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TABLE OF CONTENTS

ABSTRACT	1
PLAIN LANGUAGE SUMMARY	2
BACKGROUND	3
OBJECTIVES	4
METHODS	4
RESULTS	7
Figure 1.	8
Figure 2.	12
DISCUSSION	20
Figure 3.	22
AUTHORS' CONCLUSIONS	22
ACKNOWLEDGEMENTS	23
REFERENCES	24
CHARACTERISTICS OF STUDIES	43
DATA AND ANALYSES	134
Analysis 1.1. Comparison 1 Behavioural Development, Outcome 1 Behaviour problems continuous.	135
Analysis 1.2. Comparison 1 Behavioural Development, Outcome 2 Behavioural problems dichotomous.	135
Analysis 1.3. Comparison 1 Behavioural Development, Outcome 3 Adaptive behaviours.	135
Analysis 2.1. Comparison 2 Mental Health, Outcome 1 Psychiatric disorders dichotomous.	136
Analysis 2.2. Comparison 2 Mental Health, Outcome 2 Well-being dichotomous.	136
Analysis 3.1. Comparison 3 Placement Stability, Outcome 1 Number of placements dichotomous.	137
Analysis 3.2. Comparison 3 Placement Stability, Outcome 2 Number of placements continuous.	138
Analysis 3.3. Comparison 3 Placement Stability, Outcome 3 Length of stay in placement.	138
Analysis 3.4. Comparison 3 Placement Stability, Outcome 4 Length of stay in out-of-home care.	138
Analysis 3.5. Comparison 3 Placement Stability, Outcome 5 Placement disruption.	139
Analysis 4.1. Comparison 4 Permanency, Outcome 1 Reunification.	139
Analysis 4.2. Comparison 4 Permanency, Outcome 2 Adoption.	140
Analysis 4.3. Comparison 4 Permanency, Outcome 3 Guardianship.	140
Analysis 4.4. Comparison 4 Permanency, Outcome 4 Still in placement.	141
Analysis 5.1. Comparison 5 Educational Attainment, Outcome 1 Repeated a grade.	141
Analysis 6.1. Comparison 6 Family Relations, Outcome 1 Attachment continuous.	142
Analysis 6.2. Comparison 6 Family Relations, Outcome 2 Attachment dichotomous.	142
Analysis 7.1. Comparison 7 Service Utilisation, Outcome 1 Mental health services.	143
Analysis 7.2. Comparison 7 Service Utilisation, Outcome 2 Developmental services.	143
Analysis 7.3. Comparison 7 Service Utilisation, Outcome 3 Physician services.	144
Analysis 8.1. Comparison 8 Re-abuse, Outcome 1 Institutional abuse.	144
ADDITIONAL TABLES	145
APPENDICES	190
WHAT'S NEW	196
HISTORY	196
CONTRIBUTIONS OF AUTHORS	197
DECLARATIONS OF INTEREST	197
SOURCES OF SUPPORT	197
DIFFERENCES BETWEEN PROTOCOL AND REVIEW	197
NOTES	197
INDEX TERMS	197

[Intervention Review]

Kinship care for the safety, permanency, and well-being of children removed from the home for maltreatment

Marc Winokur¹, Amy Holtan², Keri E Batchelder³

¹Social Work Research Center, School of Social Work, Colorado State University, Fort Collins, Colorado, USA. ²Faculty of Health Sciences, UiT The Arctic University of Norway, Regional Centre for Child and Youth Mental Health and Child Welfare (RKBU North), Tromsø, Norway. ³Office of Performance and Strategic Outcomes, Colorado Department of Human Services, Denver, Colorado, USA

Contact: Marc Winokur, Social Work Research Center, School of Social Work, Colorado State University, 110 Education, Fort Collins, Colorado, 80523, USA. marc.winokur@colostate.edu.

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ABSTRACT

Background

Every year a large number of children around the world are removed from their homes because they are maltreated. Child welfare agencies are responsible for placing these children in out-of-home settings that will facilitate their safety, permanency, and well-being. However, children in out-of-home placements typically display more educational, behavioural, and psychological problems than do their peers, although it is unclear whether this results from the placement itself, the maltreatment that precipitated it, or inadequacies in the child welfare system.

Objectives

To evaluate the effect of kinship care placement compared to foster care placement on the safety, permanency, and well-being of children removed from the home for maltreatment.

Search methods

We searched the following databases for this updated review on 14 March 2011: the Cochrane Central Register of Controlled Trials (CENTRAL), MEDLINE, PsycINFO, CINAHL, Sociological Abstracts, Social Science Citation Index, ERIC, Conference Proceedings Citation Index-Social Science and Humanities, ASSIA, and Dissertation Express. We handsearched relevant social work journals and reference lists of published literature reviews, and contacted authors.

Selection criteria

Controlled experimental and quasi-experimental studies, in which children removed from the home for maltreatment and subsequently placed in kinship foster care were compared with children placed in non-kinship foster care for child welfare outcomes in the domains of well-being, permanency, or safety.

Data collection and analysis

Two review authors independently read the titles and abstracts identified in the searches, and selected appropriate studies. Two review authors assessed the eligibility of each study for the evidence base and then evaluated the methodological quality of the included studies. Lastly, we extracted outcome data and entered them into Review Manager 5 software (RevMan) for meta-analysis with the results presented in written and graphical forms.

Main results

One-hundred-and-two quasi-experimental studies, with 666,615 children are included in this review. The 'Risk of bias' analysis indicates that the evidence base contains studies with unclear risk for selection bias, performance bias, detection bias, reporting bias, and attrition bias, with the highest risk associated with selection bias and the lowest associated with reporting bias. The outcome data suggest that children in kinship foster care experience fewer behavioural problems (standardised mean difference effect size -0.33, 95% confidence interval (CI) -0.49 to -0.17), fewer mental health disorders (odds ratio (OR) 0.51, 95% CI 0.42 to 0.62), better well-being (OR 0.50, 95% CI 0.38 to 0.64), and less placement disruption (OR 0.52, 95% CI 0.40 to 0.69) than do children in non-kinship foster care. For permanency, there was no difference on reunification rates, although children in non-kinship foster care were more likely to be adopted (OR 2.52, 95% CI 1.42 to 4.49), while children in kinship foster care were more likely to be in guardianship (OR 0.26, 95% CI 0.17 to 0.40). Lastly, children in non-kinship foster care were more likely to utilise mental health services (OR 1.79, 95% CI 1.35 to 2.37).

Authors' conclusions

This review supports the practice of treating kinship care as a viable out-of-home placement option for children removed from the home for maltreatment. However, this conclusion is tempered by the pronounced methodological and design weaknesses of the included studies.

PLAIN LANGUAGE SUMMARY

Kinship care for the safety, permanency, and well-being of maltreated children

Child abuse and neglect are common problems across the world that result in negative consequences for children, families, and communities. Children who have been abused or neglected are often removed from the home and placed in residential care or with other families, including foster families. Foster care was traditionally provided by people that social workers recruited from the community specifically to provide care for children whose parents could not look after them. Typically they were not related to the children placed with them, and did not know them before the placement was arranged. In recent years many societies have introduced policies that favour placing children who cannot live at home with other members of their family or with friends of the family. This is known as 'kinship care' or 'families and friends care'. We do not know what type of out-of-home care (placement) is best for children.

This review was designed to help find out if research studies could tell us which kind of placement is best. We found 102 studies with 666,615 children that met the methodological standards we considered acceptable. Wherever possible we combined the data from studies looking at the same outcome for children, in order to be more confident about what the research was telling us. Current best evidence suggests that children in kinship foster care may do better than children in traditional foster care in terms of their behavioural development, mental health functioning, and placement stability. Children in traditional foster care placements may do better with regard to achieving adoption and accessing services they may need. There were no negative effects experienced by children who were placed in kinship care. The major limitation of this systematic review is that the quality of research on kinship care is weakened by the poor methods of the included studies. Implications for practice and future research are discussed.

BACKGROUND

Description of the condition

Every year a large number of children around the world are removed from their homes because they are abused, neglected, or otherwise maltreated. For example, there were 408,425 children in foster care in the United States as of September 2010 (USDHHS 2011a), 64,400 looked-after children in England as of March 2010 (DFE 2010), 35,895 children in out-of-home care in Australia as of 2010 (AIHW 2012), 15,892 looked-after children in Scotland as of July 2010 (Scottish Government 2011), 8408 children in out-of-home therapeutic placement in Israel as of 2010 (CBS 2011), 5419 looked-after children in Wales as of March 2011 (NAW 2011), and 7270 looked-after children in state custody in Norway as of 2011 (Statistics Norway 2011). Except for the United States which has experienced a 20% decrease in the number of children in foster care from 2005, the other countries all experienced an increase in the number of children placed in foster care. Specifically, England had a 5% increase from 2005, Israel had an 8% increase, Wales had a 16% increase, Norway had a 21% increase, Scotland had a 23% increase, and Australia had a 50% increase from 2005.

The main reasons for the removal of children in the United States are neglect, physical abuse, sexual abuse, psychological maltreatment, abandonment, threats of harm, and drug addiction (USDHHS 2011b). Abuse and neglect are the most prevalent causes of children being removed from the home in other countries as well (e.g., Wales) (NAW 2011).

Internationally, child welfare systems are accountable for the safety, permanency, and well-being of children in their care. For children removed from the home, child welfare professionals are responsible for placing them in out-of-home settings that will facilitate these outcomes. Specifically, the primary placement options are traditional foster care, kinship care, institutional care, and group homes (AIHW 2012; USDHHS 2011a). Children in out-of-home placements typically display more educational, behavioural, physical, and psychological problems than do their peers (Gleeson 1999), although it is unclear whether this results from the placement itself, the maltreatment that precipitated it, or inadequacies in the child welfare system. In addition to experiencing poor adult outcomes, these children are at risk for drifting in out-of-home care until, in some cases, they 'graduate' from the system because of age (Zuravin 1999).

Description of the intervention

Kinship Care

Kinship care is broadly defined as, "the full-time nurturing and protection of children who must be separated from their parents, by relatives, members of their tribes or clans, godparents, stepparents, or other adults who have a kinship bond with a child" (CWLA 1994, p. 2). This is contrasted with traditional foster care or non-kinship foster care, which is the placement of children removed from the home with unrelated foster parents. Kinship care is known by many other names around the world, including family and friends care in the United Kingdom, kith and kin care in Australia, and kinship foster care in the United States. For this review, kinship care will refer to kinship foster care placements, while foster care will refer to non-kinship foster care placements.

There are several variations of kinship care, including formal, informal, and private placements. Formal kinship care is a legal arrangement in which a child welfare agency has custody of a child (Ayala-Quillen 1998). Informal kinship care is when a child welfare agency assists in the placement of a child but does not seek custody (Geen 2000). Private kinship care is a voluntary arrangement between the birth parents and family members without the involvement of a child welfare agency (Dubowitz 1994a).

The most commonly perceived benefits are that kinship care "enables children to live with persons whom they know and trust, reduces the trauma children may experience when they are placed with persons who are initially unknown to them, and reinforces children's sense of identity and self esteem which flows from their family history and culture" (Wilson 1996, p. 387). The primary aims of kinship placements are family preservation, in which the permanency goal is reunification with birth parents, and substitute care, in which kinship care is considered to be a long-term arrangement when restoration is not possible or the permanency goal is adoption or guardianship by kin caregivers (Scannapieco 1999). Kinship care is also considered to be the least restrictive (Scannapieco 1999) and safest setting (Gleeson 1999) on the continuum of out-of-home placements.

Intervention context

Although an ancient practice in many cultures, formal kinship care is a newer placement paradigm in countries like the United States and Australia, due to its recent adoption by the child welfare field as the placement of choice, when appropriate, in the continuum of out-of-home care services for children (Ainsworth 1998; Geen 2000; Scannapieco 1999). For example, the Personal Responsibility and Work Opportunity Reconciliation Act of 1996 explicitly required U.S. states to give preference to family members when placing a child outside of the home (Leos-Urbel 2002). The Adoption and Safe Families Act of 1997 continued this federal commitment towards promoting and supporting kinship care (Ayala-Quillen 1998). In Australia, the Aboriginal Child Placement Principle has resulted in the increased use of kinship placements, although this differs by state or territory (Paxman 2006). In addition, the New South Wales Children and Young Persons (Care and Protection) Act 1998 encourages the 'least intrusive' principle, which is interpreted by caseworkers as placements with kin (Spence 2004). In some European countries, there has also been a shift in policy regarding kinship placements. Specifically, the Children Act 1989 (United Kingdom), the Children Act 1995 (Scotland), and the Children Order 1995 (Northern Ireland) are generally supportive of kinship care (Broad 2005a), as are regulations from 2003 in Norway (MCESI 2003). However, there is no legislation in Israel concerning kinship care, and a lack of consensus about how to define and serve the population of children at risk for maltreatment (Schmid 2007).

For the countries included in this review (i.e., Australia, Ireland, Israel, Netherlands, Norway, Spain, Sweden, United Kingdom, and U.S.), there are essential differences in child welfare policy and practice for placing children in out-of-home care. Outside of the U.S., long-term foster or kinship care is the preferred placement, which implies that parents have right of access to their child provided it is not considered damaging, and also a right to express their opinion on important issues like education and religion. In Australia, Israel, Netherlands, Norway, and Sweden, foster care placement is not time-limited and can be extended until the

child emancipates from care (e.g., [Strijker 2003](#)). As the preferred option is long-term stable placements, there are foster children in Norway and Sweden who remain in foster homes throughout their entire childhood (e.g., [Sallnas 2004](#)). The concept of breakdown (premature termination of placement), therefore, is a more relevant measure in the evaluation of foster care than is reunification or adoption ([Sallnas 2004](#)).

During the past 25 years in many countries, there has been a rapid increase in the number of children removed from home and placed with relatives ([Cuddeback 2004](#)). The main reasons for the growth of this placement option include an influx of abused and neglected children into out-of-home care ([Berrick 1998](#)), concern about poor outcomes for children leaving care ([Broad 2005b](#)), a persistent shortage in foster care homes ([Berrick 1998](#)), and a shift in policy toward treating kin as appropriate caregivers with all of the legal rights and responsibilities of foster parents ([Leos-Urbel 2002](#)). In New South Wales, Australia, the most important factor accounting for historically high numbers of children in foster care is the low use of residential care ([Tarren-Sweeney 2006a](#)). This trend toward lower use of residential care also exists in the United Kingdom ([Berridge 1998](#)). Although the use of residential care has increased for older children in Israel and Sweden ([Mosek 2001](#); [Sallnas 2004](#)), this practice runs counter to official childcare policies in Sweden ([Sallnas 2000](#)).

Similar to other child welfare interventions, kinship care is faced with its fair share of controversial issues. The major controversy centres on the unequal financial support ([Brooks 2002](#)) and service provision received by kinship caregivers compared with traditional foster parents ([Dubowitz 1994a](#)). The licensing and certification of kinship caregivers is also a source of much disagreement and dissatisfaction ([Gibbs 2000](#)). Relatedly, the appropriate level of oversight of kinship caregivers by child welfare agencies is another area of discord ([Cohen 1999](#)). One of the key debates is over the appropriate level of involvement for biological parents prior to and after the removal of their children ([Ayala-Quillen 1998](#)).

In a comprehensive review of the American literature, [Cuddeback 2004](#) confirmed much of the conventional wisdom about kinship care while identifying many of the weaknesses of quantitative research on the topic. Cuddeback found that kinship caregivers are more likely to be older, single, less educated, unemployed, and poor than are foster parents and non-custodial grandparents. Furthermore, Cuddeback reported that kin caregivers report less daily physical activity, more health problems, higher levels of depression, and less marital satisfaction. Cuddeback also concluded that kinship care families receive less training, services, and financial support than do foster care families. In addition, Cuddeback reported that birth parents rarely receive family preservation services, which means that children in kinship care are less likely than children in foster care to be reunified. Lastly, Cuddeback found inconclusive evidence that children in kinship care have greater problems related to overall functioning than do children in foster care.

Why it is important to do this review

In 2004, [Geen](#) argued that, "despite the centrality of kinship foster care in child welfare, our understanding of how best to utilize and support kin caregivers, and the impact of kinship foster care on child development, is limited" ([Geen 2004](#) p. 144). Furthermore, it is difficult for social work researchers to keep up with the exponential

growth of kinship care as a placement option ([Berrick 1994a](#); [Dubowitz 1994a](#)).

Ethical standards preclude the random assignment of children to kinship or foster care, as these placements typically are based on the appropriateness and availability of kinship caregivers or foster parents ([Barth 2008a](#)). However, recent studies have used propensity score matching as a means of statistically simulating random assignment to placement conditions ([Barth 2008b](#)).

Even the better-designed studies need to be brought together and appropriately synthesised to provide child welfare professionals with an accessible summary of research on which to make evidence-based decisions ([Goerge 1994](#)).

In 2005, we identified a need to undertake a systematic review of the available evidence from those quasi-experimental study designs best able to provide 'good enough' evidence of the effectiveness of kinship care. That review was published in January 2009. Unfortunately, the best available evidence on kinship care was seriously lacking in many ways, especially in regard to controlling for baseline differences in non-randomised studies. In keeping with Cochrane Collaboration Policy we have updated this review, which now includes studies published between March 2007 and March 2011.

OBJECTIVES

To evaluate the effect of kinship care placement compared to foster care placement on the safety, permanency, and well-being of children removed from the home for maltreatment.

METHODS

Criteria for considering studies for this review

Types of studies

Controlled experimental and quasi-experimental studies, in which children placed in kinship care are compared cross-sectionally or longitudinally with children placed in foster care. The types of eligible quasi-experimental designs include studies that employ matching, covariates, or ex post facto comparisons of children in kinship care and foster care. Studies that compare kinship care to more restrictive out-of-home settings (e.g., residential treatment centres) were not considered for this review. Relative to children who are placed in kinship or foster care, children placed in more restrictive settings tend to differ in important ways. These differences complicate inferences about the effects of placement and as such, the review focuses on kinship and foster care placements only.

Types of participants

Children and youth under the age of 18 who were removed from the home for abuse, neglect, or other maltreatment, and subsequently placed in kinship care.

Types of interventions

Formal kinship care placements, irrespective of whether the kin caregivers were licensed (paid) or unlicensed (unpaid). Thus, studies that exclusively examine informal or private kinship care arrangements were not considered. Studies were considered if participants experienced other placement types in conjunction

with the kinship care intervention. For example, the treatment group may include children for whom kinship care was their first, last, or only placement in out-of-home care. However, these children must have spent the majority (i.e., more than 50%) of their total time in out-of-home care in kinship care.

Types of outcome measures

Eligible studies must analyse child welfare outcomes in the well-being, permanency, or safety domains. Although caregiver and birth parent outcomes are very relevant, they were not considered in this review because child outcomes are what drive the policy and practice of kinship care. However, these outcomes may mediate or moderate the effect of kinship care on child welfare outcomes and should be explored in future research on the topic.

Primary outcomes for the review are behavioural development, mental health, placement stability, and permanency. Secondary outcomes include educational attainment, family relations, service utilisation, and re-abuse. The following list of outcome domains is meant to be exhaustive, although the examples in each domain are illustrative of the outcomes to be considered in this review.

Behavioural development

Behaviour problems, adaptive behaviours, delinquency. Measured by case records, caregiver reports, teacher reports, self reports, and standardised instruments.

Mental health

Psychiatric illnesses, psychopathological conditions, well-being. Measured by case records, caregiver reports, self reports, and standardised instruments.

Placement stability

Number of placements, re-entry, length of stay. Measured by child welfare administrative databases.

Permanency

Reunification, adoption, guardianship. Measured by child welfare administrative databases.

Educational attainment

Graduation, grades, test scores, attendance, academic success. Measured by school and case records, caregiver reports, self reports, and standardised instruments.

Family relations

Problem-solving, tolerance, commitment, conflicts, emotional availability, home environment. Measured by caregiver reports, self reports, and standardised instruments.

Service utilisation

Mental health services, foster support groups, family therapy, developmental services, physician services. Measured by medical records, caregiver reports, self reports, and child welfare administrative databases.

Re-abuse

Recurrence of abuse, institutional abuse.

Measured by child welfare administrative databases.

Search methods for identification of studies

Preliminary searches indicated that a narrowing of the search strategy using a methodological filter resulted in the exclusion of potentially relevant studies so we ran the searches without a study methods filter. The original search strategies ([Appendix 1](#)) were revised for this update by adding appropriate controlled vocabulary terms for foster care, where they were available. We also included additional free text phrases (for example 'custodial grandparent') to increase the sensitivity of the updated search strategies ([Appendix 2](#)). We ran the updated searches from the inception of each database and imported the records into Procite. We compared these with records from the previous searches and discarded any duplicates. New records identified by the updated searches were imported records into Reference Manager 11/12 for screening. Searches were not limited by language, date, or geographic area.

Electronic searches

We ran updated searches of the following databases in March 2011:

Cochrane Central Register of Controlled Trials (CENTRAL), 2011 Issue 1, part of *The Cochrane Library*;
 Ovid MEDLINE, 1948 to March Week 1 2011;
 PsycINFO, 1887 to 14 March 2011;
 CINAHL, 1937 to current;
 Sociological Abstracts, 1952 to current;
 Social Sciences Citation Index (SSCI), 1970 to 12 March 2011;
 Conference Proceedings Citation Index -Social Science and Humanities (CPCI-SSH), 1990 to 12 March 2011;
 ERIC, 1966 to current;
 Applied Social Sciences Index and Abstracts (ASSIA), 1987 to current;
 Dissertation Abstracts (via Dissertation Express), last searched 14 March 2011.

We could not update the searches of the following three databases because they have either ceased to function or are no longer available to us:

Campbell Collaboration's Social, Psychological, Educational, and Criminological Trials Register (C2-SPECTR), last searched 9 March 2007;
 Social Work Abstracts, last searched February 2007;
 Family and Society Studies Worldwide, last searched February 2007.

Searching other resources

For the original review, we handsearched volumes of *Child Abuse & Neglect*, *Children and Youth Services Review*, *Child Welfare*, *Research on Social Work Practice*, and *Families in Society* from 2006 and 2007. We contacted several authors of studies included in this review for knowledge of other studies not yet identified. Lastly, we screened the reference lists of published literature reviews for relevant studies.

Data collection and analysis

The procedures for collecting and analysing the data for this review are detailed below.

Selection of studies

Two review authors independently read the titles and abstracts of identified articles and reports to select those that described an empirical study of kinship care. A study was obtained if either review author believed it was appropriate. Once the studies were retrieved, two review authors used a 'keywording' rubric to categorise each study by the type of design, participants, intervention, and outcome measure(s). Two review authors then determined if each study was eligible for selection based on the aforementioned criteria for considering studies for this review. When we could not reach a consensus regarding selection decisions, we resolved it through discussion with a third review author.

Data extraction and management

We entered citations for all selected studies into Reference Manager 11/12, which is an interactive literature management software package. We then uploaded the citations for included studies into The Cochrane Collaboration's Review Manager 5 software (RevMan). We extracted outcome data from studies and entered them into RevMan, where they were meta-analysed for this review. We present the statistical results in both narrative form, and in figures and tables. Specifically, RevMan-generated forest plots are used to display effect size estimates and confidence intervals from the meta-analyses. We use funnel plots generated from RevMan to examine the presence of publication bias in the evidence base. In addition, we present data from the quality assessment process in a table created in RevMan.

Assessment of risk of bias in included studies

Existing scales for measuring the quality of controlled trials have not been properly developed, are not well-validated, and are known to give differing (even opposing) ratings of trial quality in systematic reviews (Moher 1999). At present, evidence indicates that "scales should generally not be used to identify trials of apparent low quality or high quality in a given systematic review. Rather, the relevant methodological aspects should be identified a priori and assessed individually" (Juni 2001, p. 45). Thus, studies were assessed in regard to the following research quality dimensions: selection bias, performance bias, detection bias, reporting bias, and attrition bias (Higgins 2011).

Two review authors independently extracted data from each study before coming to consensus on the assessment of risk of bias for each of the following domains for each study. The methodological criteria were operationalised as follows:

- *Selection bias*: Was group assignment determined randomly or might it have been related to outcomes or the interventions received?
 - The studies rated at high risk did not attempt to equate the kinship care and foster care groups through matching or controlling for covariates AND did not provide evidence on the comparability of the groups on setting (e.g., urbanicity), placement characteristics (e.g., age at placement, removal reason), or child demographics (e.g., gender, ethnicity). The studies rated at unclear risk either attempted to equate the groups OR provided evidence on the comparability of the groups. The studies rated at low risk attempted to equate the groups AND provided evidence on the comparability of the groups. For example, these studies provided evidence that the groups were comparable at baseline in regard to placement history, visits to biological parents, and caregiver characteristics (e.g., family composition, age, education).
- *Performance bias*: Could the services provided have been influenced by something other than the interventions being compared?
 - In the studies that were rated at high risk, the kinship care and foster care groups experienced different exposure to the intervention (e.g., length of stay) AND received different services during placement (e.g., caseworker contact). In the studies that were rated at unclear risk, the groups either experienced different exposure OR received different services. In the studies that were rated at low risk, the groups did not experience different exposure AND did not receive different services.
- *Detection bias*: Were outcomes influenced by anything other than the constructs of interest, including biased assessment or the influence of exposure on detection?
 - In the studies rated at high risk, the kinship care and foster care groups were not defined in the same way (e.g., caregiver licensure, caregiver characteristics) AND there was evidence of biased assessment resulting from the type of placement (e.g., caregiver reports only). In the studies rated at unclear risk, the groups were not defined in the same way OR there was evidence of biased assessment. In the studies rated at low risk, the groups were defined in the same way AND there was no evidence of biased assessment.
- *Reporting bias*: Were the outcomes, measures, and analyses selected a priori and reported completely? Were participants biased in their recall or response?
 - In the studies rated at high risk, the instrumentation used to measure the outcomes was not specified completely (e.g., data collection procedures) AND reliability with or without validity information was not reported for the instrumentation. In the studies rated at unclear risk, the instrumentation used to measure the outcomes was specified completely OR reliability with or without validity information was reported for the instrumentation. In the studies rated at low risk, the instrumentation was completely specified AND reliability with or without validity information was reported.
- *Attrition bias*: Could deviations from protocol, including missing data and dropout, have influenced the results?
 - In the studies rated at high risk, not all participants were accounted for in the reporting of results (e.g., low response rate, missing outcome data) AND attrition could have influenced the results (e.g., significant difference between participants and non-participants). In the studies rated at unclear risk, not all participants were accounted for OR attrition could have influenced the results. In the studies rated at low risk, all participants were accounted for AND attrition could not have influenced the results.

Measures of treatment effect

Continuous data

We computed a standardised mean difference (SMD) effect size for the continuous outcome variables. For this review, we created a corrected Hedges' *g* by dividing the difference between group means by the pooled and weighted standard deviation of the groups. Specifically, Hedges' *g* corrects for a bias (overestimation)

that occurs when the uncorrected standardised mean difference effect size is used on small samples. The combined effect size for each outcome was computed as a weighted mean of the effect size for each study, with the weight being the inverse of the square of the standard error. Thus, a study was given greater weight for a larger sample size and more precise measurement, both of which reduce standard error. We computed a 95% confidence interval for each combined effect size to test for statistical significance; if the confidence interval did not include zero, we rejected the null hypothesis that there is no difference between the group means.

Dichotomous data

We computed Mantel-Haenszel odds ratios (ORs) for the dichotomous outcome variables. Based on the assumption of proportional odds, ORs can be compared between variables with different distributions, including very rare and more frequent occurrences. Specifically, the odds of an event (e.g., reunification) were calculated for each group by dividing the number of events (i.e., re-entry, reunification) by the number of non-events (i.e., re-entry, no reunification). We then calculated an OR by dividing the odds of the kinship care group by the odds of the foster care group. In addition, we calculated and reported 95% confidence intervals for the dichotomous effect size estimates.

Unit of analysis issues

The unit of analysis for this review was children. There were no unit of analysis issues identified for the included studies.

Dealing with missing data

Although studies with incomplete outcome data (e.g., missing means, standard deviations, sample sizes) were included in the review, they were excluded from the meta-analyses unless the review authors could calculate an effect size from the available information. When outcome data were missing from an article or report, we made reasonable attempts to retrieve these data from the original researchers. Attrition overall and by group were accounted for in the quality assessment and sensitivity analyses.

Assessment of heterogeneity

We assessed the consistency of results using the I^2 statistic (Higgins 2002; Higgins 2003). If there was evidence of heterogeneity (P value from test of heterogeneity < 0.1 coupled with an I^2 value of 25% or greater), we also considered sources of methodological and practice diversity according to prespecified subgroup and sensitivity analyses (see below). The values of the Q heterogeneity statistic and the between-studies variance component τ^2 were also reported.

Assessment of reporting biases

With the additional studies identified in the updated review, we assessed publication bias through the use of funnel plots. This method of assessing reporting bias was only used for outcomes that

included meta-analytic findings from at least 10 studies (Higgins 2011).

Data synthesis

As heterogeneity is to be expected with similar interventions provided under different circumstances and by different providers, we used a random-effects model for data synthesis. If a study reported multiple effect sizes (e.g., grades, behaviour problems), the results were included in the meta-analysis for each outcome. If a study reported effect sizes for multiple samples (e.g., male, female), we aggregated the results for the main effects meta-analyses before splitting them for the subgroup meta-analyses. We conducted data synthesis for outcomes in which at least three studies contributed effect sizes to the meta-analysis.

Subgroup analysis and investigation of heterogeneity

We considered subgroup analyses to explore different effects of the intervention (if any) by gender, ethnicity, and age at placement.

Sensitivity analysis

We planned sensitivity analyses to explore the impact of the risk of bias dimensions on the specific outcomes of the review. Specifically, we considered the following planned comparisons:

1. Studies that used matching or covariates versus studies that did not control for confounders;
2. Studies with outcomes measured by caregiver or teacher reports versus studies with outcomes measured by self reports;
3. Studies at low risk of attrition bias versus studies at high risk of attrition bias;
4. Studies at low risk of selection bias versus studies at high risk of selection bias.

We conducted the sensitivity analyses using simple unweighted ANOVA models.

RESULTS

Description of studies

The included studies are described in terms of the location, participants, interventions, and outcome measures.

Results of the search

As displayed in the study flow diagram (Figure 1), a comprehensive electronic search of the kinship care literature base up until March 2011 yielded 9643 records with eight additional records identified through other sources. After 72 duplicates were removed, there were 9579 records with 4797 records from the search during the original review and 4782 records from the search during the updated review (of which 2728 were records found using the modified search strategy for the period covered by the original review).

Figure 1. Study flow diagram (complete review)

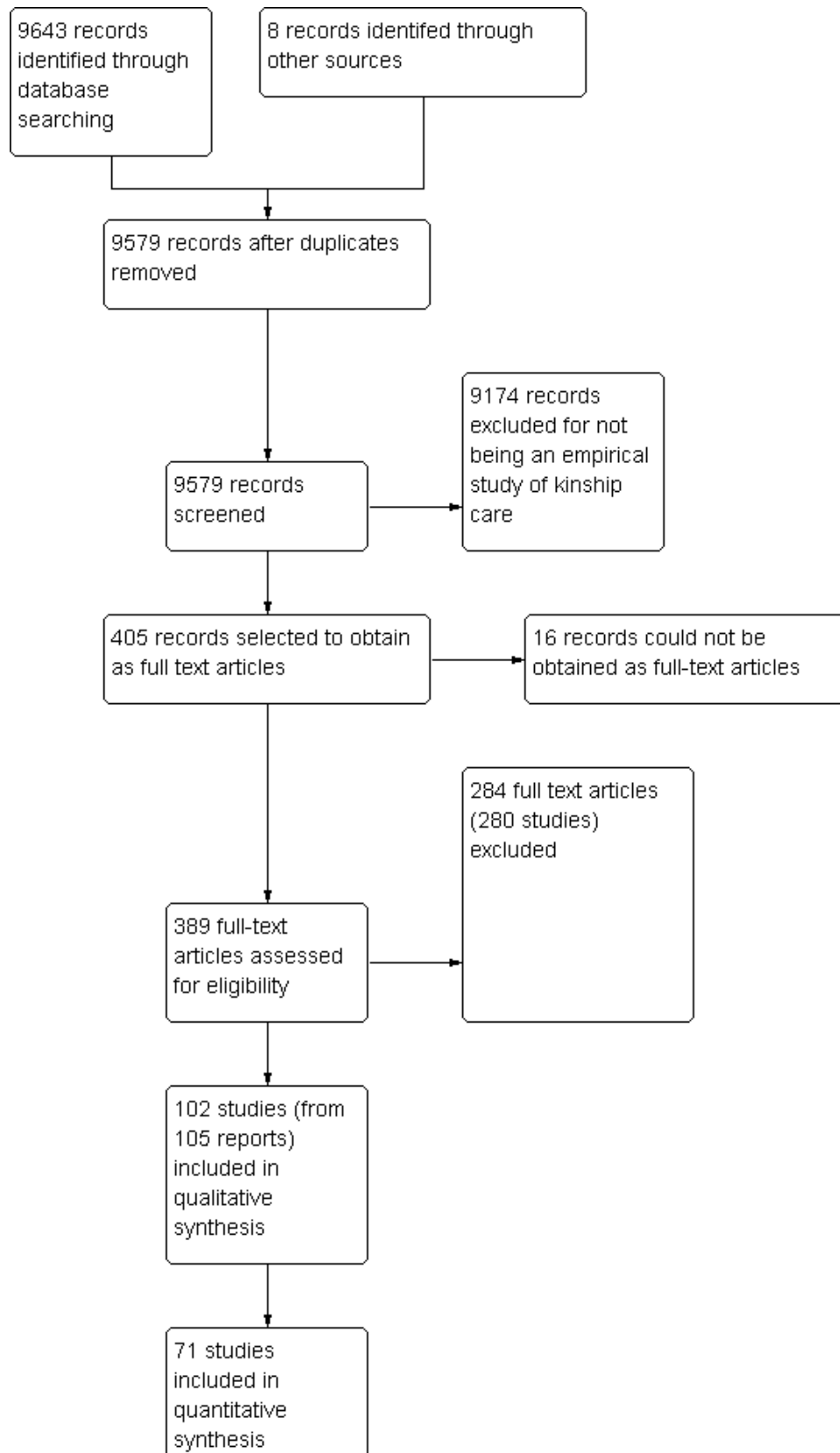


Figure 1. (Continued)

quantitative
synthesis
(meta-analysis)

Included studies

9174 studies, which were not empirical studies of kinship care, were eliminated by screening titles and abstracts. We made every effort to retrieve the full text of the remaining 405 records (271 records from the original search and 134 records from the updated search). Of these 405 records, 16 were intractably unavailable as full-text articles and were transferred to the excluded studies. We assessed the remaining 389 full-text articles for eligibility and identified studies which had multiple reports: 102 studies (comprised of 105 papers) met the inclusion criteria and 280 studies (comprised of 284 papers) were excluded. Thus, a total of 102 studies were identified and included in the qualitative synthesis (62 from the original review and 40 from the updated review, of which six were published pre-2007), while 71 studies were included in the meta-analysis (46 from the original review and 25 from the updated review, of which none was published pre-2007).

Location of Studies

All but 13 of the 102 studies were conducted in the U.S. The 13 international studies were [Del Valle 2009](#) and [Palacios 2009](#) conducted in Spain, [Holtan 2005](#) conducted in Norway, [Lernihan 2006](#) conducted in Ireland, [Lutman 2009](#) conducted in the United Kingdom, [Mosek 2001](#) conducted in Israel, [Sallnas 2004](#) conducted in Sweden, [Strijker 2003](#) and [Strijker 2008](#) conducted in the Netherlands, and [Tarren-Sweeney 2006a](#), [Tarren-Sweeney 2006b](#), [Tarren-Sweeney 2008a](#), and [Tarren-Sweeney 2008b](#) conducted in Australia.

Participants

As displayed in the Participant Baseline Characteristics Table ([Table 1](#)), 87 of the 102 studies reported data for at least one of the following participant characteristics: age at placement, gender, ethnicity, removal reason, or urbanicity.

For age at entry into the specific placement, there was an overall unweighted mean age at placement of 7 years 10 months, based on 14 studies. Eleven studies reported a mean age at placement by placement type. For the kinship care group, the unweighted mean age at placement was 4 years 10 months. For the foster care group, the unweighted mean age at placement was also 4 years 10 months.

For gender, there were overall unweighted frequencies of 52% female and 48% male children, based on 57 studies. Furthermore, 33 studies reported gender frequencies by placement type. For the kinship care group, the unweighted frequencies were 50% female and 50% male. For the foster care group, the unweighted frequencies were 52% female and 48% male.

For ethnicity, there was an overall unweighted frequency of 45% African-American children, based on 53 studies. There was an overall unweighted frequency of 22% Hispanic children based on 45 studies. Furthermore, 25 studies reported the frequency of African-American children by placement type. For the kinship care group, the unweighted frequency was 51% African-American.

For the foster care group, the unweighted frequency was 44% African-American. In addition, 20 studies reported the frequency of Hispanic children by placement type. For the kinship care group, the unweighted frequency was 24% Hispanic. For the foster care group, the unweighted frequency was 26% Hispanic.

For removal reason, there was an overall unweighted frequency of 60% of children removed for neglect, based on 31 studies. Furthermore, 15 studies reported the frequency of children removed for neglect by placement type. For the kinship care group, the unweighted frequency was 67% of children removed for neglect. For the foster care group, the unweighted frequency was 63% of children removed for neglect.

For urbanicity, there was an overall unweighted frequency of 80% of children from urban settings, based on 17 studies. In addition, there was an overall unweighted frequency of 13% of children from rural settings based on four studies. However, no studies reported the urbanicity of children by placement type.

Interventions

As displayed in [Table 2](#), all 102 studies reported data for at least one of the following intervention characteristics: caregiver licensure, timing of placement, length of stay, or timing of data collection.

For caregiver licensure, nine studies reported information on whether kinship caregivers were licensed or unlicensed. Specifically, six studies included licensed kinship placements, two studies included unlicensed kinship placements, and one study included both licensed and unlicensed kinship placements.

For the timing of placement, 40 studies reported information on whether children were in their first, last, or only kinship or foster placement. Specifically, the kinship or foster placement was the first in 29 of the studies, the last in eight of the studies, the only placement in one study, and either the first or last placement depending on the outcome being measured in two studies.

For length of stay, there was an unweighted mean length of placement of 36.0 months for the kinship care group and 34.2 months for the foster care group, based on 16 studies. In addition, there was an unweighted mean length of stay in out-of-home care of 48.7 months for the kinship care group and 45.5 months for the foster care group based on 14 studies.

For the timing of data collection, 62 studies used a cross-sectional data collection approach while 40 studies used a longitudinal data collection approach with a follow-up ranging from one year to 10 years.

Outcome measures

There were eight outcome categories and 29 specific outcomes considered in this review (including the same outcome measured both dichotomously and continuously). The following narrative contains the definitions and instrumentation used to measure the outcome variables in which bivariate data were extracted for the

meta-analyses. The Outcomes Measures Table (Table 3) displays the outcomes and measures for all 102 studies in the review.

Behavioural development

The two behavioural development outcomes were behaviour problems and adaptive behaviours. Behaviour problems were defined dichotomously as the presence or absence of internalising (e.g., withdrawn, passive) and externalising (e.g., aggressive, delinquent) problem behaviours and continuously as the level of these behaviours. The continuous outcome was measured by the total problems scale of the Child Behavior Checklist (CBCL) in 12 studies (Davis 2005; Ford 2007; Holtan 2005; Jones-Karena 1998; Lawler 2008; Linares 2010; Orgel 2007; Rudenberg 1991; Strijker 2003; Tarren-Sweeney 2006a; Timmer 2004; Villagrana 2008), the Behaviour Problems Index (Brooks 1998), and caregiver reports in two studies (Metzger 1997; Surbeck 2000). The dichotomous outcome was measured by the CBCL in two studies (Ringelisen 2009; Sakai 2011), the Behavioural Assessment Scoring System for Children (McCarthy 2007), an administrative database (Ryan 2010a), and case records in two studies (Iglehart 1994; Landsverk 1996). Adaptive behaviours were defined continuously as the level of competence or positive behaviours and were measured by the total competence scale of the CBCL in three studies (Holtan 2005; Tarren-Sweeney 2006a; Villagrana 2008), the adaptive composite score on the Vineland Adaptive Behavior Scales (VABS) in three studies (Belanger 2002; Jones-Karena 1998; Villagrana 2008), and caregiver reports (Surbeck 2000).

Mental health

The two mental health outcomes were psychiatric disorders and well-being. Psychiatric disorders were defined dichotomously by the presence or absence of mental illness and continuously by scores on a measure of psychopathology. The dichotomous outcome was measured by the Composite International Diagnostic Interview (Keller 2010), the Child Depression Inventory and Trauma Symptoms Checklist for children (Sakai 2011), paid claims data (Bilaver 1999), the DSM-IV (McMillen 2005), and case records in two studies (Harris 2003; Iglehart 1994). The continuous outcome was measured by the Devereaux Scales of Mental Disorders (Belanger 2002) and the Columbia Impairment Scale and the Self-Perception Profile of Adolescents (Mennen 2010). Well-being was defined dichotomously by the presence or absence of positive emotional health and continuously by the level of well-being or self worth. The dichotomous outcome was measured by the Foster Care Questionnaire (Dunn 2010), child self reports (Wilson 1999), the R.C. Monitoring Protocol (Harris 2003), and caseworker reports (Tompkins 2003). The continuous outcome was measured by the Personal Attribute Inventory for Children (Metzger 1997) and a measure from the National Longitudinal Study of Adolescent Health (Farruggia 2009).

Placement stability

The four placement stability outcomes were number of placements, length of stay, placement disruption, and re-entry as measured by secondary data from administrative databases for all studies except for case records in two studies (Strijker 2008; Valicenti-McDermott 2008), and caseworker reports in two studies (Del Valle 2009; Sakai 2011). Number of placements was measured both continuously by the number of out-of-home placements and dichotomously by experiencing either two or fewer or three or more placement settings. The dichotomous outcome was used in

six studies (Courtney 1997b; Harris 2003; Metzger 1997; Pabustan-Claar 2007a; Ryan 2010a; Zimmerman 1998). The continuous outcome was used in six studies (Belanger 2002; Davis 2005; Ryan 2010a; Sakai 2011; Strijker 2008; Winokur 2008). Length of stay in placement was measured continuously in six studies (Berrick 1994; Brooks 1998; Cole 2006; Davis 2005; Surbeck 2000; Valicenti-McDermott 2008). Length of stay in out-of-home care was measured continuously in nine studies (Belanger 2002; Clyman 1998; Jenkins 2002; Ryan 2010a; Sivright 2004; Strijker 2008; Tompkins 2003; Valicenti-McDermott 2008; Winokur 2008). It should be noted that longer lengths of stay in placement or in out-of-home care are considered negative outcomes in the U.S., as reunification within 12 months is the primary permanency goal for children placed in short-term kinship or foster care. Placement disruption was measured dichotomously by whether the kin or foster placement ended without permanency in five studies (Del Valle 2009; Koh 2008b; Rubin 2008; Sallnas 2004; Testa 2001). Re-entry was measured dichotomously by whether there was a re-entry to out-of-home care after achieving permanency in two studies (Frame 2000; Winokur 2008).

Permanency

The four permanency outcomes were reunification, adoption, guardianship, and still in placement. All four outcomes were measured dichotomously by secondary data from administrative databases in 15 studies (Akin 2011; Barth 1994; Berrick 1999; Johnson 2005; Koh 2008b; McIntosh 2002; Pabustan-Claar 2007a; Sivright 2004; Smith 2002; Smith 2003; Testa 1999; Testa 2001; Wells 1999; Winokur 2008; Zimmerman 1998) and case records or caseworker reports in four studies (Del Valle 2009; Lutman 2009; Sakai 2011; Valicenti-McDermott 2008). Reunification was defined as a return home to biological or birth parents after placement in out-of-home care. Adoption was defined as a termination of parental rights with legal custody transferred to adoptive parents (in most cases non-relatives). Guardianship was defined as an allocation of parents' rights with legal custody to relative caregivers (in most cases relatives). 'Still in placement' was defined as remaining in either kinship or foster care at the time data were collected for the study.

Educational attainment

The three educational attainment outcomes were repeating a grade, graduation, and grade level, and all were measured dichotomously. It should be noted that these outcomes are all U.S. measures of educational attainment. Repeating a grade was defined by whether a child had been retained in one or more grades as measured by caregiver or self reports in five studies (Berrick 1994; Brooks 1998; Ford 2007; Metzger 1997; Sripathy 2004) and case records (Valicenti-McDermott 2008). Graduation was defined by whether a child completed high school and was measured by case records (Christopher 1998). Grade level was defined by whether a child's academic performance was below their actual grade level and was measured by child self reports (Iglehart 1995) and case records (Iglehart 1994).

Family relations

The three family relations outcomes were attachment, conflict, and home environment. Attachment was defined as perceived level of relatedness or attachment between child and caregiver and was measured continuously by child self reports (Chapman 2004), the Attachment Q-Sort Version 3 Assessment (Chew 1998),

caregiver reports (Strijker 2003), the Assessment of Interpersonal Relations (Davis 2005), and the Child Well-Being Scales (Surbeck 2000). Attachment was measured dichotomously by the Ainsworth Strange Situation Procedure (Cole 2006), case records (Jenkins 2002), the Offer Self-Image Questionnaire (Mosek 2001), and the Relationship Story Completion Test (Orgel 2007). Conflict was defined continuously as the level of family functioning as measured by the Index of Family Relations (Berrick 1997). Home environment was defined as the milieu within the foster and kinship care households (e.g., emotional climate, paternal involvement, and family participation) and was measured by the Elementary HOME Inventory (Ford 2007).

Service utilisation

The three service utilisation outcomes were mental health services, physician services, and developmental services defined dichotomously as whether a child actually received services (not just referral). Mental health service utilisation was measured by paid claims data (Bilaver 1999), caseworker reports in two studies (Metzger 1997; Tompkins 2003), case records in three studies (Jenkins 2002; Scannapieco 1997; Sivright 2004), caregiver reports in three studies (Berrick 1994; Sakai 2011; Sripathy 2004), The Young Kids Early Services Assessment (TYKES) (Clyman 1998), and the Child and Adolescent Services Assessment in three studies (Farmer 2010; Ringeisen 2009; Villagrana 2008). Physician service utilisation was measured by paid claims data (Bilaver 1999), caseworker reports (Tompkins 2003), case records in two studies (Scannapieco 1997; Valicenti-McDermott 2008), caregiver reports in two studies (Sakai 2011; Schneiderman 2010), and the TYKES (Clyman 1998). Developmental services were measured by paid claims data (Bilaver 1999), the TYKES (Clyman 1998), and the Child and Adolescent Services Assessment (Ringeisen 2009).

Re-abuse

The two re-abuse outcomes were recurrence of abuse and institutional abuse, as measured dichotomously by secondary data from administrative databases. Recurrence of abuse was defined as whether a new substantiated incident of intrafamilial abuse or neglect (by birth or biological parent(s) not kin caregiver(s) or foster parent(s)) occurred after a previous substantiated incident and was reported in one study (Fuller 2005). Institutional abuse was defined as whether a substantiated incident of abuse or neglect occurred in an out-of-home placement setting (by kin caregiver(s) or foster parent(s) not birth or biological parent(s)) and was reported in three studies (Benedict 1996a; Winokur 2008; Zuravin 1993).

Excluded studies

As displayed in the [Characteristics of excluded studies](#) table, 296 studies (comprised of 300 reports) were excluded from the review for the following reasons: 102 were excluded because there was no formal kinship care group or the kinship care group was not disaggregated from the foster care group; 40 studies were excluded because there was no foster care comparison group or the foster care group was not disaggregated from other out-of-home placement types; 38 studies were excluded because they reported on an intervention other than out-of-home placement; 37 studies were excluded because they were non-empirical (e.g. literature reviews); 29 studies were excluded because they were survey, descriptive, or qualitative research designs; 23 studies were excluded because child welfare outcomes were not reported; 16 studies were excluded because they were intractably unavailable; 11 studies were excluded because they were based on an adult sample.

Risk of bias in included studies

The included studies were assessed for risk of selection bias, performance bias, detection bias, reporting bias, and attrition bias. Specifically, each study was rated either at low risk, unclear risk, or high risk based on two sub-questions for each of these areas. The 'Risk of bias' tables included with the [Characteristics of included studies](#) display the ratings for each type of bias and the support for these judgements. Specifically, selection bias is reported in 'allocation concealment', performance bias is reported in 'blinding of participants and personnel', detection bias is reported in 'blinding of outcome assessment', reporting bias is reported in 'selective reporting', and attrition bias is reported in 'incomplete outcome data'. There is nothing reported for 'random sequence generation', 'blinding', and 'other bias' because of the different dimensions of risk of bias assessed for the quasi-experimental studies that comprise this evidence base. As displayed in the 'Risk of bias' Summary Figure ([Figure 2](#)), the risk of bias analysis indicates that the evidence base contains studies with unclear risk in all five categories, with the highest risk associated with selection bias and the lowest risk associated with reporting bias. It should be noted that there were some changes in the risk of reporting bias ratings for studies included in the original review. Specifically, studies from the original review that utilised administrative databases for outcome measurement were categorised as being at low risk of reporting bias rather than at unclear risk of reporting bias, to align them with the judgements made on the studies added for the updated review.

Figure 2. Risk of bias summary: Review authors' judgements about each risk of bias item for each included study.

	Allocation concealment (selection bias)	Blinding of participants and personnel (performance bias)	Blinding of outcome assessment (detection bias)	Incomplete outcome data (attrition bias)	Selective reporting (reporting bias)
Akin 2011	?	?	?	+	+
Barth 1994	?	?	?	+	+
Belanger 2002	+	?	?	?	?
Benedict 1996a	?	?	+	+	?
Bennett 2000	?	?	?	+	+
Berger 2009	+	?	?	?	+
Berrick 1994	?	-	-	?	+
Berrick 1997	?	+	?	?	+
Berrick 1999	?	?	?	+	+
Bilaver 1999	-	?	?	+	+
Brooks 1998	?	-	?	?	?
Chamberlain 2006	?	?	?	+	?
Chapman 2004	-	?	?	?	?
Chew 1998	-	?	?	-	+
Christopher 1998	-	?	?	?	?
Clyman 1998	+	?	-	?	?
Cole 2006	?	?	+	?	?
Connell 2006a	?	?	?	?	+
Connell 2006b	?	?	?	?	+
Courtney 1995	?	?	?	+	?

Figure 2. (Continued)

Courtney 1995	?	?	?	+	?
Courtney 1996a	?	?	?	+	+
Courtney 1996b	?	?	?	+	+
Courtney 1997a	?	?	?	+	+
Courtney 1997b	-	?	?	+	+
Davis 2005	?	?	?	?	?
Del Valle 2009	?	?	?	+	?
De Robertis 2004	+	?	?	?	+
Dunn 2010	-	?	?	?	+
Farmer 2010	?	?	?	?	+
Farruggia 2009	-	?	?	+	+
Ford 2007	+	?	?	+	+
Frame 2000	?	?	?	?	?
Frame 2002	?	?	?	+	?
Fuller 2005	?	?	?	?	?
Geenen 2006	-	?	?	?	?
Grogan-Kaylor 2000	?	?	?	+	+
Harris 2003	-	?	?	+	+
Helton 2010	?	?	?	+	?
Holtan 2005	+	+	?	?	+
Hurlburt 2010	?	?	?	?	+
Iglehart 1994	-	?	?	+	?
Iglehart 1995	-	?	?	?	?
Jenkins 2002	-	-	+	+	+
Johnson 2005	?	?	?	+	+
Jones-Karena 1998	?	?	?	+	+
Jonson-Reid 2003	?	?	?	+	+
Keller 2010	-	?	?	+	+
Koh 2008a	+	?	?	+	+
Koh 2008b	+	?	?	+	+
Koh 2009	+	?	?	?	+

Figure 2. (Continued)

Koh 2009	+	?	?	?	+
Landsverk 1996	-	?	?	?	+
Lawler 2008	+	?	?	+	+
Lernihan 2006	-	?	?	?	-
Leslie 2000a	?	?	+	?	?
Linares 2010	+	?	?	+	+
Lutman 2009	-	?	-	?	-
McCarthy 2007	?	?	?	+	+
McIntosh 2002	?	?	?	?	+
McMillen 2004	?	?	?	?	+
McMillen 2005	?	?	?	?	+
Mennen 2010	?	?	?	-	+
Metzger 1997	+	+	-	?	?
Metzger 2008	?	?	?	+	+
Mosek 2001	?	?	?	?	+
Orgel 2007	?	?	?	+	+
Pabustan-Claar 2007a	?	?	?	+	+
Palacios 2009	?	?	?	?	-
Ringeisen 2009	-	-	?	+	+
Rubin 2008	?	?	?	?	+
Rudenberg 1991	+	?	?	?	+
Ryan 2010a	+	?	?	+	+
Sakai 2011	+	?	-	?	+
Sallnas 2004	-	?	?	?	?
Scannapieco 1997	-	-	+	+	+
Schneiderman 2010	+	?	?	?	?
Shin 2003	?	?	?	?	+
Sivright 2004	?	+	?	?	?
Smith 2002	-	?	?	?	+
Smith 2003	?	?	?	+	+
Sripathy 2004	?	?	?	?	?

Figure 2. (Continued)

Sripathy 2004	?	?	?	?	?
Strijker 2003	-	?	-	?	+
Strijker 2008	-	?	?	?	+
Surbeck 2000	?	?	?	+	?
Tarren-Sweeney 2006a	-	?	?	-	+
Tarren-Sweeney 2006b	?	?	?	-	+
Tarren-Sweeney 2008a	+	?	?	?	+
Tarren-Sweeney 2008b	+	?	?	?	+
Testa 1999	-	?	?	+	+
Testa 2001	+	?	?	+	?
Timmer 2004	?	?	?	?	+
Tompkins 2003	?	?	?	?	?
USDHHS 2005	?	?	?	?	+
Valicenti-McDermott 2008	?	-	?	?	+
Villagrana 2008	-	?	?	?	+
Vogel 1999	?	?	?	?	+
Wells 1999	?	?	?	+	+
Wilson 1999	-	?	?	?	+
Winokur 2008	+	?	?	+	+
Zima 2000	?	?	?	?	?
Zimmerman 1998	?	?	?	?	+
Zinn 2009	+	?	?	+	+
Zuravin 1993	?	?	+	+	+

Allocation

For selection bias, 21 studies (Belanger 2002; Berger 2009; Clyman 1998; De Robertis 2004; Ford 2007; Holtan 2005; Koh 2008a; Koh 2008b; Koh 2009; Lawler 2008; Linares 2010; Metzger 1997; Rudenberg 1991; Ryan 2010a; Sakai 2011; Schneiderman 2010; Tarren-Sweeney 2008a; Tarren-Sweeney 2008b; Winokur 2008; Testa 2001; Zinn 2009) were rated at low risk, 55 studies were rated at unclear risk, and 26 studies were rated at high risk. The primary reasons that studies were assessed to have unclear or high risk for selection bias were the lack of equating procedures and uncertainty or non-reporting for placement and demographic data.

Blinding

For performance bias, four studies (Berrick 1997; Holtan 2005; Metzger 1997; Sivright 2004) were rated at low risk, 92 were rated

at unclear risk, and six were rated at high risk. The primary reasons that studies were assessed to have unclear or high risk for performance bias were uncertainty regarding both the length of stay and receipt of services during placement.

For detection bias, six studies (Benedict 1996a; Cole 2006; Jenkins 2002; Leslie 2000a; Scannapieco 1997; Zuravin 1993) were rated at low risk, 90 were rated at unclear risk, and six were rated at high risk. The primary reasons that studies were assessed to have unclear or high risk for detection bias were uncertainty in how the groups were defined and the use of only caregiver or self reports to measure the outcome. Although biased assessment is not necessarily due to the type of placement, it may differentially impact the detection of a placement's effect on child welfare outcomes.

Incomplete outcome data

For attrition bias, 44 studies were rated at low risk, 54 studies were rated at unclear risk, and four studies were rated at high risk. The primary reason that studies were assessed to have unclear or high risk for attrition bias was the loss of participants due to missing outcome data.

Selective reporting

For reporting bias, 71 studies were rated at low risk, 28 studies were rated at unclear risk, and three studies were rated at high risk. The primary reason that studies were assessed to have unclear or high risk for report bias was the lack of reliability and/or validity information.

Other potential sources of bias

There were no other potential sources of bias assessed.

Effects of interventions

Meta-analyses

There were sufficient data for meta-analysis for 21 of the 29 outcomes in the review. As a result, we generated at least one meta-analysis for each outcome category. We report the results for these 21 outcomes as the statistical significance of the effect, the direction and magnitude of the effect size, the 95% confidence interval around the effect size estimate, and the evidence of heterogeneity for the individual effect sizes. The effect sizes were drawn exclusively from the studies reporting bivariate data, and thus do not reflect adjustment by covariates (although bivariate data from studies that used matching designs were included in the effect size analyses). It should be noted that all standardised mean difference (SMD) effect sizes that are negative indicate better outcomes for the kinship care group, while all odds ratio (OR) effect sizes that are less than 1.0 also indicate better outcomes for the kinship care group.

Behavioural Development

There was a statistically significant overall effect size for the 15 studies (Brooks 1998; Davis 2005; Ford 2007; Holtan 2005; Jones-Karena 1998; Lawler 2008; Linares 2010; Metzger 1997; Orgel 2007; Rudenberg 1991; Strijker 2003; Surbeck 2000; Tarren-Sweeney 2006a; Timmer 2004; Villagrana 2008) that reported sufficient bivariate continuous data to generate effect size estimates for behaviour problems. Specifically, the overall effect size estimate was $g = -0.33$, 95% confidence interval (CI) -0.49 to -0.17 (see Analysis 1.1). Thus, children in kinship care ($N = 1158$) had lower reported levels of internalising and externalising behaviour problems than did children in foster care ($N = 1657$). The test of heterogeneity was significant for this outcome ($P < .00001$; $I^2 = 73\%$; $\text{Tau}^2 = 0.07$; $\text{Chi}^2 = 51.23$).

There was a statistically significant overall effect size for the six studies (Iglehart 1994; Landsverk 1996; McCarthy 2007; Ringeisen 2009; Ryan 2010a; Sakai 2011) that reported sufficient bivariate dichotomous data to generate effect size estimates for behaviour problems. Specifically, the overall effect size estimate was reported OR 0.62, 95% CI 0.41 to 0.93 (see Analysis 1.2). Thus, children in foster care ($N = 8407$) had 1.6 times the odds of reporting internalising and externalising behaviour problems than did children in kinship care ($N = 8042$). The test of heterogeneity was

significant for this outcome ($P < 0.00001$; $I^2 = 92\%$; $\text{Tau}^2 = 0.21$; $\text{Chi}^2 = 59.90$).

There was a statistically significant overall effect size for the six studies (Belanger 2002; Holtan 2005; Jones-Karena 1998; Surbeck 2000; Tarren-Sweeney 2006a; Villagrana 2008) that reported sufficient bivariate data to generate effect size estimates for adaptive behaviours. Specifically, the overall effect size estimate was $g = -0.42$, 95% CI -0.61 to -0.22 (see Analysis 1.3). Thus, children in kinship care ($N = 491$) had higher reported levels of competence than did children in foster care ($N = 796$). The test of heterogeneity was significant for this outcome ($P = 0.03$; $I^2 = 61\%$; $\text{Tau}^2 = 0.03$; $\text{Chi}^2 = 12.69$).

Mental health

There was a statistically significant overall effect size for the six studies (Bilaver 1999; Harris 2003; Iglehart 1994; Keller 2010; McMillen 2005; Sakai 2011) that reported sufficient bivariate dichotomous data to generate effect size estimates for psychiatric disorders. Specifically, the overall effect size estimate was OR 0.51, 95% CI 0.42 to 0.62 (see Analysis 2.1). Thus, children in foster care ($N = 35448$) had 2.0 times the odds of experiencing mental illness as did children in kinship care ($N = 15303$). The test of heterogeneity was not significant for this outcome ($P = 0.26$; $I^2 = 23\%$; $\text{Tau}^2 = 0.01$; $\text{Chi}^2 = 6.51$).

There was a statistically significant overall effect size for the four studies (Dunn 2010; Harris 2003; Tompkins 2003; Wilson 1999) that reported sufficient bivariate dichotomous data to generate effect size estimates for well-being. Specifically, the overall effect size estimate was reported OR 0.50, 95% CI 0.38 to 0.64 (see Analysis 2.2). Thus, children in kinship care ($N = 126054$) had 2.0 times the odds of reporting positive emotional health as did children in foster care ($N = 191955$). The test of heterogeneity was not significant for this outcome ($P = 0.33$; $I^2 = 12\%$; $\text{Tau}^2 = 0.02$; $\text{Chi}^2 = 3.41$).

Placement stability

There was a statistically significant overall effect size for the six studies (Courtney 1997b; Harris 2003; Metzger 1997; Pabustan-Claar 2007a; Ryan 2010a; Zimmerman 1998) that reported sufficient bivariate dichotomous data to generate effect size estimates for placement settings. Specifically, the overall effect size estimate was OR 0.39, 95% CI 0.33 to 0.45 (see Analysis 3.1). Thus, children in foster care ($N = 15729$) had 2.6 times the odds of experiencing three or more placement settings as did children in kinship care ($N = 10763$). The test of heterogeneity was significant for this outcome ($P = 0.05$; $I^2 = 55\%$; $\text{Tau}^2 = 0.01$; $\text{Chi}^2 = 11.14$).

There was a statistically significant overall effect size for the six studies (Belanger 2002; Davis 2005; Ryan 2010a; Sakai 2011; Strijker 2008; Winokur 2008) that reported sufficient bivariate continuous data to generate effect size estimates for number of placements. Specifically, the overall effect size estimate was $g = -0.38$, 95% CI -0.58 to -0.17 (see Analysis 3.2). Thus, children in kinship care ($N = 7749$) had fewer mean number of placements as did children in foster care ($N = 7928$). The test of heterogeneity was significant for this outcome ($P < 0.00001$; $I^2 = 90\%$; $\text{Tau}^2 = 0.05$; $\text{Chi}^2 = 51.14$).

There were six studies (Berrick 1994; Brooks 1998; Cole 2006; Davis 2005; Surbeck 2000; Valicenti-McDermott 2008), with a total sample size of $N = 634$ for the kinship care group and $N = 883$ for the foster care group, that reported sufficient bivariate data to generate

effect size estimates for length of placement. The overall effect size estimate was $g = 0.90$, 95% CI -0.66 to 2.46 (see [Analysis 3.3](#)). However, the analysis could not rule out zero as a likely population value. The test of heterogeneity was significant for this outcome ($P < 0.00001$; $I^2 = 99\%$; $\text{Tau}^2 = 3.73$; $\text{Chi}^2 = 631.50$).

There were nine studies ([Belanger 2002](#); [Clyman 1998](#); [Jenkins 2002](#); [Ryan 2010a](#); [Sivright 2004](#); [Strijker 2008](#); [Tompkins 2003](#); [Valicenti-McDermott 2008](#); [Winokur 2008](#)), with a total sample size of $N = 129503$ for the kinship care group and $N = 201218$ for the foster care group, that reported sufficient bivariate data to generate effect size estimates for length of stay in out-of-home care. The overall effect size estimate was $g = 0.02$ with a confidence interval of -0.04 to 0.09 (see [Analysis 3.4](#)). However, the analysis could not rule out zero as a likely population value. The test of heterogeneity was significant for this outcome ($P < 0.00001$; $I^2 = 75\%$; $\text{Tau}^2 = 0.00$; $\text{Chi}^2 = 32.46$).

There was a statistically significant overall effect size for the five studies ([Del Valle 2009](#); [Koh 2008b](#); [Rubin 2008](#); [Sallnas 2004](#); [Testa 2001](#)) that reported sufficient bivariate data to generate effect size estimates for placement disruption. Specifically, the overall effect size estimate was OR 0.52, 95% CI 0.40 to 0.69 (see [Analysis 3.5](#)). Thus, children in foster care ($N = 3541$) had 1.9 times the odds of experiencing a placement disruption as did children in kinship care ($N = 3340$). The test of heterogeneity was significant for this outcome ($P = 0.00003$; $I^2 = 81\%$; $\text{Tau}^2 = 0.07$; $\text{Chi}^2 = 21.12$).

Permanency

There were 13 studies ([Akin 2011](#); [Berrick 1999](#); [Del Valle 2009](#); [Koh 2008b](#); [McIntosh 2002](#); [Pabustan-Claar 2007a](#); [Smith 2002](#); [Testa 1999](#); [Testa 2001](#); [Valicenti-McDermott 2008](#); [Wells 1999](#); [Winokur 2008](#); [Zimmerman 1998](#)), with a total sample size of $N = 22907$ for the kinship care group and $N = 44496$ for the foster care group, that reported sufficient bivariate data to generate effect size estimates for reunification. The overall effect size estimate was OR 1.09, 95% CI 0.85 to 1.40 (see [Analysis 4.1](#)). However, the analysis could not rule out zero as a likely population value. The test of heterogeneity was significant for this outcome ($P < 0.00001$; $I^2 = 93\%$; $\text{Tau}^2 = 0.15$; $\text{Chi}^2 = 173.03$).

There was a statistically significant overall effect size for the 12 studies ([Akin 2011](#); [Barth 1994](#); [Berrick 1999](#); [Del Valle 2009](#); [Koh 2008b](#); [Pabustan-Claar 2007a](#); [Smith 2002](#); [Testa 1999](#); [Testa 2001](#); [Valicenti-McDermott 2008](#); [Winokur 2008](#); [Zimmerman 1998](#)) that reported sufficient bivariate data to generate effect size estimates for adoption. Specifically, the overall effect size estimate was OR 2.52, 95% CI 1.42 to 4.49 (see [Analysis 4.2](#)). Thus, children in foster care ($N = 44600$) had 2.5 times the odds of being adopted as did children in kinship care ($N = 22217$). The test of heterogeneity was significant for this outcome ($P < 0.00001$; $I^2 = 98\%$; $\text{Tau}^2 = 0.86$; $\text{Chi}^2 = 533.68$).

There was a statistically significant overall effect size for the eight studies ([Akin 2011](#); [Berrick 1999](#); [Koh 2008b](#); [Pabustan-Claar 2007a](#); [Testa 1999](#); [Testa 2001](#); [Winokur 2008](#); [Zimmerman 1998](#)) that reported sufficient bivariate data to generate effect size estimates for guardianship. Specifically, the overall effect size estimate was OR 0.26, 95% CI 0.17 to 0.40 (see [Analysis 4.3](#)). Thus, children in kinship care ($N = 21590$) had 3.8 times the odds of having relatives assume legal custody as did children in foster care ($N = 43143$). The

test of heterogeneity was significant for this outcome ($P < 0.00001$; $I^2 = 91\%$; $\text{Tau}^2 = 0.29$; $\text{Chi}^2 = 82.29$).

There was a statistically significant overall effect size for the 11 studies ([Barth 1994](#); [Berrick 1999](#); [Johnson 2005](#); [Lutman 2009](#); [Sakai 2011](#); [Sivright 2004](#); [Smith 2002](#); [Smith 2003](#); [Testa 2001](#); [Winokur 2008](#); [Zimmerman 1998](#)) that reported sufficient bivariate data to generate effect size estimates for the still-in-placement outcome. Specifically, the overall effect size estimate was OR 1.18, 95% CI 0.77 to 1.80 (see [Analysis 4.4](#)). Thus, children in kinship care ($N = 19416$) had 1.2 times the odds of still being in care as did children in foster care ($N = 37830$). The test of heterogeneity was significant for this outcome ($P < 0.00001$; $I^2 = 96\%$; $\text{Tau}^2 = 0.42$; $\text{Chi}^2 = 237.39$).

Educational attainment

There were six studies ([Berrick 1994](#); [Brooks 1998](#); [Ford 2007](#); [Metzger 1997](#); [Sripathy 2004](#); [Valicenti-McDermott 2008](#)), with a total sample size of $N = 546$ for the kinship care group and $N = 673$ for the foster care group, that reported sufficient bivariate data to generate effect size estimates for the 'repeated a grade' outcome. The overall effect size estimate was OR 0.73, 95% CI 0.50 to 1.07 (see [Analysis 5.1](#)). However, the analysis could not rule out zero as a likely population value. The test of heterogeneity was not significant for this outcome ($P = 0.16$; $I^2 = 37\%$; $\text{Tau}^2 = 0.08$; $\text{Chi}^2 = 7.94$).

Family relations

There were five studies ([Chapman 2004](#); [Chew 1998](#); [Davis 2005](#); [Strijker 2003](#); [Surbeck 2000](#)), with a total sample size of $N = 217$ for the kinship care group and $N = 282$ for the foster care group, that reported sufficient bivariate continuous data to generate effect size estimates for the attachment outcome. The overall effect size estimate was $g = -0.01$, 95% CI -0.30 to 0.28 (see [Analysis 6.1](#)). However, the analysis could not rule out zero as a likely population value. The test of heterogeneity was significant for this outcome ($P = 0.09$; $I^2 = 50\%$; $\text{Tau}^2 = 0.05$; $\text{Chi}^2 = 8.04$).

There were four studies ([Cole 2006](#); [Jenkins 2002](#); [Mosek 2001](#); [Orgel 2007](#)), with a total sample size of $N = 163$ for the kinship care group and $N = 212$ for the foster care group, that reported sufficient bivariate dichotomous data to generate effect size estimates for the attachment outcome. The overall effect size estimate was OR 1.21, 95% CI 0.56 to 2.59 (see [Analysis 6.2](#)). However, the analysis could not rule out zero as a likely population value. The test of heterogeneity was not significant for this outcome ($P = 0.08$; $I^2 = 56\%$; $\text{Tau}^2 = 0.33$; $\text{Chi}^2 = 6.80$).

Service utilisation

There was a statistically significant overall effect size for the 13 studies ([Berrick 1994](#); [Bilaver 1999](#); [Clyman 1998](#); [Farmer 2010](#); [Jenkins 2002](#); [Metzger 1997](#); [Ringelisen 2009](#); [Sakai 2011](#); [Scannapieco 1997](#); [Sivright 2004](#); [Sripathy 2004](#); [Tompkins 2003](#); [Villagrana 2008](#)) that reported sufficient bivariate data to generate effect size estimates for mental health service utilisation. Specifically, the overall effect size estimate was OR 1.79, 95% CI 1.35 to 2.37 (see [Analysis 7.1](#)). Thus, children in foster care ($N = 107705$) had 2.4 times the odds of receiving mental health services as did children in kinship care ($N = 44921$). The test of heterogeneity was significant for this outcome ($P < 0.00001$; $I^2 = 96\%$; $\text{Tau}^2 = 0.17$; $\text{Chi}^2 = 289.17$).

There were three studies (Bilaver 1999; Clyman 1998; Ringeisen 2009), with a total sample size of $N = 14314$ for the kinship care group and $N = 33744$ for the foster care group, that reported sufficient bivariate data to generate effect size estimates for developmental service utilisation. The overall effect size estimate was OR 0.94, 95% CI 0.38 to 2.32 (see Analysis 7.2). However, the analysis could not rule out zero as a likely population value. The test of heterogeneity was significant for this outcome ($P < .03$; $I^2 = 72\%$; $\text{Tau}^2 = 0.44$; $\text{Chi}^2 = 7.02$).

There were seven studies (Bilaver 1999; Clyman 1998; Sakai 2011; Scannapieco 1997; Schneiderman 2010; Tompkins 2003; Valicenti-McDermott 2008), with a total sample size of $N = 74354$ for the kinship care group and $N = 139651$ for the foster care group, that reported sufficient bivariate data to generate effect size estimates for physician service utilisation. The overall effect size estimate was OR 1.37, 95% CI 0.48 to 3.93 (see Analysis 7.3). However, the analysis could not rule out zero as a likely population value. The test of heterogeneity was significant for this outcome ($P < 0.00001$; $I^2 = 99\%$; $\text{Tau}^2 = 1.84$; $\text{Chi}^2 = 454.25$).

Re-abuse

There was a statistically significant overall effect size for the three studies (Benedict 1996a; Winokur 2008; Zuravin 1993) that reported sufficient bivariate data to generate effect size estimates for institutional abuse. Specifically, the overall effect size estimate was OR 0.27, 95% CI 0.10 to 0.71 (see Analysis 8.1). Thus, children in foster care ($N = 659$) had 3.7 times the odds of experiencing institutional abuse as did children in kinship care ($N = 543$). The test of heterogeneity was significant for this outcome ($P = 0.003$; $I^2 = 83\%$; $\text{Tau}^2 = 0.62$; $\text{Chi}^2 = 11.62$).

Multivariate analyses

As studies that reported multivariate data controlled for covariates, such as age at placement, gender, ethnicity, socioeconomic status, geographic region, behaviour and health problems, placement reason and history, and caregiver variables, they potentially provide a stronger level of evidence regarding the effect of kinship care on child welfare outcomes. Thus, results from the weaker quasi-experimental designs comprising the meta-analytical data could also be considered stronger evidence if corroborated by the multivariate results which are summarised in the Outcomes for Studies with Multivariate Analysis Table (Table 4). It should be noted that some studies reported both bivariate and multivariate data, and were included in both analyses. Overall, the multivariate results generally support the results generated from the meta-analyses.

For behavioural development, Bennett 2000, Holtan 2005, Rubin 2008, and Sakai 2011 found that children in kinship care had significantly lower likelihood of behaviour problems than did children in foster care. Furthermore, three studies reporting multivariate adaptive behaviours data (Belanger 2002; Bennett 2000; Brooks 1998) found that children in kinship care had significantly greater adaptive behaviours than did children in foster care. However, De Robertis 2004, Linares 2010, Mennen 2010, Surbeck 2000, Tarren-Sweeney 2008b, and Zima 2000 did not find a significant difference between the groups on behaviour problems, while Berger 2009 found that time spent in foster care homes was associated with decreased externalising behaviour problems. Again, Zima 2000 did not find a significant difference between the groups on adaptive behaviours.

For mental health, Belanger 2002 and Metzger 1997 found that children in kinship care had significantly better reported well-being and fewer psychiatric disorders than did children in foster care. However, Ford 2007, Mennen 2010, and Tarren-Sweeney 2008a found that type of placement was not a significant predictor of well-being, while McMillen 2005 and Tarren-Sweeney 2006a found no significant difference between the groups on psychiatric disorders. Sakai 2011 found that children in kinship care had a lower risk of depression but a higher risk of post-traumatic stress disorder (PTSD).

For service utilisation, Clyman 1998, Farmer 2010, Leslie 2000a, McMillen 2004, and Sakai 2011 found that children in foster care were significantly more likely to utilise mental health services than were children in kinship care. As for physician service utilisation, Clyman 1998 found no significant difference between the groups, while Schneiderman 2010 found that children in kinship care had a greater likelihood of utilising physician service than did children in foster care.

The greatest amount of multivariate data was reported for the permanency outcomes. Similar to the nonsignificant meta-analysis results for reunification, the findings from the 12 studies reporting multivariate data were also inconclusive. Specifically, four studies (Akin 2011, Berrick 1999; Courtney 1996a; Grogan-Kaylor 2000) found that children in kinship care were more likely to reunify, while two studies (Connell 2006a; Courtney 1996b) found that children in foster care were more likely to reunify. Furthermore, Courtney 1997a, Frame 2002, Wells 1999, and Zimmerman 1998 found no significant difference between the groups on reunification, while Koh 2008a reported mixed findings on reunification depending on the state being analysed. As for adoption, Akin 2011, Barth 1994, and Courtney 1996b found that children in foster care were significantly more likely to be adopted than were children in kinship care. However, Courtney 1996a found that children in kinship care were more likely to be adopted, while Connell 2006a found no significant difference between the groups, and Koh 2008a reported mixed findings on adoption depending on the state being analysed. Berrick 1999 and Smith 2003 found that children in foster care were significantly less likely to still be in placement than were children in kinship care, while Frame 2002 and Johnson 2005 found no significant difference between the groups, and Koh 2008a reported mixed findings on this permanency outcome depending on the state being analysed.

For placement stability, Chamberlain 2006, Connell 2006b, Helton 2010, Hurlburt 2010, Koh 2008a, Koh 2009, and Testa 2001 found that children in kinship care were less likely to disrupt from placement than were children in foster care. Perhaps the most compelling evidence from the multivariate analyses was for re-entry, in that seven studies (Berrick 1999; Courtney 1995; Courtney 1997a; Frame 2000; Frame 2002; Jonson-Reid 2003; Wells 1999) reported that children in kinship care were significantly less likely to re-enter care than were children placed in foster care, while only one study (Koh 2008a) reported mixed findings on re-entry depending on the state being analysed. Vogel 1999 found that children in kinship care had significantly longer lengths of stay than did children in foster care, while Koh 2008a reported that children in kinship care were less likely to experience three or more placements within a year.

For the safety outcomes, Benedict 1996a and Zuravin 1993 found that children in kinship care were less likely to experience

institutional abuse than were children in foster care. However, the multivariate results were inconclusive for recurrence of abuse, as [Jonson-Reid 2003](#) found that children in kinship care were less likely to experience recurrence of abuse, while [Fuller 2005](#) found that children in kinship care were more likely to experience recurrence of abuse.

For family relations, the [USDHHS 2005](#) study reported that children in kinship care had higher levels of attachment, while [Davis 2005](#) and [Lawler 2008](#) found that type of placement was not a significant predictor of relatedness or emotional availability, respectively. Finally, for educational attainment, [Shin 2003](#) found that children in kinship care had significantly higher reading scores than did children in foster care, while [Zinn 2009](#) found no difference between the groups on educational attainment.

Bivariate analyses

As summarised in the Outcomes for Studies with Bivariate Analysis Table ([Table 5](#)), there were several studies that reported findings from bivariate analyses but did not report sufficient information for effect size calculation. Typically, these studies reported nonsignificant findings in the narrative but did not include the relevant data in a table. For example, five studies ([De Robertis 2004](#); [Landsverk 1996](#); [Sripathy 2004](#); [Tarren-Sweeney 2008b](#); [Valicenti-McDermott 2008](#)) found no difference between children in kinship care and foster care on the level of behaviour problems as measured by the Child Behavior Checklist (CBCL). However, [Berrick 1994](#), [Metzger 2008](#), [Palacios 2009](#), and [Tarren-Sweeney 2008b](#) confirmed the results from the meta-analysis, in that children in kinship care had significantly fewer reported behavioural problems than did children in foster care. As for adaptive behaviours, [Sripathy 2004](#) found no difference between children in kinship care and foster care on the level of adaptive behaviours as measured by the CBCL.

For mental health, [Mosek 2001](#) and [Tarren-Sweeney 2008a](#) found that children in kinship care had significantly higher well-being than did children in foster care, while [Palacios 2009](#) found that foster parents reported greater well-being in regard to basic needs and educational supervision, and [Valicenti-McDermott 2008](#) found no difference in well-being or psychiatric disorders between the groups. For family relations, [Metzger 2008](#) and [USDHHS 2005](#) found higher levels of attachment for children in kinship care than for children in foster care. For educational attainment, [Geenen 2006](#) found that children in foster care had significantly higher grade point averages and earned credits than did children in kinship care, although there were no differences for attendance, number of grades retained, and test scores.

For placement stability, two studies, [Scannapieco 1997](#) and [Zimmerman 1998](#), found that children in foster care had significantly shorter placement lengths than did children in kinship care, while [Metzger 1997](#) found that children in kinship care had significantly shorter lengths of placement, and [Lernihan 2006](#) found no differences between the groups on length of placement. The bivariate results were similar for length of stay in out-of-home care, as [Zimmerman 1998](#) found that children in foster care had significantly shorter lengths of stay than did children in kinship care, while [Sakai 2011](#) found no difference between the groups on length of stay in out-of-home care. [Helton 2010](#) found that children in kinship care had significantly lower rates of placement disruption, while [Strijker 2008](#) and [Tarren-Sweeney](#)

[2008a](#) found no difference between the groups on placement disruption. [Zimmerman 1998](#) found no difference between the groups on re-entry rates. Lastly, [Zinn 2009](#) found no differences between the groups on the permanency outcomes of reunification and adoption.

Sensitivity analyses

Sensitivity analyses comparing studies with high risk of attrition bias and low risk of attrition bias were planned but were not conducted because only four studies were rated at high risk. Furthermore, attrition rates could not be accurately determined for the quasi-experimental studies included in the review. Specifically, all of these studies were post-test only, so there were often incomplete data on how many children were originally placed in kinship or foster care and no pre-measures to indicate how many children 'dropped out' of the study by the time of the post-measures data collection. There were missing data in some of the studies, in that multiple measures had different sample sizes, presumably because data were either not available from case files or not collected. However, the missing data are presumed to be missing at random, so no sensitivity analysis is warranted.

Sensitivity analyses comparing studies with child self reports and parent/teacher/caregiver reports were planned for the review, but were not conducted because of the lack of such comparisons for the included outcomes. For example, there were no studies that measured behavioural development by child self report and only one study each that measured service utilisation and educational attainment by child self report. Furthermore, there were only two studies that measured mental health by child self report. Lastly, three studies used child self reports for family relations, but there were no studies that measured family relations by caregiver reports.

Sensitivity analyses comparing studies that controlled for confounders with those that did not were not possible using statistical techniques because of differences in the type of data reported. Specifically, the studies that controlled for confounders used multivariate analyses rather than matching (except for [Koh 2008a](#); [Rudenberg 1991](#); [Testa 2001](#); [Winokur 2008](#)). As such, many of the multivariate data were reported as correlation and beta coefficients or odds and risk ratios. These data could not be used in the meta-analyses to generate multivariate effect sizes to compare with the bivariate data effect sizes. However, we employed vote counting for the multivariate studies to provide some comparison with the results from the bivariate studies.

We conducted sensitivity analyses comparing studies at low, unclear, and high risk for selection bias, as there were 21 studies rated at low risk, 55 studies rated at moderate risk, and 26 studies rated at high risk. Specifically, we conducted sensitivity analyses for selection bias on behaviour problems and mental health service utilisation because these two outcomes had at least three studies in each of the risk groups. For the continuous behaviour problems outcome, we used a simple unweighted ANOVA model with the risk groups as the independent variable and the standard mean difference from each study as the dependent variable. The following are the mean effect sizes and 95% confidence intervals for the low risk group: -0.65 (95% CI -1.56 to 0.24), the unclear risk group: -0.23 (95% CI -0.36 to -0.10); and the high risk group: -0.17 (95% CI -0.66 to 0.33). The result was nonsignificant ($F = 1.53$, $P = 0.257$), which indicates that the effect sizes for behaviour problems

are similar between the low risk (Ford 2007; Holtan 2005; Lawler 2008; Linares 2010; Metzger 1997; Rudenberg 1991), the unclear risk (Brooks 1998; Davis 2005; Orgel 2007; Surbeck 2000; Timmer 2004), and the high risk (Jones-Karena 1998; Strijker 2003; Tarren-Sweeney 2006a; Villagrana 2008) for selection bias groups.

For the mental health service utilisation outcome, we used a simple unweighted ANOVA model with the risk groups as the independent variable and the odds ratios as the dependent variable. Before conducting the ANOVA, the odds ratios were transformed into standard mean differences using a method from Chinn 2000, in which the log transformation of each odds ratio is divided by 1.81. The following are the mean effect sizes and 95% confidence intervals for the low risk group: 0.39 (95% CI -0.84 to 1.62), the unclear risk group: 0.19 (95% CI -0.13 to 0.51); and the high risk group: 0.39 (95% CI 0.19 to 0.60). The result was nonsignificant ($F = 0.75$, $P = 0.496$), which indicates that the effect sizes for mental health service utilisation are similar between the low risk (Clyman 1998; Metzger 1997; Sakai 2011), unclear risk (Berrick 1994; Farmer 2010; Sivright 2004; Sripathy 2004; Tompkins 2003), and high risk groups (Bilaver 1999; Jenkins 2002; Ringeisen 2009; Scannapieco 1997; Villagrana 2008) for selection bias.

Subgroup analyses

There were insufficient data to examine different effects of the intervention by gender, ethnicity, and age at placement. Specifically, only three studies (Farruggia 2009; Holtan 2005; Ryan 2010a) reported outcome data by gender for each placement type, only Farruggia 2009 and Smith 2002 reported outcome data by ethnicity for each placement type, and no studies reported outcome data by age at placement for each placement type.

DISCUSSION

Summary of main results

Based on the preponderance of the available evidence, it appears that children in kinship care experience better outcomes in regard to behaviour problems, adaptive behaviours, psychiatric disorders, well-being, placement stability (placement settings, number of placements, and placement disruption), guardianship, and institutional abuse than do children in foster care. There were no detectable differences between the groups on reunification, length of stay (in placement or out-of-home care), educational attainment, family relations, developmental service utilisation, and physician service utilisation. However, children placed with kin are less likely to achieve adoption and to utilise mental health services, while being more likely to still be in placement than are children in foster care. Although there were some findings of no difference between the groups for certain outcomes, the multivariate results generally support the findings from the meta-analyses while indicating that children in kinship care are less likely to re-enter out-of-home care than are children in foster care. However, these conclusions are tempered by the pronounced methodological and design weaknesses of the included studies and particularly the absence of conclusive evidence on the comparability of groups. It is clear that researchers and practitioners must do better to mitigate the biases that cloud the study of kinship care.

Although this review supports the practice of treating kinship care as a viable out-of-home placement option for children removed from the home for maltreatment, policies mandating kinship

placements may not always be in the best interest of children and families. Professional judgement from child welfare practitioners must also be used to assess the individual needs of children and the ability of kin caregivers to attend to these needs.

Overall completeness and applicability of evidence

With the inclusion of 40 new studies and an overall evidence base of 102 studies, this systematic review represents the most complete synthesis of kinship care research to date. The findings presented here are robust, in that the addition of the 40 studies did not change any of the previous results and in fact consolidated many of them. Although two years have passed since the updated search date of March 2011, it would take an additional 40 studies with dramatically different results to have any impact on the findings. Furthermore, the context in which kinship care is practised (at least in the U.S.) has not changed in the past two years, as kinship care is still the preferred out-of-home placement option. Thus, the decision was made to proceed with the publication of the updated systematic review to maximise the applicability of the evidence for child welfare practitioners and policymakers. All studies produced after March 2011 will be considered for the next update of this systematic review.

Overall, a very secure picture of the outcomes for kinship care has emerged. However, the applicability of the evidence is still worth considering, especially for the key outcomes. For example, the lack of a baseline measurement of initial behavioural functioning makes ambiguous the conclusion that children in foster care have lower levels of current behavioural functioning. Furthermore, caregiver reports may be biased because foster parents have more incentive to report behavioural and mental health issues, whereas relatives are more apt to view the behaviour as acceptable and thus less likely to report it as problematic.

The mixed findings for the permanency outcomes could be interpreted in the context that long-term kinship care arrangements satisfy the definition of permanency in many countries, as kinship caregivers are allocated the parental rights for a child. Thus, an undesirable outcome (e.g., remaining in care) might actually be desirable if the kinship care placement is considered to be safe and stable. Adoption and guardianship are secondary permanency goals, which are considered only after reunification has been ruled out. Furthermore, these permanency outcomes are fundamentally dependent on the public and legal policy of individual countries. For example, adoption is not a viable permanency option in many countries outside of the U.S., including Australia, Israel, Netherlands, and the Nordic nations.

The commonly-held idea that foster parents are more 'system involved' may explain the greater propensity for children in foster care to receive mental health services. Furthermore, the training and supervision of foster parents may contribute to the higher identification of mental health problems, and as such contribute to higher levels of service utilisation. The lower licensure rate for kin caregivers may be another factor in the unequal receipt of services for children in kinship care. However, the greater likelihood for children in foster care to utilise mental health services may have less to do with the type of placement and more to do with these children having a greater need for services.

Quality of the evidence

The major limitation encountered in this systematic review is the weak standing of quantitative research on kinship care (Cuddeback 2004). Specifically, the "differences between the children who enter kinship care and those who enter nonkinship care" lead to a lack of confidence regarding the comparability of groups and the subsequent lack of control over contaminating events such as family preservation services (Barth 2008b, p. 218). In general, the included studies also have unclear to high risks of performance, detection, reporting, and attrition bias, which compromise the tenability of the findings from the systematic review. However, the sensitivity analyses indicate that the results for behavioural development and mental health service utilisation are more robust, in that the effect sizes for studies with low, unclear, and high risk of selection bias were comparable.

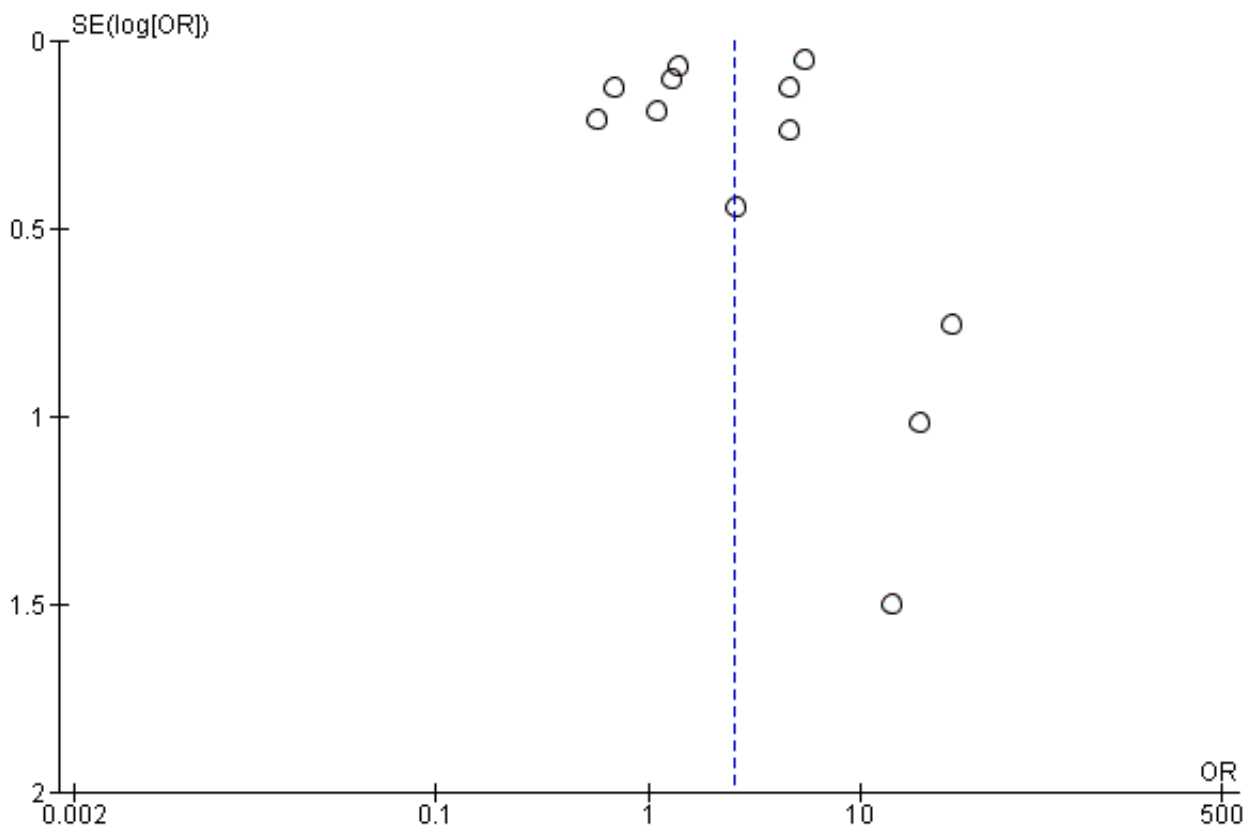
Another concern regarding the quality of evidence is the potential misalignment between the intervention and child welfare outcomes, in that the fullest representation of the effects of kinship care has yet to be truly measured (Cuddeback 2004). When compared to traditional foster care, in which the relationship between foster parents and the 'system' is more standardised, the effect of kinship care may be more difficult to detect. For example, there is seemingly a lack of implementation fidelity within and across countries in regard to kinship care. Furthermore, kinship placements, especially with unlicensed caregivers, are often more private and out of the control of child welfare agencies than are foster placements. The concepts, terminology, and outcomes typically ascribed to out-of-home care may not always be appropriate for kinship placements. As a result of these limitations, it is more appropriate to research kinship care after it has been fully and consistently integrated into the fabric of child welfare policy and practice.

Potential biases in the review process

One potential bias in the review process is that the robustness of the meta-analysis results is weakened by challenges confronted during the effect size calculations. Specifically, the heterogeneity statistic was significant for 17 of the 21 outcomes, which indicates that the effect sizes were not always consistent within the same outcome. In addition, bivariate data were not reported in every study, which restricted the meta-analysis of some outcomes to the bare minimum of three studies and eliminated other outcomes from consideration. Another potential bias is that many studies analysed a small sample of children, while others utilised a much larger dataset. However, this was somewhat mitigated by the use of random-effects weighting, which gave more weight to the studies with smaller sample sizes and less weight to the studies with larger sample sizes, than would a fixed-effect analysis.

The presence of publication bias in this review was examined for behavioural problems (continuous), reunification, adoption, still in placement, and mental health service utilisation, as these outcomes had at least 10 studies included in the respective meta-analyses. Overall, a visual inspection of the funnel plots suggests that publication bias is likely not present for these outcomes. Specifically, the funnel plots for behavioural problems, mental health service utilisation, reunification, and still in placement appear symmetrical. The funnel plot for adoption (Figure 3) appears asymmetrical with a gap in the bottom left corner of the graph. However, the three studies represented in the bottom right corner have the smallest sample sizes, the largest effect sizes, and the largest standard errors, which may indicate poor methodological quality rather than publication bias. Furthermore, these three studies are in favour of the control condition, so it does not appear that any studies that may be 'missing' are missing because of negative findings.

Figure 3. Funnel plot of comparison: 4.2 Adoption.



Agreements and disagreements with other studies or reviews

The results of this review are in strong agreement with the only previous narrative review of kinship care, conducted by [Cuddeback 2004](#).

AUTHORS' CONCLUSIONS

Implications for practice

Several implications for social work professionals and policymakers emerged from this review, although they are dependent on how individual countries interpret the results. If the goal of kinship care is to enhance the behavioural development, mental health functioning, well-being, and placement stability of children, then the evidence base is supportive. However, the findings from the review do not support implementing kinship care solely to increase the permanency rates and service utilisation of children in out-of-home care.

The primary implication for practitioners to consider is whether kinship placements would be even more effective with increased levels of caseworker involvement and service delivery ([Geen 2000](#)). However, the potential benefits of greater financial and therapeutic support must be weighed against the independence that some kin caregivers demand. Relatedly, the main implications for policymakers is whether licensing standards should be required for kin caregivers ([Geen 2000](#)), and whether additional financial

resources should be made available to these providers ([Hornby 1996](#)).

On the other hand, there may be a cost-effectiveness component to placing children with relatives in light of the comparable permanency outcomes, and lower payments and fewer services offered to kin caregivers. As such, this could play an important role in how child welfare agencies view their current approach to kinship care. That being said, foster care should continue to be an essential out-of-home care option, as children in these placements also experience positive outcomes and appropriate kinship placements are not always available.

Implications for research

To address the major limitations of research on kinship care, there is a demand for studies that employ generalisable samples, equivalent groups, and repeated measurements ([Berrick 1994a](#)). [Cuddeback 2004](#) advocates longitudinal designs to investigate the outcomes of children over time, the development of psychometrically sound instruments of family and child functioning that allow for more reliable comparisons across groups and studies, and greater emphasis on controlling and understanding selection bias through the use of emerging statistical models (e.g., meta-regression analysis). Furthermore, the duration effect or the relationship between length of stay and child welfare outcomes should be explored in greater depth. For example, survival analysis could be used to investigate the timeliness of achieving reunification and other permanency outcomes for children in out-of-home care. There is also a need to

disaggregate the effects of kinship care across important subgroups of target participants, settings, and intervention variations. For example, there are few studies that reliably measure the effect of kinship care on caregiver outcomes (Gibbs 2000).

As for other topics, Testa 1992 calls for research on the financial implications of kin caregivers becoming licensed, while Cuddeback 2004 recommends studies that examine the relationship between certification and the provision of services to kin caregivers. Studies that focus on the educational outcomes of children in kinship care are certainly warranted, as education is essential to effective integration into adult life. In addition, research on informal and voluntary kinship care arrangements should be a top priority for child welfare researchers.

Qualitative research that explores the underlying dynamics of kinship care along with the factors associated with positive outcomes is a natural outgrowth of this systematic review. Specifically, investigating the lived experiences of different types of kin caregivers (e.g., grandparents, other relatives, family friends) would greatly enhance our understanding of this placement option.

As research on this topic is predominantly U.S.-based, studies from other countries are sorely needed, especially as kinship care is increasing in popularity elsewhere in the western world. For example, the different permanency goals should be examined in greater depth to determine which outcome offers greater practical permanency to children removed from the home.

For kinship care to remain a viable option in the social work repertoire, researchers must work more closely with practitioners to design, implement, and disseminate innovative studies of the intervention. For example, new predictor variables and outcome

measures should be included in data collection instruments to facilitate richer analyses of the effect of kinship care.

Lastly, the Methods for Future Updates Table (Table 6) displays methods such as sensitivity and subgroup analyses that were not conducted in this review but should be included in future updates.

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* Indicates the major publication for the study

CHARACTERISTICS OF STUDIES
Characteristics of included studies [ordered by study ID]
Akin 2011

Methods	Multivariate effect sizes adjusted using covariates for gender, age, race, disability, mental health, reason for removal, prior removal history, initial placement type, sibling placement, early placement stability, and runaways
Participants	Kinship n = 480 Foster n = 2701 Local sample of all children who entered and stayed in foster care for 8 or more days in a Midwestern state during fiscal year 2006.
Interventions	See Table 2
Outcomes	Permanency - Reunification; Adoption; Guardianship

Akin 2011 (Continued)

Notes

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	Attempt was made to equate the kinship care and foster care groups through controlling for covariates; No evidence reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Unclear if kinship care and foster care groups experienced different exposure to the intervention; Unclear if groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Unclear if kinship care and foster care groups were defined in same way; There was no evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Low risk	All participants were accounted for in the reporting of results; Attrition could not have influenced the results
Selective reporting (reporting bias)	Low risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was reported for instrumentation

Barth 1994

Methods	Multivariate effect sizes adjusted using covariates for age, facility of initial placement, ethnicity, AFDC-eligibility status and preplacement preventive services
Participants	Kinship n = 526 Foster n = 1324 Local sample of all children entering foster care in California in 1988 and 1989 who were adopted by 1991 are compared to a random sample of all children entering care during the same time period
Interventions	See Table 2
Outcomes	Permanency - Adoption; Still in Placement

Notes

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	Attempt was made to equate the kinship care and foster care groups through controlling for covariates; No evidence reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups experienced different exposure to the intervention; Uncertain if groups received different services during placement

Barth 1994 (Continued)

Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Unclear if kinship care and foster care groups were defined in same way; There was no evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Low risk	All participants were accounted for in the reporting of results; Attrition could not have influenced the results
Selective reporting (reporting bias)	Low risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was reported for instrumentation

Belanger 2002

Methods	Multivariate effect sizes adjusted using covariates for home index variables and temperament match index variables	
Participants	Kinship n = 22 Foster n = 39 Local sample drawn from Jewish Child Care Association in New York	
Interventions	See Table 2	
Outcomes	Mental Health - Psychiatric Disorders behavioural Development - Adaptive behaviours Placement Stability - Length of Stay (OOH), Number of Placements	
Notes		

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	Attempt was made to equate the kinship care and foster care groups through controlling for covariates; Evidence on placement characteristics and child demographics was reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Kinship care and foster care groups did not experience different exposure to the intervention; Uncertain if groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups were defined in same way; There was evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Unclear risk	All participants were not accounted for in the reporting of results; Uncertain if attrition could have influenced the results
Selective reporting (reporting bias)	Unclear risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was not reported for some instrumentation

Benedict 1996a

Methods	Multivariate effect sizes adjusted using covariates for child gender, age at placement, placement reason, placement type, indicators of health problems prior to placement, and indicators of health problems during placement
Participants	Kinship n = 90 Foster n = 180 Local sample of children with substantiated maltreatment reports in Baltimore Comparison sample compiled of one child from each home without a maltreatment report during the same time period.
Interventions	See Table 2
Outcomes	Re-abuse - Institutional Abuse
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	Attempt was made to equate the kinship care and foster care groups through controlling for covariates; No evidence reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups experienced different exposure to the intervention; Uncertain if groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Low risk	Kinship care and foster care groups were defined in same way; There was no evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Low risk	All participants were accounted for in the reporting of results; Attrition could not have influenced the results
Selective reporting (reporting bias)	Unclear risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was not reported for instrumentation

Bennett 2000

Methods	Multivariate effect sizes adjusted using covariates for placement history variables and foster parent perception variables
Participants	Kinship n = 28 Foster n = 71 Foster children between the ages of 2 and 18 years who were administered psychological testing as part of the pre-adoption procedure; subset of a larger database of children (of an outpatient clinic at a children's hospital in a large city in western New York) who were freed for adoption between 1994 - 1999

Bennett 2000 (Continued)

Interventions	See Table 2	
Outcomes	Behavioural Development - Behaviour Problems; Adaptive Behaviours	
Notes		
Risk of bias		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	Attempt was made to equate the kinship care and foster care groups through controlling for covariates; No evidence reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups experienced different exposure to the intervention; Uncertain if groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups were defined in same way; There was evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Low risk	All participants were accounted for in the reporting of results; Attrition could not have influenced the results
Selective reporting (reporting bias)	Low risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was reported for instrumentation

Berger 2009

Methods	Multivariate effect sizes adjusted using propensity score matching with covariates for child age, race, and gender; caregiver age, marital status, education, and nativity; grandparent presence; family income-to-poverty ratio and risk score; type of maltreatment; initial report substantiation; child OOH placement prior to initial assessment; children's baseline vocabulary, matrices, internalizing and externalizing behaviour problems	
Participants	Overall n = 308 National sample of those children who entered the child welfare system due to a new CPS investigation during the initial NSCAW sampling period.	
Interventions	See Table 2	
Outcomes	behavioural Development - behaviour Problems	
Notes		
Risk of bias		
Bias	Authors' judgement	Support for judgement

Berger 2009 (Continued)

Allocation concealment (selection bias)	Low risk	Attempt was made to equate the kinship care and foster care groups through controlling for covariates; Evidence on placement characteristics and child demographics reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Kinship care and foster care groups did not experience different exposure to the intervention; Unclear if groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Unclear if kinship care and foster care groups were defined in same way; There was no evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Unclear risk	Unclear if participants were accounted for in the reporting of results; Unclear if attrition could have influenced the results
Selective reporting (reporting bias)	Low risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was reported for instrumentation

Berrick 1994

Methods	No control for confounders Demographic comparison using gender and ethnicity
Participants	Kinship n = 246 Foster n = 354 Drawn from the University of California at Berkeley-Foster Care Database (UCB-FCD) which contains information on all children in foster care in California from January 1988 through the present time of the study - 1991
Interventions	See Table 2
Outcomes	Placement Stability - Length of Placement Service Utilization - Mental Health Services Educational Attainment - Repeated a Grade
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	No attempt was made to equate the kinship care and foster care groups through controlling for covariates; Evidence on placement characteristics and child demographics was reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	High risk	Kinship care and foster care groups experienced different exposure to the intervention; Groups received different services during placement

Berrick 1994 *(Continued)*

Blinding of outcome assessment (detection bias) All outcomes	High risk	Kinship care and foster care groups were not defined in same way; There was evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Unclear risk	All participants were not accounted for in the reporting of results; Uncertain if attrition could have influenced the results
Selective reporting (reporting bias)	Low risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was reported for instrumentation

Berrick 1997

Methods	No control for confounders	
Participants	Kinship n = 28 Foster n = 33 Local sample randomly drawn from one county in California.	
Interventions	See Table 2	
Outcomes	Family Relations - Conflict	
Notes		

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	No attempt was made to equate the kinship care and foster care groups through controlling for covariates; Evidence on placement characteristics, and child demographics was reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Low risk	Kinship care and foster care groups did not experience different exposure to the intervention; Groups did not receive different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups were defined in same way; There was evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Unclear risk	All participants were not accounted for in the reporting of results; Uncertain if attrition could not have influenced the results
Selective reporting (reporting bias)	Low risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was reported for instrumentation

Berrick 1999

Methods	Multivariate effect sizes adjusted using covariates for ethnicity
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Berrick 1999 (Continued)

Participants	Kinship n = 32,946 (permanency outcomes) Foster n = 32,586 (permanency outcomes) Kinship n = 52,573 (placement stability outcome) Foster n = 41,286 (placement stability outcome) Sample includes all children entering care in California for the first time in 1989 - 1991
Interventions	See Table 2
Outcomes	Permanency - Reunification; Adoption; Guardianship; Still in Placement Placement Stability - Re-entry
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	Attempt was made to equate the kinship care and foster care groups through controlling for covariates; No evidence reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups experienced different exposure to the intervention; Uncertain if groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups were defined in same way; There was no evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Low risk	All participants were accounted for in the reporting of results; Attrition could not have influenced the results
Selective reporting (reporting bias)	Low risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was reported for instrumentation

Bilaver 1999

Methods	No control for confounders for kinship-foster comparison No demographic comparison
Participants	Kinship n = 14,106 Foster n = 33,649 Local sample drawn from all Medicaid eligible children in 1994 - 1995 as well as all children in foster care during that same period
Interventions	See Table 2
Outcomes	Mental Health - Psychiatric Disorders Service Utilisation - Mental Health Services; Developmental Services; Physician Services

Bilaver 1999 (Continued)

Notes

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	High risk	No attempt was made to equate the kinship care and foster care groups through controlling for covariates; No evidence reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Kinship care and foster care groups did not experience different exposure to the intervention; Uncertain if groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups were defined in same way; There was no evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Low risk	All participants were accounted for in the reporting of results; Attrition could not have influenced the results
Selective reporting (reporting bias)	Low risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was reported for instrumentation

Brooks 1998

Methods	Multivariate effect sizes adjusted using covariates for age Demographic comparison using gender, ethnicity, age, child health, and placement history
Participants	Kinship n = 242 Foster n = 336 Drawn from the University of California at Berkeley-California Services Archive (UCB-CSA) which contains information on all children in foster care in California from January 1988 through the present time of the study
Interventions	See Table 2
Outcomes	Educational Attainment - Repeated a Grade Behavioural Development - Behaviour Problems; Adaptive behaviour Placement Stability - Length of Placement

Notes

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	Attempt was made to equate the kinship care and foster care groups through controlling for covariates; Evidence on placement characteristics and child demographics was reported on the non-comparability of the groups

Brooks 1998 (Continued)

Blinding of participants and personnel (performance bias) All outcomes	High risk	Kinship care and foster care groups experienced different exposure to the intervention; Groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups were defined in same way; There was evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Unclear risk	All participants were not accounted for in the reporting of results; Uncertain if attrition could have influenced the results
Selective reporting (reporting bias)	Unclear risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was not reported for some instrumentation

Chamberlain 2006

Methods	Multivariate effect sizes adjusted using covariates for problem behaviours score, number of children in home, age of child, type of care, gender of child, parent ethnicity, and child ethnicity
Participants	Kinship n = 88 Foster n = 158 Subjects participated in a foster care 'as usual' control condition in a larger study testing the effectiveness of an intervention aimed at strengthening the parenting skills of foster and kinship parents in state foster homes in San Diego County of California
Interventions	See Table 2
Outcomes	Placement Stability - Placement Disruption
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	Attempt was made to equate the kinship care and foster care groups through controlling for covariates; No evidence reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups experienced different exposure to the intervention; Uncertain if groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups were defined in same way; There was evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Low risk	All participants were accounted for in the reporting of results; Attrition could not have influenced the results

Chamberlain 2006 (Continued)

Selective reporting (reporting bias)	Unclear risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was not reported for instrumentation
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Chapman 2004

Methods	No control for confounders No demographic comparison
Participants	Kinship n = 36 Foster n = 82 Nationwide sample drawn from NSCAW of children in care for 12 months and age 6 or over
Interventions	See Table 2
Outcomes	Family Relations - Attachment
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	High risk	No attempt was made to equate the kinship care and foster care groups through controlling for covariates; No evidence reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Kinship care and foster care groups did not experience different exposure to the intervention; Uncertain if groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups were defined in same way; There was evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Unclear risk	All participants were not accounted for in the reporting of results; Uncertain if attrition could have influenced the results
Selective reporting (reporting bias)	Unclear risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was not reported for instrumentation

Chew 1998

Methods	No control for confounders No demographic comparison
Participants	Kinship n = 7 Foster n = 24

Chew 1998 (Continued)

Drawn from children, between the ages of 23 and 48 months, in foster care who have been followed, longitudinally, through a research study at an inner city hospital foster care programme in California

Interventions	See Table 2
Outcomes	Family Relations - Attachment
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	High risk	No attempt was made to equate the kinship care and foster care groups through controlling for covariates; No evidence reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups experienced different exposure to the intervention; Uncertain if groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups were defined in same way; There was no evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	High risk	All participants were not accounted for in the reporting of results; Attrition could have influenced the results
Selective reporting (reporting bias)	Low risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was reported for instrumentation

Christopher 1998

Methods	No control for confounders No demographic comparison
Participants	Kinship n = 24 Foster n = 42 Consisted of closed-case files within the Permanent Placement Units of the Department of Human Services in Kern County of those youth who emancipated in 1995 and 1996
Interventions	See Table 2
Outcomes	Educational Attainment - Graduation
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
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Christopher 1998 (Continued)

Allocation concealment (selection bias)	High risk	No attempt was made to equate the kinship care and foster care groups through controlling for covariates; No evidence reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups experienced different exposure to the intervention; Uncertain if groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups were defined in same way; There was no evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Unclear risk	All participants were not accounted for in the reporting of results; Uncertain if attrition could have influenced the results
Selective reporting (reporting bias)	Unclear risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was not reported for instrumentation

Clyman 1998

Methods	Multivariate effect sizes adjusted using covariates for caregiver education, lifetime births, lifetime number foster children, income, and placement duration Demographic comparison using gender, age, ethnicity, parental status, caregiver education and employment, duration in care, and income
Participants	Kinship n = 41 Foster n = 48 Local sample drawn from suburban eastern county using all families with placements for three months; random sample of one child from each family
Interventions	See Table 2
Outcomes	Service Utilisation - Mental Health Services; Developmental Services; Physician Services Placement Stability - Length of Stay (OOH)
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	Attempt was made to equate the kinship care and foster care groups through controlling for covariates; Evidence on setting, placement characteristics, and child demographics was reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Kinship care and foster care groups did not experience different exposure to the intervention; Groups received different services during placement
Blinding of outcome assessment (detection bias)	High risk	Kinship care and foster care groups were not defined in same way; There was evidence of biased assessment resulting from the type of placement

Clyman 1998 (Continued)

All outcomes

Incomplete outcome data (attrition bias) All outcomes	Unclear risk	All participants were not accounted for in the reporting of results; Uncertain if attrition could have influenced the results
Selective reporting (reporting bias)	Unclear risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was not reported for instrumentation

Cole 2006

Methods	Demographic comparison using gender, race/ethnicity, age and time in home	
Participants	Kinship n = 12 Foster n = 34 Drawn from all kin and unrelated caregivers in the county child welfare database who had infants 10 - 15 months of age, who had been placed with the caregiver within the first 3 months of the child's life and who had been with the identified caregivers continuously for at least 6 months	
Interventions	See Table 2	
Outcomes	Family Relations - Attachment Placement Stability - Length of Placement	
Notes		

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	No attempt was made to equate the kinship care and foster care groups through controlling for covariates; Evidence on placement characteristics and child demographics was reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Kinship care and foster care groups did not experience different exposure to the intervention; Uncertain if groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Low risk	Kinship care and foster care groups were defined in same way; There was no evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Unclear risk	All participants were not accounted for in the reporting of results; Uncertain if attrition could have influenced the results
Selective reporting (reporting bias)	Unclear risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was not reported for some instrumentation

Connell 2006a

Methods	Multivariate effect sizes adjusted using covariates for child variables and episode variables
Participants	Kinship n = 1310 Foster n = 2108 Local sample drawn from Rhode Island Department of Children, Youth, and Families. Included all children with initial placement between 1998 and 2002.
Interventions	See Table 2
Outcomes	Permanency - Reunification; Adoption
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	Attempt was made to equate the kinship care and foster care groups through controlling for covariates; No evidence reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups experienced different exposure to the intervention; Uncertain if groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups were defined in same way; There was no evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Unclear risk	All participants were not accounted for in the reporting of results; Uncertain if attrition could have influenced the results
Selective reporting (reporting bias)	Low risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was reported for instrumentation

Connell 2006b

Methods	Multivariate effect sizes adjusted using covariates for age at entry to care, gender, race and ethnicity, child risk factors, prior removals, reason for removal, and service setting
Participants	Kinship n = 1,310 Foster n = 2,108 Drawn from all foster care placements in Rhode Island for the period from January 1, 1998 through December 31, 2002
Interventions	See Table 2
Outcomes	Placement Stability - Placement Disruption
Notes	

Connell 2006b (Continued)

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	Attempt was made to equate the kinship care and foster care groups through controlling for covariates; No evidence reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups experienced different exposure to the intervention; Uncertain if groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups were defined in same way; There was no evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Unclear risk	All participants were not accounted for in the reporting of results; Uncertain if attrition could have influenced the results
Selective reporting (reporting bias)	Low risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was reported for instrumentation

Courtney 1995

Methods	Multivariate effect sizes adjusted using covariates for age at exit from care, race/ethnicity, health problems, poverty, last placement before discharge, placement stability, and time in care before discharge	
Participants	Kinship n = 2976 Foster n = 3132 Drawn from a population of 6831 children, discharged to their families, from a first episode in the foster care system in California between January 1 and June 30, 1988, and whose foster care status was monitored through June 1991	
Interventions	See Table 2	
Outcomes	Placement Stability - Re-entry	
Notes		

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	Attempt was made to equate the kinship care and foster care groups through controlling for covariates; No evidence reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups experienced different exposure to the intervention; Uncertain if groups received different services during placement

Courtney 1995 (Continued)

Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups were defined in same way; There was no evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Low risk	All participants were accounted for in the reporting of results; Attrition could not have influenced the results
Selective reporting (reporting bias)	Unclear risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was not reported for instrumentation

Courtney 1996a

Methods	Multivariate effect sizes adjusted using covariates for demographic and placement variables	
Participants	Kinship n = 668 Foster n = 1016 Local sample from Children's Services Archive in California. Sample determined by discharge between 1991 and 1992, 17 years of age or older at exit, at least 18 months in foster care prior to exit.	
Interventions	Table 2	
Outcomes	Permanency - Reunification; Adoption	
Notes		

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	Attempt was made to equate the kinship care and foster care groups through controlling for covariates; No evidence reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups experienced different exposure to the intervention; Uncertain if groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups were defined in same way; There was no evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Low risk	All participants were accounted for in the reporting of results; Attrition could not have influenced the results
Selective reporting (reporting bias)	Low risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was reported for instrumentation

Courtney 1996b

Methods	Multivariate effect sizes adjusted using covariates for child variables, family variables, and placement variables
Participants	Kinship n = 2092 Foster n = 5342 Local sample from California foster care system with entry into care in 1988. All children meeting criteria included in sample and assigned to comparison groups based on discharge type.
Interventions	See Table 2
Outcomes	Permanency - Reunification; Adoption
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	Attempt was made to equate the kinship care and foster care groups through controlling for covariates; No evidence reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups experienced different exposure to the intervention; Uncertain if groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups were defined in same way; There was no evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Low risk	All participants were accounted for in the reporting of results; Attrition could not have influenced the results
Selective reporting (reporting bias)	Low risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was reported for instrumentation

Courtney 1997a

Methods	Multivariate effect sizes adjusted using covariates for child gender, race/ethnicity, age at entry to out-of-home care, health problems, removal and placement variables, AFDC eligibility, and county type
Participants	Kinship n = 6588 Foster n = 13,431 Drawn from California child welfare administrative data kept at the Children's Services Archive of the Child Welfare Research Center at the University of California, Berkeley Sample composed of all abused or neglected children placed for the first time in out-of-home by California county child welfare departments during 1988, who were 12 years or younger at the time of placement
Interventions	See Table 2

Courtney 1997a (Continued)

Outcomes Placement Stability - Re-entry
 Permanency - Reunification

Notes

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	Attempt was made to equate the kinship care and foster care groups through controlling for covariates; No evidence reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups experienced different exposure to the intervention; Uncertain if groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups were defined in same way; There was no evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Low risk	All participants were accounted for in the reporting of results; Attrition could not have influenced the results
Selective reporting (reporting bias)	Low risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was reported for instrumentation

Courtney 1997b

Methods No control for confounders for kinship-foster comparisons
 No demographic comparison

Participants Kinship n = 3487
 Foster n = 7702
 Drawn from data entered in the University of California Foster Care Database consisting of administrative data on children who resided in substitute care in California in January 1988 or who entered care any time between that date and June 1994
 To examine placement stability, sample drawn from all children who entered care during the first 4 months of 1988 who were initially placed in either foster family homes or in kinship foster care - followed through the end of 1992 (cases divided, for analysis, between open and closed cases)

Interventions See [Table 2](#)

Outcomes Placement Stability - Number of Placements

Notes

Risk of bias

Bias	Authors' judgement	Support for judgement
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Courtney 1997b (Continued)

Allocation concealment (selection bias)	High risk	No attempt was made to equate the kinship care and foster care groups through controlling for covariates; No evidence reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups experienced different exposure to the intervention; Uncertain if groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups were defined in same way; There was no evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Low risk	All participants were accounted for in the reporting of results; Attrition could not have influenced the results
Selective reporting (reporting bias)	Low risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was reported for instrumentation

Davis 2005

Methods	Multivariate effect sizes adjusted using covariates for placement variables, caregiver variables, and child variables
Participants	Kinship n = 8 Foster n = 22 Drawn from African-American adolescents, ages 12 to 18, currently placed in foster care from 5 counties in New York State
Interventions	See Table 2
Outcomes	Behavioural Development - Behaviour Problems Family Relations - Attachment Placement Stability - Length of Placement; Number of Placements
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	Attempt was made to equate the kinship care and foster care groups through controlling for covariates; Evidence on placement characteristics and child demographics was reported on the non-comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Kinship care and foster care groups experienced different exposure to the intervention; Uncertain if groups received different services during placement
Blinding of outcome assessment (detection bias)	Unclear risk	Uncertain if kinship care and foster care groups were defined in same way; There was evidence of biased assessment resulting from the type of placement

Davis 2005 (Continued)

All outcomes

Incomplete outcome data (attrition bias) All outcomes	Unclear risk	All participants were not accounted for in the reporting of results; Uncertain if attrition could have influenced the results
Selective reporting (reporting bias)	Unclear risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was not reported for some instrumentation

De Robertis 2004

Methods	Multivariate effect sizes adjusted using covariates for discipline, stability of placement, child gender, socioeconomic status, and ethnicity Demographic comparison on child ethnicity, gender, family income. Placement comparison on same placement
Participants	Kinship n = 37 Foster n = 33 Drawn from sample of foster children who are participating in the San Diego Site of LONGSCAN
Interventions	See Table 2
Outcomes	Behavioural Development - Behaviour Problems
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	Attempt was made to equate the kinship care and foster care groups through controlling for covariates; Evidence on placement characteristics and child demographics was reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups experienced different exposure to the intervention; Uncertain if groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups were defined in same way; Uncertain if there was evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Unclear risk	All participants were not accounted for in the reporting of results; Uncertain if attrition could have influenced the results
Selective reporting (reporting bias)	Low risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was reported for instrumentation

Del Valle 2009

Methods	Demographic comparison using gender, age at placement, age at case open, disability, serious illness, origin
Participants	Kinship n = 142 Foster n = 179 International sample from 6 of 17 autonomous regions in Spain (Madrid, Catalonia, Valencia, Andalusia, Galicia, and Castilla-Leon)
Interventions	See Table 2
Outcomes	Placement Stability - Placement Disruption Permanency - Reunification; Adoption
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	Attempt was made to equate the kinship care and foster care groups through controlling for covariates; Evidence on child demographics was reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Kinship care and foster care groups did not experience different exposure to the intervention; Groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Kinship care and foster care groups were not defined in same way; There was no evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Low risk	All participants were accounted for in the reporting of results; Attrition could not have influenced the results
Selective reporting (reporting bias)	Unclear risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was not reported for instrumentation

Dunn 2010

Methods	No control for confounders No demographic comparison
Participants	Kinship n = 91 Foster n = 87 Local sample of children who were court-ordered into OOH care in two Colorado counties from 2002 - 2006
Interventions	See Table 2

Dunn 2010 (Continued)

Outcomes Mental Health - Well-being

Notes

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	High risk	No attempt was made to equate the kinship care and foster care groups; No evidence reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups experienced different exposure to the intervention; Uncertain if groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups were defined in same way; There was evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Unclear risk	All participants were not accounted for in the reporting of results; Uncertain if attrition could have influenced the results
Selective reporting (reporting bias)	Low risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was reported for instrumentation

Farmer 2010

Methods Multivariate effect sizes adjusted using covariates for age at baseline, race/ethnicity, gender, type of insurance, maltreatment type, receipt of child welfare services at baseline

 Participants Kinship n = 171
 Foster n = 137
 National sample from NSCAW main study of children who had contact with the child welfare system because of investigations/assessments for abuse/neglect within a 15-month period began in October 1999

 Interventions See [Table 2](#)

Outcomes Service Utilisation - Mental Health Services

Notes

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	Attempt was made to equate the kinship care and foster care groups through controlling for covariates; No evidence reported on the comparability of the groups

Farmer 2010 (Continued)

Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups experienced different exposure to the intervention; Groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups were defined in same way; There was no evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Unclear risk	All participants were not accounted for in the reporting of results; Attrition could not have influenced the results
Selective reporting (reporting bias)	Low risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was reported for instrumentation

Farruggia 2009

Methods	No control for confounders No demographic comparison
Participants	Kinship n = 28 Foster n = 111 Local sample of adolescents in the child welfare system in Los Angeles County, CA
Interventions	See Table 2
Outcomes	Mental Health - Well-being
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	High risk	No attempt was made to equate the kinship care and foster care groups; No evidence reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups experienced different exposure to the intervention; Uncertain if groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups were defined in same way; Uncertain if there was evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Low risk	All participants were accounted for in the reporting of results; Attrition could not have influenced the results
Selective reporting (reporting bias)	Low risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was reported for instrumentation

Ford 2007

Methods	Multivariate effect sizes adjusted using covariates for length of time in placement, maltreatment severity, number of CPS reports, number of months family monitored by CPS, household income, gender Demographic comparison of age at entry, gender, school attendance, special education services, academic problems, disabilities/illnesses
Participants	Kinship n = 25 Foster n = 25 Local sample of children who were wards of Illinois Dept. of Children and Family Services between March 2004 and January 2006
Interventions	See Table 2
Outcomes	Behavioural Development - Behaviour Problems Mental Health - Well-being Educational Attainment - Repeated a Grade Family Relations - Home Environment

Notes

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	Attempt was made to equate the kinship care and foster care groups through controlling for covariates; Evidence on placement characteristics and child demographics was reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Kinship care and foster care groups did not experience different exposure to the intervention; Groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Kinship care and foster care groups were not defined in same way; There was no evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Low risk	All participants were accounted for in the reporting of results; Attrition could not have influenced the results
Selective reporting (reporting bias)	Low risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was reported for instrumentation

Frame 2000

Methods	Multivariate effect sizes adjusted using covariates for maternal criminal history, child age at placement, type of placement prior to reunification, and maternal substance abuse
Participants	Kinship n = 26

Frame 2000 (Continued)

Foster n = 62

Random sample drawn for 200 infants (ages 1 day to 12 months), from administrative database that is part of the California Children's Services Authority (the Foster Care Information System), who entered out-of-home care in a large urban county between 1990 and 1992, who subsequently reunified with at least one parent, and whose record could be tracked through January 1996

Interventions	See Table 2
Outcomes	Placement Stability - Re-entry
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	Attempt was made to equate the kinship care and foster care groups through controlling for covariates; No evidence reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups experienced different exposure to the intervention; Uncertain if groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups were defined in same way; Uncertain if there was evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Unclear risk	All participants were not accounted for in the reporting of results; Uncertain if attrition could have influenced the results
Selective reporting (reporting bias)	Unclear risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was not reported for instrumentation

Frame 2002

Methods	Multivariate effect sizes adjusted using covariates for child race, gender, age, removal and placement variables, and length of stay
Participants	Kinship n = 314 Foster n = 960 Drawn from all children, ages zero to 2½ years, who were placed in foster care between July 1 1991 and June 30 1992, in 6 California counties - followed through December 31, 1995
Interventions	See Table 2
Outcomes	Placement Stability - Re-entry Permanency - Reunification; Still in Placement
Notes	

Frame 2002 (Continued)

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	Attempt was made to equate the kinship care and foster care groups through controlling for covariates; No evidence reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups experienced different exposure to the intervention; Uncertain if groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups were defined in same way; Uncertain if there was evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Low risk	All participants were accounted for in the reporting of results; Attrition could not have influenced the results
Selective reporting (reporting bias)	Unclear risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was not reported for some instrumentation

Fuller 2005

Methods	Multivariate effect sizes adjusted using covariates for child variables, caretaker variables, placement variables, family environment variables, service provision variables, and casework behaviour variables	
Participants	Kinship n = 77 Foster n = 62 Non-random sample of children drawn from Illinois Child and Youth-Centered Information System database for all children with an exit type of 'return home' during FY 98 through FY01. Children were matched, 1 comparison child for each child identified as having been maltreated; matching characteristics are not provided	
Interventions	See Table 2	
Outcomes	Re-Abuse - Recurrence of Abuse	
Notes		

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	Attempt was made to equate the kinship care and foster care groups through controlling for covariates; No evidence reported on the comparability of the groups
Blinding of participants and personnel (performance bias)	Unclear risk	Uncertain if kinship care and foster care groups experienced different exposure to the intervention; Uncertain if groups received different services during placement

Fuller 2005 (Continued)

All outcomes

Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups were defined in same way; Uncertain if there was evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Unclear risk	All participants were not accounted for in the reporting of results; Uncertain if attrition could have influenced the results
Selective reporting (reporting bias)	Unclear risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was not reported for some instrumentation

Geenen 2006

Methods	No control for confounders No demographic comparison
Participants	Kinship n = 34 Foster n = 124 Local sample of youth involved in foster care programme in large urban school district in Oregon
Interventions	See Table 2
Outcomes	Educational Attainment - Graduation; Test Scores; GPA; Attendance
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	High risk	No attempt was made to equate the kinship care and foster care groups through controlling for covariates; No evidence reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups experienced different exposure to the intervention; Uncertain if groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups were defined in same way; Uncertain if there was evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Unclear risk	Uncertain if all participants were accounted for in the reporting of results; Uncertain if attrition could have influenced the results
Selective reporting (reporting bias)	Unclear risk	Uncertain if instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was not reported for instrumentation

Grogan-Kaylor 2000

Methods	Multivariate effect sizes adjusted using covariates for individual variables, family variables, population level variables of the foster care caseload of the counties in which children were placed, and foster care licensing variables
Participants	N =16,866 Based on a 10% random sample of initial placements in care between 1988 and 1995 Local samples used from The Foster Care Information System (FCIS) in California
Interventions	See Table 2
Outcomes	Permanency - Reunification
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	Attempt was made to equate the kinship care and foster care groups through controlling for covariates; No evidence reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups experienced different exposure to the intervention; Uncertain if groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups were defined in same way; There was no evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Low risk	All participants were accounted for in the reporting of results; Attrition could not have influenced the results
Selective reporting (reporting bias)	Low risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was reported for instrumentation

Harris 2003

Methods	No control for confounders No demographic comparison
Participants	Kinship n = 41 Foster n = 155 Random sample drawn from counties in Alabama using Court Monitor's office sampling Sample includes all state sampled open cases from 1997 through 2001 meeting study criteria
Interventions	See Table 2

Harris 2003 (Continued)

Outcomes Mental Health - Psychiatric Disorders
 Placement Stability - Number of Placements

Notes

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	High risk	No attempt was made to equate the kinship care and foster care groups through controlling for covariates; No evidence reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups experienced different exposure to the intervention; Groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups were defined in same way; There was evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Low risk	All participants were accounted for in the reporting of results; Attrition could not have influenced the results
Selective reporting (reporting bias)	Low risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was reported for instrumentation

Helton 2010

Methods Multivariate effect sizes adjusted using covariates for child, caregiver, and family characteristics

Participants N = 405
 National sample drawn from NSCAW from October, 1999

Interventions See [Table 2](#)

Outcomes Placement Stability - Placement Disruption

Notes

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	Attempt was made to equate the kinship care and foster care groups through controlling for covariates; No evidence reported on the comparability of the groups
Blinding of participants and personnel (performance bias)	Unclear risk	Unclear if kinship care and foster care groups experienced different exposure to the intervention; Unclear if groups received different services during placement

Helton 2010 (Continued)

All outcomes

Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Unclear if kinship care and foster care groups were defined in same way; There was no evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Low risk	All participants were accounted for in the reporting of results; Attrition could not have influenced the results
Selective reporting (reporting bias)	Unclear risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was not reported for instrumentation

Holtan 2005

Methods	Multivariate effect sizes adjusted using covariates for child variables, placement variables and caregiver variables
Participants	Kinship n = 110 Foster n = 89 Drawn from children in state custody, aged 4 - 13, with a minimum stay of 1 year in kinship or non-kinship foster care in Norway
Interventions	See Table 2
Outcomes	Behavioural Development - Behaviour Problems; Adaptive behaviours
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	Attempt was made to equate the kinship care and foster care groups through controlling for covariates; Evidence on placement characteristics and child demographics was reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Low risk	Kinship care and foster care groups did not experience different exposure to the intervention; Groups did not receive different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups were defined in same way; There was evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Unclear risk	All participants were not accounted for in the reporting of results; Uncertain if attrition could have influenced the results
Selective reporting (reporting bias)	Low risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was reported for instrumentation

Hurlburt 2010

Methods	Multivariate effect sizes adjusted using covariates for number of children, child age, caregiver relationship, gender, child race, child behaviour, caregiver stress
Participants	Kinship n = 238 Foster n = 462 Local sample of children placed by San Diego County DHHS between 1999 and 2004
Interventions	See Table 2
Outcomes	Placement Stability - Placement Disruption
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	Attempt was made to equate the kinship care and foster care groups through controlling for covariates; No evidence reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups experienced different exposure to the intervention; Uncertain if groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups were defined in same way; There was evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Unclear risk	All participants were not accounted for in the reporting of results; Uncertain if attrition could have influenced the results
Selective reporting (reporting bias)	Low risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was reported for instrumentation

Iglehart 1994

Methods	Demographic comparison using ethnicity, gender, removal reason, placement history, and length of stay
Participants	Kinship n = 352 Foster n = 638 Drawn from Los Angeles County data that included only adolescents, 16 years of age and older, in relative placements or in non-relative foster family placements, as well as, only white, African-American and Hispanic adolescents
Interventions	See Table 2
Outcomes	Behavioural Development - Behavioural Problems Mental Health - Psychiatric Disorders

Iglehart 1994 (Continued)

Educational Attainment - Grade Level

Notes

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	High risk	No attempt was made to equate the kinship care and foster care groups through controlling for covariates; Evidence on setting, placement characteristics, and child demographics was reported on the non-comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Kinship care and foster care groups did not experience different exposure to the intervention; Uncertain if groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Kinship care and foster care groups were defined in same way; There was evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Low risk	All participants were accounted for in the reporting of results; Attrition could not have influenced the results
Selective reporting (reporting bias)	Unclear risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was not reported for instrumentation

Iglehart 1995

Methods	No control for confounders Demographic comparison using gender and ethnicity
Participants	Kinship n = 42 Foster n = 69 Drawn from adolescents 16 and older, under the supervision of the Los Angeles County Department of Children Services (DCS), in out-of-home placement, as well as adolescents, 16 and older, from a high school in Los Angeles County living with 1 or both biological parents and not under any supervision by DCS
Interventions	See Table 2
Outcomes	Educational Attainment - Grade Level

Notes

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	High risk	No attempt was made to equate the kinship care and foster care groups through controlling for covariates; Evidence on child demographics was reported on the non-comparability of the groups

Iglehart 1995 (Continued)

Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups experienced different exposure to the intervention; Groups did not receive different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups were defined in same way; There was evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Unclear risk	All participants were not accounted for in the reporting of results; Uncertain if attrition could have influenced the results
Selective reporting (reporting bias)	Unclear risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was not reported for instrumentation

Jenkins 2002

Methods	No control for confounders No demographic comparison
Participants	Kinship n = 76 Foster n = 105 Drawn from children who were in the foster care of relatives or non-relatives, for at least 14 weeks, in 2 of New York City's voluntary, contract foster care agencies in 1996
Interventions	See Table 2
Outcomes	Placement Stability - Length of Stay (OOH) Family Relations - Attachment Service Utilisation - Mental Health Services
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	High risk	No attempt was made to equate the kinship care and foster care groups through controlling for covariates; No evidence reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	High risk	Kinship care and foster care groups experienced different exposure to the intervention; Groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Low risk	Kinship care and foster care groups were defined in same way; There was no evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias)	Low risk	All participants were accounted for in the reporting of results; Attrition could not have influenced the results

Jenkins 2002 (Continued)

All outcomes

Selective reporting (reporting bias)	Low risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was reported for instrumentation
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Johnson 2005

Methods	Matched comparison for population covariates (size, urbanicity, race, poverty, public assistance) and agency covariates (caseload size, private agency caseload)	
Participants	Kinship n = 722 Foster n = 809 Local sample from Michigan	
Interventions	See Table 2	
Outcomes	Permanency - Still in Placement	
Notes		

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	Attempt was made to equate the kinship care and foster care groups through matching; No evidence reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Kinship care and foster care groups did not experience different exposure to the intervention; Uncertain if groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups were defined in same way; There was no evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Low risk	All participants were accounted for in the reporting of results; Attrition could not have influenced the results
Selective reporting (reporting bias)	Low risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was reported for instrumentation

Jones-Karena 1998

Methods	No control for confounders No demographic comparison	
Participants	Kinship n = 159 (behaviour problems outcome) Foster n = 241 (behaviour problems outcome) Kinship n = 107 (adaptive behaviour outcome)	

Jones-Karena 1998 (Continued)

Foster n = 164 (adaptive behaviour outcome)

Drawn from a database maintained at a children's hospital outpatient clinic located in Buffalo, New York; information contained in the database taken from psychological assessments of children in foster care in Erie County, as all children in New York state that are waiting for adoption must have psychological evaluations completed before the adoption can be finalised

Interventions	See Table 2
Outcomes	Behavioural Development - Behaviour Problems; Adaptive behaviours
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	Attempt was made to equate the kinship care and foster care groups through controlling for covariates; No evidence reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups experienced different exposure to the intervention; Uncertain if groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups were defined in same way; There was evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Low risk	All participants were accounted for in the reporting of results; Attrition could not have influenced the results
Selective reporting (reporting bias)	Low risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was reported for instrumentation

Jonson-Reid 2003

Methods	Multivariate effect sizes adjusted using covariates for child demographic variables, family of origin variables, child abuse and neglect report variables, provision of in-home service prior to or following out-of-home placement, and foster care variables
Participants	Kinship n = 360 Foster n = 823 Local sample drawn from Missouri case files for children who entered care in 1993 or 1994 and exited during 4½ year study period; all cases meeting study criteria were included
Interventions	See Table 2
Outcomes	Re-abuse - Recurrence of Abuse Placement Stability - Re-entry
Notes	

Jonson-Reid 2003 (Continued)

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	Attempt was made to equate the kinship care and foster care groups through controlling for covariates; No evidence reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups experienced different exposure to the intervention; Uncertain if groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups were defined in same way; There was no evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Low risk	All participants were accounted for in the reporting of results; Attrition could not have influenced the results
Selective reporting (reporting bias)	Low risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was reported for instrumentation

Keller 2010

Methods	No control for confounders No demographic comparison
Participants	Kinship n = 223 Foster n = 262 National representative sample from Illinois, Iowa, and Wisconsin of youth 17 years or older, in OOH care for at least 1 year
Interventions	See Table 2
Outcomes	Mental Health - Psychiatric Disorders
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	High risk	No attempt was made to equate the kinship care and foster care groups through controlling for covariates; No evidence reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups experienced different exposure to the intervention; Uncertain if groups received different services during placement

Keller 2010 (Continued)

Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups were defined in same way; There was no evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Low risk	All participants were accounted for in the reporting of results; Attrition could not have influenced the results
Selective reporting (reporting bias)	Low risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was reported for instrumentation

Koh 2008a

Methods	Matched comparison on child age, race, disability, gender, reason for removal, year of entry, locality of services, parent age and marital status, caregiver age and marital status, match of child and caregiver race	
Participants	Kinship n = 16,831 Foster n = 16,831 National sample drawn from AFCARS data in Arizona, Connecticut, Illinois, Missouri, North Dakota, Ohio, and Tennessee from March 2000 to September 2005	
Interventions	See Table 2	
Outcomes	Placement Stability - Number of Placemetns; Length of Stay (OOH); Placement Disruption; Reentry Permanency - Reunification; Adoption; Guardianship	
Notes		

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	Attempt was made to equate the kinship care and foster care groups through matching; Evidence on placement characteristics and child demographics were reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Kinship care and foster care groups did not experience different exposure to the intervention; Unclear if groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Unclear if kinship care and foster care groups were defined in same way; There was no evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Low risk	All participants were accounted for in the reporting of results; Attrition could not have influenced the results
Selective reporting (reporting bias)	Low risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was reported for instrumentation

Koh 2008b

Methods	Matched comparison on child age, gender, race, disability, reason for removal, year of entry, caregiver race, and locality of service
Participants	Kinship n = 1500 Foster n = 1500 Local sample drawn from AFCARS data in Illinois from 1997 to 2007
Interventions	See Table 2
Outcomes	Placement Stability - Placement Disruption Permanency - Reunification; Adoption; Guardianship
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	Attempt was made to equate the kinship care and foster care groups through controlling for covariates; Evidence on placement characteristics and child demographics was reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Kinship care and foster care groups did not experience different exposure to the intervention; Uncertain if groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups were defined in same way; There was no evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Low risk	All participants were accounted for in the reporting of results; Attrition could not have influenced the results
Selective reporting (reporting bias)	Low risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was reported for instrumentation

Koh 2009

Methods	Matched comparison on child age, race, disability, gender, reason for removal, year of entry, locality of services, parent age and marital status, caregiver age and marital status, match of child and caregiver race
Participants	Kinship n = 14,060 Foster n = 14,060 National sample drawn from AFCARS data from Arizona, Connecticut, Missouri, Ohio, and Tennessee from March 2000 to September 2005

Koh 2009 (Continued)

Interventions	See Table 2	
Outcomes	Placement Stability - Placement Disruption	
Notes		
Risk of bias		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	Attempt was made to equate the kinship care and foster care groups through matching; Evidence on child demographics reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Kinship care and foster care groups experienced different exposure to the intervention; Unclear if groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Kinship care and foster care groups were not defined in same way; There was no evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Unclear risk	Unclear if all participants were accounted for in the reporting of results; Unclear if attrition could have influenced the results
Selective reporting (reporting bias)	Low risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was reported for instrumentation

Landsverk 1996

Methods	No control for confounders for kinship-foster comparison Demographic comparison using age, gender, ethnicity, parental status, and removal reason	
Participants	Kinship n = 298 Foster n = 371 Drawn from cohort of children, between the ages of 0 and 16, who entered out-of-home placement in San Diego County between May 1990 and October 1991, and remained in placement for at least 5 months	
Interventions	See Table 2	
Outcomes	Behavioural Development - Behaviour Problems	
Notes		
Risk of bias		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	High risk	No attempt was made to equate the kinship care and foster care groups through controlling for covariates; Evidence on setting, placement character-

Landsverk 1996 (Continued)

		istics, and child demographics was reported on the non-comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups experienced different exposure to the intervention; Uncertain if groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Kinship care and foster care groups were defined in same way; There was evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Unclear risk	Uncertain if all participants were accounted for in the reporting of results; Uncertain if attrition could have influenced the results
Selective reporting (reporting bias)	Low risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was reported for instrumentation

Lawler 2008

Methods	Multivariate effect sizes adjusted using covariates for child age, caregiver age, caregiver education, placement duration Demographic comparison of child age, caregiver age, caregiver education, marital status, placement duration
Participants	Kinship n = 50 Foster n = 56 Local random sample of children from an urban California region
Interventions	See Table 2
Outcomes	Behavioural Development - Behaviour Problems Family Relations - Emotional Availability
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	Attempt was made to equate the kinship care and foster care groups through controlling for covariates; Evidence on setting, placement characteristics, and child demographics was reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Kinship care and foster care groups experienced different exposure to the intervention; Uncertain if groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Kinship care and foster care groups were not defined in same way; There was no evidence of biased assessment resulting from the type of placement

Lawler 2008 (Continued)

Incomplete outcome data (attrition bias) All outcomes	Low risk	All participants were accounted for in the reporting of results; Attrition could not have influenced the results
Selective reporting (reporting bias)	Low risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was reported for instrumentation

Lernihan 2006

Methods	No control for confounders No demographic comparison
Participants	Kinship n = 122 Foster n = 154 Local sample drawn from 11 Health and Social Service Trusts in Northern Ireland
Interventions	See Table 2
Outcomes	Placement Stability - Length of Placement Stay
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	High risk	No attempt was made to equate the kinship care and foster care groups; No evidence reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Unclear if kinship care and foster care groups experienced different exposure to the intervention; Unclear if groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Unclear if kinship care and foster care groups were defined in same way; Unclear if there was evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Unclear risk	Unclear if all participants were accounted for in the reporting of results; Unclear if attrition could have influenced the results
Selective reporting (reporting bias)	High risk	Instrumentation used to measure the outcomes was not specified completely; Reliability and/or validity information was not reported for instrumentation

Leslie 2000a

Methods	Multivariate effect sizes adjusted using covariates for age at entry into foster care placement, race/ethnicity, gender, maltreatment history, placement pattern, and presence of clinically significant behaviour problems
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Leslie 2000a (Continued)

Participants	Kinship n = 53 Foster n = 243 Local sample of children 0 - 16 in San Diego County from 1990-1991 drawn from larger longitudinal study
Interventions	See Table 2
Outcomes	Service Utilisation - Mental Health Services
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	Attempt was made to equate the kinship care and foster care groups through controlling for covariates; No evidence reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups experienced different exposure to the intervention; Uncertain if groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Low risk	Kinship care and foster care groups were defined in same way; There was no evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Unclear risk	All participants were not accounted for in the reporting of results; Uncertain if attrition could have influenced the results
Selective reporting (reporting bias)	Unclear risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was not reported for some instrumentation

Linares 2010

Methods	Multivariate effect sizes adjusted using covariates for caregiver psychological distress, harsh discipline, coparenting Demographic comparison of child age, gender, ethnicity, type of maltreatment; caregiver age, education, ethnicity; placement characteristics (length, fostering experience, family visitations, number of children in home)
Participants	Kinship n = 35 Foster n = 45 Local sample of children in OOH placement from local DSS
Interventions	See Table 2
Outcomes	Behavioural Development - Behaviour Problems

Linares 2010 (Continued)

Notes

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	Attempt was made to equate the kinship care and foster care groups through controlling for covariates; Evidence on child demographics was reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Kinship care and foster care groups experienced different exposure to the intervention; Unclear if groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Kinship care and foster care groups were defined in same way; There was evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Low risk	All participants were accounted for in the reporting of results; Attrition could not have influenced the results
Selective reporting (reporting bias)	Low risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was reported for instrumentation

Lutman 2009

Methods	No control for confounders No demographic comparison
Participants	Kinship n = 55 Foster n = 31 Local sample drawn from children under 5 years old from 2 local authorities in the UK placed between October 1995 to September 1999 and 1999 - 2001
Interventions	See Table 2
Outcomes	Permanency - Still in Placement
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	High risk	No attempt was made to equate the kinship care and foster care groups; No evidence reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Unclear if kinship care and foster care groups experienced different exposure to the intervention; Unclear if groups received different services during placement

Lutman 2009 (Continued)

Blinding of outcome assessment (detection bias) All outcomes	High risk	Unclear if kinship care and foster care groups were defined in same way; There was evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Unclear risk	Unclear if all participants were accounted for in the reporting of results; Attrition could have influenced the results
Selective reporting (reporting bias)	High risk	Instrumentation used to measure the outcomes was not specified completely; Reliability and/or validity information was not reported for instrumentation

McCarthy 2007

Methods	Demographic comparison on child age, ethnicity, gender, and caregiver marital status and education level	
Participants	Kinship n = 21 Foster n = 24 Local sample drawn from children served by Durham County Department of Social Services in North Carolina	
Interventions	See Table 2	
Outcomes	Behavioural Development - Behaviour Problems	
Notes		

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	No attempt was made to equate the kinship care and foster care groups; Evidence on child demographics was reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups experienced different exposure to the intervention; Uncertain if groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Kinship care and foster care groups were not defined in same way; There was no evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Low risk	All participants were accounted for in the reporting of results; Attrition could not have influenced the results
Selective reporting (reporting bias)	Low risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was reported for instrumentation

McIntosh 2002

Methods	Demographic comparison using gender, ethnicity, and reason for placement
Participants	Kinship n = 39 Foster n = 54 Purposive samples drawn for outcomes of Family Maintenance (reunified) cases and Permanent Placement (non-reunified) cases in Los Angeles County
Interventions	See Table 2
Outcomes	Permanency - Reunification
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	No attempt was made to equate the kinship care and foster care groups through controlling for covariates; Evidence on placement characteristics and child demographics was reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups experienced different exposure to the intervention; Uncertain if groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups were defined in same way; There was no evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Unclear risk	All participants were not accounted for in the reporting of results; Uncertain if attrition could have influenced the results
Selective reporting (reporting bias)	Low risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was reported for instrumentation

McMillen 2004

Methods	Multivariate effect sizes adjusted using covariates for predisposing variables, enabling variables, and need variables
Participants	Kinship n = 75 Foster n = 115 Sample drawn from Missouri foster care system between 2001 and 2003 Purposive sample of all youth meeting criteria including turning 17, living in specified region, and not having continual runaway status.
Interventions	See Table 2
Outcomes	Service Utilisation - Mental Health Services
Notes	

McMillen 2004 (Continued)

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	Attempt was made to equate the kinship care and foster care groups through controlling for covariates; No evidence reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups experienced different exposure to the intervention; Groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Kinship care and foster care groups were defined in same way; There was evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Unclear risk	All participants were not accounted for in the reporting of results; Uncertain if attrition could have influenced the results
Selective reporting (reporting bias)	Low risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was reported for instrumentation

McMillen 2005

Methods	Multivariate effect sizes adjusted using covariates for demographic variables, maltreatment history variables, and living situation difference variables	
Participants	Kinship n = 75 Foster n = 115 Local sample from Missouri Division of Family Services of youth turning 17 between 2001 - 2003.	
Interventions	See Table 2	
Outcomes	Mental Health - Psychiatric Disorders	
Notes		

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	Attempt was made to equate the kinship care and foster care groups through controlling for covariates; No evidence reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups experienced different exposure to the intervention; Uncertain if groups received different services during placement
Blinding of outcome assessment (detection bias)	Unclear risk	Kinship care and foster care groups were defined in same way; There was evidence of biased assessment resulting from the type of placement

McMillen 2005 (Continued)

All outcomes

Incomplete outcome data (attrition bias) All outcomes	Unclear risk	All participants were not accounted for in the reporting of results; Uncertain if attrition could have influenced the results
Selective reporting (reporting bias)	Low risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was reported for instrumentation

Mennen 2010

Methods	Multivariate effect sizes adjusted using covariates for gender, ethnicity, and age
Participants	Kinship n = 74 Foster n = 64 Local sample drawn from children involved with the Los Angeles County Department of Children and Family Services that met the criteria of being between 9 - 12 years of age
Interventions	See Table 2
Outcomes	Behavioural Development - Behaviour Problems Mental Health - Psychiatric Disorders; Well-being
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	Attempt was made to equate the kinship care and foster care groups through controlling for covariates; No evidence reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Unclear if kinship care and foster care groups experienced different exposure to the intervention; Unclear if groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Unclear if kinship care and foster care groups were defined in same way; Unclear if there was evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	High risk	All participants were not accounted for in the reporting of results; Attrition could have influenced the results
Selective reporting (reporting bias)	Low risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was reported for instrumentation

Metzger 1997

Methods	Multivariate effect sizes adjusted using covariates for age of child, gender of child, birth mother visits, and placement variables Demographic comparison using gender, ethnicity, and reason for placement
Participants	Kinship n = 52 Foster n = 55 Local sample drawn from private, non-profit agency in Manhattan includes all children over age of 7 in placement during 3-month study period.
Interventions	See Table 2
Outcomes	Mental Health - Well-Being Placement Stability - Number of Placements; Length of Placement Educational Attainment - Repeated a Grade Behavioural Development - Behaviour Problems Service Utilisation - Mental Health Services
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	Attempt was made to equate the kinship care and foster care groups through controlling for covariates; Evidence on placement characteristics and child demographics was reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Low risk	Kinship care and foster care groups did not experience different exposure to the intervention; Groups did not receive different services during placement
Blinding of outcome assessment (detection bias) All outcomes	High risk	Kinship care and foster care groups were not defined in same way; There was evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Unclear risk	All participants were not accounted for in the reporting of results; Uncertain if attrition could have influenced the results
Selective reporting (reporting bias)	Unclear risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was not reported for some instrumentation

Metzger 2008

Methods	Demographic comparison on child age, gender, ethnicity, type of maltreatment, special education, length of stay in care, number of placements, number of home visits
Participants	Kinship n = 52 Foster n = 55

Kinship care for the safety, permanency, and well-being of children removed from the home for maltreatment (Review)

Metzger 2008 (Continued)

Local sample drawn from youth placed by a private child welfare agency in New York City in 1997

Interventions	See Table 2
Outcomes	Behavioural Development - Behaviour Problems Family Relations - Attachment
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	No attempt was made to equate the kinship care and foster care groups; Evidence on placement characteristics and child demographics was reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Kinship care and foster care groups did not experience different exposure to the intervention; Uncertain if groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups were defined in same way; Uncertain if there was evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Low risk	All participants were accounted for in the reporting of results; Attrition could not have influenced the results
Selective reporting (reporting bias)	Low risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was reported for instrumentation

Mosek 2001

Methods	Demographic comparison using child variables, family variables, foster parent variables, and family relation variables
Participants	Kinship n = 20 Foster n = 18 Purposive sample of all girls age 12 - 18 in foster care in northern Israel during study period (1994 - 1996) who had been in care at least 4 years.
Interventions	See Table 2
Outcomes	Mental Health - Well-Being Family Relations - Attachment
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
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Mosek 2001 (Continued)

Allocation concealment (selection bias)	Unclear risk	No attempt was made to equate the kinship care and foster care groups through controlling for covariates; Evidence on setting, placement characteristics, and child demographics was reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Kinship care and foster care groups experienced different exposure to the intervention; Uncertain if groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Kinship care and foster care groups were defined in same way; There was evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Unclear risk	All participants were not accounted for in the reporting of results; Uncertain if attrition could have influenced the results
Selective reporting (reporting bias)	Low risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was reported for instrumentation

Orgel 2007

Methods	Demographic comparison on age, placement history, ethnicity, language, poverty, caregiver substance abuse and mental health
Participants	Kinship n = 55 Foster n = 72 Local sample drawn from children who received evaluations at Children's Assessment Services in Portland, Oregon between 1996 and 2003
Interventions	See Table 2
Outcomes	Behavioural Development - Behaviour Problems Family Relations - Attachment
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	No attempt was made to equate the kinship care and foster care groups; Evidence on child demographics was reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups experienced different exposure to the intervention; Uncertain if groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups were defined in same way; There was no evidence of biased assessment resulting from the type of placement

Orgel 2007 (Continued)

Incomplete outcome data (attrition bias) All outcomes	Low risk	All participants were accounted for in the reporting of results; Attrition could not have influenced the results
Selective reporting (reporting bias)	Low risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was reported for instrumentation

Pabustan-Claar 2007a

Methods	Demographic comparison on gender, ethnicity/race, primary language, maltreatment type. Placement comparison on placement patterns	
Participants	Kinship n = 359 Foster n = 929 Local sample drawn from children in OOH care from Los Angeles County, California from 2000 - 2005	
Interventions	See Table 2	
Outcomes	Placement Stability - Placement Settings Permanency - Reunification; Adoption; Guardianship	
Notes		

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	No attempt was made to equate the kinship care and foster care groups through controlling for covariates; Evidence on placement characteristics and child demographics was reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Kinship care and foster care groups experienced different exposure to the intervention; Uncertain if groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups were defined in same way; There was no evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Low risk	All participants were accounted for in the reporting of results; Attrition could not have influenced the results
Selective reporting (reporting bias)	Low risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was reported for instrumentation

Palacios 2009

Methods	Demographic comparison on age at placement, previous placement, maltreatment type	
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Palacios 2009 (Continued)

Participants	Kinship n = 151 Foster n = 67 Local sample of children in Adalusia, Spain
Interventions	See Table 2
Outcomes	Behavioural Development - Behaviour Problems Mental Health - Well-being
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	No attempt was made to equate the kinship care and foster care groups; Evidence on placement characteristics and child demographics was reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Kinship care and foster care groups did not experience different exposure to the intervention; Groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups were defined in same way; Uncertain if there was evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Unclear risk	Uncertain if all participants were accounted for in the reporting of results; Uncertain if attrition could have influenced the results
Selective reporting (reporting bias)	High risk	Instrumentation used to measure the outcomes was not specified completely; Reliability and/or validity information was not reported for instrumentation

Ringeisen 2009

Methods	No control for confounders No demographic comparison
Participants	Kinship n = 167 Foster n = 47 National sample drawn from NSCAW for randomly selected children involved with child welfare system during a 15-month period starting October 1999
Interventions	See Table 2
Outcomes	Behavioural Development - Behaviour Problems; Adaptive behaviours Service Utilisation - Mental Health Services; Developmental Services

Ringeisen 2009 (Continued)

Notes

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	High risk	No attempt was made to equate the kinship care and foster care groups through controlling for covariates; No evidence reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	High risk	Kinship care and foster care groups experienced different exposure to the intervention; Groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups were defined in same way; There was no evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Low risk	All participants were accounted for in the reporting of results; Attrition could not have influenced the results
Selective reporting (reporting bias)	Low risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was reported for instrumentation

Rubin 2008

Methods	Multivariate effect sizes adjusted using covariates for placement stability, baseline risk, and reunification status
Participants	Kinship n = 599 Foster n = 584 National sample drawn from NSCAW for children involved with the child welfare system from October 1999 to December 2000
Interventions	See Table 2
Outcomes	Behavioural Development - Behaviour Problems Placement Stability - Placement Disruption
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	Attempt was made to equate the kinship care and foster care groups through controlling for covariates; No evidence reported on the comparability of the groups

Rubin 2008 (Continued)

Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups experienced different exposure to the intervention; Uncertain if groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups were defined in same way; There was no evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Unclear risk	All participants were not accounted for in the reporting of results; Uncertain if attrition could have influenced the results
Selective reporting (reporting bias)	Low risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was reported for instrumentation

Rudenberg 1991

Methods	Multivariate effect sizes adjusted using covariates for age and gender Demographic comparisons using ethnicity, age, and gender
Participants	Kinship n = 28 Foster n = 28 Drawn from formerly abused children, ages 8 through 17, who were living with at least 1 biological grandparent or living with their foster families Grandparent caregivers included members of a group in the San Diego area called Grandparents Offering Love and Direction (GOLD), members participating in a therapeutic support group for grandparents raising grandchildren, and grandparents who sought arbitration through Family Court Services and were awarded custody of their grandchildren by the Superior Court of San Diego county Foster children were selected from the Family Care Resource Center, a foster care agency in San Diego county, and a research study conducted by the San Diego Foster Children's Health Project, a joint demonstration project by the Center for Child Protection of Children's Hospital and Health Center in San Diego and the Child Resource Division of the San Diego County Department of Social Services
Interventions	See Table 2
Outcomes	Behavioural Development - Behaviour Problems
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	Attempt was made to equate the kinship care and foster care groups through controlling for covariates; Evidence on child demographics was reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups experienced different exposure to the intervention; Uncertain if groups received different services during placement

Rudenberg 1991 (Continued)

Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups were defined in same way; There was evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Unclear risk	All participants were not accounted for in the reporting of results; Uncertain if attrition could have influenced the results
Selective reporting (reporting bias)	Low risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was reported for instrumentation

Ryan 2010a

Methods	Matched comparison using propensity score matching on age at first placement, race, gender, reason for placement	
Participants	Kinship n = 6698 Foster n = 6698 Local sample drawn from children involved with the Department of Children and Family Services in Los Angeles County, CA between 2002 and 2008	
Interventions	See Table 2	
Outcomes	Behavioural Development - Behaviour Problems Placement Stability - Placement Settings; Length of Placement Stay	
Notes		

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	Attempt was made to equate the kinship care and foster care groups through matching; Evidence on setting and child demographics was reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Kinship care and foster care groups did not experience different exposure to the intervention; Uncertain if groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups were defined in same way; Uncertain if there was evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Low risk	All participants were accounted for in the reporting of results; Attrition could not have influenced the results
Selective reporting (reporting bias)	Low risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was reported for instrumentation

Sakai 2011

Methods	Multivariate effect sizes adjusted using covariates for child's race/ethnicity, age, sex, behavioural problems, number of children, maltreatment substantiation, total number of placements, permanency status, caregiver's age, marital, educational, job, and income statuses Demographic comparison on age, gender, race/ethnicity, behavioural problems, children in household, maltreatment form and substantiation
Participants	Kinship n = 572 Foster n = 736 National sample drawn from NSCAW for randomly selected children in child welfare system from October 1999 to December 2000
Interventions	See Table 2
Outcomes	Behavioural Development - Behaviour Problems Mental Health - Pyschiatric Disorders Placement Stability - Number of Placements; Length of Stay Permanency - Still in Placement Service Utilisation - Mental Health Services; Physician Services

Notes

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	Attempt was made to equate the kinship care and foster care groups through controlling for covariates; Evidence was reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Kinship care and foster care groups did not experience different exposure to the intervention; Uncertain if groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	High risk	Kinship care and foster care groups were not defined in same way; There was evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Unclear risk	All participants were not accounted for in the reporting of results; Uncertain if attrition could have influenced the results
Selective reporting (reporting bias)	Low risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was reported for instrumentation

Sallnas 2004

Methods	No control for confounders
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Sallnas 2004 (Continued)

No demographic comparison

Participants	Kinship n = 144 Foster n = 323 Drawn from a cohort of youths, aged 13 - 16 years, who were placed in out-of-home care in 1991 according to a national database maintained by the Swedish National Board of Health and Welfare; every second youth experiencing his/her first placement during 1991 in foster family care randomly selected, but included all youths whose first placement was in residential care
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Interventions	See Table 2
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Outcomes	Placement Stability - Placement Disruption
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Notes	
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Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	High risk	No attempt was made to equate the kinship care and foster care groups through controlling for covariates; No evidence reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups experienced different exposure to the intervention; Uncertain if groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups were defined in same way; There was no evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Unclear risk	All participants were not accounted for in the reporting of results; Uncertain if attrition could have influenced the results
Selective reporting (reporting bias)	Unclear risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was not reported for instrumentation

Scannapieco 1997

Methods	No control for confounders Demographic comparison using setting, placement characteristics, and child variables
Participants	Kinship n = 47 Foster n = 59 Local sample of Maryland foster homes Study includes all kin homes open in 1993 and a random sample of traditional foster homes
Interventions	See Table 2
Outcomes	Service Utilisation - Mental Health Services, Physician Services

Scannapieco 1997 (Continued)

Placement Stability - Length of Stay (OOH)

Notes

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	High risk	Attempt was made to equate the kinship care and foster care groups through controlling for covariates; Evidence on setting, placement characteristics, and child demographics was reported on the non-comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	High risk	Kinship care and foster care groups experienced different exposure to the intervention; Groups did receive different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Low risk	Kinship care and foster care groups were defined in same way; There was no evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Low risk	All participants were accounted for in the reporting of results; Attrition could not have influenced the results
Selective reporting (reporting bias)	Low risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was reported for instrumentation

Schneiderman 2010

Methods	Multivariate effect sizes adjusted using covariates for child age, caregiver ethnicity, US citizenship, family income, education, immigration status, and number of children Demographic comparison using child and caregiver age, gender, race/ethnicity; caregiver income, immigration status, citizenship, length of time in USA, marital status, educational attainment; number of children in home	
Participants	Kinship n = 60 Foster n = 110 Local sample drawn from families served by the Community-Based Assessment and Treatment Clinic in Los Angeles, CA	
Interventions	See Table 2	
Outcomes	Service Utilisation - Physician	
Notes		
Risk of bias		
Bias	Authors' judgement	Support for judgement

Schneiderman 2010 (Continued)

Allocation concealment (selection bias)	Low risk	Attempt was made to equate the kinship care and foster care groups through controlling for covariates; Evidence on child demographics was reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups experienced different exposure to the intervention; Uncertain if groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups were defined in same way; There was evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Unclear risk	All participants were not accounted for in the reporting of results; Uncertain if attrition could have influenced the results
Selective reporting (reporting bias)	Unclear risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was not reported for instrumentation

Shin 2003

Methods	Multivariate effect sizes adjusted using covariates for individual variables, mental health variables, placement variables, school variables, mental health service use variables, and victimisation variables	
Participants	Kinship n = 58 Foster n = 36	Random sample of older foster youth selected from the Illinois Department of Children and Family Services Integrated Database maintained by the Chapin Hall Center for Children at the University of Chicago; population from which the sample was chosen consisted of youth in substitute care in the state of Illinois between the ages of 16½ and 17½ years as of December 1 1998; after collecting data from the first sample, the sample size was augmented to increase generalisability of the study findings, thus, another random sample of youth, between 16½ and 17½ years old, in out-of-home care was selected as of February 1 2000
Interventions	See Table 2	
Outcomes	Educational Attainment - Grade Level	
Notes		

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	Attempt was made to equate the kinship care and foster care groups through controlling for covariates; No evidence reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Kinship care and foster care groups did not experience different exposure to the intervention; Uncertain if groups received different services during placement

Shin 2003 (Continued)

Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups were defined in same way; There was no evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Unclear risk	All participants were not accounted for in the reporting of results; Attrition could not have influenced the results
Selective reporting (reporting bias)	Low risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was reported for instrumentation

Sivright 2004

Methods	No control for confounders Demographic comparison using age at placement, gender, ethnicity, and reason for placement
Participants	Kinship n = 51 Foster n = 67 Local sample randomly drawn from New York foster care agency and including only children who experienced initial placement between 1995 and 2000 and were age 12 or under.
Interventions	See Table 2
Outcomes	Placement Stability - Length of Stay (OOH) Service Utilisation - Mental Health Services Permanency - Still in Placement
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	No attempt was made to equate the kinship care and foster care groups through controlling for covariates; Evidence on placement characteristics and child demographics was reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Low risk	Kinship care and foster care groups did not experience different exposure to the intervention; Groups did not receive different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups were defined in same way; There was no evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Unclear risk	All participants were not accounted for in the reporting of results; Uncertain if attrition could have influenced the results
Selective reporting (reporting bias)	Unclear risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was not reported for instrumentation

Smith 2002

Methods	Demographic comparison using age, gender, and race/ethnicity
Participants	Kinship n =39 Foster n = 36 Sample drawn from all identified kinship placements in 1 New York county between October 1993 and April 1994; only infants were used for this study.
Interventions	See Table 2
Outcomes	Permanency - Adoption; Reunification; Still in Placement
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	High risk	No attempt was made to equate the kinship care and foster care groups through controlling for covariates; Evidence on setting, placement characteristics, and child demographics was reported on the non-comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Kinship care and foster care groups experienced different exposure to the intervention; Uncertain if groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups were defined in same way; There was no evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Unclear risk	All participants were not accounted for in the reporting of results; Attrition could not have influenced the results
Selective reporting (reporting bias)	Low risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was reported for instrumentation

Smith 2003

Methods	Multivariate effect sizes adjusted using covariates for child, family, and case variables
Participants	Kinship n = 379 Foster n = 878 National sample drawn from the AFCARS based on termination of parental rights in October 1997
Interventions	See Table 2
Outcomes	Permanency - Still in Placement
Notes	

Smith 2003 (Continued)

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	Attempt was made to equate the kinship care and foster care groups through controlling for covariates; No evidence reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups experienced different exposure to the intervention; Uncertain if groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups were defined in same way; There was no evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Low risk	All participants were accounted for in the reporting of results; Attrition could not have influenced the results
Selective reporting (reporting bias)	Low risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was reported for instrumentation

Sripathy 2004

Methods	Demographic comparison using reason for placement
Participants	Kinship n = 31 Foster n = 31 Recruited from foster care agency located in New York City; youth required to have been living with their foster families for at least 6 months
Interventions	See Table 2
Outcomes	Educational Attainment - Repeated a Grade Service Utilisation - Mental Health Services Behavioural Development - Behaviour Problems; Adaptive behaviours
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	No attempt was made to equate the kinship care and foster care groups through controlling for covariates; Evidence on child demographics was reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups experienced different exposure to the intervention; Uncertain if groups received different services during placement

Sripathy 2004 (Continued)

Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Kinship care and foster care groups were defined in same way; There was evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Unclear risk	All participants were not accounted for in the reporting of results; Uncertain if attrition could have influenced the results
Selective reporting (reporting bias)	Unclear risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was not reported for some instrumentation

Strijker 2003

Methods	No control for confounders for kinship-foster comparison No demographic comparison
Participants	Kinship n = 68 Foster n = 52 Convenience sample determined by caseworkers estimation of long-term care Local sample in Netherlands
Interventions	See Table 2
Outcomes	Family Relations - Attachment Behavioural Development - Behaviour Problems
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	High risk	No attempt was made to equate the kinship care and foster care groups through controlling for covariates; No evidence reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups experienced different exposure to the intervention; Uncertain if groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	High risk	Kinship care and foster care groups were not defined in same way; There was evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Unclear risk	All participants were not accounted for in the reporting of results; Uncertain if attrition could have influenced the results
Selective reporting (reporting bias)	Low risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was reported for instrumentation

Strijker 2008

Methods	No control for confounders No demographic comparison
Participants	Kinship n = 197 Foster n = 222 Local sample drawn from children admitted to long-term foster care from 2000 - 2004 in the district of North Netherlands
Interventions	See Table 2
Outcomes	Placement Stability - Number of Placements; Length of Stay; Placement Disruption
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	High risk	No attempt was made to equate the kinship care and foster care groups; No evidence reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Kinship care and foster care groups experienced different exposure to the intervention; Uncertain if groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups were defined in same way; Uncertain if there was evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Unclear risk	Uncertain if all participants were accounted for in the reporting of results; Uncertain if attrition could have influenced the results
Selective reporting (reporting bias)	Low risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was reported for instrumentation

Surbeck 2000

Methods	Multivariate effect sizes adjusted using covariates for child, parent, and caregiver characteristics Demographic comparison using child variables, biological mother variables, caregiver variables, material resource variables, attachment variables, frequency of visitation variables, and service variables
Participants	Kinship n = 98 Foster n = 102 Local sample drawn from 1 agency's case records in Pennsylvania Purposeful sample of all cases meeting criteria during study period
Interventions	See Table 2

Surbeck 2000 (Continued)

Outcomes	Behavioural Development - Behaviour Problems; Adaptive behaviour Family Relations - Attachment Placement Stability - Length of Placement
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Notes

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	Attempt was made to equate the kinship care and foster care groups through controlling for covariates; Evidence on placement characteristics and child demographics was reported on the non-comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups experienced different exposure to the intervention; Groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Kinship care and foster care groups were not defined in same way; There was no evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Low risk	All participants were accounted for in the reporting of results; Attrition could not have influenced the results
Selective reporting (reporting bias)	Unclear risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was not reported for instrumentation

Tarren-Sweeney 2006a

Methods	No control for confounders No demographic comparison
Participants	Kinship n = 50 Foster n = 297 Drawn from all 4- to 9-year old children residing in foster or kinship care in NSW, Australia, under the guardianship of the Minister for DOCS, and for whom casework responsibility rested with DOCS
Interventions	See Table 2
Outcomes	Behavioural Development - Behaviour Problems; Adaptive behaviours

Notes

Risk of bias

Bias	Authors' judgement	Support for judgement
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Tarren-Sweeney 2006a (Continued)

Allocation concealment (selection bias)	High risk	No attempt was made to equate the kinship care and foster care groups through controlling for covariates; No evidence reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups experienced different exposure to the intervention; Uncertain if groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups were defined in same way; There was evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	High risk	All participants were not accounted for in the reporting of results; Attrition could have influenced the results
Selective reporting (reporting bias)	Low risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was reported for instrumentation

Tarren-Sweeney 2006b

Methods	Multivariate effect sizes adjusted using covariates for reported intellectual disability, speech problem, reading difficulty, emotional abuse, entry into care before 6 months, maltreatment in care/present placement, carer expects restoration and carer has poor health
Participants	Kinship n = 50 Foster n = 297 Drawn from all 4- to 9-year old children residing in foster or kinship care in NSW, Australia, under the guardianship of the Minister for DOCS, and for whom casework responsibility rested with DOCS
Interventions	See Table 2
Outcomes	Mental Health - Psychiatric Disorders
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	Attempt was made to equate the kinship care and foster care groups through controlling for covariates; No evidence reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups experienced different exposure to the intervention; Uncertain if groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups were defined in same way; Uncertain if there was evidence of biased assessment resulting from the type of placement

Tarren-Sweeney 2006b (Continued)

Incomplete outcome data (attrition bias) All outcomes	High risk	All participants were not accounted for in the reporting of results; Attrition could have influenced the results
Selective reporting (reporting bias)	Low risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was reported for instrumentation

Tarren-Sweeney 2008a

Methods	Multivariate effect sizes adjusted using covariates for age at entry, developmental difficulties, maltreatment types, recent adverse events, and placement insecurity/lack of permanence Placement comparison on placement stability
Participants	Kinship n = 50 Foster n = 297 Local sample drawn from children in NSW, Australia from 2000 - 2003
Interventions	See Table 2
Outcomes	Behavioural Development - Behaviour Problems Mental Health - Well-being Placement Stability - Placement Disruption
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	Attempt was made to equate the kinship care and foster care groups through controlling for covariates; Evidence on placement characteristics was reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Kinship care and foster care groups experienced different exposure to the intervention; Uncertain if groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups were defined in same way; Uncertain if there was evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Unclear risk	Uncertain if all participants were accounted for in the reporting of results; Attrition could have influenced the results
Selective reporting (reporting bias)	Low risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was reported for instrumentation

Tarren-Sweeney 2008b

Methods	Multivariate effect sizes adjusted using covariates for developmental, precare, and in-care factors and experiences Placement comparison on age at entry into care and length of time in care
Participants	Kinship n = 50 Foster n = 297 Local sample drawn from 4- to 11-year old children in court-ordered care in NSW, Australia from 2000 - 2003
Interventions	See Table 2
Outcomes	Behavioural Development - Behaviour Problems
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	Attempt was made to equate the kinship care and foster care groups through controlling for covariates; Evidence on placement characteristics was reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups experienced different exposure to the intervention; Uncertain if groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups were defined in same way; Uncertain if there was evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Unclear risk	All participants were not accounted for in the reporting of results; Uncertain if attrition could have influenced the results
Selective reporting (reporting bias)	Low risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was reported for instrumentation

Testa 1999

Methods	No control for confounders No demographic comparison
Participants	Kinship n = 2159 Foster n = 4003 Local sample drawn from professional foster care program in Illinois; random samples of comparison groups from similar agencies.
Interventions	See Table 2

Testa 1999 (Continued)

Outcomes Permanency - Reunification; Adoption; Guardianship

Notes

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	High risk	No attempt was made to equate the kinship care and foster care groups through controlling for covariates; No evidence reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups experienced different exposure to the intervention; Uncertain if groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups were defined in same way; There was no evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Low risk	All participants were accounted for in the reporting of results; Attrition could not have influenced the results
Selective reporting (reporting bias)	Low risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was reported for instrumentation

Testa 2001

Methods Multivariate effect sizes adjusted using covariates for age, duration of placement, kinship status, gender, placement variables, and degree of relatedness

Participants Kinship n = 955
Foster n = 955

Data drawn from 2 sources: (1) the IDCFS Integrated Database designed for the Department of the Chapin Hall Center for Children, and (2) the 1994 RCSA survey

Administrative case records extracted from the Integrated Database of kinship and non-related foster placements that began in Cook County, Illinois between July 1 1991 and June 30 1995 - placements tracked longitudinally with administrative data until case resolution, placement disruption or June 30 1999

Dataset created by linking records from the Integrated Database to RCSA respondents - a comparable sample of children in non-related foster care was matched by the child's age and duration of placement

 Interventions See [Table 2](#)

 Outcomes Placement Stability - Placement Disruption
 Permanency - Adoption; Guardianship

Notes

Risk of bias

Testa 2001 (Continued)

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	Attempt was made to equate the kinship care and foster care groups through controlling for covariates; Evidence on setting, placement characteristics, and child demographics was reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Kinship care and foster care groups did not experience different exposure to the intervention; Uncertain if groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups were defined in same way; There was no evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Low risk	All participants were accounted for in the reporting of results; Attrition could not have influenced the results
Selective reporting (reporting bias)	Unclear risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was not reported for some instrumentation

Timmer 2004

Methods	No control for confounders for kinship-foster comparison Demographic comparison using child gender, age, ethnicity, abuse history, and length in placement, and caregiver ethnicity, educational attainment, and marital status	
Participants	Kinship n = 92 Foster n = 141	Drawn from kin and non-kin foster parents and children who had been referred for Parent-Child Interaction Therapy (PCIT) services at a clinic primarily serving children in the child welfare system
Interventions	See Table 2	
Outcomes	Behavioural Development - Behaviour Problems	
Notes		

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	No attempt was made to equate the kinship care and foster care groups through controlling for covariates; Evidence on setting, placement characteristics, and child demographics was reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups experienced different exposure to the intervention; Groups received different services during placement

Timmer 2004 (Continued)

Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Kinship care and foster care groups were defined in same way; There was evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Unclear risk	All participants were not accounted for in the reporting of results; Uncertain if attrition could have influenced the results
Selective reporting (reporting bias)	Low risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was reported for instrumentation

Tompkins 2003

Methods	No control for confounders for kinship-foster comparisons Demographic comparisons using caregiver age, gender, ethnicity, employment status, marital status, and child age, gender, and ethnicity	
Participants	Kinship n = 122,058 Foster n = 193,681 Drawn randomly from the National Study of Protective, Preventive and Reunification Services Delivered to Children and their Families receiving child welfare services between March 1 1993 and March 1 1994	
Interventions	See Table 2	
Outcomes	Mental Health - Well-Being Placement Stability - Length of Stay (OOH) Service Utilisation - Mental Health Services; Physician Services	
Notes		

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	No attempt was made to equate the kinship care and foster care groups through controlling for covariates; Evidence on placement characteristics and child demographics was reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Kinship care and foster care groups did not experience different exposure to the intervention; Groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Kinship care and foster care groups were defined in same way; There was evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Unclear risk	All participants were not accounted for in the reporting of results; Attrition could not have influenced the results

Tompkins 2003 (Continued)

Selective reporting (re-reporting bias)	Unclear risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was not reported for instrumentation
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USDHHS 2005

Methods	Placement comparison for length of placement
Participants	National sample drawn from NSCAW for children involved in child welfare system in October 1999
Interventions	See Table 2
Outcomes	Family Relations - Attachment

Notes

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	No attempt was made to equate the kinship care and foster care groups; Evidence on placement characteristics was reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups experienced different exposure to the intervention; Uncertain if groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups were defined in same way; Uncertain if there was evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Unclear risk	Uncertain if all participants were accounted for in the reporting of results; Uncertain if attrition could have influenced the results
Selective reporting (re-reporting bias)	Low risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was reported for instrumentation

Valicenti-McDermott 2008

Methods	Demographic and placement comparison on age at entry, number of placements, length of OOH care, sibling placement, developmental disabilities, psychiatric diagnoses
Participants	Kinship n = 42 Foster n = 40 Local sample drawn from children evaluated for developmental problems at a University Center in New York City
Interventions	See Table 2
Outcomes	Behavioural Development - Behaviour Problems

Valicenti-McDermott 2008 (Continued)

Mental Health - Psychiatric Disorders; Well-being

Placement Stability - Number of Placements; Length of Stay

Permanency - Reunification; Adoption

Educational Attainment - Academic Failure

Service Utilisation - Physician Services

Notes

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	No attempt was made to equate the kinship care and foster care groups; Evidence on placement characteristics and child demographics was reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	High risk	Kinship care and foster care groups experienced different exposure to the intervention; Groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups were defined in same way; There was no evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Unclear risk	All participants were not accounted for in the reporting of results; Uncertain if attrition could have influenced the results
Selective reporting (reporting bias)	Low risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was reported for instrumentation

Villagrana 2008

Methods	No control for confounders No demographic comparison
Participants	Kinship n = 110 Foster n = 153 Local sample drawn from youth in one or more public service sectors of care during 1996 - 1996 in San Diego County
Interventions	See Table 2
Outcomes	Behavioural Development - Behaviour Problems; Adaptive behaviours
Notes	
Risk of bias	

Villagrana 2008 (Continued)

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	High risk	No attempt was made to equate the kinship care and foster care groups; No evidence reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups experienced different exposure to the intervention; Groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups were defined in same way; There was no evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Unclear risk	All participants were not accounted for in the reporting of results; Uncertain if attrition could have influenced the results
Selective reporting (reporting bias)	Low risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was reported for instrumentation

Vogel 1999

Methods	Multivariate effect sizes adjusted using covariates for race, age, gender, and receipt of preplacement services
Participants	Kinship n = 43 Foster n = 616 Drawn from those children entering substitute, city-funded placements, for the first time, during the 1994 calendar year, and followed through February 1996
Interventions	See Table 2
Outcomes	Placement Stability - Length of Stay (OOH)
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	Attempt was made to equate the kinship care and foster care groups through controlling for covariates; Evidence on placement characteristics was reported on the non-comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Kinship care and foster care groups experienced different exposure to the intervention; Uncertain if groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups were defined in same way; There was no evidence of biased assessment resulting from the type of placement

Vogel 1999 (Continued)

Incomplete outcome data (attrition bias) All outcomes	Unclear risk	All participants were not accounted for in the reporting of results; Uncertain if attrition could have influenced the results
Selective reporting (reporting bias)	Low risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was reported for instrumentation

Wells 1999

Methods	Multivariate effect sizes adjusted using covariates for child age at entry, gender, ethnicity, health status at entry, and removal and placement variables
Participants	Kinship n = 1155 Foster n = 1157 Local sample drawn from county records in Ohio for children entering care 1992 - 1993 Includes all children meeting study criteria during specified time period
Interventions	See Table 2
Outcomes	Placement Stability - Re-entry Permanency - Reunification
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	Attempt was made to equate the kinship care and foster care groups through controlling for covariates; No evidence reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups experienced different exposure to the intervention; Uncertain if groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups were defined in same way; There was no evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Low risk	All participants were accounted for in the reporting of results; Attrition could not have influenced the results
Selective reporting (reporting bias)	Low risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was reported for instrumentation

Wilson 1999

Methods	No control for confounders
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Wilson 1999 (Continued)

No demographic comparison

Participants	Kinship n = 100 Foster n = 100 Sample drawn from children in out-of-home care in Illinois from 1993 - 1996 using both random sampling and stratified sampling
Interventions	See Table 2
Outcomes	Mental Health - Well-Being
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	High risk	No attempt was made to equate the kinship care and foster care groups through controlling for covariates; No evidence reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups experienced different exposure to the intervention; Groups did not receive different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups were defined in same way; There was evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Unclear risk	All participants were not accounted for in the reporting of results; Uncertain if attrition could have influenced the results
Selective reporting (reporting bias)	Low risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was reported for instrumentation

Winokur 2008

Methods	Matched comparison on gender, ethnicity, county of placement, programme area, allegation severity, removal reason
Participants	Kinship n = 318 Foster n = 318 Local sample drawn from children placed in out-of-home care in 12 Colorado counties
Interventions	See Table 2
Outcomes	Placement Stability - Number of Placements; Length of Stay; Re-entry Permanency - Reunification; Adoption; Guardianship; Still in Placement Re-abuse - Institutional Abuse

Winokur 2008 (Continued)

Notes

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	Attempt was made to equate the kinship care and foster care groups through matching; Evidence on setting, placement characteristics, and child demographics was reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups experienced different exposure to the intervention; Uncertain if groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups were defined in same way; There was no evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Low risk	All participants were accounted for in the reporting of results; Attrition could not have influenced the results
Selective reporting (reporting bias)	Low risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was reported for instrumentation

Zima 2000

Methods	Multivariate effect sizes adjusted using covariates for child age, gender, ethnicity, foster parent education, placement history variables. and school history variables	
Participants	Kinship n = 171 Foster n = 44 Drawn from the Los Angeles County DCFS Management Information System (MIS) composed of children, aged 6 through 12 years, living in out-of-home placement Children selected from 3 of the 8 county service areas, every 2 months, between July 1996 and March 1998	
Interventions	See Table 2	
Outcomes	Behavioural Development - Behaviour Problems; Adaptive behaviours Educational Attainment - Repeated a Grade	

Notes

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	Attempt was made to equate the kinship care and foster care groups through controlling for covariates; No evidence reported on the comparability of the groups

Zima 2000 (Continued)

Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups experienced different exposure to the intervention; Uncertain if groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups were defined in same way; There was evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Unclear risk	All participants were not accounted for in the reporting of results; Uncertain if attrition could have influenced the results
Selective reporting (reporting bias)	Unclear risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was not reported for some instrumentation

Zimmerman 1998

Methods	Multivariate effect sizes adjusted using covariates for foster care system variables, child's birth family variables, child variables, placement variables, and birth parent case participation variables	
Participants	Kinship n = 126 Foster n = 197 Random local sample drawn from New York City foster care records	
Interventions	See Table 2	
Outcomes	Placement Stability - Number of Placements Permanency - Reunification	

Notes

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	Attempt was made to equate the kinship care and foster care groups through controlling for covariates; No evidence reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups experienced different exposure to the intervention; Groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups were defined in same way; There was no evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Unclear risk	All participants were not accounted for in the reporting of results; Uncertain if attrition could have influenced the results

Zimmerman 1998 (Continued)

Selective reporting (reporting bias)	Low risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was reported for instrumentation
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Zinn 2009

Methods	Multivariate effects sizes adjusted using covariates for foster family characteristics Demographic comparison on gender, age, race/ethnicity, health, mental health, stability, siblings in care
Participants	Kinship n = 7905 Foster n = 11,101 Local sample drawn from children who entered substitute care in Illinois between July 1996 and June 1999
Interventions	See Table 2
Outcomes	Permanency - Reunification; Adoption
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	Attempt was made to equate the kinship care and foster care groups through controlling for covariates; Evidence on placement characteristics and child demographics was reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Kinship care and foster care groups experienced different exposure to the intervention; Uncertain if groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Kinship care and foster care groups were not defined in same way; There was no evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Low risk	All participants were accounted for in the reporting of results; Attrition could not have influenced the results
Selective reporting (reporting bias)	Low risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was reported for instrumentation

Zuravin 1993

Methods	Multivariate effect sizes adjusted using covariates for application and relicensing variables
Participants	Kinship n = 135 Foster n = 161

Zuravin 1993 (Continued)

Non-random sample drawn from Baltimore City Department of Social Services based on foster homes confirmed for maltreatment and homes that were not reported for maltreatment between January 1 1984 through December 31 1988

Interventions	See Table 2
Outcomes	Re-abuse - Institutional Abuse
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	Attempt was made to equate the kinship care and foster care groups through controlling for covariates; No evidence reported on the comparability of the groups
Blinding of participants and personnel (performance bias) All outcomes	Unclear risk	Uncertain if kinship care and foster care groups experienced different exposure to the intervention; Uncertain if groups received different services during placement
Blinding of outcome assessment (detection bias) All outcomes	Low risk	Kinship care and foster care groups were defined in same way; There was no evidence of biased assessment resulting from the type of placement
Incomplete outcome data (attrition bias) All outcomes	Low risk	All participants were accounted for in the reporting of results; Attrition could not have influenced the results
Selective reporting (reporting bias)	Low risk	Instrumentation used to measure the outcomes was specified completely; Reliability and/or validity information was reported for instrumentation

AFCARS: Adoption and Foster Care Analysis and Reporting System

AFDC: Aid to Families with Dependent Children

CPS: Child Protection Services

DCFS: Department of Children and Family Services

DHHS: Department of Health and Human Services

DOCS: Department of Community Services

DSS: Department of Social Services

GPA: Grade Point Average

IDCFS: Illinois Department of Children and Family Services

LONGSCAN: Longitudinal Studies of Child Abuse and Neglect

NSCAW: National Survey of Child and Adolescent Well-being

OOH: out-of-home

RCSA: Relative Caregiver Social Assessment

Characteristics of excluded studies [ordered by study ID]

Study	Reason for exclusion
Aarons 2010	The study reports on an intervention other than kinship care
Adamson 1969	The article/report was intractably unavailable

Study	Reason for exclusion
Ainsworth 1998	The article/report describes a study in which there was no intervention
Ajduković 2004	The intervention did not include a kinship care group
Ajduković 2005	The intervention did not include a kinship care group
Albert 2008	The study did not report on child outcomes
Almgren 2001	The intervention did not include a kinship care group
Altshuler 1998	The article/report describes a study in which there was no intervention
Altshuler 1999	The kinship care group was not compared with a foster care group
Anaut 1999	The intervention did not include a kinship care group
Anderson 1995	The article/report describes a study in which there was no intervention
Aquilino 1991	The study reports on an intervention other than kinship care
Armsden 2000	The intervention did not include a kinship care group
Backovic 2006	The intervention did not include a kinship care group
Bada 2008	The study reports on an intervention other than kinship care
Barber 2003	The intervention did not include a kinship care group
Barth 1995	The article/report describes a study in which there was no intervention
Barth 2008a	The study did not report on child outcomes
Bass 2004	The article/report describes a study in which there was no intervention
Beatty 1995	The intervention did not include a kinship care group
Becker 2007	The intervention did not include a kinship care group
Benedict 1990	The foster care group was not disaggregated from other out-of-home placement types
Benedict 1994	The intervention did not include a kinship care group
Benedict 1996b	The cases were drawn from a sample of adults over the age of 18
Berman 2004	The article/report describes a study in which there was no intervention
Berrick 1995	The foster care group was not disaggregated from other out-of-home placement types
Berridge 1987	The study reports on an intervention other than kinship care
Biehal 2007	The article/report describes a study in which there was no intervention
Billing 2002	The kinship care group was not compared with a foster care group
Blumberg 1996	The study reports on an intervention other than kinship care

Study	Reason for exclusion
Broad 2001	The kinship care group was not compared with a foster care group
Broad 2004	The research design was descriptive, survey, or qualitative
Browne 2005	The intervention did not include a kinship care group
Browning 1994	The article/report describes a study in which there was no intervention
Burge 2007	The intervention did not include a kinship care group
Burrus 2007	The study did not report on child outcomes
Cantos 1996	The kinship group was not disaggregated from the foster care group
Cariglia 1999	The research design was descriptive, survey, or qualitative
Carlson 2002	The cases were drawn from a sample of adults over the age of 18
Carpenter 2001	The cases were drawn from a sample of adults over the age of 18
Carpenter 2003	The article/report was intractably unavailable
Carpenter 2004a	The article/report was intractably unavailable
Carpenter 2004b	The cases were drawn from a sample of adults over the age of 18
Chamberlain 2008	The intervention did not include a kinship care group
Chen 2000	The research design was descriptive, survey, or qualitative
Chipungu 1998	The research design was descriptive, survey, or qualitative
Clawar 1984	The article/report describes a study in which there was no intervention
Clyman 2002	The article/report describes a study in which there was no intervention
CNNP 1996	The article/report describes a study in which there was no intervention
Cole 2001	The study did not report on child outcomes
Cole 2005a	The study did not report on child outcomes
Cole 2005b	The intervention did not include a kinship care group
Colon 1978	The article/report describes a study in which there was no intervention
Colton 1994	The intervention did not include a kinship care group
Colton 1995	The intervention did not include a kinship care group
Connell 2009	The cases were drawn from a sample of adults over the age of 18
Courtney 1992	The article/report was intractably unavailable
Courtney 1994	The foster care group was not disaggregated from other out-of-home placement types

Study	Reason for exclusion
Courtney 1996	The article/report describes a study in which there was no intervention
Courtney 2001	The intervention did not include a kinship care group
Courtney 2009	The intervention did not include a kinship care group
Cousins 2010	The intervention did not include a kinship care group
Cranley 2003	The research design was descriptive, survey, or qualitative
Crawford 2006	The article/report describes a study in which there was no intervention
Cuddeback 2002	The study did not report on child outcomes
CWLA 1995	The article/report was intractably unavailable
Danzy 1997	The research design was descriptive, survey, or qualitative
David 1982	The study reports on an intervention other than kinship care
Davidson-Arad 2003	The intervention did not include a kinship care group
Davis 1993	The article/report was intractably unavailable
Davis 1996	The article/report was intractably unavailable
De Cadiz 2006	The study reports on an intervention other than kinship care
Delfabbro 2002	The intervention did not include a kinship care group
Delfabbro 2003	The intervention did not include a kinship care group
DiGiuseppe 2003	The study reports on an intervention other than kinship care
Du 2002	The intervention did not include a kinship care group
Dubowitz 1990	The kinship care group was not compared with a foster care group
Dubowitz 1992	The kinship care group was not compared with a foster care group
Dubowitz 1993a	The kinship care group was not compared with a foster care group
Dubowitz 1993b	The kinship care group was not compared with a foster care group
Dubowitz 1994b	The kinship care group was not compared with a foster care group
Dubowitz 1994c	The article/report describes a study in which there was no intervention
Duhrssen 1958	The intervention did not include a kinship care group
Dworsky 2005	The intervention did not include a kinship care group
Eggertson 2008	The study reports on an intervention other than kinship care
Ehrle 2002a	The kinship care group was not compared with a foster care group

Study	Reason for exclusion
Ehrle 2002b	The study did not report on child outcomes
English 1994	The intervention did not include a kinship care group
Falcon 2000	The research design was descriptive, survey, or qualitative
Fan 2010	The study reports on an intervention other than kinship care
Farmer 1991	The kinship care group was not compared with a foster care group
Farmer 2001	The intervention did not include a kinship care group
Farmer 2009a	The study reports on an intervention other than kinship care
Farmer 2009b	The intervention did not include a kinship care group
Fechter-Leggett 2010	The cases were drawn from a sample of adults over the age of 18
Feigelman 1995	The research design was descriptive, survey, or qualitative
Fernandez 2007	The research design was descriptive, survey, or qualitative
Festinger 1996	The intervention did not include a kinship care group
Flint 1973	The intervention did not include a kinship care group
Fluke 2008	The intervention did not include a kinship care group
Folman 1995	The intervention did not include a kinship care group
Fong 2006	The kinship group was not disaggregated from the foster care group
Foster 2011	The study reports on an intervention other than kinship care.
Fox 2008	The research design was descriptive, survey, or qualitative
Franck 2002	The article/report was intractably unavailable
Freedman 1994	The intervention did not include a kinship care group
Garland 2003	The intervention did not include a kinship care group
Gaudin 1993	The study did not report on child outcomes
Gebel 1996	The study did not report on child outcomes
Geen 2003	The research design was descriptive, survey, or qualitative
Gennaro 1998	The research design was descriptive, survey, or qualitative
Ghera 2009	The intervention did not include a kinship care group
Gibbison 2005	The intervention did not include a kinship care group
Gil 1982	The intervention did not include a kinship care group

Study	Reason for exclusion
Goerge 1995	The research design was descriptive, survey, or qualitative
Gottesman 2001	The article/report describes a study in which there was no intervention
Graf 1987	The study reports on an intervention other than kinship care
Gramkowski 2009	The study reports on an intervention other than kinship care
Grogan-Kaylor 2001	The kinship care group was not compared with a foster care group
Groppenbacher 2002	The article/report describes a study in which there was no intervention
Haist 2005	The kinship care group was not compared with a foster care group
Hansen 2004	The intervention did not include a kinship care group
Harden 2002	The intervention did not include a kinship care group
Harden 2004	The study did not report on child outcomes
Harman 2000	The intervention did not include a kinship care group
Havlicek 2010	The study did not report on child outcomes
Hayward 2007	The study reports on an intervention other than kinship care
Hazel 1978	The research design was descriptive, survey, or qualitative
Hegar 2009	The cases were drawn from a sample of adults over the age of 18
Hessle 1989	The intervention did not include a kinship care group
Hill 2008	The article/report describes a study in which there was no intervention
Hinterlong 2008	The study reports on an intervention other than kinship care
Hjern 2004	The intervention did not include a kinship care group
Holloway 1997	The intervention did not include a kinship care group
Holtan 2008	The research design was descriptive, survey, or qualitative
Holtan 2009	The study did not report on child outcomes
Hornby 1995	The article/report describes a study in which there was no intervention
Hornick 1989	The intervention did not include a kinship care group
Houston 1998	The study did not report on child outcomes
Hughes 1969	The research design was descriptive, survey, or qualitative
Hulse 1989	The intervention did not include a kinship care group
Hunt 1999	The study reports on an intervention other than kinship care

Study	Reason for exclusion
Hurley 2009	The foster care group was not disaggregated from other out-of-home placement types
Iafrate 2001	The intervention did not include a kinship care group
Iglehart 2004	The article/report describes a study in which there was no intervention
Ingley 2008	The study reports on an intervention other than kinship care
Ingram 1996	The article/report describes a study in which there was no intervention
Jackson 1994	The article/report describes a study in which there was no intervention
Jaffe 2004	The intervention did not include a kinship care group
James 2004a	The kinship care group was not compared with a foster care group
James 2004b	The study did not report on child outcomes
Jantz 2002	The article/report describes a study in which there was no intervention
Jee 2005	The intervention did not include a kinship care group
Jee 2006	The intervention did not include a kinship care group
Johnson 1995	The intervention did not include a kinship care group
Jones 1998	The intervention did not include a kinship care group
Joyce 2008	The research design was descriptive, survey, qualitative
Kamaiko-Solano 2003	The study did not report on child outcomes
Kappenberg 2006	The article/report describes a study in which there was no intervention
Kaye 2007	The intervention did not include a kinship care group
Keller 2001	The study reports on an intervention other than kinship care
Kirton 2008a	The article/report describes a study in which there was no intervention
Kirton 2008b	The article/report describes a study in which there was no intervention
Kools 2009	The study reports on an intervention other than kinship care
Kortenkamp 2002	The intervention did not include a kinship care group
Kosonen 1993	The research design was descriptive, survey, or qualitative
Kreutzmann 1995	The study reports on an intervention other than kinship care
Kufeldt 1995	The intervention did not include a kinship care group
Laan 2001	The intervention did not include a kinship care group
Le Blanc 1991	The intervention did not include a kinship care group

Study	Reason for exclusion
Leslie 2000b	The kinship care group was not compared with a foster care group
Leslie 2002	The study did not report on child outcomes
Leslie 2005	The kinship group was not disaggregated from the foster care group
Lewandowski 2002	The intervention did not include a kinship care group
Lewis 1987	The research design was descriptive, survey, or qualitative
Linderkamp 2009	The article/report was intractably unavailable
Link 1996	The kinship care group was not compared with a foster care group
Litrownik 2003	The study reports on an intervention other than kinship care
Lopez 2010	The intervention did not include a kinship care group
Lu 2008	The cases were drawn from a sample of adults over the age of 18
Lux 2001	The intervention did not include a kinship care group
Lyman 1996	The intervention did not include a kinship care group
MacIntyre 1970	The article/report describes a study in which there was no intervention
Mackintosh 2006	The kinship care group was not compared with a foster care group
Maclean 2003	The kinship group was not disaggregated from the foster care group
Mallon 2010	The article/report describes a study in which there was no intervention
Maluccio 1999	The article/report describes a study in which there was no intervention
Marinković 2004	The intervention did not include a kinship care group
Marinković 2007	The intervention did not include a kinship care group
Martin 2002	The study reports on an intervention other than kinship care
Mascorro 2003	The foster care group was not disaggregated from other out-of-home placement types
Mason 2003	The intervention did not include a kinship care group
McCrae 2010	The intervention did not include a kinship care group
McLean 1996	The research design was descriptive, survey, or qualitative
McMahon 2001	The kinship care group was not compared with a foster care group
McMillen 1999	The kinship care group was not compared with a foster care group
McQuaid 1994	The intervention did not include a kinship care group
McSherry 2010	The study did not report on child outcomes

Study	Reason for exclusion
Mech 1994	The intervention did not include a kinship care group
Merritt 2008	The kinship care group was not disaggregated from the foster care group
Millham 1986	The kinship care group was not disaggregated from the foster care group
Minnis 2006	The kinship care group was not compared with a foster care group
Minty 2000	The article/report describes a study in which there was no intervention
Mitchell 2002	The study did not report on child outcomes
Monheit 1997	The intervention did not include a kinship care group
Montserrat 2006	The kinship care group was not compared with a foster care group
Moore 2001	The intervention did not include a kinship care group
Mosek 1993	The intervention did not include a kinship care group
Moss 2009	The research design was descriptive, survey, or qualitative
Moutassem-Mimouni 1999	The intervention did not include a kinship care group
Needell 1996	The foster care group was not disaggregated from other out-of-home placement types
O'Donnell 2001	The kinship care group was not compared with a foster care group
Ober 2008	The cases were drawn from a sample of adults over the age of 18
Oosterman 2007	The article/report describes a study in which there was no intervention
Oyemade 1974	The kinship care group was not compared with a foster care group
Pabustan-Claar 2007b	The study reports on an intervention other than kinship care
Park 2010	The study reports on an intervention other than kinship care
Payne 2000	The article/report describes a study in which there was no intervention
Pears 2005	The intervention did not include a kinship care group
Pecora 1998	The intervention did not include a kinship care group
Pecora 2006	The intervention did not include a kinship care group
Perez 1998	The kinship care group was not compared with a foster care group
Prosser 1997	The formal kinship care group was not disaggregated from the informal kinship placement
Raghunandan 2010	The study reports on an intervention other than kinship care
Rickert 2008	The study reports on an intervention other than kinship care
Ritchie 2005	The article/report describes a study in which there was no intervention

Study	Reason for exclusion
Ritter 2005	The article/report was intractably unavailable
Rock 1988	The intervention did not include a kinship care group
Romney 2006	The study did not report on child outcomes
Rose 2010	The article/report describes a study in which there was no intervention
Rowe 1984	The study reports on an intervention other than kinship care
Rowe 1989	The study did not report on child outcomes
Roy 2000	The intervention did not include a kinship care group
Roy 2006	The intervention did not include a kinship care group
Rubin 2004	The intervention did not include a kinship care group
Ryan 2005	The study reports on an intervention other than kinship care
Ryan 2010b	The study reports on an intervention other than kinship care
Sawyer 1994	The kinship care group was not compared with a foster care group
Schneiderman 2011	The study did not report on child outcomes
Schwartz 2005	The research design was descriptive, survey, or qualitative
Schwartz 2007	The research design was descriptive, survey, or qualitative
Shin 2004	The intervention did not include a kinship care group
Shlonsky 2002	The kinship care group was not compared with a foster care group
Shore 2002	The study reports on an intervention other than kinship care
Simard 1993	The intervention did not include a kinship care group
Sinclair 2000	The kinship care group was not disaggregated
Smith 1986	The intervention did not include a kinship care group
Smith 2007	The kinship care group was not compared with a foster care group
Smithgall 2004	The research design was descriptive, survey, or qualitative
Snowden 2008	The intervention did not include a kinship care group
Sousa 2005	The article/report was intractably unavailable
Stahmer 2009	The intervention did not include a kinship care group
Starr 1999	The kinship care group was not compared with a foster care group
Stiffman 2002	The study reports on an intervention other than kinship care

Study	Reason for exclusion
Stott 2010	The article/report describes a study in which there was no intervention
Strijker 2005	The formal kinship care group was not disaggregated from the informal kinship care group
Strijker 2010	The study reports on an intervention other than kinship care
Sun 2003	The kinship care group was not disaggregated from the foster care group
Sykes 2002	The study did not report on child outcomes
Tarren-Sweeney 2010a	The kinship care group was not compared with a foster care group
Tarren-Sweeney 2010b	The kinship care group was not compared with a foster care group
Taussig 2001	The study reports on an intervention other than kinship care
Taussig 2002	The kinship care group was not compared with a foster care group
Taussig 2011	The study reports on an intervention other than kinship care
Tepper 1991	The article/report was intractably unavailable
Terling-Watt 2001	The kinship care group was not compared with a foster care group
Testa 1996	The research design was descriptive, survey, or qualitative
Testa 1997	The article/report was intractably unavailable
Testa 2002	The kinship care group was not compared with a foster care group
Thoburn 1989	The intervention did not include a kinship care group
Thomas 2010	The research design was descriptive, survey, or qualitative
Thornton 1991	The research design was descriptive, survey, or qualitative
Troutman 2000	The article/report describes a study in which there was no intervention
Turner 2003	The study reports on an intervention other than kinship care
Unknown 2009	The article/report was intractably unavailable
Unrau 2005a	The intervention did not include a kinship care group
Unrau 2005b	The study did not report on child outcomes
Urban Institute 2006	The article/report was intractably unavailable
USGAO 1999	The foster care group was not disaggregated from other out-of-home placement types
Valicenti-McDermott 2004	The article/report was intractably unavailable
Van Santen 2010	The intervention did not include a kinship care group
VDSS 1994	The research design was descriptive, survey, or qualitative

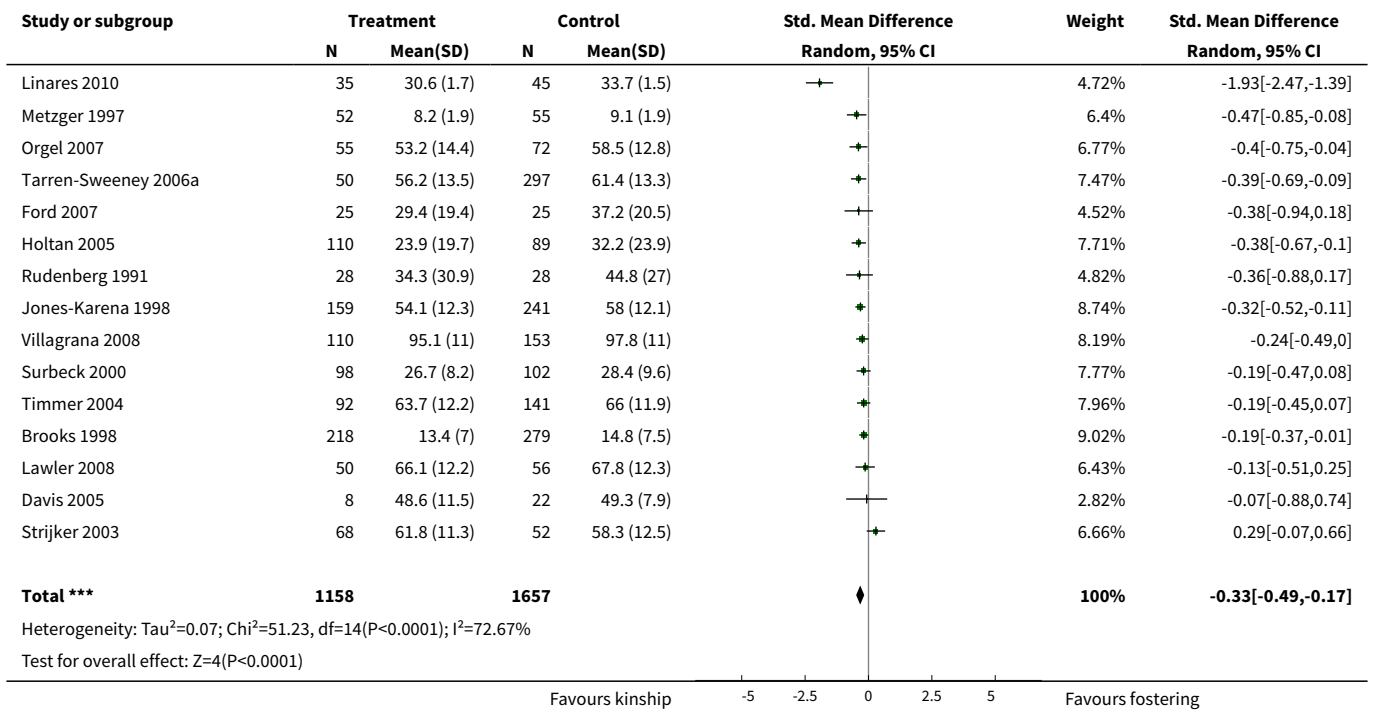
Study	Reason for exclusion
Vinnerljung 1996	The cases were drawn from a sample of adults over the age of 18
Vinnerljung 2005	The intervention did not include a kinship care group
Wade 2000	The intervention did not include a kinship care group
Wade 2001	The intervention did not include a kinship care group
Wall 2007	The kinship care group was not disaggregated from the foster care group
Walsh 1981	The intervention did not include a kinship care group
Walton 2007	The study reports on an intervention other than kinship care
Webster 2000	The foster care group was not disaggregated from other out-of-home placement types
Wilson 1996	The article/report describes a study in which there was no intervention
Won 2009	The study reports on an intervention other than kinship care
Wulczyn 1992	The research design was descriptive, survey, or qualitative
Wulczyn 2004	The intervention did not include a kinship care group
Zhao 2009	The kinship care group was not compared with a foster care group
Zuravin 1998	The cases were drawn from a sample of adults over the age of 18

DATA AND ANALYSES

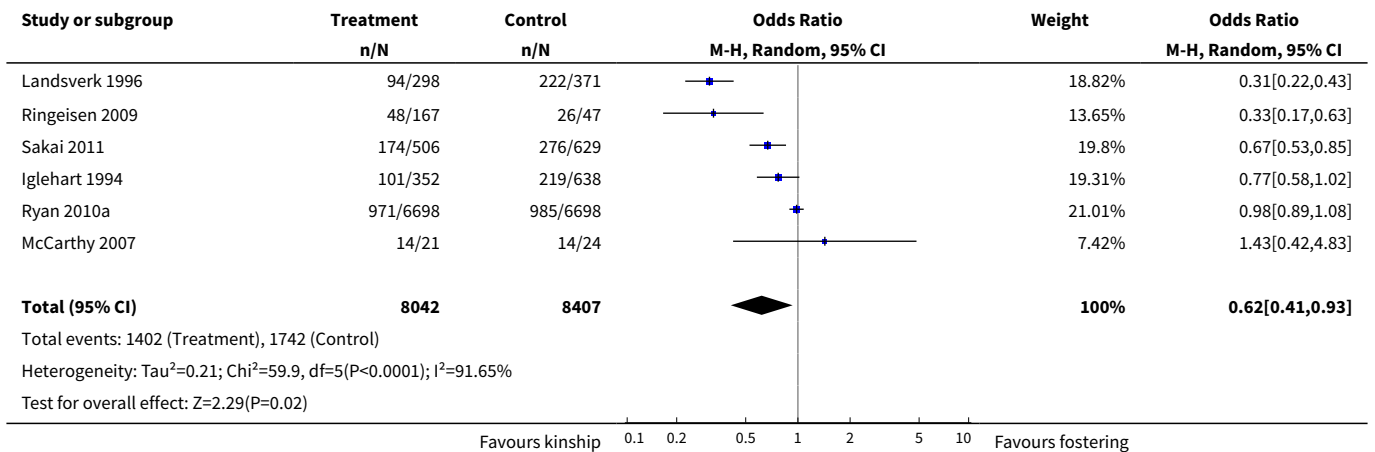
Comparison 1. Behavioural Development

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Behaviour problems continuous	15	2815	Std. Mean Difference (IV, Random, 95% CI)	-0.33 [-0.49, -0.17]
2 Behavioural problems dichotomous	6	16449	Odds Ratio (M-H, Random, 95% CI)	0.62 [0.41, 0.93]
3 Adaptive behaviours	6	1287	Std. Mean Difference (IV, Random, 95% CI)	-0.42 [-0.61, -0.22]

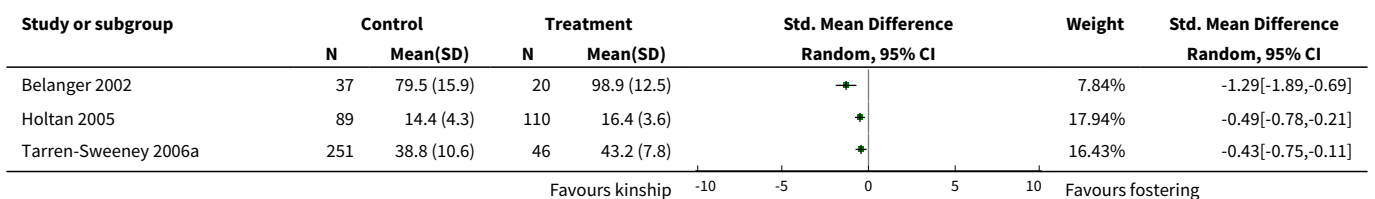
Analysis 1.1. Comparison 1 Behavioural Development, Outcome 1 Behaviour problems continuous.

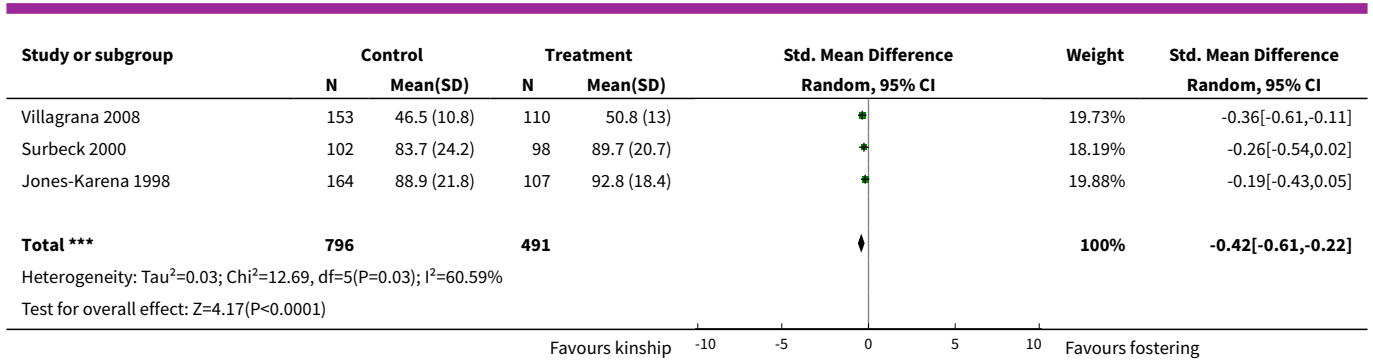


Analysis 1.2. Comparison 1 Behavioural Development, Outcome 2 Behavioural problems dichotomous.



Analysis 1.3. Comparison 1 Behavioural Development, Outcome 3 Adaptive behaviours.

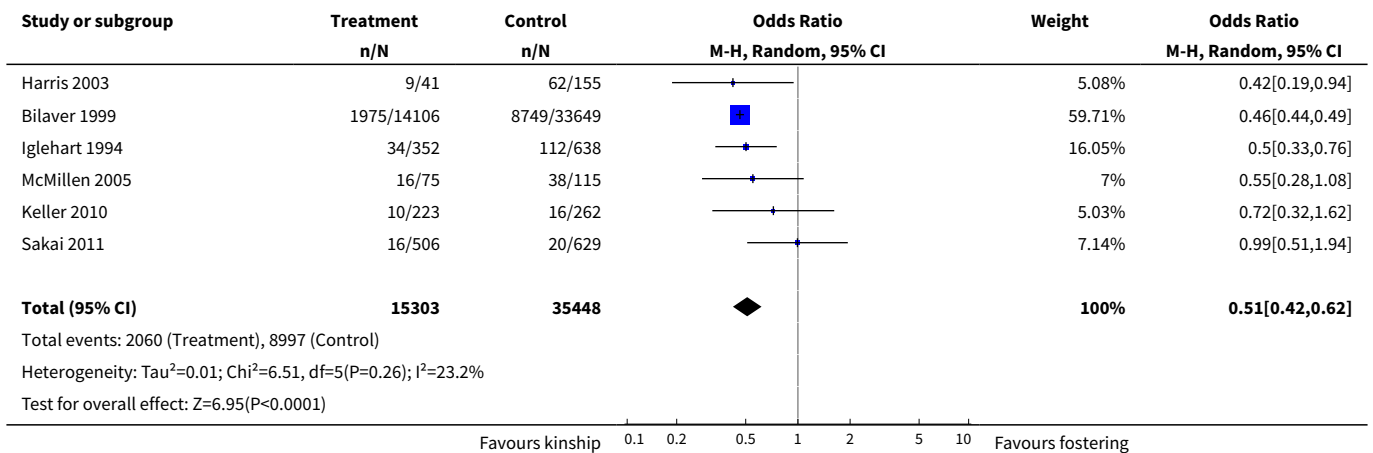




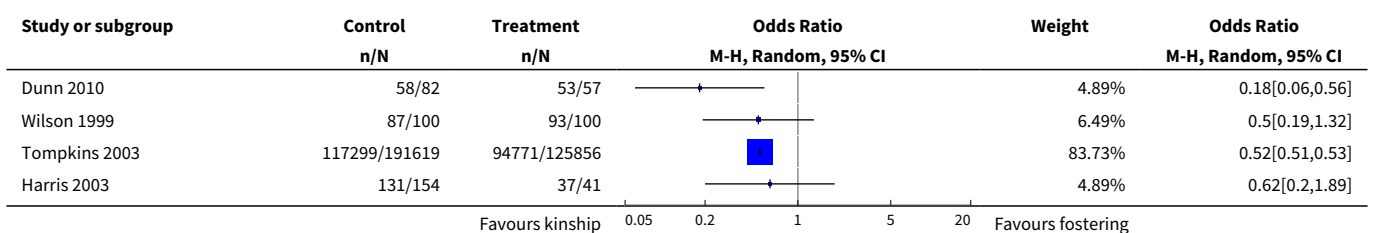
Comparison 2. Mental Health

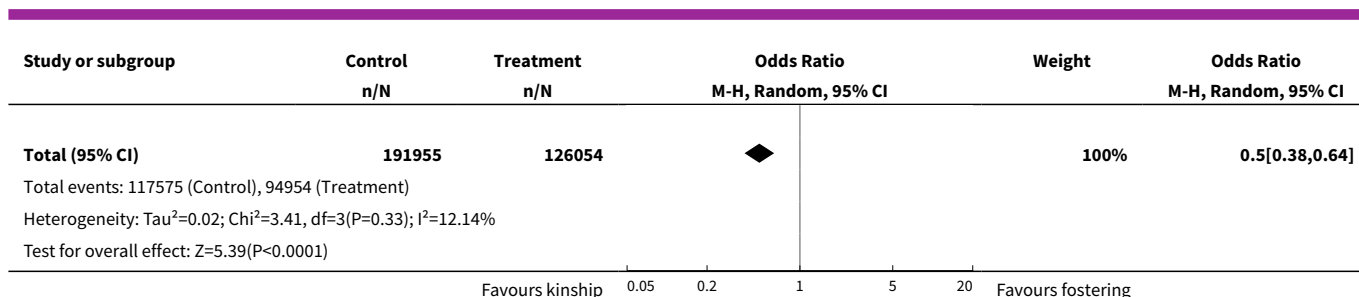
Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Psychiatric disorders dichotomous	6	50751	Odds Ratio (M-H, Random, 95% CI)	0.51 [0.42, 0.62]
2 Well-being dichotomous	4	318009	Odds Ratio (M-H, Random, 95% CI)	0.50 [0.38, 0.64]

Analysis 2.1. Comparison 2 Mental Health, Outcome 1 Psychiatric disorders dichotomous.



Analysis 2.2. Comparison 2 Mental Health, Outcome 2 Well-being dichotomous.

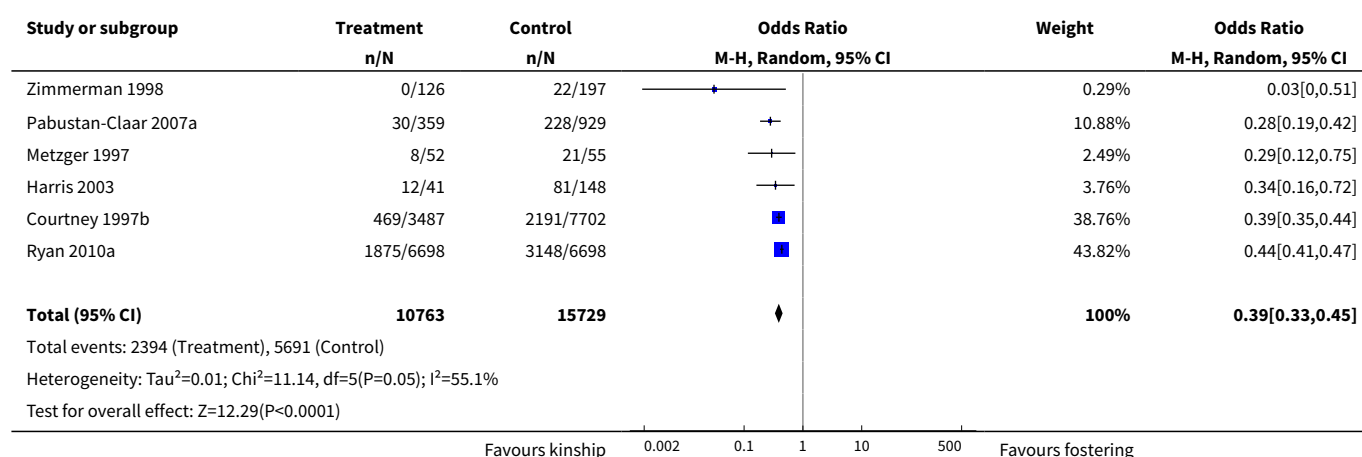


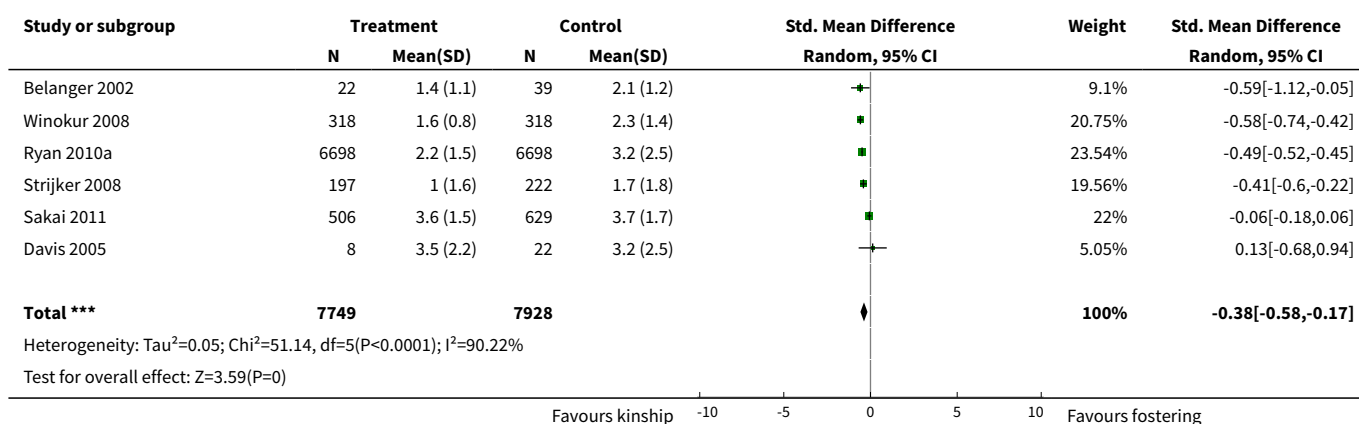
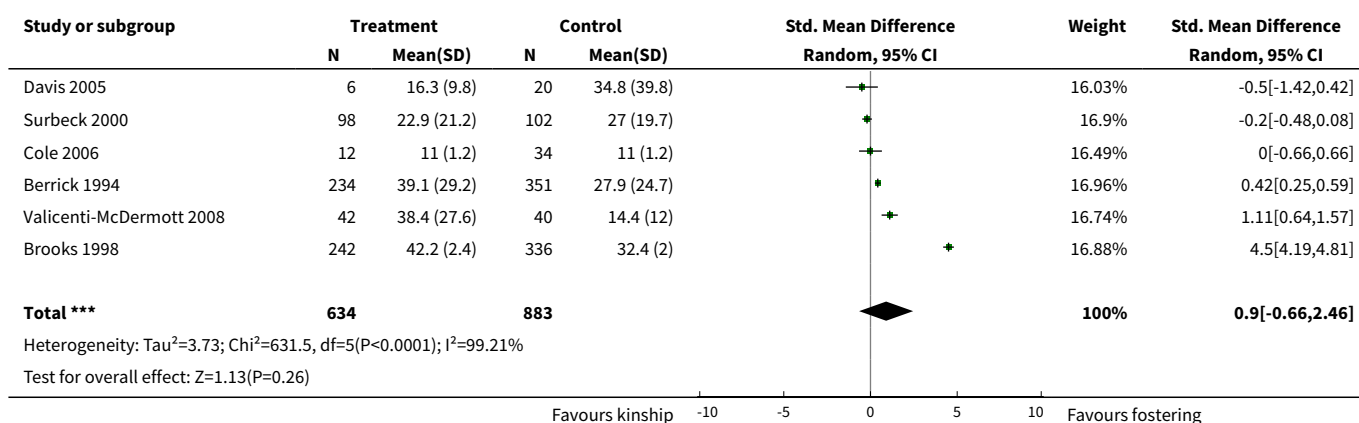
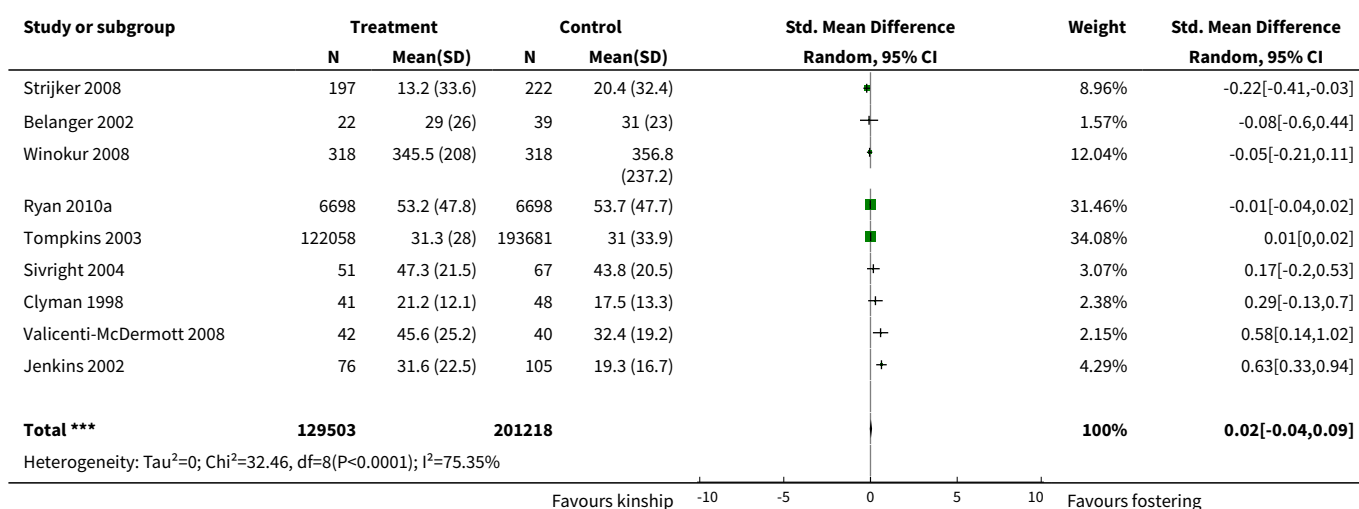


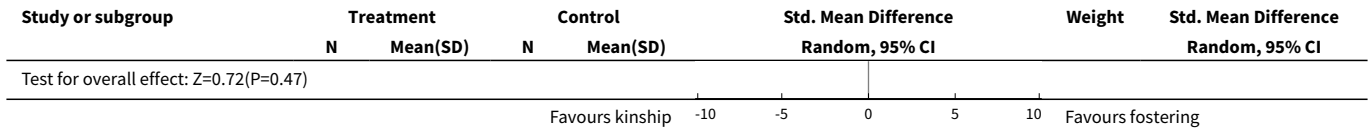
Comparison 3. Placement Stability

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Number of placements dichotomous	6	26492	Odds Ratio (M-H, Random, 95% CI)	0.39 [0.33, 0.45]
2 Number of placements continuous	6	15677	Std. Mean Difference (IV, Random, 95% CI)	-0.38 [-0.58, -0.17]
3 Length of stay in placement	6	1517	Std. Mean Difference (IV, Random, 95% CI)	0.90 [-0.66, 2.46]
4 Length of stay in out-of-home care	9	330721	Std. Mean Difference (IV, Random, 95% CI)	0.02 [-0.04, 0.09]
5 Placement disruption	5	6881	Odds Ratio (M-H, Random, 95% CI)	0.52 [0.40, 0.69]

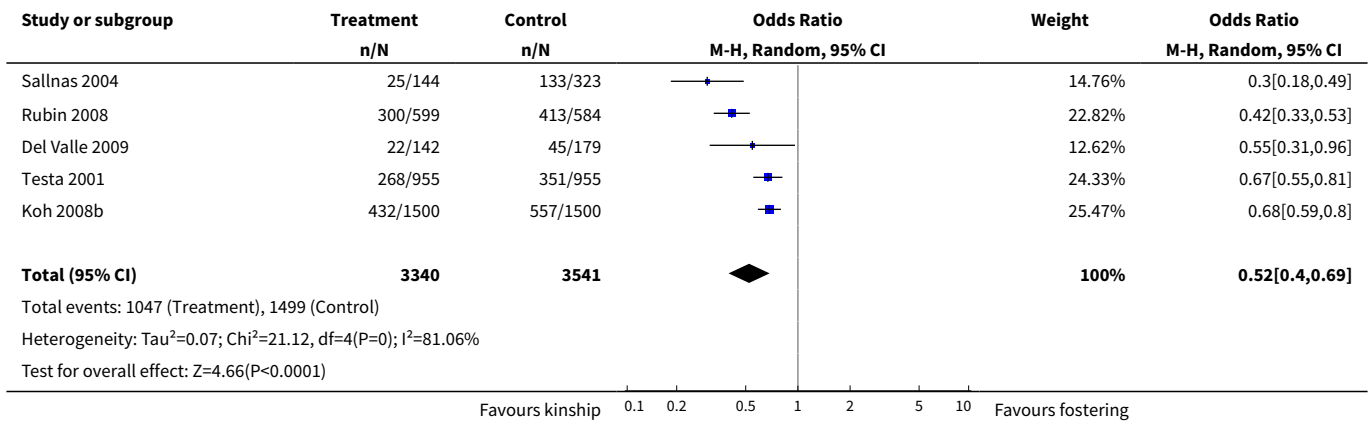
Analysis 3.1. Comparison 3 Placement Stability, Outcome 1 Number of placements dichotomous.



Analysis 3.2. Comparison 3 Placement Stability, Outcome 2 Number of placements continuous.

Analysis 3.3. Comparison 3 Placement Stability, Outcome 3 Length of stay in placement.

Analysis 3.4. Comparison 3 Placement Stability, Outcome 4 Length of stay in out-of-home care.




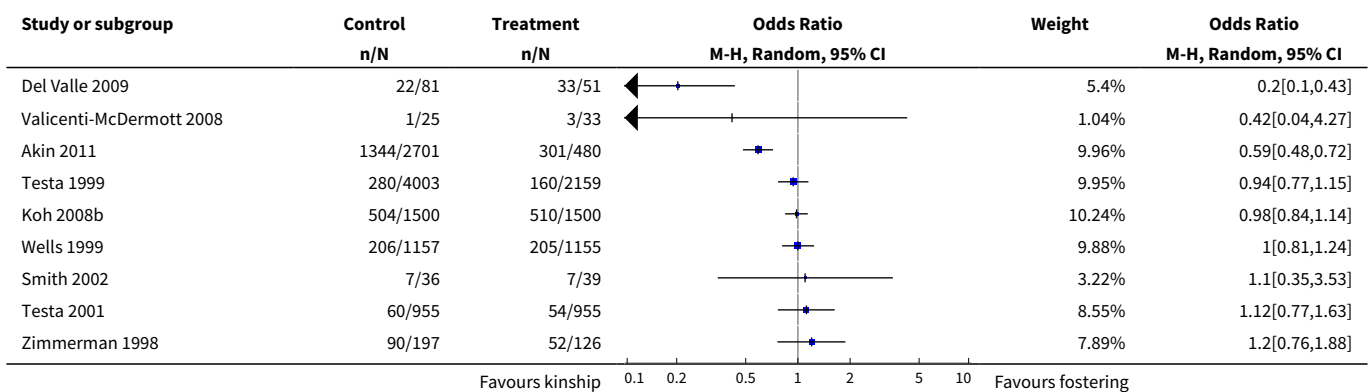
Analysis 3.5. Comparison 3 Placement Stability, Outcome 5 Placement disruption.

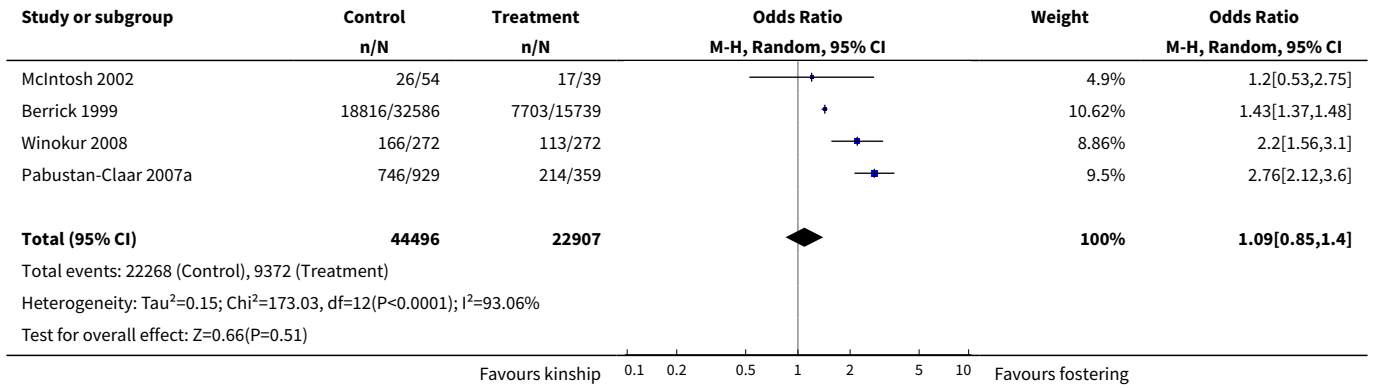


Comparison 4. Permanency

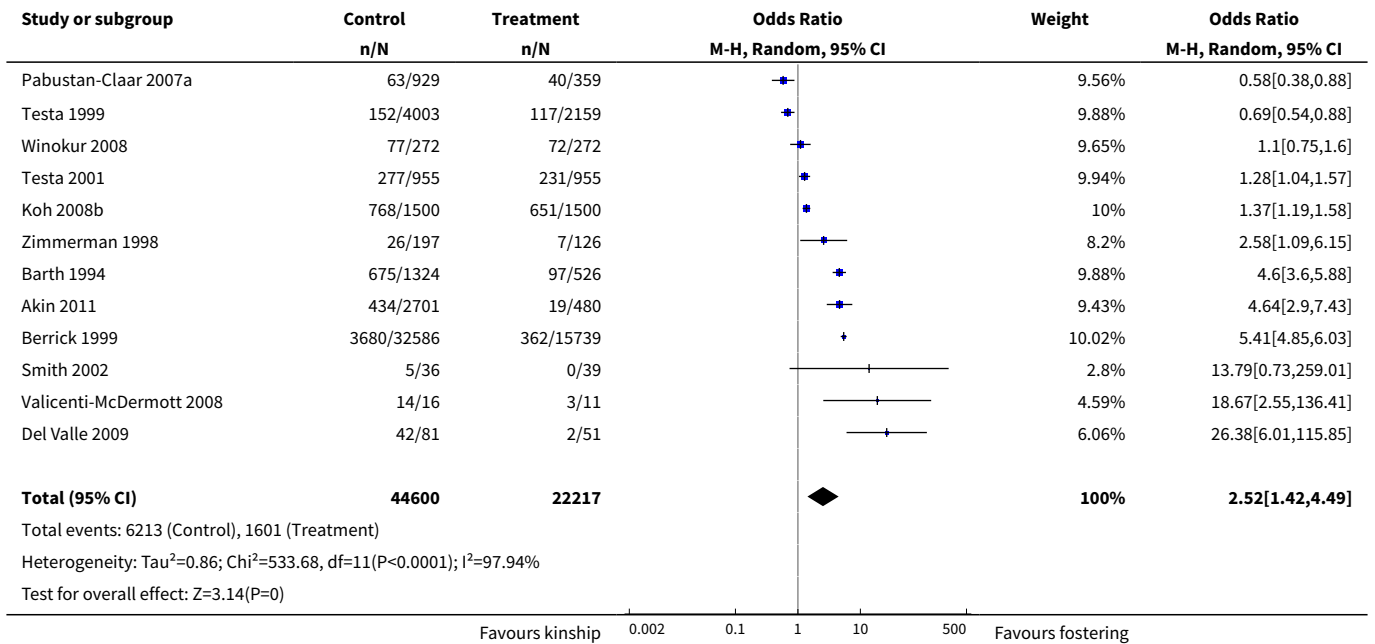
Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Reunification	13	67403	Odds Ratio (M-H, Random, 95% CI)	1.09 [0.85, 1.40]
2 Adoption	12	66817	Odds Ratio (M-H, Random, 95% CI)	2.52 [1.42, 4.49]
3 Guardianship	8	64733	Odds Ratio (M-H, Random, 95% CI)	0.26 [0.17, 0.40]
4 Still in placement	11	57246	Odds Ratio (M-H, Random, 95% CI)	1.18 [0.77, 1.80]

Analysis 4.1. Comparison 4 Permanency, Outcome 1 Reunification.

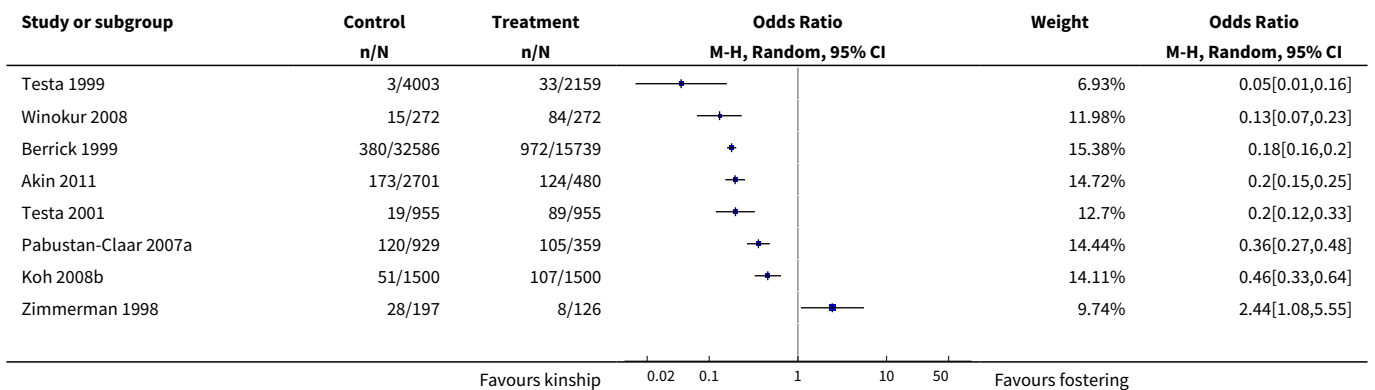


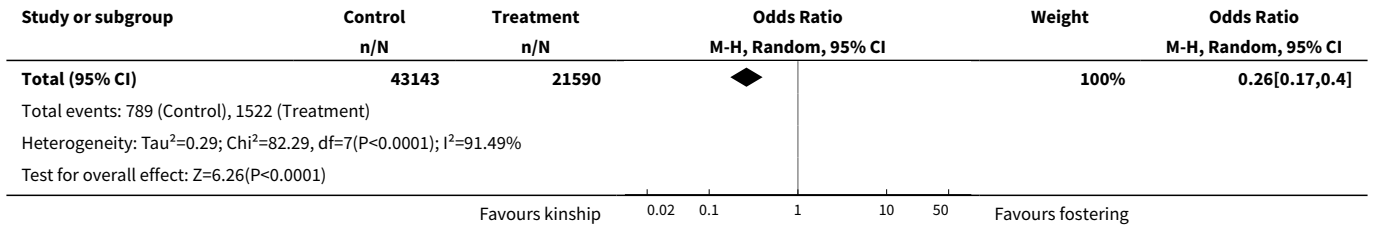


Analysis 4.2. Comparison 4 Permanency, Outcome 2 Adoption.

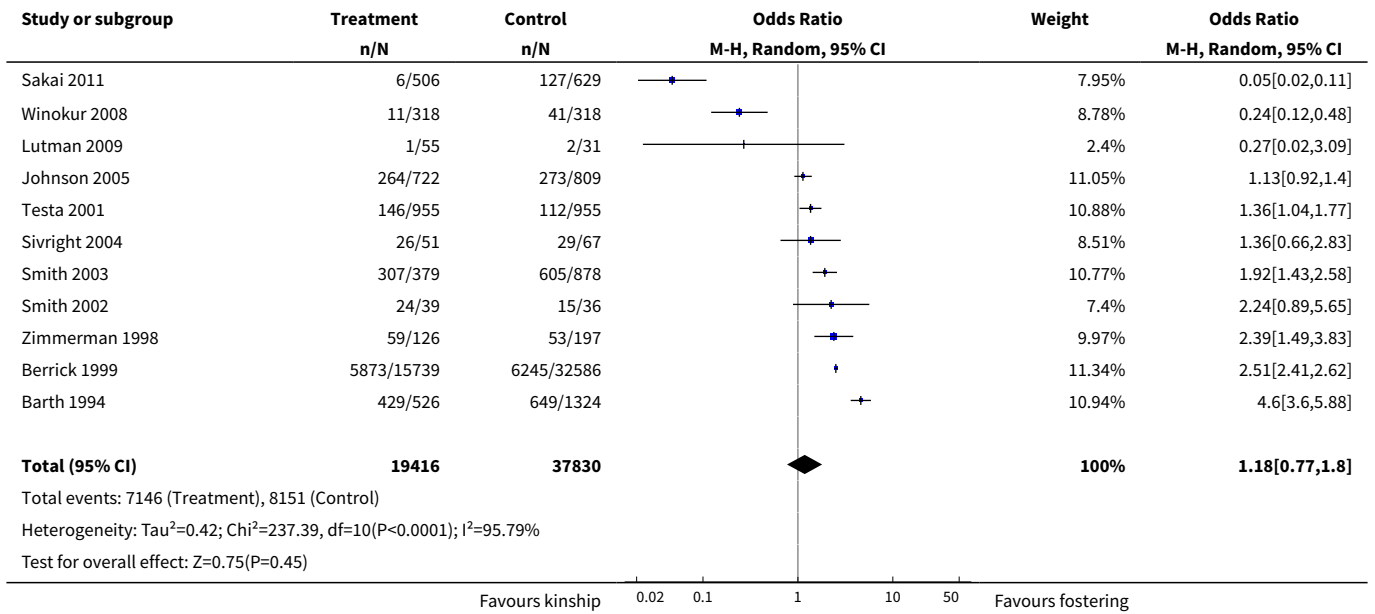


Analysis 4.3. Comparison 4 Permanency, Outcome 3 Guardianship.





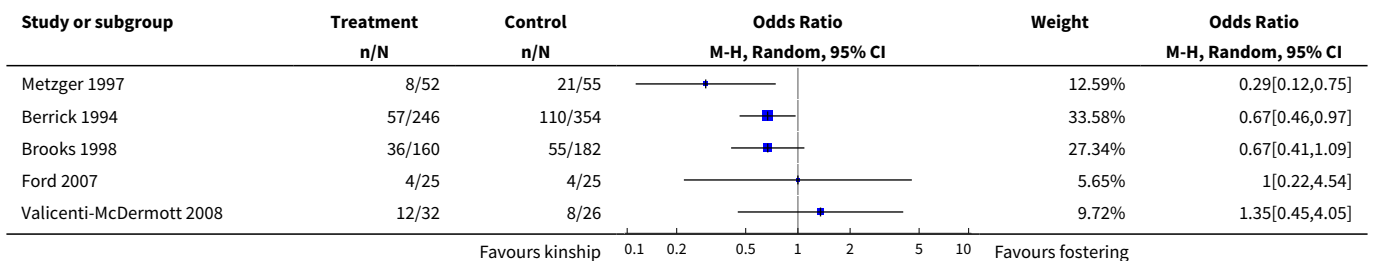
Analysis 4.4. Comparison 4 Permanency, Outcome 4 Still in placement.

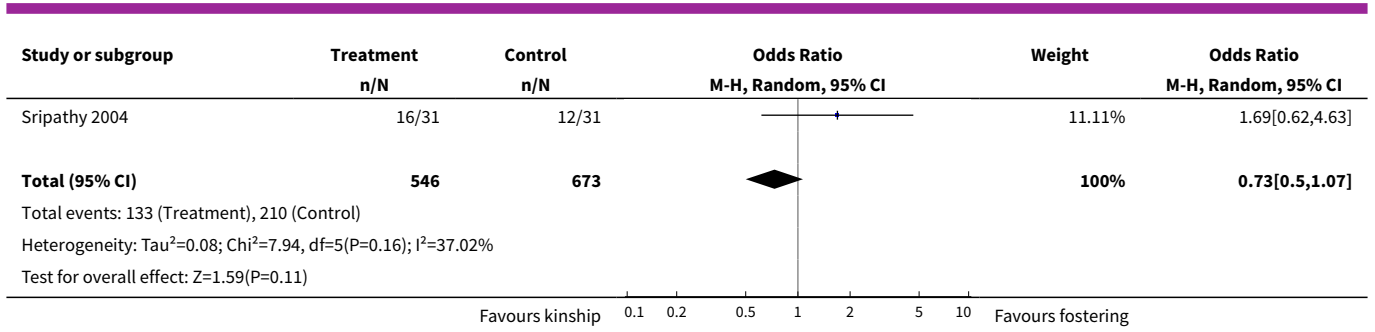


Comparison 5. Educational Attainment

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Repeated a grade	6	1219	Odds Ratio (M-H, Random, 95% CI)	0.73 [0.50, 1.07]

Analysis 5.1. Comparison 5 Educational Attainment, Outcome 1 Repeated a grade.

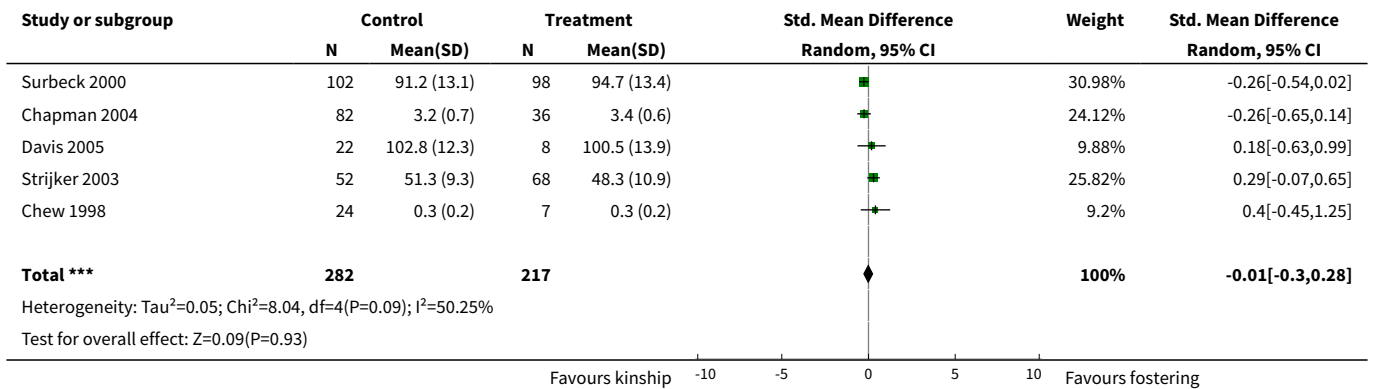




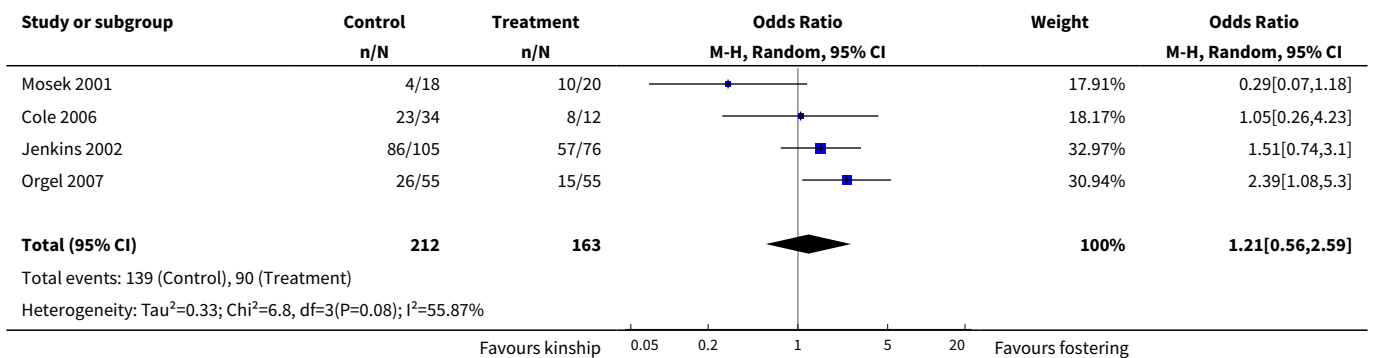
Comparison 6. Family Relations

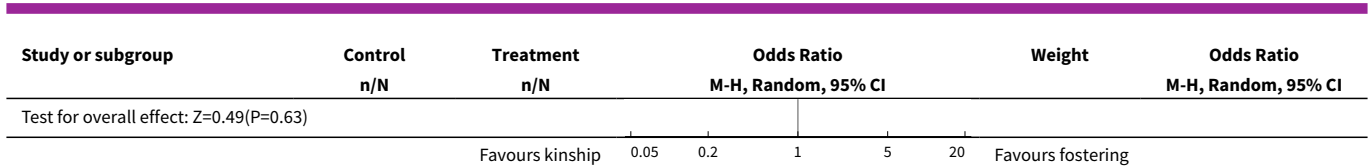
Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Attachment continuous	5	499	Std. Mean Difference (IV, Random, 95% CI)	-0.01 [-0.30, 0.28]
2 Attachment dichotomous	4	375	Odds Ratio (M-H, Random, 95% CI)	1.21 [0.56, 2.59]

Analysis 6.1. Comparison 6 Family Relations, Outcome 1 Attachment continuous.



Analysis 6.2. Comparison 6 Family Relations, Outcome 2 Attachment dichotomous.

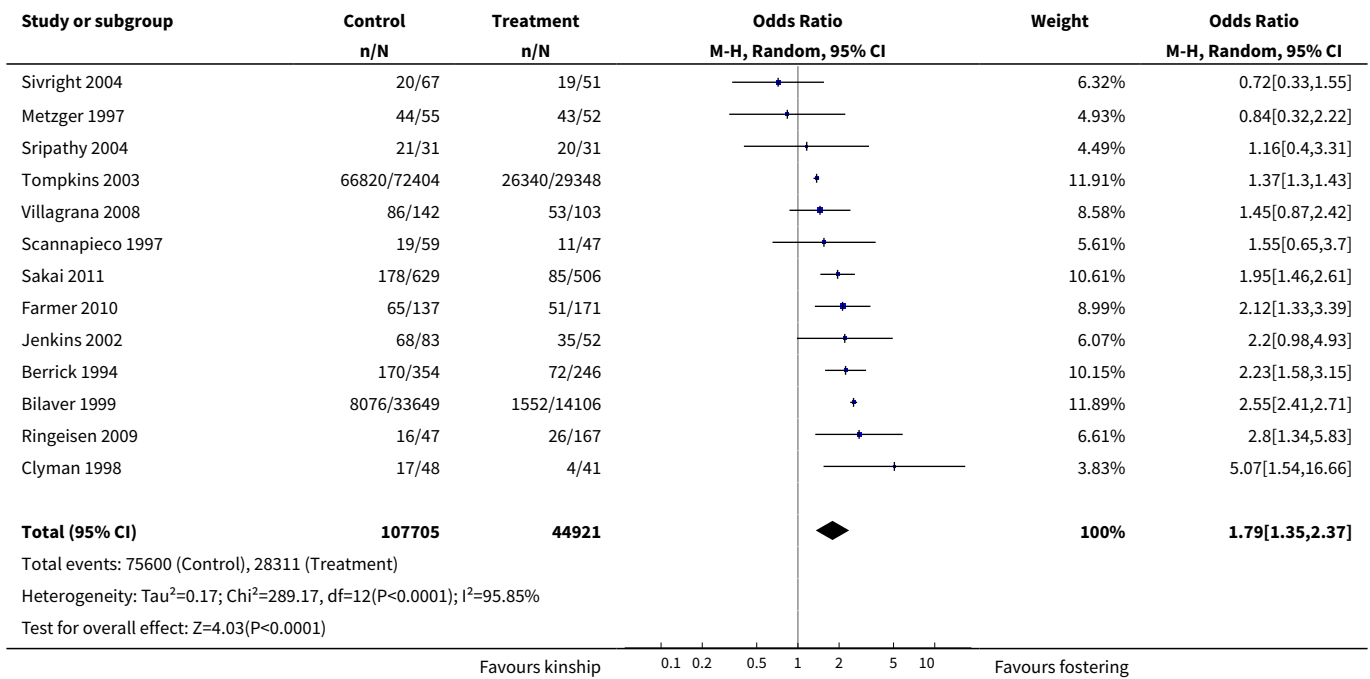




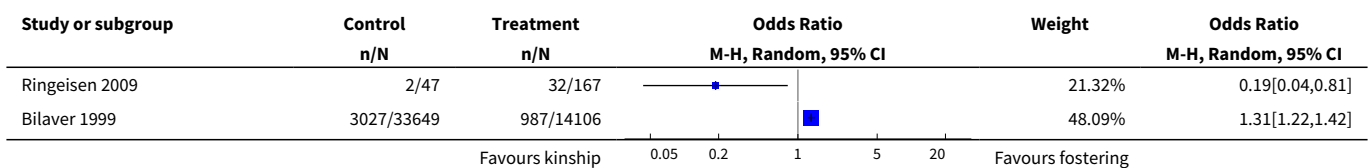
Comparison 7. Service Utilisation

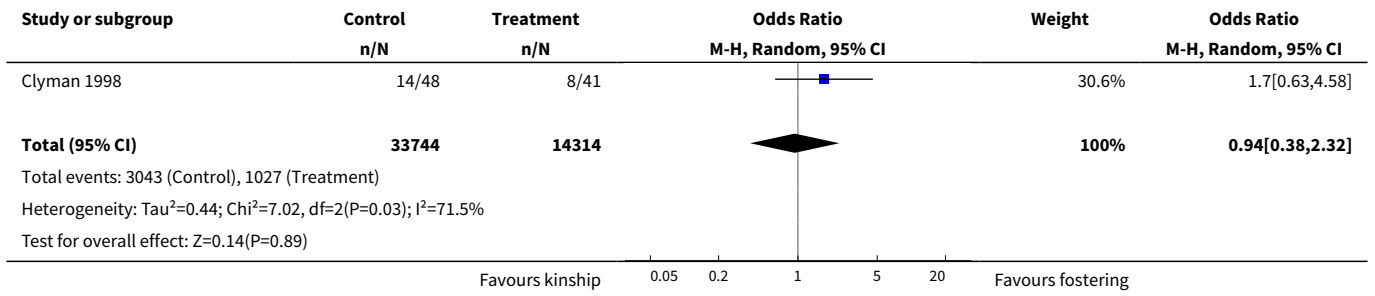
Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Mental health services	13	152626	Odds Ratio (M-H, Random, 95% CI)	1.79 [1.35, 2.37]
2 Developmental services	3	48058	Odds Ratio (M-H, Random, 95% CI)	0.94 [0.38, 2.32]
3 Physician services	7	214005	Odds Ratio (M-H, Random, 95% CI)	1.37 [0.48, 3.93]

Analysis 7.1. Comparison 7 Service Utilisation, Outcome 1 Mental health services.

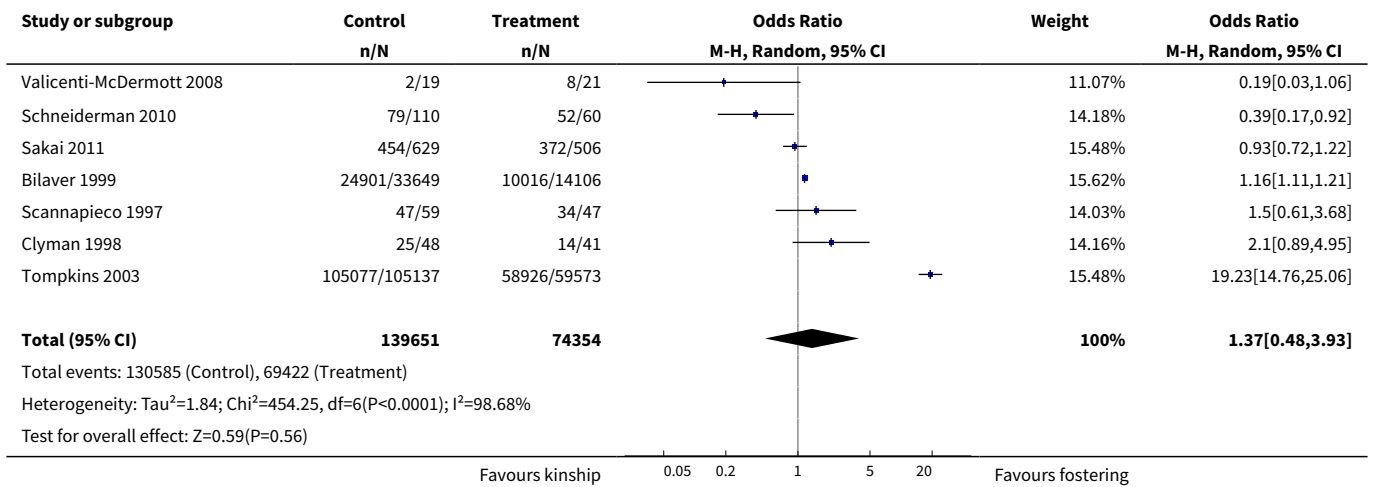


Analysis 7.2. Comparison 7 Service Utilisation, Outcome 2 Developmental services.





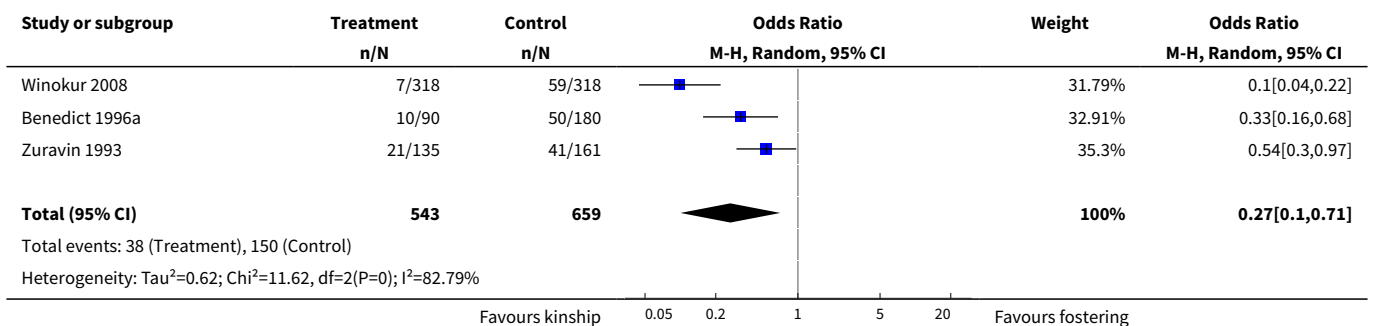
Analysis 7.3. Comparison 7 Service Utilisation, Outcome 3 Physician services.

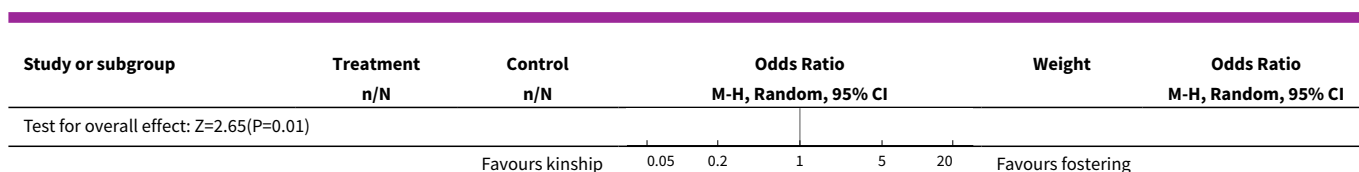


Comparison 8. Re-abuse

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Institutional abuse	3	1202	Odds Ratio (M-H, Random, 95% CI)	0.27 [0.10, 0.71]

Analysis 8.1. Comparison 8 Re-abuse, Outcome 1 Institutional abuse.





ADDITIONAL TABLES

Table 1. Participant Baseline Characteristics

Study	Age at Placement	Gender	Ethnicity	Removal Reason	Urbanicity
Akin 2011		Female (O) - 49%	Black (O) - 16%	Neglect (O) - 24%	
Barth 1994					
Belanger 2002		Female (K) - 59% Female (F) - 59%	Black (O) - 63% Black (K) - 68% Black (F) - 61% Hispanic (O) - 33% Hispanic (K) - 32% Hispanic (F) - 33%		
Benedict 1996a		Female (O) - 51%	Black (O) - 84%	Neglect (O) - 27%	Urban (O) - 100%
Bennett 2000	(O) - 3.4 years	Female (O) - 41%	Black (O) - 56% Hispanic (O) - 12%	Neglect (O) - 92%	
Berger 2009					
Berrick 1994		Female (K) - 52% Female (F) - 54%	Black (K) - 46% Black (F) - 28% Hispanic (K) - 14% Hispanic (F) - 22%		
Berrick 1997	(K) - 7 years (F) - 7 years	Female (O) - 62%	Black (O) - 19% Hispanic (O) - 32%		
Berrick 1999					
Bilaver 1999					
Brooks 1998		Female (K) - 52% Female (F) - 55%	Black (K) - 47% Black (F) - 29% Hispanic (K) - 14% Hispanic (F) - 21%		
Chamberlain 2006		Female (O) - 53%	Black (O) - 19% Hispanic (O) - 31%		
Chapman 2004		Female (O) - 51%	Black (O) - 37% Hispanic (O) - 17%		

Table 1. Participant Baseline Characteristics (Continued)

Chew 1998		Female (O) - 44%	Black (O) - 62% Hispanic (O) - 3%	Neglect (O) - 100%	
Christopher 1998	(O) - 9.5 years	Female (O) - 71%	Black (O) - 30% Hispanic (O) - 26%	Neglect (O) - 41%	
Clyman 1998		Female (K) - 46% Female (F) - 46%	Black (K) - 73% Black (F) - 65%		
Cole 2006	(K) - 1 year (F) - 1.1 years	Female (K) - 58% Female (F) - 53%	Black (K) - 83% Black (F) - 94%		
Connell 2006a	(O) - 9.4 years	Female (O) - 45%	Black (O) - 18% Hispanic (O) - 16%	Neglect (O) - 40%	
Connell 2006b		Female (O) - 45%	Black (O) - 18% Hispanic (O) - 16%	Neglect (O) - 40%	
Courtney 1995		Female (O) - 53%	Black (O) - 26% Hispanic (O) - 27%		
Courtney 1996a		Female (O) - 64%	Black (O) - 31% Hispanic (O) - 19%		
Courtney 1996b		Female (O) - 53%	Black (O) - 31% Hispanic (O) - 23%	Neglect (O) - 67%	Urban (O) - 94% Rural (O) - 6%
Courtney 1997a		Female (O) - 50%	Black (O) - 35% Hispanic (O) - 23%	Neglect (O) - 72%	Urban (O) - 40% Rural (O) - 6%
Courtney 1997b					
Davis 2005	(K) - 8.8 years (F) - 8.9 years	Female (O) - 40% Female (K) - 12% Female (F) - 50%	Black (O) - 100%	Neglect (O) - 77% Neglect (K) - 38% Neglect (F) - 91%	
De Robertis 2004		Female (O) - 47% Female (K) - 38% Female (F) - 58%	Black (O) - 51% Black (K) - 60% Black (F) - 42% Hispanic (O) - 17% Hispanic (K) - 19% Hispanic (F) - 15%		
Del Valle 2009					Urban (O) - 67% Rural (O) - 33%
Dunn 2010	(O) - 9.9 years	Female (O) - 50%	Black (O) - 30%		

Table 1. Participant Baseline Characteristics (Continued)

			Hispanic (O) - 46%		
Farmer 2010		Female (O) - 50%	Black (O) - 28%	Neglect (O) - 59%	
			Hispanic (O) - 18%		
Farruggia 2009		Female (O) - 55%	Black (O) - 40%		Urban (O) - 100%
			Hispanic (O) - 36%		
Ford 2007	(O) - 8.0 years	Female (O) - 50%	Black (O) - 100%	Neglect (O) - 48%	Urban (O) - 100%
	(K) - 7.8 years	Female (K) - 60%		Neglect (K) - 56%	
	(F) - 8.3 years	Female (F) - 40%		Neglect (F) - 48%	
Frame 2000					
Frame 2002		Female (O) - 51%	Black (O) - 37%	Neglect (O) - 82%	
			Hispanic (O) - 26%		
Fuller 2005		Female (O) - 53%	Black (O) - 45%	Neglect (O) - 58%	
			Hispanic (O) - 9%		
Geenen 2006		Female (O) - 42%	Black (O) - 46%		Urban (O) - 100%
			Hispanic (O) - 3%		
Grogan-Kaylor 2000		Female (O) - 54%	Black (O) - 29%	Neglect (O) - 66%	Urban (O) - 37%
			Hispanic (O) - 26%		Rural (O) - 6%
Harris 2003		Female (O) - 55%	Black (O) - 55%	Neglect (O) - 63%	
Helton 2010	(O) - 3.4 years	Female (O) - 60%	Black (O) - 27%		
			Hispanic (O) - 8%		
Holtan 2005	(K) - 3.8 years	Female (K) - 45%			
	(F) - 3.8 years	Female (F) - 43%			
Hurlburt 2010			Black (O) - 21%		
			Hispanic (O) - 33%		
Iglehart 1994		Female (O) - 62%	Black (O) - 43%	Neglect (K) - 62%	
		Female (K) - 34%	Hispanic (O) - 28%	Neglect (F) - 50%	
Iglehart 1995		Female (K) - 52%	Black (K) - 69%		
		Female (F) - 75%	Black (F) - 41%		
			Hispanic (K) - 10%		
			Hispanic (F) - 19%		

Table 1. Participant Baseline Characteristics (Continued)

Jenkins 2002		Female (O) - 49%	Black (O) - 45% Hispanic (O) - 52%	Urban (O) - 100%
Johnson 2005				
Jones-Karena 1998		Female (O) - 50%	Black (O) - 60%	Neglect (O) - 47%
Jonson-Reid 2003		Female (O) - 55%		Neglect (O) - 40%
Keller 2010	(O) - 10.8 years	Female (O) - 52%	Black (O) - 57% Hispanic (O) - 9%	
Koh 2008a				
Koh 2008b		Female (K) - 51%	Black (K) - 54%	Neglect (K) - 73%
		Female (F) - 50%	Black (F) - 54%	Neglect (F) - 71%
Koh 2009				
Landsverk 1996		Female (K) - 49% Female (F) - 59%		Neglect (K) - 80% Neglect (F) - 68%
Lawler 2008		Female (K) - 38% Female (F) - 50%	Black (O) - 33% Hispanic (O) - 13%	Urban (O) - 100%
Lernihan 2006		Female (K) - 41% Female (F) - 54%		
Leslie 2000a		Female (O) - 55%	Black (O) - 28% Hispanic (O) - 23%	Neglect (O) - 68%
Linares 2010	(K) - 6.9 years (F) - 6.5 years	Female (K) - 43% Female (F) - 60%	Black (K) - 46% Black (F) - 56% Hispanic (K) - 20% Hispanic (F) - 31%	Neglect (K) - 93% Neglect (F) - 79%
Lutman 2009				
McCarthy 2007		Female (K) - 86% Female (F) - 58%	Black (K) - 76% Black (F) - 75% Hispanic (K) - 5% Hispanic (F) - 8%	

Table 1. Participant Baseline Characteristics (Continued)

McIntosh 2002		Female (O) - 46% Female (K) - 51% Female (F) - 43%	Black (O) - 45% Black (K) - 49% Black (F) - 43% Hispanic (O) - 38% Hispanic (K) - 36% Hispanic (F) - 40%	Neglect (O) - 60% Neglect (K) - 59% Neglect (F) - 61%	
McMillen 2004	(O) - 10.9 years	Female (O) - 56%	Black (O) - 51% Hispanic (O) - 1%	Neglect (O) - 46%	
McMillen 2005	(O) - 10.6 years	Female (O) - 56%	Black (O) - 52% Hispanic (O) - 1%	Neglect (O) - 48%	
Mennen 2010		Female (O) - 50%	Black (O) - 40% Hispanic (O) - 35%		
Metzger 1997		Female (K) - 56% Female (F) - 49%	Black (K) - 61% Black (F) - 58% Hispanic (K) - 27% Hispanic (F) - 15%	Neglect (K) - 87% Neglect (F) - 71%	
Metzger 2008		Female (K) - 56% Female (F) - 49%		Neglect (K) - 62% Neglect (F) - 53%	Urban (O) - 100%
Mosek 2001		Female (O) - 100%			
Orgel 2007		Female (O) - 52%	Black (O) - 12% Hispanic (O) - 4%	Neglect (O) - 28%	
Pabustan-Claar 2007a	(O) - 8.3 years	Female (O) - 48% Female (K) - 51% Female (F) - 47%	Black (O) - 14% Black (K) - 16% Black (F) - 14% Hispanic (O) - 46% Hispanic (K) - 41% Hispanic (F) - 47%	Neglect (O) - 86% Neglect (K) - 86% Neglect (F) - 86%	
Palacios 2009	(K) - 3.2 years (F) - 4.7 years				
Ringeisen 2009		Female (O) - 50%	Black (O) - 30% Hispanic (O) - 21%	Neglect (O) - 64%	
Rubin 2008			Black (K) - 41% Hispanic (K) - 13%	Neglect (O) - 59% Neglect (K) - 59%	

Table 1. Participant Baseline Characteristics (Continued)

Rudenberg 1991		Female (K) - 50% Female (F) - 50%	Black (K) - 14% Black (F) - 29% Hispanic (K) - 14% Hispanic (F) - 11%	
Ryan 2010a		Female (O) - 55% Female (K) - 54% Female (F) - 56%	Black (O) - 29% Black (K) - 30% Black (F) - 29% Hispanic (O) - 51% Hispanic (K) - 50% Hispanic (F) - 52%	Neglect (K) - 42% Neglect (F) - 42%
Sakai 2011		Female (K) - 60% Female (F) - 48%	Black (K) - 33% Black (F) - 38% Hispanic (K) - 14% Hispanic (F) - 15%	Neglect (K) - 62% Neglect (F) - 58%
Sallnas 2004				
Scannapieco 1997				
Schneiderman 2010		Female (K) - 45% Female (F) - 45%	Black (K) - 18% Black (F) - 17% Hispanic (K) - 70% Hispanic (F) - 65%	Urban (O) - 100%
Shin 2003	(O) - 9.5 years	Female (O) - 51%	Black (O) - 64% Hispanic (O) - 4%	
Sivright 2004	(K) - 4.7 years (F) - 3.5 years	Female (O) - 53% Female (K) - 51% Female (F) - 54%	Black (O) - 52% Black (K) - 63% Black (F) - 54% Hispanic (O) - 34% Hispanic (K) - 35% Hispanic (F) - 40%	Neglect (O) - 78% Neglect (K) - 82% Neglect (F) - 75%
Smith 2002		Female (K) - 47% Female (F) - 36%	Black (K) - 80% Black (F) - 61%	
Smith 2003		Female (O) - 48%	Black (O) - 48% Hispanic (O) - 10%	Neglect (O) - 56%
Sripathy 2004		Female (O) - 44%	Black (O) - 70% Hispanic (O) - 16%	Neglect (K) - 75% Neglect (F) - 45% Urban (O) - 100%
Strijker 2003				

Table 1. Participant Baseline Characteristics (Continued)

Strijker 2008		Female (O) - 50%		
Surbeck 2000		Female (K) - 56% Female (F) - 54%	Black (K) - 72% Black (F) - 41% Hispanic (K) - 1% Hispanic (F) - 1%	
Tar- ren-Sweeney 2006a	(O) - 3.5 years	Female (O) - 49%		Neglect (O) - 78% Urban (O) - 52%
Tar- ren-Sweeney 2006b		Female (O) - 49%		
Tar- ren-Sweeney 2008a		Female (O) - 49%		Urban (O) - 52%
Tar- ren-Sweeney 2008b	(K) - 3.2 years (F) - 3.5 years	Female (O) - 49%		
Testa 1999				
Testa 2001	(K) - 5.4 years (F) - 4.2 years	Female (K) - 50% Female (F) - 51%	Black (O) - 100%	
Timmer 2004		Female (O) - 36% Female (K) - 28% Female (F) - 47%	Black (O) - 39% Black (K) - 33% Black (F) - 42% Hispanic (O) - 20% Hispanic (K) - 22% Hispanic (F) - 19%	
Tompkins 2003		Female (O) - 50% Female (K) - 47% Female (F) - 53%	Black (O) - 57% Black (K) - 62% Black (F) - 55% Hispanic (O) - 14% Hispanic (K) - 13% Hispanic (O) - 15%	
USDHHS 2005	(O) - 6 years			
Valicenti-Mc- Dermott 2008		Female (O) - 67% Female (K) - 77% Female (F) - 59%		
Villagrana 2008				
Vogel 1999	(O) - 6.3 years	Female (O) - 50%	Black (O) - 83% Hispanic (O) - 8%	
Wells 1999		Female (O) - 51%	Black (O) - 77%	Neglect (O) - 87%

Table 1. Participant Baseline Characteristics (Continued)

Wilson 1999					
Winokur 2008		Female (K) - 54%	Black (K) - 14%		
		Female (F) - 54%	Black (F) - 14%		
			Hispanic (K) - 37%		
			Hispanic (F) - 37%		
Zima 2000		Female (O) - 53%	Black (O) - 34%		
			Hispanic (O) - 38%		
Zimmerman 1998	(K) - 1.8 years (F) - 1.8 years	Female (O) - 50%	Black (O) - 70%	Neglect (O) - 70%	Urban (O) - 100%
			Hispanic (O) - 26%		
Zinn 2009		Female (K) - 51%	Black (K) - 57%	Neglect (K) - 48%	
		Female (F) - 52%	Black (F) - 49%	Neglect (F) - 54%	
			Hispanic (K) - 6%		
			Hispanic (F) - 5%		
Zuravin 1993					Urban (O) - 100%

O: Overall
 K: Kinship
 F: Foster

Table 2. Intervention Characteristics

Study	Kin Placement Type	Placement Timing	Length of Stay	Data Collection
Akin 2011	Not Reported/Unclear	First		Longitudinal - 30 - 42 months
Barth 1994	Not Reported/Unclear	First		Cross-sectional
Belanger 2002	Not Reported/Unclear	Not Reported/Unclear	(K) - OOH - 29.0 months (F) - OOH - 31.0 months	Cross-sectional
Benedict 1996a	Licensed	First		Longitudinal - 4 years
Bennett 2000	Not Reported/Unclear	Not Reported/Unclear		Cross-sectional
Berger 2009	Not Reported/Unclear	First		Longitudinal
Berrick 1994	Not Reported/Unclear	Not Reported/Unclear	(K) - Placement - 39.0 months (F) - Placement - 28.0 months	Cross-sectional
Berrick 1997	Not Reported/Unclear	Not Reported/Unclear	(K) - Placement - 18.0 months	Cross-sectional

Table 2. Intervention Characteristics (Continued)

			(F) - Placement - 18.0 months	
Berrick 1999	Not Reported/Unclear	First		Longitudinal - up to 7 years
Bilaver 1999	Not Reported/Unclear	Only		Longitudinal - 1 - 2 years
Brooks 1998	Not Reported/Unclear	Not Reported/Unclear	(K) - Placement - 43.2 months (F) - Placement - 32.4 months	Cross-sectional
Chamberlain 2006	Not Reported/Unclear	Not Reported/Unclear		Longitudinal - 1 year
Chapman 2004	Not Reported/Unclear	Not Reported/Unclear	(K) - Placement - 12.0 months (F) - Placement - 12.0 months	Cross-sectional
Chew 1998	Not Reported/Unclear	Not Reported/Unclear		Cross-sectional
Christopher 1998	Not Reported/Unclear	Last		Cross-sectional
Clyman 1998	Not Reported/Unclear	Not Reported/Unclear	(K) - OOH - 21.2 months (F) - OOH - 17.5 months	Cross-sectional
Cole 2006	Not Reported/Unclear	First		Cross-sectional
Connell 2006a	Not Reported/Unclear	First		Longitudinal - up to 5 years
Connell 2006b	Not Reported/Unclear	First		Longitudinal - 5 years
Courtney 1995	Not Reported/Unclear	Last		Longitudinal - 3 years
Courtney 1996a	Not Reported/Unclear	Last		Cross-sectional
Courtney 1996b	Not Reported/Unclear	First		Cross-sectional
Courtney 1997a	Not Reported/Unclear	First (Reunification) Last (re-entry)		Longitudinal - 6 years
Courtney 1997b	Not Reported/Unclear	First		Longitudinal - 4 years
Davis 2005	Not Reported/Unclear	Not Reported/Unclear	(K) - Placement - 16.0 months (F) - Placement - 39.0 months (K) - OOH - 80.0 months (F) - OOH - 65.0 months	Cross-sectional
De Robertis 2004	Not Reported/Unclear	Not Reported/Unclear		Longitudinal - 4 - 8 years

Table 2. Intervention Characteristics (Continued)

Del Valle 2009	Not Reported/Unclear	Not Reported/Unclear	(K) - Placement - 57.6 months (F) - Placement - 40.8 months	Cross-sectional
Dunn 2010	Not Reported/Unclear	First		Cross-sectional
Farmer 2010	Not Reported/Unclear	First		Longitudinal - 18 months
Farruggia 2009	Not Reported/Unclear	Last		Cross-sectional
Ford 2007	Licensed (52%)	Not Reported/Unclear	(K) - Placement - 36 months (F) - Placement - 30 months	Cross-sectional
Frame 2000	Not Reported/Unclear	Last		Longitudinal - 4 - 6 years
Frame 2002	Not Reported/Unclear	First		Longitudinal - 3.5 - 4.5 years
Fuller 2005	Not Reported/Unclear	First		Cross-sectional
Geenen 2006	Not Reported/Unclear	Not Reported/Unclear		Cross-sectional
Grogan-Kaylor 2000	Not Reported/Unclear	First		Cross-sectional
Harris 2003	Not Reported/Unclear	Not Reported/Unclear		Cross-sectional
Helton 2010	Not Reported/Unclear	Not Reported/Unclear		Longitudinal
Holtan 2005	Not Reported/Unclear	Not Reported/Unclear	(K) - Placement - 61.2 months (F) - Placement - 68.4 months	Cross-sectional
Hurlburt 2010	Not Reported/Unclear	Not Reported/Unclear		Longitudinal - 4-12 months
Iglehart 1994	Not Reported/Unclear	Not Reported/Unclear		Cross-sectional
Iglehart 1995	Not Reported/Unclear	Not Reported/Unclear		Cross-sectional
Jenkins 2002	Licensed	Not Reported/Unclear	(K) - Placement - 31.6 months (F) - Placement - 19.3 months	Cross-sectional
Johnson 2005	Not Reported/Unclear	First		Longitudinal - 15 months
Jones-Karena 1998	Not Reported/Unclear	Not Reported/Unclear		Cross-sectional

Table 2. Intervention Characteristics (Continued)

Jonson-Reid 2003	Not Reported/Unclear	Last		Longitudinal - 4.5 years
Keller 2010	Not Reported/Unclear	Not Reported/Unclear		Cross-sectional
Koh 2008a	Not Reported/Unclear	First		Longitudinal - 1 year
Koh 2008b	Not Reported/Unclear	First		Longitudinal - 3 years
Koh 2009	Not Reported/Unclear	First		Longitudinal - 1 year
Landsverk 1996	Not Reported/Unclear	Not Reported/Unclear		Cross-sectional
Lawler 2008	Not Reported/Unclear	Not Reported/Unclear		Cross-sectional
Lernihan 2006	Not Reported/Unclear	Not Reported/Unclear	(K) - Placement - 46.8 months (F) - Placement - 60 months	Cross-sectional
Leslie 2000a	Not Reported/Unclear	Not Reported/Unclear		Longitudinal - 1.5 years
Linares 2010	Not Reported/Unclear	Not Reported/Unclear		Cross-sectional
Lutman 2009	Not Reported/Unclear	Not Reported/Unclear		Longitudinal - 3-10 years
McCarthy 2007	Not Reported/Unclear	Not Reported/Unclear		Cross-sectional
McIntosh 2002	Not Reported/Unclear	Not Reported/Unclear		Cross-sectional
McMillen 2004	Not Reported/Unclear	Not Reported/Unclear		Cross-sectional
McMillen 2005	Not Reported/Unclear	Not Reported/Unclear		Cross-sectional
Mennen 2010	Not Reported/Unclear	Not Reported/Unclear		Cross-sectional
Metzger 1997	Unlicensed	Not Reported/Unclear	(K) - Placement - 74.0 months (F) - Placement - 77.8 months	Cross-sectional
Metzger 2008	Not Reported/Unclear	Not Reported/Unclear	(K) - OOH - 74 months (F) - OOH - 78 months	Cross-sectional
Mosek 2001	Not Reported/Unclear	Not Reported/Unclear	(K) - OOH - 104.4 months	Cross-sectional

Table 2. Intervention Characteristics (Continued)

			(F) - OOH - 126.0 months	
Orgel 2007	Not Reported/Unclear	Not Reported/Unclear		Cross-sectional
Pabustan-Claar 2007a	Not Reported/Unclear	First		Longitudinal - 6 years
Palacios 2009	Not Reported/Unclear	Not Reported/Unclear		Cross-sectional
Ringeisen 2009	Not Reported/Unclear	First		Longitudinal - 5 - 6 years
Rubin 2008	Not Reported/Unclear	First		Longitudinal - 18 and 36 months
Rudenberg 1991	Not Reported/Unclear	Not Reported/Unclear		Cross-sectional
Ryan 2010a	Not Reported/Unclear	Not Reported/Unclear	(K) - Placement - 53.2 months (F) - Placement - 53.7 months	Longitudinal - 6.1 years
Sakai 2011	Not Reported/Unclear	First	(K) - OOH - 26 months (F) - OOH - 19.3 months	Longitudinal - 3 years
Sallnas 2004	Not Reported/Unclear	First		Longitudinal - 5 years
Scannapieco 1997	Licensed	Not Reported/Unclear	(K) - OOH - 33.6 months (F) - OOH - 17.8 months	Cross-sectional
Schneiderman 2010	Not Reported/Unclear	Not Reported/Unclear		Cross-sectional
Shin 2003	Not Reported/Unclear	Not Reported/Unclear	(K) - OOH - 96.0 months (F) - OOH - 96.0 months	Cross-sectional
Sivright 2004	Not Reported/Unclear	First	(K) - OOH - 47.3 months (F) - OOH - 43.8 months	Cross-sectional
Smith 2002	Unlicensed	First	(K) - Placement - 13.4 months (F) - Placement - 5.5 months	Longitudinal - 2 - 3 years
Smith 2003	Not Reported/Unclear	Last		Longitudinal - 11 months
Sripathy 2004	Licensed	Not Reported/Unclear		Cross-sectional
Strijker 2003	Not Reported/Unclear	Not Reported/Unclear		Cross-sectional
Strijker 2008	Not Reported/Unclear	Not Reported/Unclear	(K) - Placement - 13.2 months	Longitudinal - 2.33 years

Table 2. Intervention Characteristics (Continued)

			(F) - Placement - 20.4 months	
Surbeck 2000	Not Reported/Unclear	Not Reported/Unclear	(K) - Placement - 22.9 months (F) - Placement - 27.0 months	Cross-sectional
Tarren-Sweeney 2006a	Not Reported/Unclear	Not Reported/Unclear		Cross-sectional
Tarren-Sweeney 2006b	Not Reported/Unclear	Not Reported/Unclear		Cross-sectional
Tarren-Sweeney 2008a	Not Reported/Unclear	Not Reported/Unclear		Cross-sectional
Tarren-Sweeney 2008b	Not Reported/Unclear	Not Reported/Unclear		Cross-sectional
Testa 1999	Not Reported/Unclear	Not Reported/Unclear		Longitudinal - 1 - 3 years
Testa 2001	Not Reported/Unclear	Not Reported/Unclear	(K) - OOH - 63.1 months (F) - OOH - 52.8 months	Longitudinal - up to 8 years
Timmer 2004	Not Reported/Unclear	Not Reported/Unclear		Cross-sectional
Tompkins 2003	Licensed and Unlicensed	Not Reported/Unclear	(K) - OOH - 31.3 months (F) - OOH - 31.0 months	Cross-sectional
USDHHS 2005	Not Reported/Unclear	First		Cross-sectional
Valicenti-McDermott 2008	Not Reported/Unclear	Not Reported/Unclear	(K) - Placement - 38.4 months (F) - Placement - 14.4 months (K) - OOH - 45.6 months (F) - OOH - 32.4 months	Cross-sectional
Villagrana 2008	Not Reported/Unclear	Not Reported/Unclear		Cross-sectional
Vogel 1999	Not Reported/Unclear	First	(K) - OOH - 18.8 months (F) - OOH - 13.8 months	Longitudinal - up to 2 years
Wells 1999	Not Reported/Unclear	First (Reunification) Last (re-entry)		Longitudinal - 3 years
Wilson 1999	Not Reported/Unclear	Not Reported/Unclear		Cross-sectional
Winokur 2008	Not Reported/Unclear	Last	(K) - OOH - 12 months (F) - OOH - 12 months	Longitudinal - 1 year

Table 2. Intervention Characteristics *(Continued)*

Zima 2000	Not Reported/Unclear	Not Reported/Unclear	Cross-sectional
Zimmerman 1998	Not Reported/Unclear	First	Cross-sectional
Zinn 2009	Not Reported/Unclear	Not Reported/Unclear	Longitudinal - 5 - 9 years
Zuravin 1993	Licensed	Not Reported/Unclear	Longitudinal - 5 years

OOH: out-of-home

Table 3. Outcome Measures

Study	Behavioural Development	Mental Health	Placement Stability	Permanency	Educational Attainment	Family Relations	Service Utilisation	Re-abuse
Akin 2011				Outcome categories: Reunification, Adoption, Guardianship. Measured using administrative database				
Barth 1994				Outcome categories: Adoption, Still in Placement. Measured using administrative database				
Belanger 2002	Outcome category: Adaptive behaviours (Continuous). Measured using standardised instrumentation - Vineland Adaptive Behaviour Scales	Outcome category: Psychiatric Disorders (Continuous). Measured using standardised instrumentation - Devereaux Scales of Mental Disorders	Outcome categories: Number of Placements (Continuous), Length of Stay (OOH Care). Measured using caregiver report					
Benedict 1996a								Outcome category: Institutional Abuse. Measured using ad-

ministrative
 database

Table 3. Outcome Measures (Continued)

Bennett 2000	Outcome categories: Behaviour Problems (Continuous), Adaptive behaviours (Continuous). Measured using standardised instrumentation - Child Behaviour Checklist; Vineland Adaptive Behaviour Scales			
Berger 2009	Outcome category: Behavioural Problems (Continuous). Measured using standardised instrumentation - Child Behaviour Checklist			
Berrick 1994	Outcome category: Length of Stay (Placement). Measured using caregiver report	Outcome category: Repeated a Grade. Measured using caregiver report	Outcome category: Mental Health Services. Measured using caregiver report	
Berrick 1997			Outcome category: Conflict (Continuous) Measured using standardized instrumentation - Index of Family Relations	

Table 3. Outcome Measures (Continued)

<p>Berrick 1999</p>		<p>Outcome category: Re-entry.</p> <p>Measured using administrative database</p>	<p>Outcome categories: Reunification, Adoption, Guardianship, Still in Placement.</p> <p>Measured using administrative database</p>
<p>Bilaver 1999</p>	<p>Outcome category: Psychiatric Disorders (Continuous).</p> <p>Measured using administrative database</p>		<p>Outcome categories: Mental Health Services, Physician Services, Developmental Services.</p> <p>Measured using administrative database</p>
<p>Brooks 1998</p>	<p>Outcome categories: Behaviour Problems (Continuous), Adaptive Behaviours (Continuous).</p> <p>Measured using standardised instrumentation - Behaviour Problem Index; Grow-Up Scale</p>	<p>Outcome category: Length of Stay (Placement).</p> <p>Measured using caregiver report</p>	<p>Outcome category: Repeated a Grade.</p> <p>Measured using caregiver report</p>
<p>Chamberlain 2006</p>		<p>Outcome category: Placement Disruption.</p> <p>Measured using caregiver report</p>	
<p>Chapman 2004</p>			<p>Outcome category: Attachment</p>

Table 3. Outcome Measures (Continued)

			(Continu- ous).	Measured using self re- port
Chew 1998			Outcome category: Attachment (Continu- ous).	Measured using stan- dardised in- strumen- tation - At- tachment Q-Sort; re- searcher ob- servation
Christopher 1998			Outcome category: Educational Attainment.	Measured using case records
Clyman 1998	Outcome category: Length of Stay (OOH Care).	Measured using care- giver report	Outcome categories: Mental Health Ser- vices, Physi- cian Ser- vices, Devel- opmental Services	Measured using stan- dardised in-

Table 3. Outcome Measures (Continued)

			strumentation - The Young Kids Early Services Assessments
Cole 2006	Outcome category: Length of Stay (Placement).	Measured using caregiver report and standardised instrumentation - Caregiver Interview Form	Outcome category: Attachment (Dichotomous). Measured using standardised instrumentation - Ainsworth Strange Situation Procedure; observational methods
Connell 2006a			Outcome categories: Reunification, Adoption. Measured using administrative database
Connell 2006b	Outcome category: Placement Disruption.	Measured using administrative database	
Courtney 1995	Outcome category: Re-entry.	Measured using administrative database	

Table 3. Outcome Measures (Continued)

Courtney 1996a			Outcome categories: Reunification, Adoption. Measured using administrative database
Courtney 1996b			Outcome categories: Reunification, Adoption. Measured using administrative database
Courtney 1997a		Outcome category: Re-entry. Measured using administrative database	Outcome category: Reunification. Measured using administrative database
Courtney 1997b		Outcome category: Number of Placements (Dichotomous). Measured using administrative database	
Davis 2005	Outcome category: Behaviour Problems (Continuous). Measured using standardised instrumentation - Youth Self-Report	Outcome categories: Number of Placements (Continuous), Length of Stay (Placement). Measured using case-worker report and case records	Outcome category: Attachment (Continuous). Measured using standardised instrumentation - Assessment Of

Interperson-
al Relations

Table 3. Outcome Measures (Continued)

<p>De Robertis 2004</p>	<p>Outcome category: Behaviour Problems (Dichotomous and Continuous).</p> <p>Measured using standardised instrumentation - Child behaviour Checklist; behavioural Intent Assessment</p>			
<p>Del Valle 2009</p>			<p>Outcome category: Placement Disruption.</p> <p>Measured using case records; caseworker interviews</p>	<p>Outcome categories: Reunification, Adoption.</p> <p>Measured using case records; caseworker interviews</p>
<p>Dunn 2010</p>		<p>Outcome category:</p> <p>Well-being (Dichotomous).</p> <p>Measured using standardised instrumentation - Foster Care Questionnaire</p>		
<p>Farmer 2010</p>				<p>Outcome category: Mental Health.</p> <p>Measured using standardised instrumentation - Child</p>

and Adolescent Services Assessment

Table 3. Outcome Measures (Continued)

Farruggia 2009		<p>Outcome category: Well-being (Continuous).</p> <p>Measured using standardised instrument - National Longitudinal Study of Adolescent Health</p>		
Ford 2007	<p>Outcome category: Behaviour Problems (Continuous).</p> <p>Measured using standardised instrument - Child Behaviour Checklist</p>	<p>Outcome category: Well-being (Continuous).</p> <p>Measured using standardised instrument - Self-perception Profile for Children</p>	<p>Outcome category: Repeated a grade.</p> <p>Measured using caregiver and self reports</p>	<p>Outcome category: Home Environment.</p> <p>Measured using standardised instrument - Elementary HOME Inventory</p>
Frame 2000			<p>Outcome category: Re-entry.</p> <p>Measured using case records</p>	
Frame 2002			<p>Outcome category: Re-entry.</p> <p>Measured using administrative database; caseworker report</p>	<p>Outcome categories: Reunification, Still in Placement.</p> <p>Measured using administrative database;</p>

Table 3. Outcome Measures (Continued)

				caseworker report	
Fuller 2005					Outcome category: Recurrence of Abuse. Measured using administrative database
Geenen 2006					Outcome categories: Graduation, Test Scores, GPA, Attendance. Measured using school records
Grogan-Kaylor 2000				Outcome category: Reunification. Measured using administrative database	
Harris 2003		Outcome category: Psychiatric Disorders (Dichotomous). Measured using caregiver report and caseworker report	Outcome category: Number of Placements (Dichotomous). Measured using caseworker report		

Table 3. Outcome Measures (Continued)

Helton 2010			Outcome category: Placement Disruption.		
			Measured using care-giver report		
Holtan 2005	Outcome categories: Behaviour Problems (Continuous), Adaptive Behaviours (Continuous).				
	Measured using standardised instrumentation - Child Behaviour Checklist				
Hurlburt 2010			Outcome category: Placement Disruption.		
			Measured using care-giver report		
Iglehart 1994	Outcome category: Behaviour Problems (Dichotomous).	Outcome category: Psychiatric Disorders (Dichotomous).		Outcome category: Grade Level.	
	Measured using caseworker report	Measured using caseworker report		Measured using caseworker report	
Iglehart 1995				Outcome category: Grade Level.	
				Measured using self report	
Jenkins 2002			Outcome category: Length of Stay (OOH Care).	Outcome category: Attachment (Dichotomous).	Outcome category: Mental Health Services.
			Measured using case records		

Table 3. Outcome Measures (Continued)

		Measured using case records	Measured using case records
Johnson 2005			
	Outcome category: Still in Placement.		
	Measured using administrative database		
Jones-Karena 1998	Outcome categories: Behaviour Problems (Continuous), Adaptive behaviours (Continuous).		
	Measured using standardised instrumentation - Child Behaviour Checklist; Vineland Adaptive Behaviour Scales.		
Jonson-Reid 2003	Outcome category: Re-entry.		Outcome category: Recurrence of Abuse.
	Measured using administrative database		Measured using administrative database
Keller 2010	Outcome category: Psychiatric Disorders (Dichotomous).		
	Measured using standardised instrument - Composite International Diag-		

Table 3. Outcome Measures (Continued)

		nostic Inter- view	
Koh 2008a		Outcome categories: Number of Placements (Dichotomous), Length of Stay (OOH), Place- ment Disruption, Re- entry. Measured using ad- ministrative database (AFCARS)	Outcome cate- gories: Reuni- fication, Adop- tion, Guardian- ship. Measured using administrative database (AF- CARS)
Koh 2008b		Outcome category: Placement Disruption. Measured using ad- ministrative database (AFCARS)	Outcome cate- gories: Reuni- fication, Adop- tion, Guardian- ship. Measured using administrative database (AF- CARS)
Koh 2009		Outcome category: Placement Disruption. Measured using ad- ministrative database (AFCARS)	
Landsverk 1996	Outcome category: Behaviour Problems (Continuous) Measured using standardised instrumentation - Child Be- haviour Checklist		
Lawler 2008	Outcome category: Behaviour Problems (Continuous). Measured using standardised instrument - Child Behaviour Checklist		Outcome category: Emotional Availabili- ty (Continu- ous).

Table 3. Outcome Measures (Continued)

			Measured using standardised instrument - Emotional Availability Scales
Lernihan 2006	Outcome category: Length of Stay (Placement). Measured using administrative database		
Leslie 2000a		Outcome category: Mental Health Services. Measured using administrative database; case records	
Linares 2010	Outcome category: Behavioural Problems (Continuous). Measured using standardised instrument - Child Behaviour Checklist		
Lutman 2009		Outcome category: Still in Placement. Measured using case records	
McCarthy 2007	Outcome category: Behaviour problems (Dichotomous). Measured using standardised instrument - Behavioural As-		

Table 3. Outcome Measures *(Continued)*
Assessment Scoring System for
Children

<p>McIntosh 2002</p>		<p>Outcome category: Reunification.</p> <p>Measured using administrative database</p>
<p>McMillen 2004</p>		<p>Outcome category: Mental Health Services.</p> <p>Measured using self report</p>
<p>McMillen 2005</p>		<p>Outcome category: Psychiatric Disorders (Dichotomous).</p> <p>Measured using standardised instrumentation - DSM-IV; self report</p>
<p>Mennen 2010</p>	<p>Outcome category: Behaviour Problems (Continuous).</p> <p>Measured using standardised instruments - Child Behaviour Checklist; Youth Self Report</p>	<p>Outcome categories: Psychiatric Disorders, Well-being (Continuous).</p> <p>Measured using standardised instruments:</p>

Table 3. Outcome Measures (Continued)

		Columbia Impairment Scale; Self Perception Profile of Adolescents			
Metzger 1997	Outcome category: Behavioural Problems (Continuous). Measured using standardised instrumentation - The Festinger Scales/Rating of Behavioural Reactions; caseworker report	Outcome category: Well-Being (Continuous). Measured using standardised instrumentation - Personal Attribute Inventory for Children	Outcome categories: Number of Placements (Dichotomous), Length of Stay (Placement). Measured using caseworker report; case records	Outcome category: Repeated a Grade. Measured using caseworker report; case records	Outcome category: Mental Health Services. Measured using caseworker report; case records
Metzger 2008	Outcome category: Behaviour Problems (Continuous). Measured using standardised instrument - Festinger Rating of Behavioural Reactions Scale			Outcome category: Attachment (Continuous). Measured using standardised instrument - Kansas Parental Satisfaction Scale	
Mosek 2001		Outcome category: Well-Being (Continuous). Measured using standardised instrumentation		Outcome category: Attachment (Dichotomous). Measured using self report	

Table 3. Outcome Measures (Continued)

		- Offer Self-Image Questionnaire	
Orgel 2007	Outcome category: behaviour problems (Continuous) Measured using standardised instrument - Child Behaviour Checklist		Outcome category: Attachment (Dichotomous) Measured using standardised instrument - Relationship Story Completion Test
Pabustan-Claar 2007a		Outcome category: Number of Placements (Dichotomous). Measured using administrative database	Outcome categories: Reunification, Adoption, Guardianship. Measured using administrative database
Palacios 2009	Outcome category: Behaviour Problems (Continuous) Measured using standardised instrument - Strength and Difficulties Questionnaire	Outcome category - Well-being Measured using standardised instrument - Child Well-being Scales	
Ringeisen 2009	Outcome category: Behaviour Problems (Dichotomous), Adaptive Behaviours (Dichotomous). Measured using standardised instrument - Child Behaviour		Outcome categories: Mental Health Services, Developmental Services.

Table 3. Outcome Measures (Continued)

	Checklist; Vineland Adaptive Behaviour Scale				Measured using Child and Adolescent Services Assessment
Rubin 2008	Outcome category: Behaviour Problems (Dichotomous). Measured using Child Behaviour Checklist		Outcome category: Placement Disruption. Measured using administrative database		
Rudenberg 1991	Outcome category: Behaviour Problems (Continuous). Measured using caregiver report and standardised instrumentation - Child Behaviour Checklist				
Ryan 2010a	Outcome category: Behaviour Problems (Dichotomous). Measured using administrative database		Outcome categories: Placement Settings; Length of Stay (Placement). Measured using administrative database		
Sakai 2011	Outcome category: Behavioural Problems (Continuous). Measured using Child Behaviour Checklist	Outcome Category: Psychiatric disorders - Depression & PTSD (Dichotomous). Measured using Child Depression Inventory; Trauma Symptoms Checklist for Children	Outcome categories: Number of Placements, Length of Stay (OOH Care). Measured using caseworker report	Outcome category: Still in Placement. Measured using caseworker report	Outcome categories: Mental Health Service Utilisation and Physician Service Utilisation. Measured using caregiver report

Table 3. Outcome Measures (Continued)

<p>Sallnas 2004</p>	<p>Outcome category: Placement Disruption.</p> <p>Measured using case records; caseworker report</p>	
<p>Scanna- pieco 1997</p>	<p>Outcome category: Length of Stay (OOH Care).</p> <p>Measured using case records</p>	<p>Outcome categories: Mental Health Services, Physician Services.</p> <p>Measured using case records</p>
<p>Schneiderman 2010</p>		<p>Outcome category: Physician Services.</p> <p>Measured using caregiver report</p>
<p>Shin 2003</p>		<p>Outcome category: Grade Level.</p> <p>Measured using standardised instrumentation - Wide Range Achievement Test/ Revised (WRAT-R)</p>

Table 3. Outcome Measures (Continued)

Sivright 2004		Outcome category: Length of Stay (OOH Care). Measured using case records	Outcome cat- egory: Still in Placement. Measured us- ing case records	Outcome catego- ry: Mental Health Ser- vices. Measured using case records
Smith 2002			Outcome cate- gories: Reuni- fication, Adop- tion, Still in Placement. Measured us- ing administra- tive database; caseworker re- port	
Smith 2003			Outcome cat- egory: Still in Placement. Measured us- ing administra- tive database	
Sripathy 2004	Outcome categories: Behav- iour Problems (Continuous), Adaptive Problems (Continu- ous). Measured using standardised instrumentation - Child Be- haviour Checklist (CBCL)		Outcome category: Repeated a Grade. Measured using care- giver report	Outcome catego- ry: Mental Health Ser- vices. Measured using care- giver report
Strijker 2003	Outcome category: Behaviour Problems (Continuous). Measured using standardised instrumentation - Child Be-			Outcome category: Attachment (Continu- ous).

Table 3. Outcome Measures (Continued)
haviour Checklist 4-18 (CB-CL/4-18)

				Measured using standardized instrumentation - Attachment Scale
Strijker 2008		Outcome categories: Number of Placements (Continuous), Length Stay (Placement), Placement Disruption.	Measured using case records	
Surbeck 2000	Outcome categories: Behaviour Problems (Continuous), Adaptive Behaviours (Continuous).	Outcome category: Length of Stay (Placement).	Measured using case records	Outcome category: Attachment (Continuous). Measured using case records
Tarren-Sweeney 2006a	Outcome categories: Behaviour Problems (Continuous), Adaptive Behaviours (Continuous).		Measured using standardised instrumentation - Child Behaviour Checklist	
Tarren-Sweeney 2006b		Outcome category: Psychiatric Disorder (Continuous)	Measured using caregiver report	

Table 3. Outcome Measures (Continued)

<p>Tar- ren-Sweeney 2008a</p>	<p>Outcome category: Behaviour Problems (Continuous). Measured using standardised instrument - Child Behaviour Checklist</p>	<p>Outcome category: Well-being (Continuous). Measured using standardised instrument - Assessment Checklist for Children</p>	<p>Outcome category: Placement Disruption. Measured using administrative database</p>
<p>Tar- ren-Sweeney 2008b</p>	<p>Outcome category: Behaviour Problems (Dichotomous). Measured using standardised instrument - Assessment Checklist for Children</p>		
<p>Testa 1999</p>			<p>Outcome categories: Reunification, Adoption, Guardianship. Measured using administrative database</p>
<p>Testa 2001</p>		<p>Outcome category: Placement Disruption. Measured using administrative database; caregiver report</p>	<p>Outcome categories: Adoption, Guardianship. Measured using administrative database; caregiver report</p>
<p>Timmer 2004</p>	<p>Outcome category: Behaviour Problems (Continuous).</p>		

Table 3. Outcome Measures (Continued)
Measured using standardised instrumentation - Child Behaviour Checklist

<p>Tompkins 2003</p>	<p>Outcome category: Well-Being (Dichotomous). Measured using caseworker report</p>	<p>Outcome category: Length of Stay (OOH Care). Measured using caseworker report</p>		<p>Outcome categories: Mental Health Services, Physician Services. Measured using caseworker report</p>		
<p>USDHHS 2005</p>				<p>Outcome category: Attachment. Measured using self report</p>		
<p>Valicenti-McDer-mott 2008</p>	<p>Outcome category: Behaviour problems (Dichotomous). Measured using case records</p>	<p>Outcome categories: Psychiatric Disorders (Dichotomous), Well-being (Continuous). Measured using standardised instrument - Children's Global Assessment Scale; DSM-IV</p>	<p>Outcome categories: Number of Placements (Continuous) , Length of Stay (Placement). Measured using case records</p>	<p>Outcome categories: Reunification, adoption. Measured using case records</p>	<p>Outcome category: Repeated a grade. Measured using case records</p>	<p>Outcome category: Physician Services. Measured using case records</p>
<p>Villagrana 2008</p>	<p>Outcome categories: Behaviour Problems (Continuous), Adaptive Behaviours (Continuous).</p>					<p>Outcome category: Mental Health Services.</p>

Table 3. Outcome Measures *(Continued)*
Measured using standardised instrument - Child Behaviour Checklist

Measured using Children and Adolescent Services Assessment

Vogel 1999	Outcome category: Length of Stay (OOH Care).	Measured using administrative database		
Wells 1999	Outcome category: Re-entry.	Measured using administrative database	Outcome category: Reunification.	Measured using administrative database
Wilson 1999	Outcome category: Well-Being (Dichotomous).	Measured using self report		
Winokur 2008	Outcome categories: Number of Placements (Continuous), Length of Stay (OOH Care), Re-entry.	Measured using administrative database	Outcome categories: Reunification, Adoption, Guardianship, Still in Placement.	Measured using administrative database
Zima 2000	Outcome categories: Behaviour Problems (Continuous), Adaptive Behaviours (Continuous).		Outcome category: Repeated a Grade.	

Table 3. Outcome Measures (Continued)

Measured using standardised instrumentation - Child Behaviour Checklist		Measured using care-giver report
Zimmerman 1998	<p>Outcome category: Number of Placements (Dichotomous), Length of Stay (OOH), Re-entry.</p> <p>Measured using administrative database and case records</p>	<p>Outcome category: Reunification.</p> <p>Measured using administrative database and case records</p>
Zinn 2009		<p>Outcome categories: Reunification, Adoption.</p> <p>Measured using administrative database</p>
Zuravin 1993		<p>Outcome category: Institutional Abuse.</p> <p>Measured using administrative database</p>

AFCARS: Adoption and Foster Care Analysis and Reporting System

GPA: Grade point average

OOH: out-of-home

PTSD: Post-traumatic Stress Disorder

Table 4. Outcomes for Studies with Multivariate Analysis

Study	Outcome	Results
Akin 2011	Reunification, Adoption	1. When all other variables are held constant, children whose initial placement was in family foster care were less likely to exit to reunification than children initially placed in kinship care (HR = 0.76, P = 0.002). 2. When all other variables are held constant, children whose initial placement was in family foster care were more likely to exit to adoption than children initially placed in kinship care (HR = 2.25, P = 0.004).
Barth 1994	Adoption	1. Initial placement in a kinship home decreases the odds of adoption by 50 percent (OR = 0.50)
Belanger 2002	Adaptive Behaviours, Psychiatric Disorders	1. The interaction of type of placement, home index, and temperament match did not account for more of the variance in VABS and DSMD scores than did type of placement alone.
Benedict 1996a	Institutional Abuse	1. Placement in foster care increases the likelihood of association with maltreatment by 4.4 times.
Bennett 2000	Behaviour Problems, Adaptive Behaviours	1. Children in kinship placements (unstandardised beta = -5.596) were significantly less likely to be rated as exhibiting externalising behaviours (CBCL scale). 2. Data did not indicate a statistically significant relationship between type of placement (unstandardised beta for kinship care = -3.962) and ratings of internalising behaviours (CBCL scale). 3. Kinship placements (unstandardised beta = 11.834) associated with higher scores on the adaptive composite scale of the VABS.
Berger 2009	Behaviour Problems	1. Time spent in non-kinship foster care homes was associated with decreased externalising behaviour problems.
Berrick 1999	Reunification, Still in Placement, Re-entry	1. Children in kinship care (AFDC subset) 2% (OR = 1.02) more likely to be reunified than children in non-kin foster care (within 4 years of placement). 2. Over 4 years of placement, non-kinship foster care group less likely to still be in care compared to kinship foster care group. 3. Over 4 years of placement, non-kinship foster care group more likely to re-enter care compared to kinship foster care group.
Brooks 1998	Adaptive Behaviours	1. Kinship foster care group significantly more likely than those from non-relative foster care group to demonstrate pro-social behaviours.
Chamberlain 2006	Placement Disruption	1. Placement in a non-kin foster home significantly increased the risk of placement disruption by a factor of just over 3 (RR = 3.18).
Clyman 1998	Mental Health, Physi- can, and Developmen- tal Services	1. Children in foster care had significantly higher rates of mental health service utilisation. 2. Children in foster care did not have significantly higher rates of physician and developmental service utilisation.
Connell 2006a	Reunification, Adoption	1. Children placed in a non-relative foster care home (RR = 1.16) experienced significantly higher rates of reunification than children in relative foster homes. 2. No significant difference between children in relative foster homes and children in non-relative foster homes (RR = 1.00) on the probability of exiting care by adoption.

Table 4. Outcomes for Studies with Multivariate Analysis (Continued)

Connell 2006b	Placement Disruption	1. Children placed in non-relative foster care (RR = 3.18) have statistically significant higher rates of changes in placement than children in relative foster care.
Courtney 1995	Re-entry	1. Children returned home after leaving kinship care placements (RR = 0.69) re-entered care at a significantly lower rate than those discharged from foster home placements.
Courtney 1996a	Reunification, Adoption	1. Placement with kin (OR = 1.90) at the time of final discharge from foster care significantly improved the odds of returning home or being adopted over unsuccessful discharge.
Courtney 1996b	Reunification, Adoption	1. Placement in kinship home associated with lowered hazards of both reunification (RR = 0.82) and adoption (RR = 0.49) as compared to foster home placements.
Courtney 1997a	Re-entry, Reunification	1. No significant difference in rates of reunification based on child's initial placement in foster home vs kinship home. 2. Children whose last placement was in kinship care (beta = -0.395) are significantly less likely to return to care than are children from foster care (beta = -0.086).
Davis 2005	Relatedness	1. Type of placement not found to be predictor of relationship with caregiver.
De Robertis 2004	Behaviour Problems	1. Kinship status did not contribute significantly to the prediction off aggressive responses (CBCL - OR = 0.65, P = 0.560; BIA - OR -1.34, P = 0.510)
Farmer 2010	Mental Health Services	1. Increased likelihood of any mental health service use for non-relative foster care placement (OR = 1.94) than for kinship care (OR = 1.08).
Ford 2007	Well-being	1. Type of placement not significant predictor of global self worth.
Frame 2000	Re-entry	1.Children placed with kin (OR = 0.19 to 0.25) just prior to reunification were about 80% less likely to re-enter care than those whose last placement was with non-kin.
Frame 2002	Re-entry, Reunification, Still in Placement	1. Type of placement not found to have statistically significant relationship with reunification 2. Type of first placement not significantly associated with re-entry. 3. No difference found for those children still in care based on type of first placement.
Fuller 2005	Recurrence of Abuse	1. Children whose initial placement was in kinship foster care (OR = 9.60), and whose initial placement was family foster care (OR = 2.40) were more likely to experience maltreatment recurrence, within 60 days of reunification, than those whose initial placement was a group home/institution; thus, children whose initial placement was in kinship foster care were 4 times more likely to experience maltreatment recurrence, within 60 days of reunification, than those whose initial placement was family foster care.
Grogan-Kaylor 2000	Reunification	1. Placement into kinship foster home (RR = 1.06) compared to foster home with non-relatives increased the probability that a child would be reunified from foster care (1998 to 1995 cohort).
Helton 2010	Placement Disruption	1. Living with a kin caregiver decreased the odds of disruption 0.16 times compared to living with a non-kin caregiver.

Table 4. Outcomes for Studies with Multivariate Analysis (Continued)

Holtan 2005	Behaviour Problems	1. Non-kinship placement (OR = 1.90) significantly associated with scoring within the borderline range on CBCL Total Problems scale.
Hurlburt 2010	Placement Disruption	1. Children living with non-relative foster parents had 3 times the odds of experiencing a negative placement disruption as children living with kin foster parents.
Johnson 2005	Still in Placement	1. Interaction terms such as child's initial placement were nonsignificant predictors of permanency within 15 months after entering out-of-home care.
Jonson-Reid 2003	Recurrence of Abuse, Re-entry	1. Children who exited from care following placement with kin (RR = 0.82) were significantly less likely than children who exited from foster care to return for a subsequent report. 2. Child's final placement with kin (RR = 0.66) associated with decrease in risk of re-entry.
Koh 2008a	Placement Disruption, Number of Placements, Length of Stay (OOH Care), Reentry, Guardianship, Adoption, Reunification, Still in Placement	1. Children in relative foster care were less likely to experience initial placement disruption than those in non-relative foster care. 2. Children in relative foster care were less likely to experience 3 or more placements within a year of entry than those in non-relative foster care. 3. The findings were mixed for length of OOH stay with children in relative foster homes reported to stay longer in care in 3 states and shorter in 3 states. 4. The findings were mixed for re-entry with children in relative foster homes more likely to re-enter care in 1 state, less likely to re-enter in 2 states, and as likely to re-enter in 1 state. 5. The findings were mixed for guardianship, with children in relative foster care having a higher likelihood of guardianship in 5 states and a similar likelihood in 1 state. 6. The findings were mixed for adoption, with children in non-relative foster care having a higher likelihood of adoption in 4 states and a lower likelihood in 2 states. 7. The findings were mixed for reunification, with children in relative foster care having a higher likelihood of reunification in 3 states and a lower likelihood in 3 states. 8. The findings were mixed for still in placement, with children in relative foster care more likely to remain in care in 3 states and less likely to remain in care in 3 states.
Koh 2009	Placement Disruption	1. Children in kinship foster homes were more likely to remain in their initial placement with kin than children initially placed in non-kinship foster homes.
Lawler 2008	Emotional Availability	1. The model's ability to predict emotional availability was not improved by the addition of the kin status of foster mothers.
Leslie 2000a	Mental Health Service Utilisation	1. Children placed in non-relative foster care had significantly higher numbers of outpatient mental health visits compared to those residing in kin only (rate estimate = 0.57).
Linares 2010	Behaviour Problems	1. Type of foster parent did not contribute to child internalising or externalising behaviour.

Table 4. Outcomes for Studies with Multivariate Analysis (Continued)

McMillen 2004	Mental Health Service Utilisation	1. Kinship care significantly associated with current outpatient therapy services; children in kinship care (OR = 0.39) less likely to utilise outpatient therapy services than non-kin foster care.
McMillen 2005	Psychiatric Disorders	1. No significant differences in rates of past year psychiatric disorders (any disorder) based on living situation (kinship care (OR = 0.87) vs non-kin family foster care).
Mennen 2010	Behaviour Problems, Well-being	1. In no instance did the maltreated children differ from each other by placement type for behaviour problems. 2. In no instance did the maltreated children differ from each other by placement type for well-being.
Metzger 1997	Well-being	1. Placement type remained the strongest variable in explaining the variability in child well-being as measured by the Personal Attribute Inventory for Children.
Rubin 2008	Behaviour Problems	1. Controlling for placement stability, baseline risk, and reunification status at 18 and 36 months, children in early kinship care had lower marginal probability of behavioural problems by 36 months. The estimate of behavioural problems was 46% if all children had been assigned to general foster care only, compared with 32% if the children had been assigned to early kinship care.
Sakai 2011	Behaviour Problems, Psychiatric Disorders, Mental Health Services	1. Kinship care compared to foster care was associated with a lower risk of continuing behavioural problems (RR = 0.59). 2. Kinship care compared to foster care was associated with a lower risk of prevalence of depression (RR = 0.73), but was associated with a higher risk of prevalence of PTSD (RR = 1.42) 3. Kinship care compared to foster care was associated with a lower risk of mental health therapy use (RR = 0.45).
Schneiderman 2010	Physician Services	1. Although the reference group was birth parents, children in kinship care had an OR = 1.41 for physician services as compared to children in foster care OR = 0.45.
Shin 2003	Test Scores	1. Adolescents placed in relative foster care (beta = 0.24) showed significantly higher scores on reading skills than those in non-kin foster care.
Smith 2003	Still in Care	1. Compared to children in adoptive placements, children in kinship care placements were 72% less likely (HR = 0.28) to exit care, children in non-relative placements were 52% less likely (HR = .48) to exit and children in institutional or other placement types were 59% less likely (HR = .41) to exit care; thus, children in non-relative placement are 1.7% more likely to exit care than children in kinship placement.
Surbeck 2000	Behaviour Problems	1. The difference in behaviour problems by placement type was not maintained when other determinants of child behaviour were included in the specification of the model.
Tarren-Sweeney 2006b	Psychiatric Disorders	1. Residing in kinship care did not contribute significantly to the prediction of psychiatric disorders (P = 0.180).
Tarren-Sweeney 2008a	Behaviour Problems, Well-being	1. Type of care did not contribute significantly to the prediction of behaviour problem scores (P = 0.290).

Table 4. Outcomes for Studies with Multivariate Analysis (Continued)

		2. Type of care did not contribute significantly to the prediction of well-being scores ($P = 0.170$).
Tarren-Sweeney 2008b	Behaviour Problems	1. Type of care did not contribute significantly to the prediction of sexual behaviour problems ($P = 0.240$).
Testa 2001	Placement Disruption	1. At placement start, kinship care is 86% to 82% less prone to disruption than non-related foster care (cohort samples); placement with relatives 67% less likely to disrupt from the start than placements into non-related foster homes (matched cross-sectional sample).
USDHHS 2005	Attachment	1. Children in kinship foster care reported higher levels of agreement than did children in foster care for "like who they are living with" (97% to 91%) and "feel like part of the family" (95% to 90%).
Vogel 1999	Length of Stay (Placement)	1. Children in caretaker placements ($\beta = -1.22$) spent significantly more time in care than their counterparts.
Wells 1999	Re-entry, Reunification	1. Rate of reunification did not differ between children placed in kinship and non-relative family foster care ($RR = 0.94$). 2. Children in non-relative foster care ($RR = 3.26$) re-entered at rate 226% faster than children whose last placement was kinship foster care.
Zima 2000	Behaviour Problems, Adaptive behaviours, Educational Attainment	1. No significant difference between non-kinship family foster home and kinship family foster home on CBCL Total Problems or Total Competence scale. 2. No significant difference between non-kinship family foster home and kinship family foster home on measure of educational attainment.
Zimmerman 1998	Reunification	1. Type of placement not directly related to likelihood of family reunification (kinship placement $HR = 1.07$).
Zuravin 1993	Institutional Abuse	1. Regular care homes were 2.7 times (OR) more likely to have confirmed report of maltreatment than were kinship homes.

AFDC: Aid to Families with Dependent Children

BIA: Behavioural Influences Analysis

CBCL: Child Behaviour Checklist

DSMD: Devereux Scales of Mental Disorder

OOH: Out-of-home

VABS: Vineland Adaptive Behaviour Scales

Table 5. Outcomes for Studies with Bivariate Analysis

Study	Outcomes	Results
Berrick 1994	Behaviour Problems	1. Children in kinship care had a lower mean total score on the Behaviour Problems Index (BPI) than children in foster care.
De Robertis 2004	Behaviour Problems	1. No significant differences on CBCL aggressive behaviours were found between kinship ($M = 9.83$) and non-kinship ($M = 10.49$) groups.
Geenen 2006	Educational Attainment	1. Students placed in non-relative foster care had significantly higher cumulative GPA and a greater number of cumulative earned credits toward graduation than students placed in relative or kinship foster care. No other differences were found for type of placement on the academic variables of number

Table 5. Outcomes for Studies with Bivariate Analysis (Continued)

		of days absent, number of grades retained, and performance on standardised state testing in maths and reading.
Helton 2010	Placement Disruption	1. A significantly greater proportion of disrupted children were living with a non-kin caregiver at baseline compared to the stable group.
Landsverk 1996	Behaviour Problems	1. Differences between 2 groups not statistically different on CBCL.
Lernihan 2006	Length of Stay (Placement)	1. No significant differences in the length of time in placement for the kinship foster care and traditional foster care groups.
Metzger 1997	Length of Stay (Placement)	1. Children placed in traditional foster homes (M = 78 months) had longer lengths of stay than children placed in kinship foster homes (M = 74 months).
Metzger 2008	Behaviour Problems, Attachment	1. Kinship foster children showed significantly better ratings of behavioural reaction than family foster children (P = 0.017). 2. Kinship foster parents had significantly greater satisfaction with their relationships with the children than the family foster parents (P = 0.039).
Mosek 2001	Well-being	1. The self concept of adolescents growing up with kin foster families is higher than the self concept of adolescents in non-relative care.
Palacios 2009	Well-being, Behaviour Problems	1. Higher scores were obtained from non-relative carers than relative carers in relation to meeting basic needs and educational supervision on the Child Well-being Scales. 2. Those in unrelated foster care were almost all the ones who received the highest behaviour problem scores according to carers, while there was no difference in behaviour problems linked to the type of foster care according to teachers.
Sakai 2011	Length of Stay (OOH)	1. There was no significant difference in length of stay (P = 0.42) between children placed initially in kinship care (M = 791 days) and children initially placed in foster care (M = 588 days).
Scannapieco 1997	Length of Stay (Placement)	1. Children in kinship care differ significantly from children in traditional foster care on length of time in care, with kinship care reporting significantly higher lengths of placement.
Sripathy 2004	Behaviour Problems, Adaptive Behaviours	1. No significant differences found between the two types of care (kinship and non-kinship children) on CBCL Total Problems and Total Competence scales.
Strijker 2008	Placement Disruption	1. No significant difference between the number of placement disruptions in foster family care and kinship foster care.
Tarren-Sweeney 2008a	Placement Disruption, Behaviour Problems, Well-being	1. Placement disruption did not vary according to whether children presently resided in foster or kinship care 2. Children in foster care had higher scores on the CBCL (more behaviour problems) than children in kinship care (P = 0.007). 3. Children in foster care had higher scores on well-being than children in kinship care (P = 0.010).
Tarren-Sweeney 2008b	Behaviour Problems	1. Type of placement was not associated with sexual behaviour problems scores.

Table 5. Outcomes for Studies with Bivariate Analysis (Continued)

USDHHS 2005	Attachment	1. Children in kinship foster care reported higher levels of agreement than did children in foster care for "like who they are living with" (97% to 91%) and "feel like part of the family" (95% to 90%).
Valicenti-McDermott 2008	Behaviour Problems, Psychiatric Disorders, Number of Placements, Well-being	1. Behavioural problems did not vary between children according to their placement. 2. Psychiatric disorders did not vary between children according to their placement. 3. The foster care groups had a mean of 2 placements while the kinship group had a mean of 1 placement. 4. There was no difference in well-being scores between the 2 groups.
Zimmerman 1998	Length of Stay (OOH), Re-entry	1. Children in non-kinship foster placements had a much shorter median length of stay than children in kinship placements. 2. No significant difference in re-entry rates between children who were only in non-kinship foster placements and children in kinship care.
Zinn 2009	Reunification, Adoption	1. Estimated rates of reunification were not found to be significantly different for children placed with kinship foster families than for children placed with non-relative foster families (HR = 1.03). 2. Estimated rates of adoption were not found to be significantly different for children placed with kinship foster families than for children placed with non-relative foster families (HR = 1.09).

CBCL: Child Behaviour Checklist

GPA: Grade point average

HR: hazard ratio

OOH: Out-of-home

M: mean

Table 6. Methods for Future Updates

Section	Methods
Search Strategy	Search Child Welfare Information Gateway, National Data Archive on Child Abuse and Neglect, and System for Information on Grey Literature in Europe (OpenSIGLE).
Search Strategy	Search the websites of international child welfare organizations, University libraries, and State departments to identify governmental and non-governmental reports and texts.
Selection of Trials	If we cannot reach a consensus regarding future selection decisions through discussion with a third reviewer, we will resolve it by appeal to external advisers.
Sensitivity Analyses	Should sufficient data exist, we will analyse the following planned comparisons: Studies that use matching or covariates will be compared to studies that do not control for confounders. Studies with outcomes measured by caregiver or teacher reports will be compared to studies with outcomes measured by self reports. Studies with low risk of attrition will be compared to studies with high risk of attrition.
Subgroup Analyses	Should sufficient data exist, we will generate subgroup analyses to examine different effects of the intervention (if any) by gender, ethnicity, and age at placement.

APPENDICES

Appendix 1. Search strategies for updated review (2011)

Cochrane Central Register of Controlled Trials (CENTRAL), 2011 (1), part of the Cochrane Library, last searched 14 March 2011

#1MeSH descriptor Foster Home Care, this term only
 #2((kin or kinship) NEAR/3 (care* or caring))
 #3((kin or kinship) NEAR/3 foster*)
 #4((kin or kinship) NEAR/3 placement*)
 #5((family or families) NEAR/3 foster*)
 #6((family or families) NEAR/3 placement*)
 #7((family or families) NEAR/3 substitute*)
 #8(relative* NEAR/3 substitute*)
 #9(relative* NEAR/3 foster*)
 #10 (custodial NEXT grandparent*)
 #11(#1 OR #2 OR #3 OR #4 OR #5 OR #6 OR #7 OR #8 OR #9 OR #10)
 #12MeSH descriptor Adolescent explode all trees
 #13MeSH descriptor Infant explode all trees
 #14child near "MESH check words"
 #15(child* or girl* or boy* or adolescen* or teen* or baby or babies or infant* or preschool* or pre NEXT school* or preteen* OR pre NEXT teen* OR young NEXT person* or young NEXT people)
 #16(#12 OR #13 OR #14 OR #15)
 #17(#11 AND #16)

Ovid MEDLINE(R), 1948 to March Week 1 2011, last searched 14 March 2011

1 foster home care/
 2 ((kin or kinship) adj3 (care\$ or caring)).tw.
 3 ((kin or kinship) adj3 foster\$).tw.
 4 ((kin or kinship) adj3 placement\$).tw.
 5 ((family or families) adj3 foster\$).tw.
 6 ((family or families) adj3 placement\$).tw.
 7 ((family or families) adj3 substitute\$).tw.
 8 (relative\$ adj3 substitute\$).tw.
 9 (relative\$ adj3 foster\$).tw.
 10 custodial grandparent\$.tw.
 11 Infant/
 12 exp Child/
 13 adolescent/
 14 (baby or babies or infant\$ or toddler\$ or PRESCHOOL\$ or PRE-SCHOOL\$ or CHILD\$ or BOY\$ or GIRL\$ or preteen or teen\$ or adolescen\$ or youth\$ or young person\$ or young people).tw.
 15 or/11-14
 16 or/1-10
 17 15 and 16

CINAHLPlus (EBSCOhost), 1937 to current, last searched 14 March 2011

S18 S12 and S17
 S17 S13 or S14 or S15 or S16
 S16 AG ADOLESCENT
 S15 AG CHILD
 S14 AG INFANT
 S13 (baby or babies or infant* or toddler* or PRESCHOOL* or PRE-SCHOOL* or CHILD* or BOY* or GIRL* or preteen* or teen* or adolescen* or youth* or young person* or young people)
 S12 S1 or S2 or S3 or S4 or S5 or S6 or S7 or S8 or S9 or S10 or S11
 S11 custodial grandparent*
 S10 (relative* N3 foster*) or (relative* N3 substitute*)
 S9 (family N3 substitute*) or (families N3 substitute*)

S8 (family N3 placement*) or (families N3 placement*)
 S7 (family N3 substitute*) or (families N3 substitute*)
 S6 (family N3 foster*) or (families N3 foster*)
 S5 (kin N3 placement*) or (kinship N3 placement*)
 S4 (kin N3 foster*) or (kinship N3 foster*)
 S3 (KINSHIP N3 CARE*) OR (KINSHIP N3 CARING)
 S2 (kin N3 care*) or (kin N3 caring) .
 S1 ((MH "Foster Home Care") OR (MH "Foster Parents") OR (MH "Child, Foster") OR (MH "Foster Home Care")) AND ((MH "Family Relations") OR (MH "Extended Family"))

PsycINFO (EBSCOhost), 1887 to current, last searched 14 March 2011

S18 S13 and S17
 S17 S14 or S15 or S16
 S16 AG Adolescence
 S15 AG childhood
 S14 (baby or babies or infant* or toddler* or PRESCHOOL* or PRE-SCHOOL* or CHILD* or BOY* or GIRL* or preteen* or teen* or adolescen* or youth* or young person* or young people)
 S13 S3 or S4 or S5 or S6 or S7 or S8 or S9 or S10 or S11 or S12
 S12 custodial grandparent*
 S11 (relative* N3 foster*) or (relative* N3 substitute*)
 S10 (family N3 placement*) or (families N3 placement*)
 S9 (family N3 substitute*) or (families N3 substitute*)
 S8 (family N3 foster*) or (families N3 foster*)
 S7 (kin N3 placement*) or (kinship N3 placement*)
 S6 (kin N3 foster*) or (kinship N3 foster*)
 S5 (KINSHIP N3 CARE*) OR (KINSHIP N3 CARING)
 S4 (kin N3 care*) or (kin N3 caring)
 S3 S1 and S2
 S2 (DE "Kinship") OR (DE "Family Members")
 S1 DE "Foster Care" OR DE "Foster Children" OR DE "Foster Parents"

ERIC (Cambridge Scientific Abstracts - CSA), 1966 to current , last searched 14 March 2011

(((DE=("grandparents raising grandchildren")) or(DE=("family sociological unit" or "family relationship"))) and(DE=("foster care")))
 or((((relative* within 3 foster*) or (relative* within 3 substitute) or (family within 3 foster*)) or ((families within 3 foster*) or (family within 3 substitute) or (families within 3 substitute)) or ((kin within 3 care*) or (kinship within 3 care*) or (kin within 3 caring)) or (kinship within 3 caring)) or((kin within 3 placement*)or (kinship within 3 placement*)or (family within 3 placement*)or (families within 3 placement*)or (custodial grandparent*))) and((DE=("children" or "infants" or "adolescents")) or (child* or girl* or boy* or adolescen* or preteen* or teen* or baby or babies or infant* or preschool* or pre school* or (young person*) or (young people) or youth*))

Sociological Abstracts (Cambridge Scientific Abstracts - CSA), 1952 to current, last searched 14 March 2011

((DE=("foster care" and "kinship")) or(((relative* within 3 foster*) or (relative* within 3 substitute) or (family within 3 foster*)) or ((families within 3 foster*) or (family within 3 substitute) or (families within 3 substitute)) or ((kin within 3 care*) or (kinship within 3 care*) or (kin within 3 caring)) or (kinship within 3 caring)) or((kin within 3 placement*)or (kinship within 3 placement*)or (family within 3 placement*)or (families within 3 placement*)or (custodial grandparent*))) and((DE=("children" or "infants" or "adolescents")) or (child* or girl* or boy* or adolescen* or preteen* or teen* or baby or babies or infant* or preschool* or pre school* or (young person*) or (young people) or youth*))

ASSIA (Cambridge Scientific Abstracts - CSA), 1987 to current, last searched 14 March 2011

(((DE=("children" or "adolescents" or "babies")) or (child* or girl* or boy* or adolescen* or teen* or baby or babies or infant* or preschool* or pre school* or (young person*) or (young people))) and (((relative* within 3 foster*) or (relative* within 3 substitute) or (family within 3 foster*)) or ((families within 3 foster*) or (family

within 3 substitute) or (families within 3 substitute)) or ((kin within 3 care*) or (kinship within 3 care*) or (kin within 3 caring)) or (kinship near caring)) or (DE="kinship foster care")) or((KIN WITHIN 3 PLACEMENT*) OR (KINSHIP WITHIN 3 PLACEMENT*) OR (FAMILY WITHIN 3 PLACEMENT*) OR (FAMILIES WITHIN 3 PLACEMENT*) OR (CUSTODIAL GRANDPARENTS*))

Social Science Citation Index, 1970 to 12 March 2011, last searched 14 March 2011

#21 #20 AND #16
#20 #19 OR #18 OR #17
#19 TS=(young person* or young people or youth*)
#18 TS=(baby or babies or infant* or preschool* or pre school*)
#17 TS=(child* or girl* or boy* or teen*)
#16 #15 OR #14 OR #13 OR #12 OR #11 OR #10 OR #9 OR #8 OR #7 OR #6 OR #5 OR #4 OR #3 OR #2 OR #1
#15 TS=(custodial grandparent*)
#14 TS=(relative* SAME foster*)
#13 TS=(relative* SAME substitute)
#12 TS=(family same foster*)
#11 TS=(families same foster*)
#10 TS=(family SAME placement*)
#9 TS=(family SAME substitute)
#8 TS=(families SAME placement*)
#7 TS=(families SAME substitute)
#6 TS=(kin SAME placement*)
#5 TS=(kinship SAME placement*)
#4 TS=(kin SAME care*)
#3 TS=(kinship SAME care*)
#2 TS=(kin SAME caring)
#1 TS=(kinship SAME caring)

Conference Proceedings Citation Index - Social Sciences and Humanities (CPCI-SSH), 1990 to 12 March 2011, last searched 14 March 2011

#21 #20 AND #16
#20 #19 OR #18 OR #17
#19 TS=(young person* or young people or youth*)
#18 TS=(baby or babies or infant* or preschool* or pre school*)
#17 TS=(child* or girl* or boy* or teen*)
#16 #15 OR #14 OR #13 OR #12 OR #11 OR #10 OR #9 OR #8 OR #7 OR #6 OR #5 OR #4 OR #3 OR #2 OR #1
#15 TS=(custodial grandparent*)
#14 TS=(relative* SAME foster*)
#13 TS=(relative* SAME substitute)
#12 TS=(family same foster*)
#11 TS=(families same foster*)
#10 TS=(family SAME placement*)
#9 TS=(family SAME substitute)
#8 TS=(families SAME placement*)
#7 TS=(families SAME substitute)
#6 TS=(kin SAME placement*)
#5 TS=(kinship SAME placement*)
#4 TS=(kin SAME care*)
#3 TS=(kinship SAME care*)
#2 TS=(kin SAME caring)
#1 TS=(kinship SAME caring)

Dissertation Express , last searched 14 March 2011

Search terms: Kinship , kin (limited by publication year 2007 or later)

Appendix 2. Search strategies for original review (2007)

CENTRAL (searched via the Cochrane Library, 2007, Issue 1)

#1 (relative near foster*)

#2 (relative* near substitute)

#3 (family near foster*)

#4 (families near foster*)

#5 (family near substitute)

#6 (families near substitute)

#7 (kin near care*)

#8 (kinship near care*)

#9(kinship near caring)

#10 (#1 OR #2 OR #3 OR #4 OR #5 OR #6 OR #7 OR #8 OR #9)

#11 MeSH descriptor Adolescent explode all trees

#12 MeSH descriptor Infant explode all trees

#13 child near "MESH check words"

#14 (child* or girl* or boy* or adolescen* or teen* or baby or babies or infant* orpreschool* or pre school* or (young person*) or (young people))

#15 (#11 OR #12 OR #13 OR #14)

#16 (#10 AND #15)

OID MEDLINE, 1966 to February 2007

1 Child/

2 Infant/

3 Adolescent/

4 (child\$ or girl\$ or boy\$ or adolescent\$ or teen\$ or baby or babies or infant\$ or preschool\$ or pre school\$ or young person\$ or young people).tw.

5 or/1-4

6 (relative\$ adj3 foster\$).tw.

7 (relative\$ adj3 substitute).tw.

8 (family adj3 foster\$).tw.

9 (families adj3 foster\$).tw.

10 (family adj3 substitute).tw.

11 (families adj3 substitute).tw.

12 (kin adj3 care\$).tw.

13 (kinship adj3 care\$).tw.

14 (kin adj3 caring).tw.

15 (kinship adj3 caring).tw.

16 or/6-15

17 5 and 16

Campbell Collaboration's Social, Psychological, Educational, and Criminological Trials Register (C2-SPECTR) (searched March 9th 2007)

{Kin}or {kinship} or {family} or {families} or {relative}

AND

{Foster} or {substitute} or {care} or {caring}

AND

{Child} or {girl} or {boy} or {adolescent} or {teen} or {baby} or {babies} or {infant}

or {preschool} or {pre school} or {young person}or {young people}

Sociological Abstracts (searched via CSA, 1962 to February 2007)

Query: (((relative* within 3 foster*) or (relative* within 3 substitute)or (family within 3 foster*)) or ((families within 3 foster*) or (familywithin 3 substitute) or (families within 3 substitute)) or ((kin within 3 care*) or (kinship within 3 care*) or (kin within 3 caring)) or (kinship near caring)) and ((DE=("children" or "infants" or "adolescents")) or(child* or girl* or boy* or adolescen* or teen* or baby or babies or infant* or preschool* or pre school* or (young person*) or (youngpeople)))

Social Work Abstracts (searched 1977 to February 2007)

1 (child* or girl* or boy* or adolescent* or teen* or baby or babies or infant* or preschool* or pre school* or young person* or young people) [Terms anywhere]

2 (relative* near3 foster*) [Terms anywhere]

3 (relative* near3 substitute) [Terms anywhere]

4 (family near3 foster*) [Terms anywhere]

5 (families near3 foster*) [Terms anywhere]

6 (family near3 substitute) [Terms anywhere]

7 (families near3 substitute) [Terms anywhere]

8 (kin near3 care*) [Terms anywhere]

9 (kinship near3 care*) [Terms anywhere]

10 (kin near3 caring) [Terms anywhere]

11 (kinship near3 caring) [Terms anywhere]

12 or/2-11

13 1 and 12

SSCI (searched 1970 to February 17th 2007); **ISI Proceedings** (searched 1990 to February 16th 2007), both accessed via ISI Web of Knowledge

#17 #16 AND #11DocType=All document types; Language=All languages;

#16 #15 OR #14 OR #13 OR #12DocType=All document types; Language=All languages;

#15 TS=(young people)DocType=All document types; Language=All languages;

#14 TS=(young person*)DocType=All document types; Language=All languages;

#13 TS=(baby or babies or infant* or preschool* or pre school*)DocType=All document types; Language=All languages;

#12 TS=(child* or girl* or boy* or teen*)DocType=All document types; Language=All languages;

#11 #10 OR #9 OR #8 OR #7 OR #6 OR #5 OR #4 OR #3 OR #2 OR #1DocType=All document types; Language=All languages;

#10 TS=(kinship SAME caring)DocType=All document types; Language=All languages;

#9 TS=(kin SAME caring)DocType=All document types; Language=All languages;

#8 TS=(kinship SAME care*)DocType=All document types; Language=All languages;

#7 TS=(kin SAME care*)DocType=All document types; Language=All languages;

#6 TS=(families SAME substitute)DocType=All document types; Language=All languages;

#5 TS=(family SAME substitute)DocType=All document types; Language=All languages;

#4 TS=(families near foster)DocType=All document types; Language=All languages;

#3 TS=(family SAME foster*)DocType=All document types; Language=All languages;

Kinship care for the safety, permanency, and well-being of children removed from the home for maltreatment (Review)

194

#2 TS=(relative* SAME substitute)DocType=All document types; Language=All languages;

#1 TS=(relative* SAME foster*)DocType=All document types; Language=All languages;

Family and Society Studies Worldwide (Searched 1970 to February 2007)

- 1 (child* or girl* or boy* or adolescent* or teen* or baby or babies or infant* or preschool* or pre school* or young person* or young people) [Key words/phrases]
- 2 (relative* near3 foster*) [Key words/phrases]
- 3 (relative* near3 substitute) [Key words/phrases]
- 4 (family near3 foster*) [Key words/phrases]
- 5 (families near3 foster*) [Key words/phrases]
- 6 (family near3 substitute) [Key words/phrases]
- 7 (families near3 substitute) [Key words/phrases]
- 8 (kin near3 care*) [Key words/phrases]
- 9 (kinship near3 care*) [Key words/phrases]
- 10 (kin near3 caring) [Key words/phrases]
- 11 (kinship near3 caring) [Key words/phrases]
- 12 or/2-11
- 13 1 and 12

ERIC (searched via Dialog DataStar, 1966 to February 2007)

- 1 RELATIVE\$ NEAR FOSTER\$
- 2 ERIC - 1966 to date
- RELATIVE\$ NEAR SUBSTITUTE
- 3 ERIC - 1966 to date
- FAMILY NEAR FOSTER\$
- 4 ERIC - 1966 to date
- FAMILIES NEAR FOSTER\$
- 5 ERIC - 1966 to date
- FAMILY NEAR SUBSTITUTE
- 6 ERIC - 1966 to date
- FAMILIES NEAR SUBSTITUTE
- 7 ERIC - 1966 to date
- KIN NEAR CARE\$
- 8 ERIC - 1966 to date
- KIN NEAR CARING
- 9 ERIC - 1966 to date
- KINSHIP NEAR CARE\$
- 10 ERIC - 1966 to date
- KINSHIP NEAR CARING
- 11 ERIC - 1966 to date
- 1 OR 2 OR 3 OR 4 OR 5 OR 6 OR 7 OR 8 OR 9 OR 10
- 12 ERIC - 1966 to date
- CHILD\$ OR GIRL\$ OR BOY\$ OR ADOLESCEN\$ OR TEEN\$ OR BABY OR BABIES OR INFANT\$ OR PRESCHOOL\$OR PRE ADJ SCHOOL
- 13 ERIC - 1966 to date
- YOUNG ADJ PERSON\$ OR YOUNG ADJ PEOPLE
- 14 ERIC - 1966 to date
- 12 OR 13
- 15 ERIC - 1966 to date
- 11 AND 14

PsycINFO (searched via SilverPlatter, 1872 to January week 5 2007)

- #12 ((((young person*) or((young people))) or (child* or boy* or girl* or adolescen* or teen* or baby or babies or infant* or preschool* or pre school*)) and ((family near3 substitute) or (families near3 foster*) or (family near3 foster*) or (relative* near3 substitute) or (relative* near3 foster*) or ((kin near3 care*)or(kinship near3 care*)or((kin near3 caring) or (kinship near3 caring))) or (families near3 substitute))
- #11 (((young person*) or((young people))) or (child* or boy* or girl* or adolescen* or teen* or baby or babies or infant* or preschool* or pre school*))
- #10 ((young person*) or((young people))
- #9 child* or boy* or girl* or adolescent* or teen* or baby or babies or infant* or preschool* or pre school*
- #8 (family near3 substitute) or (families near3 foster*) or (family near3 foster*) or (relative* near3 substitute) or (relative* near3 foster*) or ((kin near3 care*)or(kinship near3 care*)or(kin near3 caring) or (kinship near3 caring))) or (families near3 substitute)
- #7(kin near3 care*)or(kinship near3 care*)or(kin near3 caring) or (kinship near3 caring))

#6 families near3 substitute
 #5 family near3 substitute
 #4 families near3 foster*
 #3 family near3 foster*
 #2 relative* near3 substitute
 #1 relative* near3 foster*

CINAHL (searched via OVID, 1982 to February week 3 2007)

1 Child/
 2 Infant/
 3 Adolescent/
 4 (child\$ or girl\$ or boy\$ or adolescent\$ or teen\$ or baby or babies or infant\$ or preschool\$ or pre school\$ or young person\$ or young people).tw.
 5 or/1-4
 6 (relative\$ adj3 foster\$).tw.
 7 (relative\$ adj3 substitute).tw.
 8 (family adj3 foster\$).tw.
 9 (families adj3 foster\$).tw.
 10 (family adj3 substitute).tw.
 11 (families adj3 substitute).tw.
 12 (kin adj3 care\$).tw.
 13 (kinship adj3 care\$).tw.
 14 (kin adj3 caring).tw.
 15 (kinship adj3 caring).tw.
 16 or/6-15
 17 5 and 16

ASSIA (searched via CSA, 1987 to February 2007)

Query: ((DE=("children" or "adolescents" or "babies")) or (child* or girl* or boy* or adolescen* or teen* or baby or babies or infant* or preschool* or pre school* or (young person*) or (young people)))

and (((relative*within 3 foster*) or (relative* within 3 substitute) or (family within 3foster*)) or ((families within 3 foster*) or (family within 3 substitute)or (families within 3 substitute)) or ((kin within 3

care*) or (kinshipwithin 3 care*) or (kin within 3 caring)) or (kinship near caring)) or(DE="kinship foster care"))

Dissertation Abstracts International, (accessed via Dissertation Express, searched late 1960s to February 2007)

Search terms used: kinship care, kin care, family foster care

WHAT'S NEW

Date	Event	Description
5 November 2012	New search has been performed	New search conducted
5 November 2012	New citation required but conclusions have not changed	40 new studies included

HISTORY

Protocol first published: Issue 2, 2007

Review first published: Issue 1, 2009

Date	Event	Description
13 May 2009	Amended	Three studies previously left 'awaiting assessment' have now formally been excluded from this review.
18 June 2008	Amended	Converted to new review format.
23 January 2004	New citation required and conclusions have changed	Substantive amendment

CONTRIBUTIONS OF AUTHORS

Marc Winokur, Amy Holtan, and Deborah Valentine contributed to the writing and revising of the original review. Marc Winokur, Amy Holtan, and Keri Batchelder contributed to the writing and revising of the updated review. The original search strategy was developed with Jo Abbott, Trial Search Co-ordinator for the Cochrane DPLPG. The updated search strategy was developed with Margaret Anderson, Trial Search Co-ordinator for the Cochrane DPLPG. Marc Winokur will be responsible for updating this review as additional evidence accumulates and as funding becomes available.

DECLARATIONS OF INTEREST

Marc Winokur, Amy Holton and Keri Batchelder - the original review was funded by the Applied Research in Child Welfare Project (USA), SFI Campbell (Denmark), and the University of Tromsø, Center for Child and Adolescent Mental Health (Norway), and the updated review was funded by the Applied Research in Child Welfare Project (USA) and UiT The Arctic University of Norway, Regional Centre for Child and Youth Mental Health and Child Welfare (Norway). There are no competing interests that influenced, or may give the appearance of potentially influencing, what we wrote in the submitted work.

SOURCES OF SUPPORT

Internal sources

- SFI Campbell, Denmark.

External sources

- Applied Research in Child Welfare Project, USA.
- University of Tromsø, Norway.

DIFFERENCES BETWEEN PROTOCOL AND REVIEW

There were no substantive differences between the protocol and review. There were some differences between the review and the update. Specifically, sensitivity analyses and reporting bias analyses were conducted with the addition of the 40 new included studies. The methods section was enhanced with additional information on the assessment of risk of bias and the assessment of heterogeneity. The results section was enhanced with additional information on the effects of the interventions, the interpretations of the meta-analytic and odds ratios results, and the sensitivity analyses. The discussion section was enhanced with additional information on the overall completeness and applicability of the evidence and potential biases in the review process. The plain language summary was enhanced with additional information on adverse effects and limitations. Meta-analyses with less than three studies were removed from the review. The risk of bias table was changed to a risk of bias figure. Lastly, studies awaiting classification were moved to excluded studies as being intractably unavailable.

NOTES

This review is co-registered within the Campbell Collaboration.

INDEX TERMS

Medical Subject Headings (MeSH)

*Child Abuse [psychology]; *Child Welfare [psychology]; *Family; *Friends; Child Behavior Disorders [epidemiology]; Child Development; Foster Home Care [*methods] [psychology] [standards]; Safety

MeSH check words

Child; Female; Humans; Male