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Kinship Care for the Safety, Permanency, and Well-being of Children Removed from the Home for Maltreatment

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Table of contents

TABLE OF CONTENTS	1
KEY MESSAGES	4
EXECUTIVE SUMMARY/ABSTRACT	5
Background	5
Objectives	5
Search Strategy	5
Selection Criteria	5
Data collection and Analysis	6
Results	6
Authors' Conclusions	6
1 BACKGROUND	7
1.1 Description of the condition	7
1.2 Description of the intervention	8
1.3 Why it is important to do this review	10
2 OBJECTIVES OF THE REVIEW	12
3 METHODS	13
3.1 Criteria for considering studies for this review	13
3.2 Search methods for identification of studies	15
3.3 Data collection and analysis	16
4 RESULTS	19
4.1 Description of studies	19
4.2 Risk of bias in included studies	24
4.3 Effects of interventions	26
5 DISCUSSION	34
5.1 Summary of main results	34
5.2 Overall completeness and applicability of evidence	34
5.3 Quality of the evidence	35
5.4 Potential biases in the review process	36
5.5 Agreements and disagreements with other studies or reviews	36
6 AUTHORS' CONCLUSIONS	37

6.1	Implications for practice	37
6.2	Implications for research	37
7	ACKNOWLEDGEMENTS	39
8	CHARACTERISTICS OF STUDIES	40
8.1	Characteristics of included studies	40
8.2	Characteristics of excluded studies	59
8.3	Characteristics of studies awaiting classification	77
9	ADDITIONAL TABLES	79
9.1	Outcomes for Studies with Multivariate Analysis	79
9.2	Outcomes for Studies with Bivariate Analysis	82
9.3	Quality Assessment Ratings	83
9.4	Methods for Future Updates	85
9.5	Participant Baseline Characteristics	85
9.6	Intervention Characteristics	91
9.7	Outcome Measures	95
10	REFERENCES TO STUDIES	119
10.1	Included studies	119
10.2	Excluded studies	124
10.3	Studies awaiting classification	142
10.4	Ongoing studies	142
10.5	Additional references	142
11	DATA AND ANALYSES	146
1	Behavioral Development	146
2	Mental Health	146
3	Placement Stability	146
4	Permanency	147
5	Educational Attainment	147
6	Family Relations	147
7	Service Utilization	148
8	Re-abuse	148
12	FIGURES	149
13	SOURCES OF SUPPORT	150
13.1	Internal sources	150
13.2	External sources	150
14	APPENDICES	151
14.1	Cochrane Library (CENTRAL) search strategy	151
14.2	MEDLINE search strategy	151
14.3	C2-SPECTR search strategy	152
14.4	Sociological Abstracts search strategy	152

14.5	Social Work Abstracts search strategy	152
14.6	Social Science Citation Index and ISI Proceedings search strategy	153
14.7	Family and Society Studies Worldwide search strategy	154
14.8	ERIC search strategy	154
14.9	PsycINFO search strategy	155
14.10	CINAHL search strategy	156
14.11	ASSIA search strategy	156
14.12	Dissertation Abstracts International search strategy	157
15	DATA AND ANALYSES	158
1	Behavioral development outcomes	158
2	Mental Health	159
3	Placement Stability Outcomes	161
4	Permanency Outcomes	164
5	Education Attainment Outcomes	166
6	Family Relations	167
7	Service Utilization Outcomes	169
8	Re-abuse Outcomes	170

Key messages

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. Sixty two studies 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 care may do better than children in traditional foster care in terms of their behavioral development, mental health functioning, and placement stability. Children in traditional foster care placements may do better with regard to achieving some permanency outcomes and accessing services they may need. Implications for practice and future research are discussed.

Executive summary/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, behavioral, 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 on the safety, permanency, and well-being of children removed from the home for maltreatment.

SEARCH STRATEGY

The following databases were searched to February 2007: CENTRAL, MEDLINE, C2-Spectr, Sociological Abstracts, Social Work Abstracts, SSCI, Family and Society Studies Worldwide, ERIC, PsycINFO, ISI Proceedings, CINAHL, ASSIA, and Dissertation Abstracts International. Relevant social work journals and reference lists of published literature reviews were handsearched, and authors contacted.

SELECTION CRITERIA

Randomized 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 on child welfare outcomes in the domains of well-being, permanency, or safety.

DATA COLLECTION AND ANALYSIS

Reviewers independently read the titles and abstracts identified in the search and selected appropriate studies. Reviewers assessed the eligibility of each study for the evidence base and then evaluated the methodological quality of the included studies. Lastly, outcome data were extracted and entered into REVMAN for meta-analysis with the results presented in written and graphical forms.

RESULTS

Sixty two quasi-experimental studies were included in this review. Data suggest that children in kinship foster care experience better behavioral development, mental health functioning, and placement stability than do children in non-kinship foster care. Although there was no difference on reunification rates, children in non-kinship foster care were more likely to be adopted while children in kinship foster care were more likely to be in guardianship. Lastly, children in non-kinship foster care were more likely to utilize mental health services.

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.

1 Background

1.1 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 513,000 children in out-of-home placements in the United States as of September 2005 (USDHHS 2006b), 60,900 children in public care in England as of March 2005 (DFES 2005), 23,965 children in out-of-home care in Australia as of June 2005 (AIHW 2006), 12,185 children in public care in Scotland as of March 2005 (SENS 2005), 4,668 children in public care in Wales as of March 2005 (NAW 2005), 6,120 children in public care in Norway as of December 2006 (SN 2007), and 7,678 children in out-of-home care in Israel as of 2007 (CBS 2007).

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 2006a). Abuse and neglect are the most prevalent causes of children being removed from the home in other countries as well (e.g. Wales) (NAW 2005). Internationally, child welfare systems are accountable for the safety, permanency, and wellbeing 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, residential treatment centers, and group homes (USDHHS 2006b; AIHW 2006). Children in out-of-home placements typically display more educational, behavioral, 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).

1.2 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 also is 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 American states to give preference to family members when placing a child outside of the home (Leos-

Urbel 2002). The most recent United States legislation, the Adoption and Safe Families Act of 1997, continues 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 also has 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). 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. re-entry Australia, Israel, Netherlands, Norway, Sweden, 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). Because, 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). Thus, the concept of breakdown (premature termination of placement) is therefore a more relevant measure in the evaluation of foster care than is reunification or adoption (Sallnas 2004).

During the past 15 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 2006). However, residential care is the preferred out-of-home placement setting for older children in Israel and Sweden (Mosek 2001; Sallnas 2004).

Similar to other child welfare interventions, kinship care is faced with its fair share of controversial issues. The major controversy centers on the unequal financial

support (Brooks 2002) and service provision received by kinship caregivers as compared with traditional foster parents (Dubowitz 1994a). The licensing and certification of kinship caregivers also is 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 U.S. 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 noncustodial 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.

1.3 WHY IT IS IMPORTANT TO DO THIS REVIEW

Geen 2004 argues 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" (p. 144). Specifically, social work researchers have not kept up with the exponential growth of kinship care as a placement option (Berrick 1994; Dubowitz 1994a). Furthermore, much of the research supporting kinship care is anecdotal and conjectural, which does not allow child welfare professionals to make evidence-based decisions from comparisons of children in out-of-home care (Goerge 1994). For example, there is great interest in the safety and well-being of children placed in kinship care, but very little experimental research on these outcomes (Gibbs 2000). 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 2008). However, Barth 2008 have identified several recent studies which employed propensity score matching as a means of statistically simulating random assignment to placement conditions. We addressed these methodological challenges by identifying and synthesizing the most strongly designed and executed studies available on this topic. Unfortunately, the best available evidence on kinship care was seriously lacking in many ways, especially in regard to controlling for baseline differences in non-randomized studies. Although some would argue that this should disqualify kinship care, along

with similar social work interventions, from being systematically reviewed, we believe that practitioners and policymakers benefit more from examining poor evidence than no evidence at all.

2 Objectives of the Review

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.

3 Methods

3.1 CRITERIA FOR CONSIDERING STUDIES FOR THIS REVIEW

Types of studies

Randomized 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 centers) 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 focused 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. re-entry more than 50%) of their total time in out-of-home care in kinship care.

Types of outcome measures

Eligible studies must analyze 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 behavioral development, mental health, placement stability, and permanency. Secondary outcomes include educational attainment, family relations, service utilization, 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.

Behavioral Development

Behavior problems, adaptive behaviors

Measured by case records, caregiver, teacher, and self-reports, and standardized instruments (e.g. Child Behavior Checklist)

Mental Health

Psychiatric illnesses, psychopathological conditions, well-being

Measured by case records, caregiver and self-reports, and standardized instruments

Placement Stability

Number of placements, re-entry, length of placement

Measured by child welfare administrative databases

Permanency

Reunification, adoption, guardianship

Measured by child welfare administrative databases

Educational Attainment

Graduation, grades, test scores

Measured by school records and child welfare administrative databases

Family Relations

Problem-solving, tolerance, commitment, conflicts

Measured by caregiver and self-reports and standardized instruments

Service Utilization

Mental health services, foster support groups, family therapy

Measured by medical records, caregiver and self-reports, and child welfare administrative databases

Re-abuse

Substantiated abuse, institutional abuse

Measured by child welfare administrative databases

3.2 SEARCH METHODS FOR IDENTIFICATION OF STUDIES

Electronic searches

To identify relevant studies, the following online databases were searched in February 2007:

Cochrane Library (CENTRAL) searched 2007 (Issue 1)

MEDLINE searched 1966 to February 2007

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

Sociological Abstracts searched 1962 to February 2007

Social Work Abstracts searched 1977 to February 2007

Social Sciences Citation Index (SSCI) searched 1900 to February 17th 2007

Family and Society Studies Worldwide searched 1970 to February 2007

ERIC searched 1966 to February 2007

PsycINFO searched 1872 to January week 5 2007

ISI Proceedings searched 1990 to February 16th 2007

CINAHL searched 1982 to February week 3 2007

Applied Social Sciences Index and Abstracts (ASSIA) searched 1987 to February 2007

UMI Dissertation Abstracts International (DAI) searched late 1960s to February 2007

The search strategies used can be found in: Appendix 1, Appendix 2, Appendix 3, Appendix 4, Appendix 5, Appendix 6, Appendix 7, Appendix 8, Appendix 9, Appendix 10, Appendix 11, Appendix 12. Both published and unpublished studies were sought, and there were no language, date, or geographic limitations.

Preliminary searches indicated that a narrowing of the search strategy using a methodological filter resulted in the exclusion of potentially relevant studies so the searches were run without a filter.

Searching other resources

The most recent volumes of Child Abuse & Neglect, Children and Youth Services Review, Child Welfare, Research on Social Work Practice, and Families in Society were manually searched. In addition, several authors of studies included in this review were contacted for knowledge of other studies not yet identified. Lastly, the reference lists of published literature reviews were screened for relevant studies.

3.3 DATA COLLECTION AND ANALYSIS

Selection of studies

Two reviewers 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 reviewer believed it is appropriate. Once retrieved, two reviewers used a "keywording" rubric to categorize each study by the type of design, participants, intervention, and outcome measure(s). Two reviewers then determined if each study was eligible for selection based on the aforementioned criteria for considering studies for this review. When consensus regarding selection decisions was not reached, it was resolved through discussion with a third reviewer.

Data extraction and management

Citations for all selected studies were entered into Reference Manager 11, which is an interactive literature management software package. The citations for included studies then were uploaded into the Cochrane Collaboration's Review Manager 4.2.8 software (RevMan). Outcome data were extracted from studies and entered into RevMan, where it was analyzed in the meta-analyses for this review. The statistical results are presented in both narrative form and in figures and tables. Specifically, forest plots generated from RevMan are used to display effect size estimates and confidence intervals from the meta-analyses. In addition, data from the quality assessment process are presented in a table created in RevMan.

Assessment of risk of bias in included studies

Quality Assessment

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). According to Higgins 2005, "factors that warrant assessment are those related to applicability of findings, validity of individual studies, and certain design characteristics that affect interpretation of results (p. 79). Thus, studies were assessed in regard to the following research quality dimensions: selection bias, performance bias, detection bias, report bias, and attrition bias (Higgins 2005).

Methodological Criteria

To provide guidelines for assessing the methodological criteria of included studies, a "data extraction" rubric was developed. Two reviewers independently extracted data from each study before coming to consensus on the assessment of quality

dimensions for each study. The methodological criteria were operationalized as follows:

- Selection Bias: Was group assignment determined randomly or might it have been related to outcomes or the interventions received?
- Performance Bias: Could the services provided have been influenced by something other than the interventions being compared?
- Detection Bias: Were outcomes influenced by anything other than the constructs of interest, including biased assessment or the influence of exposure on detection?
- Report Bias: Were the outcomes, measures, and analyses selected a priori and reported completely? Were participants biased in their recall or response?
- Attrition Bias: Could deviations from protocol, including missing data and dropout, have influenced the results?

Measures of treatment effect

A standardized mean difference (SMD) effect size was computed for the continuous outcome variables. For this review, a corrected Hedges' *g* was computed 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 standardized 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. Odds ratios (OR) were computed for the dichotomous outcome variables. Based on the assumption of proportional odds, odds ratios 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 reunified) by the number of non-events (i.e. re-entry not reunified). An odds ratio then was calculated by dividing the odds of the kinship care group with the odds of the foster care group. In addition, 95% confidence intervals were computed and reported for the dichotomous effect size estimates.

Unit of analysis issues

The unit of analysis was children for this review. No attempts were made to adjust for clustering and we were unaware of any such problems including multiple children per family.

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 reviewers could calculate an effect size from the available information. When outcome data were missing from an article or report, reasonable attempts were made to retrieve these data from the original researchers. Overall and differential attrition were accounted for in the quality assessment and sensitivity analyses.

Assessment of heterogeneity

The consistency of results was assessed using the I² statistic (Higgins 2002; Higgins 2003). If there was evidence of heterogeneity (p value from test of heterogeneity < 0.1 coupled with an I² value of 25% or greater), we also considered sources according to pre-specified subgroup and sensitivity analyses (see below).

Assessment of reporting biases

Reporting biases were assessed and reported in Table 3.

Data synthesis

As heterogeneity is to be expected with similar interventions provided under different circumstances and by different providers, the data syntheses used a random effects model. If a study reported multiple effect sizes (e.g. grades, behavior 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), the results were aggregated for the main effects meta-analyses before being used for the subgroup meta-analyses.

Subgroup analysis and investigation of heterogeneity

Subgroup analyses were considered to examine different effects of the intervention (if any) by gender, ethnicity, and age at placement.

Sensitivity analysis

Sensitivity analyses were considered to explore the impact of the quality dimensions on the outcomes of the review. Specifically, the following planned comparisons were considered. Studies that use matching or covariates and studies that do not control for confounders. Studies with outcomes measured by caregiver or teacher reports and studies with outcomes measured by self-reports. Studies with low overall or differential attrition and studies with high overall or differential attrition.

4 Results

4.1 DESCRIPTION OF STUDIES

A comprehensive electronic search of the kinship care literature base using 15 online databases yielded 4791 citations that matched the search terms (see also Figure 1). The 4791 abstracts for these citations were reviewed and 263 references were identified as meeting the initial criteria of being an empirical study on kinship care. Of the 263 references, 251 were acquired with 12 being unavailable. These 251 articles/reports were then keyworded to determine whether they met the inclusion criteria for the review. As a result, 90 studies were deemed to be potentially appropriate to be included in the review. However, two studies were subsequently categorized as being duplicates and 26 studies did not meet the inclusion criteria upon further review. Thus, 62 eligible studies were included in the evidence base with an overall interrater agreement of 81% before consensus. As displayed in the Table of Included Studies, outcome data were extracted from these 62 studies with 27 studies reporting bivariate data only, 16 studies reporting multivariate data only, and 19 studies reporting both bivariate and multivariate data.

Excluded Studies

As displayed in the Table of Excluded Studies, 189 of the 251 available studies were excluded from the review for the following reasons: 81 studies were excluded because there was no formal kinship care group or the kinship care group was not disaggregated from the foster care group; 30 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; 27 studies were excluded because they were non-empirical (e.g. literature reviews); 19 studies were excluded because they were survey, descriptive, or qualitative research designs; 13 studies were excluded because child welfare outcomes were not reported; 10 studies were excluded because they reported on an intervention other than out-of-home placement; five studies were excluded because they were based on an adult sample; and three studies were excluded because the kinship and foster care placements were considered to be permanent.

More than a year after searches were run, a further nine references not identified through electronic searches were supplied by a UK-based peer reviewer of this paper

for scrutiny (Adams 1969a, Rowe 1984, Millham 1986a, Berridge 1987a, Rowe 1989, Farmer 1991, Kosenen 1993, Hunt 1999a, Sinclair 2000a). Of these, three were excluded (Adams 1969a, Farmer 1991, and Kosenen 1993). Six studies remain awaiting assessment prior to a minor update of this review (Berridge 1987a, Millham 1986a, Hunt 1999a, Rowe 1984, Rowe 1989, Sinclair 2000a).

Studies awaiting assessment

Three relatively old studies remain awaiting assessment (including Adams 1969a (currently unavailable), Rowe 1984 and Rowe 1989).

Location of Studies

All but five of the 62 studies were conducted in the U.S. The five international studies were Holtan 2005 conducted in Norway, Mosek 2001 conducted in Israel, Sallnas 2004 conducted in Sweden, Strijker 2003 conducted in the Netherlands, and Tarren-Sweeney 2006 conducted in Australia.

Participants

As displayed in the Participant Baseline Characteristics Table (Table 5), 52 of the 62 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 11 months based on eight studies. Furthermore, seven studies reported a mean age at placement by placement type. For the kinship care group, the unweighted mean age at placement was 4 years 7 months. For the foster care group, the unweighted mean age at placement was 4 years 4 months.

For gender, there were overall unweighted frequencies of 53% female and 47% male children based on 38 studies. Furthermore, 20 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 54% female and 46% male.

For ethnicity, there was an overall unweighted frequency of 49% African-American children based on 37 U.S. studies. Furthermore, 17 studies reported the frequency of African-American children by placement type. For the kinship care group, the unweighted frequency was 63% African-American. For the foster care group, the unweighted frequency was 56% African-American. In addition, there was an overall unweighted frequency of 21% Hispanic children based on 31 studies. Furthermore, 12 studies reported the frequency of Hispanic children by placement type. For both

the kinship care and foster care groups, the unweighted frequency was 21% Hispanic.

For removal reason, there was an overall unweighted frequency of 63% of children removed for neglect based on 24 studies. Furthermore, seven studies reported the frequency of children removed for neglect by placement type. For the kinship care group, the unweighted frequency was 69% of children removed for neglect. For the foster care group, the unweighted frequency was 66% of children removed for neglect.

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

Interventions

As displayed in the Intervention Characteristics Table (Table 6), all 62 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, eight studies reported information on whether kinship caregivers were licensed or unlicensed. Specifically, five 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, 25 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 16 of the studies, the last in six 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 31.1 months for the kinship care group and 30.1 months for the foster care group based on 11 studies. In addition, there was an unweighted mean length of stay in out-of-home care of 52.5 months for the kinship care group and 49.5 months for the foster care group based on 10 studies.

For the timing of data collection, 41 studies used a cross-sectional data collection approach while 21 studies used a longitudinal data collection approach.

Outcome measures

There were eight outcome categories and 28 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 7) displays the outcomes and measures for all 62 studies in the review.

Behavioral Development

The two behavioral development outcomes were behavior problems and adaptive behaviors. Behavior problems were defined dichotomously as the presence or absence of internalizing (e.g. withdrawn, passive) and externalizing (e.g. aggressive, delinquent) problem behaviors and continuously as the level of these behaviors. The continuous outcome was measured by the total problems scale of the Child Behavior Checklist (CBCL) completed by caregivers in seven studies (Davis 2005; Holtan 2005; Jones-Karena 1998; Rudenberg 1991; Strijker 2003; Tarren-Sweeney 2006; Timmer 2004), the Behavior Problems Index completed by caregivers in one study (Brooks 1998), and caregiver reports in one study (Metzger 1997; Surbeck 2000). The dichotomous outcome was measured by case records in two studies (Iglehart 1994; Landsverk 1996). Adaptive behaviors were defined continuously as the level of competence or positive behaviors and were measured by the total competence scale of the CBCL completed by caregivers in two studies (Holtan 2005; Tarren-Sweeney 2006), the adaptive composite score on the Vineland Adaptive Behavior Scales (VABS) completed by caregivers in two studies (Belanger 2002; Jones-Karena 1998), and caregiver reports in one study (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 paid claims data in one study (Bilaver 1999), case records in one study (Harris 2003; Iglehart 1994), and the DSM-IV in one study (McMillen 2005). The continuous outcome was measured by the Devereaux Scales of Mental Disorders completed by caregivers in one study (Belanger 2002). Well-being was defined dichotomously by the presence or absence of positive emotional health and continuously by the level of well-being or selfworth. The dichotomous outcome was measured by child self-reports in one study (Wilson 1999), R.C. Monitoring Protocol completed by caseworkers, caregivers, and child in one study (Harris 2003), and caseworker reports in one study (Tompkins 2003). The continuous outcome was measured by the Personal Attribute Inventory for Children completed as a child self-report in one study (Metzger 1997).

Placement Stability

The four placement stability outcomes were number of placements, length of placement, placement disruption, and re-entry as measured by secondary data from administrative databases. 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 four studies (Courtney 1997b; Harris 2003; Metzger 1997; Zimmerman 1998). The continuous outcome was used in two studies (Belanger 2002; Davis 2005). Length of placement was measured continuously by length of stay in the kin or foster placement in five studies (Berrick 1994; Brooks 1998; Cole 2006; Davis 2005; Surbeck 2000) and continuously by length of total stay in out-of-home care in five other studies (Belanger 2002; Clyman 1998; Jenkins 2002; Sivright 2004; Tompkins 2003). It should be noted that longer lengths of stay in placement or in 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 two studies (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 one study (Frame 2000).

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 ten studies (Barth 1994; Berrick 1999; McIntosh 2002; Sivright 2004; Smith 2002; Smith 2003; Testa 1999; Testa 2001; Wells 1999; Zimmerman 1998). 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 repeated 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. Repeated a grade was defined by whether a child had been retained in one or more grades as measured by caregiver reports in four studies (Berrick 1994; Brooks 1998; Metzger 1997; Sripathy 2004). Graduation was defined by whether a child completed high school and was measured by case records in one study (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 in one study (Iglehart 1995) and case records in one study (Iglehart 1994).

Family Relations

The two family relations outcomes were attachment and conflict. Attachment was defined as perceived level of relatedness or attachment between child and caregiver and was measured continuously by child self-reports in one study (Chapman 2004), the Attachment Q-Sort Version 3 Assessment completed by the child in one study (Chew 1998), caregiver reports in one study (Strijker 2003), Assessment of Interpersonal Relations completed by the child in one study (Davis 2005), and the Child Well-Being Scales completed by caregivers in one study (Surbeck 2000). Attachment was measured dichotomously by the Ainsworth Strange Situation Procedure based on observations of caregiver and child in one study (Cole 2006), case records in one study (Jenkins 2002), and the Offer Self-Image Questionnaire completed by the child in one study (Mosek 2001). Conflict was defined continuously as the level of family functioning as measured by the Index of Family relations completed by caregivers in one study (Berrick 1997).

Service Utilization

The three service utilization outcomes were mental health services, physician services, and developmental services defined dichotomously as whether a child actually received services (not just referred). Mental health and physician service utilization was measured by paid claims data in one study (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 two studies (Berrick 1994; Sripathy 2004), and The Young Kids Early Services Assessment (TYKES) in one study (Clyman 1998). Physician services were measured by paid claims data in one study (Bilaver 1999) and the TYKES in one study (Clyman 1998).

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 (i.e. re-entry 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 (i.e. re-entry by kin caregiver(s) or foster parent(s) not birth or biological parent(s)) and was reported in two studies (Benedict 1996a; Zuravin 1993).

4.2 RISK OF BIAS IN INCLUDED STUDIES

The included studies were assessed on methodological quality in regard to selection bias, performance bias, detection bias, report bias, and attrition bias. Specifically, each study was rated either low risk, moderate risk, or high risk based on two sub-questions for each of these areas. As displayed in the Quality Assessment Ratings

Table (Table 3), the quality assessment indicates that the evidence base contains studies with at least moderate risk in all five categories with the highest risk associated with selection bias and the lowest risk associated with attrition bias.

For selection bias, five studies (Belanger 2002; Clyman 1998; Holtan 2005; Metzger 1997; Testa 2001) were rated low risk, 39 studies were rated moderate risk, and 18 studies were rated high risk. The studies rated 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 moderate risk either attempted to equate the groups OR provided evidence on the comparability of the groups. The studies rated 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). The primary reasons that studies were assessed to have moderate or high risk for selection bias were the lack of equating procedures and the non-reporting of placement and demographic data.

For performance bias, four studies (Berrick 1997; Holtan 2005; Metzger 1997; Sivright 2004) were rated low risk, 54 were rated moderate risk, and four were rated high risk. In the studies that were rated high risk, the kinship care and foster care groups experienced differential exposure to the intervention (e.g. length of stay) AND received differential services during placement (e.g. caseworker contact). In the studies that were rated moderate risk, the groups either experienced differential exposure OR received differential services. In the studies that were rated low risk, the groups did not experience differential exposure AND did not receive differential services. The primary reasons that studies were assessed to have moderate or high risk for performance bias were uncertainty regarding both the length of stay and receipt of services during placement.

For detection bias, four studies (Benedict 1996a; Jenkins 2002; Scannapieco 1997; Zuravin 1993) were rated low risk, 54 were rated moderate risk, and four were rated high risk. In the studies rated 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 moderate risk, the groups were not defined in the same way OR there was evidence of biased assessment. In the studies rated low risk, the groups were defined in the same way AND there was no evidence of biased assessment. The primary reasons that studies were assessed to have moderate 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.

For report bias, 19 studies were rated low risk and 43 studies were rated moderate risk. In the studies rated moderate risk, the instrumentation used to measure the outcomes was specified completely (e.g. data collection procedures) OR reliability and/or validity information was reported for the instrumentation. In the studies rated low risk, the instrumentation was completely specified AND reliability and/or validity information was reported. The primary reason that studies were assessed to have moderate risk for report bias was the lack of reliability and/or validity information.

For attrition bias, 25 studies were rated low risk, 35 studies were rated moderate risk, and two studies were rated high risk. In the studies rated high risk, all subjects were not 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 nonparticipants). In the studies rated moderate risk, all subjects were not accounted for OR attrition could have influenced the results. In the studies rated low risk, all subjects were accounted for AND attrition could not have influenced the results. The primary reason that studies were assessed to have moderate or high risk for attrition bias was the loss of subjects due to missing outcome data.

4.3 EFFECTS OF INTERVENTIONS

Meta-analyses

There were sufficient data for meta-analysis for 16 of the 28 outcomes in the review, as only outcomes with three or more studies were considered for effect size calculation. As a result, meta-analyses were generated for all outcome categories except for re-abuse. The results for these 16 outcomes are reported in regard to 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. It should be noted that all SMD effect sizes that are negative indicate better outcomes for the kinship care group, while all OR effect sizes that are less than 1.0 also indicate better outcomes for the kinship care group.

Behavioral Development

There was a statistically significant, small overall effect size for the 10 studies (Brooks 1998; Davis 2005; Holtan 2005; Jones-Karena 1998; Metzger 1997; Rudenberg 1991; Strijker 2003; Surbeck 2000; Tarren-Sweeney 2006; Timmer 2004) that reported sufficient bivariate data to generate effect size estimates for

behavior problems. Specifically, the overall effect size estimate was $g = -.24$ with a confidence interval of $-.13$ to $-.35$ (see Analysis 1.1). Thus, children in kinship care had lower reported levels of internalizing and externalizing behavior problems than did children in foster care. The test of heterogeneity was not significant for this outcome ($p = .16$; $I^2 = 31.1\%$). There was a statistically significant overall effect size for the five studies (Belanger 2002; Holtan 2005; Jones-Karena 1998; Surbeck 2000; Tarren-Sweeney 2006) that reported sufficient bivariate data to generate effect size estimates for adaptive behaviors. Specifically, the overall effect size estimate was $g = -.45$ with a confidence interval of $-.19$ to $-.70$ (see Analysis 1.2). Thus, children in kinship care had higher reported levels of competence than did children in foster care. The test of heterogeneity was significant for this outcome ($p = .01$; $I^2 = 68.4\%$).

Mental Health

There was a statistically significant overall effect size for the four studies (Bilaver 1999; Harris 2003; Iglehart 1994; McMillen 2005) that reported sufficient bivariate data to generate effect size estimates for psychiatric disorders. Specifically, the overall effect size estimate was $OR = .46$ with a confidence interval of $.44$ to $.49$ (see Analysis 2.1). Thus, children in foster care were 2.2 times more likely than were children in kinship care to experience mental illness. The test of heterogeneity was not significant for this outcome ($p = .93$; $I^2 = 0.0\%$). There was a statistically significant overall effect size for the three studies (Harris 2003; Tompkins 2003; Wilson 1999) that reported sufficient bivariate data to generate effect size estimates for well-being. Specifically, the overall effect size estimate was reported $OR = .52$ with a confidence interval of $.51$ to $.53$ (see Analysis 2.3). Thus, children in kinship care were 1.9 times more likely than were children in foster care to report positive emotional health. The test of heterogeneity was not significant for this outcome ($p = .95$; $I^2 = 0.0\%$).

Placement Stability

There was a statistically significant overall effect size for the four studies (Courtney 1997b; Harris 2003; Metzger 1997; Zimmerman 1998) that reported sufficient bivariate data to generate effect size estimates for placement settings. Specifically, the overall effect size estimate was $OR = .36$ with a confidence interval of $.27$ to $.49$ (see Analysis 3.1). Thus, children in foster care were 2.6 times more likely than were children in kinship care to experience three or more placement settings. The test of heterogeneity was not significant for this outcome ($p = .31$; $I^2 = 16.8\%$).

There were five studies (Berrick 1994; Brooks 1998; Cole 2006; Davis 2005; Surbeck 2000) that reported sufficient bivariate data to generate effect size estimates for length of placement. Although the overall effect size was in favor of children in foster care, the effect was not statistically significant. Specifically, the overall effect size estimate was $g = .86$ with a confidence interval of $-.98$ to 2.70 (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 ($p < .001$; $I^2 = 99.4\%$).

There were five studies (Belanger 2002; Clyman 1998; Jenkins 2002; Sivright 2004; Tompkins 2003) that reported sufficient bivariate data to generate effect size estimates for length of stay in out-of-home care. Although the overall effect size was in favor of children in foster care, the effect was not statistically significant. Specifically, the overall effect size estimate was $g = .21$ with a confidence interval of $-.07$ to $.48$ (see Analysis 3.6). However, the analysis could not rule out zero as a likely population value. The test of heterogeneity was significant for this outcome ($p < .001$; $I^2 = 78.8\%$).

Permanency

There were seven studies (Berrick 1999; McIntosh 2002; Smith 2002; Testa 1999; Testa 2001; Wells 1999; Zimmerman 1998) that reported sufficient bivariate data to generate effect size estimates for reunification. Although the overall effect size was in favor of children in foster care, the effect was not statistically significant. Specifically, the overall effect size estimate was $OR = 1.13$ with a confidence interval of $.92$ to 1.41 (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 ($p < .001$; $I^2 = 77.8\%$).

There was a statistically significant overall effect size for the six studies (Barth 1994; Berrick 1999; Smith 2002; Testa 1999; Testa 2001; Zimmerman 1998) that reported sufficient bivariate data to generate effect size estimates for adoption. Specifically, the overall effect size estimate was $OR = 2.50$ with a confidence interval of 1.05 to 5.94 (see Analysis 4.2). Thus, children in foster care were more likely to be adopted than were children in kinship care. The test of heterogeneity was significant for this outcome ($p < .001$; $I^2 = 98.5\%$).

There was a statistically significant overall effect size for the four studies (Berrick 1999; Testa 1999; Testa 2001; Zimmerman 1998) that reported sufficient bivariate data to generate effect size estimates for guardianship. Specifically, the overall effect size estimate was $OR = .26$ with a confidence interval of $.10$ to $.72$ (see Analysis 4.3). Thus, children in kinship care were more likely to have relatives assume legal custody than were children in foster care. The test of heterogeneity was significant for this outcome ($p < .001$; $I^2 = 93.1\%$).

There was a statistically significant overall effect size for the seven studies (Barth 1994; Berrick 1999; Sivright 2004; Smith 2002; Smith 2003; Testa 2001; 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 $OR = 2.24$ with a confidence interval of 1.66 to 3.03 (see Analysis 4.4). Thus, children in kinship care were more likely to still be in care than were children

in foster care. The test of heterogeneity was significant for this outcome ($p < .001$; $I^2 = 88.0\%$).

Educational Attainment

There were four studies (Berrick 1994; Brooks 1998; Metzger 1997; Sripathy 2004) that reported sufficient bivariate data to generate effect size estimates for the repeated a grade outcome. Although the overall effect size was in favor of children in kinship care, the effect was not statistically significant. Specifically, the overall effect size estimate was $OR = .67$ with a confidence interval of .43 to 1.05 (see Analysis 5.3). However, the analysis could not rule out zero as a likely population value. The test of heterogeneity was not significant for this outcome ($p = .10$; $I^2 = 51.9\%$).

Family Relations

There were five studies (Chapman 2004; Chew 1998; Davis 2005; Strijker 2003; Surbeck 2000) that reported sufficient bivariate data to generate effect size estimates for the continuous attachment outcome. Although the overall effect size was in favor of children in kinship care, the effect was not statistically significant. Specifically, the overall effect size estimate was $g = -.01$ with a confidence interval of $-.30$ to $.28$ (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 ($p = .09$; $I^2 = 50.2\%$).

There were three studies (Cole 2006; Jenkins 2002; Mosek 2001) that reported sufficient bivariate data to generate effect size estimates for the dichotomous attachment outcome. Although the overall effect size was in favor of children in kinship care, the effect was not statistically significant. Specifically, the overall effect size estimate was $OR = .88$ with a confidence interval of .33 to 2.30 (see Analysis 6.3). However, the analysis could not rule out zero as a likely population value. The test of heterogeneity was not significant for this outcome ($p = .12$; $I^2 = 52.7\%$).

Service Utilization

There was a statistically significant overall effect size for the nine studies (Berrick 1994; Bilaver 1999; Clyman 1998; Jenkins 2002; Metzger 1997; Scannapieco 1997; Sivright 2004; Sripathy 2004; Tompkins 2003) that reported sufficient bivariate data to generate effect size estimates for mental health service utilization. Specifically, the overall effect size estimate was $OR = 1.69$ with a confidence interval of 1.18 to 2.42 (see Analysis 7.1). Thus, children in foster care were more likely to receive mental health services than were children in kinship care. The test of heterogeneity was significant for this outcome ($p < .001$; $I^2 = 97.2\%$).

There were four studies (Bilaver 1999; Clyman 1998; Scannapieco 1997; Tompkins 2003) that reported sufficient bivariate data to generate effect size estimates for physician service utilization. Although the overall effect size was in favor of children in foster care, the effect was not statistically significant. Specifically, the overall

effect size estimate was $OR = 2.93$ with a confidence interval of .46 to 18.59 (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 ($p < .001$; $I^2 = 99.3\%$).

Multivariate analyses

As studies that reported multivariate data controlled for covariates such as age at placement, gender, ethnicity, socioeconomic status, geographic region, behavior 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 summarized in the Outcomes for Studies with Multivariate Analysis Table (Table 1). It should be noted that some studies reported both bivariate and multivariate data and were included in both analyses.

Overall, the multivariate data generally support the results generated from the meta-analyses. For example, two studies reporting multivariate behavior problems data (Bennett 2000; Holtan 2005) found that children in kinship care had significantly lower CBCL scores than did children in foster care. Surbeck 2000 and Zima 2000 did not find a significant difference between the groups and did not report the direction of the effect. Furthermore, three studies reporting multivariate adaptive behaviors data (Belanger 2002; Bennett 2000; Brooks 1998) found that children in kinship care had significantly greater adaptive behaviors than did children in foster care. Again, Zima 2000 did not find a significant difference between the groups on this outcome and did not report the direction of the effect. Three studies reporting multivariate data on mental health service utilization (Clyman 1998; Leslie 2000a; McMillen 2004) found that children in foster care were significantly more likely to utilize services than were children in kinship care. For mental health, one study reporting multivariate data (Metzger 1997) found that children in kinship care had significantly greater well-being 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 nine studies reporting multivariate data also were inconclusive. Specifically, three studies (Berrick 1999; Courtney 1996a; Grogan-Kaylor 2000) found that children in kinship care were more likely to reunify and two studies (Connell 2006a; Courtney 1996b) found that children in foster care were more likely to reunify. Courtney 1997a and Frame 2002 found no significant difference between the groups on reunification and did not report the direction of the effect. Wells 1999 and Zimmerman 1998 also found no significant difference between the groups on reunification, but reported that children in foster care reunified at a lower rate. As

for adoption, two studies reporting multivariate data (Barth 1994; Courtney 1996b) found that children in foster care were significantly more likely to be adopted than were children in kinship care, although Courtney 1996a found that children in kinship care were more likely to be adopted. Furthermore, Connell 2006a found no significant difference on adoption and reported an identical risk ratio for both groups. Lastly, two studies reporting multivariate data (Berrick 1999; Smith 2003) found that children in foster care were significantly less likely to still be in care than were children in kinship care.

The studies reporting multivariate data also provided evidence for some of the outcomes that had insufficient data for effect size calculation. For example, the most compelling evidence from the multivariate analyses was for re-entry, in that all 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. Furthermore, all three studies that reported multivariate placement disruption data (Chamberlain 2006; Connell 2006b; Testa 2001) found that children in kinship care were less likely to disrupt from placement than were children in foster care. For the safety outcomes, two studies reporting multivariate data (Benedict 1996a; Zuravin 1993) found that children in kinship care were less likely to experience institutional abuse than were children in foster care. 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 than were children in foster care, while Fuller 2005 found that children in kinship care were more likely to experience recurrence of abuse than were children in foster care.

Bivariate analyses

As summarized in the Outcomes for Studies with Bivariate Analysis Table (Table 2), 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, two studies (Landsverk 1996; Sripathy 2004) found no difference between children in kinship care and foster care on the level of behavior problems as measured by the CBCL. However, Berrick 1994 confirmed the results from the meta-analysis and multivariate analysis in that children in kinship care had significantly lower scores on the total problems scale of the CBCL than did children in foster care. As for adaptive behaviors, Sripathy 2004 found no difference between children in kinship care and foster care on the level of adaptive behaviors as measured by the CBCL. For length of placement, two studies (Scannapieco 1997; Zimmerman 1998) found that children in foster care had significantly shorter lengths of stay than did children in kinship care, while Metzger 1997 found that children in kinship care had significantly lower lengths of stay than did children in

foster care. Lastly, Zimmerman 1998 found no difference between the groups on re-entry rates.

Sensitivity analyses

Sensitivity analyses comparing studies with high attrition and low attrition were planned but were not conducted because attrition rates could not be accurately determined for the quasiexperimental studies included in the review. Specifically, all of these studies were posttest only, so there often was 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 is presumed to be missing at random, thus no sensitivity analysis is warranted. Furthermore, sensitivity analyses comparing studies with low and high risk for attrition bias were not conducted because only two studies were rated high risk.

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 four studies that measured well-being by child self-reports, but only one study that also measured it using caregiver reports. Furthermore, there was only one study each measuring psychiatric illness, family relations, and behavior problems by child self-report. Lastly, three studies used child self-reports for educational attainment outcomes, but there was only one each for test scores, graduation, and grade level; thus comparisons were not possible with the studies that used other measures.

Sensitivity analyses comparing studies that controlled for confounders with those that did not was 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 Rudenberg 1991; Testa 2001). As such, much of the multivariate data was reported as correlation and beta coefficients or odds and risk ratios. Thus, 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. In addition, sensitivity analyses comparing studies with low and high risk for selection bias were not conducted because only five studies were rated low risk and no more than two studies shared similar outcomes.

Subgroup analyses

There were insufficient data to examine different effects of the intervention by gender, ethnicity, and age at placement. Specifically, only Holtan 2005 reported outcome data by gender for each placement type, only 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.

5 Discussion

5.1 SUMMARY OF MAIN RESULTS

Based on a preponderance of the available evidence, it appears that children in kinship care experience better outcomes in regard to behavior problems, adaptive behaviors, psychiatric disorders, well-being, placement stability, and guardianship than do children in foster care. Furthermore, there was no detectable difference between the groups on reunification, length of stay, family relations, or educational attainment. However, children placed with kin are less likely to achieve adoption and utilize mental health services while being more likely to still be in placement than are children in foster care. The multivariate results generally support these findings while indicating that children in kinship care are less likely to re-enter out-of-home care or have a disrupted placement 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 of 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 judgment from child welfare practitioners also should be used to assess the individual needs of children and the ability of kin caregivers to attend to these needs.

5.2 OVERALL COMPLETENESS AND APPLICABILITY OF EVIDENCE

Because all of the effect sizes are small to medium in magnitude, the findings generated from this review may have limited practical consequences. 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 behavioral functioning makes ambiguous the conclusion that children in foster care have lower levels of current behavioral functioning. Furthermore, caregiver reports may be biased because foster parents have more incentive to report behavioral and mental

health issues, whereas relatives are more apt to view the behavior 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 (i.e. re-entry 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 utilization. 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 utilize 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.

5.3 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 2008, p. 218). In general, the included studies also have moderate to high risks of performance, detection, report, and attrition bias, which compromise the tenability of the findings from the systematic review.

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 standardized, the effect of kinship care may be more difficult to detect. For example, there seemingly is a lack of implementation fidelity within and across countries in regard to kinship care implementation. 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.

5.4 POTENTIAL BIASES IN THE REVIEW PROCESS

One potential bias in the review process is that the usefulness of the meta-analysis results is weakened by challenges confronted during the effect size calculations. Specifically, the heterogeneity statistic was significant for 10 of the 16 outcomes, which indicates that the effect sizes were not always consistent within the same construct. 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 analyzed a small sample of children, while others utilized a much larger data set. As a result, studies with large sample sizes essentially eliminated the effects from studies with small sample sizes for certain outcomes (e.g. psychiatric disorders, well-being, placement settings). In addition, publication bias is always a concern with systematic reviews. It was not plausible to investigate the presence of publication bias in this review because the results were widely distributed across so many studies. However, the review included unpublished reports, dissertations, and theses, along with many studies that reported nonsignificant results.

5.5 AGREEMENTS AND DISAGREEMENTS WITH OTHER STUDIES OR REVIEWS

The results of this review are in strong agreement with the "substantive synthesis of research" conducted by Cuddeback 2004.

6 Authors' Conclusions

6.1 IMPLICATIONS FOR PRACTICE

Although the implications of this review depend on how individual countries interpret the results, several recommendations for social work professionals and policymakers did emerge. If the goal of kinship care is to enhance the behavioral development, mental health functioning, 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 utilization 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 well-being and 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.

6.2 IMPLICATIONS FOR RESEARCH

To address the major limitations of research on kinship care, there is a demand for studies that employ generalizable samples, equivalent groups, and repeated measurements (Berrick 1994). Cuddeback 2004 advocates for 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. Furthermore, the duration effect or the relationship between length of stay in out-of-home care and child welfare outcomes should be explored in greater depth. There also is 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 is certainly warranted, as education is essential to effectively integrating into adult life. In addition, research on informal and voluntary kinship care arrangements should be a top priority for social work 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 on the effect of kinship care.

Lastly, the Methods for Future Updates Table (Table 4) 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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8 Characteristics of studies

8.1 CHARACTERISTICS OF INCLUDED STUDIES

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 = 1,324 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 6
Outcomes	Permanency - Adoption, Still in Placement
Notes	

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 6
Outcomes	Mental Health - Psychiatric Disorders Behavioral Development - Adaptive Behaviors Placement Stability - Length of Stay (OOH), Number of Placements
Notes	

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 6
Outcomes	Re-Abuse - Institutional Abuse
Notes	

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
Interventions	See Table 6
Outcomes	Behavioral Development - Behavior Problems, Adaptive Behaviors
Notes	

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 6
Outcomes	Placement Stability - Length of Placement Service Utilization - Mental Health Services Educational Attainment - Repeated a Grade
Notes	

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 6
Outcomes	Family Relations - Conflict

Notes	
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Berrick 1999

Methods	Multivariate effect sizes adjusted using covariates for ethnicity
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 6
Outcomes	Permanency - Reunification, Adoption, Guardianship, Still in Placement Placement Stability - Re-entry
Notes	

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 6
Outcomes	Mental Health - Psychiatric Disorders Service Utilization - Mental Health Services, Developmental Services, Physician Services
Notes	

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 6
Outcomes	Educational Attainment - Repeated a Grade Behavioral Development - Behavior Problems, Adaptive Behavior Placement Stability - Length of Placement
Notes	

Chamberlain 2006

Methods	Multivariate effect sizes adjusted using covariates for problem behaviors 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 6
Outcomes	Placement Stability - Placement Disruption
Notes	

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 6
Outcomes	Family Relations - Attachment
Notes	

Chew 1998

Methods	No control for confounders No demographic comparison
Participants	Kinship n = 7 Foster n = 24 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 program in California
Interventions	See Table 6
Outcomes	Family Relations - Attachment
Notes	

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 6
Outcomes	Educational Attainment - Graduation
Notes	

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 6
Outcomes	Service Utilization - Mental Health Services, Developmental Services, Physician Services Placement Stability - Length of Stay (OOH)
Notes	

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 6
Outcomes	Family Relations - Attachment Placement Stability - Length of Placement
Notes	

Connell 2006a

Methods	Multivariate effect sizes adjusted using covariates for child variables and episode variables
Participants	Kinship n = 1,310 Foster n = 2,108 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 6
Outcomes	Permanency - Reunification, Adoption
Notes	

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 6
Outcomes	Placement Stability - Placement Disruption
Notes	

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 = 2,976 Foster n = 3,132 Drawn from a population of 6,831 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 6
Outcomes	Placement Stability - Re-entry
Notes	

Courtney 1996a

Methods	Multivariate effect sizes adjusted using covariates for demographic and placement variables
Participants	Kinship n = 668 Foster n = 1,016 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	See Table 6
Outcomes	Permanency - Reunification, Adoption
Notes	

Courtney 1996b

Methods	Multivariate effect sizes adjusted using covariates for child variables, family variables, and placement variables
Participants	Kinship n = 2,092 Foster n = 5,342 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 6
Outcomes	Permanency - Reunification, Adoption
Notes	

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 = 6,588 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 6
Outcomes	Placement Stability - Re-entry Permanency - Reunification
Notes	

Courtney 1997b

Methods	No control for confounders for kinship-foster comparisons No demographic comparison
Participants	Kinship n = 3,487 Foster n = 7,702 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 four 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 6
Outcomes	Placement Stability - Number of Placements
Notes	

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 five counties in New York State
Interventions	See Table 6
Outcomes	Behavioral Development - Behavior Problems Family Relations - Attachment Placement Stability - Length of Placement, Number of Placements
Notes	

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 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 6
Outcomes	Placement Stability - Re-entry
Notes	

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 2-1/2 years, who were placed in foster care between July 1, 1991 and June 30, 1992, in six California counties - followed through December 31, 1995
Interventions	See Table 6
Outcomes	Placement Stability - Re-entry Permanency - Reunification, Still in Placement
Notes	

Fuller 2005

Methods	Multivariate effect sizes adjusted using covariates for child variables, caretaker variables, placement variables, family environment variables, service provision variables, and casework behavior 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 6
Outcomes	Re-Abuse - Recurrence of Abuse
Notes	

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 6
Outcomes	Permanency - Reunification
Notes	

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 6
Outcomes	Mental Health - Psychiatric Disorders Placement Stability - Number of Placements
Notes	

Holtan 2005

Methods	Multivariate effect sizes adjusted using covariates for child variables, placement variables and caregiver variables
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Participants	Kinship n = 110 Foster n = 89 Drawn from children in state custody, aged 4-13, with a minimum stay of one year in kinship or non-kinship foster care in Norway
Interventions	See Table 6
Outcomes	Behavioral Development - Behavior Problems, Adaptive Behaviors
Notes	

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 6
Outcomes	Behavioral Development - Behavioral Problems Mental Health - Psychiatric Disorders Educational Attainment - Grade Level
Notes	

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 one or both biological parents and not under any supervision by DCS
Interventions	See Table 6
Outcomes	Educational Attainment - Grade Level
Notes	

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 two of New York City's voluntary, contract foster care agencies in 1996
Interventions	See Table 6
Outcomes	Placement Stability - Length of Stay (OOH) Family Relations - Attachment Service Utilization - Mental Health Services
Notes	

Jones-Karena 1998

Methods	No control for confounders No demographic comparison
Participants	Kinship n = 159 (behavior problems outcome) Foster n = 241 (behavior problems outcome) Kinship n = 107 (adaptive behavior outcome) Foster n = 164 (adaptive behavior 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 finalized
Interventions	See Table 6
Outcomes	Behavioral Development - Behavior Problems, Adaptive Behaviors
Notes	

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 4.5 year study period; all cases meeting study criteria were included
Interventions	See Table 6
Outcomes	Re-abuse - Recurrence of Abuse Placement Stability - Re-entry
Notes	

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 five months
Interventions	See Table 6
Outcomes	Behavioral Development - Behavior Problems
Notes	

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 behavior problems
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 6
Outcomes	Service Utilization - Mental Health Services
Notes	

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 6
Outcomes	Permanency - Reunification
Notes	

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 seventeen, living in specified region, and not having continual runaway status.
Interventions	See Table 6
Outcomes	Service Utilization - Mental Health Services
Notes	

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 6
Outcomes	Mental Health - Psychiatric Disorders
Notes	

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 seven in placement during three month study period.
Interventions	See Table 6
Outcomes	Mental Health - Well-Being Placement Stability - Number of Placements, Length of Placement Educational Attainment - Repeated a Grade Behavioral Development - Behavior Problems Service Utilization - Mental Health Services
Notes	

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 6
Outcomes	Mental Health - Well-Being Family Relations - Attachment
Notes	

Rudenberg 1991

Methods	Multivariate effect sizes adjusted using covariates for age and gender Demographic comparisons using ethnicity, age, and gender
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Participants	<p>Kinship n = 28 Foster n = 28 Drawn from formerly abused children, ages 8 through 17, who were living with at least one 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</p>
Interventions	See Table 6
Outcomes	Behavioral Development - Behavior Problems
Notes	

Sallnas 2004

Methods	<p>No control for confounders No demographic comparison</p>
Participants	<p>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</p>
Interventions	See Table 6
Outcomes	Placement Stability - Placement Disruption
Notes	

Scannapieco 1997

Methods	<p>No control for confounders Demographic comparison using setting, placement characteristics, and child variables</p>
Participants	<p>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</p>
Interventions	See Table 6
Outcomes	Service Utilization - Mental Health Services, Physician Services

	Placement Stability - Length of Stay (OOH)
Notes	

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 victimization 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 16.5 and 17.5 years as of December 1, 1998; after collecting data from the first sample, the sample size was augmented to increase generalizability of the study findings, thus, another random sample of youth, between 16.5 and 17.5 years old, in out-of-home care was selected as of February 1, 2000
Interventions	See Table 6
Outcomes	Educational Attainment - Grade Level
Notes	

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 6
Outcomes	Placement Stability - Length of Stay (OOH) Service Utilization - Mental Health Services Permanency - Still in Placement
Notes	

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 one New York county between October 1993 and April 1994; only infants were used for this study.
Interventions	See Table 6

Outcomes	Permanency - Adoption, Reunification, Still in Placement
Notes	

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 Adoption and Foster Care Analysis and Reporting System (AFCARS) based on termination of parental rights in October 1997
Interventions	See Table 6
Outcomes	Permanency - Still in Placement
Notes	

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 six months
Interventions	See Table 6
Outcomes	Educational Attainment - Repeated a Grade Service Utilization - Mental Health Services Behavioral Development - Behavior Problems, Adaptive Behaviors
Notes	

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 6
Outcomes	Family Relations - Attachment Behavioral Development - Behavior Problems
Notes	

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 one agency's case records in Pennsylvania Purposive sample of all cases meeting criteria during study period
Interventions	See Table 6
Outcomes	Behavioral Development - Behavior Problems, Adaptive Behavior Family Relations - Attachment Placement Stability - Length of Placement
Notes	

Tarren-Sweeney 2006

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 Department of Community Services (DOCS), and for whom casework responsibility rested with DOCS
Interventions	See Table 6
Outcomes	Behavioral Development - Behavior Problems, Adaptive Behaviors
Notes	

Testa 1999

Methods	No control for confounders No demographic comparison
Participants	Kinship n = 2,159 Foster n = 4,003 Local sample drawn from professional foster care program in Illinois; random samples of comparison groups from similar agencies.
Interventions	See Table 6
Outcomes	Permanency - Reunification, Adoption, Guardianship
Notes	

Testa 2001

Methods	Multivariate effect sizes adjusted using covariates for age, duration of placement, kinship status, gender, placement variables, and degree of relatedness
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Participants	<p>Kinship n = 955 Foster n = 955 Data drawn from two sources: (1) the IDCFS Integrated Database designed for the Department of the Chapin Hall Center for Children, and (2) the 1994 Relative Caregiver Social Assessment (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</p>
Interventions	See Table 6
Outcomes	<p>Placement Stability - Placement Disruption Permanency - Adoption, Guardianship</p>
Notes	

Timmer 2004

Methods	<p>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</p>
Participants	<p>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</p>
Interventions	See Table 6
Outcomes	Behavioral Development - Behavior Problems
Notes	

Tompkins 2003

Methods	<p>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</p>
Participants	<p>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</p>
Interventions	See Table 6
Outcomes	<p>Mental Health - Well-Being Placement Stability - Length of Stay (OOH) Service Utilization - Mental Health Services, Physician Services</p>

Notes	
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Vogel 1999

Methods	Multivariate effect sizes adjusted using covariates for race, age, gender, and receipt of pre-placement 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 6
Outcomes	Placement Stability - Length of Stay (OOH)
Notes	

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 6
Outcomes	Placement Stability - Re-entry Permanency - Reunification
Notes	

Wilson 1999

Methods	No control for confounders 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 6
Outcomes	Mental Health - Well-Being
Notes	

Zima 2000

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

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 6
Outcomes	Placement Stability - Number of Placements Permanency - Reunification
Notes	

Zuravin 1993

Methods	Multivariate effect sizes adjusted using covariates for application and relicensing variables
Participants	Kinship n = 135 Foster n = 161 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 6
Outcomes	Re-abuse - Institutional Abuse
Notes	

8.2 CHARACTERISTICS OF EXCLUDED STUDIES

Adams 1969

Reason for exclusion	Out of print and unavailable
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Ainsworth 1998

Reason for exclusion	The article/report describes a study in which there was no intervention
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Ajdukovic 2004

Reason for exclusion	The intervention did not include a kinship care group
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Ajdukovic 2005

Reason for exclusion	The intervention did not include a kinship care group
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Almgren 2001

Reason for exclusion	The intervention did not include a kinship care group
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Altshuler 1998

Reason for exclusion	The article/report describes a study in which there was no intervention
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Altshuler 1999

Reason for exclusion	The kinship care group was not compared with a foster care group
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Anaut 1999

Reason for exclusion	The intervention did not include a kinship care group
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Anderson 1995

Reason for exclusion	The article/report describes a study in which there was no intervention
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Aquilino 1991

Reason for exclusion	The study reports on an intervention other than kinship care
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Armsden 2000

Reason for exclusion	The intervention did not include a kinship care group
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Backovic 2006

Reason for exclusion	The intervention did not include a kinship care group
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Barber 2003

Reason for exclusion	The intervention did not include a kinship care group
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Barth 1995

Reason for exclusion	The article/report describes a study in which there was no intervention
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Bass 2004

Reason for exclusion	The article/report describes a study in which there was no intervention
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Beatty 1995

Reason for exclusion	The intervention did not include a kinship care group
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Benedict 1990

Reason for exclusion	The foster care group was not disaggregated from other out-of-home placement types
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Benedict 1994

Reason for exclusion	The intervention did not include a kinship care group
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Benedict 1996b

Reason for exclusion	The cases were drawn from a sample of adults over the age of 18
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Berman 2004

Reason for exclusion	The article/report describes a study in which there was no intervention
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Berrick 1995

Reason for exclusion	The foster care group was not disaggregated from other out-of-home placement types
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Billing 2002

Reason for exclusion	The kinship care group was not compared with a foster care group
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Blumberg 1996

Reason for exclusion	The type of placement is the outcome not the intervention
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Broad 2001

Reason for exclusion	The kinship care group was not compared with a foster care group
<i>Broad 2004</i>	
Reason for exclusion	Research design was descriptive, survey, or qualitative
<i>Browne 2005</i>	
Reason for exclusion	The intervention did not include a kinship care group
<i>Browning 1994</i>	
Reason for exclusion	The article/report describes a study in which there was no intervention
<i>Cantos 1996</i>	
Reason for exclusion	The kinship group was not disaggregated from the foster care group
<i>Cariglia 1999</i>	
Reason for exclusion	The research design was descriptive, survey, or qualitative
<i>Carlson 2002</i>	
Reason for exclusion	The cases were drawn from a sample of adults over the age of 18
<i>Carpenter 2001</i>	
Reason for exclusion	The cases were drawn from a sample of adults over the age of 18
<i>Carpenter 2003</i>	
Reason for exclusion	The article/report was unavailable
<i>Carpenter 2004a</i>	
Reason for exclusion	The article/report was unavailable
<i>Carpenter 2004b</i>	
Reason for exclusion	The cases were drawn from a sample of adults over the age of 18
<i>Chen 2000</i>	
Reason for exclusion	The research design was descriptive, survey, or qualitative

Chipungu 1998

Reason for exclusion	The research design was descriptive, survey, or qualitative
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Clawar 1984

Reason for exclusion	The article/report describes a study in which there was no intervention
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Clyman 2002

Reason for exclusion	The article/report describes a study in which there was no intervention
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CNNP 1996

Reason for exclusion	The article/report describes a study in which there was no intervention
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Cole 2001

Reason for exclusion	The study reported on caregiver outcomes and physical health is not a child well-being outcome
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Cole 2005a

Reason for exclusion	The study reported on caregiver outcomes only
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Cole 2005b

Reason for exclusion	The intervention did not include a kinship care group
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Colton 1994

Reason for exclusion	The intervention did not include a kinship care group
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Colton 1995

Reason for exclusion	The intervention did not include a kinship care group
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Courtney 1992

Reason for exclusion	The article/report was unavailable
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Courtney 1994

Reason for exclusion	The foster care group was not disaggregated from other out-of-home placement types
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Courtney 1996

Reason for exclusion	The article/report describes a study in which there was no intervention
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Courtney 2001

Reason for exclusion	The intervention did not include a kinship care group
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Cranley 2003

Reason for exclusion	The research design was descriptive, survey, or qualitative
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Crawford 2006

Reason for exclusion	The article/report describes a study in which there was no intervention
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Cuddeback 2002

Reason for exclusion	The study reported on caregiver outcomes only
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CWLA 1995

Reason for exclusion	The article/report was unavailable
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Davidson-Arad 2003

Reason for exclusion	The intervention did not include a kinship care group
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Davis 1993

Reason for exclusion	The article/report was unavailable
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Davis 1996

Reason for exclusion	The article/report was unavailable
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De Cadiz 2006

Reason for exclusion	The intervention was only informal kinship care
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Delfabbro 2002

Reason for exclusion	The intervention did not include a kinship care group
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Delfabbro 2003

Reason for exclusion	The intervention did not include a kinship care group
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Du 2002

Reason for exclusion	The intervention did not include a kinship care group
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Dubowitz 1990

Reason for exclusion	The kinship care group was not compared with a foster care group
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Dubowitz 1992

Reason for exclusion	The kinship care group was not compared with a foster care group
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Dubowitz 1993a

Reason for exclusion	The kinship care group was not compared with a foster care group
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Dubowitz 1993b

Reason for exclusion	The kinship care group was not compared with a foster care group
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Dubowitz 1994b

Reason for exclusion	The kinship care group was not compared with a foster care group
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Dubowitz 1994c

Reason for exclusion	The article/report describes a study in which there was no intervention
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Duhrssen 1958

Reason for exclusion	The intervention did not include a kinship care group
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Dworsky 2005

Reason for exclusion	The intervention did not include a kinship care group
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Ehrle 2002

Reason for exclusion	The study reported on caregiver outcomes only
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Ehrle, Gee 2002

Reason for exclusion	The kinship care group was not compared with a foster care group
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English 1994

Reason for exclusion	The intervention did not include a kinship care group
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Falcon 2000

Reason for exclusion	The research design was descriptive, survey, or qualitative
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Farmer 1991

Reason for exclusion	Comparison of children in kinship care with children returned to parent
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Farmer 2001

Reason for exclusion	The intervention did not include a kinship care group
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Feigelman 1995

Reason for exclusion	The research design was descriptive, survey, or qualitative
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Festinger 1996

Reason for exclusion	The intervention did not include a kinship care group
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Flint 1973

Reason for exclusion	The intervention did not include a kinship care group
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Folman 1995

Reason for exclusion	The intervention did not include a kinship care group
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Fong 2006

Reason for exclusion	The kinship group was not disaggregated from the foster care group
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Franck 2002

Reason for exclusion	The article/report was unavailable
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Freedman 1994

Reason for exclusion	The intervention did not include a kinship care group
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Garland 2003

Reason for exclusion	The intervention did not include a kinship care group
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Gaudin 1993

Reason for exclusion	The study did not report on child outcomes
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Gebel 1996

Reason for exclusion	The study reported on caregiver outcomes only
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Geen 2003

Reason for exclusion	The research design was descriptive, survey, or qualitative
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Gennaro 1998

Reason for exclusion	The research design was descriptive, survey, or qualitative
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Gibbison 2005

Reason for exclusion	The intervention did not include a kinship care group
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Gil 1982

Reason for exclusion	The intervention did not include a kinship care group
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Goerge 1995

Reason for exclusion	The research design was descriptive, survey, or qualitative
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Gottesman 2001

Reason for exclusion	The article/report describes a study in which there was no intervention
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Graf 1987

Reason for exclusion	The study reports on an intervention other than kinship care
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Grogan-Kaylor 2001

Reason for exclusion	The kinship care group was not compared with a foster care group
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Groppenbacher 2002

Reason for exclusion	The article/report describes a study in which there was no intervention
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Haist 2005

Reason for exclusion	The kinship care group was not compared with a foster care group
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Hansen 2004

Reason for exclusion	The intervention did not include a kinship care group
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Harden 2002

Reason for exclusion	The intervention did not include a kinship care group
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Harden 2004

Reason for exclusion	The study did not report on child outcomes
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Harman 2000

Reason for exclusion	The intervention did not include a kinship care group
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Hessle 1989

Reason for exclusion	The intervention did not include a kinship care group
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Hjern 2004

Reason for exclusion	The intervention did not include a kinship care group
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Holloway 1997

Reason for exclusion	The intervention did not include a kinship care group
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Hornby 1995

Reason for exclusion	The article/report describes a study in which there was no intervention
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Hornick 1989

Reason for exclusion	The intervention did not include a kinship care group
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Houston 1998

Reason for exclusion	The study did not report on child outcomes
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Hughes 1969

Reason for exclusion	The research design was descriptive, survey, or qualitative
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Hulsey 1989

Reason for exclusion	The intervention did not include a kinship care group
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Iafrate 2001

Reason for exclusion	The intervention did not include a kinship care group
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Iglehart 2004

Reason for exclusion	The article/report describes a study in which there was no intervention
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Jackson 1994

Reason for exclusion	The article/report describes a study in which there was no intervention
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Jaffe 2004

Reason for exclusion	The intervention did not include a kinship care group
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James 2004a

Reason for exclusion	The kinship care group was not compared with a foster care group
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James 2004b

Reason for exclusion	The type of placement is the outcome not the intervention
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Jantz 2002

Reason for exclusion	The article/report describes a study in which there was no intervention
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Jee 2005

Reason for exclusion	The intervention did not include a kinship care group
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Jee 2006

Reason for exclusion	The intervention did not include a kinship care group
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Johnson 1995

Reason for exclusion	The intervention did not include a kinship care group
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Jones 1998

Reason for exclusion	The intervention did not include a kinship care group
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Kamaiko 2003

Reason for exclusion	Developmental delay is not a child well-being outcome
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Kappenberg 2006

Reason for exclusion	The article/report describes a study in which there was no intervention
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Keller 2001

Reason for exclusion	The intervention was permanent foster care placement
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Kortenkamp 2002

Reason for exclusion	The intervention did not include a kinship care group
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Kosonen 1993

Reason for exclusion	Descriptive study of foster care sample (one quarter lived in kinship care)
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Kufeldt 1995

Reason for exclusion	The intervention did not include a kinship care group
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Laan 2001

Reason for exclusion	The intervention did not include a kinship care group
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Le Blanc 1991

Reason for exclusion	The intervention did not include a kinship care group
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Leslie 2000b

Reason for exclusion	The kinship care group was not compared with a foster care group
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Leslie 2002

Reason for exclusion	Developmental delay is not a child well-being outcome
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Leslie 2005

Reason for exclusion	The kinship group was not disaggregated from the foster care group
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Lewandowski 2002

Reason for exclusion	The intervention did not include a kinship care group
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Lewis 1987

Reason for exclusion	The research design was descriptive, survey, or qualitative
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Link 1996

Reason for exclusion	The kinship care group was not compared with a foster care group
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Litrownik 2003

Reason for exclusion	The intervention was permanent foster care placement
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Lux 2001

Reason for exclusion	The intervention did not include a kinship care group
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Lyman 1996

Reason for exclusion	The intervention did not include a kinship care group
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Macintyre 1970

Reason for exclusion	The article/report describes a study in which there was no intervention
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Mackintosh 2006

Reason for exclusion	The kinship care group was not compared with a foster care group
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Maclean 2003

Reason for exclusion	The kinship group was not disaggregated from the foster care group
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Maluccio 1999

Reason for exclusion	The article/report describes a study in which there was no intervention
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Marinkovic 2004

Reason for exclusion	The intervention did not include a kinship care group
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Mascorro 2003

Reason for exclusion	The foster care group was not disaggregated from other out-of-home placement types
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Mason 2003

Reason for exclusion	The intervention did not include a kinship care group
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McLean 1996

Reason for exclusion	The research design was descriptive, survey, or qualitative
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Mcquaid 1994

Reason for exclusion	The intervention did not include a kinship care group
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Mech 1994

Reason for exclusion	The intervention did not include a kinship care group
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Minnis 2006

Reason for exclusion	The kinship care group was not compared with a foster care group
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Minty 2000

Reason for exclusion	The article/report describes a study in which there was no intervention
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Mitchell 2002

Reason for exclusion	Physical health is not a child well-being outcome
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Monheit 1997

Reason for exclusion	The intervention did not include a kinship care group
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Moore 2001

Reason for exclusion	The intervention did not include a kinship care group
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Mosek 1993

Reason for exclusion	The intervention did not include a kinship care group
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Moutassem 1999

Reason for exclusion	The intervention did not include a kinship care group
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Needell 1996

Reason for exclusion	The foster care group was not disaggregated from other out-of-home placement types
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Oyemade 1974

Reason for exclusion	The kinship care group was not compared with a foster care group
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Payne 2000

Reason for exclusion	The article/report describes a study in which there was no intervention
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Pears 2005

Reason for exclusion	The intervention did not include a kinship care group
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Pecora 1998

Reason for exclusion	The intervention did not include a kinship care group
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Pecora 2006

Reason for exclusion	The intervention did not include a kinship care group
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Perez 1998

Reason for exclusion	The kinship care group was not compared with a foster care group
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Prosser 1997

Reason for exclusion	The formal kinship care group was not disaggregated from the informal kinship placement
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Ritchie 2005

Reason for exclusion	The article/report describes a study in which there was no intervention
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Ritter 2005

Reason for exclusion	The article/report was unavailable
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Rock 1988

Reason for exclusion	The intervention did not include a kinship care group
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Romney 2006

Reason for exclusion	The type of placement is the outcome not the intervention
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Roy 2000

Reason for exclusion	The intervention did not include a kinship care group
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Roy 2006

Reason for exclusion	The intervention did not include a kinship care group
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Rubin 2004

Reason for exclusion	The intervention did not include a kinship care group
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Ryan 2005

Reason for exclusion	The study reports on an intervention other than kinship care
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Sawyer 1994

Reason for exclusion	The kinship care group was not compared with a foster care group
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Schwartz 2005

Reason for exclusion	The research design was descriptive, survey, or qualitative
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Shin 2004

Reason for exclusion	The intervention did not include a kinship care group
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Shlonsky 2002

Reason for exclusion	The kinship care group was not compared with a foster care group
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Shore 2002

Reason for exclusion	The intervention was permanent foster care placement
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Simard 1993

Reason for exclusion	The intervention did not include a kinship care group
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Smith 1986

Reason for exclusion	The intervention did not include a kinship care group
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Smithgall 2004

Reason for exclusion	The research design was descriptive, survey, or qualitative
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Sousa 2005

Reason for exclusion	The article/report was unavailable
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Starr 1999

Reason for exclusion	The kinship care group was not compared with a foster care group
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Stiffman 2002

Reason for exclusion	The study reports on an intervention other than kinship care
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Strijker 2005

Reason for exclusion	The formal kinship care group was not disaggregated from the informal kinship care group
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Sun 2003

Reason for exclusion	The kinship care group was not disaggregated from the foster care group
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Sykes 2002

Reason for exclusion	The study reported on caregiver outcomes only
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Taussig 2001

Reason for exclusion	The study reports on an intervention other than kinship care
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Tepper 1991

Reason for exclusion	The article/report was unavailable
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Testa 1996

Reason for exclusion	The research design was descriptive, survey, or qualitative
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Testa 1997

Reason for exclusion	The article/report was unavailable
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Testa 2002

Reason for exclusion	The kinship care group was not compared with a foster care group
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Thoburn 1989

Reason for exclusion	The intervention did not include a kinship care group
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Thornton 1991

Reason for exclusion	The research design was descriptive, survey, or qualitative
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Troutman 2000

Reason for exclusion	The article/report describes a study in which there was no intervention
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Turner 2003

Reason for exclusion	The study reports on an intervention other than kinship care
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Unrau 2005

Reason for exclusion	The intervention did not include a kinship care group
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Unrau, Wel 2005

Reason for exclusion	The study reported on birth parent outcomes only
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USGAO 1999

Reason for exclusion	The foster care group was not disaggregated from other out-of-home placement types
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Valicenti-Mcd 2004

Reason for exclusion	The article/report was unavailable
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VDSS 1994

Reason for exclusion	The research design was descriptive, survey, or qualitative
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Vinnerljung 2005

Reason for exclusion	The intervention did not include a kinship care group
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Wade 2000

Reason for exclusion	The intervention did not include a kinship care group
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Wade 2001

Reason for exclusion	The intervention did not include a kinship care group
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Walsh 1981

Reason for exclusion	The intervention did not include a kinship care group
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Webster 2000

Reason for exclusion	The foster care group was not disaggregated from other out-of-home placement types
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Wilson, Chi 1996

Reason for exclusion	The article/report describes a study in which there was no intervention
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Wulczyn 1992

Reason for exclusion	The research design was descriptive, survey, or qualitative
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Wulczyn 2004

Reason for exclusion	The intervention did not include a kinship care group
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Zuravin 1998

Reason for exclusion	The cases were drawn from a sample of adults over the age of 18
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8.3 CHARACTERISTICS OF STUDIES AWAITING CLASSIFICATION

Berridge 1987

Methods	
Participants	
Interventions	
Outcomes	
Notes	

Hunt 1999

Methods	
Participants	
Interventions	
Outcomes	
Notes	

Millham 1986

Methods	
Participants	
Interventions	
Outcomes	
Notes	

Rowe 1984

Methods	
Participants	
Interventions	
Outcomes	
Notes	

Rowe 1989

Methods	
Participants	
Interventions	
Outcomes	
Notes	

Sinclair 2000

Methods	
Participants	
Interventions	
Outcomes	
Notes	

9 Additional tables

9.1 OUTCOMES FOR STUDIES WITH MULTIVARIATE ANALYSIS

Study	Outcome	Results
Barth 1994	Adoption	1. Initial placement in a kinship home decreases the odds of adoption by 50 percent (OR = 0.50)
Belanger 2001	Adaptive Behaviors 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, Zur 1996	Institutional Abuse	1. Placement in foster care increases the likelihood of association with maltreatment by 4.4 times
Bennett 2001	Behavior Problems Adaptive Behaviors	1. Children in kinship placements (unstandardized beta = -5.596) were significantly less likely to be rated as exhibiting externalizing behaviors (CBCL scale) 2. Data did not indicate a statistically significant relationship between type of placement (unstandardized beta for kinship care = -3.962) and ratings of internalizing behaviors (CBCL scale) 3. Kinship placements (unstandardized beta = 11.834) associated with higher scores on the adaptive composite scale of the VABS
Berrick 1999	Re-entry Permanency "Reunification" "Still in Care"	1. Children in kinship care (AFDC subset) 2 % (OR = 1.02) more likely to be reunified than children in non-kin foster care (within four years of placement) 2. Over four years of placement, non-kinship foster care group less likely to still be in care as compared to kinship foster care group 3. Over four years of placement, non-kinship foster care group more likely to re-enter care as compared to kinship foster care group
Brooks 1998	Adaptive Behaviors	1. Kinship foster care group significantly more likely than those from non-relative foster care group to demonstrate pro-social behaviors
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)

Study	Outcome	Results
Clyman 1998	Mental Health, Physician, and Developmental Service Utilization	1.Children in foster care had significantly higher rates of mental health service utilization 2.Children in foster care did not have significantly higher rates of physician and developmental service utilization
Connell 2006	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
Connell, Van 2006	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, Bar 1996	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, Won 1996	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 1997	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 = -.395) are significantly less likely to return to care than are children from foster care (beta = -.086)
Davis 2005	Relatedness	1.Type of placement not found to be predictor of relationship with caregiver
Frame 2000	Re-entry	1.Children placed with kin (OR = .19 -.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 Care	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

Study	Outcome	Results
Grogan-Kaylor 2000	Reunification	1.Placement into kinship foster home (RR = 1.06) as compared to foster home with non-relatives increased the probability that a child would be reunified from foster care (1998 to 1995 cohort)
Holtan 2005	Behavior Problems	1.Non-kinship placement (OR = 1.90) significantly associated with scoring within the borderline range on CBCL Total Problems scale
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
Leslie 2000	Mental Health Service Utilization	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)
McMillen 2004	Mental Health Service Utilization	1.Kinship care significantly associated with current outpatient therapy services; children in kinship care (OR = 0.39) less likely to utilize 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)
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
Shin 2003	Test Scores	1.Adolescents placed in relative foster care (beta = .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	Behavior Problems	1.The difference in behavior problems by placement type was not maintained when other determinants of child behavior were included in the specification of the model
Testa 2001	Placement Disruption Permanency "Adoption "Guardianship	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)
Vogel 1999	Length of Placement	1.Children in caretaker placements (beta = -1.22) spent significantly more time in care than their counterparts

Study	Outcome	Results
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	Behavior Problems/Adaptive Behaviors 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

9.2 OUTCOMES FOR STUDIES WITH BIVARIATE ANALYSIS

Study	Outcomes	Results
Berrick, Oth 1994	Behavior Problems	1. Children in kinship care had a lower mean total score on the Behavior Problems Index (BPI) than children in foster care
Landsverk 1996	Behavior Problems	1. Differences between two groups not statistically different on CBCL
Metzger 1997	Length of Stay	1. Children placed in traditional foster homes had longer lengths of stay than children placed in kinship foster homes
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
Scannapieco 1997	Length of 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	Behavior Problems Adaptive Behaviors	1. No significant differences found between the two types of care (kinship and non-kinship children) on CBCL Total Problems and Total Competence scales
Zimmerman 1998	Length of Stay 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

9.3 QUALITY ASSESSMENT RATINGS

Study	Selection Bias	Performance Bias	Detection Bias	Report Bias	Attrition Bias
Barth 1994	Moderate	Moderate	Moderate	Moderate	Low
Belanger 2001	Low	Moderate	Moderate	Moderate	Moderate
Benedict, Zur 1996	Moderate	Moderate	Low	Moderate	Low
Bennett 2001	Moderate	Moderate	Moderate	Low	Low
Berrick 1997	Moderate	Low	Moderate	Moderate	Moderate
Berrick 1999	Moderate	Moderate	Moderate	Moderate	Low
Berrick, Oth 1994	Moderate	High	High	Low	Moderate
Bilaver 1999	High	Moderate	Moderate	Moderate	Low
Brooks 1998	Moderate	High	Moderate	Moderate	Moderate
Chamberlain 2006	Moderate	Moderate	Moderate	Moderate	Low
Chapman 2004	High	Moderate	Moderate	Moderate	Moderate
Chew 1998	High	Moderate	Moderate	Low	High
Christopher 1998	High	Moderate	Moderate	Moderate	Moderate
Clyman 1998	Low	Moderate	High	Moderate	Moderate
Cole 2006	Moderate	Moderate	Moderate	Moderate	Moderate
Connell 2006	Moderate	Moderate	Moderate	Moderate	Moderate
Connell, Van 2006	Moderate	Moderate	Moderate	Moderate	Moderate
Courtney 1995	Moderate	Moderate	Moderate	Moderate	Low
Courtney 1997	Moderate	Moderate	Moderate	Moderate	Low
Courtney, Bar 1996	Moderate	Moderate	Moderate	Moderate	Low
Courtney, Nee 1997	High	Moderate	Moderate	Moderate	Low
Courtney, Won 1996	Moderate	Moderate	Moderate	Moderate	Low
Davis 2005	Moderate	Moderate	Moderate	Moderate	Moderate
Frame 2000	Moderate	Moderate	Moderate	Moderate	Moderate
Frame 2002	Moderate	Moderate	Moderate	Moderate	Low
Fuller 2005	Moderate	Moderate	Moderate	Moderate	Moderate
Grogan-Kaylor 2000	Moderate	Moderate	Moderate	Moderate	Low
Harris 2003	High	Moderate	Moderate	Low	Low
Holtan 2005	Low	Low	Moderate	Low	Moderate
Iglehart 1994	High	Moderate	Moderate	Moderate	Low
Iglehart 1995	High	Moderate	Moderate	Moderate	Moderate
Jenkins 2002	High	High	Low	Low	Low

Study	Selection Bias	Performance Bias	Detection Bias	Report Bias	Attrition Bias
Jones-Karena 1998	High	Moderate	Moderate	Low	Low
Jonson-Reid 2003	Moderate	Moderate	Moderate	Moderate	Low
Landsverk 1996	High	Moderate	Moderate	Low	Moderate
Leslie 2000	Moderate	Moderate	Moderate	Moderate	Moderate
McIntosh 2002	Moderate	Moderate	Moderate	Moderate	Moderate
McMillen 2004	Moderate	Moderate	Moderate	Low	Moderate
McMillen 2005	Moderate	Moderate	Moderate	Low	Moderate
Metzger 1997	Low	Low	High	Moderate	Moderate
Mosek 2001	Moderate	Moderate	Moderate	Low	Moderate
Rudenberg 1990	Moderate	Moderate	Moderate	Low	Moderate
Sallnas 2004	High	Moderate	Moderate	Moderate	Moderate
Scannapieco 1997	High	High	Low	Low	Low
Shin 2003	Moderate	Moderate	Moderate	Low	Moderate
Sivright 2004	Moderate	Low	Moderate	Moderate	Moderate
Smith 2002	High	Moderate	Moderate	Moderate	Moderate
Smith 2003	Moderate	Moderate	Moderate	Moderate	Low
Sripathy 2004	Moderate	Moderate	Moderate	Moderate	Moderate
Strijker 2003	High	Moderate	High	Low	Moderate
Surbeck 2000	Moderate	Moderate	Moderate	Moderate	Low
Tarren-Sweeney 2005	High	Moderate	Moderate	Low	High
Testa 1999	High	Moderate	Moderate	Moderate	Low
Testa 2001	Low	Moderate	Moderate	Moderate	Low
Timmer 2004	Moderate	Moderate	Moderate	Low	Moderate
Tompkins Jr 2003	Moderate	Moderate	Moderate	Moderate	Moderate
Vogel 1999	Moderate	Moderate	Moderate	Moderate	Moderate
Wells 1999	Moderate	Moderate	Moderate	Moderate	Low
Wilson 1999	High	Moderate	Moderate	Low	Moderate
Zima 2000	Moderate	Moderate	Moderate	Moderate	Moderate
Zimmerman 1998	Moderate	Moderate	Moderate	Moderate	Moderate
Zuravin 1999	Moderate	Moderate	Low	Low	Low

9.4 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 consensus regarding future selection decisions cannot be reached through discussion with a third reviewer, it will be resolved by appeal to external advisers.
Sensitivity Analyses	Should sufficient data exist, the following planned comparisons will be analyzed: 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 overall or differential attrition will be compared to studies with high overall or differential attrition.
Subgroup Analyses	Should sufficient data exist, we plan subgroup analyses to examine different effects of the intervention (if any) by gender, ethnicity, and age at placement.

9.5 PARTICIPANT BASELINE CHARACTERISTICS

Study	Age at Placement	Gender	Ethnicity	Removal Reason	Urbanicity
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%	
Berrick 1997	(K) - 7 years (F) - 7 years	Female (O) - 62%	Black (O) - 19% Hispanic (O) - 32%		
Berrick 1999					

Study	Age at Placement	Gender	Ethnicity	Removal Reason	Urbanicity
Berrick, Oth 1994		Female (K) - 52% Female (F) - 54%	Black (K) - 46% Black (F) - 28% Hispanic (K) - 14% Hispanic (F) - 22%		
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%		
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%	

Study	Age at Placement	Gender	Ethnicity	Removal Reason	Urbanicity
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%	
Frame 2000					
Frame 2002		Female (O) - 51%	Black (O) - 37% Hispanic (O) - 26%	Neglect (O) - 82%	
Fuller 2005		Female (O) - 53%	Black (O) - 45% Hispanic (O) - 9%	Neglect (O) - 58%	
Grogan-Kaylor 2000		Female (O) - 54%	Black (O) - 29% Hispanic (O) - 26%	Neglect (O) - 66%	Urban (O) - 37% Rural (O) - 6%
Harris 2003		Female (O) - 55%	Black (O) - 55%	Neglect (O) - 63%	
Holtan 2005	(K) - 3.8 years (F) - 3.8 years	Female (K) - 45% Female (F) - 43%			

Study	Age at Placement	Gender	Ethnicity	Removal Reason	Urbanicity
Iglehart 1994		Female (O) - 62% Female (K) - 34%	Black (O) - 43% Black (K) - 44% Hispanic (O) - 28% Hispanic (K) - 28%	Neglect (K) - 62% Neglect (F) - 50%	
Iglehart 1995		Female (K) - 52% Female (F) - 75%	Black (K) - 69% Black (F) - 41% Hispanic (K) - 10% Hispanic (F) - 19%		
Jenkins 2002		Female (O) - 49%	Black (O) - 45% Hispanic (O) - 52%		Urban (O) - 100%
Jones-Karena 1998		Female (O) - 50%	Black (O) - 60%	Neglect (O) - 47%	
Jonson-Reid 2003		Female (O) - 55%		Neglect (O) - 40%	
Landsverk 1996		Female (K) - 49% Female (F) - 59%		Neglect (K) - 80% Neglect (F) - 68%	
Leslie 2000a		Female (O) - 55%	Black (O) - 28% Hispanic (O) - 23%	Neglect (O) - 68%	
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%	

Study	Age at Placement	Gender	Ethnicity	Removal Reason	Urbanicity
McMillen 2005	(O) - 10.6 years	Female (O) - 56%	Black (O) - 52% Hispanic (O) - 1%	Neglect (O) - 48%	
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%	
Mosek 2001		Female (O) - 100%			
Rudenberg 1991		Female (K) - 50% Female (F) - 50%	Black (K) - 14% Black (F) - 29% Hispanic (K) - 14% Hispanic (F) - 11%		
Sallnas 2004					
Scannapieco 1997					
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%	

Study	Age at Placement	Gender	Ethnicity	Removal Reason	Urbanicity
Sripathy 2004		Female (O) - 44%	Black (O) - 70% Hispanic (O) - 16%	Neglect (K) - 75% Neglect (F) - 45%	Urban (O) - 100%
Strijker 2003					
Surbeck 2000		Female (K) - 56% Female (F) - 54%	Black (K) - 72% Black (F) - 41% Hispanic (K) - 1% Hispanic (F) - 1%		
Tarren-Sweeney 2006	(O) - 3.5 years	Female (O) - 49%		Neglect (O) - 78%	Urban (O) - 52% Rural (O) - 48%
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%		

Study	Age at Placement	Gender	Ethnicity	Removal Reason	Urbanicity
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%	
Wilson 1999					
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% Hispanic (O) - 26%	Neglect (O) - 70%	Urban (O) - 100%
Zuravin 1993					Urban (O) - 100%

9.6 INTERVENTION CHARACTERISTICS

Study	Kin Placement Type	Placement Timing	Length of Stay	Data Collection
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
Berrick 1997	Not Reported/Unclear	Not Reported/Unclear	(K) - Placement - 18.0 months (F) - Placement - 18.0 months	Cross-sectional
Berrick 1999	Not Reported/Unclear	First		Longitudinal - up to 7 years
Berrick, Oth 1994	Not Reported/Unclear	Not Reported/Unclear	(K) - Placement - 39.0 months (F) - Placement - 28.0 months	Cross-sectional
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

Study	Kin Placement Type	Placement Timing	Length of Stay	Data Collection
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	(K) - Placement - 11.0 months	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 (K) - OOH - 80.0 months (F) - Placement - 39.0 months (F) - OOH - 65.0 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
Grogan-Kaylor 2000	Not Reported/Unclear	First		Cross-sectional
Harris 2003	Not Reported/Unclear	Not Reported/Unclear		Cross-sectional

Study	Kin Placement Type	Placement Timing	Length of Stay	Data Collection
Holtan 2005	Not Reported/Unclear	Not Reported/Unclear	(K) - Placement - 61.2 months (F) - Placement - 68.4 months	Cross-sectional
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
Jones-Karena 1998	Not Reported/Unclear	Not Reported/Unclear		Cross-sectional
Jonson-Reid 2003	Not Reported/Unclear	Last		Longitudinal - 4.5 years
Landsverk 1996	Not Reported/Unclear	Not Reported/Unclear		Cross-sectional
Leslie 2000a	Not Reported/Unclear	Not Reported/Unclear		Longitudinal - 1.5 years
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
Metzger 1997	Unlicensed	Not Reported/Unclear	(K) - Placement - 74.0 months (F) - Placement - 77.8 months	Cross-sectional
Mosek 2001	Not Reported/Unclear	Not Reported/Unclear	(K) - OOH - 104.4 months (F) - OOH - 126.0 months	Cross-sectional
Rudenberg 1991	Not Reported/Unclear	Not Reported/Unclear		Cross-sectional
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
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

Study	Kin Placement Type	Placement Timing	Length of Stay	Data Collection
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
Surbeck 2000	Not Reported/Unclear	Not Reported/Unclear	(K) - Placement - 22.9 months (F) - Placement - 27.0 months	Cross-sectional
Tarren-Sweeney 2006	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 Jr. 2003	Licensed and Unlicensed	Not Reported/Unclear	(K) - OOH - 31.3 months (F) - OOH - 31.0 months	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
Zima 2000	Not Reported/Unclear	Not Reported/Unclear		Cross-sectional
Zimmerman 1998	Not Reported/Unclear	First		Cross-sectional
Zuravin 1999	Licensed	Not Reported/Unclear		Longitudinal - 5 years

9.7 OUTCOME MEASURES

Study	Behavioral Development	Mental Health	Placement Stability	Permanency	Educational Attainment	Family Relations	Service Utilization	Re-abuse
Barth 1994				Outcome categories: Adoption, Still in Placement				
				Measured using administrative database				
Belanger 2002	Outcome category: Adaptive Behaviors (Continuous) Measured using caregiver report and standardized instrumentation - Vineland Adaptive Behavior Scales: Interview Edition Survey Form	Outcome category: Psychiatric Disorders (Continuous) Measured using caregiver report and standardized instrumentation - Devereaux Scales of mental Disorders (DSMD)	Outcome categories: Number of Placements (Continuous), Length of Stay (OOH Care) Measured using caregiver report					

Study	Behavioral Development	Mental Health	Placement Stability	Permanency	Educational Attainment	Family Relations	Service Utilization	Re-abuse
Benedict 1996a								Outcome category: Institutional Abuse Measured using administrative database
Bennett 2000	<p>Outcome categories: Behavior Problems (Continuous), Adaptive Behaviors (Continuous)</p> <p>Measured using caregiver report and standardized instrumentation - Child Behavior Checklist/4-18, Vineland Adaptive Behavior Scales</p>							

Study	Behavioral Development	Mental Health	Placement Stability	Permanency	Educational Attainment	Family Relations	Service Utilization	Re-abuse
Berrick 1997						Outcome category: Conflict (Continuous) Measured using caregiver report and standardized instrumentation - Index of Family Relations		
Berrick 1999			Outcome category: Re-entry Measured using administrative database	Outcome categories: Reunification, Adoption, Guardianship, Still in Placement Measured using administrative database				
Berrick, Oth 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	

Study	Behavioral Development	Mental Health	Placement Stability	Permanency	Educational Attainment	Family Relations	Service Utilization	Re-abuse
Bilaver 1999		Outcome category: Psychiatric Disorders (Continuous) Measured using administrative database					Outcome categories: Mental Health Services, Physician Services, Developmental Services Measured using administrative database	
Brooks 1998	Outcome categories: Behavior Problems (Continuous), Adaptive Behaviors (Continuous) Measured using caregiver report and standardized instrumentation - Behavior Problem Index (BPI), Grow-Up Scale		Outcome category: Length of Stay (Placement) Measured using caregiver report		Outcome category: Repeated a Grade Measured using caregiver report			

Study	Behavioral Development	Mental Health	Placement Stability	Permanency	Educational Attainment	Family Relations	Service Utilization	Re-abuse
Chamberlain 2006			Outcome category: Placement Disruption Measured using caregiver report					
Chapman 2004						Outcome category: Attachment (Continuous) Measured using self-report		
Chew 1998						Outcome category: Attachment (Continuous) Measured using standardized instrumentation - Attachment Q-Sort Version 3 - and researcher observation		
Christopher 1998					Outcome category: Educational Attainment Measured using case records			

Study	Behavioral Development	Mental Health	Placement Stability	Permanency	Educational Attainment	Family Relations	Service Utilization	Re-abuse
Clyman 1998			<p>Outcome category: Length of Stay (OOH Care)</p> <p>Measured using caregiver report</p>				<p>Outcome categories: Mental Health Services, Physician Services, Developmental Services</p> <p>Measured using caregiver report and standardized instrumentation - The Young Kids Early Services Assessments 1.0 (TYKES)</p>	
Cole 2006			<p>Outcome category: Length of Stay (Placement)</p> <p>Measured using caregiver report and standardized instrumentation - Caregiver Interview Form (CIF)</p>			<p>Outcome category: Attachment (Dichotomous)</p> <p>Measured using standardized instrumentation - Ainsworth Strange Situation Procedure (ASSP) - and observational methods</p>		

Study	Behavioral Development	Mental Health	Placement Stability	Permanency	Educational Attainment	Family Relations	Service Utilization	Re-abuse
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					

Study	Behavioral Development	Mental Health	Placement Stability	Permanency	Educational Attainment	Family Relations	Service Utilization	Re-abuse
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	Outcome category: Reunification				
			Measured using administrative database	Measured using administrative database				

Study	Behavioral Development	Mental Health	Placement Stability	Permanency	Educational Attainment	Family Relations	Service Utilization	Re-abuse
Courtney 1997b			Outcome category: Number of Placements (Dichotomous) Measured using administrative database					
Davis 2005	Outcome category: Behavior Problems (Continuous) Measured using self-report and standardized instrumentation - Youth Self-Report (YSR)		Outcome categories: Number of Placements (Continuous), Length of Stay (Placement) Measured using caseworker report and case records			Outcome category: Attachment (Continuous) Measured using self-report and standardized instrumentation - Assessment Of Interpersonal Relations(AIR)/Mother Subscale		
Frame 2000			Outcome category: Re-entry Measured using case records					

Study	Behavioral Development	Mental Health	Placement Stability	Permanency	Educational Attainment	Family Relations	Service Utilization	Re-abuse
Frame 2002			Outcome category: Re-entry Measured using administrative database and caseworker report	Outcome categories: Reunification, Still in Placement Measured using administrative database and caseworker report				
Fuller 2005								Outcome category: Recurrence of Abuse Measured using administrative database
Grogan-Kaylor 2000				Outcome category: Reunification Measured using administrative database				

Study	Behavioral Development	Mental Health	Placement Stability	Permanency	Educational Attainment	Family Relations	Service Utilization	Re-abuse
Harris 2003		Outcome category: Psychiatric Disorders (Dichotomous) Measured using caregiver report and caseworker report	Outcome category: Number of Placements (Dichotomous) Measured using caseworker report					
Holtan 2005	Outcome categories: Behavior Problems (Continuous), Adaptive Behaviors (Continuous) Measured using caregiver report and standardized instrumentation - Child Behavior Checklist (CBCL)							
Iglehart 1994	Outcome category: Behavior Problems (Dichotomous) Measured using caseworker report	Outcome category: Psychiatric Disorders (Dichotomous) Measured using caseworker report			Outcome category: Grade Level Measured using caseworker report			

Study	Behavioral Development	Mental Health	Placement Stability	Permanency	Educational Attainment	Family Relations	Service Utilization	Re-abuse
Iglehart 1995					Outcome category: Grade Level Measured using self-report			
Jenkins 2002			Outcome category: Length of Stay (OOH Care) Measured using case records			Outcome category: Attachment (Dichotomous) Measured using case records	Outcome category: Mental Health Services Measured using case records	
Jones-Karena 1998	Outcome categories: Behavior Problems (Continuous), Adaptive Behaviors (Continuous) Measured using caregiver report and standardized instrumentation - Child Behavior Checklist/4-18, Vineland Adaptive Behavior Scales - Survey Form							

Study	Behavioral Development	Mental Health	Placement Stability	Permanency	Educational Attainment	Family Relations	Service Utilization	Re-abuse
Jonson-Reid 2003			Outcome category: Re-entry Measured using administrative database					Outcome category: Recurrence of Abuse Measured using administrative database
Landsverk 1996	Outcome category: Behavior Problems (Continuous) Measured using caregiver report and standardized instrumentation - Child Behavior Checklist (CBCL)							
Leslie 2000a							Outcome category: Mental Health Services Measured using administrative database and case records	

Study	Behavioral Development	Mental Health	Placement Stability	Permanency	Educational Attainment	Family Relations	Service Utilization	Re-abuse
McIntosh 2002				Outcome category: Reunification				
				Measured using administrative database				
McMillen 2004							Outcome category: Mental Health Services	
							Measured using self-report	
McMillen 2005		Outcome category: Psychiatric Disorders (Dichotomous)						
		Measured using self-report and standardized instrumentation - DSM-IV						

Study	Behavioral Development	Mental Health	Placement Stability	Permanency	Educational Attainment	Family Relations	Service Utilization	Re-abuse
Metzger 1997	Outcome category: Behavioral Problems (Continuous) Measured using caseworker report and standardized instrumentation - The Festinger Scales/Rating of Behavioral Reactions	Outcome category: Well-Being (Continuous) Measured using self-report and standardized instrumentation - Personal Attribute Inventory for Children	Outcome categories: Number of Placements (Dichotomous), Length of Stay (Placement) Measured using caseworker report and case records		Outcome category: Repeated a Grade Measured using caseworker report and case records		Outcome category: Mental Health Services Measured using caseworker report and case records	
Mosek 2001		Outcome category: Well-Being (Continuous) Measured using self-report and standardized instrumentation - Offer Self-Image Questionnaire (OSIQ)				Outcome category: Attachment (Dichotomous) Measured using self-report		

Study	Behavioral Development	Mental Health	Placement Stability	Permanency	Educational Attainment	Family Relations	Service Utilization	Re-abuse
Rudenberg 1991	Outcome category: Behavior Problems (Continuous) Measured using caregiver report and standardized instrumentation - Child Behavior Checklist (CBCL)							
Sallnas 2004			Outcome category: Placement Disruption Measured using caseworker report and case records					
Scannapieco 1997			Outcome category: Length of Stay (OOH Care) Measured using case records				Outcome categories: Mental Health Services, Physician Services Measured using case records	

Study	Behavioral Development	Mental Health	Placement Stability	Permanency	Educational Attainment	Family Relations	Service Utilization	Re-abuse
Shin 2003					<p>Outcome category: Grade Level</p> <p>Measured using self-report and standardized instrumentation - Wide Range Achievement Test/Revised (WRAT-R)</p>			
Sivright 2004			<p>Outcome category: Length of Stay (OOH Care)</p> <p>Measured using case records</p>	<p>Outcome category: Still in Placement</p> <p>Measured using case records</p>			<p>Outcome category: Mental Health Services</p> <p>Measured using case records</p>	

Study	Behavioral Development	Mental Health	Placement Stability	Permanency	Educational Attainment	Family Relations	Service Utilization	Re-abuse
Smith 2002				Outcome categories: Reunification, Adoption, Still in Placement				
				Measured using caseworker report and administrative database				
Smith 2003				Outcome category: Still in Placement				
				Measured using administrative database				

Study	Behavioral Development	Mental Health	Placement Stability	Permanency	Educational Attainment	Family Relations	Service Utilization	Re-abuse
Sripathy 2004	<p>Outcome categories: Behavior Problems (Continuous), Adaptive Problems (Continuous)</p> <p>Measured using caregiver report and standardized instrumentation - Child Behavior Checklist (CBCL)</p>				<p>Outcome category: Repeated a Grade</p> <p>Measured using caregiver report</p>		<p>Outcome category: Mental Health Services</p> <p>Measured using caregiver report</p>	
Strijker 2003	<p>Outcome category: Behavior Problems (Continuous)</p> <p>Measured using caregiver report and standardized instrumentation - Child Behavior Checklist 4-18 (CBCL/4-18)</p>					<p>Outcome category: Attachment (Continuous)</p> <p>Measured using caregiver report and standardized instrumentation - Attachment Scale</p>		

Study	Behavioral Development	Mental Health	Placement Stability	Permanency	Educational Attainment	Family Relations	Service Utilization	Re-abuse
Surbeck 2000	Outcome categories: Behavior Problems (Continuous), Adaptive Behaviors (Continuous) Measured using case records		Outcome category: Length of Stay (Placement) Measured using case records			Outcome category: Attachment (Continuous) Measured using case records		
Tarren-Sweeney 2006	Outcome categories: Behavior Problems (Continuous), Adaptive Behaviors (Continuous) Measured using caregiver report and standardized instrumentation - Child Behavior Checklist (CBCL)							

Study	Behavioral Development	Mental Health	Placement Stability	Permanency	Educational Attainment	Family Relations	Service Utilization	Re-abuse
Testa 1999				Outcome categories: Reunification, Adoption and Guardianship				
				Measured using administrative database				
Testa 2001			Outcome category: Placement Disruption	Outcome categories: Adoption, Guardianship				
			Measured using caregiver report and administrative database	Measured using caregiver report and administrative database				

Study	Behavioral Development	Mental Health	Placement Stability	Permanency	Educational Attainment	Family Relations	Service Utilization	Re-abuse
Timmer 2004	Outcome category: Behavior Problems (Continuous) Measured using caregiver report and standardized instrumentation - Child Behavior Checklist (CBCL)							
Tompkins Jr. 2003		Outcome category: Well-Being (Dichotomous) Measured using caseworker report	Outcome category: Length of Stay (OOH Care) Measured using caseworker report				Outcome categories: Mental Health Services, Physician Services Measured using caseworker report	
Vogel 1999			Outcome category: Length of Stay (OOH Care) Measured using administrative database					

Study	Behavioral Development	Mental Health	Placement Stability	Permanency	Educational Attainment	Family Relations	Service Utilization	Re-abuse
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						
Zima 2000	Outcome categories: Behavior Problems (Continuous), Adaptive Behaviors (Continuous) Measured using caregiver report and standardized instrumentation - Child behavior Checklist (CBCL)				Outcome category: Repeated a Grade Measured using caregiver report			

Study	Behavioral Development	Mental Health	Placement Stability	Permanency	Educational Attainment	Family Relations	Service Utilization	Re-abuse
Zimmerman 1998			Outcome category: Number of Placements (Dichotomous) Measured using administrative database and case records	Outcome categories: Reunification Measured using administrative database and case records				
Zuravin 1999								Outcome category: Institutional Abuse Measured using administrative database

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11 Data and analyses

1 BEHAVIORAL DEVELOPMENT

Outcome or Subgroup	Studies	Participants	Statistical Method	Effect Estimate
1.1 Behavior Problems Continuous	7	59200	Odds Ratio (M-H, Random, 95% CI)	1.13 [0.92, 1.41]
1.2 Adaptive Behaviors	5	1024	Std. Mean Difference (IV, Random, 95% CI)	-0.45 [-0.70, -0.19]
1.3 Behavioral Problems Dichotomous	2	1659	Odds Ratio (M-H, Random, 95% CI)	0.49 [0.20, 1.20]

2 MENTAL HEALTH

Outcome or Subgroup	Studies	Participants	Statistical Method	Effect Estimate
2.1 Psychiatric Disorders Dichotomous	4	49131	Odds Ratio (M-H, Random, 95% CI)	0.46 [0.44, 0.49]
2.2 Psychiatric Disorders Continuous	1	59	Std. Mean Difference (IV, Random, 95% CI)	-0.06 [-0.59, 0.47]
2.3 Well-being Dichotomous	3	317870	Odds Ratio (M-H, Random, 95% CI)	0.52 [0.51, 0.53]
2.4 Well-being Continuous	1	102	Std. Mean Difference (IV, Random, 95% CI)	-0.91 [-1.32, -0.51]

3 PLACEMENT STABILITY

Outcome or Subgroup	Studies	Participants	Statistical Method	Effect Estimate
3.1 Placement Settings	4	11808	Odds Ratio (M-H, Random, 95% CI)	0.36 [0.27, 0.49]
3.2 Reentry	1	88	Odds Ratio (M-H, Random, 95% CI)	0.29 [0.09, 0.94]

3.3 Length of Placement	5	1435	Std. Mean Difference (IV, Random, 95% CI)	0.86 [-0.98, 2.70]
3.4 Placement Disruption	2	2377	Odds Ratio (M-H, Random, 95% CI)	0.46 [0.21, 1.02]
3.5 Number of Placements	2	91	Std. Mean Difference (IV, Random, 95% CI)	-0.30 [-0.98, 0.39]
3.6 Length of Stay	5	316188	Std. Mean Difference (IV, Random, 95% CI)	0.21 [-0.07, 0.48]

4 PERMANENCY

Outcome or Subgroup	Studies	Participants	Statistical Method	Effect Estimate
4.1 Reunification	7	59200	Odds Ratio (M-H, Random, 95% CI)	1.13 [0.92, 1.41]
4.2 Adoption	6	58645	Odds Ratio (M-H, Random, 95% CI)	2.50 [1.05, 5.94]
4.3 Guardianship	4	56720	Odds Ratio (M-H, Random, 95% CI)	0.26 [0.10, 0.72]
4.4 Still in Placement	7	53858	Odds Ratio (M-H, Random, 95% CI)	2.24 [1.66, 3.03]

5 EDUCATIONAL ATTAINMENT

Outcome or Subgroup	Studies	Participants	Statistical Method	Effect Estimate
5.1 Graduation	1	66	Odds Ratio (M-H, Random, 95% CI)	3.33 [1.16, 9.59]
5.2 Grade Level	2	1101	Odds Ratio (M-H, Random, 95% CI)	0.81 [0.63, 1.04]
5.3 Repeated a Grade	4	1111	Odds Ratio (M-H, Random, 95% CI)	0.67 [0.43, 1.05]

6 FAMILY RELATIONS

Outcome or Subgroup	Studies	Participants	Statistical Method	Effect Estimate
6.1 Attachment Continuous	5	499	Std. Mean Difference (IV, Random, 95% CI)	-0.01 [-0.30, 0.28]
6.2 Conflict	1	61	Std. Mean Difference (IV, Random, 95% CI)	-2.20 [-2.85, -1.55]

6.3 Attachment Dichotomous	3	265	Odds Ratio (M-H, Random, 95% CI)	0.88 [0.33, 2.30]
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7 SERVICE UTILIZATION

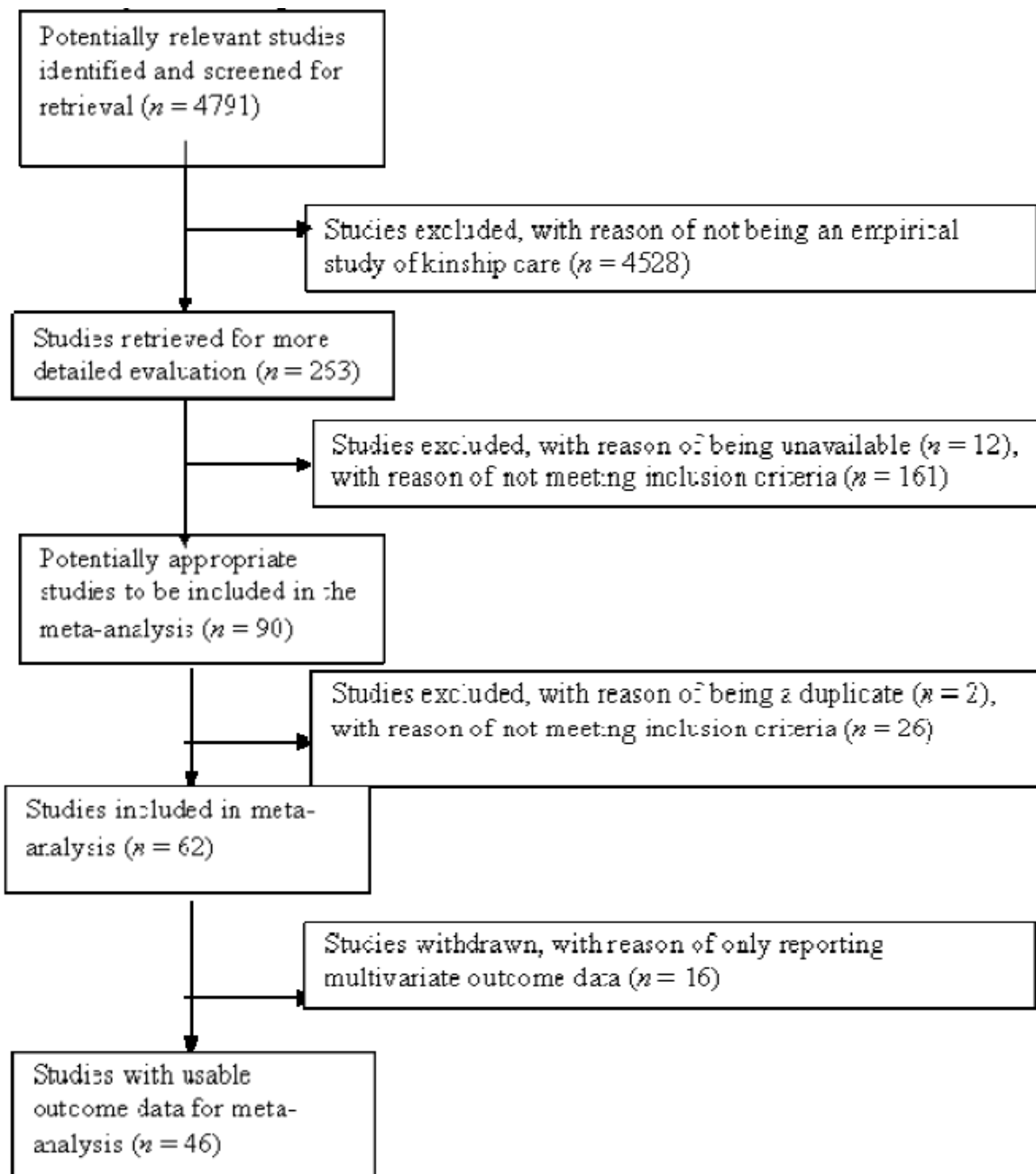
Outcome or Subgroup	Studies	Participants	Statistical Method	Effect Estimate
7.1 Mental Health Services	9	150724	Odds Ratio (M-H, Random, 95% CI)	1.69 [1.18, 2.42]
7.2 Developmental Services	2	47844	Odds Ratio (M-H, Random, 95% CI)	1.32 [1.22, 1.42]
7.3 Physician Services	4	212660	Odds Ratio (M-H, Random, 95% CI)	2.93 [0.46, 18.59]

8 RE-ABUSE

Outcome or Subgroup	Studies	Participants	Statistical Method	Effect Estimate
8.1 Recurrence of Abuse	1	139	Odds Ratio (M-H, Random, 95% CI)	2.11 [1.07, 4.17]
8.2 Institutional Abuse	2	566	Odds Ratio (M-H, Random, 95% CI)	0.44 [0.27, 0.72]

12 Figures

Figure 1: Kinship Care Systematic Review Flow of Included Studies



13 Sources of support

13.1 INTERNAL SOURCES

SFI Campbell, The Danish National Centre for social research, Denmark

13.2 EXTERNAL SOURCES

Applied Research in Child Welfare Project, USA

14 Appendices

14.1 COCHRANE LIBRARY (CENTRAL) SEARCH STRATEGY

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* or preschool* or pre school* or (young person*) or (young people))
- #15 (#11 OR #12 OR #13 OR #14)
- #16 (#10 AND #15)

14.2 MEDLINE SEARCH STRATEGY

MEDLINE, searched via OVID, 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

14.3 C2-SPECTR SEARCH STRATEGY

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}

14.4 SOCIOLOGICAL ABSTRACTS SEARCH STRATEGY

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 (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)) 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 (young people)))

14.5 SOCIAL WORK ABSTRACTS SEARCH STRATEGY

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

14.6 SOCIAL SCIENCE CITATION INDEX AND ISI PROCEEDINGS SEARCH STRATEGY

SSCI, searched 1900 to February 17th 2007, and ISI Proceedings, searched 1990 to February 16th 2007, both accessed via ISI Web of Knowledge,

#17 #16 AND #11

DocType=All document types; Language=All languages;

#16 #15 OR #14 OR #13 OR #12

DocType=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 #1

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

14.7 FAMILY AND SOCIETY STUDIES WORLDWIDE SEARCH STRATEGY

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

14.8 ERIC SEARCH STRATEGY

ERIC, searched via Dialog DataStar, 1966 to February 2007

- 1 ERIC - 1966 to date
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

14.9 PSYCINFO SEARCH STRATEGY

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 adolescen* 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*

14.10 CINAHL SEARCH STRATEGY

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

14.11 ASSIA SEARCH STRATEGY

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 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"))

14.12 DISSERTATION ABSTRACTS INTERNATIONAL SEARCH STRATEGY

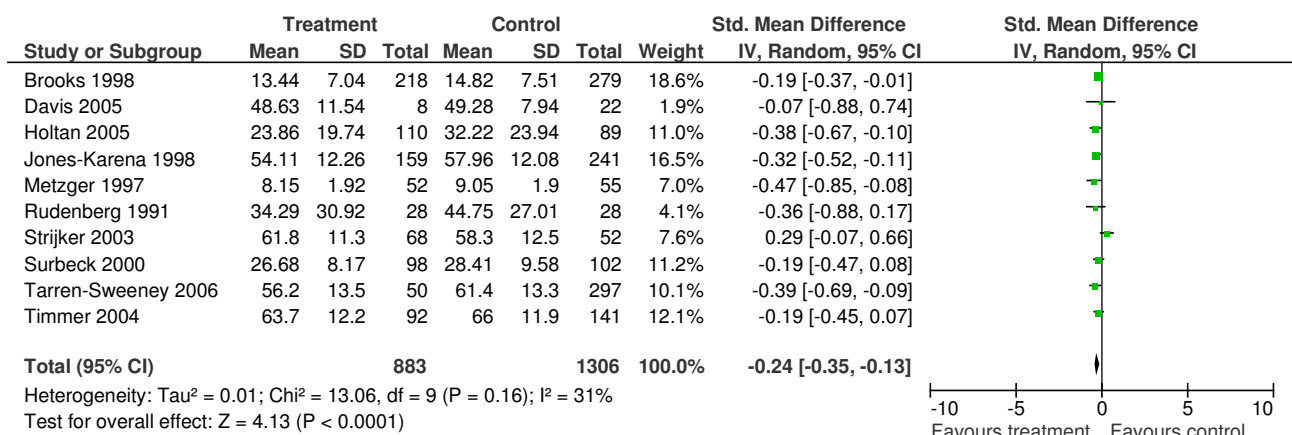
Dissertation Abstracts International, accessed via Dissertation Express, searched
late 1960s to February 2007

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

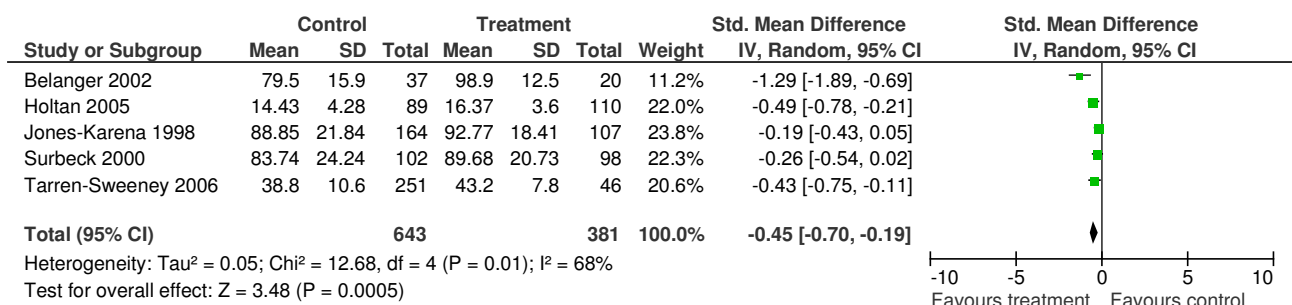
15 Data and analyses

1 BEHAVIORAL DEVELOPMENT OUTCOMES

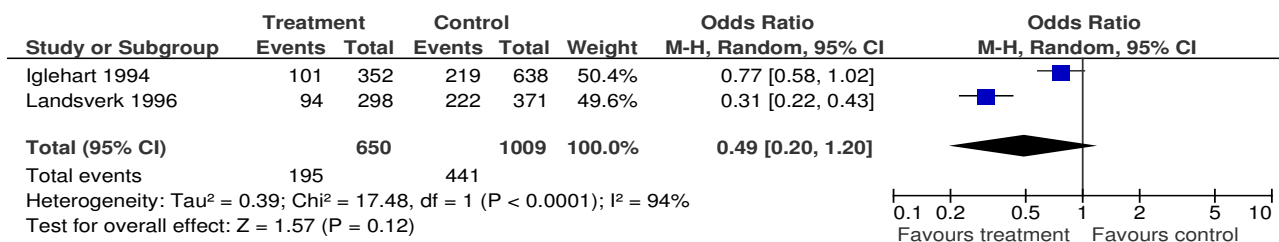
Comparison 1.1 Behavioral Development, Outcome 1 Behavior Problems (Continuous)



Comparison 1.2 Behavioral Development, Outcome 2 Adaptive Behaviors

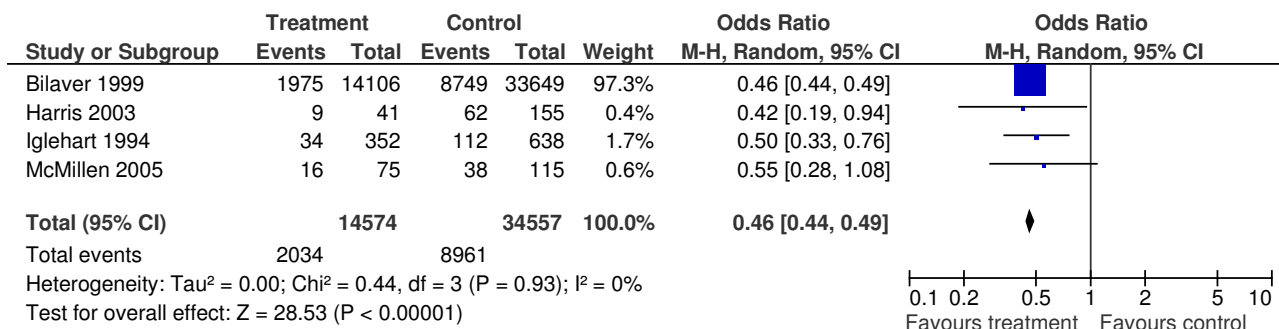


Comparison 1.3 Behavioral Development, Outcome 3 Behavioral Problems (Dichotomous)

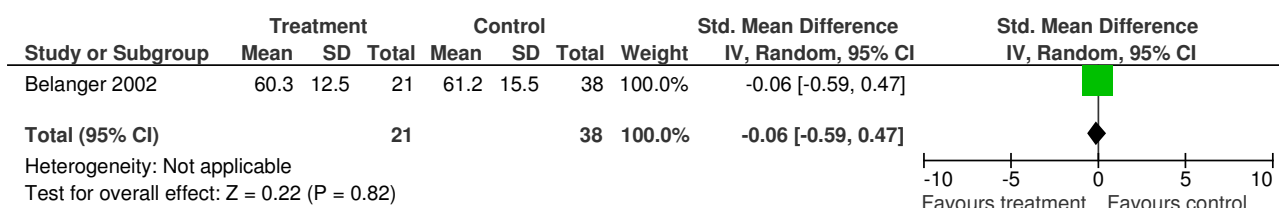


2 MENTAL HEALTH

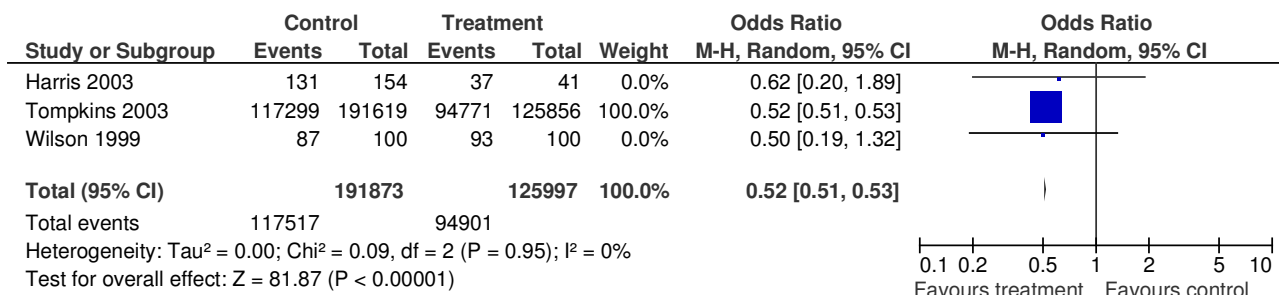
Comparison 2.1 Mental Health, Outcome 1 Psychiatric Disorders (Dichotomous)



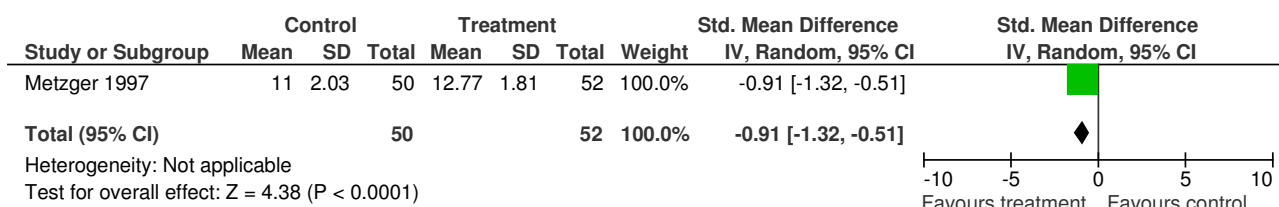
Comparison 2.2 Mental Health, Outcome 2 Psychiatric Disorders (Continuous)



Comparison 2.3 Mental Health, Outcome 3 Well-being (Dichotomous)

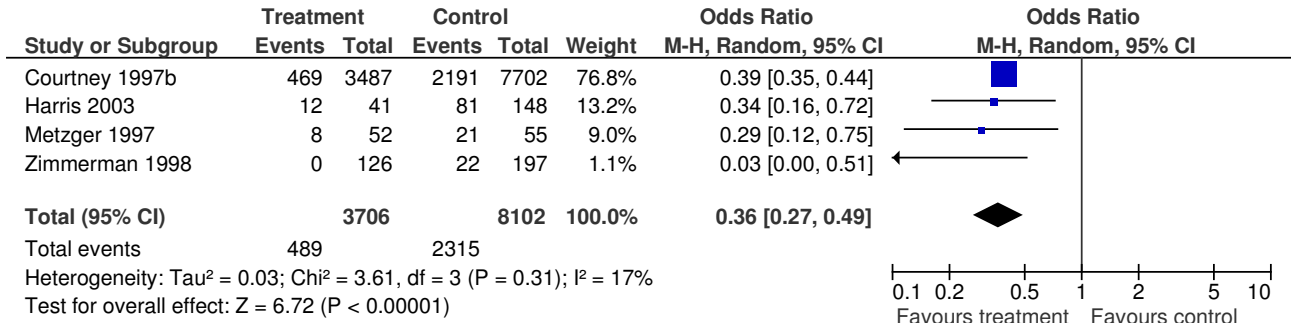


Comparison 2.4 Mental Health, Outcome 3 Well-being (Continuous)

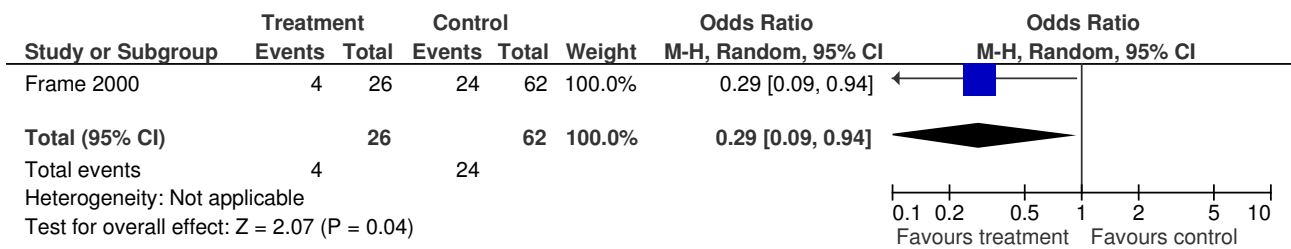


3 PLACEMENT STABILITY OUTCOMES

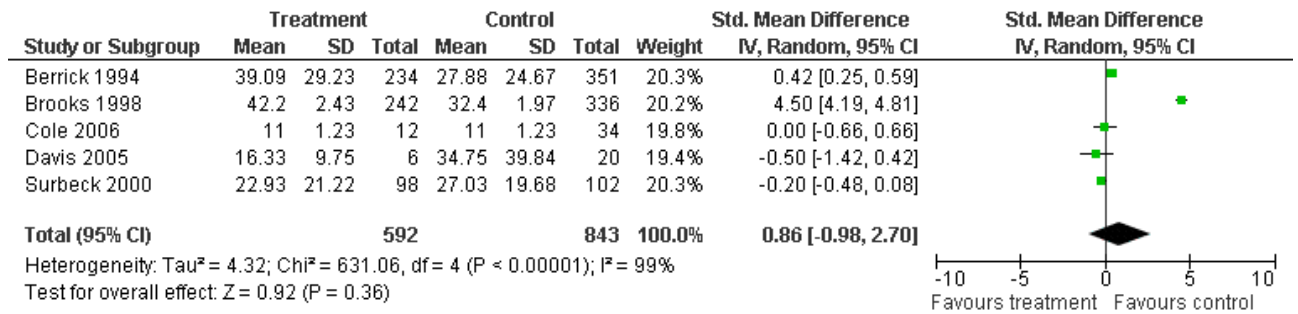
Comparison 3.1 Placement Stability, Outcome 1 Placement Settings



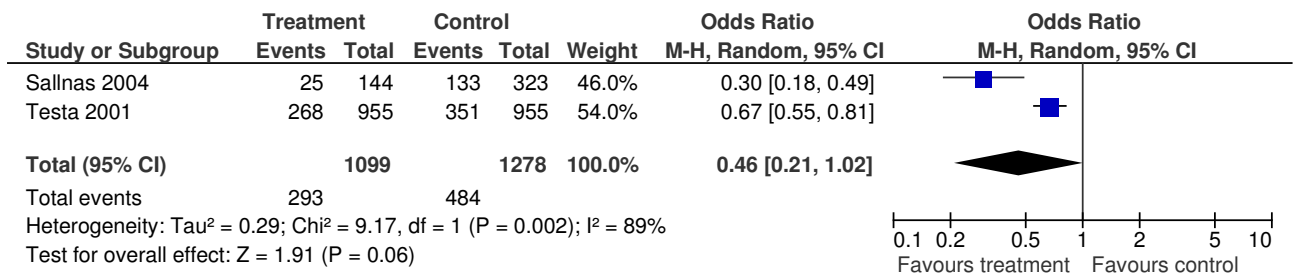
Comparison 3.2 Placement Stability, Outcome 2 Reentry



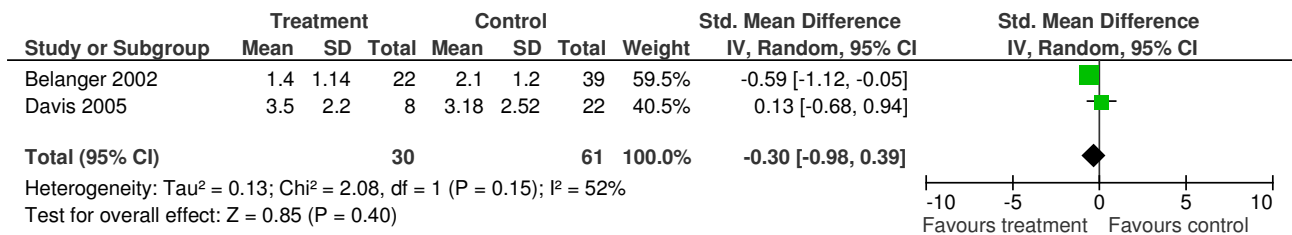
Comparison 3.3 Placement Stability, Outcome 3 Length of placement



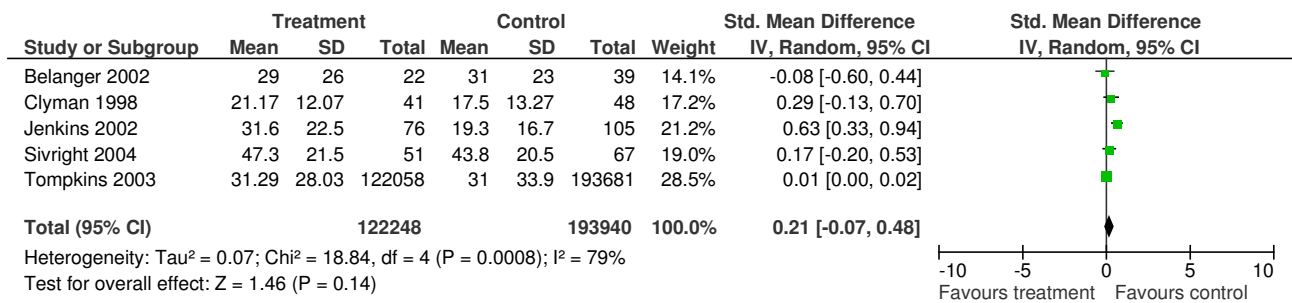
Comparison 3.4 Placement Stability, Outcome 4 Placement disruption



Comparison 3.5 Placement Stability, Outcome 5 Number of placements

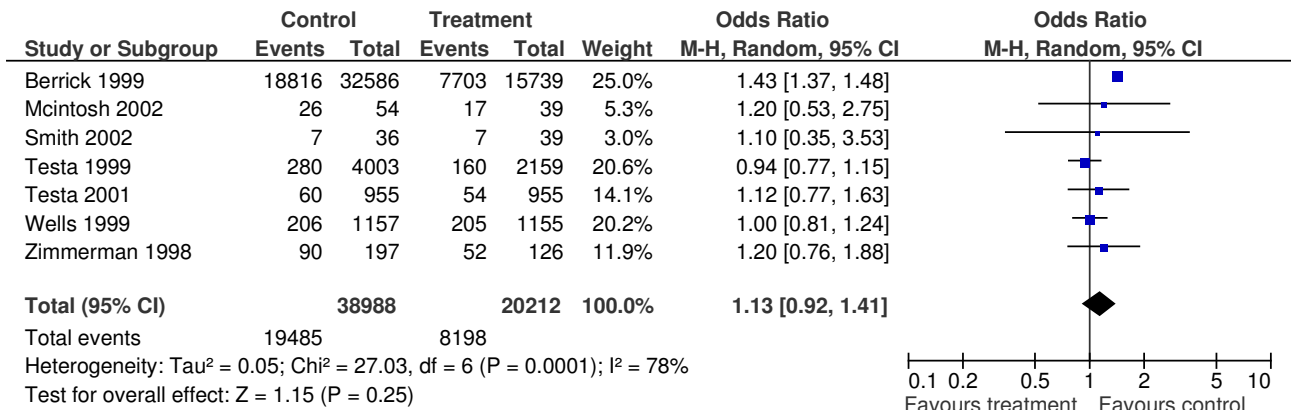


Comparison 3.6 Placement Stability, Outcome 6 Length of stay

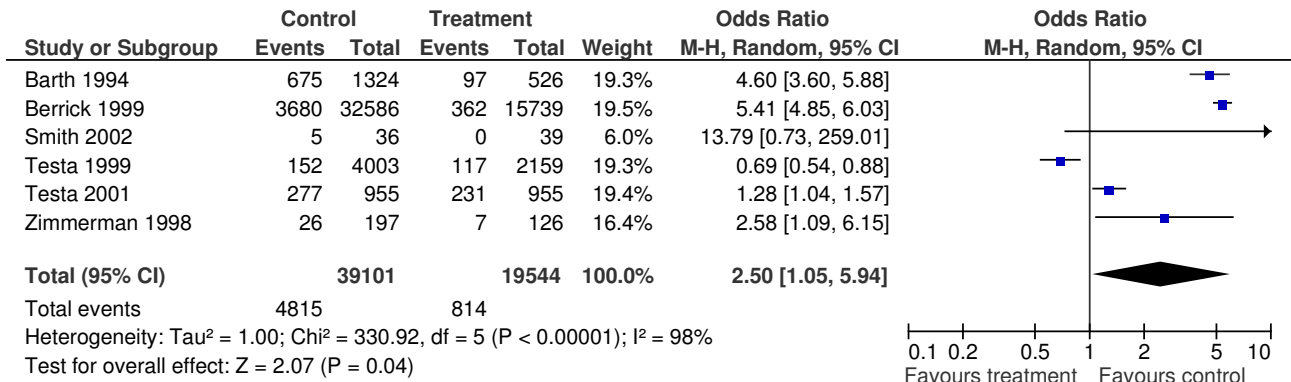


4 PERMANENCY OUTCOMES

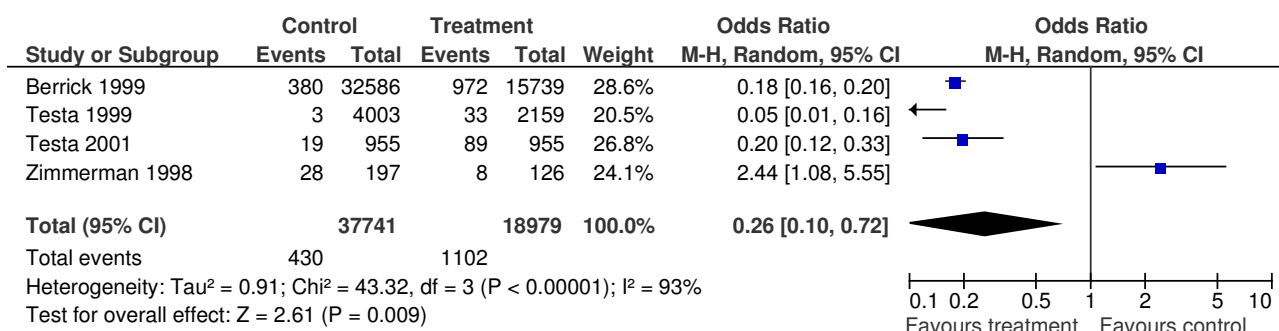
Comparison 4.1 Permanency, Outcome 1 Reunification



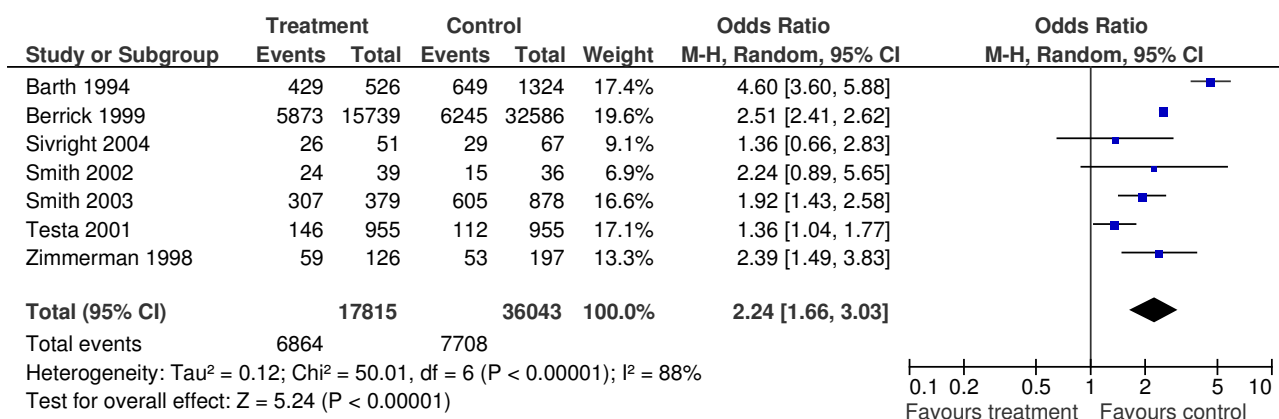
Comparison 4.2 Permanency, Outcome 2 Adoption



Comparison 4.3 Permanency, Outcome 3 Guardianship

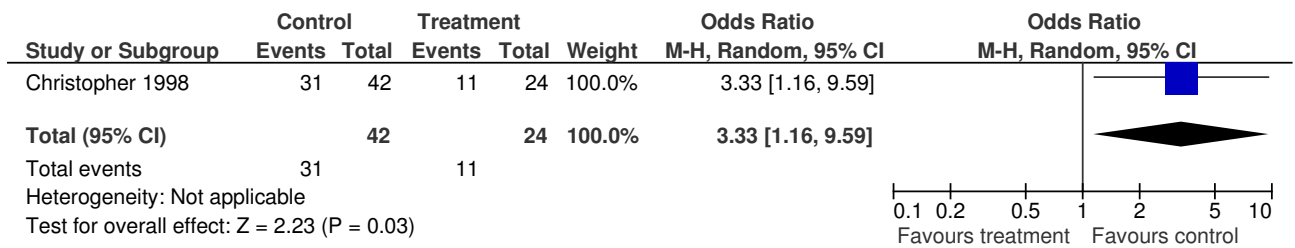


Comparison 4.4 Permanency, Outcome 4 Still in placement

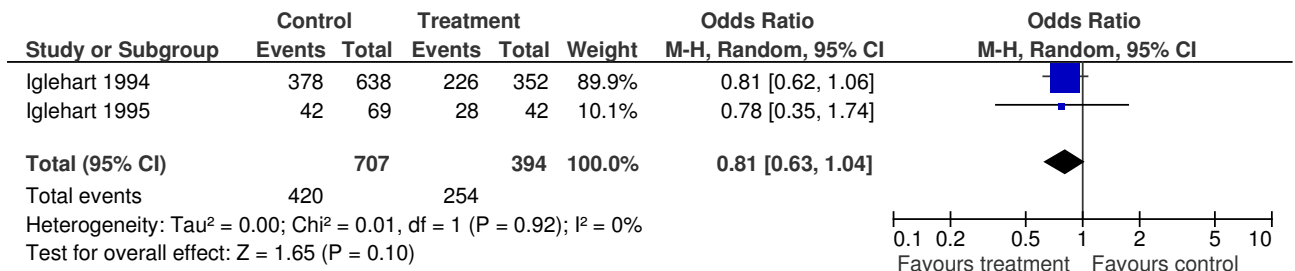


5 EDUCATION ATTAINMENT OUTCOMES

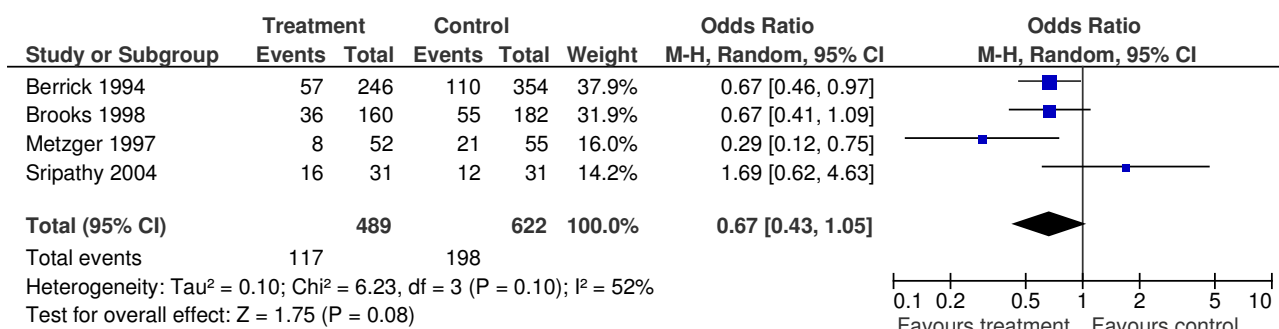
Comparison 5.1 Education Attainment, Outcome 1 Graduation



Comparison 5.2 Education Attainment, Outcome 2 Grade level

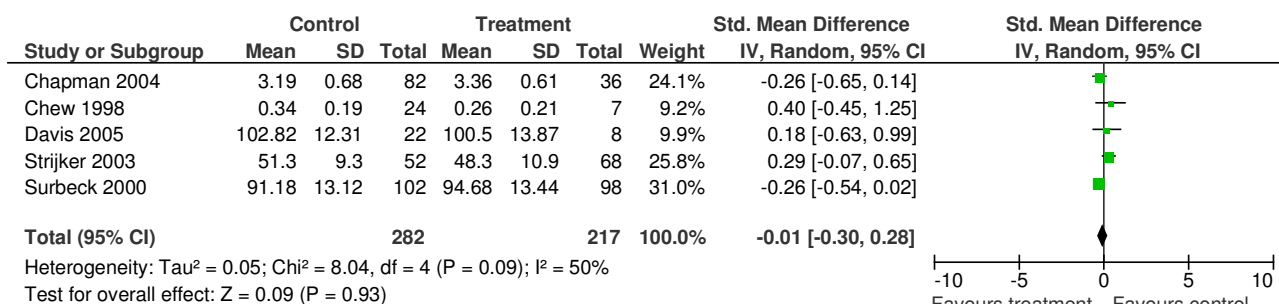


Comparison 5.3 Education Attainment, Outcome 3 Repeated a grade

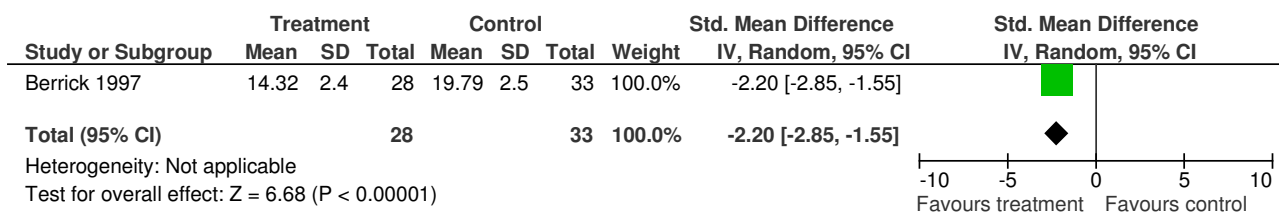


6 FAMILY RELATIONS

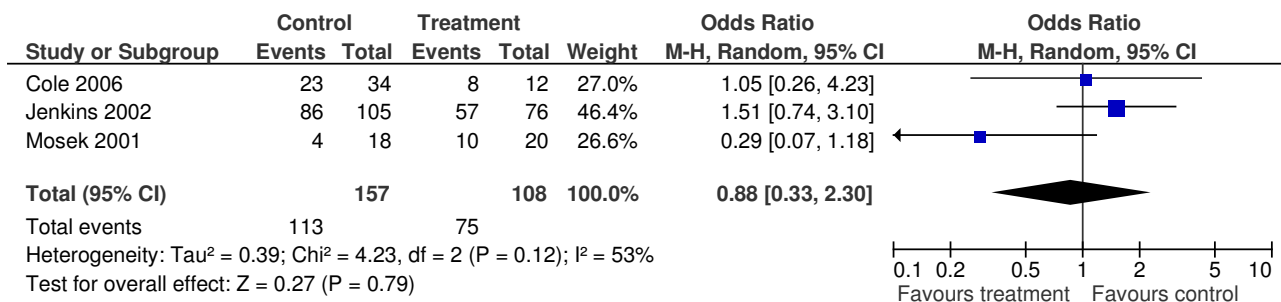
Comparison 6.1 Family Relations, Outcome 1 Attachment (Continuous)



Comparison 6.2 Family Relations, Outcome 2 Conflict

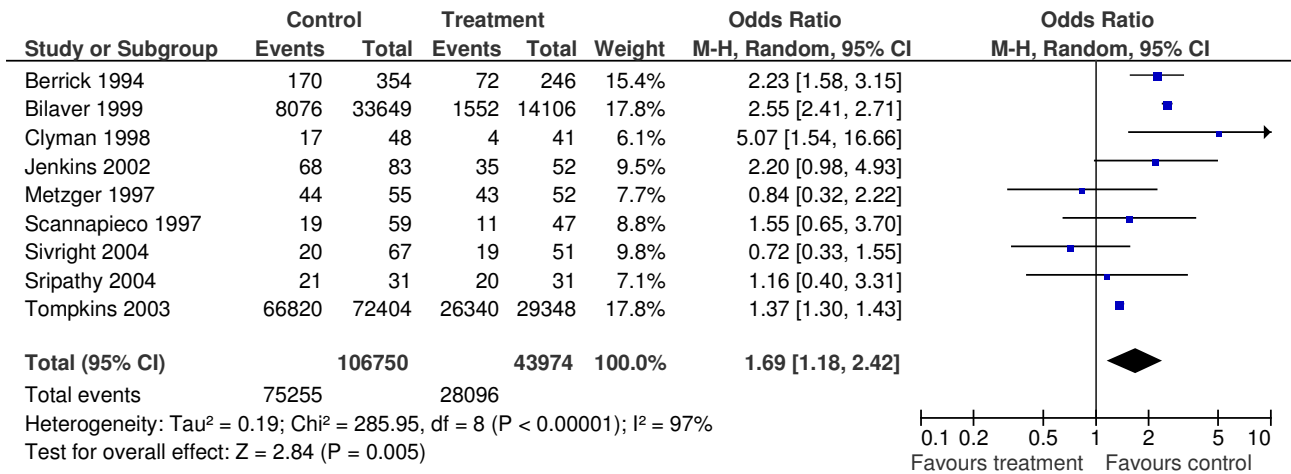


Comparison 6.3 Family Relations, Outcome 3 Attachment (Dichotomous)

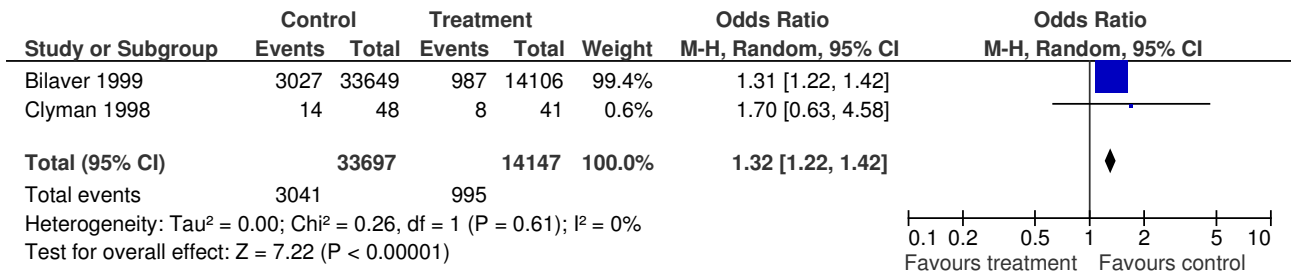


7 SERVICE UTILIZATION OUTCOMES

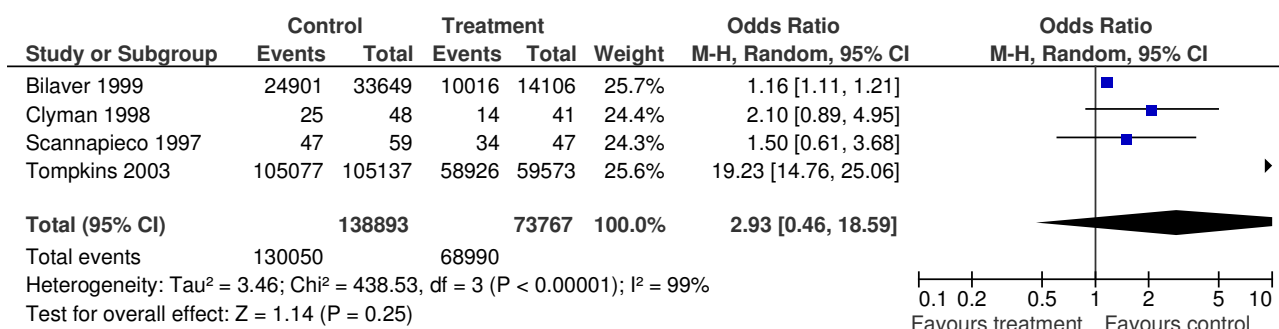
Comparison 7.1 Service Utilization, Outcome 1 Mental Health Services



Comparison 7.2 Service Utilization, Outcome 2 Developmental Services

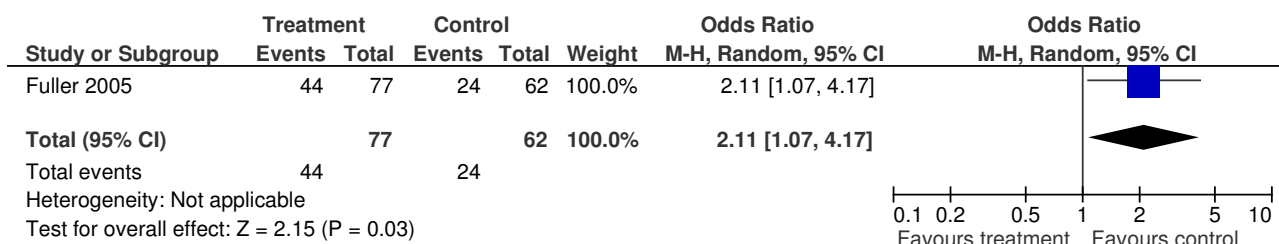


Comparison 7.3 Service Utilization, Outcome 3 Physician Services



8 RE-ABUSE OUTCOMES

Comparison 8.1 Service Re-abuse, Outcome 1 Recurrence of Abuse



Comparison 8.2 Service Re-abuse, Outcome 2 Institutional Abuse

