

## Psychosocial Factors of Behavioral Health Outcomes Among Children in Foster and Kinship Care: A Systematic Review

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### **Abstract:**

National data indicate recent increases in the number of children in foster and kinship care placements. Children in out-of-home placements are at elevated risk for behavioral problems, often stemming from maltreatment or trauma exposure before placement. Behavioral problems are associated with placement disruptions, delinquency, and substance use; long-term data show children with histories of foster and kinship care disproportionately experience these negative outcomes. Thus, research is needed to identify factors that can be targeted in prevention and intervention efforts to improve behavioral health outcomes among this vulnerable population. To fill this knowledge gap, we conducted a systematic review with the aim of developing a better understanding of the psychosocial factors associated with the behavioral health of children in foster and kinship care. Guided by the PRISMA protocol for systematic reviews, we identified relevant literature through searches of 3 electronic databases: Social Work Abstracts, Social Service Abstracts, and PsycINFO. Criteria for review inclusion were study samples of children in foster or kinship care; studies published between 2010 and 2016; and study focus on behavioral health outcomes, with psychosocial factors as the predictor variables. Studies were evaluated for risk of bias. The final sample included 40 studies, from which we identified almost 50 psychosocial factors associated with the behavioral health of children in foster and kinship care, including the most frequently examined psychosocial factors of caregivers' parenting practices and placement type. Additionally, we found positive psychosocial factors (e.g., positive parenting practices; healthy family functioning) predicted fewer behavioral problems. Practitioners should consider placement types and parenting interventions as a means to reduce problem behaviors. Given the substantial number of racial/ethnic minority samples in the reviewed literature, future research should focus on the direct and indirect influences of race/ethnicity and cultural competencies on children's behavioral health outcomes.

**Keywords:** foster care | kinship care | children's behavioral health | parenting

### **Article:**

## **1. Introduction**

Increasing numbers of children are growing up in foster and kinship care (Annie E. Casey Foundation; AECF, 2012; Fernandez & Barth, 2010; U.S. Department of Health and Human Services [USDHHS], 2015). Out-of-home placements such as foster care and kinship care provide caregiving arrangements for children whose biological parents are deemed unable to care for their children, with many of these children having experienced some type of maltreatment (e.g., physical, sexual, emotional, or psychological abuse and/or neglect) prior to their entering out-of-home care (e.g., Leve et al., 2012). The experience of maltreatment and the disruption of children's families, social networks, and environments combined with the already heightened vulnerability of childhood and adolescence put children in out-of-home placements at elevated risk for behavioral and social problems. Indeed, recent research has shown children in out-of-home care have disproportionate rates of behavioral problems, posing a significant public health concern that exacts a toll on children, families, and communities. The existing evidence of increased negative outcomes among children in foster and kinship care (Benedict, Zuravin, & Stallings, 1996; Courtney, Piliavin, Grogan-Kaylor, & Nesmith, 2001) points to the need for research that identifies specific factors that influence increases or reductions in behavioral problems among this population. To fill this knowledge gap, our research team conducted a systematic review with the aim of developing a better understanding of foster care and kinship care placements and to explore associations between psychosocial factors and behavioral health outcomes of children in foster and kinship care placements.

Many children removed from the home are placed with relatives (i.e., kinship care) whereas others enter the foster care system in which the well-being of the child is the responsibility of the various agencies and entities that make up the child welfare system (Child Welfare Information Gateway, 2013). Children in foster care reside with individual foster families, group homes, or other residential settings, all of which are selected to keep children safe from further maltreatment at the hands of caregivers. The September 30, 2015, point-in-time foster care census showed that an estimated 427,910 children were living in foster care on that date (Child Welfare Information Gateway, 2017), and over the course of 2015, more than 671,000 children across the United States spent time in foster care (USDHHS, 2015).

Increasing numbers of children in out-of-home placements live in kinship care arrangements in which grandparents or other relatives, godparents, or other adults who have a strong family-like bond with the child step in to ensure the child's well-being when biological parents are unable or unwilling to provide care (Annie E. Casey Foundation; AECF, 2012). For example, current estimates suggest that more than 2.5 million grandparents are caring for their grandchildren in either formal or informal kinship care placements (U.S. Census Bureau, 2015). *Formal kinship care* placements are those in which the care of children is provided by relatives but the legal custody of the child is retained by child welfare system, which monitors the formal kinship arrangement. In contrast, *informal kinship care* refers to the care of children by relatives when the living arrangement is not under the auspices of the child welfare system and the relative caregiver does not legal rights of a parent. Formal and informal kinship care living arrangements are often initiated for similar reasons (e.g., maltreatment, parental substance abuse or incarceration; Gleeson et al., 2009; Jendrek, 1994), and research has indicated that caregivers in both types of kinship care arrangements share similar characteristics, including low socioeconomic status, single female status (Annie E. Casey Foundation; AECF, 2012) as well as similar family traditions and strengths (Gibson, 2002). In light of these similarities, this

review included studies that explored the outcomes of children in both formal and informal kinship care placements.

The developmental stages of childhood and adolescence have generally been identified as times when youth are substantially susceptible to behavioral health problems (Copeland, Shanahan, Costello, & Angold, 2009; Kessler et al., 2005). In addition, children placed in foster care and kinship care have heightened vulnerability to behavioral problems (e.g., Leve et al., 2012). Although one study (Keller et al., 2001) reported that children in formal kinship were no more likely to be above the clinical cutoff on any problem behaviors assessed on the Child Behavior Checklist (CBCL) than were children in the general population, most empirical research has shown children in out-of-home placements have disproportionate rates of behavior problems. For example, results of an analysis of data from the National Survey of Child and Adolescent Well-Being (NSCAW) showed that between one-half and three-fourths of children entering foster care or formal kinship care exhibited behavioral or social competency problems (Landsverk, Burns, Stambaugh, & Reutz, 2009). Additionally, most studies on children in formal and informal kinship care have demonstrated that this population tends to have higher rates of behavioral problems than their peers in the general population (Dubowitz et al., 1994; Edwards, 2006; Gleeson et al., 2008; Smith & Palmieri, 2007).

Notably, children in foster and kinship care are more likely than other children to live in poverty, which can contribute to academic difficulties as well as social and behavioral problems (Jensen, 2009; McLeod & Nonnemaker, 2000; Shonkoff & Phillips, 2000). Moreover, many children who enter foster and kinship care have histories of experiencing high-risk conditions, including child maltreatment; socioeconomic hardship; exposure to violence; and parental substance abuse, incarceration, and/or mental illness (Gleeson et al., 2009; Jendrek, 1994; Thomlison, 2004).

The behavioral problems of children in foster and kinship have serious consequences on children and families' lives. For example, behavior problems are a primary reason for placement disruptions; the resulting move to a new placement brings further instability to the lives of already traumatized children through the loss of connections with family, friends, and community (Chamberlain et al., 2006; Fisher, Stoolmiller, Mannering, Takahashi, & Chamberlain, 2011; Leathers, 2006; Newton, Litrownik & Lansverk, 2000). This lack of stability contributes to increases in behavior and academic problems (Newton, Litrownik & Landsverk, 2000). Additionally, children with behavioral problems are at risk for delinquency and physical violence (Brody et al., 2003), substance use (Andrade et al., 2012; Mason, Hitchings, & Spoth, 2008), and antisocial behaviors in young adulthood (Schaeffer et al., 2006). Research has indicated that many children who experience foster and kinship care suffer serious, persistent negative outcomes rooted in behavioral health problems (Benedict et al., 1996; Courtney et al., 2001); this tragic human cost points to the urgent need for identifying protective and promotive factors that can be targeted to increase resilience and to reduce behavioral problems in this population.

Protective factors are the internal and external resources (e.g., an individual's biological or psychological makeup, family and environmental characteristics) that promote resilience and reduce the likelihood of problems by buffering the effect of negative risk factors for behavioral or social problems (Fraser, Kirby, & Smokowski, 2004). Promotive factors are viewed as the internal and external resources that influence positive developmental outcomes in general, independent of risk. Research has established the importance of psychosocial factors in

promoting better outcomes among foster and kinship care children. Specifically, outcome studies of children in foster or kinship care have shown psychosocial factors play an important role in reducing social problems (e.g., Washington, Gleeson, & Rulison, 2013; Washington et al., 2014) and behavioral problems (Dunleavy & Leon, 2011; Richardson & Gleeson, 2012). Given the importance of psychosocial factors to the healthy development of children and adolescents, it is critically important to develop a better understanding of which factors can be targeted in interventions to promote better outcomes for children in foster and kinship care who have histories of trauma and high risk of behavioral and social problems.

To that end, we were particularly interested in identifying the subset of studies examining psychosocial factors (e.g., caregivers' parenting practices, family functioning) with the potential to buffer against problem behaviors and/or promote better behavioral outcomes. Our aim in conducting this systematic review was to explore associations between psychosocial factors and behavioral health among foster and kinship care children. Specifically, we sought to examine the reported relationships between various psychosocial factors and behavioral health outcomes in light of our assessment of the methodological quality of studies. We expected that positive psychosocial factors (e.g., positive parenting practices, healthy family functioning) would be shown to promote the behavioral health of children in foster and kinship care. The findings of this review provide avenues for prevention and intervention research, an essential resource for child welfare workers and other practitioners who work with foster and kinship care children and families. Moreover, the findings have value for informing clinical applications and policy design to address behavior problems among this population.

## **2. Conceptualization definitions**

### **2.1. Behavioral health**

Researchers and practitioners vary greatly in the ways in which they conceptualize behavioral health and in the number and types of conditions encompassed by the term. Behavioral health consists of a range of health and mental health conditions, including the management of chronic diseases, obesity, alcohol and drug use problems, symptoms of depression and/or anxiety, juvenile delinquency, aggression, and violations of rules, among others. However, for the purposes of this article, the behavioral health outcomes of interest included oppositional defiant/conduct disorders (ODD/CD) and symptoms of ODD/CD; attention deficit hyperactive disorder (ADHD) and symptoms of ADHD; minor juvenile delinquency (e.g., fighting or stealing); and problem behaviors, including internalizing problem behaviors, as operationalized by the CBCL (Achenbach & Rescorla, 2001).

### **2.2. Psychosocial factors**

Psychosocial factors are a combination of psychological and social influences on an individual or a group's mental health or behaviors. The term *psychosocial factors* is used by many practitioners and researchers. In this article, we use the term broadly to include any factor, other than a biological factor with the potential to influence children's behavioral health. This broad approach was taken intentionally to allow consideration of the greatest possible number of psychosocial factors that may contribute to children's behavioral health.

## **3. Methods**

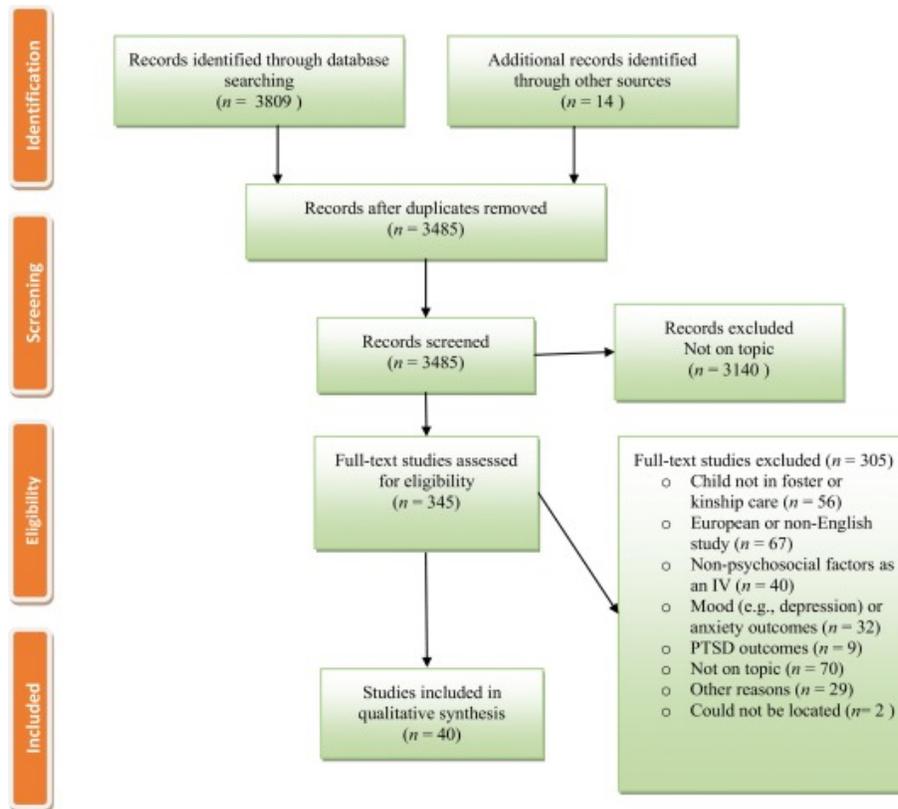
### **3.1. Eligibility criteria**

This review is guided by the PRISMA methods for systematic reviews (Gough, Oliver, & Thomas, 2012; Moher, Liberati, Tetzlaff, Altman, & PRISMA Group, 2009). For this systematic review, we convened a research team consisting of university professors, undergraduate and graduate research assistants, and child welfare administrators. The studies for this review were selected using four predetermined inclusion criteria: (a) sample population residing in foster or kinship care; (b) scholarly, empirical literature published between 2010 and 2016; (c) focused on behavioral health outcomes, including ODD/CD, ADHD, and problem behaviors; and (d) predictor variables were psychosocial factors related to the family and social support. Studies excluded from this review included non-English studies and study samples of children outside the United States. We chose to limit the scope of our review to U.S. based studies given the unique characteristics of foster care and kinship care in the United States.

The database and protocol search strategies were developed by the research team in consultation with a university librarian with expertise in systematic reviews. We conducted electronic searches of three databases: Social Work Abstracts, Social Service Abstracts, and PsycINFO. These databases were selected based on the aim of the review and the recommendation of the university librarian. For example, we included disciplinary topic-specific databases that contain relevant journals on children involved in the child welfare system. Initial searches of these databases were conducted from January 2010 through December 2015. We chose to limit our search to the last five years to capture literature reflecting recent increases of children in foster and kinship care (Annie E. Casey Foundation; AECF, 2012; Fernandez & Barth, 2010; USDHHS, 2015), changes in the child welfare populations and policies (e.g., Fernandez & Barth, 2010), and recent phenomena in the United States. A second search was conducted from December 2015 to April 2016 due to the time lapse between when databases were initially searched and when the review was submitted for publication. Database searches used various combinations of the following keywords and phrases: *foster care*, *kinship care*, *child welfare*, *internalizing and externalizing problem behaviors*, *ODD/CD*, *ADHD*, *psychological well-being*, and *mental health*. We also used wild card searches to capture different versions of the keywords. Additionally, the team members conducting the searches used the thesaurus tools available in databases to identify controlled terms for keywords and phrases when appropriate. Other methods used to locate studies that might not have been identified by the database searches included reverse searches (i.e., reference harvesting of identified studies) and recommendations solicited from child welfare scholars.

### 3.2. Study selection

Initial searches yielded 3823 studies, of which 338 were duplicates and were removed (See Fig. 1). The first stage screening process consisted of a review of study titles and abstracts to determine whether the study met our eligibility criteria. To ensure the reliability of this screening stage, a double-review was conducted that included the calculation of Cohen's kappa (Gough et al., 2012). Four research team members' interrater agreement exceeded 90% for the titles and abstracts screening. This screening process yielded a sample of 345 articles that were retained for full-text review to determine inclusion eligibility. Interrater agreement exceeded 95% for the full-text review. When there was a disagreement or uncertainty on whether a study met inclusion criteria, a master coder reviewed the studies to achieve a consensus. The full-text review yielded 40 studies that met the inclusion criteria and were included in this review.



**Fig. 1.** PRISMA flow chart.

### 3.3. Data collection and analysis

The research team members worked independently using a data extraction tool to code each eligible study. The data extraction tool was created by the research team leader and the tool was pilot-tested by a member of the research team. The tool was used to collect data on study design, sample characteristics, independent and dependent variables, and key findings. Key constructs were clarified using the data extraction tool, the companion codebook, and discussions at team meetings. In addition, to assess the methodological strength of the studies included in our review, we used the Effective Public Health Practice Project Quality Assessment Tool for Quantitative Studies checklist (EPHPP; Thomas, Cliska, Dobbins, & Micucci, 2004).

## 4. Results

### 4.1. Study characteristics

The majority of the 40 studies included in this review used cross-sectional design ( $n = 18$ ; 45%), whereas 10 used a longitudinal design (25%) and 12 were designed as intervention studies (30%; See Table 1, Table 2). Only 83% ( $n = 33$ ) of included studies clearly reported the mean age of children, and across these studies the mean child age was 10.7 years. Slightly more than half of the studies (53%,  $n = 21$ ) indicated their samples included children in both nonrelative foster care and kinship care, whereas 10% ( $n = 4$ ) focused solely on children in kinship care. The remaining 38% ( $n = 15$ ) broadly noted that children were placed in foster care, but it was unclear if these studies included children placed with kin. Additionally, 25% ( $n = 10$ ) of studies in our review distinguished the placement of children in family settings (e.g., foster or kinship home),

group homes, and those in residential care (e.g., family-style residential care, psychiatric, shelters). Of these 10 studies, two included children in residential care only (Jewell, Brown, Smith, & Thompson, 2010; Lee, 2014), and the other 8 studies reported on children placed in all settings (family, group homes, and residential; Delisle, 2010; Geenen et al., 2013; Gabrielli et al., 2015; Jackson, Gabrielli, Fleming, Tunno, & Makanui, 2014; Makanui, 2012; Petrenko, Friend, Garrido, Taussig, & Culhane, 2012; Rufa & Fowler, 2016; Taussig & Culhane, 2010). The majority of the studies in this review reported that boys and girls were relatively equally represented; the exception were three studies that focused solely on adolescent girls (Kim & Leve, 2011; Podgurski, Lyons, Kisiel, & Griffin, 2014; Smith, Leve, & Chamberlain, 2011). Notably, almost three-fourths of the studies (68%,  $n = 27$ ) included in this review consisted of samples, in which, a majority (50%+) of children involved were racial/ethnic minorities.

Studies included in this review most commonly used the CBCL (Achenbach & Rescorla, 2001) to assess behavioral health ( $n = 20$ ; 50%), followed by the Parent Daily Report Checklist (Chamberlain & Reed, 1987) ( $n = 6$ ; 15%), the Behavioral Assessment System (Reynolds, 2004) ( $n = 4$ ; 10%), and the Child and Adolescents Needs and Strengths assessment (Lyons & Anderson, 2001) ( $n = 3$ ; 8%).

#### 4.1.1. Methodological quality of studies

The methodological quality of the studies included in our review was assessed using the EPHPP (Thomas et al., 2004). This tool is designed to assess quantitative studies and has demonstrated reliability and validity (Cohen's  $k = 0.74$ ; Thomas et al., 2004). The EPHPP assesses six methodological domains: selection bias, study design, confounders (e.g., variables associated with the intervention that might be causally related to the dependent variables), blinding (e.g., participants were not aware of the research question), data collection methods, and attrition (i.e., withdrawals and dropouts). This systematic review identified only 12 studies that included all domains, all of which were intervention studies. The confounders and blinding domains were not applicable to the other 28 studies included in this review (nonintervention studies). Thus, we applied the EPHPP in its original form for intervention studies and adapted the EPHPP for nonintervention studies; the adapted EPHPP excluded the confounders and blinding domains. For both versions of the EPHPP, each individual domain was rated using a 3-point scale: *strong* (= 1), *moderate* (= 2), and *weak* (= 3). With the original EPHPP, a global rating of strong methodological rigor indicated a study had no categories with a *weak* rating and at least four categories with a *strong* rating. Intervention studies with one weak rating and four strong ratings were classified as moderate, and those with a weak rating in two or more categories were classified as weak. For the adapted EPHPP, the mean score across domains for each study was used to determine the study's global rating.

In our review, 86% of nonintervention studies had a moderate global methodological rating ( $n = 24$ ), and 14% were rated weak ( $n = 4$ ; See Table 1). Of the four studies with a weak rating, two were cross-sectional (Frederick, 2010; Makanui, 2012) and two were longitudinal studies (Gabrielli et al., 2015; Lee, 2014). Of these weak-rated studies, all four either did not use reliable and valid tools or did not describe the tools used (Frederick, 2010; Gabrielli et al., 2015; Lee, 2014; Makanui, 2012), and 3 of the 4 either did not report the quantity or reasons for withdrawals and drop-outs (Frederick, 2010; Gabrielli et al., 2015; Lee, 2014).

**Table 1.** Methodological quality of nonintervention studies.

Articles By Authors/Year	Selection Bias	Study design	Data collection methods	Withdrawals and dropouts	Global mean rating (1–3)	Global modified EPHPP rating
*Anderson and Linares, 2012	2	3	1	2	2	□
Delisle, 2010	3	3	1	2	2.25	□
Dunleavy & Leon, 2011*	2	3	1	3	2.25	□
Font, 2014	2	3	1	3	2.25	□
Frederick, 2010	2	3	3	3	2.75	●
Gabrielli et al., 2015*	3	3	3	3	3	●
Garcia et al., 2015*	2	3	1	2	2	□
Hegar & Rosenthal, 2011	2	3	1	2	2	□
Iteld, 2011	1	3	1	1	1.5	□
Jackson et al., 2014*	2	3	1	2	2	□
Jewell et al., 2010	3	3	1	2	2.25	□
Lee, 2014*	3	3	1	3	2.5	●
Lynch, 2011	2	3	1	2	2	□
Makanui, 2012	3	3	3	2	2.75	●
McWey et al., 2010	2	3	1	2	2	□
Merritt and Snyder, 2015	3	3	1	2	2.25	□
Ostler et al., 2010	2	3	1	2	2	□
Petrenko et al., 2012	2	3	1	2	2	□
Podgurski et al., 2014	1	3	3	2	2.25	□
Quinn et al., 2014	2	3	1	2	2	□
Rich, 2011*	3	3	1	2	2.25	□
Richardson & Gleeson, 2012	3	3	1	2	2.25	□
Rufa and Fowler, 2016*	2	3	1	2	2	□
Sakai et al., 2011*	1	3	1	1	1.5	□
Taussig & Clyman, 2011*	2	3	1	1	1.75	□
Taussig & Culhane, 2010	2	3	1	2	2.0	□
Taussig et al., 2013*	2	3	1	1	1.75	□
Tucker, 2010	2	3	2	2	2.25	□

Note: ★ Strong; □ Moderate; ● Weak.

By category: 1 = Strong; 2 = Moderate; 3 = Weak.

Global Rating: Strong = Mean score of 1 across categories; Moderate = Mean score of 2 across categories 2; Weak = Mean score of 3 across categories.

Global Modified Effective Public Health Practice Project (EPHPP) Quality Assessment Tool for Quantitative Studies rating represents rounded mean score.

\* Longitudinal study; all others are cross-sectional.

Of the 12 intervention studies, seven had a moderate global methodological rating and five had a weak global methodological rating (See Table 2). Of the five weak-rated intervention studies, one did not use a randomized controlled design (Greeno et al., 2015), three had a follow-up rates of less than 60% or the follow up rate was not described (Greeno et al., 2015; Greeno et al., 2016; Price, Roesh, & Walsh, 2012), all five either did not use blinding or did not describe study blinding (Greeno et al., 2016; Price et al., 2012; Price, Roesh, Walsh, & Landsverk, 2015; Stevens, 2011), and it was unclear if three of the studies accounted for confounders (Greeno et al., 2015; Greeno et al., 2016; Stevens, 2011).

**Table 2.** Methodological quality of intervention studies.

Articles By Authors/Year	Selection bias	Study design	Confounders	Blinding	Data collection methods	Withdrawals and dropouts	Global EPHP scoring
Geenen et al., 2013	2	1	3	2	1	1	□
Greeno et al., 2015	3	3	3	3	1	2	●
Greeno et al., 2016	3	2	3	3	1	3	●
Haight et al., 2010	2	1	1	2	1	2	□
Johnson et al., 2011	2	3	1	2	1	1	□
Kim & Leve, 2011	3	1	1	2	1	1	□
Leathers et al., 2011	2	3	1	2	2	1	□
Pears, Kim, & Fisher, 2016	2	1	1	3	1	1	□
Price, Roesh, & Walsh, 2012	3	1	1	3	1	3	●
Price, Roesh, Walsh, & Landsverk, 2015	3	1	1	3	1	1	●
Smith, Leve, & Chamberlain, 2011	3	1	1	2	1	1	□
Stevens, 2011	3	1	3	3	1	1	●

Note: ★ Strong; □ Moderate; ● Weak.

By category: 1 = Strong; 2 = Moderate; 3 = Weak.

Global Rating: Strong = No weak ratings on any category and at least 4 strong ratings; Moderate = Less than 4 strong ratings and 1 weak rating; Weak = Two or more weak ratings.

#### 4.2. Categorizing psychosocial factors

Our review identified approximately 50 psychosocial factors associated with children's behavioral health outcomes. For the purpose of the narrative synthesis, we used Fraser and colleagues' risk and resilience framework to categorize psychosocial factors (Fraser et al., 2004). This framework identifies risk, protective, and promotive factors that affect children across three system-related domains: (a) individual psychosocial and biological, (b) family factors, and (c) environmental conditions.

In addition to presenting findings by the three system-related domains, we also present findings based on study design to help readers interpret the findings. Cross-sectional and longitudinal studies are categorized as nonintervention studies. In general, cross-sectional studies provide a “snapshot in time” of a particular phenomenon, whereas longitudinal studies enable the researcher to examine change over time and to establish a sequence of events (Yegidis, Weinbach, & Myers, 2018). These types of studies are useful in identifying prevalence and associations that can be more rigorously studied using randomized controlled trials (RCT) or controlled clinical trials (CCT). Both cross-sectional and longitudinal studies are useful for providing knowledge about the child welfare populations given that children are a vulnerable population and intervention studies are not always possible or ethical. In our review, we classified RCT, CCT, and other experimental studies as intervention designs. The intent of intervention designs are to determine whether a cause-effect relationship exists between an intervention and outcome variable.

Please see Appendix A and the originals studies for detailed information on covariates, sampling, and *p*-values estimates.

**Table 3.** Psychosocial factors.

Articles By Authors/Year	Characteristics	Parenting practices	Placement	Bioparent	Family functioning/ support	Trauma/ maltreatment	Social support	School support
Anderson & Linares, 2012	X							
Delisle, 2010		X						
Dunleavy & Leon, 2011					X			
Font, 2014			X					
Frederick, 2010	X							
Gabrielli et al., 2015			X					
Geenen et al., 2013							X	
Greeno et al., 2015		X						
Greeno et al., 2016		X						
Garcia et al., 2015	X		X					
Haight et al., 2010					X			
Hegar & Rosenthal, 2011			X					
Iteld, 2011			X			X		
Jackson et al., 2014						X		
Jewell et al., 2010	X							
Johnson et al., 2011							X	
Kim & Leve, 2011								X
Leathers et al., 2011		X						
Lee, 2014					X		X	
Lynch, 2011	X		X					
Makanui, 2012	X						X	
McWey et al., 2010				X				
Merritt and Snyder, 2015						X	X	
Ostler et al., 2010					X			
Pears et al., 2016								X
Petrenko et al., 2012						X		
Podgurski et al., 2014						X		
Price et al., 2012		X						
Price et al., 2015		X						
Quinn et al., 2014					X			
Rich, 2011				X				
Richardson & Gleeson, 2012		X			X			
Rufa et al., 2016			X					

Articles By Authors/Year	Characteristics	Parenting practices	Placement	Bioparent	Family functioning/support	Trauma/maltreatment	Social support	School support
Sakai & Flores, 2011			X					
Smith et al., 2011		X						
Stevens, 2011		X						
Taussig & Clyman, 2011			X					
Taussig & Culhane, 2010						X		
Taussig et al., 2013						X		
Tucker, 2010		X	X			X		

### 4.3. Individual psychosocial factors

#### 4.3.1. Individuals' characteristics

Of the reviewed studies, 6 of 40 (15%) examined the relationships between individual characteristics (either the foster child or the caregiver) and children's behavioral health (See Table 3). All studies in this section were nonintervention studies (i.e., five cross-sectional and one longitudinal).

Garcia et al.'s (2015) examined the relationship between caregiver's depression and changes in children's behavioral health over time as measured by the CBCL. They found that children in kinship care who experienced the greatest reduction in internalizing behavior problems were those cared for by caregivers who reported no depression or whose depression had improved over time. Notably, across all caregiver depression categories (*never depressed, became depressed, improved, remained depressed*), the change in scores for youth in kinship care always exhibited better internalizing, externalizing, and total behavior change scores than youth in nonrelative foster care settings. Frederick (2010) used another characteristics of caregivers to determine its influence on children's behavioral health; however, unlike Garcia et al. (2015), in this study, the bivariate, baseline logistic regression analysis showed no significant relationship existed between age of caregiver and nonviolent delinquency.

Two studies considered the influence of race/ethnicity variables on children's behavioral health (Jewell, Brown, Smith, & Thompson, 2010; Lynch 2011), and both found race/ethnicity to be a significant contributor to behavioral health. For example, Jewell et al. (2010) compared behavioral health outcomes of African American children placed with either African American foster families or foster families of other races. These researchers found a statistically significant relationship between same-race placements and improved child behavioral health outcomes.

Two studies examined the relationship between foster children's characteristics (e.g., language spoken, spirituality) and behavioral health outcomes. Anderson and Linares (2012) found *language incongruence* (i.e., speaking different languages) between foster parents and foster children was significantly associated with conduct problems. Based on their findings, Anderson and Linares recommended against translingual fostering. Makanui's (2012) study examined the relationship between spirituality of the foster children and behavioral health

outcomes, but found no significant relationship between these factors. Overall, the evidence of associations between individuals' characteristics and behavioral health is strong. However, only two studies examined similar characteristics (Jewell et al., 2010; Lynch, 2011); thus, there is a variation across studies of the conceptualization of individuals' characteristics.

#### 4.4. Family-level factors

##### 4.4.1. Foster & Kinship care parenting practice

10 of the 40 studies (25%) examined the relationships between foster and kinship care parents' parenting practices and children's behavioral health. Three of these studies were cross-sectional (DeLisle, 2010; Richardson & Gleeson, 2012; Tucker, 2010) and seven were intervention studies (Greeno et al., 2015; Greeno et al., 2016; Leathers et al., 2011; Price et al., 2012; Price et al., 2015; Smith, Leve, & Chamberlain 2011; Stevens, 2011).

##### 4.4.2. Nonintervention designs

Tucker (2010) examined the relationship between foster parent discipline with self-regulation (e.g., control over emotions and behavior) of young children (5 to 8 years) in foster care. Tucker found that positive discipline by foster parents was positively correlated with children's self-regulation in school, whereas harsh discipline was associated with poor self-regulation in both the school and home settings. Similarly, DeLisle (2010) used NSCAW data to examine the relationship between children's reports of their feelings of closeness with their out-of-home caregivers (i.e., foster parents and kinship relative caregivers) and behavioral outcomes. Results indicated that children who felt closer to their caregiver were more likely to have better behavioral well-being. The caregiver parenting style was the focus of Richardson and Gleeson's (2012) study that examined the relationship between parenting style, family functioning, and caregiver reports of behavioral problems in predominantly African American children/caregiver dyads. Study findings indicated that caregiver self-ratings of their parenting styles were related to family functioning, but not to caregiver self-reports of child's behavioral functioning.

##### 4.4.3. Intervention designs

Several studies examined the relationship between foster and kinship parenting practices and behavioral problems, specifically using the Keeping Foster Parents Trained and Supported (KEEP) intervention (Greeno et al., 2015; Greeno et al., 2016; Leathers, Spielfogel, McMeel, & Atkins, 2011; Price et al., 2012; Price et al., 2015). The KEEP intervention was designed to equip foster and kinship caregivers with the parenting skills necessary for managing challenging behavior problems (Price et al., 2012). All of the study that used the KEEP intervention found it to be effective in decreasing children's behavioral problems. For example, Leathers et al.' (2011) study found that over time, as compared with children in the control groups, children in the intervention groups had significantly fewer problems as assessed using the CBCL; however, this effect was moderated by the caregivers' understanding of and ability to apply the newly learned skills. \*Price et al., 2012, \*Price et al., 2015 conducted two studies using the KEEP intervention. In their 2012 study, the intervention was delivered by paraprofessionals to 181 foster parent and relative caregivers of boys and girls between the ages of 5 and 12, and it effectively reduced child behavior problems. Researchers' 2015 study expanded research on KEEP by revealing that the intervention was effective in reducing the behavior problems of more

than one child in the same household and in reducing parental stress levels associated with children's behavioral problems.

\*Stevens (2011) and Smith et al. (2011) are the only caregiver's interventions studies in this review that did not use KEEP. However, similar to the KEEP studies they also found significant results. For instance, Stevens (2011) indicated that as compared with caregivers in the control group, caregivers who received the intervention (i.e., Child-Directed Interaction Training intervention) reported their children exhibited significantly fewer externalizing behaviors. However, no significant difference was found for internalizing behaviors. Notably, the control contained only seven participants.

In this section, only one study had absolutely no significant findings related to children behavioral health (Richardson & Gleeson, 2012). Thus, the findings suggest that caregiver's practicing practices play a significant role in foster and kinship care children's behavioral health outcomes. Findings also parallels with the literature in the general populations concerning parenting practices predicting children's behavioral health (e.g., Washington, et al., 2015; Holtrop, Smith, & Scott, 2015).

#### 4.4.4. Family setting/placement type

Ten of the 40 studies (25%) examined the relationship between placement characteristics (e.g., kinship care, foster care, or group home; placement length) and behavioral health outcomes. Five of the studies were cross-sectional, and five were longitudinal (See Tables 1). In general, this review found kinship care was associated with better behavior health outcomes (Garcia et al., 2015; Iteld, 2011; Lynch, 2011; Sakai, Lin and Flores, 2011). For example, Garcia et al. (2015) compared behavioral health outcomes of children in kinship care and nonrelative foster care placements and found kinship care was significantly associated with fewer behavioral problems as measured by the CBCL. Similarly, Iteld (2011) used the CBCL in addition to other assessment tools to measure children's behavioral health outcomes in a comparison of kinship care and nonrelative foster care placements. Iteld found that as compared with youth in kinship care, youth in foster care placements were 2.7 times more likely to score in the at-risk or clinical ranges on the externalizing composite assessment, which included CBCL scores.

Three studies that examined the relationship between kinship and children's behavioral health found mixed or non-significant results (Font, 2014; Rufa & Fowler, 2016; Taussig & Clyman, 2011; Tucker, 2010). For instance, Rufa and Fowler's (2016) study indicated that youth placed in kinship care with older caregivers with poor health exhibited greater increases in externalizing problems. Taussig and Clyman (2011) examined the effects of length of out-of-home placement on child behavioral health. These researchers found that length of time in kinship care was not related to internalizing or externalizing behaviors as measured by the CBCL. However, Taussig and Clyman reported the longer children lived with kin was related to greater involvement in risk behaviors (e.g., delinquency), as measured by the Adolescent Risk Behavior Survey.

In addition to kinship care, other placement variables; such as residential vs. foster homes (Gabrielli et al., 2015) and sibling placement (Hegar and Rosenthal, 2011) were examined for its impact on children's behaviors. Gabrielli et al.'s (2015) study indicated that as compared with children in foster care placements, children in residential treatment settings had higher numbers of self-harm statements. Hegar and Rosenthal (2011) examined the effects of sibling placement on behavioral health. Specifically, this research looked at three types of foster care sibling

placement: (a) split, with no siblings in the home; (b) splintered, with at least one sibling but not all siblings in the home; and (c) together, all siblings in the home. Although neither foster parents' nor foster children's reports of behavioral problems differed by sibling placement type, teachers reported fewer externalizing and internalizing behavioral problems among children in foster placements with one or more of their siblings (i.e., splintered or together placement types). For the most part, the findings indicate the importance of birth families' (e.g. kinship care, siblings) positive influence on children's behavioral health outcomes. However, the long-term effect of birth families on children in out-of-home placement is not clear (Taussig & Clyman, 2011).

#### 4.4.5. Biological parent factors

Two of the 40 studies (5%) examined the relationship between children's contact with their biological parents and child behavioral health (McWey, Acock, and Porter, 2010; Rich, 2011). In McWey, Acock, and Porter's (2010) cross-sectional study, the research team found that more frequent contact with the biological mother was associated with lower externalizing behaviors, even after controlling for gender and pre-placement exposure to violence. In contrast, Rich (2011) conducted a longitudinal study that found no significant correlation existed between frequency of visits with biological parents and behavioral problems.

#### 4.4.6. Family functioning & family support

Six of the 40 studies (15%) examined the relationships between family functioning and support and behavioral health. Three studies were cross-sectional (Ostler et al., 2010; Quinn, Briggs, Miller, & Orellana, 2014; Richardson and Gleeson, 2012), two studies were longitudinal studies (Dunleavy & Leon, 2011; Lee, 2014), and one study was an intervention study (Haight et al., 2010).

#### 4.4.7. Nonintervention designs

Research indicates that quality family relationships promote children's behavioral health (Dunleavy & Leon, 2011; Richardson & Gleeson, 2012; Lee, 2014). Family dysfunction due to parental drug use was the focus of Ostler, Bahar, and Jessee's (2010) study. Ostler and colleagues found significantly fewer behavioral health problems among children whose biological parents abused methamphetamines but who had higher mentalization scores (e.g., family stories about happy, sad, or scary times). Likewise, Quinn et al. (2014) found caregiver mental health partially mediated the relationship between low social support and child internalizing and externalizing problems.

#### 4.4.8. Intervention designs

Haight, Black, and Sheridan (2010) tested a mental health intervention for rural foster children from methamphetamine-involved families. Researchers discovered the trajectory of the experimental group improved while that of the control group worsened. Additionally, gains made by the experimental group were maintained for at least seven month after the intervention.

Generally, family dysfunction places children at risk for negative outcome (e.g., Fraser et al., 2004). However, this review provides evidence that risk can be mediated and/or moderated by the positive characteristics that families do have (e.g., Ostler Bahar, & Jessee 2010; Haight, Black, Sheridan, 2010).

#### 4.4.9. Maltreatment

Eight of the 40 studies (20%) examined the relationship between maltreatment or trauma and behavioral health. Seven studies examined the relationship between maltreatment and behavioral health (Iteld, 2011; Jackson, Gabrielli, Fleming, Tunno, & Makanui, 2014; Merritt and Snyder, 2015; Petrenko et al., 2012; Taussig & Culhane, 2010; Taussig et al., 2013; Tucker, 2010), and one study examined the relationship between trauma and behavioral health (Podgurski et al., 2014). Five of the studies were cross-sectional (Iteld, 2011; Merritt and Snyder, 2015; Petrenko et al., 2012; Podgurski et al., 2014; Tucker, 2010), two of the studies were longitudinal (Jackson, et al., 2014; Taussig et al., 2013), and one study had an intervention design. In general, the conceptualization of maltreatment was similar across studies, and contributed to out-of-home placement. Maltreatment typically included physical abuse, sexual abuse, and at least one type of neglect of a child.

Six studies found at least one statistically significant relationship between maltreatment/trauma and behavioral health outcomes (Iteld, 2011; Jackson et al., 2014; Merritt and Snyder, 2015; Petrenko et al., 2012; Podgurski et al., 2014; Taussig & Culhane, 2010). Four of these six studies used the CBCL to assess children's behavioral health (Iteld, 2011; Petrenko et al., 2012; Merritt and Snyder, 2015; Taussig & Culhane, 2010). For example, Jackson et al. (2014) examined the relationship between severity and frequency of maltreatment and behavior problems. These researchers found that severity, but not frequency of abuse, was significantly related to externalizing behaviors. Additionally, Petrenko et al. (2012) completed a study examining the relationship between maltreatment subtype and behavioral problems. They identified four maltreatment subtypes: physical abuse, sexual abuse, physical neglect, and supervisory neglect. Overall, children who experienced physical or sexual abuse were at highest risk for caregiver-reported externalizing behavior problems, and those who experienced physical abuse and/or physical neglect had higher levels of caregiver-reported internalizing problems. Children experiencing predominantly supervisory neglect had relatively better functioning as measured by caregiver report than others.

Two studies found that maltreatment did not significantly contribute negatively to behavioral problems (Taussig, Culhane, Garrido, Knudston, & Petrenko, 2013; Tucker, 2010). However, these insignificant findings may be related to measurement (Taussig et al., 2013) or sampling issues (Tucker, 2010). On the whole, the evidence here indicates when children suffer more severe abuse, then their behavioral outcomes are poorer.

### **5. Environmental factors**

#### 5.1. Social support

5 of the 40 studies (13%) examined the relationships between social support characteristics and behavioral health. Two studies were cross-sectional (Makanui, 2012; Merritt and Snyder, 2015), one study was longitudinal (Lee, 2014), and two studies were intervention studies (Geenen et al., 2013; Johnson et al., 2011).

##### 5.1.1. Non-intervention designs

Merritt and Snyder (2015) examined the relationship between peer connectedness and behavior problems as measured by the CBCL. Overall, stronger school friend connectedness appeared to act as a protective factor. Children who reported feeling that they had strong peer connections at

school were more likely to classify below the CBCL problem behavior threshold than those with weaker peer connections. Similarly, Makanui (2012) found that higher ratings of peer support were significantly correlated with lower internalizing and externalizing behaviors. Consequently, Lee's (2014) study did not find peer connection (e.g. social convey) to reduce behavioral problems.

### 5.1.2. Intervention designs

Geenen et al. (2013) conducted a randomized clinical trial examining the relationship between an intervention providing coaching in self-determination skills and mentoring and emotional-behavioral outcomes. To qualify for the study, foster youth had to be receiving special education services. Geenen et al. found the intervention was associated with improved emotional-behavioral outcomes (e.g. self-determination and school performance), not internalizing behaviors as measured by the CBCL. In contrast, Johnson et al. (2011) found that foster youth who received "significant therapeutic mentoring" improved significantly on measures of family functioning and school behavior. Although, the evidence here is mixed, it suggests the important role of peer relationships and mentoring in children's behavioral health outcomes.

### 5.2. School supports

Two of the 40 studies (5%) were intervention studies that examined the relationships between school supports and behavioral health, and these studies indicate direct (Pears, Kim, & Fisher, 2016) or indirect (Kim & Leve, 2011) improvement in behaviors after the school based intervention was implemented. For example, Kim and Leve (2011) examined the relationship between the Middle School Success intervention and youth behavioral health outcomes. Although the results showed no direct intervention effect on internalizing or externalizing behaviors, the youth exposed to the intervention did have an increase in prosocial behavior, which appeared to have had an indirect effect on internalizing and externalizing behaviors.

## 6. Discussion

The main aim of this review was to explore associations between psychosocial factors and behavioral health among foster and kinship care children. First, we summarized study characteristics, such as research design, sample demographics, and instruments used to assess children's behavioral health outcomes. Our findings revealed that the majority of studies were cross-sectional, followed by longitudinal studies. Only a few studies were intervention designs ( $n = 12$ ). Several studies described their sample as children in foster care, but they did not clearly report if this group of children included children who were placed with relatives (i.e. kinship care). This finding suggests a gap in knowledge about psychosocial factors and behavioral health outcomes among children in kinship care. In this review, the majority of the study samples included racial/ethnic minorities, with almost three-fourths of the study samples consisting of predominantly racial/ethnic minorities. This finding is not surprising given the overrepresentation of African Americans and Latinos in child welfare (Dettlaff & Rycraft, 2008; Fong, Dettlaff, & Crocker, 2014). Additionally, among the studies included in this review, the CBCL was by far the most frequently used scale to assess children's behavioral health.

We also assessed the risk of bias in the reviewed studies. Cumulatively, between nonintervention and intervention studies, nine studies had a poor methodological rating. Among the intervention studies, ratings were most affected by selection bias, a lack of use or absence of discussion of

blinding, and no discussion of study attrition (i.e., withdrawal, drop-out rates). For blinding and/or attrition rates, it is possible that these factors were considered or reviewed at the study level but this pertinent information was not included or easily locatable in the journal articles. Additionally, child welfare researchers often have little to no influence on children's and families' continued participation in research. For example, children in foster care might have placement changes that prevent them from continuing in the studies. Nevertheless, despite the challenges with attrition in child welfare research, the knowledge provided by this research is rare and valuable (e.g., Greeno et al., 2015; Greeno et al., 2016; Price et al., 2012). With the nonintervention studies, we found similar omission of information on dropout rates and data collection methods, which beg the question of whether these researchers failed to address these important factors in their studies, or did the researchers fail to include comprehensive information in the dissemination of their findings. It is important to note that even though we rated some intervention and nonintervention studies as weak, readers should consider our ratings with caution given the many challenges related to child welfare research and the possibility of information being addressed at study level, but not in the publication.

Next, we examined studies that explored the association between psychosocial factors and behavioral health among children in foster and kinship care. As expected, we found that positive psychosocial factors (e.g., positive parenting practices; healthy family functioning) had a promotive role in addressing behavioral health problems in this population. This review found foster and kinship care parenting practices to be one of the most frequently examined psychosocial factors. Almost of the studies that examined whether caregivers' positive parenting practices predicted less behavioral problems found a significant inverse relationship existed. This key finding is consistent with other child welfare literature that has targeted parenting practices and parenting interventions as means for decreasing behavioral health problems among children in foster care and kinship care (DeGarmo, Leve, Fisher, Chamberlain, & Price, 2009; Fisher, Gunnar, Chamberlain, & Reid, 2000; Fisher, Gunnar, Dozier, Bruce, & Pears, 2006). Thus, despite the changes in the child welfare populations and policies, it is still highly relevant to address the treatment of children's behavioral health problems by targeting the parenting skills of caregivers involved in foster and kinship care placements.

Additionally, children's family setting or placement type was one of the most commonly assessed psychosocial factor. Almost all of the studies that examined the placement type reported a significant relationship between placement type and behavioral health outcomes. In general, children who were in relative placements had fewer behavioral health problems than did children in non-relative placements. This finding is particularly relevant because family is regarded as the primary socialization agent during childhood that provides a context that shapes developmental outcomes (e.g., Grusec, 2011; Washington, Rose, Colombo, Hong, & Coard, 2015). Moreover, research suggests the importance of kinship care families' strengths and resources that contribute to positive outcomes for children (Washington et al., 2013; Washington et al., 2014). This finding is hopeful because many states have adopted child welfare policies that encourage the use of relative placement as a first option for children who come into care.

Importantly, there were a few studies that had insignificant results (e.g., Frederick, 2010; Makanui's, 2012; Rich, 2011; Quinn et al., 2014; Stevens, 2011). However, their findings still provide knowledge. For example, Rich (2011) found a non-significant relationship between frequency of visits with biological parents and behavioral problems. Although, the finding did not support researcher's hypothesis, it builds on other child welfare research that concluded

increased behavior problems may be related to loyal conflict as opposed to a direct effect of biological parents' visitation (e.g., Leathers, 2003).

## **7. Limitations**

This systematic literature review presented key results; however, similar to most reviews, there are limitations that must be acknowledged. First, despite our best search strategies intended to include the greatest number of relevant studies, it is possible that some publications were unintentionally overlooked or excluded from the review. Second, several studies included in our review used NSCAW data. NSCAW is a nationally representative, longitudinal survey of children and families who have been the subjects of investigation by child protective services (Administration for Children and Families, n.d.). For one study (Merritt & Snyder, 2015) included in our review, it was unclear if all of the children sampled were in child welfare custody as opposed to having received services from child welfare agencies. Nevertheless, the study was included in the review because it provided specific findings for children in foster and kinship care regarding associations of psychosocial factors with children's behavioral health outcomes. Third, our searches located numerous studies that provided evidence of the feasibility and effectiveness Multidimensional Treatment Foster Care (MTFC; Institute for Innovation and Implementation, n.d.) on reducing children's antisocial behavior and delinquency. However, none of these studies were included in our review because they did not meet our eligibility criteria. For example, several MTFC studies included samples of children from both the child welfare and juvenile justice systems (Institute for Innovation and Implementation, n.d.), samples that included children who exited child welfare custody during the study, and samples in which it appeared some birth parents had legal custody of children even though the children were in an out-of-home placement (e.g., Van Ryzin & Leve, 2012). Other MTFC studies were published outside the dates specified in our inclusion criteria (i.e., between 2010 and 2016; e.g., Leve, Fisher, Chamberlain, 2009; Fisher, Kim, & Pears, 2009). Thus, although MTFC studies have relevance to our topic, these studies were not included in our review. Similarly, the KEEP program is an evidenced-based intervention that has been widely implemented throughout the United States, and several of studies included in our review used the KEEP program. However, other KEEP studies were not included in our review because they did not meet our eligibility criteria, particularly publication date (e.g., Chamberlain et al., 2008; DeGarmo et al., 2009). Finally, other literature relevant to the review might have been published after the database searches were conducted, and other databases that we did search might have contained studies relevant to our topic.

## **8. Implications for practice**

This review found that kinship placement (i.e., placement with relatives) and positive parenting practices were associated with better behavioral health outcomes for children in out-of-home placements. The implications of these findings for practice suggest the importance of considering relative placements (i.e., kinship care) as part of a comprehensive approach to addressing behavioral problems among children in out-of-home placements. In addition, practitioners should work with foster and kinship caregivers to support specific positive parenting practices and interventions, such as the KEEP intervention, to decrease behavioral health problems among children in foster care and kinship care placements.

In addition, this review identified relationships between the type of maltreatment or trauma a child experienced and their behavioral outcomes. Therefore, practitioners should consider the

type of maltreatment and/or trauma a child has experienced when determining the child's needs for interventions, placement, and additional supports.

## **9. Implications for future research**

Despite the limitations of this review, our findings highlight the relationship between psychosocial factors and behavioral health among children in foster and kinship care. The current review focused broadly on psychosocial factors; thus, future research could concentrate on the influences of specific factors on children's behavioral health outcomes. For example, this review found that only two studies had examined the association between children's contact with their biological parents and the children's behavioral health (McWey, Acock, and Porter, 2010; Rich, 2011). Given that recent literature is increasingly looking at the effects of birth parent involvement on children's well-being, even when birth parents do not reside with children (e.g., Leon, Bai, & Fuller, 2016; Icard, Fagan, Lee, & Rutledge, 2017; Washington et al., 2014), a systematic review of literature addressing this particular factor could yield additional insight. Moreover, a review specific to the effects of birth parent involvement on children's well-being could provide researchers and practitioners with knowledge that would be helpful in developing prevention interventions aimed at promoting better behavioral health for children in foster and kinship care.

This review did not examine genetic or other biological factors that can influence children's behavioral health. The genetic basis of behavior is a pertinent area of research given the evidence suggesting genetic factors are involved in antisocial behaviors and mental health (e.g., Uher & McGuffin, 2010; Yin et al., 2016). Therefore, future research should examine the impact of genetic factors on this population's' behavioral health.

Our systematic review found that a significant number of children and families sampled in the included studies were racial/ethnic minorities. Research suggests the importance of the role of race in life experiences (e.g., Schaefer, 2004) and the effect of racial/cultural-related factors (e.g., racial discrimination) on children's behavioral health and overall well-being (McNeil, Harris-McKoy, Brantley, Fincham, & Beach, 2014; Zhu, Guo, Pan, & Lin, 2015; Sirin et al., 2015). Thus, knowledge could be gained from a systematic review that focused on the direct and indirect influences of race/ethnicity and/or cultural nuances and competencies on behavioral health outcomes of children in foster and kinship care.

## **10. Conclusion**

In summary, this review found that positive psychosocial factors (e.g., positive parenting, healthy family functioning) serve as protective factors for the behavioral health outcomes of children in foster or kinship care. Findings from this review can inform the development or adaptation of preventive and treatment interventions targeting foster and kinship care children who are at risk for or experiencing behavioral health problems.

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## Appendix A. Study Details

Study	Sample	Main behavioral health measure	Key findings
<b>Anderson &amp; Linares, 2012</b>	<i>N</i> = 106 <b>Gender:</b> 55% Boys, 45% Girls <b>Race/Ethnicity:</b> 39.6% African American, 28.3% Latino, 3.8% Caucasian, 1.9% West.Indies, 26.4% Multiracial	Eyberg Child Inventory	Results showed that higher number of dissimilar types (i.e., ethnic status, country of birth, and spoken language) and certain types contributed to lower scores in child psychological adjustment.
<b>Delisle, 2010</b>	<i>N</i> = 188 <b>Gender:</b> 51.1% Boys, 48.9% Girls <b>Race/Ethnicity:</b> 40.4% Black, 34.5% White, 13.3% Hispanic, 11.2% Other	CBCL	Indicates that Parental Closeness and Problem Behaviors are moderately inversely correlated
<b>Dunleavy &amp; Leon, 2011</b>	<i>N</i> = 77 <b>Gender:</b> 64% Boys, 36% Girls	CANS- MH (Child and Adolescent Needs	These results indicate that clinically significant decreases over time in antisocial behavior were

Study	Sample	Main behavioral health measure	Key findings
	<b>Race/Ethnicity:</b> 71% African American, 21% European American, 4% Latino, 3% Asian American	and Strengths-Mental Health)	associated with concurrent improvement in individual and environmental variables.
<b>Font, 2014</b>	<i>N</i> = 1215 <b>Gender:</b> 46% Boys, 54% Girls <b>Race/Ethnicity:</b> 40% White, 39.5% Black, 20.5% Hispanic/Other	CBCL	The results consistently estimate a negative effect of kin placements on reading scores, but kin placements appear to have no effect on child health, and findings on children's math and cognitive skills test scores and behavioral problems are mixed.
<b>Frederick, 2010</b>	<i>N</i> = 6504 <b>Gender:</b> Not Reported <b>Race/Ethnicity:</b> Not Reported	Measures within the The National Longitudinal Study of Adolescent Health	Results of the bivariate analyses show significantly higher likelihood of committing a violent delinquent act by youth raised by grandparents. This finding, however, does not hold up in the multivariate analysis.
<b>Gabrielli et al., 2015</b>	<i>N</i> = 135 <b>Gender:</b> 46% Boys, 54% Girls <b>Race/Ethnicity:</b> 54% African American, 33% Caucasian, 11% Multiracial, 2% Other	Behavioral Assessment Screen for Children 2nd Edition	Youth self-report revealed that 21% of children indicated a desire for self-harm, and rates of self-harm from both reporters decreased over time. Also, caregivers for youth in residential facilities were more likely to report youth self-harm talk than caregivers from foster home settings.
<b>Geenen et al., 2013</b>	<i>N</i> = 133 <b>Gender:</b> 53.7% Boys, 46.3% Girls <b>Race/Ethnicity:</b> 49.6% Caucasian, 29.3% African American, 8% Asian, 7.3% Native American, 6.5% Hispanic, 5.7% Multiethnic, 8% Other	CBCL, Outcome survey (school dropout, placement stability & employment), AIR Self-Determination	Findings on the outcomes of 123 youth who completed the study suggest gains for the intervention group in elements of emotional-behavioral outcomes (e.g., self-determination, school performance). No significant findings for CBCL (internalizing scales)
<b>Greeno et al., 2015</b>	<i>N</i> = 65 <b>Gender:</b> 51% Boys, 49% Girls <b>Race/Ethnicity:</b> 48% Black, 32% White, 17% Other	Parent Daily Report (PDR)	Overall, foster and kinship parents reported significantly fewer child behavior problems...(the results provide support for the effectiveness of KEEP)
<b>Greeno et al., 2016</b>	<i>N</i> = 65 <b>Gender:</b> 51% Boys, 49% Girls <b>Race/Ethnicity:</b> 48% Black, 32% White, 17% Other	CBCL, PDR	Overall, foster and kinship parents reported significantly fewer child behavior problems at posttest...(The results provide support for the effectiveness of KEEP for a child welfare population with a high level of behavior problems and for the effectiveness of KEEP as a training program for foster and kinship parents)
<b>Garcia et al., 2015</b>	<i>N</i> = 199 <b>Gender:</b> Not Reported	CBCL	The caregiver well-being may modify the influence of placement setting on foster and

Study	Sample	Main behavioral health measure	Key findings
	<b>Race/Ethnicity:</b> Not Reported		kinship children's social, emotional, and behavioral outcomes.
<b>Haight et al., 2010</b>	<i>N</i> = 15 <b>Gender:</b> 60% Boys, 40% Girls <b>Race:</b> 100% White	CBCL	Results from the culturally adaptive mental health intervention show a significant interaction effect of time (pre and post test) and group on externalizing behavior with the trajectory of the experimental group improving while that of the control group worsened
<b>Hegar &amp; Rosenthal, 2011</b>	<i>N</i> = 1701 <b>Gender:</b> 47% Boys, 53% Girls <b>Race/Ethnicity:</b> 40% Black, 39% White, 13% Hispanic, 7% Other	CBCL	Neither foster parents' nor youths' reports of behavioral problems differ by sibling placement status. For children in kinship homes, teachers reported less problematic internalizing and externalizing behavior for the splintered and together groups than for the split group. Children in the splintered group also responded more favorably than those in the split group to questions of closeness to the primary caregiver and liking the people in the foster family
<b>Iteld, 2011</b>	<i>N</i> = 143 <b>Gender:</b> 47.6% Boys, 47.6% Girls, 4.9% Not Reported <b>Race/Ethnicity:</b> 72% African American, 14% Caucasian, 4.2% Hispanic, 7% Native American, 2.8% Mixed Ethnicity, 7% Other, 5.6% Not Reported	CBCL	Results indicate that ethnicity is a significant predictor of externalizing problems of youth in out of home placements, gender is a significant predictor of internalizing problems, and that there is a significant ethnicity by placement type interaction.
<b>Jackson, 2014</b>	<i>N</i> = 309 <b>Gender:</b> 57% Boys, 43% Girls <b>Race/Ethnicity:</b> 52% African American, 32% White, 10% Multiracial, 6% Other	Behavioral Assessment System Children 2-Parent-report (behavioral outcome)	Results indicated that the paths from severity to externalizing behavior and adaptive behavior (reverse loading) were significant. Paths from frequency of abuse were not predictive of behavioral outcome.
<b>Jewell, 2010</b>	<i>N</i> = 427 <b>Gender:</b> 59.7% Boys, 40.3% Girls <b>Race/Ethnicity:</b> 76.3% White, 23.7% African American	Daily Incident Report (problem behaviors); Diagnostic Interview Schedule for children	Results provide support for hypotheses on the impacts on African American youth in transracial placements, related to some youth's externalizing behaviors. However, the hypotheses regarding youth internalizing behaviors were not supported
<b>Johnson, 2011</b>	<i>N</i> = 262 <b>Gender:</b> Not Reported <b>Race/Ethnicity:</b> 76% African American, 9.9% Hispanic, 5.3% Caucasian, 4.2% Multiracial, 3.1% Other, 1.4% Not Reported	CANS	Results showed that mentored youth improved significantly in the areas of family and social functioning, school behavior, and recreational activities, as well as in the reduction of expressed symptoms of traumatic stress.

Study	Sample	Main behavioral health measure	Key findings
<b>Kim &amp; Leve, 2011</b>	<i>N</i> = 100 <b>Gender:</b> 100% Girls <b>Race/Ethnicity:</b> 63% European American, 10% Latino, 9% African American, 4% Native American, 14% Multiracial	PDR, Achenbach system of Empirically Based Assessment, Self report Delinquency Scale (CBCL)	Analyses indicated significant indirect effects of the intervention through increased prosocial behaviors that led to decreased internalizing and externalizing symptoms.
<b>Leathers, 2011</b>	<i>N</i> = 31 <b>Gender:</b> 72% Boys, 28% Girls <b>Race/Ethnicity:</b> 97% African American, 3% White	CBCL	Over time, children's behavior problems were significantly lower in the intervention group relative to the control group, and the effect of the intervention was partially mediated by parents' understanding of how to appropriately use the intervention parenting skills
<b>Lee, 2014</b>	<i>N</i> = 950 <b>Gender:</b> 59% Boys, 41% Girls <b>Race/Ethnicity:</b> 47% African American, 34% Latino, 13% Caucasian, 5% Other/Mixed Ethnicity	Youth Outcome Questionnaire	Caregiver and peer relationships had a significant correlation with internalizing and externalizing problems at baseline and over the course of the study.
<b>Lynch, 2011</b>	<i>N</i> = 150 <b>Gender:</b> 48% Boys, 52% Girls <b>Race/Ethnicity:</b> 40% White, 38% African American, 13% Latino, 10% Other	Child Instrument interview & LongSCAN Inventory of Supportive Figures	Poisson regression analysis determined a statistically significant relationship between caregiver type and race/ethnicity with relational resilience. Foster children whose primary caregivers were grandmothers, as well as Native and Asian American children, demonstrated more relational resilience
<b>Makanui, 2012</b>	<i>N</i> = 159 <b>Gender:</b> 54% Boys, 46% Girls <b>Race/Ethnicity:</b> 50% African American, 30% Caucasian, 3% Latino/Hispanic, 15% Multiracial	Behavioral Inventory for Strategic Control (BISC), Behavioral Assessment System for Children Second Edition (BASC-II)	No significant relationship between spirituality and psychosocial factors. Significant negative relationship found between social support and externalizing behaviors.
<b>McWey et al., 2010</b>	<i>N</i> = 362 <b>Gender:</b> 46% Boys, 54% Girls <b>Race/Ethnicity:</b> 45% White, 40% African American, 13% Hispanic, 8% American Indian/Alaskan Native, 2% Asian, 5% Other	CBCL	More frequent contact with biological mother was significantly associated with lower externalizing behaviors.
<b>Merritt and Snyder, 2015</b>	<i>N</i> = 1054 <b>Gender:</b> 51% Boys, 49% Girls <b>Race/Ethnicity:</b> 34%	CBCL	Results indicated that children with a strong perception of peer connectedness show less behavioral problems. Additionally, physically abused children were significantly less likely to

Study	Sample	Main behavioral health measure	Key findings
	White, 31% Black, 28% Hispanic, 7% Other		display behaviors below the problem range than children with all other types of maltreatment.
<b>Ostler et al., 2010</b>	<b>N</b> = 26 <b>Gender:</b> 57.7% Boys, 42.3% Girls <b>Race/Ethnicity:</b> Not Reported	CBCL	Children with higher mentalization scores had lower total CBCL scores, as well as lower scores on the Anxious/Depressed, Social Problems, and Aggressive Behavior assessments.
<b>Pears et al., 2016</b>	<b>N</b> = 192 <b>Gender:</b> 52% Boys, 48% Girls <b>Race/Ethnicity:</b> 55% European American, 30% Latino, 2% Native American, 2% Pacific Islander, 1% African American, 10% Mixed Race	Survey with open-ended questions	Children who participated in the intervention exhibited decreased positive attitudes towards antisocial behavior.
<b>Petrenko et al., 2012</b>	<b>N</b> = 334 <b>Gender:</b> 51.5% Boys, 48.5% Girls <b>Race/Ethnicity:</b> 48.8% Caucasian, 46.7% Hispanic/Latino, 27.8% African American, 12.6% Native American, 2.1% Asian	CBCL	Physical abuse and sexual abuse were significantly associated with externalizing behaviors. Physical neglect and physical abuse were associated with internalizing behaviors.
<b>Podgurski et al., 2014</b>	<b>N</b> = 1479 <b>Gender:</b> 100% Girls <b>Race/Ethnicity:</b> Not Reported	Child and Adolescent Needs and Strengths (CANS)	Five of the ten researched trauma types were significantly associated with conduct disorder: sexual abuse, community violence, school violence, grief, and witnessing a crime
<b>Price et al., 2012</b>	<b>N</b> = 181 <b>Gender:</b> 54% Boys, 46% Girls <b>Race/Ethnicity:</b> Not Reported	PDR	KEEP intervention participants had significantly lower problem behavior scores at the end of the intervention than the control group.
<b>Price et al., 2015</b>	<b>N</b> = 335 <b>Gender:</b> 53% Boys, 47% Girls <b>Race/Ethnicity:</b> 46% Hispanic, 23% African American, 11% Caucasian, 2% Asian/Pacific Islander, 16% Mixed Ethnicity, 1% Not Reported	PDRC	KEEP intervention participants had significantly lower problem behavior scores at the end of the intervention. Problem behavior was also reduced in focal siblings, another child in the home whose age was closest to the KEEP intervention participant child.
<b>Quinn et al., 2014</b>	<b>N</b> = 3255 <b>Gender:</b> 50.2% Boys, 49.8% Girls	CBCL	Caregiver mental and physical health mediated the relationship between high family stress and increased child internalizing

Study	Sample	Main behavioral health measure	Key findings
	<b>Race/Ethnicity:</b> 59.9% White, 23.6% Black, 8.6% American Indian, 4.5% Asian/Pacific Islander, 3.3% Not Reported		problems. Caregiver mental health partially mediated the relationship between low social support and child internalizing and externalizing problems.
<b>Rich, 2011</b>	<i>N</i> = 64 <b>Gender:</b> 57.8% Boys, 42.2% Girls <b>Race/Ethnicity:</b> 64% Caucasian, 10.9% Hispanic, 9.3% African American, 6.3% Asian American, 7.8% Caucasian-Hispanic, 1.6% Caucasian-African American	BASC, II	Foster children without birth parent contact had significantly lower levels of anxiety than foster children with regular contact. However, children without regular contact exhibited greater dysfunction with regards to externalizing behaviors.
<b>Richardson &amp; Gleeson, 2012</b>	<i>N</i> = 120 <b>Gender:</b> 47% Boys, 53% Girls <b>Race/Ethnicity:</b> Not Reported	Behavioral Problems Index (BPI)	Healthier family functioning related to roles and affective involvement were associated with lower levels of child behavior problems, but, contrary to expectation, less healthy family functioning related to behavior control was also associated with lower levels of child behavior problems.
<b>Rufa et al., 2016</b>	<i>N</i> = 225 <b>Gender:</b> 47.1% Boys, 52.9% Girls <b>Race/Ethnicity:</b> 100% African American	CBCL	Youth placed in kinship care with older caregivers with poor health exhibited greater increases in externalizing problems over time. In addition, mental health problems at the time of the investigation, as well as problems in the neighborhoods in which youth are placed, predict increased problems over time.
<b>Sakai et al., 2011</b>	<i>N</i> = 1308 <b>Gender:</b> 46% Boys, 54% Girls <b>Race/Ethnicity:</b> 43.6% White, 35.3% African American, 14.3% Latino, 6.8% Other	CBCL, Social Skills Rating System	Overall, kinship care was associated with a lower risk ratio of continuing behavioral problems and low social skills
<b>Smith et al., 2011</b>	<i>N</i> = 100 <b>Gender:</b> 100% Girls <b>Race/Ethnicity:</b> 63% European American, 10% Latino, 9% African American, 4% Native American, 14% Multiracial	PDRC	Girls who completed intervention reported significantly reduced externalizing and internalizing behaviors than at the initial screening; however, prosocial behavior did not significantly change over time.
<b>Stevens, 2011</b>	<i>N</i> = 11 <b>Gender:</b> 37% Boys, 63% Girls <b>Race/Ethnicity:</b> 64%	CBCL	Eighty percent of those in the intervention group showed significant changes on the CBCL externalizing scale compared to 0% of the wait list control group. No significant differences

Study	Sample	Main behavioral health measure	Key findings
	Caucasian, 18% African American, 9% Hispanic, 9% Biracial		were found in caregiver CBCL report of child internalizing symptoms.
<b>Taussig &amp; Clyman, 2011</b>	<i>N</i> = 148 <b>Gender:</b> 43% Boys, 57% Girls <b>Race/Ethnicity:</b> 42. Caucasian, 31.8% African American, 20.3% Hispanic, 5.4% Other	CBCL, Adolescent Risk Behavior Survey, Youth Self-Report	In multivariate analyses, longer lengths of time in kinship care placements were related to delinquency, sexual risk behaviors, substance use, and total risk behaviors. Time living with kin was not associated with internalizing and externalizing behavioral problems.
<b>Taussig &amp; Culhane, 2010</b>	<i>N</i> = 243 <b>Gender:</b> 51.9% Boys, 48.1% Girls <b>Race/Ethnicity:</b> 48.6% Caucasian, 46.9% Hispanic, 28% African American	CBCL	The inappropriate responsibility subtype was associated with fewer caregiver-reported social problems. Emotional maltreatment appeared to have a larger overall effect on males than on females.
<b>Taussig et al., 2013</b>	<i>N</i> = 156 <b>Gender:</b> 49.3% Boys, 50.7% Girls <b>Race/Ethnicity:</b> 47.2% Caucasian, 45.8% Hispanic, 29.9% African American	CBCL	Researchers hypothesized that children with physical neglect subtype would experience stronger intervention effect. Findings did not support these hypotheses, no significant difference observed.
<b>Tucker, 2010</b>	<i>N</i> = 86 <b>Gender:</b> 48.8% Boys, 50.2% Girls <b>Race/Ethnicity:</b> 44.2% African American, 26.7% Latino, 11.6% Caucasian, 17.4% Mixed Race	Indicators for Self-Control Constructs (Self-Regulation)	Positive discipline by foster parents was positively correlated with children's self-regulation in school, whereas harsh discipline was associated with poor self-regulation both at school and at home. Kinship placement was associated with higher self-regulation at school and lower self-regulation at home.

\*Select information in table is taken directly from published studies.