Effectiveness studies (non-randomised controlled studies)

Balluerka 2015

Study type	Non-randomised controlled trial
Study location	Spain

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Study setting	Residential care
Study dates	2010- 2014
Duration of follow-up	pre-test and post-test evaluation was performed
Sources of funding	funded by a grant from the Research Bureau of the University of the Basque Country
Inclusion criteria	Age between 12 and 17 years old Care situation in residential care Emotional or behavioral disorders presenting with mental healthproblems and difficulties adapting to the care facility)
Exclusion criteria	Medical health problem psychotic disorders, substance addictions, Behavioural serious antisocial disorder with aggressiontoward people or animals Other aversion to animals
Sample size	67
Split between study groups	39 youths in the intervention group, 24 in the control group
Loss to follow-up	four participants did not complete the intervention
% Female	38.1%
Mean age (SD)	15.27 ± 1.63

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Condition specific characteristics	**outside of mainstream education** 42.9% were enrolled incompulsory secondary education, 47.6% were attending vocational training courses, and 9.5% were not studying **Unaccompanied children seeking asylum** 31.7% were unaccompanied minors(FUMs) from northern Africa **Non-white ethnicity** 31.7% were unaccompanied minors(FUMs) from northern Africa **Care characteristics** In terms of their residential care, 71.4% were involved in a basic care program and 28.6% in a specialized program. The basic care program was designed for children and young people aged between 4 and 18 years,and it was implemented in residential facilities with a maximum capacity of 10 people per center. The specialized program was designed for young people over the age of 13 years who could not be treated on the basic program because of their disruptive behavior.
Outcome measures	**Educational outcome 1** School maladjustment: self-rated and rated by teachers: measured as part of the Spanish version of the Behavior Assessment System for Children. School maladjustment refers to a lack of adaptation to school and academic problems, including problems of motivation,attention, learning, and cognition. In this study, the level of school maladjustment was determined by both the T-score obtained on the School Problems composite scale of the TRS, comprising the Attention Problems and Learning Problems subscales, and the T-score on the School Maladjustment composite of the SRP, which consists of subscales measuring Negative Attitudes toward school and teachers and Sensation-Seeking. The Attention Problems subscale assesses the inability to maintain attention and the tendency to be easily distracted. The Learning Disabilities subscale collects information from teachers on different educational areas such as reading, writing, and mathematics in order to detect learning difficulties.The Negative Attitude to School subscale reflects feelings of alienation, hostility, and dissatisfaction with the school. The Negative Attitude to Teachers subscale examines the feelings of resentment and antipathy toward teachers, that is, the belief that teachers are unfair, do not pay attention to their students, are excessively demanding, or are not motivated to help. Finally, the Sensation-Seeking subscale assesses the need for new, varied sensations and experiences and the willingness to take physical and social risks to achieve these experiences. **Emotional and behaviour outcomes 1** Personal adjustment composite scale- Self Report of Personality: measured as part of the Spanish version of the Behavior Assessment System for Children. Personal adjustment, which refers to the coping strategies used by youths and the social and family support available tothem, was determined from the T-score obtained in the Personal Adjustment composite scale of the SRP, which consists of subscales labeled Interpersonal Relations, Relations with Parents, Self-Reliance, and Self-Esteem. The Interpersonal Relationssubscale refers to the perception of having good social relationships and friendships with peers. The Relations with Parentssubscale assesses positive attitudes toward parents and the feeling of being loved. The Self-Reliance subscale examines theconfidence in one's ability to solve problems, the belief in one's own independence, and the ability to decide for oneself.Finally, the Self-Esteem subscale reflects feelings of self-worth, self-respect, and self-acceptance. **Behaviour outcome 1** Behavioral symptoms rated by teachers (TRS): measured as part of the Spanish version of the Behavior Assessment System for Children **Behaviour outcome 2** Behavioral symptoms rated by residential care staff: measured as part of the Spanish version of the Behavior Assessment System for Children **Health outcome 1** Self-rated clinical maladjustment: The presence of clinical symptoms was determined based on the T-score obtained in the Behavioral Symptom Index ofthe PRS and TRS and through the T-score corresponding to the Clinical Maladjustment composite in the SRP. The BehavioralSymptom Index of the PRS and TRS comprises the subscales Aggression, Hyperactivity, Attention Problems, Atypicality,Depression, and Anxiety. The Clinical Maladjustment composite in the SRP comprises subscales labeled Atypicality, Locus ofcontrol, Somatization and Anxiety.

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	Social outcome 1 Adaptive skills: Adaptive skills were assessed based on the score obtained in the Adaptive Skills composite of the PRS and the TRS, which includes Social Skills and Leadership subscales. The Social Skills subscale reflects the skills needed to interact successfully with peers and adults in the areas of home, school, and community. The Leadership subscale evaluates skills associated with achieving academic, social, or community goals, including, in particular, the ability to work well with others.
Study arms	**Animal-assisted psychotherapy (N = 43)** Implementation of the AAP program took place 12-weeks at a farm. Teenagers spent 2 consecutive days each week staying overnight at a "caserío" (a typical farm in the Basque region of northern Spain). The program consisted of 34 sessions involving both group (23 sessions) and individual (11 sessions) AAP. A dog and nine horses (five adults and four colts) were used as therapy animals. Guided interactions also took place using cats and farm animals such as sheep, goats, chickens, and pigs. The treatment consisted of six thematic blocks: (1) establishing a secure base, (2) identification, understanding and verbalization of emotions, (3) emotional regulation, (4) Interpersonal relationships, (5) self-esteem and self-competence, and (6) close. Details of the contents of thematic blocks, individual, and group sessions can be found in the study. Throughout the treatment, the therapist received supervision for the clinical work performed. The selection of animals was performed by an ethologist. All of the animals used in the program had previously received training.

% Female	48.7%
Mean age (SD)	15.03 ± 0.51
Outcome measures	**Educational outcome 1** Self-rated school maladjustment: mean change (pre- vs post- intervention) -2.13 (no significant difference observed between treatment and comparison group, p=0.80); Teacher-rated school maladjustment: mean change (pre- vs post- intervention) -2.71 (no significant difference observed between treatment and comparison group, p=0.10) **Emotional and behaviour outcomes 1** Personal adjustment composite scale: mean change in score 2.84 (no statistical difference between treatment and control group, p=0.73) **Behaviour outcome 1** Behavioral symptoms rated by teachers (TRS): mean change in score (pre- vs post-test). -1.53 (non-significant difference when compared to the control group p=0.55) **Behaviour outcome 2** Behavioral symptoms rated by residential care staff: mean change in score (pre- vs post-intervention -4.33 (no significant difference when compared to control group p=0.87)

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Health outcome 1

Self-rated clinical maladjustment: change in mean score pre- and post-test -3.33 (test of difference between comparison groups p=87). Participants in the intervention group presented with more reduced hyperactivity symptoms than the control group (p=0.005).

Social outcome 1

Residential care staff rated adaptive skills: mean change (pre- vs post intervention) 3.52 (no significant difference between treatment and control group, p=0.38); Teacher-rated adaptive skills: mean change (pre- vs post intervention) 4.88 (a significant difference observed between treatment and control group, p=0.009). However, participants in the treatment group were found to have significantly higher social skills on the personal adjustment subscale (p=0.009).

Residential care as usual (N = 24)

Both controls and members of the treatment group received individual psychotherapybefore, during, and after the AAP intervention. It should also be noted that participants in the control group followed thesame routine as did their peers in the treatment group, except for the AAP. In particular, the general running of the residentialcare facilities included the fulfillment of everyday routines in relation to basic living standards and regular attendance atschool and other after-school activities.

% Female	20.8%
Mean age (SD)	15.67 ± 1.63

Outcome measures	**Educational outcome 1** Self-rated school maladjustment mean change in score (pre-vs post-intervention): -1.50; Teacher-rated school maladjustment mean change in score (pre-vs post-intervention): 0.48 **Emotional and behaviour outcomes 1** Self-rated personal adjustment mean change in score (pre-vs post-intervention): 1.96 **Behaviour outcome 1** Behavioral symptoms rated by teachers mean change in score (pre-vs post-intervention): -0.14 **Behaviour outcome 2** Behavioral symptoms rated by residential care staff mean change in score (pre-vs post-intervention): -3.68 **Health outcome 1** Self-rated clinical maladjustment mean change in score (pre- vs post-intervention): -2.92

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	Social outcome 1 Teacher-rated adaptive skills mean change in score (pre-vs post-intervention): -1.00; Residential care staff rated adaptive skills mean change in score (pre-vs post-intervention): 1.18
Risk of Bias	**1. Bias due to confounding** Serious (Matching methods used. Unclear how matching criteria were measured. Similarity between groups was not reported in detail.) **2. Bias in selection of participants into the study** Low **3. Bias in classification of interventions** Low **4. Bias due to deviations from intended interventions** Low **5. Bias due to missing data** Serious (Large amounts of missing data for various outcomes, no reason for missing data provided) **6. Bias in measurement of outcomes** Low (Teachers/caregivers/residential care staff were unaware of intervention status. However, self-report outcomes were completed with knowledge of intervention status.) **7. Bias in selection of the reported result** Moderate (Various subscales reported (often if significant) but not others)

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	Overall bias
	Risk of bias judgement
	Serious
	Directness
	This question has not yet been answered.

Muela 2017

Study type	Non-randomised controlled trial
Study location	Spain
Study setting	Youth in residential care
Study dates	2010 to 2016
Duration of follow-up	pre-test and post-test evaluation was performed
Sources of funding	funded by a grant from the Research Bureau of the University of the Basque Country
Inclusion criteria	Age between 12 and 17 years old Care situation in residential care Emotional or behavioral disorders presenting with mental healthproblems and difficulties adapting to the care facility)
Exclusion criteria	Medical health problem psychotic disorders, substance addictions,

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	Behavioural serious antisocial disorder with aggressiontoward people or animals **Other** aversion to animals
Sample size	87
Split between study groups	52 youths in the intervention group, 25 in the control group
Loss to follow-up	Eight were excluded post randomisation: two did not complete the AAP programme because they were transferred to special treatment care centres, five dropped out, and one was expelled for refusing to accept the rules established for participation. Unclear to which group these participants were randomised.
% Female	39.1%
Mean age (SD)	15.17 ± 1.53 years
Condition specific characteristics	**outside of mainstream education** Regarding educational level, 36.4% were enrolled in compulsory secondary education, 53.4% were attending vocational training courses, and 10.2% were not studying. **Non-white ethnicity** 36.4% were unaccompanied asylum seekers from northern Africa **Care characteristics** In terms of their residential care, 64.8% were involved in a basic care programme and 35.2% in a specialized programme. The basic programme was designed for children and adolescents aged between 4 and 18 years who were living in residential care units housing a maximum of 10 young people. The specialized programme was a specific resource targeted at adolescents over the age of 13 who, due to their disruptive behaviour, could not be managed under the basic programme.
Outcome measures	**Outcome 1** Outcomes were derived from the Spanish version of the Behaviour Assessment System for Children: The Behaviour Assessment System for Children (BASC) is a multimethod, multidimensional system used to assess a wide array of behaviours that represent both problems and strengths, including internalizing or externalizing problems, issues at school, and adaptive skills. It includes both a Parent Rating Scale (PRS) and a Self-Report of Personality (SRP). The PRS can be used to measure both adaptive and problem behaviours in the community and residential settings, whereas the SRP enables the young person to describe his or her emotions and self-perceptions. The PRS was completed by residential care staff and includes descriptors of behaviours whose frequency must be rated on a 4-point scale (ranging from Never to Almost always). The 137 items are distributed across 18 scales: 3 control scales and 15 scales grouped into clinical, adaptive, and composite scales. This instrument takes approximately 10–20 min to complete. The SRP consists of 185

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	statements that require a response of "True" or "False," with around 30 min being required to complete the scale. The 185 items are spread across 23 scales: 5 control scales and 18 scales grouped into clinical, adaptive, and composite scales. **Educational outcome 1** School adjustment: As a measure of school adjustment, was determined on the bases of the T score obtained on the attitude to school and attitude to teachers scales of the SRP. **Health outcome 1** The presence of clinical symptoms: determined on the basis of the T score obtained on the clinical scales of both the SRP and PRS: atypicality, locus of control, somatization, social stress, anxiety, depression, sensation seeking, and sense of inadequacy from the SRP and aggression, hyperactivity, conduct problems, atypicality, depression, anxiety, withdrawal, and somatization from the PRS. **Social outcome 1** Adaptive skills was measured using the score obtained on the social skills and leadership scales of the PRS. The former focuses on interpersonal aspects of social adaptation, and the latter assesses a range of skills related to successful adaptation to the community and school. **Emotional and relationship outcomes 1** Personal adjustment: determined on the basis of the T score obtained on the interpersonal relations, relations with parents, selfreliance, and self-esteem scales of the SRP.
Study arms	**Animal-assisted psychotherapy (N = 52)** Implementation of the AAP program took place 12-weeks at a farm. Teenagers spent 2 consecutive days each week staying overnight at a "caserío" (a typical farm in the Basque region of northern Spain). The program consisted of 34 sessions involving both group (23 sessions) and individual (11 sessions) AAP. A dog and nine horses (five adults and four colts) were used as therapy animals. Guided interactions also took place using cats and farm animals such as sheep, goats, chickens, and pigs. The treatment consisted of six thematic blocks: (1) establishing a secure base, (2) identification, understanding and verbalization of emotions, (3) emotional regulation, (4) Interpersonal relationships, (5) self-esteem and self-competence, and (6) close. Details of the contents of thematic blocks, individual, and group sessions can be found in the study. Throughout the treatment, the therapist received supervision for the clinical work performed. The selection of animals was performed by an ethologist. All of the animals used in the program had previously received training. <table><tr><td>% Female</td><td>48.1%</td></tr><tr><td>Mean age (SD)</td><td>15.00 ± 1.55 years</td></tr><tr><td>Outcome measures</td><td>Educational outcome 1 School adjustment: mean change in negative attitude to school score (pre- vs post-intervention): -2.29; no significant difference was observed between treatment and control group on follow up, p=0.989. School adjustment: mean change in negative attitude to teachers score (pre- vs post-intervention): -4.60; treatment group had a significantly reduced score compared to control group, p=0.012.</td></tr></table>

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Health outcome 1

The presence of self-rated clinical symptoms, mean change in score pre- vs post-intervention (significant difference between treatment and control group, p-value): Atypicality -4.17 (p=0.278); Locus of Control -3.33 (0.717), Somatization -2.96 (p=0.337); Social stress -2.15 (0.828); Anxiety -0.29 (0.353); Depression -6.75 (0.032); Sensation seeking 0.42 (p=0.569); Sense of inadequacy -5.29 (p=0.014). The presence of residential care staff-rated clinical symptoms, mean change in score pre- vs post-intervention (significant difference between treatment and control group, p-value): Aggression -2.08 (p=0.232); Hyperactivity -2.68 (p=0.675), Conduct problems -1.08 (p=0.681); Atypicality -2.24 (p=0.716); Depression -3.66 (0.907); Anxiety -0.55 (p=0.408); Withdrawal -0.24 (0.839); Somatization -6.39 (0.023).

Social outcome 1

Adaptive skills scale mean change in score pre- vs post-intervention (significant difference between treatment and control group): Social skills: 4.79 (p=0.037); Leadership skills: 2.82 (0.582)

Emotional and relationship outcomes 1

Personal adjustment. Mean change in score pre- vs post-intervention (significant difference between intervention and control group, p-value): Interpersonal relations: 4.33 (0.248); Relations with parents: 2.21 (0.531); Self-reliance: 2.02 (0.593); Self-esteem: 4.48 (0.265)

Residential care as usual (N = 25)

Both controls and members of the treatment group received individual psychotherapybefore, during, and after the AAP intervention. It should also be noted that participants in the control group followed thesame routine as did their peers in the treatment group, except for the AAP. In particular, the general running of the residentialcare facilities included the fulfillment of everyday routines in relation to basic living standards and regular attendance atschool and other after-school activities.

Outcome measures	**Educational outcome 1** School adjustment: mean change in negative attitude to school score: -2.26. Mean change in negative attitude to teachers score: -1.91 **Health outcome 1** The presence of self-rated clinical symptoms, mean change in score pre- vs post-intervention: Atypicality -1.71; Locus of Control -2.54; Somatization -0.74; Social stress -1.71; Anxiety -1.91; Depression -1.37; Sensation seeking -0.63; Sense of inadequacy 0.06. Residential care staff-rated clinical symptoms, mean change in score pre- vs post-intervention: Aggression 3.41; Hyperactivity -1.31, Conduct problems 0.90; Atypicality -4.34; Depression -3.34; Anxiety -2.28; Withdrawal -0.83; Somatization 1.24. **Social outcome 1** Adaptive skills scale mean change in score pre- vs post-intervention: Social skills: -0.55; Leadership skills: 1.62 **Emotional and relationship outcomes 1** Personal adjustment. Mean change in score pre- vs post-intervention: Interpersonal relations: 1.63; Relations with parents: 0.26; Self-reliance: 0.91; Self-esteem: 2.03

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Risk of bias	**1. Bias due to confounding**
	Serious
	(Matching methods used. Unclear how matching criteria were measured. Similarity between groups was not reported in detail.)
	2. Bias in selection of participants into the study
	Low
	3. Bias in classification of interventions
	Low
	4. Bias due to deviations from intended interventions
	Low
	5. Bias due to missing data
	Serious
	(Large amounts of missing data for various outcomes, no reason for missing data provided)
	6. Bias in measurement of outcomes
	Low
	(Teachers/caregivers/residential care staff were unaware of intervention status. However, self-report outcomes were completed with knowledge of intervention status.)
	7. Bias in selection of the reported result
	Moderate
	(Various subscales reported but not others)
	Overall bias
	Risk of bias judgement

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Serious

Directness

This question has not yet been answered.

Waxman 2009

Study type	Non-randomised controlled trial
Study location	USA
Study setting	Children in custody of the Texas Department of Protective and Regulatory Services
Study dates	Treatment group included children who were assigned a court-appointed advocate volunteer from February 1999 to August 1999.
Duration of follow-up	Three years
Sources of funding	The Hogg Foundation for Mental Health in Austin, Texas, funded the initial study. As the longitudinal study progressed, the USAA Foundation provided additional funding to collect needed data and complete the analyses.
Inclusion criteria	Care situation All children in the Harris County Court system were considered part of the population of the study. comparison children were chosen randomly from a population of 1,643 children in custody of the Texas Department of Protective and Regulatory Services (TDPRS) from October 1998 through October 1999.
Sample size	581
Split between study groups	327 participants in the intervention group, 254 in the comparison group

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Loss to follow-up	Not all instruments were administered to all children and sample sizes for various data sources vary. Approximately 10-15% loss to follow up by year 2. A much greater loss to follow up was reported at year 3 (over 50% in some cases). Therefore year 1 and 2 results are reported.
% Female	Not reported for total study sample
Mean age (SD)	Not reported for total study sample (range 5 months to 18 years)
Condition specific characteristics	At risk or victims of exploitation 36.0% had experienced physical abuse; 27.0% neglectful supervision; 23.1% physical neglect; 10.5% sexual abuse; 3.1% emotional abuse
Outcome measures	Educational outcome 1 School indicators: pass all courses (%); poor conduct (%); expelled (%) Agency outcome 1 Self esteem and locus of control: Children who were age 9 and older completed an instrument designed to assess children's self-esteem and locus of control. Both scales were measured on a four-point Likert type scale (4 = strongly agree, 3 = agree, 2 = disagree, and 1 = strongly disagree). Multidimensional outcome 1 Protective Factors Scale (PFS) is a 36-item instrument designed to determine the extent to which programs are successful in strengthening protective factors. The PFS was completed by caregivers. Items pertain to children's age, 6 and older, and are scored on a four-point scale ranging from one (strongly disagree) to four (strongly agree). The nine scales are as follows: (1) neighborhood resources; (2) interested adults; (3) sense of acceptance; (4) controls against deviant behavior; (5) models of conventional behavior; (6) positive attitude toward the future; (7) value on achievement; (8) ability to work with others; and (9) ability to work out conflicts. Relationship outcomes 1 Family Functioning Scale (FFS). A 40-item instrument designed to measure general dimensions of family functioning. The FFS has five factors: (1) positive family effect, (2) family communication, (3) family conflicts, (4) family worries, and (5) family rituals/supports. The scale of positive effect was found to be unreliable in this study and was eliminated.
Study arms	**Child Advocate Volunteers (N = 327)** Child Advocates, Inc. (CA) addresses the needs of abused and neglected children in Harris County, Texas. The organization's purpose is to find safe, loving, permanent homes for abused and neglected children. CA is one of over 900 court-appointed special advocates (CASA) community volunteer intervention programs. The CA volunteer concentrates on one case, while a Harris County CPS caseworker is more burdened with a workload of 25 to 40 cases. Support from a teacher, neighbor, or a friend's parent helps children become resilient to stress and adversity (Garmezy, 1991, 1993; Pollack, 2006). A CA volunteer is one such person in the lives of abused or neglected children. Children who have been abused or neglected may have had many discontinuities in caregiving relationships. A good quality relationship with a

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caring adult can be a catalyst to build resilience in children. Even the most severely abused child can develop resilience from a short-term relationship if the adult conveys a sense of value to the child. CA serves abused and neglected children from infancy through 18 years of age. After being appointed to a child's case by a juvenile court judge, the CA volunteer assesses and addresses each child's needs. Then, the volunteer makes recommendations to the court. By working with juvenile court judges, attorneys, caseworkers, parents, foster parents, teachers, physicians, and therapists, the volunteer attempts to serve the child's best interests.

Study type	Non-randomised controlled trial
Study location	USA
Study setting	Children in custody of the Texas Department of Protective and Regulatory Services
Study dates	Treatment group included children who were assigned a court-appointed advocate volunteer from February 1999 to August 1999.
Duration of follow-up	Three years
Sources of funding	The Hogg Foundation for Mental Health in Austin, Texas, funded the initial study. As the longitudinal study progressed, the USAA Foundation provided additional funding to collect needed data and complete the analyses.
Inclusion criteria	Care situation All children in the Harris County Court system were considered part of the population of the study. comparison children were chosen randomly from a population of 1,643 children in custody of the Texas Department of Protective and Regulatory Services (TDPRS) from October 1998 through October 1999.
Sample size	581
Split between study groups	327 participants in the intervention group, 254 in the comparison group

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	Loss to follow-up	Not all instruments were administered to all children and sample sizes for various data sources vary. Approximately 10-15% loss to follow up by year 2. A much greater loss to follow up was reported at year 3 (over 50% in some cases). Therefore year 1 and 2 results are reported.
	% Female	49%
	Mean age (SD)	Not reported
	Condition specific characteristics	**At risk or victims of exploitation** 36.7% had experienced physical abuse; 28.1% neglectful supervision; 27.8% physical neglect; 15.0% sexual abuse; 3.1% emotional abuse **Non-white ethnicity** 73%
	Outcome measures	**Educational outcome 1** Year 1 School indicators: pass all courses: 82.1%; poor conduct: 30.5%; expelled 4.1%. Year 2 School indicators: pass all courses: 88.4%; poor conduct: 34.6%; expelled 11.3% **Agency outcome 1** Year 1 self esteem score mean ± SD: 3.01 ± 0.43. Year 1 locus of control mean ± SD: 2.57 ± 0.58. Year 2 self esteem score mean ± SD: 3.07 ± 0.41. Year 2 locus of control mean ± SD: 2.82 ± 0.55. **Multidimensional outcome 1** Protective Factors Scale (PFS) 1 year mean scores ± SD: neighborhood resources: 3.02 ± 0.46; interested adults 3.27 ± 0.52; sense of acceptance 3.21 ± 0.49; controls against deviant behavior 3.25 ± 0.50; models of conventional behavior 3.08 ± 64; positive attitude toward the future 2.97 ± 0.50; value on achievement 3.09 ± 0.5; ability to work with others 2.99 ± 0.61; ability to work out conflicts 2.72 ± 0.64. Protective Factors Scale (PFS) 2 year mean scores ± SD: neighborhood resources: 3.05 ± 0.48; interested adults 3.40 ± 0.56; sense of acceptance 3.25 ± 0.57; controls against deviant behavior 3.19 ± 0.57; models of conventional behavior 2.98 ± 0.71; positive attitude toward the future 3.01 ± 0.53; value on achievement 3.15 ± 0.65; ability to work with others 2.92 ± 0.60; ability to work out conflicts 2.63 ± 0.65. **Relationship outcomes 1** Family Functioning Scale (FFS) 1 year mean score ± SD: family rituals/supports: 6.39 ± 0.57; family conflicts: 2.98 ± 0.94; family worries: 4.18 ± 1.10; family communication: 5.27 ± 1.03. Family Functioning Scale (FFS) 2 year mean score ± SD: family rituals/supports: 6.40 ± 0.68; family conflicts: 2.92 ± 0.94; family worries: 4.06 ± 1.19; family communication: 5.17 ± 0.97 **Placement changes** Year 1 mean ± SD: 1.72 ± 1.31; Year 2 mean ± SD: 0.89 ± 1.04. Year 3 mean ± SD: 0.33 ± 0.72.

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Usual care (N = 254)
The comparison group included 254 children who were selected from October 1998 to October 1999 from a population of 1,643 children who were taken into CPS custody during this time period.

Study type	Non-randomised controlled trial
Study location	USA
Study setting	Children in custody of the Texas Department of Protective and Regulatory Services
Study dates	Treatment group included children who were assigned a court-appointed advocate volunteer from February 1999 to August 1999.
Duration of follow-up	Three years
Sources of funding	The Hogg Foundation for Mental Health in Austin, Texas, funded the initial study. As the longitudinal study progressed, the USAA Foundation provided additional funding to collect needed data and complete the analyses.
Inclusion criteria	Care situation All children in the Harris County Court system were considered part of the population of the study. comparison children were chosen randomly from a population of 1,643 children in custody of the Texas Department of Protective and Regulatory Services (TDPRS) from October 1998 through October 1999.
Sample size	581
Split between study groups	327 participants in the intervention group, 254 in the comparison group

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	Loss to follow-up	Not all instruments were administered to all children and sample sizes for various data sources vary. Approximately 10-15% loss to follow up by year 2. A much greater loss to follow up was reported at year 3 (over 50% in some cases). Therefore year 1 and 2 results are reported.
	% Female	49%
	Mean age (SD)	Not reported
	Condition specific characteristics	**At risk or victims of exploitation** 35.0% had experienced physical abuse; 25.6% neglectful supervision; 16.9% physical neglect; 4.7% sexual abuse; 3.1% emotional abuse **Non-white ethnicity** 80%
	Outcome measures	**Educational outcome 1** Year 1 School indicators: pass all courses: 60.0%; poor conduct: 56.1%; expelled 7.6%. Year 2 School indicators: pass all courses: 82.9%; poor conduct: 38.5%; expelled 12.1% **Agency outcome 1** Year 1 self esteem score mean ± SD: 2.97 ± 0.42. Year 1 locus of control mean ± SD: 2.53 ± 0.68. Year 2 self esteem score mean ± SD: 3.06 ± 0.50. Year 2 locus of control mean ± SD: 2.59 ± 0.67. **Multidimensional outcome 1** Protective Factors Scale (PFS) 1 year mean scores ± SD: neighborhood resources: 2.78 ± 0.59; interested adults 3.13 ± 0.58; sense of acceptance 2.93 ± 0.59; controls against deviant behavior 3.05 ± 0.57; models of conventional behavior 2.83 ± 0.75; positive attitude toward the future 2.72 ± 0.53; value on achievement 2.75 ± 0.62; ability to work with others 2.75 ± 0.62; ability to work out conflicts 2.58 ± 0.66. Protective Factors Scale (PFS) 2 year mean scores ± SD: neighborhood resources: 2.96 ± 0.61; interested adults 3.18 ± 0.59; sense of acceptance 3.07 ± 0.51; controls against deviant behavior 3.19 ± 0.52; models of conventional behavior 2.79 ± 0.71; positive attitude toward the future 2.92 ± 0.53; value on achievement 3.02 ± 0.62; ability to work with others 2.99 ± 0.56; ability to work out conflicts 2.64 ± 0.56. **Relationship outcomes 1** Family Functioning Scale (FFS) 1 year mean score ± SD: family rituals/supports: 6.25 ± 0.68; family conflicts: 3.00 ± 0.98; family worries: 4.10 ± 1.07; family communication: 5.06 ± 0.93. Family Functioning Scale (FFS) 2 year mean score ± SD: family rituals/supports: 6.21 ± 0.81; family conflicts: 2.97 ± 0.97; family worries: 4.07 ± 1.02; family communication: 4.84 ± 1.13 **Placement changes** Year 1 mean ± SD: 2.08 ± 1.30; Year 2 mean ± SD: 1.11 ± 1.73. Year 3 mean ± SD: 0.48 ± 1.53.
Risk of bias	**1. Bias due to confounding**	

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Serious

(Participants were only matched for gender, age, and type of abuse. However, there are several other relevant factors e.g. behaviour, special education needs, and mental health problems)

2. Bias in selection of participants into the study

Moderate

(Unclear if intervention had already begun at the start of observation period. Children still in advocate system may be those with more stable placements. Therefore, starting observation midway through the treatment may ignore those who received treatment with worse outcomes.)

3. Bias in classification of interventions

Serious

(Unclear how often advocates met with youth, or the placement types of those youth. Treatment children received double the amount of counselling ?as a direct result of the intervention but not necessarily.)

4. Bias due to deviations from intended interventions

Moderate

(Unclear level of interaction youth had with the advocate. Only assignment of treatment tested. Unclear if deviations from intended intervention, however drop out was high.)

5. Bias due to missing data

Critical

(By year 2, there was a 10-15% loss to follow up. Also there was substantial missing data which was >50% in some cases. Unclear reasons for missing data and how reasons differed between groups.)

6. Bias in measurement of outcomes

Critical

(Interviewers were the advocates (the treatment givers) in the intervention group. Therefore, different personnel were used to carry out interviews for different comparison groups." Not all measures were administered to all children" but no further information provided.)

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7. Bias in selection of the reported result

Low

Overall bias

Critical

Directness

This question has not yet been answered.

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