

Overview of results per intervention

Better Futures

The effect of Better Futures compared to treatment as usual for foster care youth aged 16–18.

Intervention (reference)	Outcome	No of participants (studies)	Effect (standard mean difference) after 10 months (95 % CI)	Confidence in effect estimate	Comment
Better Futures focuses on improving school participation for youth in foster care with mental health problems [1]	Mental health (Mental Health Recovery Measure)	59 (1)	0.63 (0.30 to 1.14)	⊕○○○ Very low	Only one study
	Self-determination (ARC Self-Determination Scale, AIR Self-Determination Scale)	59 (1)	0.83 (0.30 to 1.37)	⊕○○○ Very low	Only one study
	Quality of life (Quality of Life Questionnaire)	59 (1)	0.68 (0.15 to 1.21)	⊕○○○ Very low	Only one study
	Attending high school (school records)	59 (1)	1.08 (0.53 to 1.64)	⊕○○○ Very low	Only one study
	Employment (self-report)	59 (1)	−0.09 (−0.62 to 0.42)	⊕○○○ Very low	Only one study

Fostering Healthy Futures (FHF)

The effect of Fostering Healthy Futures (FHF) compared to treatment as usual for foster care children aged 9–11.

Intervention (reference)	Outcome	No of participants (studies)	Effect (standard mean difference) after 6 and 9 months respectively (95 % CI)	Confidence in effect estimate	Comment
Fostering Healthy Futures is a	Mental health symptoms (Trauma Symptom Checklist for Children, Child Behavior	144 (1)	0.65 (0.31 to 0.98)	⊕○○○ Very low	Only one study

mentoring/skills building intervention for preadolescent children, targeting placement stability [2,3]	Checklist and Teacher Report Form; (6 months)				
	Self-competence (Self-Perception Profile for Children; 6 months)	144 (1)	0.09 (-0.07 to 0.42)	⊕○○○ Very low	Only one study
	Quality of life (the Life Satisfaction Survey; 6 months)	144 (1)	0.16 (-0.17 to 0.49)	⊕○○○ Very low	Only one study
	New placement (data from administrative database; 9 months)	144 (1)	0.30 (-0.07 to 0.68)	⊕○○○ Very low	Only one study

Incredible Years (Dina Program)

The effect of Incredible Years (Dina Program) compared to treatment as usual for foster care children aged 5–8.

Intervention (reference)	Outcome	No of participants (studies)	Effect (standard mean difference) after 3 months (95 % CI)	Confidence in effect estimate	Comment
The Incredible Years (Dina Program) is a small-group intervention for children, targeting self-regulatory processes [4]	Physical aggression (Child Behavior Checklist aggression subscale)	91 (1)	-0.28 (-0.69 to 0.13)	⊕○○○ Very low	Only one study
	Self-control (questionnaire to foster parents)	91 (1)	-0.39 (-0.81 to 0.03)	⊕○○○ Very low	Only one study

Supporting Siblings in Foster Care (SIBS-FC)

The effect of Supporting Siblings in Foster Care (SIBS-FC) compared to treatment as usual for foster care siblings.

Intervention (reference)	Outcome	No of participants (studies)	Effect (standard mean difference) after 18 months (95 % CI)	Confidence in effect estimate	Comment
Supporting Siblings in Foster Care is an intervention for improving sibling relationships [5]	Sibling relationships (Multi-Agent Construct of Sibling Relationship Quality, Sibling Relationship Questionnaire, and Sibling Interaction Quality)	263 (1)	0.58 (0.33 to 0.83)	⊕○○○ Very low	Only one study

Take Charge

The effect of Take Charge compared to treatment as usual respectively Foster Care Independent Program for foster care youth.

Intervention (reference)	Outcome	No of participants (studies)	Effect (standard mean difference) after 6 and 9 months respectively (95 % CI)	Confidence in effect estimate	Comment
Take Charge is a self-determination intervention for improving transitions to independent	Emotional and behavioral problems (Child Behavior Checklist; Anxious/Depressed scale)	123 (1)	0.33 (-0.03 to 0.67)	⊕○○○ Very low	Only one study
	Self-determination (ARC Self-Determination Scale, AIR Self-Determination Scale, the	184 (2)	0.43 (0.22 to 0.64)	⊕⊕⊕○ Moderate	Indirectness (-1) ¹

¹ The studies were performed in a different setting from the Swedish school system.

living for high-risk youth who are in both foster care and special education [6,7]	Outcome survey, and Parent AIR Self-Determination Scale)				
	Somatic health (Child Behavior Checklist; Somatic Complaints)	123 (1)	0.51 (0.15 to 0.87)	⊕○○○ Very low	Only one study
	High school completion (school records)	184 (2)	0.38 (0.09 to 0.67)	⊕⊕○○ Low	Imprecision (-1) ² Indirectness (-1) ³
	Employment status (self-report)	184 (2)	0.55 (0.25 to 0.84)	⊕⊕⊕○ Moderate	Indirectness (-1) ⁴
	Quality of life (Quality of Life Questionnaire)	61 (1)	0.62 (0.11 to 1.13)	⊕○○○ Very low	Only one study

Attachment and Biobehavioral Catch-up (ABC)

The effect of Attachment and Biobehavioral Catch-up (ABC) compared to Developmental Education for Families (DEF) for foster care infants.

Intervention (reference)	Outcome	No of participants (studies)	Effect (standard mean difference) after 1 months (95 % CI)	Confidence in effect estimate	Comment
ABC is a short-term attachment-based intervention program	Child's attachment behavior (Parent Attachment Diary and cortisol assay in saliva sampling)	106 (2)	0.60 (0.21 to 0.99) Relevant effect	⊕⊕○○ Low	Indirectness (-1) ⁵ Risk of bias (-1) ⁶
	Child behavior problems	46 (1)	0.55 (0.03 to 1.06)	⊕○○○	Only one study

² The confidence interval is not significantly differed from the criteria of a clinically important effect (SMD of 0.20).

³ The studies were performed in a different setting from the Swedish school system.

⁴ The studies were performed in a different setting from the Swedish labor market.

⁵ Use of outcome measure of unknown relevance (cortisol assay in saliva sampling).

⁶ Use of unvalidated outcome measure (Parent Attachment Diary).

designed to promote sensitive caregiving behavior among foster parents [8–10]	(Parent Daily Report)			Very low	
	Parental sensitivity (observed during a 10-minutes play interaction)	96 (1)	0.18 (–0.22 to 0.58)	⊕○○○ Very low	Only one study

Foster Family Intervention

The effect of Foster Family Intervention compared to treatment as usual for foster care children aged 0–5.

Intervention (reference)	Outcome	No of participants (studies)	Effect (standard mean difference) after 3 months (95 % CI)	Confidence in effect estimate	Comment
Foster Family Intervention focuses on the interaction in the first weeks of the placement in order to improve and develop a secure relationship between foster carer and foster child [11]	Child's stress (measured with salivary cortisol)	59 (1)	0.0 (–0.35 to 0.35)	⊕○○○ Very low	Only one study
	Parenting skills (Emotional Availability Scales)	96 (1)	0.82 (0.45 to 1.19)	⊕○○○ Very low	Only one study
	Stress in the family (Nijmeegse Ouderlijke Stress Index, Revised)	86 (1)	0.0 (–0.35 to 0.35)	⊕○○○ Very low	Only one study

Incredible Years

The effect of Incredible Years compared to treatment as usual of various ages.

Intervention (reference)	Outcome	No of participants (studies)	Effect (standard mean difference) after 3 and 6 months respectively (95 % CI)	Confidence in effect estimate	Comment
Incredible Years includes facilitator-led group discussions, videotape modelling and rehearsal of intervention strategies, and focuses on strengthening parenting skills [12,13]	Externalizing and conduct problems (Eyberg Child Behavior Inventory, and Strength and Difficulties Questionnaire)	145 (2)	0.33 (0.03 to 0.63) Relevant effect	⊕⊕○○ Low	Imprecision ⁷ (-1) Risk of bias (-1) ⁸
	Foster carers' parenting competencies (Parenting Scale/ Arnold, and the Parenting Practice Interview)	145 (2)	0.40 (0.03 to 0.77) Relevant effect	⊕⊕○○ Low	Imprecision ⁹ (-1) Risk of bias (-1) ¹⁰
	Foster carers' depression level (Beck Depression Inventory; 6 months)	46 (1)	0.47 (-0.14 to 1.07)	⊕○○○ Very low	Only one study

⁷ The confidence interval does not significantly differ from the criteria of a clinically important effect (SMD of 0.20).

⁸ The largest study has an extensive and selective drop-out rate.

⁹ The confidence interval does not significantly differ from the criteria of a clinically important effect (SMD of 0.20).

¹⁰ The largest study has an extensive and selective drop-out rate.

The effect of Keeping foster and kin parents supported and trained (KEEP)

The effect of Keeping foster and kin parents supported and trained (KEEP) compared to caseworker treatment as usual for foster children aged 5–12.

Intervention (reference)	Outcome	No of participants (studies)	Effect (standard mean difference) after 5 months (95 % CI)	Confidence in effect estimate	Comment
KEEP is a training program targeting foster parents' behavior management skills [14]	Child behavior problems (Parent Daily Report)	700 (1)	0.26 (0.11 to 0.41)	⊕○○○ Very low	Only one study
	Foster parents' positive reinforcement and discipline (Parent Daily Report)	700 (1)	0.29 (0.14 to 0.44)	⊕○○○ Very low	Only one study

Neighbor To Family (NTF)

The effect of Neighbor To Family (NTF) compared to treatment as usual for foster care children of various ages.

Intervention (reference)	Outcome	No of participants (studies)	Effect (standard mean difference) after 36 months (95 % CI)	Confidence in effect estimate	Comment
Neighbor To Family prepares sibling groups for permanency through the use of extensive training and support to caregivers [15]	Sibling placed together (administrative database records)	834 (1)	0.38 (0.24 to 0.52)	⊕○○○ Very low	Only one study
	Placement stability (administrative database records)	834 (1)	0.60 (0.46 to 0.74)	⊕○○○ Very low	Only one study

Parent Management Training Oregon (PMTO)

The effect of Parent Management Training Oregon (PMTO) compared to treatment as usual for foster care children aged 4–12.

Intervention (reference)	Outcome	No of participants (studies)	Effect (standard mean difference) after 4 months (95 % CI)	Confidence in effect estimate	Comment
PMTO is an intensive and individualized parenting program for parents to children with severe behavior problems [16]	Internalizing problems (Child Behavior Checklist)	63 (1)	0.15 (−0.27 to 0.57)	⊕○○○ Very low	Only one study
	Externalizing behavior (Child Behavior Checklist)	63 (1)	0.09 (−0.33 to 0.51)	⊕○○○ Very low	Only one study
	Parental behavior (Parenting Behavior Questionnaire)	63 (1)	−0.09 (−0.51 to 0.33)	⊕○○○ Very low	Only one study
	Foster carers' stress (Parenting Stress Index-R)	63 (1)	−0.12 (−0.54 to 0.30)	⊕○○○ Very low	Only one study

Promise

The effect of Promise compared to Treatment as usual for foster care children.

Intervention (reference)	Outcome	No of participants (studies)	Effect (standard mean difference) after 15 months (95 % CI)	Confidence in effect estimate	Comment
Promise involves teams of workers that decide on and modify services to best meet client needs, assessed with a strengths-based family-centered approach [17]	Placement stability (administrative database records)	816 (1)	0,14 (0,00 to 0,28)	⊕○○○ Very low	Only one study

Promoting First Relationships

The effect of Promoting First Relationships compared to Early Education Support for toddlers in foster care.

Intervention (reference)	Outcome	No of participants (studies)	Effect (standard mean difference) after 24 months (95 % CI)	Confidence in effect estimate	Comment
Promoting First Relationships is a brief attachment-based intervention focusing on increasing parenting sensitivity using attachment theory-informed, strength-based consultation strategies in conjunction with video feedback [18]	Placement stability (administrative database records)	210 (1)	0.12 (-0.15 to 0.39)	⊕○○○ Very low	Only one study

Casey Family Programs

The effect of Casey Family Programs compared with treatment as usual for foster care youths.

Intervention (reference)	Outcome	No of participants (studies)	Effect (standard mean difference) after 1–13 months (95 % CI)	Confidence in effect estimate	Comment
Casey Family Programs is a private foster care agency with highly qualified workers with a low work load, and a focus on children's health care, education and job training [19]	Mental disorders (version 3 of the WHO Composite International Diagnostic Interview)	479 (1)	1.11 (1.11 to 1.44)	⊕○○○ Very low	Only one study
	Somatic disorders (self-reported with a checklist)	479 (1)	0.46 (0.25 to 0.67)	⊕○○○ Very low	Only one study

Fostering Individualized Assistance Program (FIAP)

The effect of Fostering Individualized Assistance Program (FIAP) compared to treatment as usual for school-aged children in foster care.

Intervention (reference)	Outcome	No of participants (studies)	Effect (standard mean difference) after 18 and 30 months respectively (95 % CI)	Confidence in effect estimate	Comment
Fostering Individualized Assistance Program involves the wrapping of services around children, based on individual needs [20,21]	Internalizing problems (Child Behavior Checklist; Internalizing Subscale)	109 (1)	0.40 (0.02 to 0.79)	⊕○○○ Very low	Only one study
	Externalizing problems (Child Behavior Checklist/ Externalizing Subscale, and Juvenile justice records)	109 (1)	0.31 (0.04 to 0.58)	⊕○○○ Very low	Only one study
	Placement stability (administrative database records)	109 (1)	0.31 (-0.07 to 0.69)	⊕○○○ Very low	Only one study

Middle School Success (MSS)

The effect of Middle School Success (MSS) compared to treatment as usual for girls aged 10–12 in foster care.

Intervention (reference)	Outcome	No of participants (studies)	Effect (standard mean difference) after 36 months (95 % CI)	Confidence in effect estimate	Comment
Middle School Success consists of group-based caregiver management training for the foster	Internalizing symptoms (Child Behavior Checklist)	100 (1)	0.02 (-0.37 to 0.41)	⊕○○○ Very low	Only one study
	Externalizing symptoms (Self-Reported Delinquency)	100 (1)	0.47 (0.07 to 0.87)	⊕○○○ Very low	Only one study

parents, and group-based skill-building sessions for girls, aiming to promote healthy adjustment in foster girls on their health-risking sexual behavior [22,23]	Scale health-risking sexual behavior (8 items), and tobacco and marijuana use (3 items))				
	Placement changes (administrative database records)	96 (1)	0.50 (0.10 to 0.90)	⊕○○○ Very low	Only one study

Multidimensional Treatment Foster Care for preschoolers (MTFC-p)

The effect of Multidimensional Treatment Foster Care for preschoolers (MTFC-p) compared with treatment as usual for preschool aged foster children.

Intervention (reference)	Outcome	No of participants (studies)	Effect (standard mean difference) after 12 and 24 months respectively (95 % CI)	Confidence in effect estimate	Comment
MTFC-p is a caregiver-based preventive intervention designed to address the developmental and social-emotional needs of foster children [24–27]	Children’s attachment-related behavior (Parent Attachment Diary, and measures of salivary cortisol)	117 (1)	0.40 (0.14 to 0.66)	⊕○○○ Very low	Only one study
	Placement changes (administrative database records)	90 (1)	0.65 (0.23 to 1.07)	⊕○○○ Very low	Only one study
	Caregiver stress (Parent Daily Report)	117 (1)	0.56 (0.19 to 0.93)	⊕○○○ Very low	Only one study

Parent-Child Interaction Therapy (PCIT)

The effect of Parent-Child Interaction Therapy (PCIT) compared with treatment as usual foster children aged 3–6.

Intervention (reference)	Outcome	No of participants (studies)	Effect (standard mean difference) after 3.5 months (95 % CI)	Confidence in effect estimate	Comment
Parent-Child Interaction Therapy is group-based intervention for foster parent–child dyads, focusing on behavior management skills. The workshops are supplemented with telephone consultations and daily homework exercises [28]	Children’s internalized problems the (Child Behavior Checklist; Internalizing Subscale)	54 (1)	3.41 (2.57 to 4.25)	⊕○○○ Very low	Only one study
	Children’s externalizing problem (Eyberg Child Behavior Inventory-Problems)	54 (1)	3.04 (2.26 to 3.82)	⊕○○○ Very low	Only one study

References

1. Geenen S, Powers LE, Phillips LA, Nelson M, McKenna J, Wings-Yanez N, et al. Better futures: a randomized field test of a model for supporting young people in foster care with mental health challenges to participate in higher education. *J Behav Health Serv Res* 2015;42:150–71.
2. Taussig HN, Culhane SE. Impact of a mentoring and skills group program on mental health outcomes for maltreated children in foster care. *Arch Pediatr Adolesc Med* 2010;164:739–46.
3. Taussig HN, Culhane SE, Garrido E, Knudtson MD. RCT of a mentoring and skills group program: placement and permanency outcomes for foster youth. *Pediatrics* 2012;130:33–9.
4. Linares LO, Li M, Shrout PE. Child training for physical aggression?: Lessons from foster care. *Child Youth Serv Rev* 2012;34:2416–22.
5. Kothari BH, McBeath B, Sorenson P, Bank L, Waid J, Webb SJ, Steele J. An intervention to improve sibling relationship quality among youth in foster care: Results of a randomized clinical trial. *Child Abuse Negl* 2017;63:19–29.
6. Powers LE, Geenen S, Powers J, Pommier-Satya S, Turner A, Dalton LD, et al. My life: Effects of a longitudinal, randomized study of self-determination enhancement on the transition outcomes of youth in foster care and special education. *Child Youth Serv Rev* 2012;34:2179–87.
7. Geenen S, Powers LE, Powers J, Cunningham M, McMahon L, Nelson M et al. Experimental Study of a Self-Determination Intervention for Youth in Foster Care. *Career Dev Transit Except Individ* 2013;36:84–95.
8. Bick J, Dozier M. The effectiveness of an attachment-based intervention in promoting foster mothers' sensitivity toward foster infants. *Infant Ment Health J* 2013;34:95–103.
9. Dozier M, Lindhiem O, Lewis E, Bick J, Bernard K, Peloso E. Effects of a Foster Parent Training Program on Young Children's Attachment Behaviors: Preliminary Evidence from a Randomized Clinical Trial. *Child Adolesc Social Work J* 2009;26:321–32.
10. Dozier M, Peloso E, Lindheim O, Gordon MK, Manni M, Sepulveda S, Ackerman J. Developing Evidence-Based Interventions for Foster Children: An Example of a Randomized Clinical Trial with Infants and Toddlers. *J Soc Issues* 2006;62:767–85.

11. van Andel H, Post W, Jansen L, Van der Gaag RJ, Knorth E, Grietens H. Optimizing foster family placement for infants and toddlers: A randomized controlled trial on the effect of the foster family intervention. *Am J Orthopsychiatry* 2016;86:332–44.
12. Linares LO, Montalto D, Li M, Oza VS. A promising parenting intervention in foster care. *J Consult Clinical Psychol* 2006;74:32–41.
13. Bywater T, Hutchings J, Linck P, Whitaker C, Daley D, Yeo ST, Edwards RT. Incredible Years parent training support for foster carers in Wales: a multi-centre feasibility study. *Child Care Health Dev* 2011;37:233–43.
14. Chamberlain P, Price J, Leve LD, Laurent H, Landsverk JA, Reid JB. Prevention of behavior problems for children in foster care: outcomes and mediation effects. *Prev Sci* 2008;9:17–27.
15. Rast J, Rast JE. Neighbor To Family: Supporting Sibling Groups in Foster Care. *Fam Soc* 2014;95:83–91.
16. Maaskant A, van Rooij FB, Overbeek GJ, Oort FJ, Hermanns JMA. Parent training in foster families with children with behavior problems: Follow-up results from a randomized controlled trial. *Child Youth Serv Rev* 2016;70:84–94.
17. Unrau Y, Wells M, Hartnett MA. Removing barriers to service delivery: an outcome evaluation of a 'remodelled' foster care programme. *Adoption & Fostering* 2004;28:20–30.
18. Spieker SJ, Oxford ML, Fleming CB. Permanency Outcomes for Toddlers in Child Welfare Two Years After a Randomized Trial of a Parenting Intervention. *Child Youth Serv Rev* 2014;44:201–06.
19. Kessler R, Pecora P, Williams J, Hiripi E, O'Brian K, English D, et al. Effects of Enhanced Foster Care on the Long-term Physical and Mental of Foster Care Alumni. *Arch Gen Psychiatry* 2008;65:625–33.
20. Clark HB, Lee B, Prange ME, McDonald BA. Children Lost Within the Foster Care System: Can Wraparound Service Strategies Improve Placement Outcomes? *J Child Fam Stud* 1996;5:39–54.
21. Clark HB, Prange ME, Lee B, Boyd LA, McDonald BA, Stewart ES. Improving adjustment outcomes for foster children with emotional and behavioral disorders: Early findings from a controlled study on individualized services. *J Emot Beh Disord* 1994;2:207–18.
22. Kim HK, Leve LD. Substance use and delinquency among middle school girls in foster care: a three-year follow-up of a randomized controlled trial. *J Consult Clin Psychol* 2011;79:740–50.

23. Kim HK, Pears KC, Leve LD, Chamberlain P, Smith DK. Intervention effects on health-risking sexual behavior among girls in foster care: The role of placement disruption and tobacco and marijuana use. *J Child Adolesc Subst Abuse* 2013;22:370–87.
24. Fisher PA, Burraston B, Pears K. The early intervention foster care program: permanent placement outcomes from a randomized trial. *Child Maltreat* 2005;10:61–71.
25. Fisher PA, Kim HK. Intervention effects on foster preschoolers' attachment-related behaviors from a randomized trial. *Prev Sci* 2007;8:161–70.
26. Fisher PA, Stoolmiller M. Intervention effects on foster parents stress: Associations with child cortisol levels. *Dev Psychopathol* 2008;20:1003–21.
27. Fisher PA, Stoolmiller M, Gunnar MR, Burraston BO. Effects of a therapeutic intervention for foster preschoolers on diurnal cortisol activity. *Psychoneuroendocrinology* 2007;32:892–905.
28. Mersky JP, Topitzes J, Grant-Savelle SD, Brondino MJ, McNeil CB. Adapting Parent-Child Interaction Therapy to Foster Care. *Res Soc Work Pract* 2016;26:157–67.