



methodological quality of research. As such, evidence to support the use of Treatment Foster Care for adolescents as an effective intervention in the UK is inconsistent,

such, educational psychologists (EPs), who are typically employed or commissioned by a local authority, are well placed to provide psychological assessment and advice to support the identification and implementation of effective interventions that meet the needs of LACYP.

For EPs working with LACYP, a point of reference is the National Institute for Health and Care Excellence (NICE) which provides guidance and quality standards for good practice in health and social care. Quality Standard 31 (NICE, 2013) states that high-quality foster care is provided by trained and supported foster carers and ensures access to specialist and dedicated services. In this way, foster carers are able to fulfil a child's basic need for love and care and meet emotional, physical, behavioural, and educational needs – all of which are conducive to positive well-being (NICE, 2013). Where LACYP are presenting with seriously challenging behaviour, NICE Guideline 205 recommends Multidimensional Treatment Foster Care (MTF6 0 Tdc(0) st

'program' refers to the wraparound multimodal care provided by a TFC placement. Similarly, 'treatment' highlights the joint working of agencies to facilitate the development of prosocial behaviours through assessment and intervention. Finally, 'agency staff' is the term used to refer to the multi-agency professionals that support foster carers with the provision of TFC.

Bryant and Snodgrass (1991) provide a useful framework to operationalise TFC and, therefore, this is the definition of TFC adopted in this review. However, it is worth noting that in actuality there is variation in the design and delivery of TFC

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conducted at the Oregon Social Learning Center (OSLC) that led to the development of the Coercion Model underpinning TFC as an intervention for challenging or antisocial behaviour (Fisher & Gilliam, 2012). The Coercion Model hypothesises that severe and inconsistent discipline methods can lead to the development of problem behaviours

vicious cycle; this is the foundational principle of the OSLC underpinning the wide range of OSLC and non-OSLC parenting interventions (Fisher & Gilliam, 2012).

As previously mentioned, TFCO is the intervention recommended within the UK by NICE for LACYP presenting with seriously challenging behaviours. Yet, despite its prevalence and evidence base in the US, the transferability and implementation of TFCO in the UK have not been sustainable due to complex contextual differences between the US and the UK (Waterman, 2021). Consequently, investigations into the

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**Table 1**

List of Terms Used in the Database Search

Population	Intervention	Context
looked-after OR	"Treatment Foster Care" OR	UK OR
"looked after" OR	"Therapeutic Foster Care" OR	"United Kingdom" OR
child* OR	"Intensive Foster Care" OR	England OR
young OR	"TFCO*" OR	Scotland OR
youth* OR	"MTFC*" OR	Wales OR
teen* OR	"Solihull Approach" OR	"Northern Ireland"
adolescen* OR	(Behaviour* AND Intervention*)	
LACYP OR		
CLA OR		
LAC		

Note. (\*) indicates truncation and ("") indicates phrase searching; each column was combined with AND; Child Looked After (CLA); Looked-After Child (LAC)





Criterion	Inclusion	Exclusion	Rationale
	reduce challenging behaviour		
7 Participants	Includes LACYP from across the 10-17 age range	Does not include LACYP from across the 10-17 age range	To allow for the review of improved behavioural outcomes for adolescent LACYP
8 Geographic distribution	Conducted in the UK	Conducted outside of the UK	To allow for the review of interventions delivered in the UK

Note. T

**Table 3**

## List of Studies Included in the Review

## Included Studies

Biehal, N., Ellison, S., & Sinclair, I. (2011). Intensive fostering: An independent evaluation of MTFC in an English setting. *Children and Youth Services Review*, 33(10), 2043–2049. <https://doi.org/10.1016/j.childyouth.2011.05.033>

Bywater, T., Hutchings, J., Linck, P., Whitaker, C., Daley, D., Yeo, S. T., & Edwards, R. T. (2011). Incredible Years parent training support for foster carers in Wales: A multi-centre feasibility study. *Child: Care, Health and Development*, 37(2), 233–243. <https://doi.org/10.1111/j.1365-2214.2010.01155.x>

Green, J. M., Biehal, N., Roberts, C., Dixon, J., Kay, C., Parry, E., Rothwell, J., Roby, A., Kapadia, D., Scott, S., & Sinclair, I. (2014). Multidimensional Treatment Foster Care for adolescents in English care: Randomised trial and observational cohort evaluation. *The British Journal of Psychiatry*, 204(3), 214–221. <https://doi.org/10.1192/bjp.bp.113.131466>

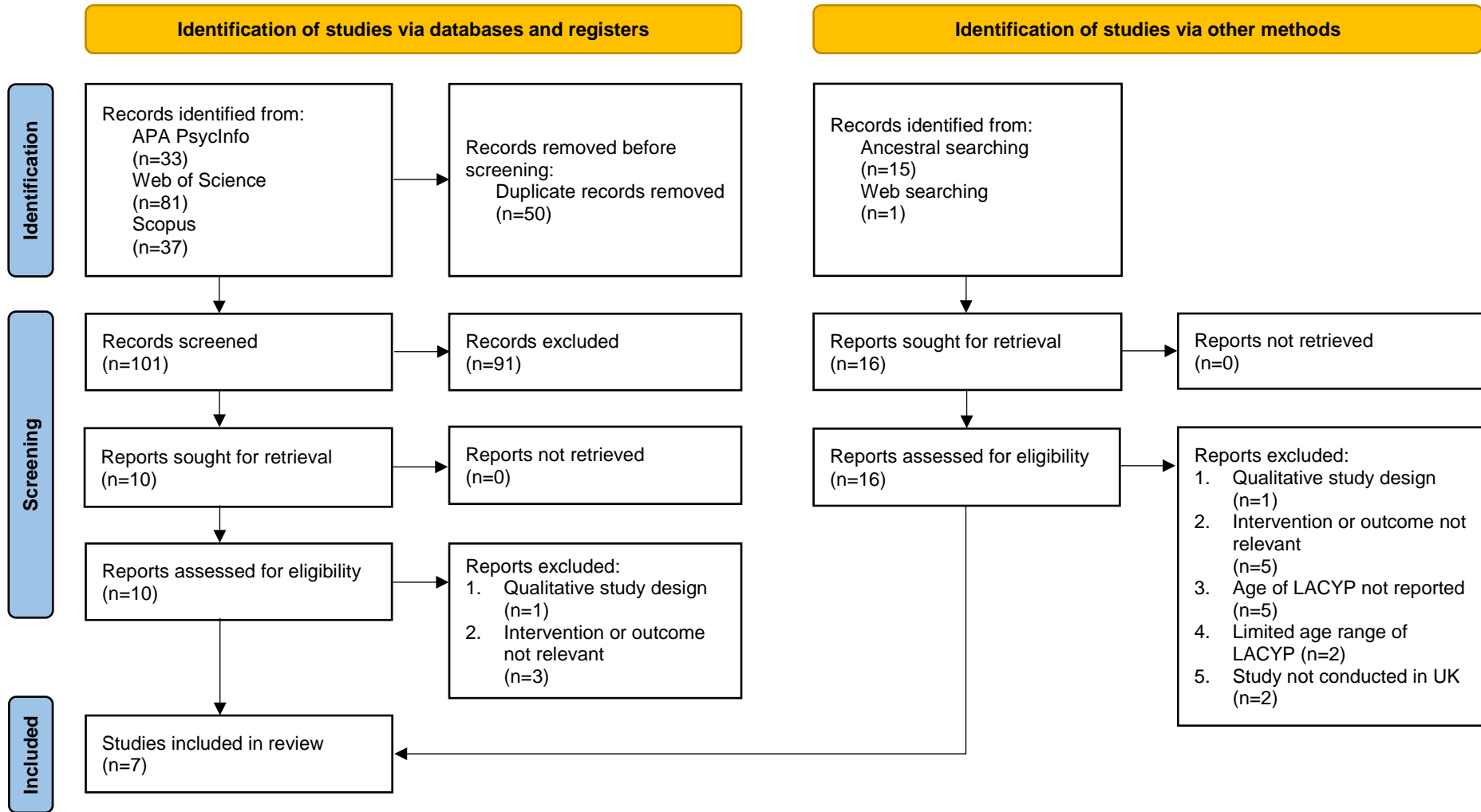
McDaniel, B., Braiden, H. J., Onyekwelu, J., Murphy, M., & Regan, H. (2011). Investigating the effectiveness of the Incredible Years Basic Parenting programme for foster carers in Northern Ireland. *Child Care in Practice*, 17(1), 55–67. <https://doi.org/10.1080/13575279.2010.522979>

Moody, G., Coulman, E., Brookes-Howell, L., Cannings-John, R., Channon, S., Lau, M., Rees, A., Segrott, J., Scourfield, J., & Robling, M. (2020). A pragmatic randomised controlled trial of the Fostering Changes programme. *Child Abuse & Neglect*, 108, 104646. <https://doi.org/10.1016/j.chiabu.2020.104646>

Rhoades, K. A., Chamberlain, P., Roberts, R., & Leve, L. D. (2013). MTFC for high-risk adolescent girls: A comparison of outcomes in England and the United States. *Journal of Child & Adolescent Substance Abuse*, 22(5), 435–449. <https://doi.org/10.1080/1067828X.2013.788887>

Roberts, R., Glynn, G., & Waterman, C. (2016). ‘We know it works but does it last?’ The implementation of the KEEP foster and kinship carer training programme in England. *Adoption & Fostering*, 40(3), 247–268. <https://doi.org/10.1080/02643758.2016.1191111>

**Figure 1**  
Prisma Flow Diagram Depicting Flow of Information Through the Different Phases of the Systematic Literature Search (BMJ, 2021)



## **Weight of Evidence**

A critical appraisal of each of the seven studies was conducted in line with Gough's (2007) Weight of Evidence (WoE) framework. As such, each study was appraised according to its methodological quality (WoE A), the relevance of its methodology (WoE B), and the relevance of the focus of the study to this review's research question (WoE C).

As can be seen in the mapping of the evidence (Table 4), the seven included studies employed four different study designs which warranted the use of four different appraisal tools for WoE A. It should be noted that Green et al.'s (2014) study consisted of two quantitative arms using different designs and from hereon will be referred to individually as Green et al.'s randomised controlled trial (RCT; 2014) and Green et al.'s case-control study (CCS; 2014).

Consequently, the included studies were appraised with reference to the design-specific critical appraisal checklists for randomised controlled trials, quasi-experimental studies, case-control studies, and case series as available in the Joanna Briggs Institute's (JBI) Manual for Evidence Synthesis (Aromataris & Munn, 2020) – these have been included in Appendix B.

WoE B was judged by determining the extent to which the design of the study is appropriate for investigating intervention effectiveness. The JBI Levels of Evidence for Effectiveness (Munn et al., 2015),

based on this review's research question seeking to investigate the effectiveness of TFC in improving challenging behaviour in adolescents in the UK. As this review sought to include different models of TFC, it was appropriate to consider whether or not the interventions being studied met this review's definition of TFC. Additionally, given the range of measures used in studies, it was appropriate to give more weight to those studies that sought to limit bias by including measures other than carer reports. Finally, it was pertinent to the review question to give greater consideration to those studies that included LACYF from across the adolescent age range of 10 to 17.

WoE D was calculated as the mean of WoE A-C to give each study an overall judgement score out of three – this is presented in Table 7 as a summary of WoE A to D.

**Table 4**

Note. Fostering Changes (FC); Incredible Years Basic Parenting (IY); Multidimensional Treatment Foster Care/Treatment Foster Care Oregon (TFCO)



**Table 5**  
Levels of Evidence for Effectiveness Studies

	Levels of Evidence - Effectiveness	WoE B
Level 1 Experimental Designs	Level 1.a – Systematic review of Randomized Controlled Trials (RCTs)	3
	Level 1.b – Systematic review of RCTs and other study designs	
	Level 1.c – RCT	
	Level 1.d – Pseudo-RCTs	
Level 2 Quasi-experimental Designs	Level 2.a – Systematic review of quasi-experimental studies	2
	Level 2.b – Systematic review of quasi-experimental and other lower study designs	
	Level 2.c – Quasi-experimental prospectively controlled study	
	Level 2.d – Pre-test – post-test or historic/retrospective control group study	
Level 3 Observational – Analytic Designs	Level 3.a – Systematic review of comparable cohort studies	1
	Level 3.b – Systematic review of comparable cohort and other lower study designs	
	Level 3.c – Cohort	

Levels of Evidence - Effectiveness		WoE B
Level 4 Observational – Descriptive Studies	Level 4.a – Systematic review of descriptive studies	0
	Level 4.b – Cross-sectional study	
	Level 4.c – Case series	
	Level 4.d – Case study	
Level 5 Expert Opinion and Bench Research	Level 5.a – Systematic review of expert opinion	
	Level 5.b – Expert consensus	
	Level 5.c – Bench research/single expert opinion	

**Table 6**

WoE C Criteria Used to Assess the Relevance of Included Studies in line with the Review Question

Included study	Does the intervention meet this review's definition of TFC?	Is behaviour
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**Table 7**



## Participants

In line with the review question, all the included studies involved adolescent index LACYP (that is, the specific child or young person subject to the intervention) displaying challenging behaviour and eligible for intensive behavioural intervention. Across the seven studies, there were 908 index LACYP aged between 2-21 years with an overall weighted average age of 12.67 years. As very few studies identified in the literature search focused solely on behavioural outcomes for adolescents from within the age range of 10-17, studies with a wider age range were included as per the inclusion criteria. Two studies (McDaniel et al., 2011; Rhoades et al., 2013) did not include index children from across the 10-17 age range and were therefore penalised in WoE C. One study (Biehal et al., 2011) did not report the age range of their participants and was also penalised in WoE C. Among the comparative design studies (Biehal et al., 2011; Bywater et al., 2011; Green et al., RCT and CCS, 2014; Moody et al., 2020), there were no significant differences reported in the characteristics of index LACYP in the intervention group and those in the comparison group. This was recognised by a higher score in WoE A.

RCTs are regarded as the gold standard for effectiveness research due to the random allocation of participants which reduces bias allowing for a more accurate examination of causal relationships between interventions and outcomes (Hariton & Locascio, 2018). This resulted in a higher WoE B score. However, the use of RCTs within the field of social work is controversial and limited due to concerns about the ethicality and feasibility of randomisation particularly when working with vulnerable groups such as LACYP (Dixon et al., 2014; Mezey et al., 2015). As such, the three RCTs included in the study did not involve true randomisation which was accounted for in their WoE A score. Additionally, two studies (Biehal et al., 2011; Green et al., CCS, 2014) that included non-randomised comparative designs to assess effectiveness were given lower scores in WoE B than RCTs but higher scores than the non-comparative studies (McDaniel et al., 2011; Rhoades et al., 2013; Roberts et al., 2016). Despite the substantial limitations of non-comparative studies of effectiveness, it was decided to include these studies, albeit penalised in WoE B, to recognise the difficulties of conducting research with LACYP as previously highlighted (Dixon et al., 2014; Mezey et al., 2015).

### **Interventions**

Across the included studies, four different behavioural interventions were identified. As part of WoE C, each intervention was assessed against this review's definition of TFC adopted from Bryant and Snodgrass (1991) and consequently deemed to be relevant to the review question.

TFCO was the focus of three studies (Biehal et al., 2011; Green et al., RCT and CCS, 2014; Rhoades et al., 2013). TFCO is a multimodal 9-month OSCL TFC





development of prosocial behaviour through 12 weekly three-hour group sessions (Moody et al., 2020).

### **Measures**

Across the seven studies, an array of different instruments was used to measure primary and secondary outcomes. Studies that elicited data from multiple sources using multiple measures scored higher in WoE A. Four studies (Bywater et al., 2011; McDaniel et al., 2011; Moody et al., 2020; Roberts et al., 2016) measured behavioural outcomes only through foster-carer-reported measures and were penalised in WoE C.

Two studies (Moody et al., 2020; Roberts et al., 2016) used SDQ, a widely used assessment measuring social, emotional, and behavioural strengths and difficulties. SDQ has shown good internal consistency, reliability, and validity (Pote et al., 2020). However, as a carer-reported measure, this incurred penalties in WoE C.

ECBI was another instrument used by two studies (Bywater et al., 2011; McDaniel et al., 2011) to measure the intensity of challenging behaviour. ECBI has shown good validity and internal consistency but limited test-retest reliability (Pote et al., 2020). As a carer-reported measure, it incurred penalties in WoE C.

HoNOSCA was used by Green et al. (RCT and CCS; 2014) to measure the severity of social functioning including disruptive, anti-social, or aggressive behaviour. This

measure has shown adequate internal consistency, reliability, and validity (Pirkis et al., 2005). The measure was completed by two independent researchers with reference to several sources including structured interviews with foster carers and LACYP, the carer-rated Child Behaviour Checklist and the self-rated Youth Self Report which have both shown good internal consistency, reliability, and validity (Pote et al., 2020), and data provided by education, health, and social care services. This systematic approach to ensuring the reliability and validity of the data was awarded higher scores 2i.TcC0.002.

three were within subjects (McDaniel et al., 2011; Rhoades et al., 2013; Roberts et al., 2016).

Three studies (Bywater et al., 2011; Rhoades et al., 2013; Roberts et al., 2016) found medium intervention effect sizes that were statistically significant. However, it should be noted that two of these studies (Rhoades et al., 2013; Roberts et al., 2016) were given a low WoE D due to the substantial design limitations of case series as highlighted in WoE B. Additionally all three studies were penalised in WoE C: two studies (Bywater et al., 2011; Roberts et al., 2016) relied solely on carer-reported data, and the age range of the index LACYP in one study (Rhoades et al., 2013) was not from across the 10-17 age range.

Two studies (Biehal et al., 2011; Green et al., RCT and CCS, 2014) reported small effect sizes that were non-significant, while one study (Moody et al., 2020) found a significant difference between the intervention group and comparison group but an effect size that was negligible.

Only one study (McDaniel et al., 2011) found a large effect size; however, this was not statistically significant. Furthermore, this study scored the lowest in WoE D due to substantial limitations across WoE A-C: use of a case series design, carer report being the sole source of data on behavioural outcomes, and the recruitment of index LACYP from a limited age range.

**Table 8**  
Summary of Effect Sizes for Reviewed Studies  
Study

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Roberts et al. (2016)	Case Series	214	KEEP	Behaviour	SDQ	t-test	-0.78	0.01*	1.33 Low
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Note. d = Cohen's d effect size (.20 = small effect, .50 = medium effect, .80 = large effect) (Cohen, 2013). (\*) indicates statistical significance at p=0.05.

## **Conclusion and Recommendations**

TFC, specifically TFCO, is the recommended intervention for LACYP with seriously challenging behaviour (NICE, 2021b). However, the evidence base supporting this recommendation

However, the current review highlights some promising findings in variations to the models of TFC,

of random allocation, multiple measures, multiple sources, and assessor blinding and masking are feasible within a mixed-methods design producing more reliable empirical evidence to support the use of interventions.

In summary, the findings of the current review reveal inconsistent levels of effectiveness of TFC highlighting a need for more high-quality experimental research to support its use in the UK for adolescent LACYP with seriously challenging behaviour in the UK.



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## Appendices

### Appendix A: List of Studies Excluded with Criterion Number as the Reason for Exclusion

Excluded Studies	Criterion
<p>Alderson, H., Kaner, E., McColl, E., Howel, D., Fouweather, T., McGovern, R., Copello, A., Brown, H., McArdle, P., Smart, D., Brown, R., &amp; Lingam, R. (2020). A pilot feasibility randomised controlled trial of two behaviour change interventions compared to usual care to reduce substance misuse in looked after children and care leavers aged 12-20 years: The SOLID study. <i>PLoS ONE</i>, 15(9 September), 1–20.  <a href="https://doi.org/10.1371/journal.pone.0238286">https://doi.org/10.1371/journal.pone.0238286</a></p>	4
<p>Briskman, J., Castle, J., Blackeby, K., Bengo, C., Slack, K., Stebbens, C., Leaver, W., &amp; Scott, S. (2012). Randomised controlled trial of the Fostering Changes programme. Department for Education.  <a href="https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/183398/DFE-RR237.pdf">https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/183398/DFE-RR237.pdf</a></p>	7
<p>Brown, S. (2014). Clinical update: A small service evaluation of a Solihull Approach foster carer training group pilot study. <i>Practice</i>, 26(1), 37–52. <a href="https://doi.org/10.1080/09503153.2013.860094">https://doi.org/10.1080/09503153.2013.860094</a></p>	7
<p>Curran, J., &amp; Bull, R. (2009). Ross programme: Effectiveness with young people in residential childcare. <i>Psychiatry, Psychology and Law</i>, 16, S81–S89. <a href="https://doi.org/10.1080/13218710802242029">https://doi.org/10.1080/13218710802242029</a></p>	4
<p>Dallos, R., Morgan-West, K., &amp; Denman, K. (2015). Changes in attachment representations for young people in long-term therapeutic foster care. <i>Clinical Child Psychology and Psychiatry</i>, 20(4), 657–676.  <a href="https://doi.org/10.1177/1359104514543956">https://doi.org/10.1177/1359104514543956</a></p>	4

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Excluded Studies

Criterion

Davies, P., Webber, M., & Briskman, J. A. (2015).



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Excluded Studies

Criterion

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Excluded Studies

Criterion





Bywater, T., Hutchings, J., Linck, P., Whitaker, C., Daley, D., Yeo, S. T., & Edwards, R. T. (2011). Incredible Years parent training support for foster carers in Wales: A multi-centre feasibility study. *Child: Care, Health and Development*, 37(2), 233–243. <https://doi.org/10.1111/j.1365-2214.2010.01155.x>

<b>Randomised Controlled Trial</b>	Yes	No	Unclear	NA
Was true randomization used for assignment of participants to treatment groups?		X		
Was allocation to treatment groups concealed?			X	
Were treatment groups similar at the baseline?	X			
Were participants blind to treatment assignment?			X	
Were those delivering treatment blind to treatment assignment?			X	
Were outcomes assessors blind to treatment assignment?			X	
Were treatment groups treated identically other than the intervention of interest?	X			
Was follow up complete and if not, were differences between groups in terms of their follow up adequately described and analyzed?	X			
Were participants analyzed in the groups to which they were randomized?	X			
Were outcomes measured in the same way for treatment groups?	X			
Were outcomes measured in a reliable way?				

Green, J. M., Biehal, N., Roberts, C., Dixon, J., Kay, C., Parry, E., Rothwell, J., Roby, A., Kapadia, D., Scott, S., & Sinclair, I. (2014). Multidimensional Treatment Foster Care for adolescents in English care: Randomised trial and observational cohort evaluation. *The British Journal of Psychiatry*, 204(3), 214–221. <https://doi.org/10.1192/bjp.bp.113.131466>

<b>Case-Controlled Studies</b>	Yes	No	Unclear	NA
Were the groups comparable other than the				

McDaniel, B., Braiden, H. J., Onyekwelu, J., Murphy, M., & Regan, H. (2011).