Cost effectiveness of a school readiness intervention for foster children

Frances L. Lynch, John F. Dickerson, Katherine C. Pears, Philip A. Fisher

Objective: Many young children in foster care suffer from emotional and behavior problems due to neglect and abuse. These problems can lead to difficulties in school, and functioning in school is linked to long-term health and development. Early intervention to reduce emotional and behavioral issues can help children successfully transition to school, which can improve long-term outcomes. However, communities need information on relative costs and benefits associated with programs to make informed choices. The objective of this study was to assess cost effectiveness, over 12 months, of the Kids in Transition to School (KITS) intervention compared to usual services available to children in a foster care control group (FCC).

Method: Randomized controlled trial of 192 children in foster care entering kindergarten who were randomized to KITS (n = 102) or FCC (n = 90). KITS includes school readiness groups and parent training over 4 months. Main outcomes were days free from internalizing symptoms (IFD), days free from externalizing behavior (EFD), intervention costs, public agency costs, and incremental cost effectiveness. Results: KITS significantly increased IFD and EFD compared to FCC. Average total cost of the intervention was $932 per family. The intervention did not significantly impact usual services. Average incremental cost effectiveness was $64 per IFD and $63 per EFD.

Conclusions: The cost of KITS is comparable to, or less than, similar programs, and the intervention is likely to provide significant emotional and behavioral benefit and improvement in school readiness for young children in foster care.

1. Introduction

Pressure to reduce costs and increasing competition for public funds are ongoing concerns across service sectors (e.g., health, education). Yet, need for these services is critically high—especially among vulnerable populations, such as children in foster care. One million children experience maltreatment in the United States each year (DeVoght, Fletcher, & Cooper, 2014), and one third of these events results in foster placement. Due to their maltreatment experiences, children in foster care are at great risk of social, emotional, and behavioral problems that can lead to multiple long-term negative outcomes (Ahrens, Garrison, & Courtine, 2014; Fang, Brown, Florence, & Mercy, 2012; Pecora et al., 2006) across development—including physical and mental health problems (Lansford et al., 2002), risky health behaviors (e.g., smoking) (Boden, Ferguson, & Horwood, 2009; Carpenter, Clyman, Davidson, & Steiner, 2001; Dregan & Gulliford, 2012; Patterson, Moniruzzaman, & Somers, 2015), school failure (Boden, Horwood, & Ferguson, 2007; Burley & Halpern, 2001), and juvenile justice involvement (Hussey, Chang, & Kotch, 2006; Yun, Ball, & Lim, 2011). These negative outcomes cause a great deal of suffering and are very expensive for health care and other public service sectors (DeVoght et al., 2014; Fang et al., 2012). It is thus crucial to find innovative and efficient ways to address foster children’s risks for long-term negative outcomes.

Early childhood provides a critical window of opportunity for preventive intervention before health problems and socially risky behaviors become chronic and entrenched. Pediatric and mental health providers play an important role in caring for young children in foster care through their medical practices; however, individual providers may see few such children (Lane & Dubowitz, 2009) and may not have the resources or training to most effectively intervene.

Fortunately, there is growing recognition among pediatric and mental health providers that environmental and social factors contribute significantly to the physical and mental health and well-being of children (American Academy of Pediatrics, 2013). Awareness and advocacy by health providers for effective services outside the health system are beginning to generate innovative approaches to interventions for those children who are most at risk.
One approach is to have health providers collaborate with other social services providers, such as school personnel. Because school is where children spend a majority of their time, it presents an important opportunity to provide preventive services to children in foster care. Several studies have demonstrated that intensive early intervention in school is linked to better educational, health, and psychosocial outcomes—including reductions in key risk factors such as reduced likelihood of using substances, teen parenthood, and criminal activities (Reynolds, Ou, Arteaga, & White, 2011; Schweinhart et al., 2005). Overall, there is strong evidence that intensive universal early intervention for high-risk children, such as low income children, is a sound long-term investment (Heckman, 2000; Reynolds, Magnuson, & Ou, 2006; Reynolds et al., 2011; Schweinhart et al., 2005). Programs such as the Chicago Child Parent Centers, which typically provide multiple levels of services over several years, improve manifold outcomes for participants (Reynolds et al., 2011).

However, these intensive universal programs may not be as effective for children, such as those in foster care, who face high levels of specific risks that may be different than those of other vulnerable children for several reasons. First, children in foster care move very frequently; therefore, universal programs requiring consistent attendance over longer periods of time may not be feasible. Programs of a shorter duration may increase the likelihood that children will receive the full dosage. Additionally, in order to potentially maximize the effects of shorter duration programs designed to increase school readiness skills, targeting those programs to occur close to the transition to school may also increase their efficacy (Pianta, Rimm-Kaufman, & Cox, 1999). Second, children in foster care may have more significant emotional and behavioral challenges related to their experiences of neglect and abuse than children with other risk factors (e.g., low income). For example, research has demonstrated that children with maltreatment histories may experience neural and physiological changes that are then associated with increased risk of behavioral problems (Busso et al., 2017; White et al., 2017). Although the abilities to regulate one’s emotions and behaviors are increasingly being recognized as essential school readiness skills for all children (Blair & Diamond, 2008), these abilities may be particularly important for children with histories of maltreatment to subsequent school adjustment (Panlilio, Harden, & Harring, 2017). Thus, since the regulation skills of preschool children with histories of maltreatment appear to be worse than those of children who have experienced other risk factors, such as low socioeconomic status (Pears, Fisher, Bruce, Kim, & Yoerger, 2010), these children may need programming that has significant content related to emotional and behavioral regulation. Finally, related to their high rates of mobility, the caregivers of children in foster care may be less involved in their schooling than caregivers experiencing stressors such as socioeconomic risk (Pears et al., 2010). Decades of research have highlighted the importance of a connection between caregivers and school and caregiver involvement in school in children’s subsequent school adjustment and achievement (Christenson, 2004; Miedel & Reynolds, 1999; Sénéchal & LeFevre, 2002). Thus, programs that promote the involvement of caregivers in the early learning and school experiences of children with a history of maltreatment and foster care may be particularly effective for these children.

Shorter duration universal programs that include significant emotional and behavioral content and involve caregivers do exist. In particular, the Incredible Years Program (IYP) has been effective in improving social and emotional outcomes in at-risk, typically low-income, children (Edwards, Céiléachair, Bywater, Hughes, & Hutchings, 2007; O’Neill, McGilloway, Donnelly, Bywater, & Kelly, 2013; Scott et al., 2010; Webster-Stratton, Reid, & Stoolmiller, 2008). Although this program is less intense than programs such as Perry Preschool, it is still quite demanding, with biweekly 1-h sessions lasting for about 1 year (Webster-Stratton et al., 2008). In addition, IYP does not specifically incorporate academic skill building. Young foster children may be particularly lacking in pre-academic skills, such as pre-reading and writing skills (Pears, Fisher, Heywood, & Bronz, 2007), which may subsequently lead to greater frustration and higher stress levels in the classroom that put children at risk for poor transitions to school. Thus, previously developed programs may not be optimal for children in foster care.

The Kids in Transition to School (KITS) program is a new program specifically developed to address the complex needs of young children in foster care. KITS aims to simultaneously increase the emotional and behavioral self-regulation, social skills, and early academic skills necessary to succeed in kindergarten. Additionally, a caregiver component is targeted at increasing involvement in early learning in the home prior to the start of kindergarten and involvement in schooling once the transition has occurred. This component also includes an emphasis on positive parenting behaviors to help children learn the new skills and routines required in formal schooling.

In the randomized clinical trial (RCT) on which this study is based, the KITS program has been shown to increase self-regulatory and academic skills of children in foster care and to reduce behavioral problems in the classroom. (Pears, Kim, & Fisher, 2012; Pears et al., 2013). However, because schools typically operate on very tight budgets, it is critical to understand the cost of such programs in tandem with the benefits. In addition, recognition that such programs can benefit multiple service sectors (e.g., school, health) is critical to evaluating their value. This paper reports on the cost effectiveness of the KITS intervention in comparison to services as usual in order to increase awareness of such programs and to aid service providers in deciding which early interventions may be most valuable for children in foster care.

2. Methods

2.1. Participants

One hundred ninety-two children in foster care and their caregivers participated in this RCT (ClinicalTrials.gov Identifier: NCT00688129). At recruitment, each child had to be in nonkinship or kinship foster care in one of two counties in the Pacific Northwest, entering kindergarten in the fall, a monolingual or bilingual English speaker, and not involved in another treatment protocol closely associated with the KITS program. Children were recruited through the local child welfare system. If a child was deemed eligible to participate, a staff member contacted the child's caseworker (considered the legal guardian while the child is in foster care) to request consent for the child to participate and then contacted the caregiver(s) to invite them to participate. For a successful recruitment, both the caseworker and caregiver(s) had to consent to participate. Because of the complexity of this multistep process, families were randomized to the KITS group or to the foster care comparison (FCC) group prior to contacting the caseworker and caregiver(s).

Of the 339 families who were eligible to participate in the study, 219 (65%) initially verbally agreed to participate (113 KITS; 106 FCC). Twenty-seven of these families (11 KITS; 16 FCC) withdrew from the study before baseline data were collected. Participant characteristics are presented in Table 1. There were no statistically significant differences between groups on demographic variables (e.g., ethnicity) at baseline (Pears et al., 2013). Children in the FCC group did not receive the KITS intervention but continued to receive any other services for which they were eligible and that their caregivers chose to access.

2.2. Study design and procedures

Children and their caregivers participated in individual assessments—including standardized testing, questionnaires, and structured interviews—at the beginning of the summer before kindergarten (prior to intervention), at the end of the summer prior to kindergarten entry, and at the end of the kindergarten year.
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