MST in the Context of Evidence Based Treatments of Conduct Disorder

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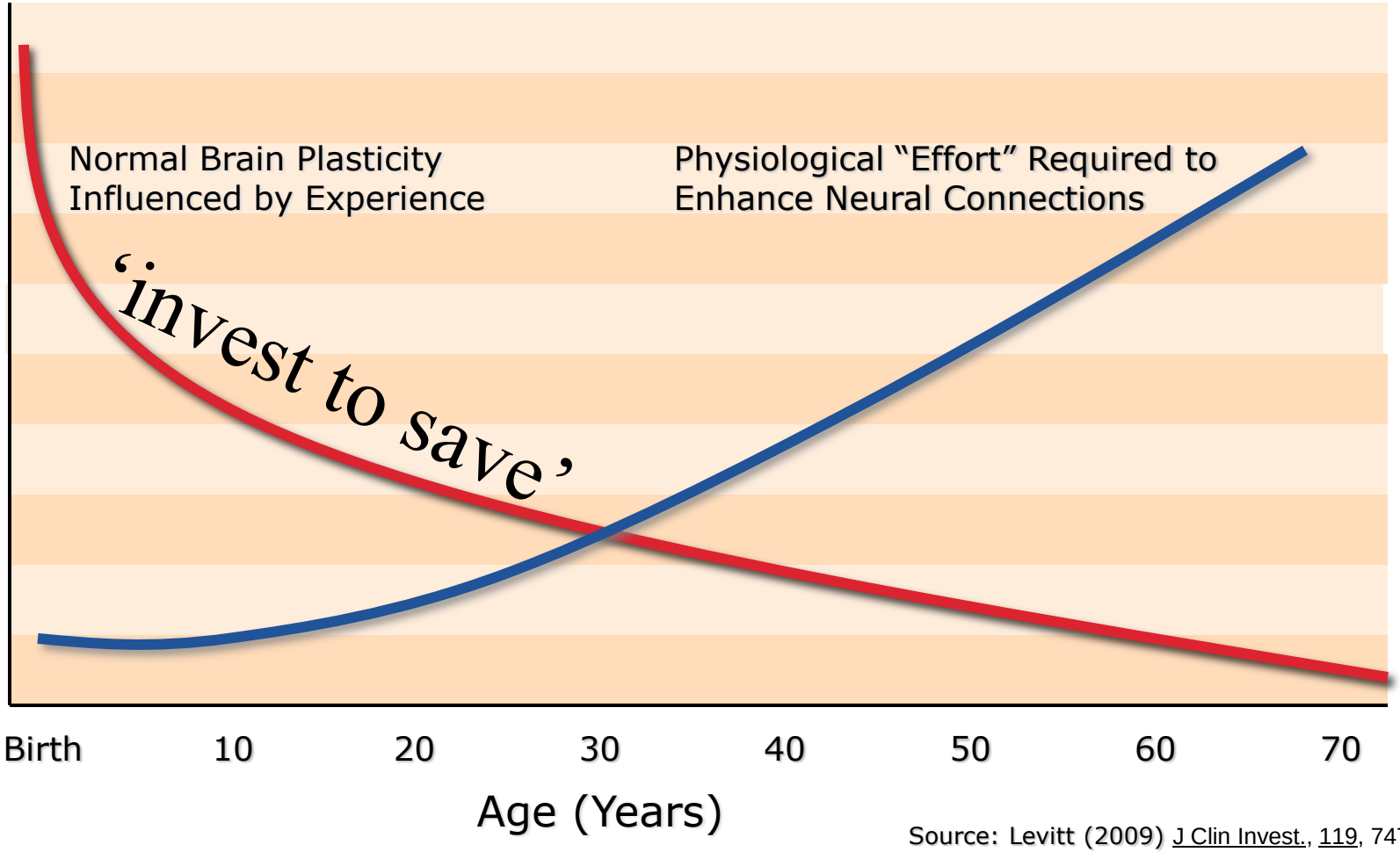
Plan of the presentation

- Apology and a thank you
- Brief overview of CD
- Overview of evidence base of CD in adolescence
- Current status of MST in the context of alternative interventions
- Outline of the START trial
- Tentative theoretical frame as per RDoC

Slides available from: P.Fonagy@UCL.AC.UK

The Ability to Change Brains Decreases Over Time



Source: Levitt (2009) J Clin Invest., 119, 747-54

The CYP IAPT Project

iapt
Improving Access to Psychological Therapies

- Transforming the way care is delivered moving towards **scientifically** founded mental health care delivery service
- Improving access to **evidence-based** therapies
- Using routine **outcomes** monitoring
  - To guide **therapist** and supervisor
  - To help **client** understand how treatment is progressing
- **Empowering** service users to take control of their care, establish treatment **goals**, **choose** treatment approaches and take opportunities to improve their **own health**

CYP-IAPT:

Training in evidence based practice

Research evidence

+

Patient preferences and values

+

Clinician observations

=

Quantifiable results

Utility for clinicians

Acceptable to recipients

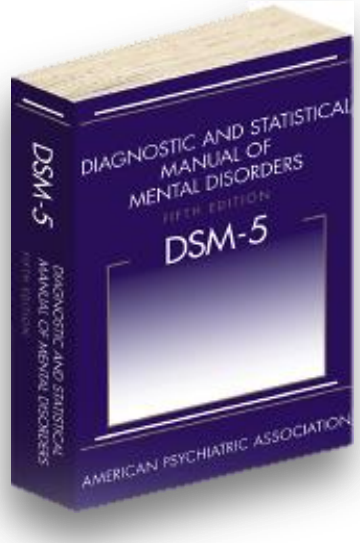
iapt

Improving Access to Psychological Therapies

Frueh et al (2012) Evidence-Based Practice in Adult Mental Health. Handbook of Evidence-Based Practice in Clinical Psychology. Published online.

Disturbances of conduct in Children

- Characterised by high rates of **noncompliant**, **hostile** and **defiant** behaviours
  - Often including aggressiveness and hyperactivity



- Three broad diagnoses (DSM-V, 2013)
  - Oppositional Defiant Disorder (**ODD**)
  - Conduct Disorder (**CD**)
  - Antisocial Personality Disorder (**ASPD**)
  - Unspecified disruptive behaviors (pyromenia, kleptomania)

- **ODD** and **CD** diagnoses **overlap**, but CD entails **violation of other's rights and social rules**
  - **Aggressiveness** to people and animals.
  - **Property** destruction
  - **Deceptiveness** or theft
  - Serious **rule violations**

- These behaviours are **embedded in** the individual's **social context** and have consequences
  - For the **family**
  - For potential **victims**
  - For the **individual** him/herself (Moffit & Scott, 2008)

Conduct disorders: Onset age and outcome

Childhood-onset type
- Appears before age of 10
- Poorer outcomes in most domains of life

Moffit & Caspi, 2005; Moffitt, 2006

Adolescent-onset type
- No disruptive behaviour before age 10
- Better outcomes in adult life, but not **exempt** of problems

Odgers et al, 2007

Childhood-limited CD
- Do not become **antisocial** adults
- They often become **depressed**, socially isolated and financially **dependent** adults

Wiesner, Kim & Capaldi, 2005

Early disruptive behaviour problems tend to improve without assistance over the first 10 years of life

Tremblay et al., 2004

Conduct disorders and psychopathy

In spite of their similar definition, CDs do **not necessarily progress** into Antisocial Personality Disorder (**ASPD**)

One subgroup of conduct disordered youth are in higher risk of **persistent** and **treatment-resistant** antisocial and offending behaviour

- Lack of **guilt**
- Lack of **empathy**
- **Callous** use of others

- More conduct problems
- More severe aggression
- More proactive aggression

Differences with other CD children

- **Brain** structure
  - Decreased **white matter** concentration
  - Differences in **gray matter** concentration
- **Brain** function
  - Reduced **amygdala response** to fearful faces
- **Genetic**
  - The most **heritable** mental disorder
- **Developmental**
  - **Earlier** onset

This subgroup has a biological aetiology and respond poorly to typical treatments

Kimonis et al., 2008; Frick et al, 2003; Lynam et al., 2007; De Brito et al., 2011; Jones et al., 2010; Rijsdijsk et al., 2010; Fontaine et al 2010; Viding et al., 2013; Falkenbach et al., 2003; Gretton et al., 2001; O'Neil, Lidz & Heilbrun, 2003; March et al, 2008

Conduct Disorders: Prevalence

They are the **most common** mental health disorders is children and adolescents

ODD:

2.6% - 15.6% in the community

28% - 65% in clinical populations

CD:

1.8% - 16% boys

0.8% - 9.2% girls

Those on lower **socioeconomic** classes are four times more likely to have a CD

Public **expenditure** on youths with CD is substantially higher

CD costs approx. **$7,000** in increased professional mental health and general health service use across childhood alone

Adolescent-onset is higher than childhood-onset: **24%** vs. **7%**

Adolescent conduct problems have **increased** over the last **30 years**

Gender differences have **narrowed** in recent years

NICE, 2011; 2013; Boylan et al., 2007; Loeber et al., 2000; Foster & Jones, 2005; Scott et al., 2001; Collishaw et al., 2004; Moffitt et al, 1996; Tracy, Kempf-Leonard & Abramoske-James, 2009

Impact of mental disorder during childhood and adolescence

Higher rates of self-harm, health risk, and antisocial behaviour (11-16 year-olds)

	Emotional disorder	Conduct disorder	Hyperkinetic disorder	Whole survey prevalence
Regular **smoker**	19%	**30%**	15%	**6%**
Regular **drinker**	13%	**19%**	13%	**9%**
Drinks twice a week or more	5%	**12%**	7%	**3%**
Taken **drugs** at some time	20%	**28%**	23%	**8%**
Taken drugs, mainly cannabis	16%	**23%**	18%	**7%**
Taken drugs other than cannabis	7%	**16%**	7%	**2%**
Self-reported **self-harm**	28%	**24%**	18%	**7%**

43% of smokers aged 11-16 have either emotional or conduct disorder
Children with conduct disorders thereby constitute a significant proportion of population health risk behaviour

Campion, 2013. From Green et al, 2005

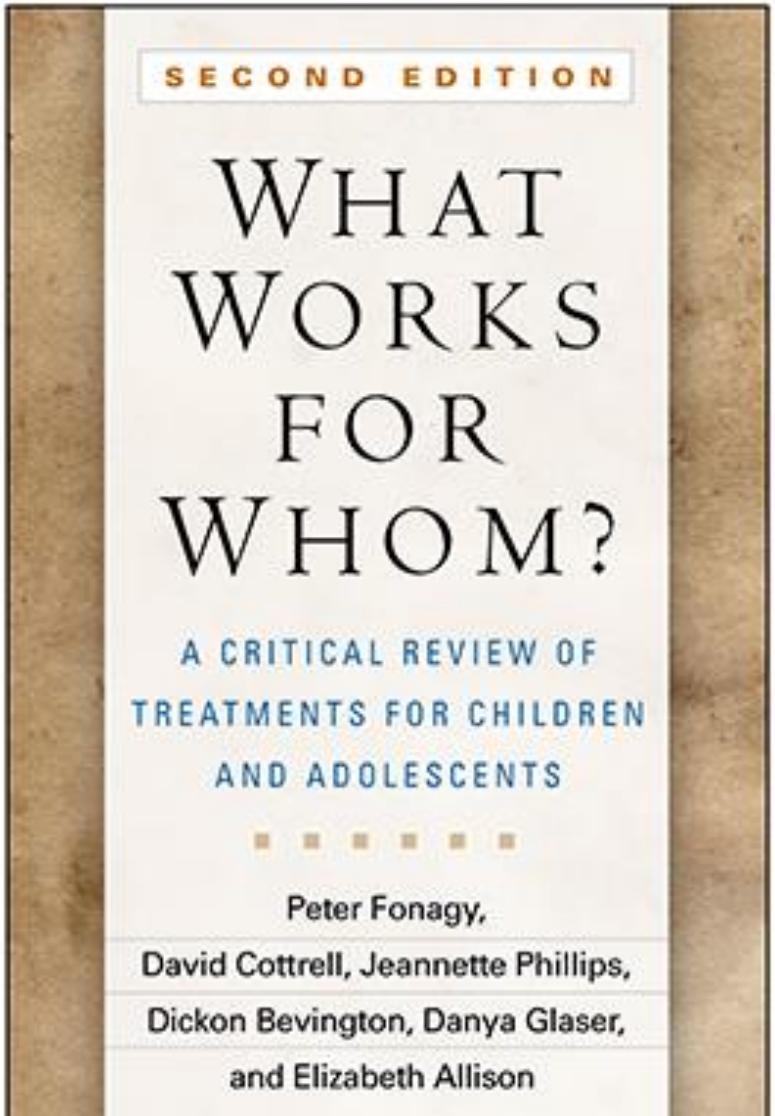
Impact of mental disorder in adulthood: Conduct problems

- Higher rates of **antisocial** behaviour, offending and violence (SCMH, 2009)
  - Nearly half of children with early-onset conduct problems have persistent and serious problems including crime and violence (Fergusson et al., 2005)
- **Unemployment** and lower **earnings** (Fergusson et al., 2005)

- Higher risk of adult mental disorder
  - **Psychosis**: schizophrenia and mania (NICE, 2006)
  - **Common mental disorder**: depression, anxiety, OCD, panic disorder (Fergusson et al., 2005; NICE, 2006; Colman et al, 2009)
  - **Substance** misuse (Fergusson et al., 2005)
  - **Suicidal** behaviour (Fergusson et al., 2005; Odgers et al., 2007)
  - **Personality** disorder: e.g., 40-70% children with CD will develop ASPD as adults (NICE, 2009)

Campion, 2013. From Green et al, 2005

The book that has it all!!



- ANXIETY DISORDERS
- DEPRESSIVE DISORDERS
- DISTURBANCE OF CONDUCT IN CHILDREN
- **DISTURBANCE OF CONDUCT IN ADOLESCENTS**
- ATTENTION DEFICIT HYPERACTIVITY DISORDER
- TOURETTE SYNDROME
- PSYCHOTIC DISORDERS
- PERVASIVE DEVELOPMENTAL DISORDERS
- SELF-INJURIOUS BEHAVIOR
- EATING DISORDERS
- SUBSTANCE USE DISORDERS
- CHILDREN WITH PHYSICAL SYMPTOMS
- SPECIFIC DEVELOPMENTAL DISORDERS
- CHILD MALTREATMENT
- SUMMARY OF FINDINGS AND DISCUSSION
- **4,460 References**

Psychosocial interventions for CD in adolescents

- Numerous meta-analyses of psychosocial treatments produced consistent findings:
  - **27 meta-analytic reviews** covering nearly **2,000 studies**:
    - ESs small to medium: *d*= 0.43 [0.38-0.45]
  - **Methodological issues** of effectiveness research seem to account for more variance than type of treatment
  - Many different interventions show **good ESs**.
  - Best results in meta-analysis are associated with **treatment fidelity**
    - Effectiveness is improved when there is a **good implementation** and targeting of **high-risk adolescents**
  - Demographic characteristic of YP are unrelated to outcome, but the **best results** are obtained by **older higher risk juveniles** (with more prior offenses)

Fonagy et al. (in press);

Conduct disturbances in adolescents:

Meta-analytic findings

- There are numerous meta-analyses with consistent findings
- Effect sizes are in general small to medium (d= 0.38 - 0.45; mean 0.43)

Successful treatments share Andrews and cols. (1990, 1999, 2000, 2006) three principles

The need principle

- Target **criminogenic needs** e.g.:
  - Promotion of **family affection** and communication
  - Family **monitoring** and supervision of the adolescent

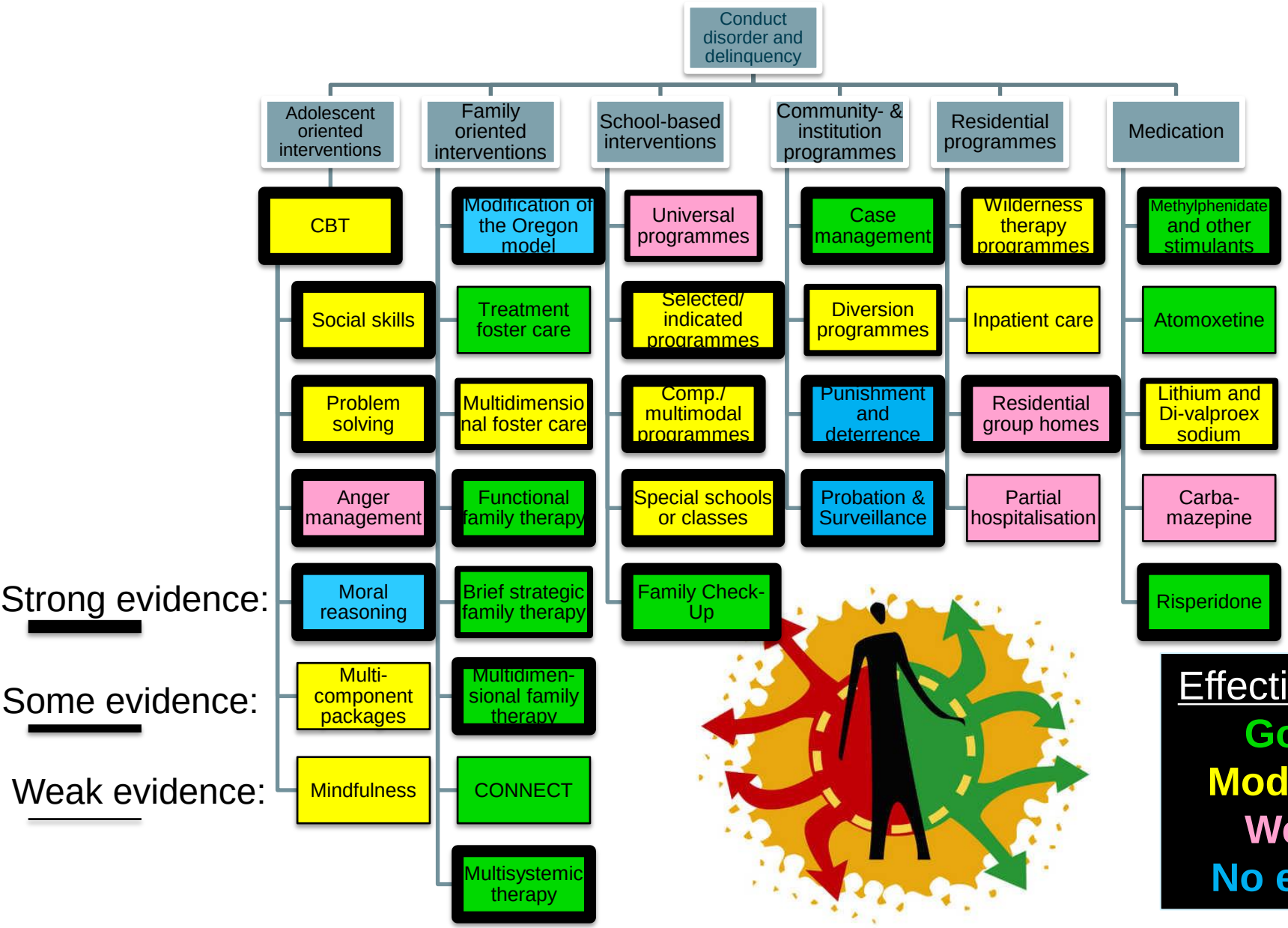
The responsivity principle

- **Tailoring** the intervention to the individual
  - Highest ESs derive from behavioural, skills-oriented and multimodal methods from **social learning theory** and cognitive behavioural principles

The risk principle

- Higher effects are found in **higher risk offenders**
  - More need for treatment and more room for improvement

Evidence-based interventions



Adolescent-oriented therapies (CBT)

- Training in **moral reasoning** (strong evidence)
  - Used by correctional agencies in many countries
  - Adolescents seem unaffected by intervention (r=0.13 overall with offenders r=0.07))

Innovative approaches that reformulate CBT (e.g. DBT, MBCT)
Limited but promising evidence

Innovative approaches: Mindfulness-based interventions

Mindfulness-based cognitive therapy (MBCT)

- **Insufficient evidence** shows:
  - Good attendance
  - **Self-reported improvements** in behaviour, goals, subjective happiness and mindful awareness
  - Improvements in parent-reported variables

• Bogels, Hoogstad, van Dun, de Schutter & Restifo, 2008

Mindfulness-based stress reduction (MBSR)

- Originally devised as an intervention for anxiety/chronic depression
- **Promising** as an **adjunct** to mainstream CBT
- **Insufficient evidence** shows significant positive changes after an 8-week intervention, maintained at follow-up.

• Biegel, Brown, Shaopiro & Schubert, 2009

Dialectic Behaviour Therapy (DBT)

- Scarce evidence shows:
  - **14% reduction** in recidivism

• Drake & Barnoski (2006)

  - Significant **decrease** in behaviour problems for **females**
  - **Suicidal** acts, aggressive behaviour and class disruptions were **not reduced**

• Trupin, Stewart, Beach & Boesky, 2002

Mode Deactivation Therapy (MDT)

- A questionable “meta-analysis” claims large ESs (*d*= 1.1 - 1.8)

• Apsche, Bass & DiMeo, 2011

School- and community-based approaches

- **Family Check-Up** (strong evidence)
  - A modification of the **Oregon** Model
  - Integrates **family** and **school**
  - Maintenance model: regular **check-ups**
  - Modification of **motivational interviewing** techniques
  - **Self-selection** of interventions
  - Reduces re-arrest rates **by 85%** to 15% amongst **'engagers'**

have largest effects (d=0.29)

- Limited evidence for the effectiveness of **wraparound services**

Family interventions

- **Strong evidence** from large sample RCTs:
  - Family-based interventions **need high levels of fidelity** to achieve outcomes
  - Even the most effective intervention **leaves 50%** or more of the youth treated **with significant** clinical **problems**
- These interventions **share** various **strengths**
  - Investment in special **protocol to engage** with families
  - Considerable **intensity**: condensed high-volume input or spaced long-term interventions
  - Engagement of a **number of systems** (school, social services, youth justice)
  - Powerful **conceptual frame**. Strong advice in relation to potential incidents
  - **Balance** between **rigidity** built into the protocol and highly **specified method** of implementation while avoiding mechanistic manualisation to **respond** to unpredictable **situations**
  - Strong focus on the therapist in **relation to the family**, in terms of the commitment expected from the therapist and the support given to the therapist by an expert holding environment
  - **Multimodal** as opposed to **multicomponent**
  - Systematic and forceful **mobilisation of parents** ads the primary therapeutic agents for the intervention

They share the challenge of being in a mental health setting which fosters and reimburses individual rather than relational diagnoses

Family Interventions

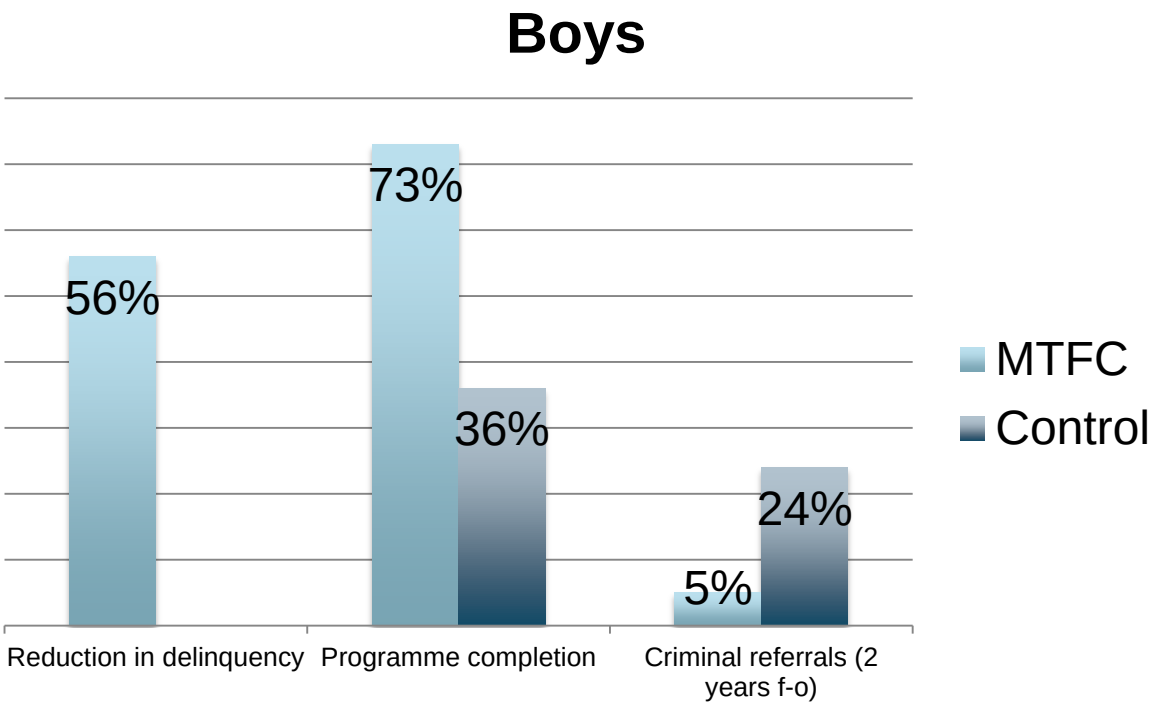
- **Parent training** is ineffective or even iatrogenic
  - When delivered together with adolescent-only groups, behavioural problems soar.

- **Multidimensional Foster Care** (MTFC) (**conflicting evidence**)
  - Youth are **placed in foster homes** for 6-9 months while their families are prepared by systemic therapy
  - Foster parents have received **20 hours of training**
  - A team of **professional therapists** and **coaches**
  - **Daily contact**
  - Prepare **biological parents** with **family therapy** intervention
  - **Excellent results** of US and a first **Swedish** trial have not been replicated in following studies
  - **UK evidence** does not confirm effectiveness

Westermark, Hansson & Vinnerljung, 2008; Biehal, Ellison & Sinclair, 2011; Alexander & Parsosns, 1973; 1982; Green et al., 2014

Multidimensional Foster Care (MTFC)

- Good results:

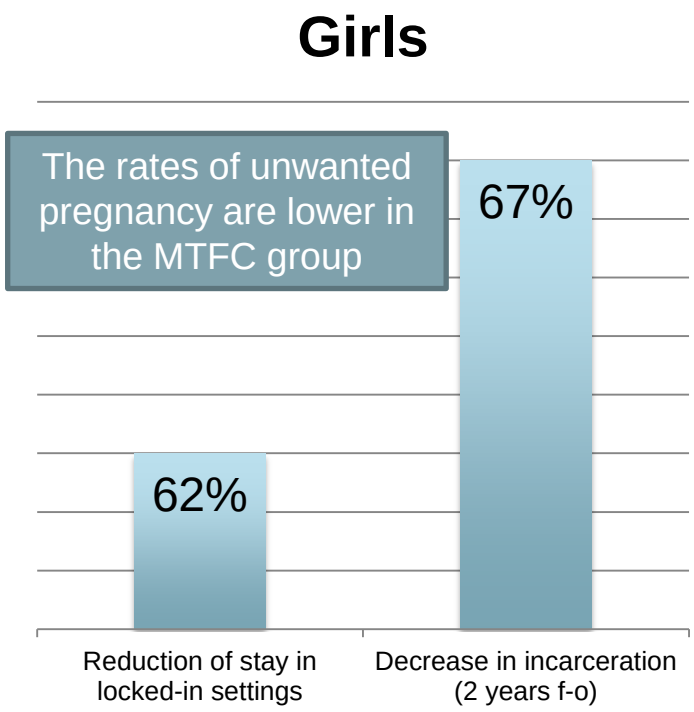


At 2 years follow-up, rates of self reported violent of the MTFC group where normative, while controls were 4-9x higher

Chamberlain & Moore, 1998; Chamberlain & Reid, 1998)

Multidimensional Foster Care (MTFC)

- Good results, somewhat inconsistent evidence:



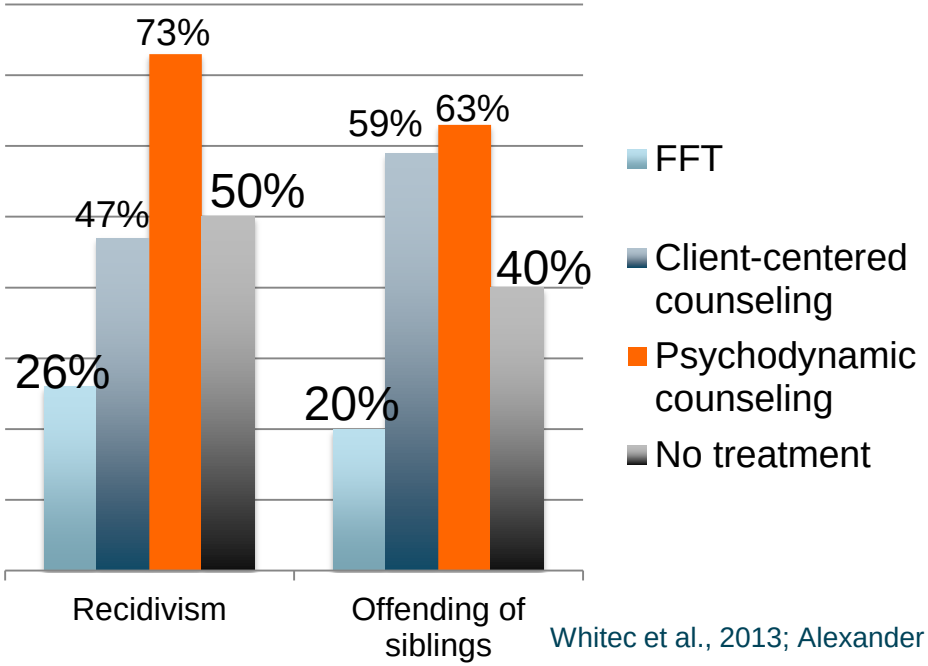
This treatment has shown usefulness in diverse contexts:

- Mental state hospitals
- Child welfare system
- Female delinquent girls with trauma histories

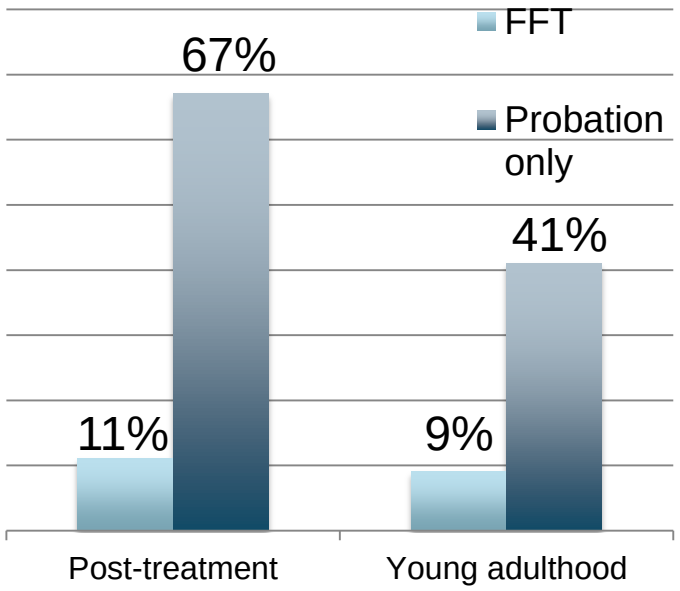
Chamberlai, Leve & Degarmo, 2007; Leve & Chamberlain, 2007; Leve, Chamberlain & Reid, 2005; Chamberlain & Reid, 1991; Chamberland, Moreland & Reid, 1992

Functional Family Therapy (FFT)

- Now **part of CYP-IAPT**
- Manualised programme: 8-30 hours (**limited evidence**)
  - Achieve changes in family patterns of interaction and **communication**
    - **Targets and family** and individual
    - Sometimes see youths in their homes
    - Youths with **callous-unemotional** traits show **bigger changes**
    - Results **not replicated in substance-abusing** youth
    - Estimated savings per case: US$ 13,000
    - Requires considerable **training** and **supervision**



Independent evaluation



Whitec et al., 2013; Alexander & Parsons, 1973; Parsons & Alexander, 1973; Gordon & Arbuthnot, 1987

Family Interventions

- Brief Strategic Family Therapy (**insufficient evidence**)
  - Can reduce behavioural problems
  - Designed to last 4 months
  - Focused in changing the youths behaviour, not the whole relational apparatus of the family
  - Engage families that normally are antagonistic to psychosocial interventions

- Multidimensional Family Therapy (MDFT) (**strong evidence**)
  - Originally designed for **adolescent drug abuse**
  - Works with both parents and teen in individual sessions, and joint sessions
  - Developmentally sensitive
  - Very customisable to the particular family
  - 1 to 3 times a week for 3 to 6 months both in clinic like at home.
  - It's evidence is strong, because it has been compared with other strong therapies.

- New attachment-base family therapies are being developed and tested
  - CONNECT: attachment and mentalization
  - Pre-post *d*= 0.75

Szapocznik, Hervis & Schwartz, 2003; Liggle, 2002; Diamond et al., 2010

Family Interventions: Multisystemic Therapy

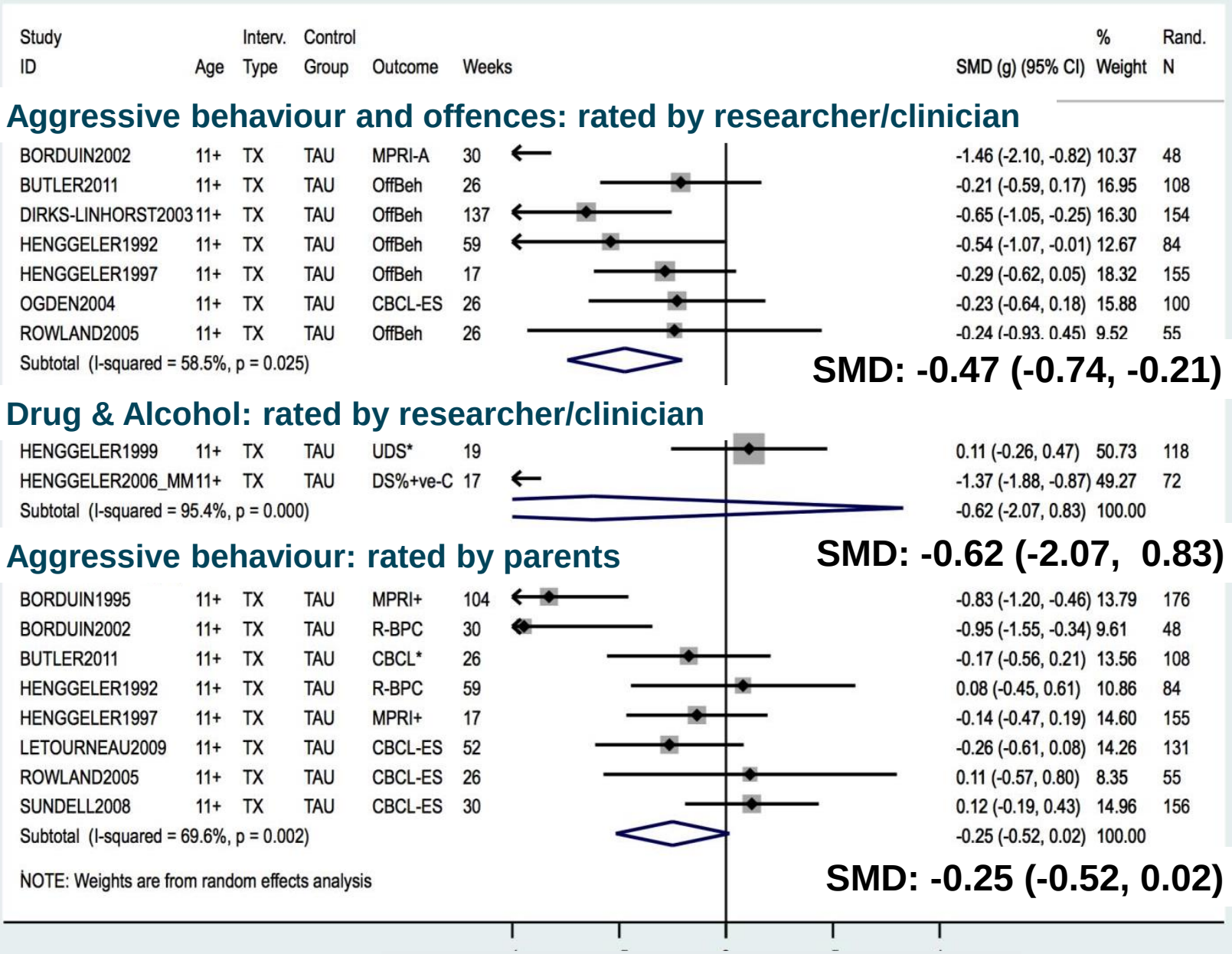
- Developed specifically for **youth conduct problems**
  - Designed to work with **hard-to-reach** families

- Effective treatment for **serious juvenile offenders**. Good quality evidence.
  - Addresses the **multidetermined nature** of severe conduct problems
  - Sees the **family** as a key factor in change
  - Uses the **adolescent's home** as the primary site of intervention
  - **Integrates** several evidence-based **techniques**
  - Uses the same therapist to deliver **multiple modalities** of intervention within a **singular** conceptual **framework**
  - Rigorous **monitoring** of the **adherence** to the model

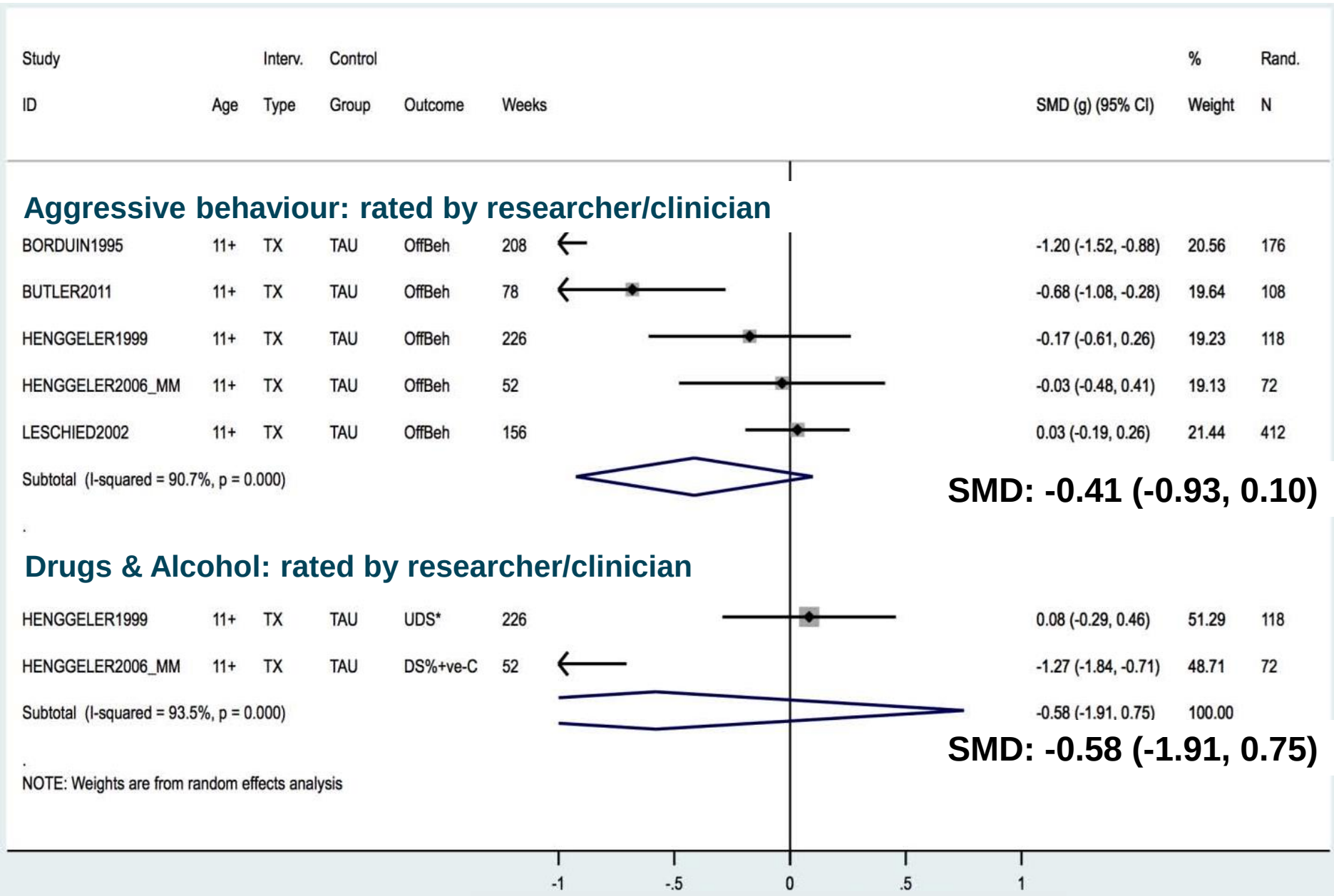
NICE have identified MST as the **most promising** intervention for reducing adolescent **antisocial** and **offending** behaviour

Henggeler et al, 1998; Littell, Popa & Forsyth (2005); NICE, 2009; 2013

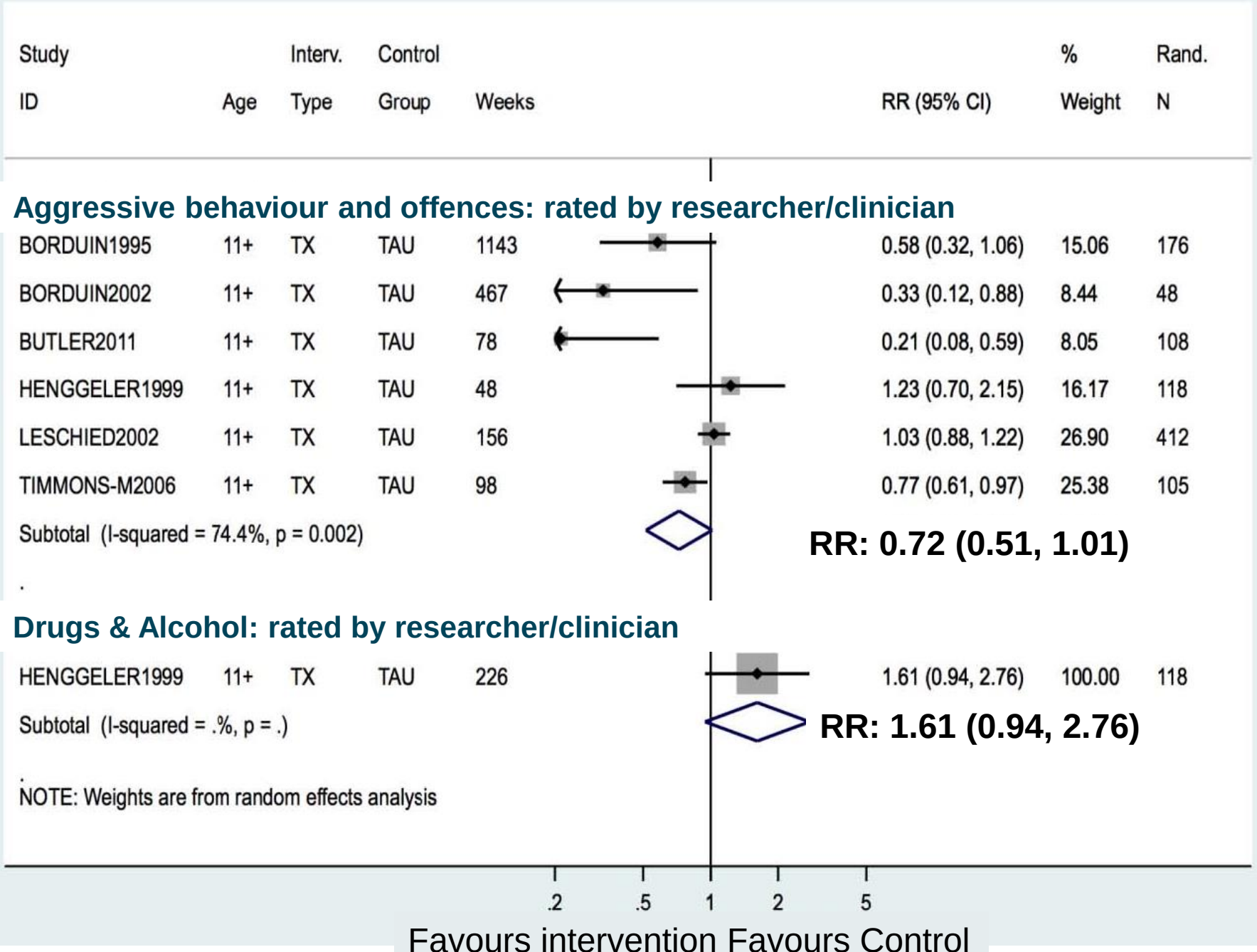
MST: Meta-analysis of post-treatment results (continuous outcomes)



MST: Meta-analysis of follow-up results (continuous outcomes)



MST: Meta-analysis of follow-up results (dichotomous outcomes)



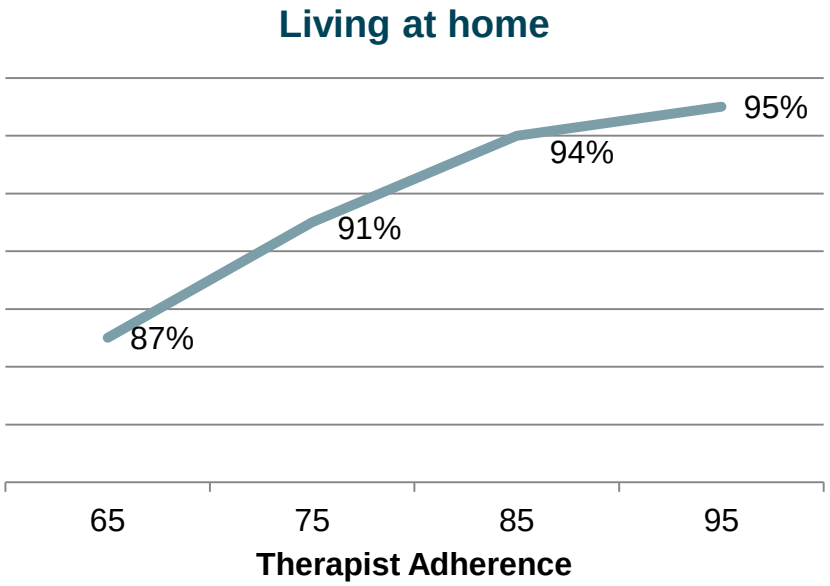
Multisystemic therapy: Evidence

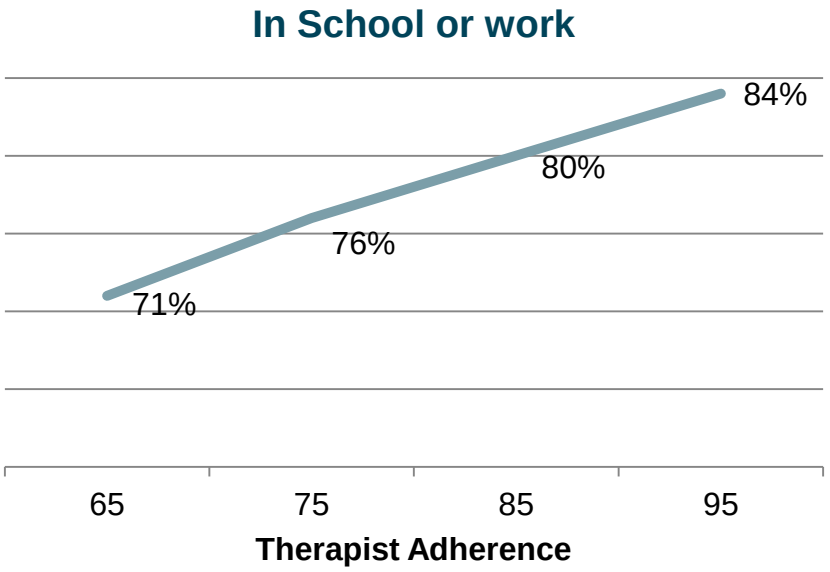
Results are **heterogeneous** among studies

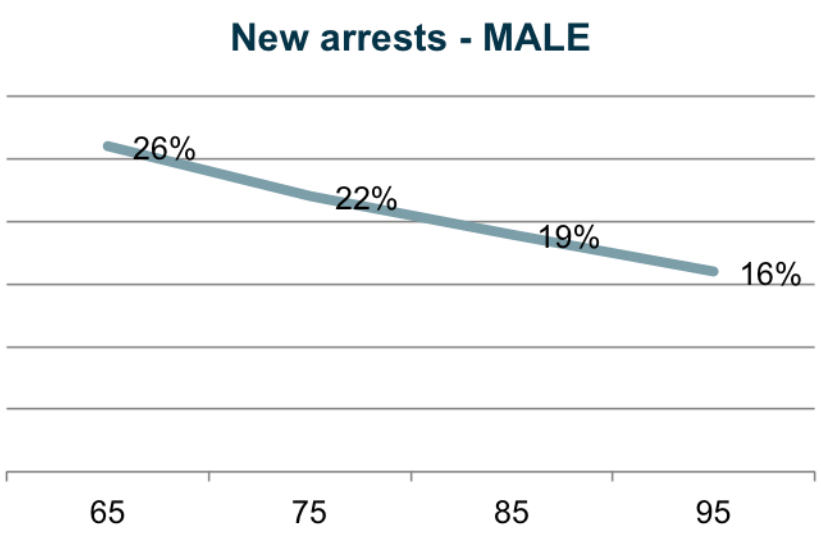
Outcome	Stardardised Median Difference (SMD)	Number of studies
Post-treatment Offending Behaviour	-.47 (95% CI [-0.74, -0.21], *p<.0001*)	7
Parent-rated antisocial behaviour (compared to TAU)	-.25 (95% CI [-0.52, -0.02], *p=.07*)	8
Follow-up (12-17 months)	-.41 (95% CI [-0.93, 0.10], *p=.10*)	5
Risk reduction on dichotomous variables	RR=.72 (95% CI [0.51, 1.0], *p=.05*)	6

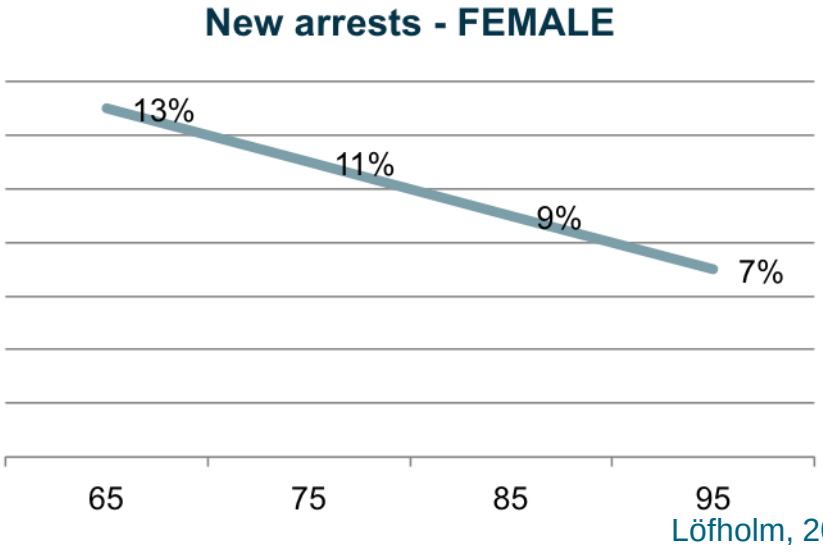
NICE, 2009; 2013

MST: Therapist's adherence predicts outcome









Löfholm, 2014

MST: Effects on recidivism and out-of-home placement

Study	Reduction in Recidivism	Reduction in Placements
Borduin et al. (1990)	72%	not assessed
Henggeler et al. (1992)	43%	64%
Borduin et al. (1995)	63%	57%
Henggeler et al (1997)	26%	3%
Henggeler, Pickrel et al. (1999)	196%	50%
Henggeler, Rowland et al. (1999)	not assessed	49%
Ogden & Halliday-Boykins (2004)	no juvenile justice system	78%
Rowland et al. (2005)	34%	68%
Timmons-Mitchell et al. (2006)	37%	not assessed
Stamburgh et al. (2007)	not assessed	54%
Ellis, Naar-King et al. (2008)	not appropriate	47%
Sundell et al. (2008)	0%	0%
Letourneau et al (2009)	not assessed	59%
Borduin et al. (2009)	50%	80%
Glisson et al. (2010)	not assessed	53%
Butler et al. (2011)	41%	41%
Weiss et al. (2013)	41%	not assessed
Asscher et al., (2013)	51%	not assessed
Average reduction:	**54%**	**50%**

Multisystemic Therapy (MST)

- Long-term effects of MST after **20 years** of intervention against individual therapy:
  - **Recidivism** rates are lower (**38.4%** vs. **54.8%**)
  - Frequency of **misdemeanour offending** is **5x** lower
  - Odds of involvement in family-related **civil suits** during adulthood **half** for MST.

Sawyer & Borduin, 2011

Cost and Cost/effectiveness

- Promising studies carried out in the US show savings of US**$ 9.51–23.59** per dollar spent.
- A **Swedish** study found **no savi**ngs comparing MST and MAU
- A **small U**K study found a statistically **insignificant increase** in costs for MST
- **NICE** guidelines speculated savings of **£7,000** in a cost offset analysis

(Cary et al., 2013; Klietz et al., 2010; NICE, 2013; Olsson, 2010a; 2010b)

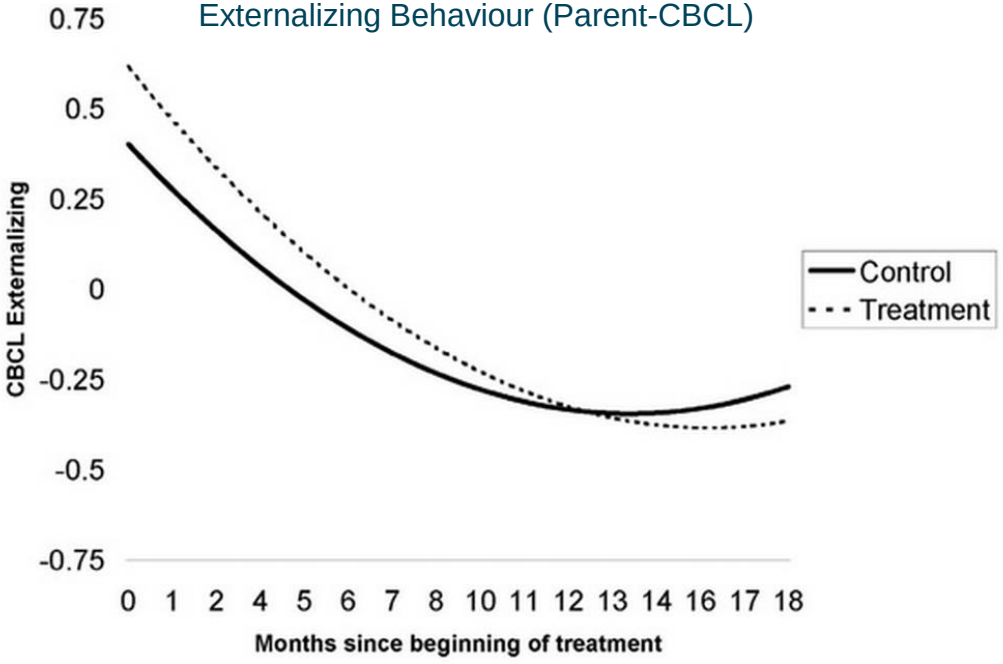
Independent US replication

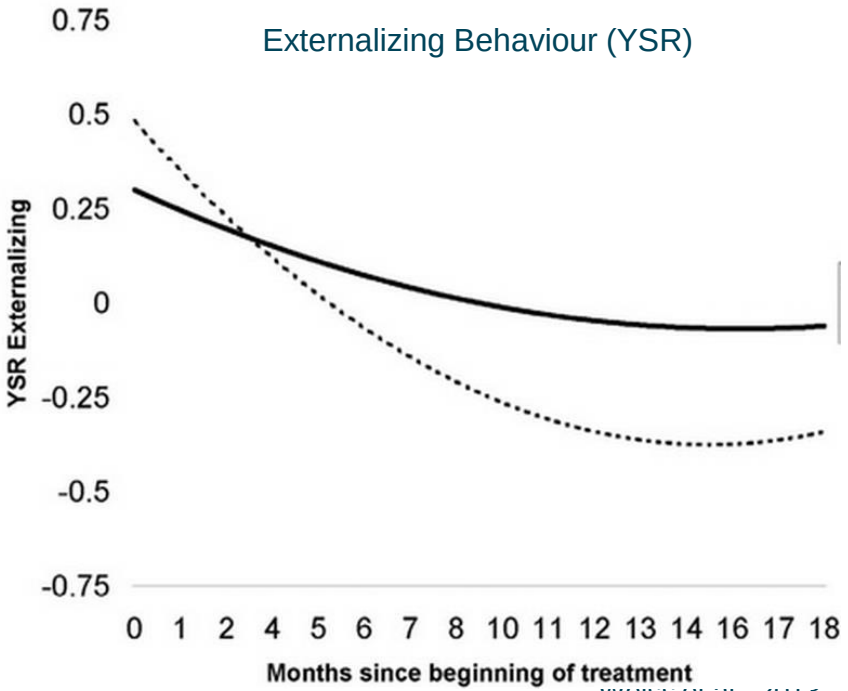
First independent US RCT with **non-court-referred** adolescents

(N= 164; ages: 11-18)

Comparison group: **TAU**

Smaller effect sizes than previous studies but significant on 2 primary outcomes (p<0.05)

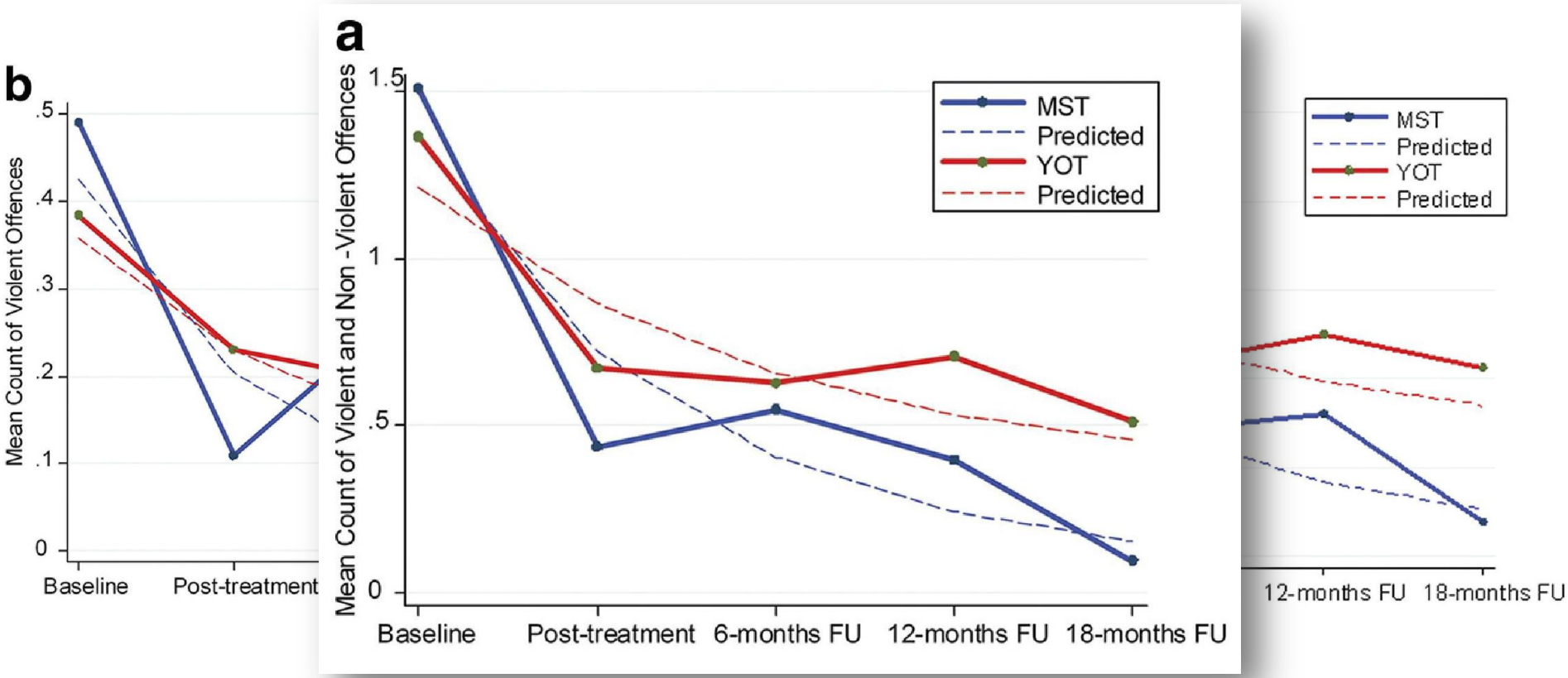




Weiss et al., 2013

UK Pilot of MST at Brandon Centre

- **UK pilot** study in 2011 (N= 108 families, adolescents aged 13-17)
- **Comparison**: Treatment as usual by Youth Offending Teams (YOTs)



Butler et al., 2011

Qualitative Study of MST Implementation

- UK pilot study in 2011 (N= 108 families)
- Thematic analysis of 37 interviews (*21 families*: 21 parents, 16 young people)

Domain 1:

Engagement in MST and Initial Process of Change

1. *At family's convenience*
2. *Holistic approach*
3. *Practical approach, early observable benefits*
4. *Strong therapeutic relationship, person centered*
5. *Therapist seen as source of support*

Domain 2:

Outcomes are complex

1. *Increased parental confidence and skills*
2. *Relationship improves*
3. *Young person choosing to create a different future*
4. *Behaviour mostly improves*
5. *Not all targets met*

Tighe et al., 2012

Implementing Randomisation: Scientific Context

"There is simply no serious scientific alternative to the generation of large-scale randomised evidence….RCT have a central role to play in the development of rational criteria for the planning of health care throughout the world."

Peto, R, Collins, R. Gray, R

J Clin Epidemiol 1995; 48:23-40

Why undertake an additional RCT?

- Will it replicate in the UK across sites? Need multisite to catch **variability of MAU** as well as generalisability.
- Large **pre- post** differences **not enough** in the UK.
- Change in parent rated behavior may not predict **reduction in criminality**.
- Need to understand **mechanism of change** which will only be possible from **sophisticated** (latent class mixed effects growth curve) **modelling** which requires **large sample** size.
- Need long follow-up to see **sleeper effects** as well as seeing if effects **wash-out**.

The START project: Relevance

- In line with the UK Government's current emphasis on developing **evidence-based, targeted, effective local services** that *represent value for money.*
- There is no strong evidence for **transportability** of MST beyond the US
- This study will provide a **"home-grown" benchmark**
  - Will assure the **viability** of MST in the UK
  - Will provide the first **detailed map of** young people's **service use**
  - Will **guide implementation** through knowledge about service structure
  - Will inform about **critical aspects of CYP mental health provision**
  - In line with **CYP IAPT**

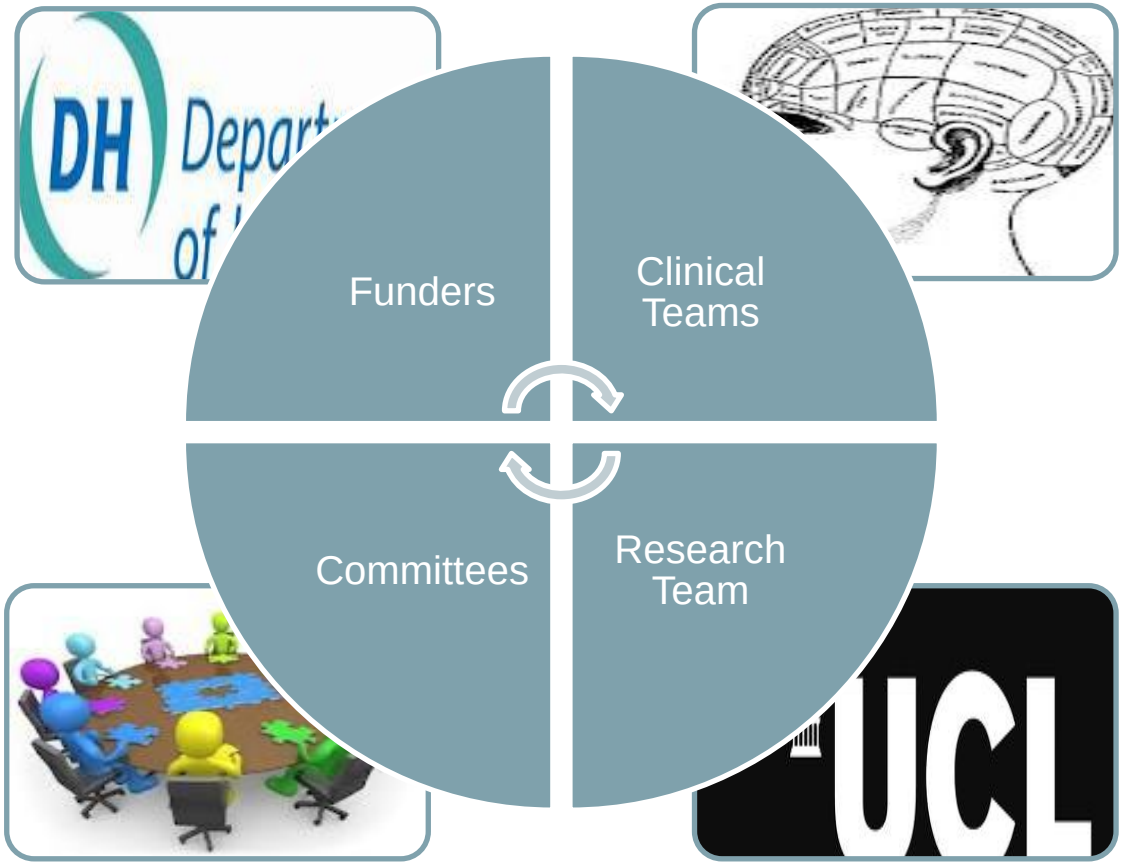
(Cabinet Office, 2006)

The START follow-up project: Aims

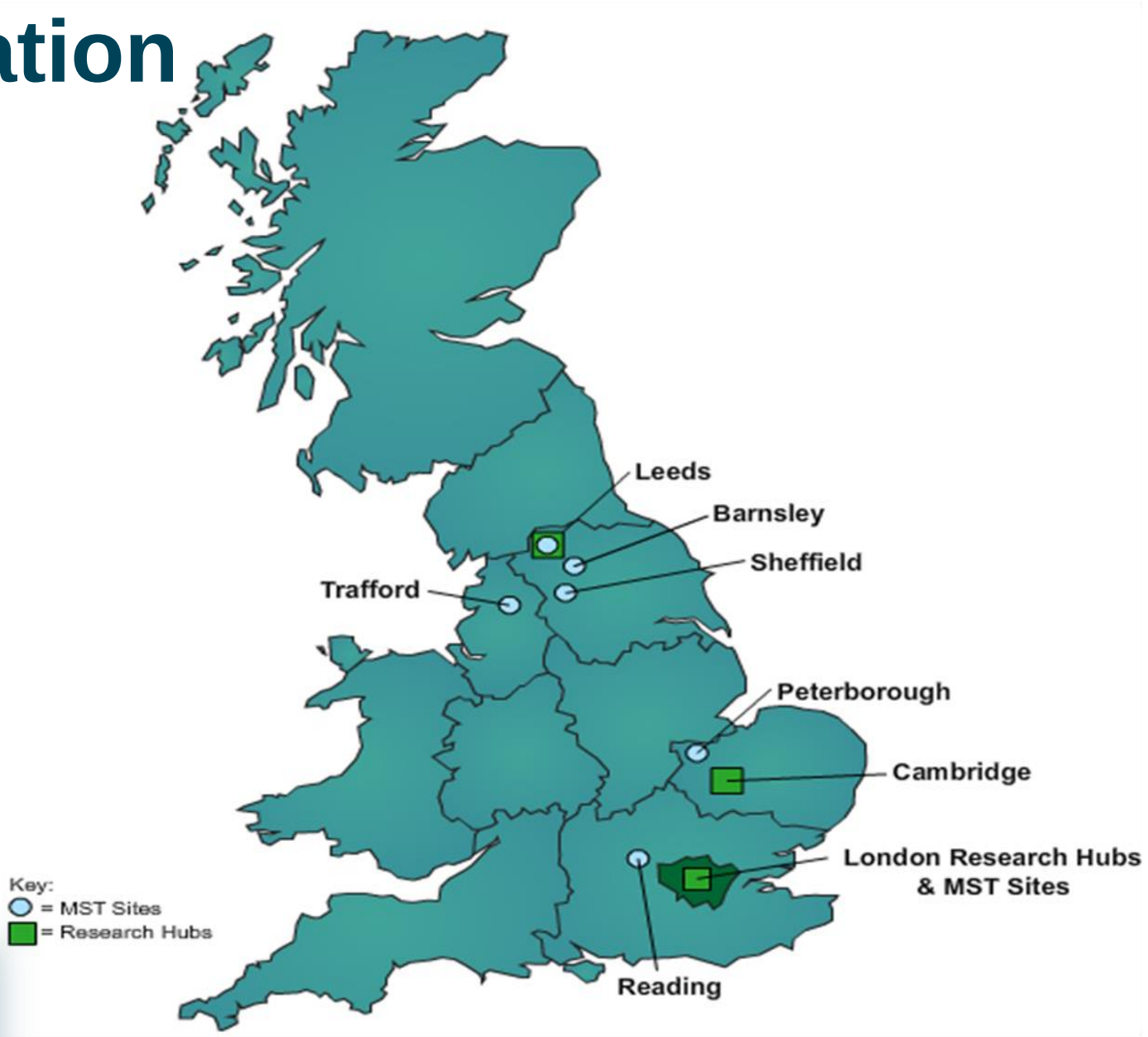
- Evaluate the medium- to **long-term efficacy of MST** relative to MAU in the UK, as suggested by NICE guidelines.
  - Primary outcome: Criminal conviction 5 years post-randomisation
  - **Secondary outcomes** (**4 years** follow-up):
    - Arrests and cautions
    - Psychiatric problems
    - Educational progress
    - Work adjustment
    - Social relationships
    - Pregnancy (unplanned)
    - Physical health

- Evaluate the cost-effectiveness of **MST relative to MAU**
- Identify correlates of good service **transition from child to adult** and its association with outcome

Stakeholders



Site location

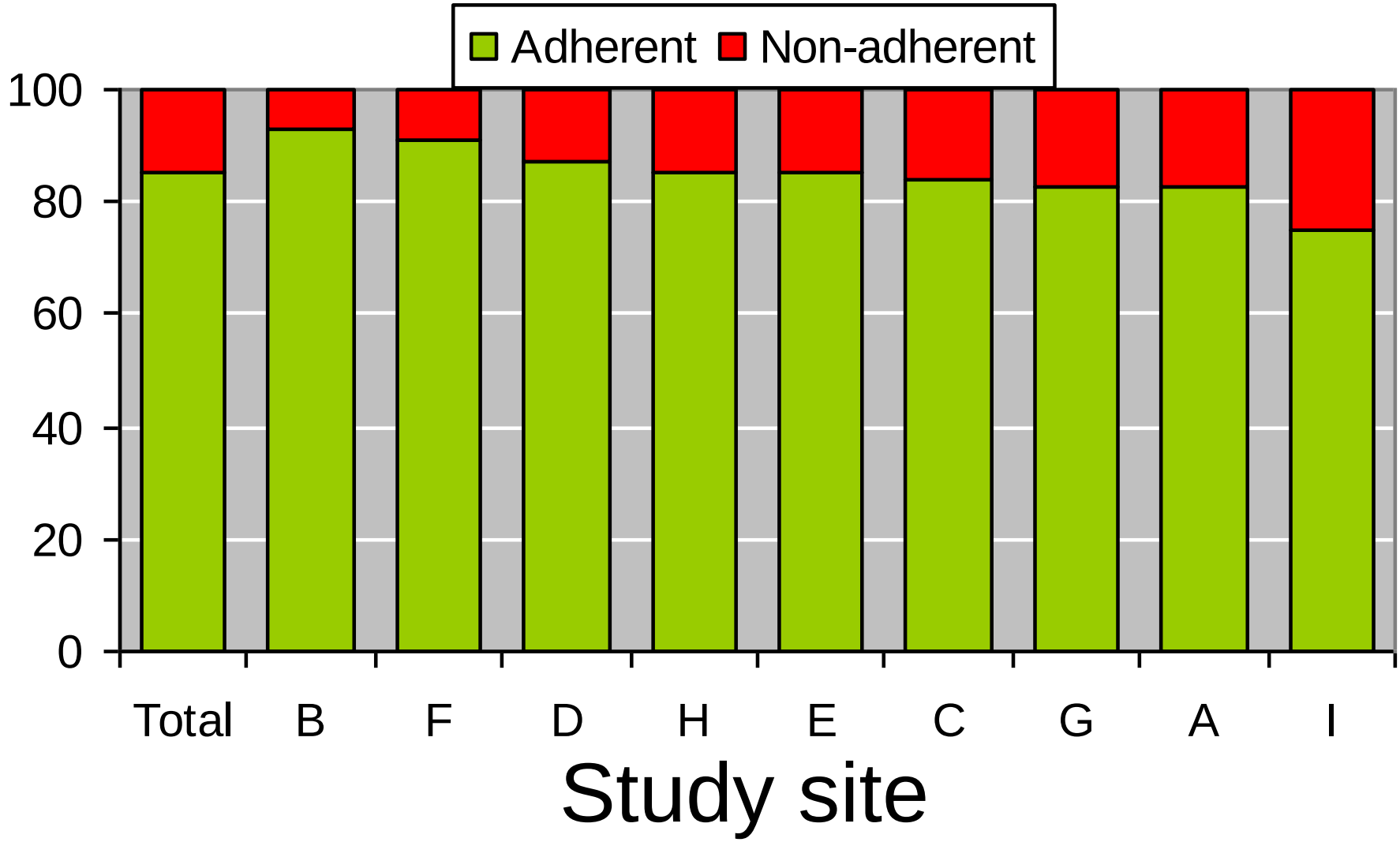


The START project: recruitment

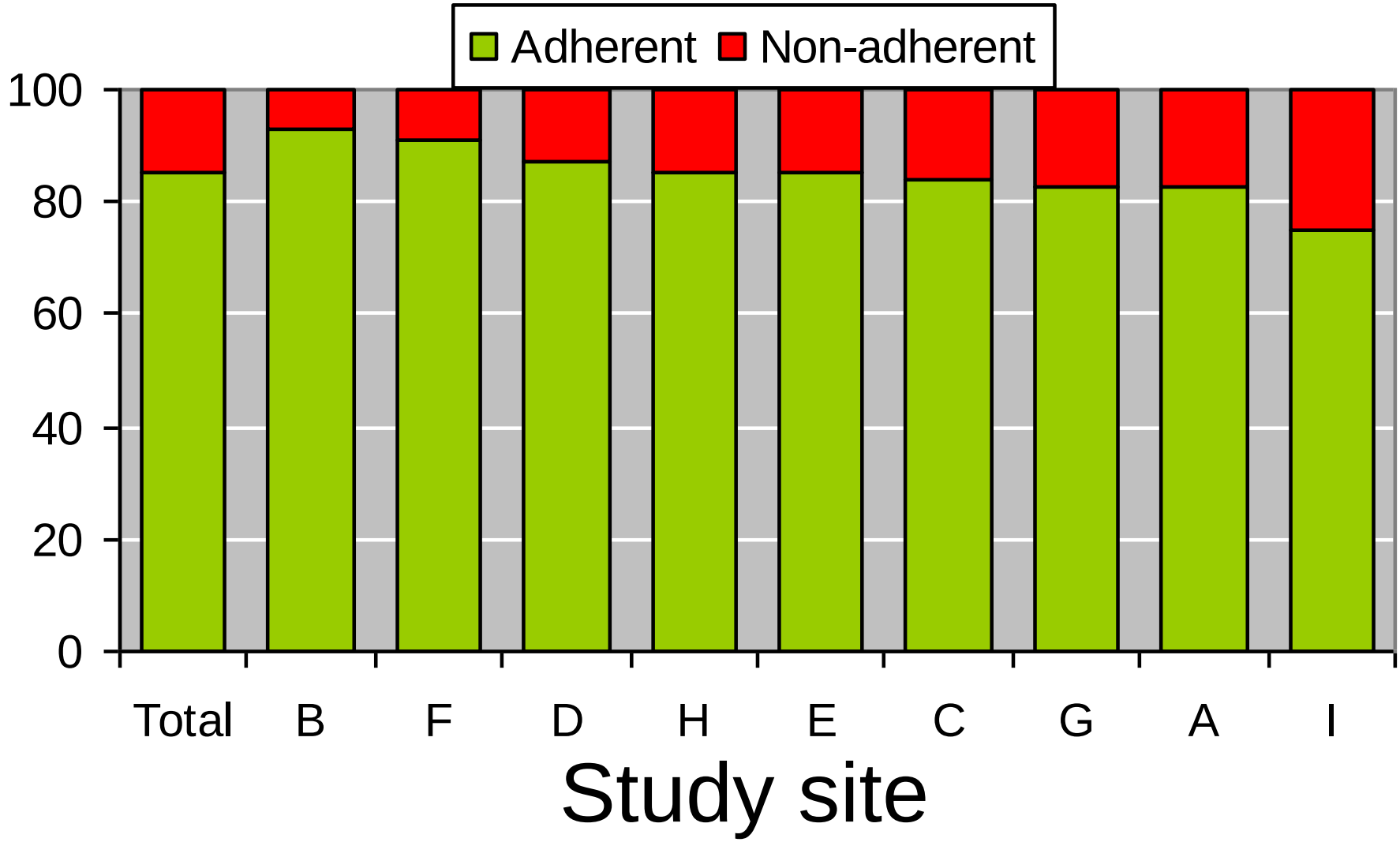
- 9 sites, representative of English population centres
  - 4 South-East
  - 4 in the North
  - 1 in East Anglia

- Two based at CAMHS, one in a YOT and the rest in multidisciplinary teams including social care, CAMHS, education and youth services.
- Referral routes:
  - 46% via children's services
  - 20% via forensic services
  - 18% via child mental health services
  - 16% via educational services
- Participants were randomised to MST or MAU
  - 80% followed up to 6, 12 and 18 months
  - Clinical record data available for 100%
- All sites have adherence to the MST programme

Percent of treatments meeting minimum criteria for adherence



Percent of treatments meeting minimum criteria for adherence



Research Team

Professor Peter Fonagy (CI)

Dr **Stephen** Butler (Co-Investigator)

Rachel Haley (Trial Coordinator)

London Hub

Leeds Hub

Cambridge Hub

Greenwich MST
Hackney MST
Merton & Kingston MST
Reading MST

Barnsley MST
Leeds MST
Sheffield MST
Trafford MST

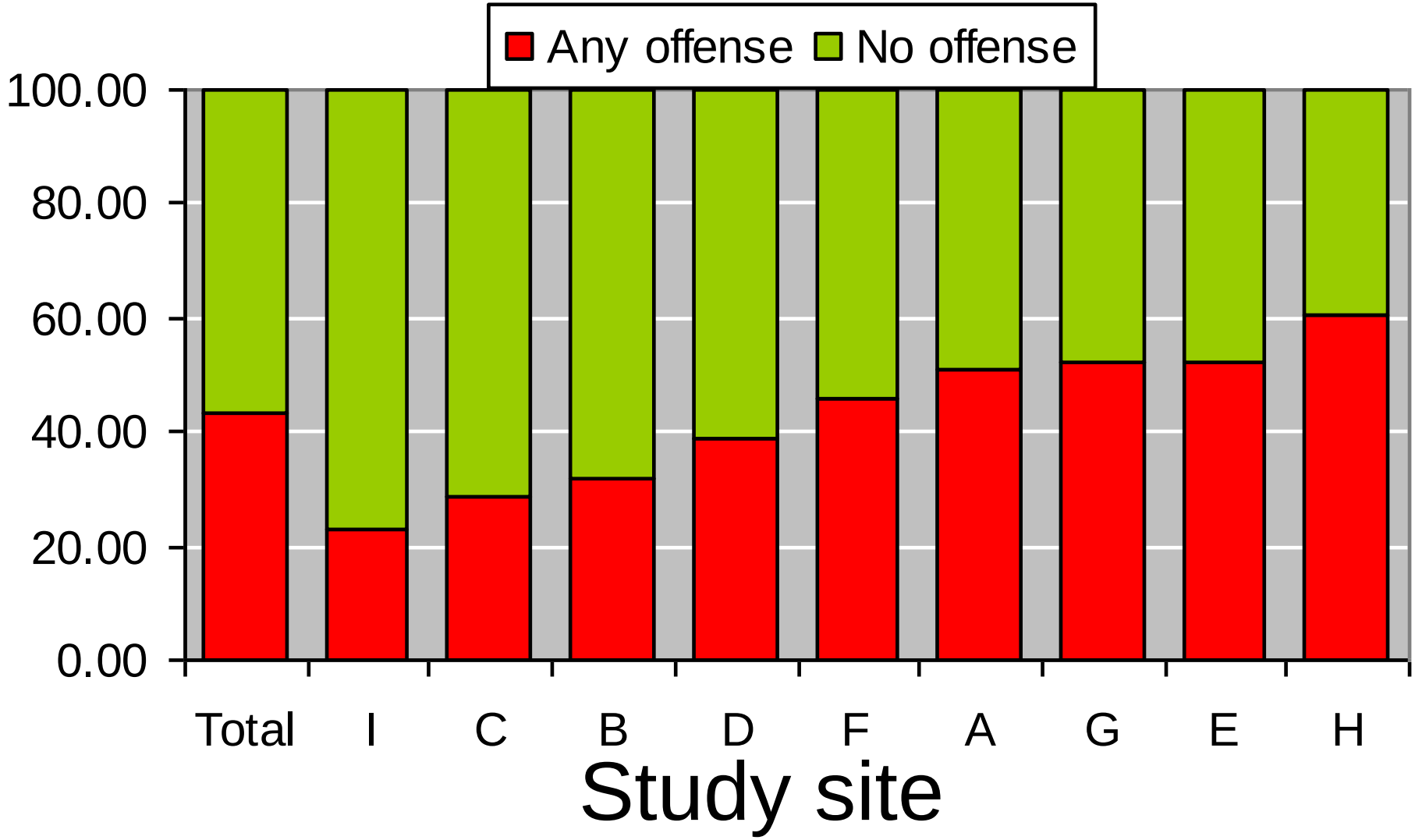
Peterborough MST

START

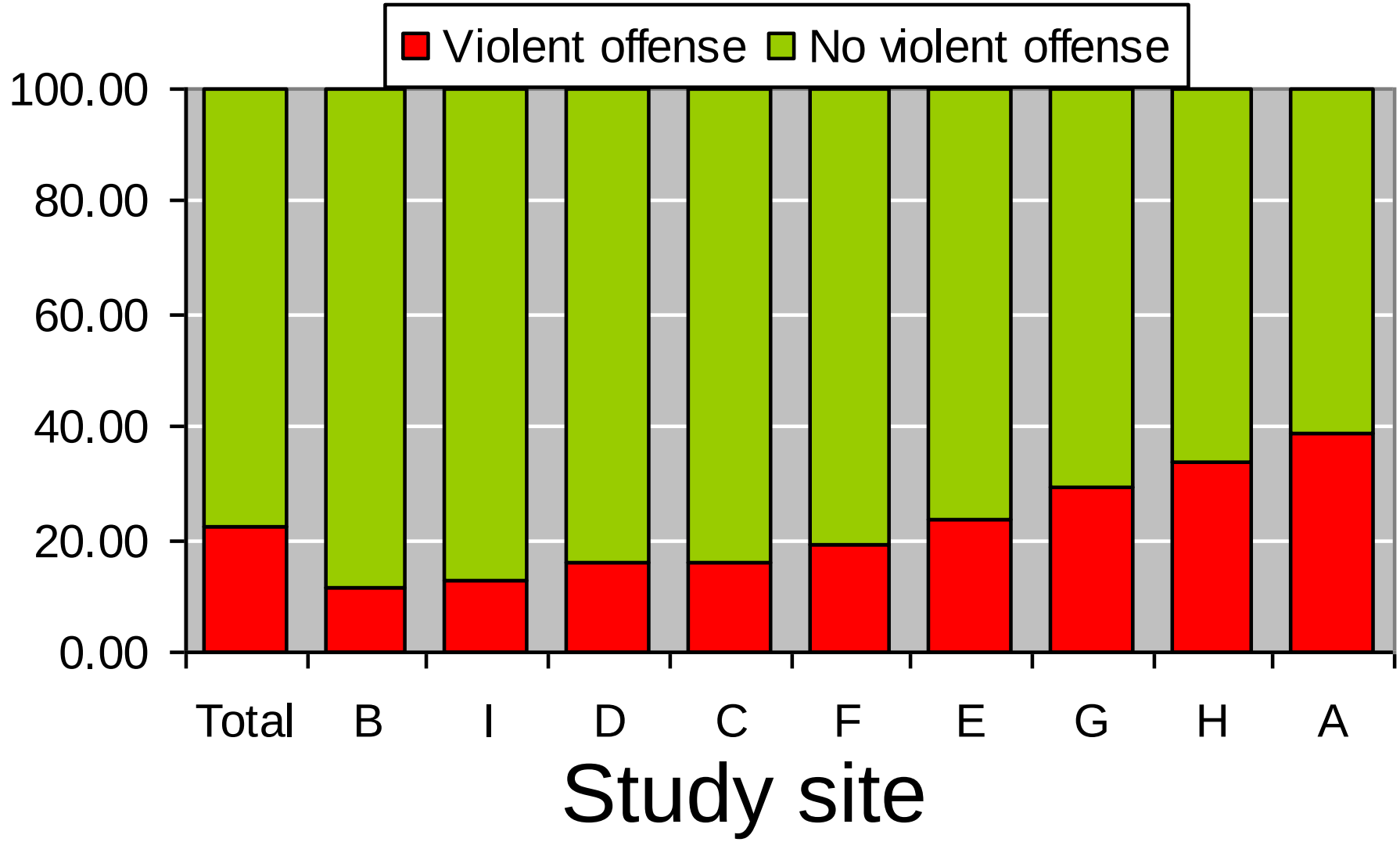
The START project: sample

- 684 families
  - Adolescents are 11-17 (mean=13.8) years old
  - 63% males
  - 66% from semi-skilled/unskilled background
    - 10.6% from a home where main carer is unemployed
  - Inclusion criteria
    - Persistent and enduring violent/aggressive behaviour or
    - Significant risk of harm to other or self or
    - A conviction or 3 warnings/reprimands or
    - Diagnosis of CD and record of unsuccessful outpatient treatment or
    - Permanent school exclusion
  - And at least 3 of the following:
    - Excluded or significant risk of school exclusion
    - High levels of non-attendance to school
    - Offending history or significant risk of offending
    - Previous episodes on the Child Protection Register
    - Previous episodes of being looked after
    - History of siblings being looked after

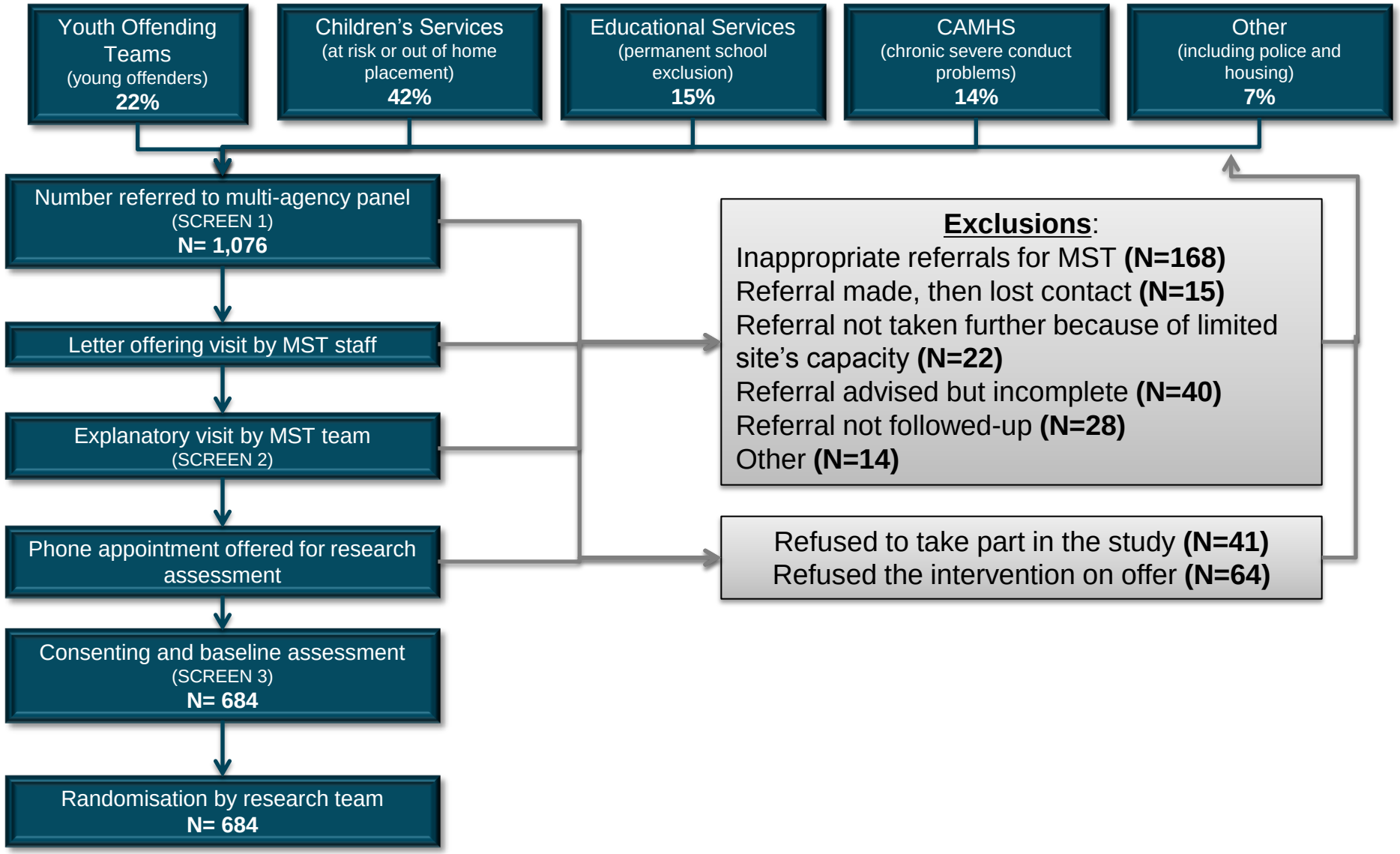
Percent committed an offense in year prior to randomisation



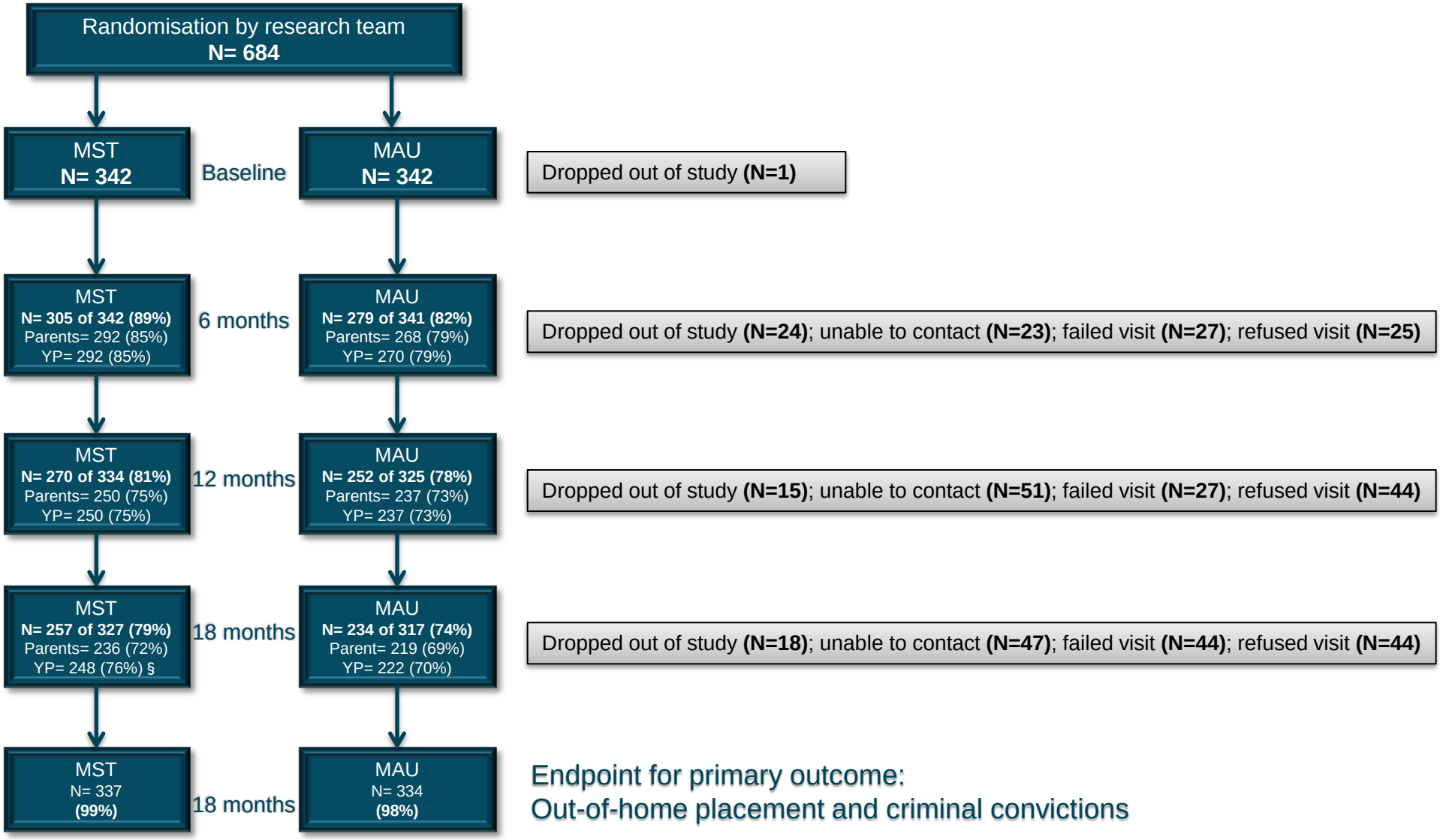
Percent committed violent offense in year prior to randomisation



START: CONSORT Diagram



START: CONSORT Diagram



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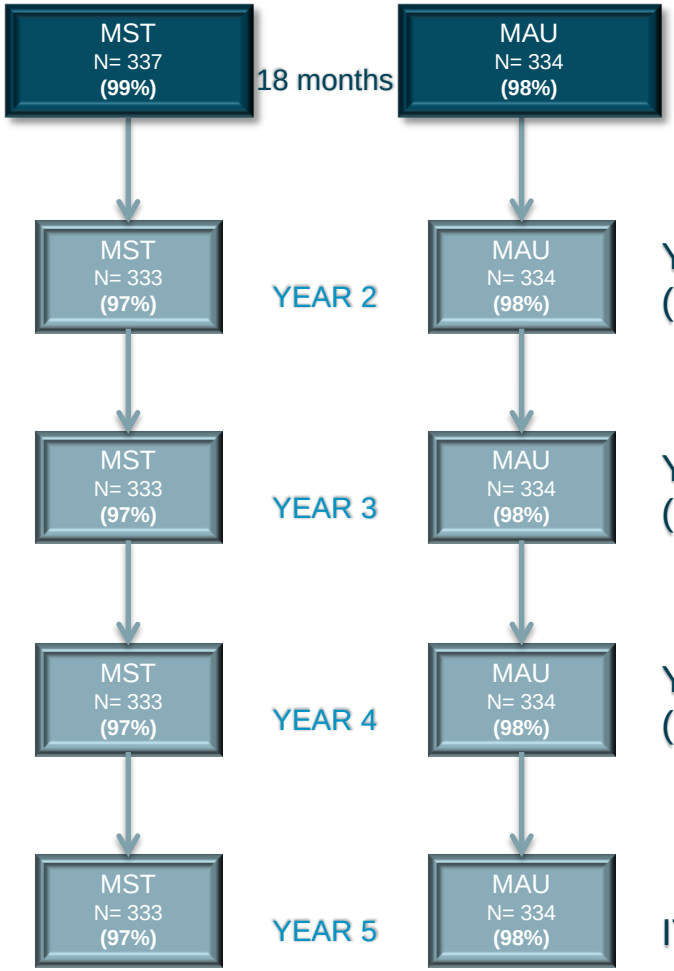

Endpoint for primary outcome:
Out-of-home placement and criminal convictions

Year 2: Follow-up of secondary outcome & additional outcomes
(3% decline participation and further 3% attrition from 18 months)

Year 3: Follow-up of secondary outcome & additional outcomes
(10% attrition, 2% dropout, 4% unable to contact, 4% failed visit)

Year 4: Follow-up of secondary outcome & additional outcomes
(10% attrition, 2% dropout, 4% unable to contact, 4% failed visit)

ITT Year 5: Endpoint for primary outcomes based on case records

The START project's design: Mixed-methods

a. Medium- and long-term follow-up of a multi-site pragmatic superiority trial: MST vs MAU in the UK.
b. A naturalistic study documenting
    i. young people and primary caregivers' reports of change in key secondary outcome domains, as putative mediator
        - quality of parent-adolescent relationship
        - ability to foster relationships outside the family
        - self-efficacy
    ii. trial participants' use of services
    iii. the characteristics of the services they used in relation to outcomes
c. Qualitative interview-based study
    i. Young people's and caregivers' experience of transition from child to adult services regarding outcomes.
    ii. To explore MST and MAU clinicians' experiences of service delivery to investigate barriers to implementation.

Why does MST work?

- **Parenting** has a key **evolutionary function** for transmitting culture across the generation
- Attachment is a key **evolutionarily determined mechanism** for marking an evolutionarily protected path for transmitting relevant, generalizable information across the generations (signaling trustworthiness of source)
- **Disorganized attachment** predicts conduct problems
- MST focuses (but it could focus more) on **restoring the epistemic trust** a child can have in the parents, educators, and their social world
- The organization and delivery of **all psychological therapies could benefit** from taking note of this system

Thank you to the START research team (PIs, RAs, interns, and above all the families and young people who helped with this almost finished programme of work.

And thank you for listening!

Slides available from: P.Fonagy@UCL.AC.UK