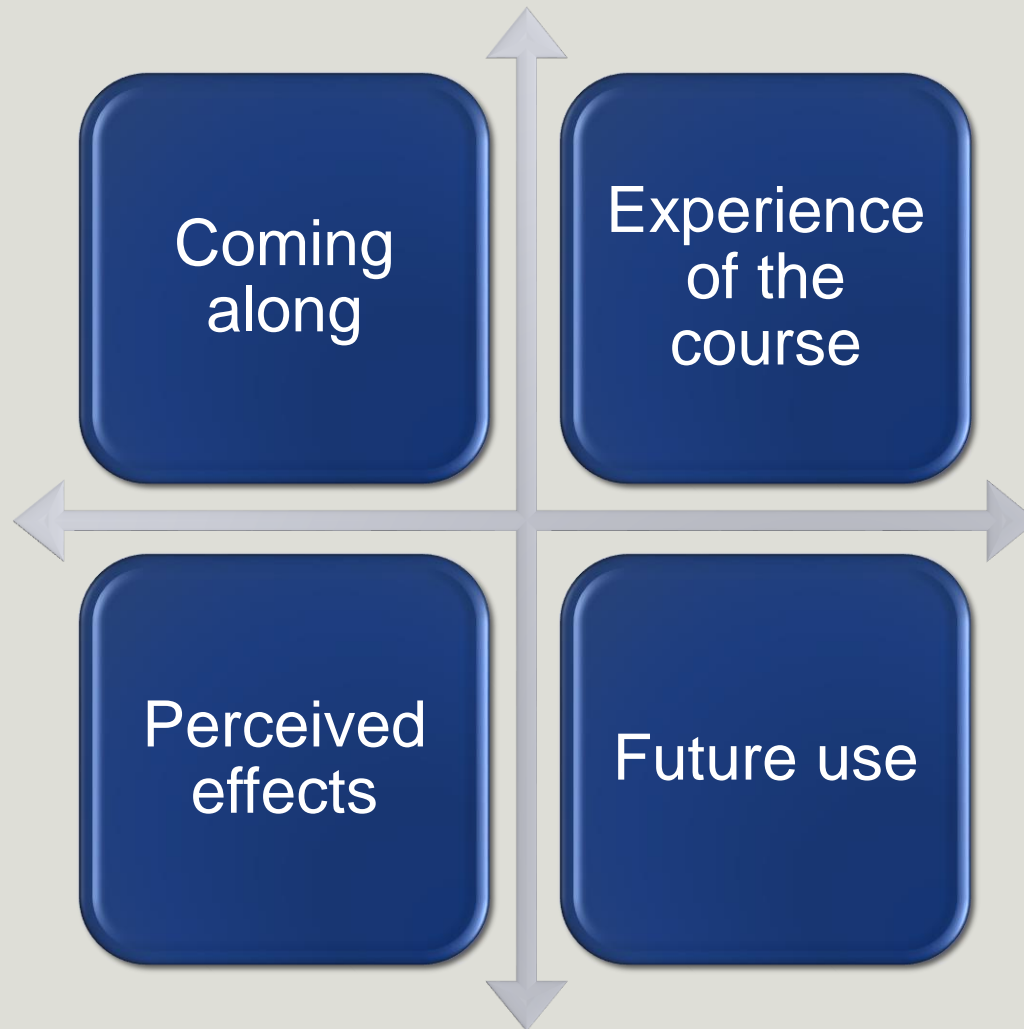
- Emotional regulation (DERS) ES 0.32, $p=0.09$



Better improvements shown

- ◆ TCS
- BIS-11
- ▲ BIS: Attentional
- ✕ BIS: Attention
- ✱ BIS: Cognitive instability
- BIS: Motor
- + BIS: Motor impulsiveness
- BIS: Perseverance
- BIS: Non-planning
- ◆ BIS: Self-control
- BIS: Cognitive complexity
- ▲ SOC-13
- ✕ SOC: Meaningfulness
- ✱ SOC: Comprehensibility
- SOC: Manageability
- + GHQ-12
- CAMM
- MAAS

Results 4: Participants experiences



1. 'Coming along'

Motivations for signing up included:

- Unsure, but willing to try it out (14/20)
- Wanting help with a specific problem (7/20)
- Invited to attend by staff (4/20)
- Wanting to get out of their cell (4/20)

"I anticipated that it was going to be a mad meditation yoga mad hippy guy one of they ones that you can sit and laugh at"

(PM17 Course 3)

2. 'Experience of the course'

- Most reported finding the course somewhat 'strange', funny or 'weird' at first.
- This changed as they began to experience benefits.
- They generally found the body scan and breathing practices most helpful (14/16)

"it [body scan] freaked me out the first couple of times man ... I felt like getting up and walking out ... breathing through your legs and all that ... I was like that it's weird ... but you begin to feel pure calm and you can actually imagine as if your doing it. It just shows what the brain can do for you"

(PM06 Course 1)

3. 'Perceived effects'

- A range of positive changes were described by the participants:
 - Feeling calmer and happier (16/16),
 - Coping more effectively with anger, stress, grief, and incarceration (14/16)
 - Being more in control (14/16)
 - Sleeping better (9/16)
 - Having better relationships (9/16).

"Before I done that mindfulness course I used to just sit and argue with them [officers] and just start shouting and get reports all the time. Since I started that course I've learned how to like start controlling it and being able to breathe. I could have been arguing with them, swearing at them but I just choose not to do it anymore and just calm myself down before it gets out of hand"

(PM13

Course 2)

4. 'Future use'

- Most (11/16) hoped to sustain their mindfulness practice after the course.
- Perceived obstacles included boredom, lack of discipline, time, support and need to deal with many competing obligations on release

"I'm going to try and stick to it when I am out there so I don't come back to prison"

(PM29 Course 4)

Additional considerations

- Presence of complex mental health needs
 - Future mindfulness course may be best delivered by a minimum of two trained mindfulness teachers.
 - Safety important consideration and additional clinical skills may be required
- Manual for clinicians
 - Manualised for future use, as a means of providing an evidence based mindfulness programme
 - Core aims, objectives, and content should reflect what matters to the young men and their rehabilitation needs
 - Not to be applied indiscriminately to other incarcerated populations (e.g., woman, adults, sex-offenders) without further evaluation and modification

Summary

- No clear optimal MBI exists for incarcerated young men
- Standard MBSR required several modifications to meet the needs of the young men
- Recruiting and retaining incarcerated young men into a MBI is challenging
 - Making the course more relevant to them may improve uptake
 - Institutional support matters
- A bespoke MBI is feasible and appears to have the potential to be effective at improving key self-report outcomes
- Mindfulness helped the young men feel better, sleep better, and get on better with others

QUESTIONS?

Stewart.Mercer@glasgow.ac.uk
Sharon.Byrne@glasgow.ac.uk

