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Psychosocial Intervention is a peer-reviewed journal that publishes papers in all areas relevant to psychosocial intervention at the individual, family, social networks, organization, community, and population levels. The Journal emphasizes an evidence-based perspective and welcomes papers reporting original basic and applied research, program evaluation, and intervention results. The journal will also feature integrative reviews, and specialized papers on theoretical advances and methodological issues. Psychosocial Intervention is committed to advance knowledge, and to provide scientific evidence informing psychosocial interventions tackling social and community problems, and promoting social welfare and quality of life. Psychosocial Intervention welcomes contributions from all areas of psychology and allied disciplines, such as sociology, social work, epidemiology, and public health. Psychosocial Intervention aims to be international in scope, and will publish papers both in Spanish and English.

Ámbito: Psychosocial Intervention es una revista revisada por pares que publica trabajos en todos los ámbitos relevantes para la intervención psicosocial en los niveles individual, familiar, redes sociales, organización, comunidad y población. La revista enfatiza una perspectiva basada en la evidencia y acoge contribuciones originales en el ámbito de la investigación básica y aplicada, evaluación de programas, y resultados de la intervención. La revista también considerará revisiones integradoras y manuscritos especializados en avances teóricos y cuestiones metodológicas. Psychosocial Intervention trata de avanzar el conocimiento científico que informe la intervención psicosocial dirigida a problemas sociales y comunitarios, y a promover el bienestar social y la calidad de vida. Psychosocial Intervention acepta contribuciones de todas las áreas de la psicología y disciplinas afines, tales como sociología, trabajo social, salud pública y epidemiología social. Psychosocial Intervention quiere ser una revista de alcance internacional y publicará artículos tanto en español como en inglés.
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Editorial Comment

Evidence-Based Programs for Children, Youth and Families: Introduction to the Special Issue*

Comentario Editorial

Programas Basados en la Evidencia para Menores, Jóvenes y Familias: Introducción al Número Especial

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Psychosocial intervention programs for children and families are an essential part of the necessary strategies to maintain the population’s well-being and to guarantee truly equal opportunities. For the past 20 years, a large number of these programs have been implemented, and this has involved considerable economic effort by the Public Administrations. Perhaps, at this moment, it would be convenient to address two questions, which could be relevant to try to improve investment in these programs.

The first question can be focused on the amount of scientific knowledge available about program effectiveness (with abusive families, children with behavior problems, delinquent youths), to improve quality of life, to reduce suffering, to guarantee life-chances, etc. It is very difficult to have an answer to these questions and to make any kind of estimations about outcomes. A major problem in the development of this kind of programs is the absence of reliable and valid information about the efficacy and benefits provided to the people and communities that these programs attend to, and to society in general. If a “pragmatic assessment culture” is not applied in the area of psychosocial intervention, it seems that these programs can’t be considered as another way of investing “public money” with a positive impact on all citizens’ well-being.

The second question is related to the general approach of psychosocial programs. There is strong empirical evidence that early life is highly vulnerable to the negative effects of adverse experiences. Research in the field of developmental neurobiology provides important evidence about the effect of negative experiences on alterations and dysfunctions in brain architecture, which can be persistent and increase the risk of physical, cognitive, social and emotional problems along infancy, adolescence and adulthood. This empirical evidence requires and supports the need for a perspective shift in programs for children and families, trying to reduce later programs, which are more expensive and less effective, and increasing the amount of early preventive programs, which showed enough information and findings about their efficacy.

It is currently perfectly feasible to work in the sphere of social intervention, promoting and funding programs that have shown sufficient empirical evidence of their efficacy or innovations that are solidly grounded on theoretical and empirical bases and that undergo rigorous assessments. As long as public resources are invested in this type of programs, it is essential for the results obtained to be translated in terms of: (1) indicators for improvement of the well-being of the people and collectives attended to and of all the citizens as a whole, and (2) the economic benefit obtained (recovered) by society at mid- or long-term. Each person and collective for whom positive results were obtained constitutes a source of well-being for the community and contributes an economic benefit to it.

The papers included in this Psychosocial Intervention issue attempt to provide professionals involved in psychosocial intervention for children and families with useful information. The content in this special issue intends to show that there are theoretical and empirical bases underpinning the relevance of introducing preventive early intervention programs, as well as enough intervention programs for children and families of proven efficacy with different types of population.

The first article presents updated empirical information on potential mid- and long-term negative, stable and persistent effects by severely adverse outcomes in early stages (pre- and perinatal) of human development. Evidence clearly supports the need and social relevancy of implementing early preventive programs.
for children and families who are at risk for experiencing toxic stress. Such policies and programs should begin as early as possible in order to reduce or avoid the need of more costly and less effective remediation programs.

Each of the next six articles included in this special issue deals with a different prevention and treatment program for children and adolescents and their families. These papers present the theoretical bases for these programs and their major components, but with a special focus on the findings obtained and existing evidence of their efficacy and efficiency. These programs have been selected as a guidance for all those programs that intend to be considered as “evidence-based practices” which have undergone rigorous assessments and proved relevant positive impacts.

Some of the “evidence-based” programs included in this special issue were designed for intervention at very early developmental stages, that is, during the first years in the children’s lives.

The Nurse-Family Partnership program, which was developed by Dr. Olds more than 30 years ago, was designed to attend pregnant women since the prenatal developmental stage until the children are 24 months old. This paper summarizes a three-decade program of research that has attempted to improve the health and development of mothers and infants and their future life prospects with prenatal and infancy home visiting by nurses. The program has three major goals: to improve the outcomes of pregnancy by helping women improve their prenatal health; to improve the child’s health and development by helping parents provide more sensitive and competent care of the child; and to improve parental life-course by helping parents plan future pregnancies, complete their educations, and find work. It is therefore an eminently preventive program which has proved in mid- and long-term outcome follow-ups to have a relevant impact on a host of maternal and child personal and social development areas.

Another two programs described in the following papers (Incredible Years and Parent-Child Interaction Therapy) were designed to attend very young children and their families when behavioral problems and difficulties in parent-child interaction first appear.

The Incredible Years (IY) programs were designed to prevent and treat behavior problems when they first appear and to intervene in multiple areas through parent, teacher, and child training. This paper summarizes the literature demonstrating the impact of the IY parent, teacher and child intervention programs, and describes in more detail the work done in Portugal so far to disseminate IY programs with fidelity.

The Parent-Child Interaction Therapy (PCIT) program was designed for children between 2 and 7 years of age with disruptive, or externalizing, behavior problems and with the objective to reduce child behavior problems, to improve parenting skills, and to enhance the quality of parent-child relationships. There is an abundance of research demonstrating very strong treatment effects with maltreating parent-child relationships, traumatized children, and in developing resilience in young children.

SafeCare® program is an evidence-based parent-training program that reduces child maltreatment, particularly neglect. The risk of child maltreatment, a public health issue affecting millions of U.S. children each year, can be markedly reduced by interventions such as SafeCare that deliver in-home services. Drawing from applied behavioral analysis roots, SafeCare focuses on providing parents with specific skills in three areas: health, home safety, and parent-child/infant interaction. This paper will include an overview of the SafeCare® model, a perspective of its history and dynamic development, description of the theoretical underpinnings of the model, a description of the program targets and content by describing its modules and delivery, an overview of program outcomes, and data discussion of dissemination and implementation.

The last two programs included in this issue are addressed to adolescents presenting serious antisocial behavior and their families.

Multisystemic therapy (MST) is an intensive family- and community-based treatment where the family is viewed as central to achieving favorable outcomes. MST uses a home-based model of treatment delivery to further facilitate family engagement and remove barriers to service access. Therapist schedules appointments at the family’s convenience, including evening and weekend hours and are available to intervene 24 hours per day, 7 days per week to address crises that might threaten treatment success. Caseloads of four to six families per therapist enable the provision of intensive services titrated to family need. A relevant number of studies conducted to evaluate program impact support the capacity of MST to reduce youth antisocial behavior and out-of-home placements.

Multidimensional Treatment Foster Care (MTFC) is a cost-effective alternative program to regular foster care, group or residential treatment, and incarceration for youth who have problems with chronic disruptive behavior. In MTFC program, children are placed in a family setting for six to nine months. Foster parents are recruited, trained, and supported to become part of the treatment team. The birth family receives family therapy and parent training in order to prepare parents for their child’s return home and to reduce conflict and increase positive relationships in the family. The MTFC treatment team is led by a program supervisor who also provides intensive support and consultation to the foster parents. The treatment team also includes a family therapist, an individual therapist, a child skills trainer, and a daily telephone contact person (PDR caller). Eight randomized trials and numerous other studies have provided evidence of the feasibility and effectiveness of MTFC. Results showed that cost of
MTFC, compared to alternative residential treatment models, was substantially lower, thus resulting in savings for both systems and taxpayers.

In the current international context, especially in the USA, professionals and policymakers have available very useful resources to make decisions on which programs are the most appropriate to deal with the needs of communities and human groups with particular problems. Several public and private organizations have been building well-documented, up-to-date data banks that include very detailed descriptions of programs based on solid, stable evidence of a high degree of efficacy to achieve the goals intended. The next paper in this issue presents one of these data banks of child and family-based intervention programs (*Blueprints for the Prevention of Violence*), which has been used in the USA for several years to design a version for several European countries.

The last paper in this issue deals with some of the new financing formulas for infancy and adolescence programs, such as the “pay by return” formula, which is now being included in some USA and UK programs. From this perspective, it may be interesting to study the incorporation of private initiative, especially that of Organizations (for example, Foundations) that can afford this kind of investment. This would mean that an important part or the entire program would be financed from the start by this kind of private Organizations. From the assessment of the results obtained and their translation into economic benefits (in terms of reduction of expenditures and of the income that the results of the program would provide to the State), the Public Administration would commit to returning part of the financing of the program, the part that could be proved to have saved tax-payers’ money.
Early Intervention Programs for Children and Families: Theoretical and Empirical Bases Supporting their Social and Economic Efficiency

Programas de Intervención Temprana para Niños y Familias: Bases Teóricas y Empíricas que Sustentan su Eficiencia Social y Económica

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Abstract. The prenatal period and the early years of life have an extraordinary importance on the physical and psychological well-being not only in the infancy, but throughout the life cycle. There is strong empirical evidence that early life is highly vulnerable to the negative effects of adverse experiences or toxic stress as maternal prenatal anxiety or child maltreatment. Research in the field of developmental neurobiology provides important keys about the mechanisms across these experiences affect the process of child development provoking alterations and dysfunctions in brain architecture. Such alterations tend to be persistent and increase the risk of physical, cognitive, social and emotional problems along infancy, adolescence and adulthood. The evidences clearly support the need and social relevancy of implementing early intervention preventive programs for children and families who are at risk for experiencing toxic stress. Such policies and programs should begin as early as possible in order to reduce or avoid the need of most costly and less effective remediation programs.

Keywords: early intervention, prenatal stress, toxic stress.

Resumen. El período prenatal y los primeros años de vida tienen una extraordinaria relevancia en la salud física y psicológica no sólo en la infancia, sino a lo largo del ciclo vital. Hay numerosas evidencias empíricas de que en este período el ser humano es altamente vulnerable a los efectos negativos de determinadas experiencias adversas (o lo que se denomina “estrés tóxico”), entre las que se pueden destacar la ansiedad materna prenatal o las situaciones de maltrato o negligencia en la temprana infancia. La investigación llevada a cabo desde la neurobiología evolutiva aporta claves importantes acerca de los mecanismos a través de los cuales dichas experiencias afectan el proceso del desarrollo infantil provocando alteraciones y disfunciones en la arquitectura cerebral. Dichas alteraciones tienden a ser persistentes e incrementan el riesgo de desórdenes y problemas físicos, cognitivos, sociales y emocionales a lo largo de la infancia, adolescencia y madurez. Las evidencias apuntan claramente la necesidad y relevancia social de desarrollar programas preventivos de intervención temprana con los niños y familias en situación de vulnerabilidad. Tales políticas y programas deben iniciarse lo antes posible para reducir o evitar la necesidad de desarrollar posteriormente intervenciones rehabilitadoras, que resultan más costosas y menos efectivas.

Palabras clave: estrés prenatal, estrés tóxico, intervención temprana.

Present and future welfare and progress in society depend on the healthy development of its members, meaning by health not only the absence of disease, but also availability of personal resources so that individuals are given the chance to adapt to the changes and challenges of everyday life, face adversity, possess a feeling of personal well-being, and participate and interact with their environments in an active and productive way (National Scientific Council on the Developing Child, 2010).

A comprehensive body of research supports the relevance of the prenatal period and the first five years of life for both physical and psychological health: what takes place in these stages provides the foundation for physical, cognitive and emotional development throughout life (National Scientific Council on the Developing Child, 2010; Shonkoff et al., 2012). However, the process of child development presents, as Shonkoff and Phillips (2000) stated, an unavoidable paradox: it is strong and vigorous, but at the same time...
highly vulnerable to the influence of adverse experiences which can have long-lasting negative effects on physical and psychological well-being. The present article shows some of the evidence from scientific research on the long-term impact of adverse experiences at the prenatal period and earliest years, with a special focus on the neurobiological mechanisms explaining how that influence takes place. The article also stresses the social relevance of implementing both prevention and early intervention services for vulnerable children and families, and reviews the outcomes of some of them.

The Effect of Adverse Experiences and Toxic Stress on Early Childhood Development

Adverse experiences may produce disturbances in the acquisition of the abilities and skills expected in the development process. When these experiences disrupt the successful completion of crucial developmental transitions and milestones, they do not only affect the particular abilities and skills specific to the developmental stage in which they occur, but they also increase the likelihood of subsequent difficulties and maladaptation in later stages. The organizational perspective on child development provides a useful framework to understand such process (Cicchetti, 1989; Cicchetti & Toth, 2005), although the relationship between early and later disturbances in human development and functioning is far from inevitable.

Research has identified some of the experiences that may disrupt significantly prenatal and early child development and produce a long-lasting negative impact on physical and psychological health. But not all adverse or stressful experiences have a negative impact on development. Exposure to them is frequent across the lifespan. Stress is an inevitable part of life, and the ability to cope with it is essential for survival as well as an important part of the developmental process.

In early childhood, the negative effect of stressful events depends on the intensity and duration of the physiological response to stress. The more intense and prolonged, the higher the probability of psychophysiological disorders associated to long-term and significant impairments in physical and psychological development (National Scientific Council on the Developing Child, 2005; Shonkoff et al., 2012). Many authors have adopted the stress-response taxonomy formulated by the National Scientific Council on the Developing Child in 2005, which differentiates between positive stress, tolerable stress and toxic stress. Positive stress refers to short-term, moderate, adverse situations (e.g., facing frustration, first day at school, meeting new people), which are frequently experienced by children and can become positive learning experiences if children have support from caring adults to cope with them satisfactorily and develop a sense of mastery. In these circumstances, physiological activation in response to the stressful event is brief and moderate in intensity, and support by adults helps the children to bring the activation of their stress-response systems down to baseline. These experiences give children valuable opportunities to observe, learn and practice healthy and adaptive responses to adverse experiences. Tolerable stress is also associated to a short-term exposure to adverse experiences, but with higher levels of adversity and threat for the physical and psychological health than in the previous type (e.g., conflictive separation or divorce, natural disaster, death or serious illness of a loved person). Also in these instances, disposition of caring and supportive adults becomes a key protective factor by helping children to cope with the adverse experience, develop a sense of mastery over it, and avoid excessive activation of their stress-response systems. In these cases, children frequently present localized effects (Finkelhor, 1995), that is, specific symptoms to adverse experiences that can be intense and persistent, but which do not interfere significantly with their development. The third and most dangerous type of stress response is the toxic stress, which occurs when the adverse experiences affecting the child are persistent, repetitive, uncontrolled and/or lacking the support of caring adults to cope with them, so that the child is unable to manage adequately and an intense and prolonged over-activation of the stress-response system occurs. In these instances, child development can be negatively affected in a deeper way, especially when there is an accumulation of stressors and interruption of important developmental transitions occurs (National Scientific Council on the Developing Child, 2005).

Research in the field of developmental neurobiology has provided valuable insights to better understand the mechanisms through which adverse experiences and toxic stress in prenatal and early years become a risk for long-term physical and psychological health. Apart from short-term changes in observable behaviour, there is strong evidence that toxic stress can produce less visible but stable changes in brain architecture and functioning which increase the risk of physical or psychological disorders, particularly when experienced during periods of rapid brain development (Gunnar & Quevedo, 2007; Mustard, 2006; National Scientific Council on the Developing Child, 2005, 2007, 2010; Pechtel & Pizzagalli, 2011; Shonkoff et al., 2012).

Brain growth and development starts at the prenatal period and, though it continues throughout childhood and adolescence, its main development takes place during the first years of life. This process involves creating, strengthening and discarding neural connections, and develops in a sequential and hierarchical manner, starting from the most simple brain regions...
and functions to the most complex ones. These different regions develop, organize and reach complete functionality at different times of development (sensitive periods), always in constant adaptation to the environment. The neural connections most frequently used are strengthened, while the potential connections not used or not properly stimulated do not activate or are discarded. Genetics provides a plan for brain development, but environment has the power to alter it: brain architecture modifies to adapt to the specific needs and characteristics of the environment (McCain, Mustard, & McCuaig, 2011; Mustard, 2010; National Scientific Council on the Developing Child, 2007). These modifications have an adaptive function, although in some cases, such as toxic stress adaptation, they can become maladaptive (McCrorry, De Brito, & Viding, 2010).

Research has shown that toxic stress has an important impact on brain structure and functioning by decreasing in some cases the brain size and, most importantly, by activating the secretion of stress hormones, mainly cortisol. It has been found that persistent high levels of cortisol disrupt the neural growth and the formation of synapses, and causes modifications in the limbic system (mainly the hippocampus, the prefrontal cortex and the amygdala). These circumstances are linked to language, cognitive and socio-emotional impairments in childhood, more difficulties in adaptation and higher reactivity to stressful events even when these are of medium intensity, and immune system problems expressed in infectious, inflammatory and autoimmune diseases (Gunnar, Herrera, & Hostinar, 2009; Gunnar & Quevedo, 2007; McCain et al., 2011; Pechtel & Pizzagalli, 2011; Shonkoff et al., 2012).

Toxic stress effects in early childhood may persist into adulthood, including increased risk of depressive disorders, anxiety, post-traumatic stress disorder and physical problems such as cardiovascular diseases, type II diabetes or hypertension (Mustard, 2006). There are many studies supporting this association, although most of them use a retrospective approach. Among these we find the Adverse Childhood Experiences (ACE) Study (Middlebrooks & Audage, 2008), carried out with 17,000 adults in order to explore the link between childhood stressors and adult health. The adverse experiences analysed included child maltreatment, exposure to intimate partner violence, household substance abuse, household mental illness, and parental separation, divorce or imprisonment. Apart from a high frequency of these adverse experiences in childhood (according to the reports by the adult participants) the study found a strong association between these and a wide range of difficulties in later life, such as physical disorders (e.g., cardiovascular, breathing, and sexually transmitted diseases), illicit drug use, alcoholism, depression, partner violence, sexual promiscuity, unwanted pregnancies and suicide attempts. The study also found a positive relationship between the number of adverse experiences suffered and the risk of health problems at a later stage. This finding has also been confirmed in several longitudinal studies (Casp, Harrington, Moffitt, Milne, & Poulton, 2006; Horwitz, Widom, McLaughlin, & White, 2001; Schilling, Aseltine, & Gore, 2007), although some analyses lead to think that the relevant factor could be not as much the quantity or accumulation of adverse experiences, but their severity or intensity (Schilling, Aseltine, & Gore, 2008).

Child maltreatment is one of the most severe adverse experiences a child may suffer, especially when occurs during sensitive stages of development. Moreover, it is frequent the concurrence of various types of maltreatment -physical, psychological and/or sexual- (Gilbert et al., 2009; Higgins & McCabe, 2001), other types of victimization, and associated adverse circumstances such parental mental health problems or substance abuse, chaotic, unstable and disorganized family environments, or family violence (Finkelhor, Ormrod, & Turner, 2007).

In recent years, many studies on the neurobiological consequences of child maltreatment and its relationship with a wide range of physical, cognitive, social and emotional problems in childhood, adolescence and adulthood have been carried out. In some cases, the maltreatment involves a severe lack of cognitive and sensory stimulation. Such experiences may alter the brain capacity to use serotonin –associated to feelings of well-being and emotional stability-, decrease brain volume and growth, and produce a loss of neurons, all these circumstances being related to impaired cognitive, emotional, behavioural and social functioning. Research has also shown that repeated maltreatment associated to a constant activation of the neurobiological stress-response systems disrupts the developing brain circuits. The chronic stimulation of the brain response associated to fearfulness seems to cause this type of responses to remain fixed, so that the child victim of severe and chronic maltreatment is in a state of constant alertness and over-activation which prevents him/her from adapting to non-threatening environments, from acquiring the calmness needed to learn, and from getting involved in the activities needed to develop complex cognitive, behavioural and emotional functions, such as emotional regulation and impulse control. Furthermore, as mentioned previously, permanent activation of the stress-response system is related to high levels of stress hormones –glucocorticoids, and particularly cortisol-, which weaken the immune system, thus rendering children more vulnerable to infections and chronic health problems (Child Welfare Information Gateway, 2009; De Bellis, 2005; Gunnar & Fisher, 2006; National Scientific Council on the Developing Child, 2005; Perry, 2002; Teicher et al., 2003; Twardosz & Lutzker, 2010; Watts-English, Fortson, Gibler, Hooper, & De Bellis, 2006).

The effects of child maltreatment on brain development may persist through adolescence and adulthood.
A lower development of the brain cortex identified in adolescents who have experienced maltreatment during childhood has been related to increased impulsive behaviour, propensity to taking risks, and delays in academic and social skills. For adults with a history of severe maltreatment during childhood, abnormalities in brain growth, in the hippocampus, in the limbic system and in the connection between the cerebral hemispheres have been identified. These conditions have been linked to higher risk of memory impairments and psychopathological problems, such as depression, post-traumatic stress disorder and dissociative and attention-deficit disorders (Child Welfare Information Gateway, 2009).

The Vulnerability of the Prenatal Period

The assumption that child development shapes through a highly complex process of interplay between biological and environmental factors (Sameroff, 2000) explains the inclusion of prenatal stress in the list of adverse experiences which can affect development negatively, in particular when other risk factors are also present. Under the generic term of ‘prenatal stress’, different situations have been included, such as maternal anxiety and depression, relational difficulties, stress at work, and natural or man-made disasters (Glover, 2011).

Research carried out with primates has consistently found that maternal stress during pregnancy results in long-term negative effects on their offspring (Schneider, Roughton, Koehler, & Lubach, 1999; Schneider, Moore, Kraemer, Roberts, & DeJesus, 2002). These studies confirm that prenatal stress is associated to lower birth weight, lower levels of attention and motor maturity, slower learning, and impaired emotional regulation in offspring. The earliest stage of gestation seems to present a special vulnerability to these effects, although they have also been observed during mid-to-late gestation.

An important number of controlled studies with humans have shown a link between maternal prenatal stress and anxiety, and ultrasonographically observed foetal behaviour. Although few studies have proved the influence of maternal stress measured in early pregnancy (12-21 weeks) on near term foetal behaviour, there are many empirical data available supporting these effects in subsequent gestational stages (Van den Berg, Mulder, Mennes, & Glover, 2005).

Some studies have found a link between prenatal stress and the newborn health. Maternal self-reports on negative life events, stress at work and anxiety symptoms seem to be associated to premature childbirth and a smaller size of the newborn, both risk factors for cognitive and social developmental problems (Wadhwa, 2005; Wadhwa, Sandman, & Garite, 2001; Wadhwa, Sandman, Porto, Dunkel-Schetter, & Garite, 1993).

Several studies have also explored the relationship between prenatal stress and neurological and behavioural outcomes during the newborn period. These studies have found that newborns from mothers with high anxiety levels showed a higher activation of the brain right frontal lobe—which may be linked to negative affectivity from childhood to adulthood-, and spent more time in deep-sleep phases and less time in calm and active alert (Field et al., 1985). In general, those studies show that maternal prenatal anxiety is positively associated to child regulation disorders expressed by a lower performance in the Neonatal Behavior Assessment Scale (Rieger et al., 2004; Brouwers, Van Baar, & Pop, 2001) and other neurological tests (Lou et al., 1994).

Several prospective studies have found an association between prenatal stress and cognitive and socio-emotional problems in early childhood. Infants of mothers with high levels of prenatal anxiety show less positive interactions with their mothers (Field et al., 1985), higher levels of negative affection and higher motor activity when presented new toys (Davis et al., 2004), higher irritability and difficulty (Van den Bergh, 1990; Huizink, Robles de Medina, Mulder, Visser, & Buitelaar, 2003), poorer language skills (Laplante et al., 2004), and lower scores in the Bayley Mental Development Index (Huizink et al., 2003). Findings from a relevant longitudinal study (Van den Bergh et al., 2005) suggest that high levels of maternal state prenatal anxiety at 12-22 weeks of pregnancy are related to impulsive cognitive style and lower scores in intelligence tests when children are 14-15 years old. Moreover, it is important to point out the results from the longitudinal study by Van den Bergh & Marcoen (2004), which found that prenatal anxiety during pregnancy explained 22% of the variance in symptoms of attention-deficit/hyperactivity disorder (ADHD) in 8-9-year-old children. Other studies have also found a link between maternal prenatal anxiety and ADHD, and more difficulties in attention regulation (O’Connor, Heron, Golding, Beveridge, & Glover, 2002; Huizink et al., 2003).

Findings from these studies could be explained by factors such as the transmission of genetic susceptibility to anxiety, the effect of maternal postpartum anxiety, the effect of pre or postnatal anxiety on maternal perception of child behaviour, or the influence of other associated variables, such as a higher use of tobacco or alcohol during pregnancy or a higher presence of neglectful behaviours or physical aggressions against the infant which could have affected negatively the process of brain development (Van den Bergh, 1990). However, it is important to point out that, although such factors are relevant to explain the difficulties observed in postnatal functioning, research suggests that prenatal stress has also a significant effect (Glover, 2011). For example, findings obtained by Van den Bergh et al. (2005), controlling the effect of postnatal
anxiety, postnatal depression and postnatal stress, show a strong association between maternal prenatal anxiety and regulation disorders in the child. These findings support the hypothesis that fetal programming by maternal stress or anxiety is occurring in humans and that the effects of the prenatal environment interact with genetic factors to determine the phenotype at birth.

The fetal programming hypothesis (Barker, 2002; Barker, Forsen, Eriksson, & Osmond, 2002) states that uterine environment may disrupt the development of the foetus during particularly sensitive periods. According to this hypothesis, quality of intra-uterine life (1) might program a certain degree of susceptibility in the individual to develop illnesses at later periods, and (2) might be as relevant as the genetic pool when predicting future physical and mental performance. According to this approach, throughout the foetal development there are critical periods of vulnerability to adverse or unfavourable conditions. These vulnerable periods take place at different times for different tissues and organs, with the most-rapid division cells being the ones at the greatest risk.

The fetal programming hypothesis also includes several key ideas. Firstly, the effects of foetal conditions are persistent. Secondly, the effects on health remain latent for many years. Thirdly, fetal programming occurs by the influence of the environment on the epigenome, a biological process still not fully understood.

The epigenome can be described as a series of switches that allow (or not) certain parts of the genome to express. The intra-uterine period may be particularly important to set or adjust those switches (Petronis, 2010). The fetal programming hypothesis states that epigenetic foetal changes may have an adaptive goal. In an adverse environment, the developing organism tries to compensate for and adapt to the deficiencies in order to increase chances of survival (Gluckman & Hanson, 2005). However, disorders can appear when postnatal conditions become different from those the foetus got prepared for. Thus, for instance, inadequate nutrition in utero programs the foetus to have metabolic characteristics that can lead to future disease; individuals starved in utero, who adapt to this adverse circumstance, are more prone in adulthood to be overweight and suffer cardiovascular disease and diabetes (Barker, 2002).

Children from mothers with high levels of anxiety or stress at pregnancy would have alterations in the functioning of the hypothalamic-pituitary-adrenal (HPA) axis to make them more vigilant and aware of potential environmental threats after birth. However, this hypervigilance and shift in attention may become maladaptive (Talge, Neal, & Glover, 2007). Alterations in the HPA axis would tend to remain for a long period of time, as suggested by the results obtained from studies which have found, for example, an association between maternal prenatal anxiety and children’s morning concentrations of cortisol at ten years of age (O’Connor et al., 2005) or the cortisol levels in response to moderate stressors in six-month-old babies (Huot, Brennan, Stowe, Plotisky, & Walker, 2004). The most widely accepted hypothesis suggests that abnormally high levels of maternal stress hormones, particularly glucocorticoids, can cross the placenta and affect foetal brain and nervous system development (Gitau, Cameron, Fisk, & Glover, 1998; Van den Bergh et al., 2005).

Results from several studies suggest that different gestational ages may present different levels of vulnerability to specific types of disorders. Thus, for example, an association between a greater vulnerability to schizophrenic disorders and extreme stress in the first three months of pregnancy has been found, as well as between ADHD and prenatal stress in later stages of pregnancy (Glover, 2011). Other studies have found greater vulnerability to prenatal stress in the tenth week for ADHD symptoms at the age of seven (Rodriguez & Bohlin, 2005), in the first three months for negative emotionality at the age of five (Martin, Noyes, Wisenbaker, & Huttunen, 1999), in the first six months for intellectual disorders at age two (Laplante et al., 2004), in the first six months for disorders at ages 8-9 and cognitive functioning at ages 14-15 (Van den Bergh & Marcoen, 2004), etc. Variability of results suggest that different mechanisms are operating at different stages of gestation, or else, this might be a consequence of methodological differences between studies (Van den Bergh et al., 2005).

It is not clear if maternal prenatal anxiety and stress affect boys and girls in different ways. Most studies do not deal with this issue. Findings from some studies suggest a greater vulnerability in boys (O’Connor et al., 2002). Nevertheless, results from the study by O’Connor, Heron, Golding, & Glover (2003) suggest a possible interaction between gender and development: while the effects of prenatal anxiety in ADHD symptoms at the age of four were observed only in boys, differences between genders disappeared when the same children were evaluated at the age of seven.

Reversibility of Neurological Effects of Pre- and Post-natal Toxic Stress

Negative effects of toxic stress on brain architecture are not always irreversible. Some reviews suggest that certain interventions—such as, providing economic and emotional support to children, behavioural and pharmacological therapies at older ages—can improve the HPA axis regulation, with subsequent improvements in behavioural and emotional adjustment (Gunnar et al., 2009). However, other studies suggest that the effects of extremely intense adverse experiences, in particular long and severe cognitive and emo-
tional deprivation during early childhood, may be irreversible (Mustard, 2006).

Animal studies have shown that some epigenetic modifications can be remediated (Barros et al., 2004; Champagne & Curley, 2009; Maccari et al., 1995; Smythe, McCormick, & Meaney, 1996; Szyf, 2009). These studies suggest that the adverse effects of prenatal stress exposure could be buffered with a postnatal nurturing environment: animals with an optimal parental care show a reduction of the behavioural effects of stress (Meaney, 2001; O’Donnel, Larocque, Seckl, & Meaney, 1994). Beneficial effects of positive postnatal experiences—either naturally occurring or by experimental manipulation—are as powerful as the negative experiences effects; positive postnatal care and prenatal stress appear to have opposite effects on the HPA axis (Vallee et al., 1999).

Findings of studies conducted with humans suggest that negative effects of prenatal stress on foetal brain development might be moderated by the effect of attachment. Results from a recent longitudinal study carried out with 125 mother-child dyads (Bergman, Sarkar, Glover, & O’Connor, 2010; Bergman, Sarkar, & O’Connor, 2008) showed an inverse association between prenatal cortisol levels, indexed by amniotic fluid levels measured at week 17th of pregnancy, and standard scores from the Bayley cognitive development scale at 17 months of age. However, a moderating role of infant-parent attachment quality on the association between prenatal cortisol exposure and cognitive development was observed. Whereas prenatal cortisol exposure strongly predicted cognitive development in children with an insecure attachment history, the relationship between both variables was essentially zero among children with a secure attachment history. Furthermore, this interaction—and, therefore, the moderating effect of attachment—was independent of obstetric and psychosocial covariates, like stressful events.

In the same study, infant temperament was assessed through observational methodology at laboratory measuring intensity of child’s fear reaction at an unpredictable situation. Results showed that correlation between antenatal stress and observed fearfulness varied according to attachment classification: a significant interaction for attachment and antenatal stress was observed indicating that the prediction from antenatal stress to fearfulness was significantly greater in the insecure-ambivalent group compared the other three attachment classifications. Findings suggest that insecure-ambivalent attachment enhances the association between exposure to prenatal stress and infant fearfulness intensity assessed at 17 months of age.

Results from this longitudinal study provides direct human evidence that prenatal maternal cortisol exposure—marker of the maternal anxiety level during pregnancy—predicts infant cognitive and emotional development and that this effect can be moderated and even completely eliminated by a positive childrearing (secure attachment bonding). It also provides relevant evidence that negative early caregiving—insecure attachment—accentuates the negative effect of antenatal stress. Taking together, findings suggest that early postnatal interventions may confer benefits to the child and that some prenatal effects may be modifiable by infant-parent attachment in the postnatal period.

The Need for a Paradigm Shift: from Rehabilitation to Early Intervention

Integrating previous information, following conclusions can be proposed:

1. Alterations in brain architecture and functioning due to adverse pre and postnatal environments appear to remain stable. From an organizational approach to brain and human development, time is a relevant variable affecting intervention prognosis.

2. Early childhood intervention programs designed to mitigate the factors that place children at risk of poor outcomes, should be considered as the most effective and maybe the unique strategy to avoid persistent negative effects of early adverse experiences.

3. Early intervention programs aimed to reduce the number or adversity of adverse experiences threatening the well-being of young children, and promote adequate nurturing for them (e.g., secure attachment with supportive adults), can achieve positive outcomes in children’s emotional and cognitive development.

A shift in thinking in the public health and social services sector, from a treatment paradigm to a prevention paradigm, is needed. A large part of the social and health public services are meant to provide services to children and their families when moderate to severe problems are identified in family relationships (for example, child maltreatment), child cognitive development, substance abuse, criminal behaviour, etc.

Scientific research provides reasons supporting effectiveness of programs carefully designed to improve early parental care and trigger significant effects on a wide range of aspects of child development (for a more comprehensive review see Olds, Sadler, & Kitzman, 2007). Evaluation of some early prevention programs has showed positive short, medium and late post-treatment outcomes.

Early intervention programs are usually home visiting programs starting at pregnancy or early after child birth. Probably, one of the most widely implemented programs in the US is Healthy Start. To be more precise, this is in fact a group of programs which follow the original program conducted in Hawaii (Duggan et al., 1999), which has been adapted in the different places where it has been implemented (Bugental et al.,
The main goal of *Healthy Start* is prevention of child maltreatment. Results have been very diverse and not always as positive as expected. A review conducted by the Washington State Institute for Public Policy (Aos, Lieb, Mayfield, Miller, & Pennucci, 2004) concluded that *Healthy Start* is not able to achieve expected outcomes and that costs are higher than benefits. Results are disappointing, in part, because of high rates of participant attrition.

There are many other programs designed to avoid the negative consequences of child exposure -before or after birth- to adverse situations: *Parents as Teachers* (Parents as Teachers National Center, 2005), *Early Head Start* (Love et al., 2002), *UCLA Family Development Project* (Heinicke et al., 1999; Heinicke, Fineman, Ponce, & Guthrie, 2001). However, for purposes of the present article, findings obtained from the evaluation of two programs will be presented: the *Comprehensive Child Development Program* and the *Nurse-Family Partnership Program*. The latter one is described in more detail in another article included in this special issue.

The implementation of the *Comprehensive Child Development Program* is an initiative by the American government to improve the life-chances of children born into low-income families. It is a program delivered by paraprofessionals home visitors and try to improve the family’s economic self-sufficiency, children care, health and development. Randomized controlled trials of CCDP were conducted for more than 2,000 families receiving treatment and findings suggested that, although the dropout rate was acceptable, hardly any substantial differences were found in any developmental area between children who had received the treatment and those who had not (Goodson, Layzer, St. Pierre, Bernstein, & Lopez, 2000). CCDP is an example of a program receiving important public funding which had not achieved expected results at the time it was assessed. Probably, negative outcomes were partly due to the lack of a previous theoretical model or a standardized pattern for the intervention implementation, but it was mainly due to the lack of controlled pilot administrations which would have allowed a previous assessment of its efficacy (Gilliam, Ripple, Zigler, & Leiter, 2000; Olds et al., 2007). CCDP experienced showed that not every prevention program can achieve expected outcomes, and that it is no possible to know program efficacy without a scientific evaluative approach.

The *Nurse-Family Partnership Program* (NFP; Olds, 2002, 2006) is a good example of an early prevention program for high-risk families with very positive results. NFP is a home visiting program delivered by nurses with specialized training who intervene with mothers and children providing support, education and information to prevent child maltreatment, to promote the child health, and to improve parental skills and life quality of the families. Intervention starts during pregnancy and lasts until the child is two years old. NFP program has three major goals: to improve the outcomes of pregnancy by helping women improve their prenatal health (health maintenance, nutrition and exercises, substance abuse and mental health); to improve the child’s health and development by helping parents provide more sensitive and competent care of the child; and to improve parental life-course by helping parents plan future pregnancies, complete their educations, and find work. Reports from randomized control trials conducted to assess short and long-term outcomes (including results from 15 to 19-year follow-ups) have shown consistent effects on prenatal health behaviors, parental care of the child, child maltreatment, child health and development, maternal life-course, and criminal involvement of the mothers and children. Positive outcomes have also been observed in mothers’ income, domestic violence and maternal depressive symptoms.

### Social and Economic Implications

The *Human Capital Theory* could be a useful framework to explain some of the conclusions arising from available data on the effects of the early childhood quality on the development over a person’s life (Kilburn & Karoly, 2008). *Human capital* is defined as “the set of activities influencing the economic and psychological gains obtained by increasing people’s competence” (Becker, 1975, p. 9) and includes everything related to people’s productive capacity like knowledge, health, experience, competences, etc. “Transformation of human capital over successive periods is known as a *human capital-production process*” (Kilburn & Karoly, 2008, p. 6).

There is an important body of rigorous research -some has been presented in this article, and some in other articles in this special issue- which shows that some prevention and early intervention programs carried out during pregnancy and the early years, are able to:

- produce long-lasting positive outcomes in development, avoid the effects that adverse experiences and toxic stress could have without the intervention and, therefore, improve individual’s physical and psychological well-being, and
- generate considerable savings for society since it increases human capital thus enabling society to generate progress, and avoids high expenses in late-treatment programs that can only yield very limited results.

Nowadays a large number of expert groups linked to relevant scientific organizations (Heckman, 2006, 2008; Knudsen, Heckman, Cameron, & Shonkoff, 2006; National Scientific Council on the Developing...
Child, 2004, 2007; RAND Corporation, 2005, 2008; Washington State Institute on Public Policy, 2011, 2012) is supporting the implementation of early childhood intervention policies. Empirical evidence from program evaluation studies conducted with the highest levels of methodological requirements can be helpful to support early childhood policies: early childhood intervention programs implemented to avoid the negative effects of pre- and perinatal adverse environments constitute a social investment improving individual well-being, societal well-being, and incomes of society.

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Improving the Life Chances of Vulnerable Children and Families with Prenatal and Infancy Support of Parents: The Nurse-Family Partnership*

Un Programa de Apoyo Parental Prenatal e Infantil para Mejorar las Oportunidades Vitales de Niños y Niñas de Familias Vulnerables: El Nurse-Family Partnership

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Abstract. Pregnancy and the early years of the child’s life offer an opportune time to prevent a host of adverse maternal and child outcomes that are important in their own right, but that also have significant implications for the development of criminal behavior. This paper summarizes a three-decade program of research that has attempted to improve the health and development of mothers and infants and their future life prospects with prenatal and infancy home visiting by nurses. The program, known as the Nurse-Family Partnership, is designed for low-income mothers who have had no previous live births. The home visiting nurses have three major goals: to improve the outcomes of pregnancy by helping women improve their prenatal health; to improve the child’s health and development by helping parents provide more sensitive and competent care of the child; and to improve parental life-course by helping parents plan future pregnancies, complete their educations, and find work. Given consistent effects on prenatal health behaviors, parental care of the child, child abuse and neglect, child health and development, maternal life-course, and criminal involvement of the mothers and children, the program is now being offered for public investment throughout the United States, where careful attention is being given to ensuring that the program is being conducted in accordance with the program model tested in the randomized trials. The program also is being adapted, developed, and tested in countries outside of the US: the Netherlands, England, Scotland, Northern Ireland, Australia, and Canada, as well as Native American and Alaskan Native populations in the US, where programmatic adjustments are being made to accommodate different populations served and health and human service contexts. We believe it is important to test this program in randomized controlled trials in these new settings before it is offered for public investment.

Keywords: crime, development, health, home visiting, nurses, prevention.

Resumen. El embarazo y los primeros años de vida ofrecen un momento oportuno para prevenir una serie de situaciones adversas para la madre y el niño que son relevantes en sí mismas, pero que también tienen importantes implicaciones en el desarrollo de conductas desadaptativas posteriores. En este artículo se resumen tres décadas de un programa de investigación que ha intentado mejorar la salud y el desarrollo de madres e hijos y sus perspectivas vitales futuras con una intervención llevada a cabo por enfermeras en el domicilio familiar durante el embarazo y los primeros años de vida del niño. El programa, conocido como Nurse-Family Partnership, fue diseñado para madres primíparas de bajos ingresos. Las enfermeras que trabajan en el domicilio materno tienen tres metas principales: mejorar los resultados del embarazo ayudando a las madres a mejorar su salud prenatal; mejorar la salud del niño y su desarrollo ayudando a los padres a proporcionarle un cuidado más sensible y competente; y mejorar el futuro desarrollo vital de la madre ayudando a los padres a planificar futuros embarazos, completar su educación y encontrar trabajo. El programa ha demostrado efectos consistentes en la salud prenatal materna, en el cuidado parental, en el maltrato y negligencia infantil, en la salud del niño y su desarrollo, en la calidad de vida posterior de la madre, y en la implicación en delitos de las madres y sus hijos. Por ello, el programa se está ofreciendo en la actualidad en el ámbito público de los Estados Unidos de América con especial atención en asegurar que el programa se lleve a cabo de acuerdo con el modelo original evaluado en diferentes ensayos experimentales.
Pregnancy and the early years of children’s lives offer an opportune time to prevent a host of adverse maternal and child outcomes that are important in their own right, but that also have significant implications for the development and prevention of criminal behavior. Over the past 30 years, our team of investigators has been involved in developing and testing a program of prenatal and infancy home visiting by nurses aimed at improving the health of mothers and children and their future life prospects. Known as the Nurse-Family Partnership (NFP), this program is different from most mental-health, substance-abuse, and crime-prevention interventions tested to date in that it focuses on improving neuro-developmental, cognitive, and behavioral functioning of the child by improving prenatal health; reducing child abuse and neglect and neuro-developmental and behavioral dysregulation; and enhancing family functioning and economic sufficiency in the first two years of the child’s life. These early alterations in biology, behavior, and family context are expected to shift the life-course trajectories of children living in highly disadvantaged families and neighborhoods away from psychopathology, substance use disorders, and risky sexual behaviors (Olds, 2002). The program is designed to alter those influences early in life that contribute to early onset conduct disorder (Moffitt, 1993).

Noting that adolescent substance use disorders (SUDs) are associated with childhood psychopathology, Kendall and Kessler (2002) have recommended public investments in earlier treatment of childhood mental disorders, rather than preventive interventions, as a way of reducing the rates of psychopathology and SUDs. They question the value of preventive interventions on the grounds that many who need such interventions fail to participate because they have no sense of vulnerability to motivate participation. Women who qualify for the NFP (low-income pregnant women bearing first babies), however, have profound senses of vulnerability that increase their participation in the NFP (Olds, 2002). Moreover, today the program is being integrated into obstetric and pediatric primary care services in hundreds of communities throughout the United States with essential fidelity to the model tested in randomized controlled trials (Olds, Hill, O’Brien, Racine, and Moritz, 2003). The NFP is thus a potentially important intervention to complement existing mental health prevention and treatment efforts, given its success in engaging vulnerable pregnant women and its impact on a wide range of much earlier risks for compromised adolescent mental health and behavior. In evaluating this program, it is important to understand its theoretical and empirical foundations.

Theory-Driven

The NFP also is grounded in theories of human ecology (Bronfenbrenner, 1979; Bronfenbrenner, 1995, pp. 619-647), self-efficacy (Bandura, 1977), and human attachment (Bowlby, 1969). Together, these theories emphasize the importance of families’ social context and individuals’ beliefs, motivations, emotions, and internal representations of their experience in explaining development. Human ecology theory, for example, emphasizes that children’s development is influenced by how their parents care for them, and that, in turn, is influenced by characteristics of their families, social networks, neighborhoods, communities, and the interrelations among them (Bronfenbrenner, 1979). Drawing from this theory, nurses attempt to enhance the material and social environment of the family by involving other family members, especially fathers, in the home visits, and by linking families with needed health and human services.

Parents help select and shape the settings in which they find themselves, however (Plomin, 1986). Self-efficacy theory provides a useful framework for understanding how women make decisions about their health-related behaviors during pregnancy, their care of their children, and their own personal development. This theory suggests that individuals choose those behaviors that they believe (1) will lead to a given outcome, and (2) they themselves can successfully carry out (Bandura, 1977). In other words, individuals’ perceptions of self-efficacy influence their choices and determine how much effort they put forth to get what they want in the face of obstacles.

The program therefore is designed to help women understand what is known about the influence of their behaviors on their health and on the health development of their babies. The home visitors help parents establish realistic goals and small achievable objectives that, once accomplished, increase parents’ reservoir of successful experiences. These successes, in turn, increase women’s confidence in taking on larger challenges.

Finally, the program is based on attachment theory, which posits that infants are biologically predisposed to seek proximity to specific caregivers in times of
stress, illness, or fatigue in order to promote survival (Bowlby, 1969). Attachment theory hypothesizes that children’s trust in the world and their later capacity for empathy and responsiveness to their own children once they become parents is influenced by the degree to which they formed an attachment with a caring, responsive, and sensitive adult when they were growing up, which affects their internal representations of themselves and their relationships with others (Main, Kaplan, and Cassidy, 1985).

The program therefore explicitly promotes sensitive, responsive, and engaged care-giving in the early years of the child’s life (Dolezol and Butterfield, 1994). To accomplish this, the nurses try to help mothers and other caregivers review their own childrearing histories and make decisions about how they wish to care for their children in light of the way they were cared for as children. Finally, the visitors seek to develop an empathic and trusting relationship with the mother and other family members because experience in such a relationship is expected to help women eventually trust others and to promote more sensitive, empathic care of their children.

Epidemiologic Foundations

Focus on Low-Income, Unmarried, and Teen Parents. The NFP registers low-income women having first births, and thus enrolls large portions of unmarried and adolescent mothers. These populations have higher rates of the problems the program was designed originally to address (e.g., poor birth outcomes, child abuse and neglect, and diminished parental economic self-sufficiency) (Elster and McAnarney, 1980; Overpeck, Brenner, Trumble, Trifiletti, and Berendes, 1998). Women bearing first children are particularly receptive to this service, and to the extent that they improve their prenatal health, care of their firstborns, and life-course they are likely to apply those skills to subsequent children they choose to have (Olds, 2002; Olds, 2006).

Program Content. The NFP seeks to reduce specific risks and promote protective factors for poor birth outcomes, neuro-cognitive impairments, child abuse and neglect, injuries, and compromised parental life course (Figure 1). These reduced exposures to prenatal toxicants, child abuse and neglect, and untoward family environments are expected to shift the child’s health and development toward greater behavioral regulation and interpersonal and cognitive competence, eventually leading to reduced exposure to and engagement with antisocial, deviant peers.

Prenatal Health Behaviors. Prenatal tobacco and alcohol exposure increase the risk for fetal growth restriction (Kramer, 1987), preterm birth (Kramer, 1987), and neurodevelopmental impairment (e.g., attention-deficit disorder, cognitive and language delays) (Fried, Watkinson, Dillon, and Dulberg, 1987; Mayes, 1994; Milberger, Biederman, Faraone, Chen, and Jones, 1996; Olds, Henderson, and Tatelbaum, 1994a; Olds, Henderson, and Tatelbaum, 1994b; Olds, 1997; Streissguth, Sampson, Barr, Bookstein, and Olson, 1994, pp. 148-183; Sood et al.,...
Children born with subtle neurological perturbations resulting from prenatal exposure to stress and substances are more likely to be irritable and inconsolable (Clark, Soto, and Bergholz, 1996; Saxon, 1978; Streissguth et al., 1994, pp. 148-183), making it more difficult for parents to enjoy their care. Improved prenatal health thus helps parents become competent caregivers.

**Sensitive, Competent Care of the Child.** Parents who empathize with and respond sensitively to their infants cues are more likely to understand their children’s competencies, leading to less maltreatment and unintentional injuries (Cole, Henderson, Kitzman, Anson, Eckenrode, and Sidora, 2004; Peterson and Gable, 1998, pp. 291-318). Competent early parenting is associated with better child behavioral regulation, language, and cognition (Hart and Risley, 1995). Later demanding, responsive, and positive parenting can provide some protection from the damaging effects of stressful environments and negative peers (Bremner, 1999; Field et al., 1998) on externalizing symptoms and substance use (Baumrind, 1987; Biglan, Duncan, Ary, and Smolkowski, 1995; Cohen, Navaline, and Metzger, 1994; Field et al., 1998; Grant et al., 2000; Johnson and Pandina, 1991). In general, poor parenting is correlated with low child serotonin levels (Pine, 2001; Pine, 2003) which, in turn, are implicated in stress-induced delays in neurodevelopment (Bremner and Vermetten, 2004).

**Early Parental Life Course.** Closely spaced subsequent births undermine unmarried women’s educational achievement and workforce participation (Furstenberg, Brooks-Gunn, and Morgan, 1987), and limit their time to protect their children. Married couples are more likely to achieve economic self-sufficiency, and their children are at lower risk for a host of problems (McLanahan and Carlson, 2002). Nurses therefore promote fathers’ involvement and help women make appropriate choices about the timing of subsequent pregnancies and the kinds of men they allow into their lives.

**Modifiable Risks for Early-Onset Antisocial Behavior, Substance-Use Disorders, and Depression.** Many of the prenatal and infancy risks addressed by this program are risks for early-onset antisocial behavior, depression, and substance use (Olds, Sadler, and Kitzman, 2007; Olds et al., 1997; Greene, 2001; Olds, 2002; Hawkins, Catalano, and Miller, 1992; Clark and Cornelius, 2004). Children with early-onset conduct problems are more likely to have subtle neurodevelopmental deficits (Arseneault, Tremblay, Boulcerice, and Saucier, 2002; Milberger et al., 1996; Olds et al., 1997; Streissguth et al., 1994, pp. 148-183) that may contribute to, be caused by, or be exacerbated by abusive and rejecting care early in life (Moffitt, 1993; Raine, Brennan, and Mednick, 1994). Aggressive and disinhibited behaviors that emerge prior to puberty are risks for adolescent SUD (Tarter et al., 2003; Clark, Cornelius, Kirisci, and Tarter, 2005) antisocial behavior, and risky sexual behavior, such as unprotected sex with multiple partners. Early onset antisocial behavior leads to more serious and violent offending that is different from normative acting out in mid-adolescence (Loeber, 1982).

A similar configuration of risks is associated with early-onset Major Depressive Disorder (MDD). Children who develop MDD in childhood, compared to those who develop MDD as adults, are more likely to have perinatal medical complications, motor skill deficits, behavioral and emotional problems (Jaffe et al., 2002), especially impulsivity, risky decision making, and problems with verbal recognition memory and inattention (Aytaclar, Tarter, Kirisci, and Lu, 1999), as well as caretaker instability, criminality, and psychopathology in their family of origin.

Both conduct disorder and early substance use increase the risk for later SUDs and chronic antisocial behavior (Boyle, et al., 1992; Clark et al., 2005; Clark and Cornelius, 2004; Clark et al., 1997; Lynskey et al., 2003; Moffitt, 1993; Raine et al., 1994). Children who begin using cannabis in adolescence (<17 years) are at greater risk for developing SUDs (Lynskey et al., 2003). The reductions in prenatal risks, dysfunctional care of the infant, and improvements in family context are thus likely to have long-term effects on youth antisocial behavior that has its roots in early experience.

**Program design**

The same basic program design has been used in Elmira, Memphis, and Denver.

**Frequency of Visitation**

The recommended frequency of home visits changed with the stages of pregnancy and was adapted to parents’ needs, with nurses visiting more frequently in times of family crisis. Mothers were enrolled through the end of the second trimester of pregnancy. In Elmira, Memphis, and Denver, the nurses completed an average of 9 (range 0-16), 7 (range 0-18), and 6.5 (range 0-17) visits during pregnancy respectively; and 23 (range 0-59), 26 (range 0-71), and 21 (range 0-71) visits from birth to the child’s second birthday. Paraprofessionals in Denver completed an average of 6 (range 0-21) prenatal visits and 16 (range 0-78) during infancy. Each visit lasted approximately 75-90 minutes.

**Nurses as Home Visitors**

Nurses were selected as home visitors in the Elmira and Memphis trials because of their formal training in women’s and children’s health and their competence in managing the complex clinical situations often pre-
presented by at-risk families. Nurses’ abilities to competently address mothers’ and family members’ concerns about the complications of pregnancy, labor, and delivery, and the physical health of the infant are thought to provide nurses with increased credibility and persuasive power in the eyes of family members. In the Denver trial, we compared the relative impact of the program when delivered by nurses compared to paraprofessional visitors who shared many of the social characteristics of the families they served.

**Program Content**

The nurses had 3 major goals: 1) to improve the outcomes of pregnancy by helping women improve their prenatal health; 2) to improve the child’s subsequent health and development by helping parents provide more competent care; and 3) to improve parents’ life-course by helping them develop visions for their futures and then make smart choices about planning future pregnancies, completing their educations, and finding work. In the service of these goals, the nurses helped women build supportive relationships with family members and friends; and linked families with other services.

The nurses followed detailed visit-by-visit guidelines whose content reflects the challenges parents are likely to confront during specific stages of pregnancy and the first 2 years of the child’s life. Specific assessments were made of maternal, child, and family functioning that correspond to those stages; and specific activities were recommended based upon problems and strengths identified through the assessments.

During pregnancy, the nurses helped women complete 24-hour diet histories on a regular basis and plot weight gains at every visit; they assessed the women’s cigarette smoking and use of alcohol and illegal drugs and facilitated a reduction in the use of these substances through behavioral change strategies. They taught women to identify the signs and symptoms of pregnancy complications, encouraged women to inform the office-based staff about those conditions, and facilitated compliance with treatment. They gave particular attention to urinary tract infections, sexually transmitted diseases, and hypertensive disorders of pregnancy (conditions associated with poor birth outcomes). They coordinated care with physicians and nurses in the office and measured blood pressure when needed.

After delivery, the nurses helped mothers and other caregivers improve the physical and emotional care of their children. They taught parents to observe the signs of illness, to take temperatures, and to communicate with office staff about their children’s illnesses before seeking care. Curricula were employed to promote parent-child interaction by facilitating parent’s understanding of their infants’ and toddlers’ communicative signals, enhancing parents’ interest in interacting with their children to promote and protect their health and development.

**Overview of research designs, methods and findings**

In each of the three trials, women were randomized to receive either home visitation services or comparison services. While the nature of the home-visitation services was essentially the same in each of the trials as described above, the comparison services were slightly different. Both studies employed a variety of data sources. The Elmira sample (N = 400) was primarily white. The Memphis sample (N = 1138 for pregnancy and 743 for the infancy phase) was primarily black. The Denver trial (n = 735) consisted of a large sample of Hispanics and systematically examined the impact of the program when delivered by paraprofessionals (individuals who shared many of the social characteristics of the families they served) and by nurses. We looked for consistency in program effect across those sources before assigning much importance to any one finding. Unless otherwise stated, all findings reported below were significant at the p ≤ .05 level using 2-tailed tests.

**Elmira Results**

**Prenatal Health Behaviors.** During pregnancy, compared to their counterparts in the control group, nurse-visited women improved the quality of their diets to a greater extent, and those identified as smokers smoked 25% fewer cigarettes by the 34 week of pregnancy (Olds, Henderson, Tatelbaum, and Chamberlin 1986). By the end of pregnancy, nurse-visited women improved the quality of their diets to a greater extent, and those identified as smokers smoked 25% fewer cigarettes by the 34 week of pregnancy (Olds, Henderson, Tatelbaum, and Chamberlin 1986). By the end of pregnancy, nurse-visited women experienced greater informal social support and made better use of formal community services.

**Pregnancy and Birth Outcomes.** By the end of pregnancy, nurse-visited women had fewer kidney infections, and among women who smoked, those who were nurse-visited had 75% fewer pre-term deliveries, and among very young adolescents (aged 14-16), those who were nurse-visited had babies who were 395 grams heavier, than their counterparts assigned to the comparison group (Olds, Henderson, Tatelbaum, and Chamberlin, 1986).

**Sensitive, Competent Care of Child.** At 10 and 22 months of the child’s life, nurse-visited poor, unmarried teens, in contrast to their counterparts in the control group, exhibited less punishment and restriction of their infants and provided more appropriate play materials than did their counterparts in the control group (Olds, Henderson, Chamberlin, and Tatelbaum, 1986). At 34 and 46 months of life, nurse-visited mothers provided home environments that were more conducive to their children’s emotional and cognitive development.
and that were safer (Olds, Henderson, and Kitzman, 1994).

**Child Abuse, Neglect, and Injuries.** During the first two years of the child’s life, nurse-visited children born to low-income, unmarried teens had 80% fewer verified cases of child abuse and neglect than did their counterparts in the control group (1 case or 4% of the nurse-visited teens, versus 8 cases or 19% of the control group, \( p = .07 \)). Figure 2 shows how the treatment-control differences were greater among families where there was more concentrated social disadvantage. While these effects were only a trend, the effects among the poor, unmarried teens were corroborated by observations of mothers’ treatment of their children in their homes and injuries detected in the children’s medical records. During the second year of life, nurse-visited children were seen in the emergency department 32% fewer times, a difference that was explained in part by a 56% reduction in visits for injuries and ingestions.

As shown in Figures 3 and 4, the effect of the program on child abuse and neglect in the first two years of life and on emergency department encounters in the second year of life was greatest among children whose mothers had little belief in their control over their lives when they first registered for the program during pregnancy. This set of findings deepened our conviction that the nurses’ emphasis on supporting women’s development of self-efficacy was a crucial element of the program.

During the two years after the program ended, its impact on health-care encounters for injuries endured: irrespective of risk, children of nurse-visited women were less likely than their control group counterparts to receive emergency room treatment and to visit a physician for injuries and ingestions (Olds et al., 1994). The impact of the program on state-verified cases of child abuse and neglect, on the other hand, disappeared during that 2-year period (Olds et al., 1994), probably because of increased detection of child abuse and neglect in nurse-visited families and nurses’ linkage of families with needed services (including child protective services) at the end of the program (Greene, 2001).

Results from a 15-year follow-up of the Elmira sample (Olds et al., 1997) indicate that the Group 4-comparison differences in rates of state-verified reports of child abuse and neglect grew between the children’s 4th and 15th birthdays. Overall, during the 15-year period after delivery of their first child, in contrast to women in the comparison group, those visited by nurses during pregnancy and infancy were identified as perpetrators of child abuse and neglect in an average of 0.29 versus 0.54 verified reports per program participant, an effect that was greater for women who were poor and unmarried at registration (Olds et al., 1997).

**Child Neuro-developmental Impairment.** At six months of age, nurse-visited poor unmarried teens reported that their infants were less irritable and fussy than did their counterparts in the comparison group (Olds, Henderson, Chamberlin, and Tatelbaum, 1986). Subsequent analyses of these data indicated that these differences were really concentrated among infants born to nurse-visited women who smoked 10 or more cigarettes per day during pregnancy in contrast to

![Figure 2. Rates of verified cases of child abuse and neglect by treatment condition, and socio-demographic characteristics of sample](image-url)
Figure 3. Rates of verified cases of child abuse and neglect (birth – age 2) by treatment condition and maternal sense of control measured at registration during pregnancy (Elmira)

Figure 4. Rates of emergency department encounters in children’s second years of life by treatment condition and maternal sense of control measured at registration during pregnancy
babies born to women who smoked 10 or more cigarettes per day in the comparison group (Conrad, 2006). Over the first four years of the child’s life, children born to comparison-group women who smoked 10 or more cigarettes per day during pregnancy experienced a 4-5 point decline in intellectual functioning in contrast to comparison-group children whose mother smoked 0-9 cigarettes per day during pregnancy (Olds et al., 1994a). In the nurse-visited condition, children whose mothers smoked 0-9 cigarettes per day at registration did not experience this decline in intellectual functioning, so that at ages 3 and 4 their I.Q. scores on the Stanford Binet test were about 4-5 points higher than their counterparts in the comparison group whose mothers smoked 10+ cigarettes per day at registration (Olds et al., 1994b).

**Early Parental Life-Course.** By the time the first child was four year of age, nurse visited women low-income, unmarried women, in contrast to their counterparts in the control group had fewer subsequent pregnancies, longer intervals between births of first and 2nd children, and greater participation in the workforce than did their comparison-group counterparts (Olds, Henderson, Tatelbaum, and Chamberlin, 1988).

**Later Parental Life Course.** At the 15-year follow-up, no differences were reported for the full sample on measures of maternal life course such as subsequent pregnancies or subsequent births, the number of months between first and second births, receipt of welfare, or months of employment. Poor unmarried women, however, showed a number of enduring benefits. In contrast to their counterparts in the comparison condition, those visited by nurses both during pregnancy and infancy averaged fewer subsequent pregnancies, fewer subsequent births, longer intervals between the birth of their first and 2nd children, fewer months on welfare, fewer months receiving food stamps; fewer behavioral problems due to substance abuse, and fewer arrests (Olds et al., 1997).

**Child/Adolescent Functioning.** Among the 15-year-old children of study participants, those visited by nurses had fewer arrests and adjudications as Persons in Need of Supervision (PINS). These effects were greater for children born to mothers who were poor, unmarried at registration. Nurse-visited children, as trends, reported fewer sexual partners and fewer convictions and violations of probation.

**Memphis Results**

**Prenatal Health Behaviors.** There were no program effects on women’s use of standard prenatal care or obstetrical emergency services after registration in the study. By the 36th week of pregnancy, nurse-visited women were more likely to use other community services than were women in the control group. There were no program effects on women’s cigarette smoking, probably because the rate of cigarette use was only 9 percent in this sample.

**Pregnancy and Birth Outcomes.** In contrast to women in the comparison group, nurse-visited women had fewer instances of pregnancy-induced hypertension and among those with the diagnosis, nurse-visited cases were less serious (Kitzman et al., 1997).

**Sensitive, Competent Care of Child.** Nurse-visited mothers reported that they attempted breast-feeding more frequently than did women in the comparison group, although there were no differences in duration of breast-feeding. By the 24th month of the child’s life, in contrast to their comparison-group counterparts, nurse-visited women held fewer beliefs about child-rearing associated with child abuse and neglect. Moreover, the homes of nurse-visited women were rated on as more conducive to children’s development. While there was no program effect on observed maternal teaching behavior, children born to nurse-visited mothers with low levels of psychological resources were observed to more communicative and responsive toward their mothers than were their comparison-group counterparts (Kitzman et al., 1997).

**Child Abuse, Neglect, Injuries, and Death.** The rate of substantiated child abuse and neglect in the population of two-year old, low-income children in Memphis was too low (3-4%) to serve as a valid indicator of child maltreatment in this study. We therefore hypothesized that we would see a pattern of program effects on childhood injuries similar to that observed in Elmira. During their first 2 years, compared to children in the comparison group, nurse-visited children had 23% fewer health-care encounters for injuries and ingestions and were hospitalized for 79% fewer days with injuries and/or ingestions, effects that were more pronounced for children born to mothers with few psychological resources (Figure 5). Nurse-visited children tended to be older when hospitalized and to have less severe conditions. The reasons for hospitalizations suggest that many of the comparison-group children suffered from more seriously deficient care than children visited by nurses (Table 1).

We chose not to hypothesize that the program would affect the rates of mortality among nurse-visited children because death is too infrequently occurring to serve as a reliable outcome. Nevertheless, we (Olds, Kitzman et al., 2007) found that as a trend, by child age 9 nurse-visited children were less likely to have died than their control-group counterparts (p = .08). The rates of death were 4.5 times higher in the control group than in the group visited by nurses. Table 2 displays the rates and reasons for death among nurse-visited and control-group children.

**Child Neuro-developmental Impairment.** By child age 6, compared to their counterparts in the control group, children visited by nurses had higher intellectual functioning and receptive vocabulary scores and fewer behavior problems in the borderline or clinical
range. Nurse-visited children born to mothers with low psychological resources had higher arithmetic achievement test scores and expressed less aggression and incoherence in response to story stems. Though child age 9, nurse-visited children born to mothers with low psychological resources had higher grade point averages in reading and math than did their counterparts in the control group (Olds, Kitzman et al., 2007). By child age 12, nurse-visited children born to low-resource mothers had higher rates of reading and math achievement and overall, nurse-visited children reported lower use of substances and internalizing disorders (depression and anxiety) (Kitzman et al., 2010).

**Early Parental Life Course.** At the 24th month of the first child’s life, nurse-visited women reported fewer second pregnancies and fewer subsequent live births than did women in the comparison group. Nurse-visited women and their first-born children relied upon welfare for slightly fewer months during the 2nd year of the child’s life than did comparison-group women and their children (Kitzman et al., 1997).

**Later Parental Life-Course.** During the 4.5-year period following birth of the first child, in contrast to control-group counterparts, women visited by nurses had fewer subsequent pregnancies, fewer therapeutic abortions, and longer durations between the birth of the first and second child; fewer total person-months (based upon administrative data) that the mother and child used Aid to Families with Dependent Children (AFDC) and food stamps; higher rates of living with a partner and living with the biological father of the child; and partners who had been employed for longer durations (Kitzman et al., 2000). By child age 6, women visited by nurses continued to have fewer subsequent pregnancies and births; longer intervals between births of first and second children; longer relationships with current partners; and since last follow-up at 4.5 years, fewer months of using welfare and food stamps. They also were more likely to register their children in formal out-of-home care between age 2 and 4.5 years (82.0% versus 74.9%) (Olds, Kitzman et al., 2004). By the time the firstborn child was nine years of age, nurse-visited women continued to have longer intervals between the births of first and second children, fewer cumulative subsequent births, and longer relationships with their current partners. From birth through child age 9, nurse-visited women continued to use welfare and food stamps for fewer months (Olds, Kitzman et al., 2007). Over the first 12 years following birth of the first child, nurse-visited relied upon welfare related services less frequently, costing government (Olds et al., 2010). This led to $12,300 discounted savings to government (expressed in 2006 dollars), which is compared to a cor-
responding program cost of $11,500, also expressed in 2006 dollars (Olds et al., 2010).

**Denver Results**

In the Denver trial, we were unable to use the women’s or children’s medical records to assess their health because the health-care delivery system was too complex to reliably abstract all of their health-care encounters as we had done in Elmira and Memphis. Moreover, as in Memphis, the rate of state-verified reports of child abuse and neglect was too low in this population (3-4% for low-income children birth to two years of age) to allow us to use Child Protective Service records to assess the impact of the program on child maltreatment. We therefore focused more of our measurement resources on the early emotional development of the infants and toddlers.

**Denver Results for Paraprofessionals**

There were no paraprofessional effects on women’s prenatal health behavior (use of tobacco), maternal life-course, or child development, although at 24-months, paraprofessional-visited mother-child pairs in which the mother had low psychological resources interacted more responsively than did control-group counterparts. Moreover, while paraprofessional-visited women did not have statistically significant reductions in the rates of subsequent pregnancy, the reductions observed were clinically significant (Olds et al., 2002). By child age 4, mothers and children visited by paraprofessionals, compared to controls, displayed greater sensitivity and responsiveness toward one another and, in those cases in which the mothers had low psychological resources at registration, had home environments that were more supportive of children’s early learning. Children of low resource women visited by paraprofessionals had better behavioral adaptation during testing than their control-group counterparts (Olds, Robinson et al., 2004).

**Denver Results for Nurses**

The nurses produced effects consistent with those achieved in earlier trials of the program.

*Prenatal Health Behaviors.* In contrast to their control-group counterparts, nurse-visited smokers had greater reductions in urine cotinine (the major nicotine metabolite) from intake to the end of pregnancy (Olds et al., 2002).

*Sensitive, Competent Care of Child.* During the first 24 months of the child’s life, nurse visited moth-
er-infant dyads interacted more responsively than did pairs, an effect concentrated in the low-resource group. As trends, nurse-visited mothers provided home environments that were more supportive of children’s early learning (Olds et al., 2002).

Child Neurodevelopmental Impairment. At 6 months of age, nurse-visited infants, in contrast to control-group counterparts, were less likely to exhibit emotional vulnerability in response to fear stimuli and those born to women with low psychological resources were less likely to display low emotional vitality in response to joy and anger stimuli. At 21 months, nurse-visited children were less likely to exhibit language delays than were children in the control group, an effect again concentrated among children born to mothers with low psychological resources. Nurse-visited children born to women with low psychological resources also had superior language and mental development in contrast to control-group counterparts (Olds et al., 2002). At child age 4, nurse-visited children whose mothers had low psychological resources at registration, compared to control-group counterparts, had more advanced language, superior executive functioning and better behavioral adaptation during testing (Olds, Robinson et al., 2004).

Early Maternal Life-Course. By 24 months after delivery, nurse-visited women, compared to controls, were less likely to have had a subsequent pregnancy and birth and had longer intervals until the next conception. Women visited by nurses were employed longer during the second year following the birth of their first child than were controls (Olds et al., 2002). By child age 4, nurse-visited women continued to have greater intervals between the birth of their first and second children, less domestic violence, and enrolled their children less frequently in either preschool, Head Start, or licensed day care than did controls (Olds, Robinson et al., 2004).

Cost Savings

The Washington State Institute for Public Policy has conducted a thorough economic analysis of prevention programs from the standpoint of their impact on crime, substance abuse, educational outcomes, teen pregnancy, suicide, child abuse and neglect, and domestic violence (Aos, Lieb, Mayfield, Miller, and Pennucci, 2004). While this analysis does not cover all outcomes that have cost implications for the NFP (such as the

Table 2: Rates and causes of infant and child deaths (International Classification of Diseases) among first-born children through age 9

<table>
<thead>
<tr>
<th>Treatment Group</th>
<th>Nurse-Visited</th>
<th>Treatment Comparisons</th>
</tr>
</thead>
<tbody>
<tr>
<td>N = 498</td>
<td>N = 222</td>
<td>P Value</td>
</tr>
<tr>
<td>No. of Deaths (rate/1000)</td>
<td>10 (20.08)</td>
<td>1 (4.50)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cause of Death (ICD9 Code)</th>
<th>Age at Death (days)</th>
<th>Cause of Death (ICD9 Code)</th>
<th>Age at Death (days)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extreme Prematurity (7650)</td>
<td>3</td>
<td>Chromosomal abnormalities (7589)</td>
<td>24</td>
</tr>
<tr>
<td>Sudden Infant Death Syndrome (7980)</td>
<td>20</td>
<td>Sudden Infant Death Syndrome (7980)</td>
<td>35</td>
</tr>
<tr>
<td>Ill Defined Intestinal Infections (90)</td>
<td>36</td>
<td>Sudden Infant Death Syndrome (7980)</td>
<td>49</td>
</tr>
<tr>
<td>Multiple Congenital Anomalies (7597)</td>
<td>152</td>
<td>Chronic Respiratory Disease in Arising in Perinatal Period (7707)</td>
<td>549</td>
</tr>
<tr>
<td>Homicide Assault by Firearm (9654)</td>
<td>1569</td>
<td>Motor Vehicle Accident (8129)</td>
<td>2100</td>
</tr>
<tr>
<td>Accident Caused by Firearm (9229)</td>
<td>2114</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* This is the likelihood ratio p-value. The Chi-Square test probability is .116
rates and outcomes of subsequent pregnancies or maternal employment), it provides a consistent examination of all programs that have attempted to affect the listed outcomes. This report sums the findings across all 3 trials of the NFP and estimates that it saves $17,000 per family. This estimate is consistent with a subsequent analysis produced by the Rand Corporation (Karoly, Kilburn, and Cannon, 2005).

Policy implications and program replication

One of the clearest messages from this program of research is that the functional and economic benefits of the nurse-home-visitation program are greatest for families at greater risk. In Elmira, it was evident that most married women and those from higher socioeconomic households managed the care of their children without serious problems and that they were able to avoid lives of welfare dependence, substance abuse, and crime without the assistance of the nurse home-visitors. Low-income, unmarried women and their children in the control group on the other hand, were at much greater risk for these problems, and the program was able to avert many of these untoward outcomes for this at-risk population. This pattern of results challenges the position that these kinds of intensive programs for targeted at-risk groups ought to be made available on a universal basis. Not only is it likely to be wasteful from an economic standpoint, but it may lead to a dilution of services for those families who need them the most, because of insufficient resources to serve everyone well.

Replication and Scale-Up of the Nurse Family Partnership

Even when communities choose to develop programs based on models with good scientific evidence, such programs run the risk of being watered down in the process of being scaled up. So, it was with some apprehension that our team began to make the program available for public investment in new communities (Olds et al., 2003). Since 1996, the Nurse Family Partnership national office has helped new communities develop the program outside of traditional research contexts so that today the program is operating in 330 counties in the United States, serving over 14,400 families per day. State and local governments are securing financial support for the Nurse-Family Partnership (about $11,000 per family for 2½ years of services, in 2008 dollars) out of existing sources of funds, such as Temporary Assistance to Needy Families, Medicaid, the Maternal and Child Health Block-Grant, and child-abuse and crime-prevention dollars. In 2009, the US federal government passed the Affordable Care Act (healthcare reform), which included $1.5 billion for states who choose to invest in evidence-based home visiting programs. The NFP served as the primary evidentiary foundation for that legislation. That legislation has served as a primary foundation for continued expansion of the NFP in the US during the recent economic downturn.

Capacities Necessary to Support Dissemination.

Each site choosing to implement the Nurse-Family Partnership needs certain capacities to operate and sustain the program with high quality. These capacities include having an organization and community that are fully knowledgeable and supportive of the program; a staff that is well trained and supported in the conduct of the program model; and real-time information on implementation of the program and its achievement of benchmarks to guide efforts in continuous quality improvement. Staff members at the NFP National Service Office are organized to help create these state and local capacities.

International Replication. Our approach to international replication of the program is to make no assumptions about its possible benefits in societies that have different health and human service delivery systems and cultures than those in which the program was tested in the United States. Given this, our team has taken the position that the program ought to be adapted and tested in other societies before it is offered for public investment. We currently are working with partners in England, Scotland, Northern Ireland, Holland, Australia, and Canada to adapt and test the program with disadvantaged populations. While it is possible that the need and impact of this intervention may be diminished in societies with more extensive health and social welfare systems than are found in the United States, it is possible that the program may have comparable effects for subgroups that do not make good use of those other services and resources that are available to them.

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Parent-Child Interaction Therapy: Enhancing Parent-Child Relationships*

Un Programa para la Mejora de las Relaciones Padres-Hijos. La Terapia de Interacción Padres-Hijos

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Abstract. Disruptive child behavior problems are common problems for parents and can be associated with serious delinquent behaviors and aggressive/violent behaviors in adolescence and adulthood. Parenting interventions to address disruptive child behavior problems has gained widespread acceptance. One of these parenting interventions is Parent-Child Interaction Therapy (PCIT). PCIT is a 14- to 20-week, founded on social learning and attachment theories, designed for children between 2 and 7 years of age with disruptive, or externalizing, behavior problems. This article will provide a brief review of the history of PCIT, a description of the basic components of PCIT, and an overview of recent developments that highlight the promise of PCIT with maltreating parent-child relationships, traumatized children, and in developing resilience in young children. In addressing the three basic treatment objectives for PCIT (i.e., reduction in child behavior problems, improving parenting skills, enhancing the quality of parent-child relationships), there is an abundance of research demonstrating very strong treatment effects and therefore, its value to the field. Recent research has also demonstrated the value of PCIT in reducing trauma symptoms in young children.

Keywords: behavior problems, Parent-Child Interaction Therapy, parenting skills, treatment.

Disruptive child behavior problems—including aggression, oppositional behaviors, and noncompliance—are the most common problems for which parents seek professional intervention (Kazdin, Bass, Ayers, & Rodgers, 1990). Although discrete instances of oppositional or defiant behaviors are fairly common throughout childhood, a stable pattern of disruptive behavior is strongly associated with serious delinquent behaviors and aggressive/violent behaviors in adolescence and adulthood (Broidy et al., 2003; Fergusson, Horwood, & Lynskey, 1994; Tolan & Gorman-Smith 1998). Throughout the history of delivery of child mental health services, ‘child-only’ approaches (e.g., play therapy, individual therapy) have been the primary interventions to reduce these types of behavioral problems. However, during the last few decades there has been a strong movement toward treating these types of disruptive child behavior problems through interventions that incorporate parents or are focused on

*Versión en castellano disponible en [spanish version available at]: www.psychosocial-intervention.org
enhancing parenting skills (Bourke & Nielsen, 1995; Graziano & Diament, 1992). This movement toward using parenting interventions to address disruptive child behavior problems has gained widespread acceptance (Kazdin & Weisz, 2003). Further, this approach is also supported by a recent meta-analysis of parenting interventions (Kaminski, Valle, Filene, & Boyle, 2008) that found interventions with the largest effects focused on increasing positive parent-child interactions and emotional communication skills, teaching parents to use time-out and the importance of parenting consistency, and requiring parents to practice new skills with their children during parent training session. One of these parenting interventions, Parent-Child Interaction Therapy (PCIT; Eyberg & Robinson, 1983) incorporates all three of these elements.

In the following pages, this chapter will provide a brief review of the history of PCIT, a description of the basic components of PCIT, and an overview of recent developments that highlight the promise of PCIT with maltreating parent-child relationships, traumatized children, and in developing resilience in young children.

Initially Sheila Eyberg emphasized PCIT’s consistency with principles of operant conditioning, with stated objectives of decreasing child disruptive behavior and improving parenting skills. However, Eyberg (2004) has also noted the influences of early pioneers in play therapy in the development of PCIT: Virginia Axline (1947) and Bernard Guerney (1964). In her description of the origin of PCIT, Eyberg (2004) expressed her support of the play therapy goals and techniques proposed by the Axline and Guerney therapeutic approaches of promoting warmth and acceptance. Eyberg (2004) added that Diana Baumrind’s work (1966; 1967) encouraged her to conceptualize healthy parenting as including clear communication and firm limit-setting, reflected in authoritative parenting. As a result, Eyberg developed PCIT with the objective of increasing positive parent and child relationship skills to achieve the underlying objective of promoting the foundational elements of a healthy parent-child relationship. The genius of Eyberg’s innovation was to expand upon Hanf’s (1968) ideas of in vivo parenting and use the structure of a ‘coaching’ paradigm to teach parents the skills employed by child therapists (e.g., nurturing, warmth, and responsiveness, enhancing the relationship) and the skills needed for managing children’s difficult behavior.

What is Parent-Child Interaction Therapy?

Parent-Child Interaction Therapy (PCIT) is a 14- to 20-week, manualized intervention founded on social learning and attachment theories. PCIT is designed for children between 2 and 7 years of age with disruptive, or externalizing, behavior problems (Eyberg & Robinson, 1983). The underlying model of change is similar to that of other parent-training programs. These programs promote the idea that through positive parenting and behavior modification skills, the parents themselves become the agent of change in reducing their child’s behavior problems. However, unlike other parenting-focused interventions, PCIT incorporates both parent and child in the treatment sessions and uses live, individualized therapist coaching for an idiographic approach to changing the dysfunctional parent-child relationship.

PCIT is conducted in two phases. The first phase focuses on enhancing the parent-child relationship (Child-Directed Interaction; CDI), and the second on improving child compliance (Parent-Directed Interaction; PDI). Both phases of treatment begin with an hour of didactic training, followed by sessions in which the therapist coaches the parent during play with the child. From an observation room behind a two-way mirror, via a ‘bug-in-the-ear’ receiver that the parent wears, the therapist provides the parent with feedback on their use of the skills. Parents are taught and practice specific skills of communication and behavior management with their children. In addition to practicing these skills during clinic sessions, parents are asked to practice with their children at home for 5 minutes every day.

In CDI (typically 7-10 sessions), parents are coached to follow their children’s lead in play by describing their activities, reflecting their appropriate verbalizations, and praising their positive behavior. By the end of CDI, parents generally have shifted from rarely noticing their children’s positive behavior to more consistently attending to or praising appropriate behavior. When caregivers master the skills taught in CDI by demonstrating that they can give behavior descriptions (e.g., “You are building a tall tower”), reflections (i.e., repeating back or paraphrasing the child’s words), and praises (e.g., “Thank you for playing so gently with these toys”), with few instances of asking a question, giving a command, and eliminate criticizing their child in a 5-minute assessment, they move to the second phase of treatment. An example of CDI coaching would include:

(With child playing with Legos; therapist is watching from an adjacent observation room and talking to the parent through the ‘bug-in-the-ear’ system)

Parent: You put all of the blue Legos on the table. [Behavioral Description]

Therapist: That was a great behavioral description!

Child: Yes, I’m going to make a big blue tower. [Reflection]

Parent: You’re going to make a big blue tower. [Behavioral Description]

Therapist: You got it! That was a perfect reflection of

Coach: You got it! That was a perfect reflection of
what Robert said. He knows you are paying attention to what he is doing. When you give him praise and attention for his good behavior, he will do more of that behavior.

Parent: I like it when you play nicely with the toys. [Labeled Praise]
Therapist: Great labeled praise.
Child: And I’m going to make a red tower too! And a yellow one!

In PDI (typically 7-10 sessions) therapists train parents to give only essential commands, to make them clear and direct, maximizing chances for compliance. Parents participating in PCIT traditionally learn a specific method of using time-out for dealing with non-compliance. Parents also may be taught “hands-off” strategies (e.g., removal of privileges) if indicated. These strategies are designed to provide caregivers tools for managing their children’s behavior while helping them to avoid using physical power, focusing instead on using positive incentives and promoting children’s emotional regulation. Mastery of behavior management skills during PDI is achieved when therapists observe that caregivers are able to use the behavior management strategies they were taught without being coached and when parents report that these strategies are effective. By the end of PDI, the process of giving commands and obtaining compliance are predictable and safe for parents and children. An example of PDI coaching would include:

(Parent and child are playing with Legos; the therapist is watching from an adjacent observation room and talking to the parent through the ‘bug-in-the-ear’ system)

Therapist: It is now time to clean up the toys. Tell Robert to put the Legos back in the box.
Parent: Robert, it’s time to clean up. Please put the Legos back in the box. [Direct Command]
Therapist: That was a wonderful Direct Command. Now Robert knows exactly what he is supposed to do.
Child: (Robert starts to put a couple of Legos in the box)
Parent: Great job of putting the Legos back in the box! [Labeled Praise]
Therapist: That was a great praise for putting the Legos away. The will help Robert want to clean-up more in the future.

**PCIT with Oppositional, Defiant Children**

There have been numerous studies demonstrating the efficacy of PCIT for reducing child behavior problems (Eisenstadt, Eyberg, McNeil, Newcomb, & Funderburk, 1993; Eyberg, 1988; Eyberg & Robinson, 1982). Positive effects have been maintained for up to six years post-treatment (Hood & Eyberg, 2003). In addition, treatment effects have been shown to generalize to the home (Boggs, Eyberg, & Reynolds, 1990), school settings (McNeil, Eyberg, Eisenstadt, Newcomb, & Funderburk, 1991), and to untreated siblings (Eyberg & Robinson, 1982). In addition, there is research indicating that PCIT yields positive treatment outcomes with different types of cultural and language groups, including Spanish-speaking families (McCabe, Yeh, Garland, Lau, & Chavez, 2005), Chinese-speaking families (Leung, Tsang, Heunh, & Yiu, 1999), and African-American families (Fernandez, Butler, & Eyberg, 2011).

**PCIT with Abusive Families**

With the numerous studies demonstrating the value of PCIT with oppositional and defiant children, Urquiza and McNeil (1996) argued that some (if not many) of the children involved in PCIT studies were also victims of physical abuse and/or exposed to domestic violence- and promoted the use of PCIT with maltreatment and exposure to domestic violence. There are many reasons to expect that PCIT would be a beneficial treatment for maltreating families. Effective treatments for these families should incorporate both the parent and the child because the behaviors of each contribute to the maladaptive responses of each, feeding a continuing cycle of hostility and coercion. The treatment should also provide a means to directly decrease negative affect and coercive control, while promoting (i.e., teaching, coaching) greater positive affect and discipline strategies. PCIT satisfies both of these conditions; and it has been demonstrated to be a highly effective treatment. It is for these reasons that in the last decade there has been a pattern of research findings showing positive outcomes with physically abusive parent-child dyads (Timmer, Urquiza, Zebell, & McGrath, 2005), and other types of maltreated children, including abused children, children exposed to domestic violence, and children with their foster parents (Borrego, Timmer, Urquiza, & Follette, 2004; Chaffin et al., 2004; Timmer, Borrego, & Urquiza, 2002; Timmer, Urquiza, & Zebell, 2006; Timmer, Ware, Zebell, & Urquiza, 2010). In summary, while PCIT was initially developed as an intervention specifically for children with disruptive behavioral problems, there is currently ample research that identifies PCIT as an effective evidence-based parenting program for high-risk and abusive families.

**PCIT and Child Trauma**

Urquiza and colleagues (Mannarino, Lieberman, Urquiza, & Cohen, 2010) have reported several inter-
ventions that are effective at reducing trauma symptoms with young children— including PCIT. Research conducted by Urquiza & Timmer (2008) found that young children with trauma symptoms and disruptive behavior problems had a significant reduction in both types of problems after receiving traditional PCIT treatment. However, this research raises questions regarding why child trauma symptoms would decrease as a result of involvement in a parenting program. To better understand why young traumatized children improve as a result of involvement in PCIT, it is important to examine developmental characteristics associated with children’s expression of trauma, parent-child relationships, and resiliency.

Younger and older children respond differently to trauma, with younger children appearing to be more responsive to the stability (or lack of stability) of parental functioning and older children less likely to be adversely affected by parent instability (Scheeringa & Zeanah, 2001). In particular, younger children (i.e., toddlers, preschool-age, elementary-age children) are highly responsive to parent cues of affective stability, instability, and distress related to adverse family events (e.g., interpersonal violence), often because their means of coping is still co-regulated by the parent (Chu & Lieberman, 2010; Fogel, Garvey, Hsu, & West-Stroming, 2006). In contrast, older children (i.e., school-age, adolescents) tend to rely more on their own coping skills and cognitions, may be more independent, developing other sources of support, such as peers or kin (Werner, 1995). Because of these factors, approaches to treatment including both the parent and child are likely to be more effective with younger than older children (Runyon, Deblinger, Ryan, & Thakkar-Kolar, 2004).

Many common child traumas (e.g., child physical abuse, child sexual abuse, exposure to domestic violence) have a range of common and disturbing responses. Children who experience traumatic events exhibit symptoms consistent with Posttraumatic Stress Disorder (American Psychiatric Association, 2000), including nightmares, affective dysregulation, intrusive imagery, and intense distress related to internal or external cues associated with the traumatic event (Copeland, Keeler, Angold, & Costello, 2007). However, it is more difficult to detect the effects of trauma in young children, because they do not recognize or cannot articulate the connection between the traumatic event and how they feel and behave because of limitations in their expressive language ability, social cognition, and cognitive functioning.

One characteristic of many violent families that contributes to children’s disruptive behavior problems is the absence of positive, warm, and nurturing parenting (Fantuzzo, DePaola, Lambert, Martino, Anderson, & Sutton, 1991). When traumatized children live in families with chaotic lifestyles, in which consistent and positive parent-child relationships are infrequent or nearly nonexistent, their behavioral problems may be less related to their trauma than the overall chaotic and dysfunctional lifestyle in which they are being raised. The population of children who have disruptive behavioral problems resulting from inconsistent and poor parenting is the group for whom some type of intensive parenting intervention may be most effective (Kaminski et al., 2008), although this type of intervention may not directly address the cognitions and affect related to the child’s trauma.

**Improved child relationship security and stability with their primary caregiver.** One of the avenues to recovery from child trauma involves eliciting support from important caregivers. That is, supportive parenting is associated with positive child outcomes in many domains (Greenberg, 1999; Kim et al., 2003), especially when a child is required to deal with some type of adverse experience. Therefore, it is essential to sustain a positive parent-child relationship and parental support in order to optimize the child’s ability to deal with any adverse or traumatic experience. The combination of parental stress associated with child trauma and problematic child symptoms can erode a parent’s ability to be supportive, warm, and understanding. By teaching parents child-centered play skills, warmth and positive affiliation increase, thereby strengthening the parent-child relationship.

**Decreasing Child Behavioral Problems May Increase Parental Capacities.** For relationship-based interventions to be effective, the caregiver must be able to participate and implement the skills learned or ideas discussed during therapy sessions. When primary caregivers have other sources of stress and trying to cope with the effects of their own traumatic experiences, these problems contribute to children’s mental health problems, dampening parents’ warmth and sensitivity and interfere with effective parenting (Lovejoy, Graczyk, O’Hare, & Neuman, 2000), and disrupt treatment effectiveness (Stevens, Ammerman, Putnam, & Van Ginkel, 2002). Symptoms of post-traumatic stress, such as depression, fatigue, dissociation and poor concentration can interfere with the acquisition of parenting skills (Reyno & McGrath, 2006). Furthermore, parental depression increases the likelihood of early treatment termination (Kazdin, 2000), completely removing the children from the possibility of being helped. However, research has shown that if traumatized parents can overcome their tendencies to drop out of treatment and are motivated to participate in a relationship-based treatment, their own psychological symptoms can be relieved (Timmer et al., 2011). In PCIT, parents are taught how to cope with the emotions that often accompany their children’s disruptive behavior by using anxiety reduction skills such as deep-breathing and counting silently when frustrated. They are coached to observe, notice, and react to their children’s positive behavior. They are coached to show warmth, enthusiasm, and enjoyment in their interactions with their children. When traumatized parents...
repeatedly perform these positive and adaptive behaviors throughout the course of PCIT, it is thought that these adaptive responses may begin to generalize, or “spill over” into other parts of their lives, replacing maladaptive responses (Timmer et al., 2011).

**PCIT Case Study**

The family in treatment was a 27-year-old mother and her 4-year-old son, “A.” The mother was married, but had been separated from her husband, the boy’s biological father, for approximately two years. The family was referred to treatment by their Child Protective Services (CPS) social worker because of the child’s extremely aggressive verbal and physical behavior towards his mother, his temper tantrums, destructiveness, and impulsive behavior. The referral also noted that the child displayed separation anxiety, crying uncontrollably whenever the mother left him. The therapist saw the mother and A for 34 PCIT sessions in the clinic: 2 assessment sessions, 2 teaching sessions, and 30 coaching sessions (these were more than the typical 14-20 sessions). In addition to these in-clinic PCIT sessions, the mother intermittently received her own individual therapy. Toward the end of treatment, the family received adjunct, in-home support services (4 sessions) to help the mother generalize her PCIT skills to the home setting.

**Child History.** “A” lived with his mother and 6-year-old brother, visiting with his father on weekends at the home of his paternal grandmother. A’s mother and father had a long history of domestic violence; the most recent incident of extreme violence took place approximately a year before their referral to PCIT. The mother had arranged to pick the children up after the father’s visitation in the parking lot of a grocery store. While the mother was waiting to get A out of his car seat, she and the father’s girlfriend began exchanging insults, which escalated into scratching and hair pulling. The father, who had been putting the brother into the mother’s vehicle, pulled the mother out of his car and held her while the girlfriend physically assaulted the mother, then pushed her back into his car and continued to kick and punch her in front of A. Bystanders called the police and emergency medical services.

In the initial clinical interview, the mother reported that A had been aggressive, destructive, defiant, and impulsive “for years.” She believed that the child’s behavioral problems resulted from his witnessing domestic violence. However, it should be noted that in addition to being exposed to violence between his parents, the mother had a history of severe depression. It is suspected that the mother was experiencing depressive symptoms throughout A’s life. At the time she brought A for PCIT services, she was not receiving any counseling, nor was she taking medication. The mother denied any drug or alcohol abuse.

**PCIT Assessment and Treatment Procedures**

PCIT is an assessment driven treatment. Prior to treatment and upon graduation, parents complete a battery of standardized assessments including the following measures: Child Behavior Checklist (CBCL, 1 ½-5 yrs; Achenbach & Rescorla, 2000) and the Eyberg Child Behavior Inventory (ECBI; Eyberg & Pincus, 1999), two standardized measures of the severity of children’s behavior problems; the Trauma Symptom Checklist for Young Children (TSCYC; Briere et al., 2001), a measure of the severity of children’s trauma symptoms; the Brief Symptom Inventory (BSI; Derogatis, 1993), a self-report measure of the parent’s psychological symptoms; and the short form of the Parenting Stress Index (PSI; Abidin, 1995), a measure of the severity of three sources of stress in the parent role: parental distress, dysfunction in the parent-child relationship, and difficult child behavior.

In addition, the therapist conducts a behavioral assessment pre- and post-treatment, observing the dyad as they play together in three semi-structured activities, using the Dyadic Parent-Child Coding System-III (DPICS-III; Eyberg, Nelson, Duke, & Boggs, 2005), a micro-analytic coding system, designed by Eyberg and her colleagues (2005) to categorize parent verbalizations in parent-child interactions. The three play situations vary in the amount of control the parent is asked to use. In the first situation (Child-Directed Interaction), the parent is asked to follow the child’s lead in play. Parents are told to let the child pick an activity and to play along. In the Parent-Directed Interaction, parents are instructed to pick an activity and have the child play with the parent according to the parent’s rules. In the third, and final situation, the parent is directed to have the child to ‘clean up’ without the parent’s assistance. For research purposes, we also used a global assessment of the quality of the caregiver-child relationship, the Emotional Availability Scales (EAS, 3rd Ed.; Biringer, 2000), to illustrate the quality of change in the parent-child relationship from pre- to post-treatment. The EAS consists of four scales measuring aspects of the parent’s behavior toward the child and two scales measuring qualities of the child’s behavior toward the parent. In addition to assessing the parent and child behavior in the DPICS sessions, the therapist uses the first 5 minutes of each weekly treatment session to observe the parent-child interactions in child-directed play. The therapist remains silent during this time, coding the parent-child verbalizations.

**Course of Treatment in PCIT**

The mother agreed with the therapist’s suggestion that PCIT would fit their needs, and weekly sessions were scheduled. After the therapist conducted a CDI
teaching session, teaching the mother about the skills she would need and what to expect from treatment, coaching sessions began. At the beginning of each session, the therapist talked briefly with the mother, asking how A had behaved since she had last seen her and how the mother was doing. During the third session, the mother complained about feeling stressed by financial difficulties and depressed by breaking up with her boyfriend. Her children were also more difficult to manage. The therapist referred mother for her own counseling, suggesting that if she had some support it might be easier for her to make progress in PCIT. Two weeks later, the mother reported that her depressive symptoms were worsening, but that she had an appointment with her physician in two weeks to obtain anti-depressant medication. According to the children’s social worker, a few days later (just before the 6th coaching session), the mother phoned the social worker and told her that she was too depressed and overwhelmed to take care of the children. The social worker decided to remove the children from the mother’s custody temporarily.

A little more than a month later, A and his mother began coming in to PCIT again. At this time the mother had two days of visitation a week and had been taking anti-depressants for about a month, and reported some decrease in depressive symptoms. A and his mother made unsteady progress over the next month. At times, she seemed focused and able to use her PCIT skills, reporting better and calmer behavior in her son. At other times, she reported that A kicked and hit her. At these times she also seemed disconnected from treatment and the child unresponsive to her attempts to perform the skills. The therapist arranged for the mother to receive weekly adjunct services to the mother for problems related to depression and trauma. Two weeks after beginning adjunct individual treatment, the mother regained full custody of both boys. Two weeks after this, on the 15th coaching session (3 months after returning to PCIT), A and his mother moved on to the second phase of treatment: the mother showed mastery of play therapy skills and her son was more consistently responsive to her.

Altogether, the dyad received 14 PDI coaching sessions before the therapist was confident that the mother could manage her son’s behavior, and that her son’s behavior problems were sufficiently diminished. During this time, the mother received 15 of her own weekly individual services. At PDI session number 12, the family began to receive in-home services to help the mother generalize her skills to the home setting.

**Description of Mother’s Treatment**

Knowing that the mother had a long history of domestic violence and a previous history of abuse and foster care, the therapist anticipated that she would be doing trauma-related therapy with the mother, uncovering triggers that made it difficult for her to implement the skills she was learning in PCIT. After initial clinical interviews, it was the therapist’s opinion that the mother’s depressive symptoms, dependency needs, helplessness, and low self-efficacy were the greatest barriers to progress in PCIT. Consequently, he implemented two-pronged approach for treatment: a cognitive-behavioral approach to help promote healthy cognitions and discourage depressive ones, and mindfulness training to help her control impulsivity and solve problems. Sessions were mostly devoted to disentangling problems she was having with her ex-husband and his girlfriend, the schools, the custody dispute, and how she could use the skills she was learning in PCIT better.

**Standardized Measures**

**Child behavior problems.** Table 1 shows the scores of measures completed by A’s mother pre-treatment, the 7th session (ECBI only) and post-treatment. The mother’s ratings of her son on the ECBI and the CBCL show that the number and frequency of his behavior problems are in the clinical range at pre-treatment. In particular, the mother noted problems with A’s emotional reactivity (e.g., sulky, whiny, moody, upset by new things), anxiety/depression (e.g., clingy, nervous, fearful), aggressiveness (e.g., angry, destructive, temper tantrums), resulting in elevated scores on the internalizing and externalizing behavior problems scales. By the 7th session, the intensity of disruptive behavior problems reported on the ECBI had dropped more than one standard deviation and was just out of the clinical range. By the end of treatment, the intensity of problems had dropped another 1.5 standard deviations. Similar decreases in the severity of A’s behavior problems were also reported on the CBCL. In contrast to the mother’s report of A’s behaviors, the change in the degree to which A’s problems were still a problem for her decreased more slowly and less dramatically. We observed no change in the numbers of behaviors considered as problems for her from pre-treatment to the 7th coaching session (26 out of 36 behaviors), but a change in more than one standard deviation from pre- to post-treatment, although the post-treatment score remained in the clinical range.

**Child trauma symptoms.** A’s scores on the TSCYC pre-treatment (per mother’s report) show symptoms of post-traumatic stress in the clinical range. In particular, the mother reported that A was bothered and still frightened by his bad memories. Additionally, A’s mother reported that he exhibited clinical levels of anxiety, depressive symptoms, anger and aggression, and sexual concerns. By post-treatment, T-scores had dropped at least two standard deviations, and all of the TSCYC scales were out of the clinical range.
Parent functioning. In addition to measures of her child’s functioning, A’s mother completed the BSI, measuring her own psychological symptoms, and the short form of the PSI, a measure of the severity stress in the parent role. As can be seen in Table 1, at pre-treatment her symptom profile on the BSI showed general symptomatic distress in the clinical range, endorsing clinical levels of symptoms on the depression, anxiety, hostility, and phobic anxiety scales. Post-treatment, scores on these scales reflecting self-reported psychological symptoms decreased at least 1.5 standard deviations and were within normal limits. The mother’s reporting on the PSI pre-treatment suggests that she was experiencing considerable stress in the parent role. Her distress related to feelings of incompetence, of being restricted in other parts of her life because of being a parent, depression, and conflict with her spouse. She reported significant stress in her relationship with A, noting that he would “do things that bother her just to be mean.” She also reported clinical levels of stress resulting from parenting a child with difficult behaviors. As Table 1 shows, the mother’s parental stress decreased from pre- to post-treatment.

Parent verbalizations. Figure 1 and Figure 2 show the results of coding the mother for the first 5 minutes of the observational assessment (child-led play) as well as the 5-minute observations at the beginning of each treatment session, using the DPICS coding system. In the first phase of treatment (CDI), the goal is to increase parents’ praise, reflections, and behavioral descriptions and reducing commands, questions, and negative talk. The variability of the mother’s performance is notable in CDI. During the first five sessions, when A’s mother is suffering most from depression, she shows little change in the way she interacts with her son. After a brief hiatus, she returns to PCIT and slowly improves until she meets “CDI mastery” (i.e.,

Table 1: Scores on Standard Measures Collected Pre-treatment, 7th session, and Post-Treatment

<table>
<thead>
<tr>
<th>Measure</th>
<th>Pre-treatment</th>
<th>Session 7</th>
<th>Post-treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eyberg Child Behavior Inventory: T-scores</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intensity Score</td>
<td>70**</td>
<td>57</td>
<td>41</td>
</tr>
<tr>
<td>Problem Score</td>
<td>75**</td>
<td>75**</td>
<td>62**</td>
</tr>
<tr>
<td>CBCL – Broadband Scales: T-scores</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internalizing</td>
<td>73**</td>
<td></td>
<td>53</td>
</tr>
<tr>
<td>Externalizing</td>
<td>73**</td>
<td></td>
<td>52</td>
</tr>
<tr>
<td>Total</td>
<td>72**</td>
<td></td>
<td>50</td>
</tr>
<tr>
<td>CBCL – DSM Scales: T-Scores</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anxiety</td>
<td>85**</td>
<td></td>
<td>55</td>
</tr>
<tr>
<td>Oppositional Defiant Disorder</td>
<td>80**</td>
<td></td>
<td>51</td>
</tr>
<tr>
<td>Developmental Problems</td>
<td>66*</td>
<td></td>
<td>52</td>
</tr>
<tr>
<td>TSCYC: T-scores</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PTS – Intrusion</td>
<td>87**</td>
<td>43</td>
<td></td>
</tr>
<tr>
<td>PTS – Avoidance</td>
<td>59</td>
<td>48</td>
<td></td>
</tr>
<tr>
<td>PTS – Arousal</td>
<td>57</td>
<td>39</td>
<td></td>
</tr>
<tr>
<td>PTS – Total</td>
<td>66*</td>
<td>41</td>
<td></td>
</tr>
<tr>
<td>Anxiety</td>
<td>69*</td>
<td>46</td>
<td></td>
</tr>
<tr>
<td>Depression</td>
<td>82**</td>
<td>54</td>
<td></td>
</tr>
<tr>
<td>Anger/Aggression</td>
<td>72**</td>
<td>47</td>
<td></td>
</tr>
<tr>
<td>Dissociation</td>
<td>44</td>
<td>43</td>
<td></td>
</tr>
<tr>
<td>Sexual Concerns</td>
<td>80**</td>
<td></td>
<td>52</td>
</tr>
<tr>
<td>BSI: T-scores</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depression scale</td>
<td>68**</td>
<td>54</td>
<td></td>
</tr>
<tr>
<td>Anxiety</td>
<td>69**</td>
<td>45</td>
<td></td>
</tr>
<tr>
<td>Phobic anxiety</td>
<td>64**</td>
<td>45</td>
<td></td>
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<tr>
<td>General Severity Index</td>
<td>69**</td>
<td>47</td>
<td></td>
</tr>
<tr>
<td>PSI- SF: Percentile scores</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parental Distress</td>
<td>97**</td>
<td>87.5**</td>
<td></td>
</tr>
<tr>
<td>Parent-Child Dysf’l Relationship</td>
<td>97**</td>
<td>95**</td>
<td></td>
</tr>
<tr>
<td>Difficult Child</td>
<td>99**</td>
<td>85</td>
<td></td>
</tr>
</tbody>
</table>

Total stress 99** 92.5**

* Borderline range, ** Clinical range
giving 10 praises, 10 reflections, and 10 behavior descriptions in the 5 minute observation, and gives no more than 3 commands, questions, or negative verbalizations). Once the parent meets CDI mastery, instructions during the 5 minutes change slightly in order to give the parent a chance to practice giving effective commands. During PDI the mother was instructed to give four commands during the five minutes of play, but was still expected to use her CDI skills (i.e., PRIDE skills). The first four months of PDI when the
dyad inconsistently attended PCIT, the mother’s performance in the 5-minute observational assessment was also inconsistent to poor. As A and his mother attended more regularly, her performance improved markedly. While the mother never gave consistently effective commands during the observational assessment in the latter part of PDI, the child was compliant with her commands.

Emotional Availability. Table 2 shows the pre- and post-treatment Emotional Availability scale scores for A and his mother. When they came into treatment, A’s mother was mostly quiet and withdrawn. When she participated in play, her voice was well-modulated (i.e., not flat or depressed), but she primarily varied between trying a little too hard to be cheerful and long periods of silence. In parent-led play and clean up, she appeared afraid to give her son a command to change the activity, asking “Okay, honey? Okay, honey?” multiple times; or clean up, when, checking with the therapist, she made it clear to the child that it was not her choice to clean up. The mother also had a difficult time setting limits. After cleaning up, the child told the mother to give him her keys and tried to put holes in the booster seat. She merely stared into space, not responding to this inappropriate behavior. For these reasons, the mother scored in the non-optimal range of sensitivity and structuring. She showed no hostility, so received optimal scores on that scale in all three activities.

As for the child, A seemed only marginally interested in playing with his mother in the pre-treatment assessment, making little eye-contact, and not really responding to her overtures or suggestions, though he asked her for help at one point in CDI. For this reason he received non-optimal scores in responsiveness in all three activities, and received an optimal score in Involvement in CDI, but non-optimal scores in PDI and Clean Up. Post-treatment, A involved his mother in his play and responded to her statements and questions. However, he wouldn’t let her look while he “made a meal” in PDI and was a little sassy, asking her “how many times do I have to ask you (not to look)”? For this behavior, A received optimal scores in Responsiveness and Involvement in CDI, and non-optimal scores in PDI and Clean Up.

<table>
<thead>
<tr>
<th>Table 2 Scores on Emotional Availability Coding Pre- and Post-Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pre-treatment</strong></td>
</tr>
<tr>
<td>CDI</td>
</tr>
<tr>
<td><strong>Parent Scales</strong></td>
</tr>
<tr>
<td>Sensitivity</td>
</tr>
<tr>
<td>Non-hostility</td>
</tr>
<tr>
<td>Non-intrusiveness</td>
</tr>
<tr>
<td>Structuring</td>
</tr>
<tr>
<td><strong>Child Scales</strong></td>
</tr>
<tr>
<td>Responsiveness</td>
</tr>
<tr>
<td>Involvement</td>
</tr>
</tbody>
</table>

Summary. We argue that the parenting skills taught in PCIT supported the mother’s confidence in taking a responsive and authoritative role with her son. In addition to giving her an effective way to communicate with A, PCIT therapists also coach related skills like positively attending to A’s desirable behaviors, consistently and calmly following through with negative consequences, planning ahead, considering his limitations, communicating clearly and directly, and, practicing and eventually mastering these skills helped A’s mother to build self-efficacy as a parent, which may spill over into other life roles.

Discussion

After three decades of efficacy and effectiveness research, there is no question that PCIT is a highly effective and well-supported intervention. In addressing the three basic treatment objectives for PCIT (i.e., reduction in child behavior problems, improving parenting skills, enhancing the quality of parent-child relationships), there is an abundance of research demonstrating very strong treatment effects and therefore, its value to the field (Eyberg & Bussing, 2010).
Why is PCIT Effective?

Although grounded in behavioral theory, social learning theory, and family systems theory, there are also continuing questions concerning exactly what makes PCIT so effective. The question of ‘Why is PCIT effective?’ is not superfluous. As described by behavioral theories, we know that consistently reinforcing desired behaviors (e.g., therapist praise of positive parenting behaviors, parent praise of child compliance) increases the frequency of this behavior. Additionally, social learning theory explains why concepts such as modeling (e.g., parents demonstrating calm, assertive, positive behaviors in interactions with their child models these same behaviors to their child) can be an effective strategy within a PCIT session. Finally, family systems theory explains why making changes in a parent’s behavior (e.g., increasing positive behaviors, decreasing negative behaviors) can influence their child’s behavior (child responses to positive parenting behaviors results in a decrease in oppositional behavior). However, there are additional processes that are likely to change as a result of successful involvement in PCIT- especially with children exposed to adverse or traumatic events.

PCIT and Child Trauma

Much of the research and treatment on traumatized children has focused solely on the traumatized child’s trauma symptoms, with much less attention to the disruptive behavior problems that are often present with these young children. As is evident in this case, children who experience significant trauma often have both trauma symptoms and disruptive behavioral problems. In examining the traumatized child through a broad scope of functioning and social contexts, it becomes apparent that the parent-child relationship may be both a protective factor and a risk factor, which can assist and hinder the child in their recovery from the traumatic event. For young children, this parent-child protective/risk conundrum suggests that any intervention for the child needs to incorporate both the parent in the treatment process and address the parent’s capacity to provide a warm, positive, and protective relationship. In the same way that negative, coercive parent-child interactions can lead to a multitude of adverse outcomes, warm, nurturing, and supportive parent-child interactions can promote resilience. The focus of PCIT is to decrease negative interactions and increase positive interactions, increasing the parent-child dyad’s capacity to support resilience in both members of the dyad. We argue that by supporting and building strength in the parent-child dyad, we help leverage ongoing mental health and well being in traumatized young children. Recent literature has reported that a positive parent-child relationship is an important protective factor, promoting resilience in distressed and traumatized children (Ellis, Saxe, & Twiss, 2011). Unfortunately, for children who exhibited aggressive and defiant behavior, their ability to sustain a positive relationship with their parents are severely compromised, thus hindering their development of resilience. The stable pattern of positive parent-child interactions sets in place a series of positive, constructive capacities for both parent and child. One asset of PCIT is that it is an intervention that promotes ‘natural’ resilience-developing processes by strengthening positive parent-child relationships (Ellis, Saxe, & Twiss, 2011).

We believe the potential gain of strengthening the parent-child relationship is great, and that this case illustrates the complexity of people’s lives and their ongoing vulnerability to risk. At several points in the course of treatment, this family could have terminated services. The mother was depressed and not really making much positive change; she was having trouble getting out of bed and attending her child’s therapy appointment. At one point, she lost custody of her children. In the face of seemingly overwhelming obstacles, the mother felt helped and supported, retaining her belief that the services make a difference for her future. By recognizing the mother’s contributions and hindrance to her son’s mental health, interventions could be put in place to support treatment of her son’s mental health problems. All things taken together, we hope this case illustrates the way in which supporting and building a secure and nurturing parent-child relationship is both the mechanism by which some trauma symptoms can be treated and the source of a resilience-developing parent-child relationship.

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Incredible Years® Parent, Teachers and Children’s Series: 
Transportability to Portugal of Early Intervention Programs for Preventing Conduct Problems and Promoting Social and Emotional Competence*

La Versión de Padres, Profesores y Niños del Incredible Years®: 
Adaptación a Portugal de Programas de Intervención Temprana para la Prevención de Problemas de Conducta y para la Promoción de la Competencia Social y Emocional

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Abstract. Disruptive behavior disorders in children are on the increase. However, there is evidence that the younger a child is at the time of intervention, the more positive the behavioral effects on his/her adjustment at home and at school. Parental education might be an effective way of addressing early problems. The Incredible Years (IY) programs were designed to prevent and treat behavior problems when they first appear (in infancy–toddlerhood through middle childhood) and to intervene in multiple areas through parent, teacher, and child training. This paper summarizes the literature demonstrating the impact of the IY parent, teacher and child intervention programs, and describes in more detail the work done in Portugal so far to disseminate IY programs with fidelity, with particular emphasis on the IY Basic Preschool Parenting and Teacher Classroom Management programs.

Keywords: disruptive behavior disorders, Incredible Years, parental education, transportability.

Resumen. La frecuencia de trastornos de conducta en la infancia parece estar en aumento. Sin embargo, hay evidencias de que en la medida en que los niños y niñas son más jóvenes en el momento de la intervención, serán mejores los efectos en su ajuste comportamental tanto en el domicilio como en el colegio. La educación parental puede ser una forma efectiva de abordar los problemas de conducta en edades tempranas. El programa Incredible Years (IY) fue diseñado para prevenir y tratar los problemas de conducta tan pronto como aparezcan (desde la primera a la mediana infancia) y para intervenir en múltiples áreas a través del entrenamiento de los padres, los profesores y los niños. En este artículo se resumen las publicaciones que demuestran el impacto de este programa en sus versiones para padres, profesores y niños y se describe con mayor detalle el trabajo hecho en Portugal para diseminar el Programa IY con fidelidad al modelo original poniendo un particular énfasis en la versión del IY para padres y profesores de niños en edad pre-escolar.

Palabras clave: educación parental, Incredible Years, transportabilidad y adaptación, trastornos de conducta.

Behavioral and emotional problems are common in young children, with reports ranging from 6-15% of boys and girls aged 3-12 years having clinically significant emotional or behavioral problems (Egger & Angold, 2006; Sawyer et al., 2000) and as high as 35% reported for young children in economically-disadvantaged families (Webster-Stratton & Hammond, 1998). Young children with early-onset behavioral and emo-

tional difficulties have been shown to have increased risk of developing severe adjustment difficulties, school drop out, violence and drug abuse in adolescence and adulthood (Costello, Foley, & Angold, 2006; Egger & Angold, 2006). Early intervention with evidence-based parent, teacher and child programs has been shown to prevent and reduce the development of conduct problems and in turn prevent secondary risk factors from developing (Kazdin & Weisz, 2010; Snyder, 2001).

Thirty years ago, Webster-Stratton (Webster-Stratton, 1981; Webster-Stratton, 1982) introduced the Incredible Years (IY) Parent Program as a new group-
Need for Early Intervention

The IY Series was largely influenced by the burgeoning literature regarding the development of antisocial behaviors that emerged in the 1960s and 1970s and has continued to expand in more recent decades. Extensive research over the past forty years has consistently demonstrated the links between child, family, and school risk factors and the subsequent development of antisocial behaviors. Several prominent researchers (e.g., Dishion & Piehl, 2007; Dodge, 1993; Moffitt, 1993; Patterson, Reid, & Dishion, 1992; Patterson & Fisher, 2002) have helped coalesce this literature into strongly supported theories about the development of antisocial behaviors.

The extensive literature based on the development of antisocial behaviors highlights some obvious implications for interventions. First, early intervention timed to key developmental periods is critical. Treatment-outcome studies suggest that interventions for conduct disorders (CD) are of limited effect when offered in adolescence, after delinquent and aggressive behaviors are entrenched, and secondary risk factors such as academic failure, school absence, substance abuse and the formation of deviant peer groups have developed (Dishion & Piehler, 2007; Offord & Bennet, 1994). Second, effective interventions need to target multiple risk factors across various settings. The increased treatment resistance in older CD probands results in part from delinquent behaviors becoming embedded in a broader array of reinforcement systems, including those at the family, school, peer group, neighborhood, and community levels (Lynam et al., 2000). Significant advances in the conceptualization and practice of prevention science in mental health emphasize that interventions must target multiple risk- and protective factors and be tied to theoretical and life-course models.

For these reasons, the IY treatment programs were designed to prevent and treat behavior problems when they first begin (infancy-toddlerhood through middle childhood) and to intervene in multiple areas through parent, teacher, and child training. Early intervention across contexts can counteract risk factors and strengthen protective factors, thereby helping to prevent a developmental trajectory to increasingly aggressive and violent behaviors in later life.

Parent and Family Risk Factors

Parents and children develop coercive interactions that stem in part from a negative reinforcement pattern in which parents acquiesce to children’s defiant requests and escalating demands (Patterson et al., 1992). In turn, the parent uses harsh or abusive discipline practices when the child escalates to severe misbehavior. Specific parent interpersonal characteristics

The purpose of this article is to describe the conceptual grounding of the evidence-based IY programs including the program behavior-change methods and the risk and protective factors that are targeted by the programs. We summarize the literature demonstrating the impact of the parent, teacher and child interventions, and describe in more detail the approach taken in Portugal to disseminate the IY programs with fidelity, with a particular emphasis in the IY Basic Preschool Parent and the Teacher Classroom Management.

Based performance-training method for supporting parents and improving parenting practices designed to reduce behavioral problems and promote children’s social and emotional competence. IY was designed to overcome the limitations of existing parenting programs that relied on verbal training (e.g., didactic lectures) and one-on-one therapy methods, as well as to address the cost and feasibility problems associated with other performance-based methods such as individualized videotaped “bug-in-the-ear” feedback. The IY Parent Program, and all subsequent programs, were based on cognitive social learning, self-efficacy and relationship-building theories and used video-based modeling methods delivered in group settings as the primary mode of intervention. Toward this end, a comprehensive video series of actual parent-child interaction vignettes illustrating positive and less effective parenting behaviors were developed for use as a tool for trained group leaders to facilitate parent groups involving group discussion, peer support, self-reflection and problem solving, practice exercises and collaborative learning. Families determined goals for themselves and their children informed by their cultural beliefs, self-managed their decisions regarding assigned home activities, participated in values exercises regarding their short- and long-term goals, and worked with group leaders to recognize and overcome their personal barriers. Since the 80s, the Incredible Years Training Series has been expanded to include three complementary curricula for parents, teachers, and children, all of which include similar training methods and therapeutic processes. These programs were designed to reduce the multiple risk factors associated with poor parenting practices, early-onset conduct problems and emotional difficulties.

The series has been the subject of extensive empirical evaluation. All three programs have been widely endorsed by various review groups as well-established evidence-based interventions for treating disruptive behavior disorders. Notably, during the past decade, several trials have also supported the preventive impact of these programs collectively and individually for use in schools to reduce children’s risk for developing serious behavior problems by strengthening parenting and teacher classroom management skills and using classroom social and emotional curriculum to promote children’s social, emotional and academic competencies.

The purpose of this article is to describe the conceptual grounding of the evidence-based IY programs including the program behavior-change methods and the risk and protective factors that are targeted by the programs. We summarize the literature demonstrating the impact of the parent, teacher and child interventions, and describe in more detail the approach taken in Portugal to disseminate the IY programs with fidelity, with a particular emphasis in the IY Basic Preschool Parent and the Teacher Classroom Management.
put parents and children at risk for developing these maladaptive interactions including parent psychopathology, interparental conflict and divorce, depression and maternal insularity and lack of support (Knutson, DeGarmo, Koeppel, & Reid, 2005). Finally, low income is a significant risk factor for the early onset of conduct problems in young children. Poverty and its related aggregation of stressful risk factors (i.e., unemployment, crowded living conditions, high life stress, low education, illness, and high residential mobility) have deleterious effects on parenting, including the development of abusive disciplinary practices (Collins, Maccoby, Steinberg, Hetherington, & Bornstein, 2000).

**Child Biological and Developmental Risk Factors**

In addition to the family and environmental factors described above, life course persistent antisocial behaviors are linked to early maladaptive development of the child’s cognitive internal organization system. Children with conduct problems are more likely to have neurocognitive symptoms and certain temperamental characteristics such as inattentiveness, impulsivity, attention deficit/hyperactivity disorder, and high rates of aggressive responsiveness (Beauchaine, Hinshaw, & Pang, 2010). Other child factors have been implicated including deficits and delays in social-cognitive skills, social and emotional play skills, emotional regulation, and peer interactions (Dishion & Piewler, 2007). Children with conduct problems tend to define problems in hostile ways, seek less information, generate fewer alternative solutions to social problems, and anticipate fewer consequences for aggression. They may also distort social cues during peer interactions and make attributions of hostile intent to neutral interactions (Dodge & Price, 1994). Low academic achievement, learning disabilities and language delays often develop in these children during the elementary grades and continue through high school. Many children enter school with academic deficits and language delays, which increases the likelihood of behavior problems in the classroom (Maleck & Elliott, 2002). In turn, behavior problems reduce children’s access to learning opportunities, which exacerbates any preexisting learning problems (Dodge & Pettit, 2003).

**Incredible Years® Parent, Teachers and Children’s Series**

**Incredible Years Parent Programs**

The BASIC parenting programs target four separate age groups: baby (6 weeks-1 year), toddler (1-2 1/2 years), preschool (3-5 years) and school age (6-12 years). Each of these recently updated programs includes age-appropriate examples of culturally diverse families and children with varying temperaments. The baby program is a minimum of 8-9 weekly, 2-hour sessions with parents and babies present. It uses the *Incredible Babies* book which includes journaling and developmental and safety checklists. The BASIC toddler parent program is completed in a minimum of 12-weekly, 2-hour sessions and has its own *Incredible Toddlers* book. The preschool and school age programs are offered in 18-20 or more weekly sessions and a reduced 14-week version protocol of the preschool program is available for low-risk prevention populations. The foundation of the program is video vignettes of modeled parenting skills (over 300 vignettes, each lasting approximately 1-3 minutes) shown by two trained group leaders to groups of 8-12 parents. The videos demonstrate social learning and child development principles and serve as the stimulus for focused discussions, self-reflection, problem solving, and collaborative learning. The programs are also designed to help parents understand typical child developmental milestones and varying temperaments, child safety-proofing and monitoring as well as age-appropriate parenting responses.

Goals of the programs are tailored specifically to each targeted age group and developmental stage and include: (a) promoting parent competencies and strengthening families by increasing positive parenting, parent-child attachment, and self-confidence about parenting; (b) increasing parents’ ability to use child-directed play interactions to coach children’s social-emotional, academic, verbal, and persistence skills; (c) reducing critical and physically violent discipline and increasing positive discipline strategies such as ignoring and redirecting, logical consequences, time-out, and problem-solving; (d) increasing family support networks; and (e) strengthening home-school bonding and parents’ involvement in school related activities.

In addition to the BASIC parenting programs there are also two supplemental or adjunct parenting programs to be used with particular populations. The ADVANCE parenting program offered after completion of the BASIC preschool or school-age programs was designed for selective high-risk and indicated populations and focuses on parents’ interpersonal risk factors such as depression, marital discord, poor communication, self-control and anger issues, problem-solving and ways to give and get support. The School Readiness Program for children ages 3-5 years is a 4-6 session prevention program designed to teach parents academic, social, and emotional coaching and ways to promote children’s preliteracy and interactive reading skills. The content of both the BASIC and ADVANCE programs is also provided in the text that parents use for the preschool and school-age programs, titled *The Incredible Years: A Troubleshooting Guide for Parents* (Webster-Stratton, 2005).
Incredible Years Child Programs (Dinosaur Curricula)

There are two versions of the IY child program. In the universal prevention classroom version teachers deliver 60+ social-emotional lessons and small group activities twice a week, with separate lesson plans for preschool (Level One: 3-5 years), kindergarten (Level Two: 5-6 years), Grade 1 and 2 classrooms (Level Three: 7-8 years). The second is a small group therapeutic Dinosaur school where accredited IY group leaders work with groups of 4-6 children in 2-hour weekly or biweekly therapy sessions. The program can also be offered as an after school or “pull out” therapy program twice a week in schools, or can be offered in 2-hour sessions while the parents participate in the parent group. This 22-week program consists of a series of DVD programs (over 180 vignettes) that teach children problem-solving, social skills and emotional self-regulation skills. Organized to dovetail with the content of the parent training program, the program consists of seven main components: (1) Introduction and Rules; (2) Empathy and Emotion; (3) Problem-Solving; (4) Anger Control; (5) Friendship Skills; (6) Communication Skills; and (7) School Skills. More information about the child programs can be found in other reviews (Webster-Stratton & Reid, 2003, 2004).

Incredible Years Teacher Classroom Management Program

In 1995 (revised 2003) Webster-Stratton developed a 6-day (42-hour) Incredible Years Teacher Classroom Management (IY-TCM) training program with the goal of promoting teacher competencies and strengthening home-school connections by doing the following: (a) improving teachers’ classroom management skills, including proactive teaching approaches and effective discipline; (b) increasing teachers’ use of academic, persistence, social, and emotional coaching with students; (c) strengthening teacher-student bonding; (d) increasing teachers’ ability to teach social skills, anger management, and problem-solving skills in the classroom and (e) improving home-school collaboration, behavior planning and parent-teacher bonding. A complete and recently updated description of the content included in this curriculum is described in the book that teachers use for the course, titled Incredible Teachers (Webster-Stratton, 2012a).

Behavior Change Methods

Cognitive social learning theory, modeling, self-efficacy, attachment and child development theories underlie the delivery method for all the IY series. Video-based modeling is based on social learning and modeling theory (Bandura, 1977), which contends that observation of a model on video can support the learning of new skills. In the IY series, video-based modeling involves showing participants vignettes of parents or teachers using social and emotional coaching, or positive discipline strategies, or children managing conflict with appropriate solutions. One advantage to using video-based modeling is that it provides a flexible method for intervention because vignettes can portray a variety of models representing different cultural backgrounds in different settings and situations with different child age groups and developmental issues that are difficult to recreate over and over again for live sessions. Additionally, the vignettes can be viewed individually or in group settings. When delivered in groups, video-based modeling has the added benefit of facilitating group discussion, collaborative learning and emotional support. Further, participants identify key “principles” from the vignettes, apply them to their personal goals by practising what they have learned with their personal problem situation and then receive direct feedback on their performance from the group leader and group members. Previous research indicates that parents and teachers tend to implement interventions with greater integrity when they are coached and given feedback on their use of the intervention (Noell et al., 2005; Stormont, Lewis, & Smith, 2007). Additional research has shown the value of having children observe, practice, and receive feedback about targeted social skills.

Observing models that represent a variety of cultures and situations increases the likelihood participants will learn to apply the methods in their own home situations. Additionally, participants are given opportunities to role play or practise these strategies in group settings and receive feedback until they achieve a sense of competence on targeted skills. The training sessions are spaced for parents, teachers and children once a week so that participants can practice the skills in their settings during the week and return in subsequent sessions for additional coaching and feedback.

An added benefit of the group format is that it helps reduce resistance to the intervention through motivational interviewing principles (Miller & Rollnick, 2002). Rather than receiving information solely from an expert, participants are given the opportunity to interact with each other. When participants express beliefs counter to effective practices, the group leader draws on others to express other viewpoints. Through this discourse, the group leader is able to elicit change talk from the participants themselves that makes it more likely they will follow through on intended changes. On the one hand, when group leaders position themselves in the “expert model” arguing for change it makes it more likely to cement the attitudes of participants who are resistant to the intervention (see Miller & Rollnick, 2002).

On the other hand, video vignettes allow group leaders to elicit behavioral principles from the parents’
insights and serve as the stimulus for collaborative learning and practice exercises. After each vignette, the group leader solicits ideas from the group and involves them in the process of self-reflection, problem solving, sharing, and discussing ideas and reactions. The group leader’s role is to support group members by teaching, leading, reframing, predicting, and role playing, always within a collaborative context. The collaborative context is designed to ensure that the intervention is sensitive to individual cultural differences and personal values. The program is “tailored” to each parent, teacher or child’s individual needs and personal goals as well as to each child’s personality, developmental ability and behavior problems.

The IY parent and child program also implies a commitment to group members’ self-management. This approach empowers participants in that it gives back dignity, respect, and self-control to parents and teachers who may be seeking help at time of low self-confidence and feelings of self-blame. The group format is more cost-effective than individual intervention and also addresses an important risk factor for children with conduct problems including the family’s isolation and stigmatization, teacher’s sense of frustration and blame, and children’s feelings of loneliness or rejection. The groups provide that support and become a model for support networks and friendships. The collaborative therapy process is also provided in a text for group leaders, titled Collaborating with Parents to Reduce Children’s Behavior Problems: A Book for Therapists Using the Incredible Years Programs (2012). The child groups also provide children who have conduct problems some of their first positive social experiences with other children. Moreover, it is theorized that the group approach provides more social and emotional support and decreases feelings of isolation for teachers as well as parents and children.

Evidence Supporting the Incredible Years Programs

Evidence Supporting the Incredible Years Parent Programs

Treatment Populations: The efficacy2 of the IY BASIC parent treatment program for children (ages 2-8 years) diagnosed with ODD/CD has been demonstrated in eight published randomized control group trials (RCTs) by the program developer (Reid, Webster-Stratton, & Hammond, 2007; Webster-Stratton, 1981, 1982, 1984, 1990a, 1992, 1994, 1998; Webster-Stratton & Hammond, 1997; Webster-Stratton, Hollinsworth, & Kolpacoﬀ, 1989; Webster-Stratton, Kolpacoﬀ, & Hollinsworth, 1988; Webster-Stratton, Reid, & Beauchaine, 2011; Webster-Stratton, Reid, & Hammond, 2004). In all of these studies, the BASIC program has been shown to improve parental attitudes and parent-child interactions and reduce harsh discipline and child conduct problems compared to wait-list control groups. The results were consistent for early childhood and school age versions of the programs. Treatment component analyses indicated that the combination of group discussion, a trained group leader, and video modeling produced the most lasting results in comparison to treatment that involved only one of the three training components (Webster-Stratton et al., 1989; Webster-Stratton et al., 1988). One earlier study (Webster-Stratton, 1994), indicated the additive benefits of the ADVANCE program on children’s prosocial solution generation and parents’ marital interactions. Consequently a 20-24 week program that combined BASIC plus ADVANCE became the core treatment for parents of children diagnosed with ODD and/or ADHD and was used for the majority of the treatment studies. Several studies have also shown that IY treatment effects are durable 1-3 years post treatment (Webster-Stratton, 1990b). Perhaps, most notable, a recent 8- to 12-year follow-up of families treated because of their children’s conduct problems indicated that 75% of the teenagers were typically adjusted with minimal behavioral and emotional problems (Webster-Stratton, Rinaldi, & Reid, 2010).

In addition, the BASIC program has been replicated with treatment populations in five research projects by independent investigators in mental health clinics, or doctor’s offices with families of children diagnosed with conduct problems (Drugli & Larsson, 2006; Gardner, Burton, & Klimes, 2006; Lavigne et al., 2008; Scott, Knapp, Henderson, & Maughan, 2001; Spaccarelli, Cotler, & Penman, 1992; Taylor, Schmidt, Pepler, & Hodgins, 1998).

Prevention Populations: Additionally, 4 RCTs have been conducted by the developer with multiethnic, socioeconomically disadvantaged families in schools (Reid, Webster-Stratton, & Beauchaine, 2001; Webster-Stratton, 1998; Webster-Stratton, Reid, & Hammond, 2001). A recent study with elementary school children evaluated the effects of the parent intervention delivered in schools with an indicated, culturally diverse population. Children who received the intervention showed fewer externalizing problems, better emotion regulation, and stronger parent-child bonding than control children. Mothers in the intervention group showed more supportive and less coercive parenting than control mothers (Reid et al., 2007).

Another 6 RCTs by independent investigators with high risk prevention populations have found that the BASIC parenting program increases parents’ use of positive attention with their children (praise, coaching, descriptive commenting) and positive discipline strategies, and reduces harsh, critical, and coercive discipline strategies (see review by Webster-Stratton & Reid, 2010). These replications were “effectiveness” trials in applied mental health settings, not a university research clinic, and the IY group leaders were exist-
ing staff (nurses, social workers and psychologists) at the centers or doctor’s offices. The program has also been found to be effective with diverse populations including those representing Latino, Asian, African American, and Caucasian background in the United States (Reid et al., 2001), and in other countries such as the United Kingdom, Ireland, Norway, Sweden, Holland, New Zealand, Wales, and Russia (Gardner et al., 2006; Hutchings et al., 2007; Larsson et al., 2009; Raaijmakers et al., 2008; Scott, Spender, Doolan, Jacobs, & Aspland, 2001; Scott et al., 2010). These illustrate the transportability of the BASIC parenting program to other cultures and countries.

**Evidence Supporting the Incredible Years Child Programs**

**Treatment:** To date, the developer has conducted three RCTs evaluating the effectiveness of the small-group child-training (CT) program for reducing conduct problems and promoting social and emotional competence in children diagnosed with ODD/CD (Webster-Stratton & Hammond, 1997; Webster-Stratton et al., 2004). Results indicated that children who received the child-training condition showed enhanced improvements in problem solving, and conflict management skills with peers compared to those in the parent training (PT) only condition. On measures of parent and child behavior at home, the PT condition resulted in more positive parent-child behavioral interactions in comparison to interaction in the CT only condition. One-year follow-up assessments indicated that all the changes noted immediately post-treatment were maintained over time. Moreover, child conduct problems at home had decreased over time. Analyses of the clinical significance of the results suggested that the combined CT + PT condition produced the most improvements in child behavior at 1-year follow-up. For this reason the CT program was combined with the PT program in a recent study for children diagnosed with ADHD. Results replicated the earlier studies with children with ODD (Webster-Stratton et al., 2011). There has been one RCT by an independent investigator of the child treatment program (Drugli & Larsson, 2006).

**Prevention:** One RCT using the classroom prevention version of the child program with Head Start families and primary grade classrooms have indicated significant improvements in school readiness, emotional regulation and social skills and reductions in behavior problems in the classroom (Webster-Stratton, Reid, & Stoolmiller, 2008).

**Evidence Supporting Incredible Years Teacher Program**

The IY-TCM program has been evaluated by the developer in one treatment (Webster-Stratton et al., 2004) and two prevention RCTs Webster-Stratton et al., 2001; Webster-Stratton et al., 2008) and five RCTs by independent investigators (see review Webster-Stratton, 2012b). Research findings have shown that teachers who participated in the training used more proactive classroom management strategies, praised their students more, used fewer coercive or critical discipline strategies, and placed more focus on helping students to problem solve. Intervention classrooms were rated as having a more positive classroom atmosphere, increases in child social competence and school readiness skills, and lower levels of aggressive behavior.

**Implementation with fidelity**

An important aspect of a program’s efficacy is fidelity in implementation. Indeed, if the programme is not rigorously followed (for example, if components are added or dispensed with, if the leaders do not receive the necessary training or if the desirable resources are not available), then the absence of effects may be attributed not to the inefficacy of the programme but to a lack of fidelity in its implementation (Hutchings, Bywater, Eames, & Martin, 2008). Recent research with the Incredible Years parenting program shows that implementation with a high degree of fidelity not only preserves the anticipated behavior modification mechanisms but is predictive of behavioral changes in parents, which in turn are predictive of behavioral changes in the child as a result of the treatment (Eams et al., 2009).

One important aspect that facilitates the application of a program with fidelity is the standardization of intervention content, structure and materials. In Incredible Years, all components relating to the implementation of the programs are described in detail in DVDs and manuals, which also lay out the basic theoretical and empirical elements of each part of the program. For Weisz (2004), one of the main advantages of the Incredible Years programs, from the point of view of clinical practice, is precisely the program’s accessibility for clinical use, along with its appealing nature and low abandonment rates.

In the context of implementation with fidelity, the training and supervision of group facilitators warrants great attention (Webster-Stratton, 2004). Consequently, facilitators receive 3 days of structured training by accredited mentors before leading their first group of parents and are then subject to supervision, through video recordings of their sessions as well as ongoing expert coaching and consultation. Considerable emphasis is also placed on peer coaching through the joint viewing of the video recordings, using inventories of desired behaviors and skills to be filled in by the individual involved and by the peer (Webster-Stratton, 2004). The process of facilitator accreditation is demanding, involving the leadership of at least two
groups, and supervision and a positive final video group assessment by an accredited mentor or trainer as well as satisfactory completion of facilitator group session protocols and weekly parent evaluations. The whole process of coaching, consultation and accreditation of new facilitators is carried out by a network of national and international accredited IY mentors and trainers. A recent RCT has shown that providing facilitators with ongoing consultation and coaching following the 3-day workshop leads to increased facilitator proficiency, treatment adherence and delivery fidelity (Webster-Stratton, Hurlburt, Reid, Marsenich, in submission).

Implementation of the Incredible Years Training Series in Portugal

In Portugal, in recent years, there has been increased interest in family intervention methods known as parental training/education, as a way of increasing positive parenting, thereby promoting mental health in childhood and throughout life. This interest has been manifested politically (XVIII Governo Constitucional, 2009; Abreu-Lima et al. 2010), socially (Sampaio, Cruz, & Carvalho, 2011), in research (Almeida & Fernandes, 2011; Gaspar, 2003) and public opinion, reflecting European structures with key positions in the design of social policy (cf. Council of Europe, 2006). However, evidence-based interventions (EBIs) have not attracted much interest or recognition, and have not been considered a priority politically, socially or (as far as we can see) in research, in the public, private and volunteer sectors, or at central and local government levels. Ironically, authors such as Shernoff & Kratochwill (2007), have claimed: "There has never been a time in the history of education and psychology when there has been a stronger emphasis on the use of evidence-based interventions in mental health and educational settings” (p. 450).

This systemic EBI response, applicable in the different life contexts of the child (school and family) and to the child itself, with the potential to be implemented by professionals in different spheres (psychology, education, health, etc.) and on different levels of intervention (universal, selective and indicated), is found in the Incredible Years programs. What follows is a description of the first steps taken to transport to Portugal an EBI-technique developed elsewhere, taking as model the experience of other countries and teams that have used it with efficacy and effectiveness before us. Particular emphasis is given to the work of Judy Hutchings, who championed the transportability of the Incredible Years programs to Wales (Hutchings et al. 2007; Hutchings et al., 2008).

Training

The first training for facilitators of the Incredible Years Basic Parenting Program took place in October 2003, with the organization of a workshop at the Faculty of Psychology and Education, University of Coimbra (the institution to which the two last-named authors of this article – also the national coordinators of IY Series in Portugal – are affiliated). Since then, three basic training workshops have been organized within the same program, involving a total of 80 trainees. Some of these facilitators continued their training in subsequent years, and there are presently four certified group facilitators, two of whom are already certified peer coaches, qualified to supervise non-accredited leaders (the other two are concluding their peer coach certification). The first two are also beginning the process that will enable them to become mentors of the Incredible Years programme in Portugal, after which they will be able to train new facilitators in Portuguese.

Research

Basic Parenting Program

Between 2004 and 2007, prior to the launch of the program, the respective materials (including the manual, leaflets to accompany each session and a book aimed at parents) were translated and adapted to the Portuguese context (Webster-Stratton, 2005/2010), and the scenes in DVD were subtitled. Thus, the version of the Basic program used in Portugal is the original version prior to the version updated in 2008.

The first Incredible Years parenting groups were implemented in 2007 and 2008, mostly in kindergartens, involving parents of children without any identified risk factors. At this stage, there were 5 groups, which enabled the facilitators to practise their recently-acquired skills and make small adjustments to the translations of the materials. The contents of the program proved adequate to the needs and cultural references of the Portuguese parents that took part. This initial phase of developing and launching the program in Portugal was carried out in close collaboration with the Incredible Years team in Wales.

In 2008, the Incredible Years Basic Parenting Program was also used in a research project that aimed amongst other things to assess the efficacy of the program when implemented in a community of socioeconomically-disadvantaged families. This project, which ended in July 2009 and had the support of the Drug Dependency Institute (Instituto da Droga e da Toxicodependência or IDT), involved 11 groups of Incredible Years parents. Account was taken of evidence-based recommendations for the sensitization and recruitment of parents and other parental figures (contacted personally and by specialised technicians) and their maintenance in the program (transport, rewards, support groups for children, training and
supervision of parental trainers). The results indicate a statistically significant change in different variables associated with the exercise of positive parenting, such as a reduction in the stress associated to the evaluation of parental competence (assessed using the Parenting Stress Index; Abidin, 2004) and an increase in the empathy and availability of the parental figure with regards to the child’s needs (assessed with the Adult-Adolescent Parenting Inventory-2; Bavolek & Keene, 1999). It was found that these gains were maintained 6 months after the post-intervention assessment. Although no statistically significant changes were found in the parents’ perceptions of their children’s behavior, the difficulties faced or pro-social behaviors (as assessed with the Strengths and Difficulties Questionnaire - SDQ; Goodman, 1997), participants nevertheless indicated a marked change in themselves and also in their children the final Satisfaction and Efficacy Assessment (e.g., “I think my children have changed for the better as regards the way they talk and behave at home”) (Cabral et al., 2009/2010).

Still in the context of the application of the program to modify the behavior of children from vulnerable families, a doctorate project is at present under way by Isabel Simões Silva, supported by the Foundation of Science and Technology (FCT), which aims to assess the efficacy of the Incredible Years programme applied not with groups of parents but with professionals from residential care institutions (Centros de Acolhimento Temporário).

Another project (Jerónimo, Sequeira, & Gaspar, 2010) sought to analyse the changes in the narratives of parents that participated in one of the groups throughout the sessions of the program using the Therapeutic Process Analysis Grid (Sequeira, 2003). The results obtained indicate that intervention permitted the emergence of exceptional moments in the parental narratives over the course of the program, pointing to the emergence of new meanings and perspectives that helped “dissolve” the problem narrative and reduce the significance of the symptom. As regards these parental narratives, parents tended at first to present themselves as passive and/or incompetent, but generally changed over the course of the program, describing themselves as more active and competent in the final sessions. This narrative change seems to have been strongly influenced by the group dynamic (which effectively amplified the emergence of new narratives), home assignments, models of interaction shown in the filmed scenes, and dramatizations. The results obtained suggest that there are similarities between the change processes found and those observed in “classic” systemic therapies (such as family and couple therapy).

Since 2009, a study has been under way to assess the efficacy of the Incredible Years programs for parents and kindergarten teachers for the prevention/early intervention of behavior problems. The target is a treatment population and the main objectives are to assess the efficacy of the IY basic parenting treatment program for preschool children (ages 3-6 years) with externalizing behavior problems, using a randomized control group trial (RCT). This project, funded by the FCT from October 2010, has till now implemented the parenting program with 15 groups (of which 10 are experimental and 5 are control). Two doctorate dissertations are being prepared under this research project, supported by the FCT. One of these (by Andreia Fernandes Azevedo) assesses the effects of the behavior program on children with symptoms of hyperactivity and attention deficit disorder, while the other (by Tatiana Carvalho Homem) is concerned with problems of defiance/opposition.

Although this project is still ongoing, preliminary results suggest that the parental program is effective in reducing externalized behavior problems in preschool children (Azevedo, Seabra-Santos, Gaspar, Homem, & Marques, 2010; Azevedo, Seabra-Santos, Gaspar, Homem, & Leitão, 2011), and that the level of adherence and satisfaction amongst parents is high (Seabra-Santos, Gaspar, Azevedo, Homem, & Pimentel, 2011).

In a second phase of this project, begun in the last quarter of 2011, parental intervention was combined with an intervention aimed at kindergarten teachers through the IY program for kindergarten teachers (TCM). The aim was to gauge if performance in both systems (family and school) translates into added gains with regard to the modification of the child’s behavior. To date (July 2012), courses have been organized for three groups of parents of children with symptoms of externalizing behavior problems, while the respective kindergarten teachers received simultaneous training in the IY program for teachers (IY-TCM). We shall return later to this intervention with teachers.

**Incredible Years Program – First steps (Toddlers)**

Two doctoral projects, begun in 2011, aim to assess the efficacy of the Incredible Years program for the parents of children of 1-2 years of age (toddler’s version). These studies will involve risk families that are being monitored by the child protection services for having shown signs of parental maltreatment, implemented in the sphere of doctoral projects by Inês Coutinho and Isabel Fidalgo. These will analyse changes to child behavior and development rate, parental skills and parent/child interactions.

**Incredible Years Teacher Training Program – TCM**

The transportability of the TCM to Portugal was studied at two moments. The first took place in 2009 immediately after the handouts had been translated into Portuguese. The program was applied to a group of kindergarten teachers from the public sector in urban and
rural areas. The research was carried out in the context of a research doctorate in Educational Psychology at the Faculty of Psychology and Education, University of Coimbra (Vale, 2011). Five weekly workshops were held over the course of two months, involving 25 hours of face-to-face group training. The DVDs were shown in English without Portuguese subtitling, and the book (Webster-Stratton, 2008) was also given in English (the kindergarten teachers had sufficient mastery of this language). The intervention group consisted of eight kindergarten teachers (who participated in the TCM training from March and April 2009), with a control group made up of another eight kindergarten teachers that was comparable to the intervention group but had not had any additional in-service training (in 2012 that control group was offered free training in TCM). This was an exploratory study involving a preliminary assessment (February 2009), post-intervention assessment (July 2009) and follow-up (February 2010, one year after the preliminary assessment). The results suggest that, after exposure to the program, preschool teachers assessed their children as displaying greater social competence and fewer conduct and behavior problems compared to the preliminary assessment by SDQ (Goodman, 1997) filled by themselves. Preschool teachers in the control group did not change their perceptions about the children’s behavior and social competence. Additionally, observations by blind coders, using the Portuguese version of the Best Practices Inventory (The Incredible Years Project, University of Washington), showed that positive classroom practices improved in the intervention group, while remaining unchanged in the control group. The results remained unaltered seven months after the end of the program. Satisfaction with the program was very high. These findings provide the first support that this program is effective in enhancing school protective factors and reducing child risk factors in a sample community in Portugal.

At a second moment, the TCM is being used in the context of a broader research project that has already been mentioned (“Early prevention/intervention in disruptive behavior disorders: efficacy of parents and teachers programmes (PTDC/PSI-PED/102556/2008). Fourteen weekly sessions for parenting groups were offered at preschool centers. Using the research funding, all the DVD were subtitled in Portuguese and the book supporting the program was translated (Webster-Stratton, 2008).

In 2012, a new doctorate project was begun by Isabel Cristina Neves Borges, with the aim of assessing the efficacy of the TCM program in the primary school context (school-age children, with and without special needs).

Conclusion

At a time when the efficient management of human and economic resources is crucial, the availability of evidence-based programs in the Portuguese context should form part of the university’s mission.

The Incredible Years programs have been classified in the main directories of evidence-based interventions in the USA: The California Evidence-Based Clearinghouse for Child Welfare (CEBC)7; Center for the Study of Prevention of Violence: Blueprints for Violence Prevention (Blueprints)8; Helping America’s Youth (HAY)9; Office of Juvenile Justice and Delinquency Prevention Model Programs Guide (OJJDP)10, Substance Abuse and Mental Health Services Administration’s National Registry of Evidence-Based Programs and Practices (SAMHSA)11. The main function of these directories is to serve as a guide for professionals in the selection of the most effective intervention for existing families, contexts and resources, increasing the guarantee of evidence-based practice that is simultaneously a combination of best evidence based on empirical research, with the practice most consistent with the values of the family/client (cf. http://www.ceb cortisol.org).

The Incredible Years programs have been successfully transposed to other countries, particularly in Europe (e.g., United Kingdom, Ireland, Norway, Denmark, Finland, Holland), where they have maintained their efficacy and effectiveness. The results of the first research carried out in Portugal12, with both the basic preschool parenting program (prevention and treatment), and the TCM program for kindergarten teachers, are encouraging, motivating us to continue this assessment and dissemination, extending it to other types of families, children and education professionals, and other programmes of the Incredible Years series for parents and children.

References


group discussion program. *Behavior Therapy*, 12, 634-642.
Footnotes

1 Bug-in-the-ear (BITE) technology is an intervention technique that provides immediate feedback to the adult (mother, father or other carer) that is interacting with the child via an earphone placed in the ear. The feedback, given by an experienced professional that receives images of the interaction in another room through a recording device, is designed to reinforce and increase desired behaviors (Arhin, 2005).

2 Efficacy studies take place in controlled environments such as laboratories or clinics, while effectiveness studies occur in real contexts in order to assess results in daily practice (according to Division 12 of the APA, cf. Diniz-Neto & Feres-Carneiro, 2005).

3 The training sessions were run by the following trainers from the Incredible Years program: Dr Ted Taylor, psychologist and researcher at the Oregon Research Institute (2003); Dr Caroline White, clinical psychologist at Manchester University Children’s Hospital (2008); Prof. Judy Hutchings, coordinator of the Incredible Years team in Wales and professor at the University of Bangor (2010 and 2011).

4 This initial phase was supported by the University of Coimbra Centro de Psicopedagogia (FCT research unit), British Council and Council of Rectors of Portuguese Universities. The funding provided by the last two bodies occurred under the Treaty of Windsor Anglo-Portuguese Joint Research Programme and enabled two members of the Portuguese team to travel to Wales and two researchers connected with the Incredible Years team in Wales to come to Portugal (Project: “Applicability of the Incredible Years Program in Portugal: Comparison with Wales”).

5 Support was provided by the Drug Dependency Institute of the Ministry of Health (Grant PIF – A/84) for the project “An Adventure in the World of the Family: A prevention/intervention project for families at risk”, implemented by the Aprender em Festa Group (IPSS Gouveia) in the context of which a study was carried out with the Incredible Years program.

6 Research and Technological Development Project entitled “Early prevention/intervention in disruptive behaviour disorders: efficacy of parents’ and teachers’ programmes”, with the following reference PTDC/PSI-PED/102556/2008 funded by the programme COMPETE in its component FEDER and by the Foundation for Science and Technology (FCT).

7 http://www.cebc4cw.org
8 http://www.colorado.edu/cspv/blueprints/index.html
9 http://guide.helpingamericasyouth.gov/programtool.cfm
10 http://www.dsonline.com/mpg_index.htm
11 http://nrepp.samhsa.gov/
12 The research with the Incredible Years parenting program in Portugal can be accompanied at http://projectopaismaesincriveis.blogspot.com/

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SafeCare®: Historical Perspective and Dynamic Development of an Evidence-Based Scaled-Up Model for the Prevention of Child Maltreatment*

SafeCare®: Perspectiva Histórica, Desarrollo Dinámico y Diseminación de un Programa de Prevención del Maltrato Infantil Basado en la Evidencia

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Abstract. SafeCare is an evidence-based parent-training program that reduces child maltreatment, particularly neglect. The risk of child maltreatment, a public health issue affecting millions of U.S. children each year, can be markedly reduced by interventions such as SafeCare that deliver in-home services. Drawing from applied behavioral analysis roots, SafeCare focuses on providing parents with concrete skills in three areas: health, home safety, and parent-child/-infant interaction. This paper will include an overview of the SafeCare model, an historical perspective of its history and dynamic development, description of the theoretical underpinnings of the model, a description of the program targets and content by describing its modules and delivery, an overview of program outcomes, and data discussion of dissemination and implementation.

Keywords: child maltreatment, evidence-based, implementation, parenting, SafeCare.

Resumen. SafeCare es un programa basado en la evidencia de enseñanza de habilidades parentales que reduce el maltrato infantil, particularmente la negligencia. El riesgo de maltrato infantil, un problema público de salud que afecta cada año a millones de niños y niñas en Estados Unidos, puede ser reducido de forma notable mediante programas como el SafeCare, que desarrolla su intervención en el domicilio. Basado en la psicología conductual aplicada, el SafeCare se centra en dotar a los padres y madres de habilidades específicas en tres áreas: salud, seguridad en el hogar, e interacción padres-hijos. Este artículo expone una visión general del modelo de intervención del SafeCare, una perspectiva histórica de su desarrollo y evolución, sus bases teóricas, sus objetivos y contenido a través de la descripción de sus módulos y forma de provisión, recoge una visión general de sus resultados, y comenta los datos acerca de su diseminación e implantación.

Palabras clave: ejercicio rol parental, implantación, maltrato infantil, programa basado en la evidencia, SafeCare.

Child maltreatment threatens the short- and long-term quality of life of children and youth. The Child Abuse Prevention and Treatment Act defines child abuse and neglect as: “Any recent act or failure to act on the part of a parent or caretaker which results in death, serious physical or emotional harm, sexual abuse or exploitation; or an act or failure to act, which presents and imminent risk of serious harm” (U.S. Department of Health and Human Services, 2011). In the United States in 2010, 3.6 million children were reported to Child Protective Services (CPS) as alleged cases of child abuse or neglect, 80.3% of which were maltreated by a parent. In 2010, 78.3% of the cases reported to CPS were attributed to neglect alone, 17.6% to physical abuse, 9.2% to sexual abuse, 8.1% to psychological or emotional abuse, and 2.4% to medical neglect (U.S. Department of Health and Human Services, 2011). The younger a child, the greater the risk for experiencing maltreatment; children between birth and three accounted for 34% of all alleged cases in 2010. It was estimated that 1,560 children (or 2.07 per 100,000) died from child abuse and neglect in the same year (U.S. Department of Health and Human Services, 2011).

These sequelae of maltreatment in childhood are long-lasting and costly. Those who have experienced child maltreatment at a young age are likely to present: impaired physical, mental, and emotional health; diffi-
culties in social situations; cognitive dysfunction; high-risk behaviors; and other behavioral problems (Anda, 2009; Chapman, Dube, & Anda, 2007). Viewed as an “extreme traumatic insult” in a child’s developmental trajectory (Hagell, 2005), there is a direct adverse impact on neurological and structural functioning of the brain (Cicchetti & Rogosch, 2009). Prevent Child Abuse America, a national organization that works in every state to ensure the healthy development of every child, postulates that child maltreatment costs the United States over $80 billion dollars annually, including both immediate costs, such as trauma treatment, and long-term costs, such as mental health care (Gelles & Perlman, 2012).

A number of risk factors commonly seen in families reported for child maltreatment have been identified. Often, parents may have unrealistic expectations or attributions of child behavior that put children at risk for maltreatment (Azar & Weinzierl, 2005). Data also indicate that a parent who engages in one form of child maltreatment is more likely to repeat this behavior and engage in other forms of maltreatment (Hélie & Bouchard, 2010). Family risk factors for child maltreatment include: premature birth, low birth weight, children crying, young mothers, alcohol and substance abuse by parents, family poverty, high number of dependent children, single parenting, and an overall lack of social support for families (Palusci, 2011). Thus, prevention and intervention strategies must consider these factors.

To address the numerous maltreatment risk factors, a wide array of services are available, including foster care, mental health services (for both parents and children), parent training, substance abuse treatment (Butchart & Harvey, 2006). Parent training programs, the most common referral for families (Prinz, Sanders, Shapiro, Whitaker, & Lutzker, 2009), are offered through various settings, such as clinics, church or community organizations, and in the home. Services delivered in-situ, that is, in the natural setting of the home, rather than a clinic or office setting, which are proxy settings, fit within a social-ecological framework. Parenting programs implemented in the family’s home environment to address risk factors for child maltreatment are particularly effective (Bilukha et al., 2005; Daro, 2012). Parents may promote skills generalization by being in-situ, and may enhance engagement and retention, as it does not require a parent to need to consider transportation, child care, scheduling, and other costs associated with having to outside of the home for training. For example, a parent might apply what she has learned about hazards to rooms that the home visitor did not walk her through (Lutzker & Bigelow, 2002). It is expected that if parents learn how to engage a child properly for routine activities in the home, they will use these skills in other activities or settings as well as with other children. Learning these skills in the home may also alleviate some of the stress of the intervention for the parent as it is a familiar, comfortable environment.

The purpose of this paper is to provide a broad understanding of SafeCare. This discussion will include an overview of the SafeCare model, an historical perspective of its history and dynamic development, description of the theoretical underpinnings of the model, a description of the program targets and content by describing its modules and delivery, an overview of program outcomes, outcome data, and an overview of dissemination and implementation efforts.

Theoretical Rationale/Conceptual Framework

The first professional recognition of child maltreatment in the United States in an academic peer-reviewed journal was the landmark article by Kempe and colleagues in the Journal of the American Medical Association, “The Battered Child Syndrome” (1962). It described injuries to children that were being seen in emergency rooms and pediatrics and general practice offices that could not be accounted for by parental accounts of falls from swings, bumps from coffee tables, and so forth. The article not only received significant attention in the professional community, but received considerable media attention that opened the public’s eyes to a problem that had been kept in the shadows. The article stimulated discussion, fostered the development of states creating child abuse reporting laws and fostered federal legislation (e.g., the Child Abuse Prevention and Treatment Act [CAPTA], P.L. 93-247), and promoted epidemiologic research and theoretical speculation as to what might cause parents to inflict harm on their children. Early theoretical discussion centered on intrapersonal parental factors (Bigelow & Lutzker, 1998), largely because more contemporary theories of mental health, behavioral, and social/ecological perspectives were nascent at the time. However, in the late 1970s and early 1980s, Bronfenbrenner (1979) and Belsky (1980) began to examine the notion that social ecologies affect a number of problems related to adverse environments and conditions (i.e., poverty), and that there was an interaction between intrapersonal, interpersonal, and community/social factors that could account for problems such as child maltreatment. Also, Bandura (1975) expanded his social learning explanations for child development and the effects of adult and child modeling on child behavior.

Interventions to try to prevent child maltreatment, other than judicial (i.e., removing a child from the home), did not appear in empirical journals until Denicola and Sandler (1980) published a case study using stress reduction techniques with a mother who had been reported for child abuse. The Denicola and Sandler (1980) case study is best described as behavior therapy. The first studies applying behavior analysis
single-case research design targeting behavior change in families reported for or at-risk for child maltreatment were from Project 12-Ways (Campbell, O’Brien, Bickett, & Lutzker, 1983; Rosenfeld-Schlacter, Sarber, Bueno, Greene, & Lutzker, 1983; Sarber, Halasz, Messmer, Bickett, & Lutzker, 1983). The foundations of applied behavior analysis began in basic research in animal laboratories exploring the role of reinforcement and punishment on learning. The mid-1960s brought applications for interventions in autism, schizophrenia, developmental and intellectual disabilities. The 1970s brought work with parents as mediators of behavior change in their children and thus the birth of behavioral parent training. The “behavioral” aspect of parent training adopted by Project 12-Ways and SafeCare involves the direct observation of parent and child behavior, repeated measurement of the behaviors, skills training with mastery performance criteria, and the use of modeling and role-playing. Early on in Project 12-Ways, the parent-child module focused largely on consequences of child behavior. SafeCare, the successor, shifted focus to antecedents of child behavior to promote positive parent-child interactions through enriched environments, with less focus on consequences for child behavior.

Program history

The application of the “ecobehavioral” approach to the prevention of child maltreatment began in 1979 with Project 12-Ways, in rural southern Illinois (Lutzker, Frame, & Rice, 1982). Project 12-Ways was implemented and still is by highly trained graduate student assistants, who worked in-situ with parents referred to child protective services (CPS) for substantiated or at-risk status for child abuse and neglect. The name, “12-Ways” came from the training of 12 parent skill-sets, including: child basic daily living skills, parent-child interaction, health maintenance and nutrition, stress reduction, marital counseling, home safety, management of finances, job searching, alcoholism treatment, leisure time, self-control, and a plethora of prenatal and post-natal services for single mothers (Lutzker & Rice, 1984). Initial data from Project 12-Ways indicated a lower rate of recidivism and/or first-time reports of child maltreatment among families trained in Project 12-Ways compared to a demographically matched control sample (12% recidivism vs. 26%, respectively) (Dachman, Halasz, Bickett, & Lutzker, 1984). Project 12-Ways has been continuously funded since 1979 at Southern Illinois University at Carbondale to provide services in rural southern Illinois.

Project 12-Ways was systematically replicated, adapted, and validated in multiple ways over several years. In 1986, the California Department of Developmental Services awarded a grant (Project Ecosystems) to provide services similar to Project 12-Ways during in-home visits to self-referred families who had children with developmental and intellectual disabilities. In 1994, The California Wellness Foundation funded a research grant to systematically replicate Project 12-Ways again for urban Los Angeles, California with the goal of making the 12-Ways model more succinct and disseminable. The 12 components of Project 12-Ways required a considerable time commitment from parents and home visitors (HV; providers) (aside from implementation, mastering the material in the 12 content areas was cumbersome). Thus, SafeCare was created in 1994 as a package of three modules (parent-child/parent-infant interaction, action, home safety, and health) the most commonly utilized by Project 12-Ways. The three modules were subsequently re-validated by experts and tested through a series of single-case research design studies (Bigelow & Lutzker, 2000; Gaskin, Lutzker, Crimmins, & Robinson, 2012; Jabaley, Lutzker, Whitaker, & Self-Brown, 2011).

Overall, outcome data for both Project 12-Ways and SafeCare have shown these programs decreased the likelihood of recidivism in families who received training compared to families that did not (Gershater-Molko, Lutzker, & Wsch, 2002, 2003). Those who received the services were asked to share their perceptions of the program and its outcomes in a process of social validation (O’Brien, Lutzker, & Campbell, 1993; Taban & Lutzker, 2001). Participants overall were favorable of the program and provided valuable suggestions that led to the social validation process later being built into the implementation model (Lutzker & Bigelow, 2002).

Over the course of its history, SafeCare has been shown to be efficacious and effective in a variety of environments, social contexts, and populations. Mothers who received SafeCare were less depressed, experienced less parenting stress, and were at lower risk for future child maltreatment after services when compared to mothers who did not receive SafeCare (Lutzker & Bigelow, 2002). The results of a large randomized statewide control trial of almost 2,200 families from Oklahoma spanning nearly a decade was recently reported by Chaffin, Hecht, Bard, Silovsky, and Beasley (2012). Six-year follow-up data showed that SafeCare decreased recidivism by 26% for families with children birth-5 yrs.

Description of intervention

Risk factors for child maltreatment relate to a lack of parenting experience, basic parenting knowledge and skills, positive social support, and other contextual environmental factors (Palusci, 2011). To address many of the prominent maltreatment risk factors, the SafeCare curriculum is divided into three core mod-

**Health module:** The aim of the Health module is to train parents in a stepwise process to determine how to best care for their children when sick or injured. Learning how to manage and identify child symptoms and illnesses reduces the risk for medical neglect. The module teaches parents what to look for, how to decide what to do, and how to keep good health records. Parents learn when to seek emergency services, when it is appropriate to call the pediatrician, and what to do when caring for a sick child at home. Training also includes prevention topics, such as proper hygiene and nutrition, as a way to minimize the need for medical attention.

**Home Safety module:** Because of the high prevalence of unintentional injuries in the home (particularly for young children) and an elevated number of hazards in homes of parents referred for child neglect, the goal of the Home Safety module is to teach parents how to identify and eliminate hazards in their homes. The Safety module categorizes common household hazards into 10 categories (e.g., choke, suffocation, electrical), which assists parents to identify what hazards exist in their home. Parents also learn how to identify when a hazard is reachable (able to be obtained by the child) and accessible (not properly secured), and what strategies to use to remove or eliminate such hazards. In addition, parents learn how to reduce clutter and filth in their homes that increase children exposure to allergens.

**Parent-Child/Parent-Infant modules:** Improving parent-child/infant interactions is a crucial component in reducing children’s risk to physical abuse and neglect (Chaffin et al., 2004). The parenting modules are divided by age to account for differences in infant and young children’s developmental needs. The Parent-Infant Interaction (PII) module focuses on how parents verbally and physically interact with their infant. The Parent-Child Interaction (PCI) module provides parents with skills to plan and organize daily activities (e.g., mealtime, playtime, bath time), to use specific set of strategies designed to enhance the parent-child interaction, and reduce the potential for child behavior problems. Both parenting modules include discussion of developmental expectations.

**Program Targets**

SafeCare is delivered to families who have a substantiated report of or who are at risk for child maltreatment. Families referred to SafeCare come from a variety of agencies or organizations including, but not limited to: child protective services, drug courts, universities, community-based organizations and prevention agencies. As such, SafeCare is used as both a primary prevention tool for those who are at-risk for child maltreatment, but also as a secondary or tertiary form of prevention for families who are already involved with the social service system. All participating families must have at minimum one child under the age of five, as the curriculum is designed specifically for birth to five.

In order to evaluate SafeCare effectiveness for various family types, researchers continue to apply the SafeCare curriculum to a number of populations. For example, they have adapted in a number of ways to be delivered to children up to age 12, to families with children with challenging behaviors, to families with a history of intimate partner violence; and finally to Latinos. Other researchers continue to apply SafeCare to populations in need including mothers with intellectual disabilities (Gaskin et al., 2012), and among those in substance abuse treatment settings. In short, the SafeCare curriculum is not limited to a specific population, thus allowing for maximum applicability and dissemination.

**Program Development**

Each module has been validated by experts three times and is shown to be efficacious in multiple studies. The majority of these studies utilize single-case research design with one family, individual, or group of families in which behaviors are directly observed and measured (Barlow, Nock, & Hersen, 2009; Weisz, Jensen-Doss, & Hawley, 2006). The curriculum is revised periodically to include new research, technology, to fit with new special populations, to address the potential of program drift, and to maximize cultural competency. In this section we will discuss the relevance of these specific modules in relation to national data, describe the overarching premise of the individual modules, and trace the development of the modules over time from their beginnings with Project 12-Ways to the innovative new approaches happening at NSTRC.

**Health**

In 2008, over 123 million visits were made to emergency rooms in the United States (Centers for Disease Control and Prevention, 2012). It was estimated that at least one-third of emergency room visits were avoidable and were non-urgent or could be treated by a primary care physician (Choudhry et al., 2007). Acknowledging that young parents often lack skills and have questions about their child’s health, Delgado and Lutzker (1988) developed a training program teaching parents how to assess symptoms, the severity of illness, and where to seek appropriate care through a series of 14 steps. Six parents referred to Project 12-Ways received the training including written materials,
Home Safety

Home safety was a necessary module for Project 12-Ways. Not only did the homes have many accessible hazards, but there were reports of parents using physical abuse when attempting to protect their children engaging a hazard, such as sticking an object in an exposed electrical outlet (Tertinger, Greene, & Lutzker, 1984). Historically, systematic training for improving home safety among families with a history of child abuse and neglect had been rare in home visiting services. The need for home safety training remains evident as nearly three million nonfatal unintentional injuries occurred from 2001-2010 in the United States among children aged 0-5 years of age (Prevention, 2010).

Tertinger et al. (1984) developed the original Home Accident Prevention Inventory (HAPI) that assessed the quantity of hazardous items a child might encounter in a home. Hazards were itemized into categories. The HAPI allowed the HV to assess the number of hazards observed during each visit and served as a means of tracking progress in eliminating hazards across sessions. The HAPI included five broad categories (fire and electrical; suffocation by ingested items; mechanical suffocation; firearms; and poisoning) which represented the top five causes of accidental deaths among children in the 1980s. The intervention involved the HV training parents to make hazards inaccessible to their children by locking-up the hazards or using child-proofing devices. A multiple-baseline design across rooms replicated across six families with a history of child abuse was used to test the efficacy of the HAPI and intervention. The number of accessible hazards was dramatically reduced when the education-feedback package was implemented (Tertinger et al., 1984).

Answering the need to promote generalization and reduce the duration of the module, Barone, Greene, and Lutzker (1986) attempted to streamline the home safety module with the inclusion of an audio-slide show. Using three Project 12-Ways families, a multiple-baseline design across families was used to evaluate the effect of the audio-slide show package and continued to use the HAPI as an assessment tool (Barone, Greene, & Lutzker, 1986). The families would watch the audio-slide show which included slides depicting an individual removing hazards or installing safety accessories. In addition, participating families also received written instructions and practiced removing hazards with the HV. There were sizable reductions of accessible hazards in the homes that were maintained. The standardized implementation of the slides reduced the time the HV needed to spend on the safety module.

A video component was added to the Home Safety module (Mandel, Bigelow, & Lutzker, 1998). In addition, a shortened, revised version of the HAPI, the HAPI-R, was used to tally accessible hazards. Although a shorter form, the HAPI-R was expanded to 10 categories of hazards: poisonous solids and liquids; fire and electrical; mechanical objects; small objects and choking; sharp objects; firearms; falling, tripping and activity restricting; crush; drowning; and organic matter. Similar to the audio slide show, four video tapes were accompanied by an instruction sheet that presented what was seen in the video. The video included instructions to pause the tape and encouraged the participants to go to the specified room and identify the hazards they had just seen in the video. Using a multiple probe design across settings, replicated across families, Mandel and colleagues found a reduction in the number of hazards in all rooms throughout the intervention. Generalization was indicated as parents removed hazards from a room between visits after watching a video that focused on a different room.

Recently Jabaley and colleagues (2011) incorporated an iPhone® into the implementation of the home safety module in order to look at the potential of lowering SafeCare costs through the use of technology. The iPhone was used by parents to show the home visitor the rooms, and replicated across families, in their homes, as well as by the home visitor to communicate feedback and coordinate logistics. Using a multiple baseline design across rooms, the data from three families showed that the inclusion of an iPhone in the delivery of the safety module would: significantly decrease hazards across rooms, reduce the chance of missed sessions with the home visitor and possibly reduce the frequency of home visits for the safety module (Jabaley et al., 2011). The three families had an average reduction in hazards of 74%, 93%, and 97%.
This research begins to scratch the surface of the numerous ways smartphones may be used within a home visiting intervention.

Parent-Infant/Child Interaction

In the Parent-Infant Interaction (PII) module, mothers are taught to engage and stimulate their babies. The PII module focuses on increasing the core behaviors of looking, talking, touching, and smiling between parent and infant with an additional emphasis on gentle movement, holding, and imitating the infant. One of the primary goals of PII is to increase positive, affective expressions from parent to infant as research has indicated this to be integral to optimal infant development (Hart & Risley, 1995). Lutzker, Lutzker, Braunling-McMorrow, and Eddleman (1987) used a multiple baseline design across six Project 12-Ways typically developing mothers to determine the efficacy of visual prompting to increase and improve the mother-infant interactions. Participating mothers were provided a combination of prompted and unprompted sessions. In a prompt session, mothers were provided a written explanation of a behavior that she needed to define and share what she did currently with her baby that supports that behavior. The HV provided additional suggestions and these activities were recorded and not used in the unprompted sessions. While observing a 5-minute activity during a session, observers used 10-second intervals to quantify 9 dependent variables: smiling, affectionate words, eye-to-face contact, affectionate physical contact, passive contact, eye-to-eye contact, speech, guided play, and vocalizations. Simple prompting, sometimes paired with positive-corrective feedback, increased the mother-infant interactions, and mothers generalized these skills to feeding and bath time activities.

A technological enhancement to the PII module with a mother with an intellectual disability was examined by Gaskin et al. (2012). A digital picture frame to display photos of the participating mother-infant dyad demonstrating the proper PII skills was added. Based on self-modeling principles (Dowrick, 1999), it was predicted that if the mother saw herself engaging in this behavior on the digital picture frame between sessions, she would be more likely to practice behaviors and learn the skills. A dramatic increase in PII skills at a more rapid rate with this mother with an intellectual disability than the typically developing mothers (Lutzker et al., 1987) occurred. The integration of this technology opens the door for future research, for example, how this enhancement could benefit typically developing mothers, and mothers with intellectual disabilities, perhaps with all three SafeCare modules.

Once the child is ambulatory, the Parent-Child Interaction (PCI) module is delivered in which Planned Activities Training, a behavioral parenting approach that emphasizes engagement as a method for preventing challenging behaviors. Parents learn strategies for time management, selecting age-appropriate activities, setting realistic rules and consequences, and providing positive feedback to children. The strategies are presented through a list of steps and a separate set of strategies is provided for setting up children to succeed in independent-play, and when engaging with children or adults.

Both the PII and PCI modules utilize the Daily Activities Checklist (DAC), a list of daily and routine activities on which the parents are asked to comment regarding the level of ease or difficulty in completing the activity. Activities surveyed with the DAC include, but are not limited to: bath time, feeding, bed time, changing clothes, diapering/toilet training, and leaving the house. Also integrated in each of the modules are materials regarding developmental milestones and corresponding age-appropriate play activities. The parents are asked to practice the daily activities and age-appropriate play activities during and between sessions for homework.

The paradigm shift in the PCI module from a focus on consequences of child behavior to antecedents of child behavior stemmed from research that sought to directly address the low rates of positive, appropriate parent-child interactions reported in numerous studies that directly observed these interactions (Lutzker, Megson, Webb, & Dachman, 1985). They developed and validated a list of behaviors, or skills that should be performed in parent-child interactions. This included: assuming a position of equal height with the child when communicating, ignoring minor misbehaviors, and allowing passive touching, for instance allowing the child to lean against the parent. To validate the skills, the list was circulated among experts who rated the behaviors on the list in level of importance for parents to learn. The training of the list of skills was then tested among parents who were actively receiving Project 12-Ways services for substantiated cases of child abuse and neglect. Training for parents included explaining the definition of a given behavior, the home visitor modeling for the parents, inviting them to practice the behaviors with their children, and providing feedback. A multiple-probe design across two parents indicated that this training strategies improved the occurrence of targeted skills (Lutzker et al., 1985). Overtime, booster sessions were needed to maintain these skills with the parents, however, the data indicated the mothers were able to generalize the skills to activities they had not practiced with the home visitor as well as to other children in the home.

Bigelow and Lutzker (1998) integrated video training with Planned Activities Training to demonstrate parenting behaviors to parents who had been reported for child abuse and neglect and subsequently referred to Project SafeCare in Los Angeles. Assessment of the skills was completed using a partial-interval time-sam-
pling procedure. A series of video tapes accompanied the training and provided a combination of instruction and modeling for the parent to view. The percentage of observed PAT skills increased with training and an even further increase upon introduction of the video training (Bigelow & Lutzker, 1998). Thus, video could be effective when teaching Planned Activities Training to parents reported for child abuse and neglect.

Evidence of Program Effectiveness/Program Outcomes

Throughout its development and evolution, SafeCare has produced strong evidence that home-based interventions reduce child maltreatment and recidivism rates (Chaffin et al., 2012; Gershater-Molko et al., 2002, 2003). In a trial comparing recidivism of families in a Family Preservation Services comparison group to SafeCare, Gershater-Molko, Lutzker, and Wesch (2002) found that 14-months following the start of intervention, the survival rate of the two groups diverged: families in Family Preservation services began to show more reports of child abuse and neglect. After 36-months following intervention, 85% of SafeCare families and 54% of Family Preservation families had no reports of child abuse or neglect. In addition to showing significantly fewer child abuse and neglect reports when compared to a different program, supplementary studies have shown that aggregate data from pre-post assessments of the SafeCare intervention demonstrate significant improvements in all three SafeCare modules (Gershater-Molko et al., 2003). These positive changes at post training occurred in at-risk families and maltreating families.

Chaffin et al. (2012) used a cluster design to examine recidivism rates of SafeCare as usual. SafeCare with coaching, services as usual, and services as usual with coaching. The findings demonstrated that adapted coached SafeCare as a home-visiting program could prevent 64-104 first-year recurrences per 1000 cases. In addition to these staggering findings, analysis of the other three versions of home-visiting provided evidence of a tiered system where SafeCare alone was better than services coached, which was more effective than services as usual uncoached. Further, Aarons, Sommerfeld, Hect, Silovsky, and Chaffin (2009) found that in this statewide implementation, ongoing coaching of SafeCare led to greater staff retention rates compared to the implementation of an evidence-based program without ongoing coaching (14.9% versus 37.6%, respectively).

Dissemination and Implementation

So as to increase dissemination and sustainability of SafeCare implementation, a train-the-trainer format is utilized. At the core of this are the HVs who provide direct services to families. They are supported by trained Coaches (also certified HVs), and supervisors who monitor session fidelity and assist with problem-solving as needed. The Coach, and the HV by proxy, is supported by a National SafeCare Training and Research Center (NSTRC) Training Specialist, who provides routine supervision. Initially, support from NSTRC is “live”, but after the Coach meets mastery criteria, support is primarily offered by NSTRC Training Specialists listening to audio-recorded sessions and providing feedback to coaches via telephone. These levels of support ensure sustainability of the intervention with frequent support that makes changing in staffing or funding easier and also the creation of autonomous intervention implementation sites (Fixsen, Naoom, Blase, Friedman, & Wallace, 2005).

Across the modules, SafeCare utilizes training techniques to meet the needs of each parent and optimize the benefits for parents. One technique is: assess-train-assess. Each module begins with an evaluation of the parent’s skills prior to any training. This is followed by a series of training sessions, each of which include short assessments to document parent’s skill change and inform the HV where progress is being made and what areas continue to need improvement. During model implementation, baseline assessments are completed in the first session of each module, and a posttest assessment is completed in the final (sixth) session. This allows for the documentation of the parent’s knowledge prior to and upon completion of the implementation such that improvement in skills can be tracked. Training occurs in sessions two through five of the module.

HVs also use the process of training, referred to as the ‘SafeCare4’: Explain, Model, Practice, Feedback. Explain involves the HV describing the skills to the parent, often engaging the parent in a discussion of the skill. This is followed by the HV physically modeling the skill for the parent and in turn the parent practicing the skill while the HV observes. Following the parent’s practice, the HV provides positive and corrective feedback to the parent. This training process is repeated as needed to enhance the parent’s skills to mastery. Mastery is achieved when the parent demonstrates all skills across various activities.

The central tenet of the train-the-trainer format is the adherence and monitoring of model intervention fidelity. Through audio recordings, HVs must meet mastery on fidelity checks which ensure they are delivering the sessions as prescribed. Using a fidelity checklist, coaches and training specialists are able to monitor service delivery and quality of treatment (Fixsen et al., 2005). The fidelity monitoring is accompanied by a form of supervision (either in-person or over the phone) in which the ‘SafeCare4’ model is used again allowing for maximum success. Another basic tenet is mastery criteria in that HVs, Coaches,
and parents must meet mastery performance criteria before they can move on with each next step of training.

SafeCare is currently implemented in 15 states, the United Kingdom, and Belarus. It is a dynamic intervention which continues to pursue new best-practices including the integration of technology into its modules (Gaskin et al., 2012; Jabaley et al., 2011; Self-Brown & Whitaker, 2008).

Program Costs

Systems considering SafeCare implementation (or any evidence-based practice) have two broad categories of cost to consider: startup costs that include training and support needed to learn the model, and ongoing implementation costs. The costs to start any new practice, can seem considerable. The SafeCare purveyor (NSTRC) uses a very specific implementation model with new sites that includes a readiness assessment, orientation for all interested parties prior to training, intensive skills-based workshop training with a low trainer-to-trainee ratio, and ongoing support for one year at a minimum (Whitaker, Lutzker, Self-Brown, & Edwards, 2008). There is ample research evidence that intensive skills-based training workshops must be followed by in-field consultation or coaching in order to ensure proper implementation (Henggeler, Schoenwald, Liao, Letourneau, & Edwards, 2002; Ogden, Forgatch, Askeland, Patterson, & Bullock, 2005; Whitaker et al., 2012), and that simple information-only workshops or manuals do not result in implementation (Fixsen et al., 2005; Henggeler, 2002; Herschell et al., 2009). At the time of this writing, costs for an initial implementation of SafeCare including all costs was approximately $6,000 per home visitor. The NSTRC also trains onsite coaches to conduct the required ongoing fidelity monitoring, and the approximate cost to train a HV to act as a coach is $3,500.

Once an implementation is established, the ongoing costs to deliver SafeCare are only slightly different than costs to operate any in-home program of similar duration. The costs include staff time, supervision, travel, materials, and the overhead expenses of operating a program. There are a few costs that may be specific to SafeCare. One such cost is coaching. The NSTRC requires that SafeCare HVs be coached on an ongoing basis one time per month (once they reach certification). Coaching involves attending a session or reviewing an audio recording of the session, scoring the session for fidelity, and providing feedback to the home visitor. Coaching can be done by the site or by NSTRC, but it is far more cost efficient for a site to conduct its own coaching. For each home visitor, a site should allot three to four hours of a coach’s time per month for a coaching session. Another SafeCare-specific cost is the reproducing of the SafeCare materials needed for the conduct of SafeCare with each family. Every program, however, has materials that are left with the family, and thus the cost of SafeCare may be no greater than other programs.

Staff turnover is often problematic for any agency. When trained staff must be replaced, new staff must be trained if a SafeCare implementation is to survive. Because the initial cost of training is relatively high, NSTRC developed a SafeCare Trainer Training Program, whereby certified coaches can be trained to conduct SafeCare training within their own organization. This allows sites to train new home visitors and coaches at their site with no out of pocket costs to NSTRC (though clearly there are ‘costs’ to the agency as training new staff takes considerable time). The presence of a SafeCare Trainer can help an organization sustain or expand their SafeCare operation. At the time of this writing, training a coach to the Trainer level costs approximately $9,000.

The Washington State Institute for Public Policy (Lee et al., 2012) recently reported that based upon the Oklahoma results, the return on investment (ROI) for SafeCare is $14.65 for each dollar spent. No other evidence-based child welfare showed double-digit ROI. This estimate includes the costs of training, coaching, and all materials needed to implement SafeCare versus a non-SafeCare based program.

Conclusion

Evidence-based interventions are necessary to reduce the overwhelming burden of child maltreatment. SafeCare has demonstrated through single-case, quasi-experimental, and randomized-control trials that it effectively improves parenting skills and reduces recidivism rates of families back into the child welfare system. With new curriculum changes, SafeCare will continue to improve the lives of parents and families at risk for child maltreatment.

References


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Abstract. Multisystemic therapy (MST) is an intensive family and community-based treatment for adolescents presenting serious antisocial behavior and their families. Using a home-based model of service delivery to overcome barriers to service access and a strong quality assurance system to promote treatment fidelity, MST therapists address known risk factors (i.e., at individual, family, peer, school, and community levels) strategically and comprehensively. The family is viewed as central to achieving favorable outcomes, and mediation research supports the emphasis of MST on promoting family functioning as the key mechanism of clinical change. Importantly, 22 MST outcome studies have been published, many of which are independent randomized clinical trials, and the vast majority, including those conducted in Europe, support the capacity of MST to reduce youth antisocial behavior and out-of-home placements. Such outcomes, combined with the advocacy of many juvenile justice stakeholders, have led to the transport of MST programs to more than 500 sites, including 10 nations in Europe. Keywords: behavior problems, intervention, multisystemic-therapy, outcomes, randomized clinical-trial, serious juvenile offenders.

The primary purposes of this article are to provide overviews of the clinical foundations of multisystemic therapy (MST) and research regarding MST effectiveness and transport to community settings. MST was developed more than 30 years ago as a community-based treatment of adolescents with serious antisocial behavior and their families. The subsequent validation of MST has been supported by an extensive body of research (e.g., 22 published outcome studies including 20 randomized trials), and MST programs have been transported to more than 500 sites worldwide. These sites, many of which are in Europe (i.e., Belgium, Denmark, England, Iceland, Northern Ireland, Netherlands, Norway, Scotland, Sweden, and Switzerland), provide intensive treatment services to more than 20,000 youths with serious antisocial behavior and their families annually. The specific locations of MST sites can be viewed at <mstservices.com>. The following overview draws substantively from Henggeler (2011), a recent review of MST research, and Henggeler, Schoenwald, Borduin, Rowland, and Cunningham (2009), which is the most recent and comprehensive description of MST clinical procedures.
The MST Clinical Model

Extensive descriptions of MST treatment procedures are provided in clinical texts (e.g., Henggeler, Schoenwald et al., 2009; Henggeler, Schoenwald, Rowland, & Cunningham, 2002). This overview focuses on central aspects of the model that are viewed as essential to achieving desired clinical outcomes for youth and their families.

Views Family is Key to Effective Behavior Change

As described recently by Tuerk, McCart, and Henggeler (2012), families mandated to MST typically come from clinical populations historically labeled as “resistant” to interventions (e.g., juvenile offenders, substance abusing youth, juvenile sexual offenders). Indeed, many of the families referred to MST have experienced multiple failures in attempting to address the serious clinical problems presented by various family members. Against this backdrop, MST therapists strive to create strong collaborative relationships with their clients. It is assumed that treatment will not progress until the therapist and key family members (i.e., the youth’s caregivers or other adults who have decision-making authority) are engaged and ready to work on important therapeutic tasks, such as defining problems, setting goals, and implementing interventions to meet those goals. To facilitate this process, therapists utilize several core clinical strategies to enhance collaboration with families. These strategies are culled from various theoretical orientations and help create a climate of engagement while behavioral and systemic interventions are being implemented. The most common engagement strategies include identifying strengths across multiple systems, reflective listening, empathy, engendering hope, reframing, providing authenticity and flexibility, and positive communication.

An underlying assumption of MST, and hence the emphasis on family engagement, is that family-directed change across the youth’s social ecology is most likely to lead to sustainable outcomes such as those observed by Sawyer and Borduin (2011) for 22 years post MST treatment. Therefore, consistent with the theory of social ecology (Bronfenbrenner, 1979) and longitudinal research on the determinants of antisocial behavior in youth (Liberman, 2008), MST aims to decrease youth antisocial behavior by addressing those variables (i.e., risk factors) that are most strongly linked with problem behaviors (see MST theory of change depicted in Figure 1). Critically, however, the family is seen as the most important link in the treatment process. The MST therapist works to enhance the caregivers’ parenting skills (i.e., monitoring, supervision, affective relations) and then leverages these improvements in family functioning to facilitate key changes in the youth’s social network with the ultimate goal of surrounding the youth with a context that better supports prosocial behavior. Caregivers are often coached in how to disengage youth from antisocial peers and develop their relationships with more prosocial peers. Similarly, caregivers are often helped to develop collaborative relations with teachers and other community professionals (e.g., probation officers).

Importantly, the MST theory of change has been supported in mediational studies conducted in the U.S. and Europe. Mediational studies with serious juvenile offenders and substance abusing juvenile offenders (Huey, Henggeler, Brondino, & Pickrel, 2000) and with juvenile sexual offenders (Henggeler, Letourneau et al., 2009) have shown that MST (or therapist adherence to MST treatment principles) altered key family and peer risk factors for criminal behavior, and these changes in risk factors resulted in decreased adolescent antisocial behavior. Similarly, in the Netherlands, Dekovic, Asscher, Manders, Prins, and van der Laan (2012) observed a sequential pattern in which changes in parental sense of competence predicted changes in positive discipline, which, in turn, predicted decreases in adolescent externalizing problems. Qualitative research conducted in England has also supported the MST theory of change (Tighe, Pistrang, Casdagli, Baruch, & Butler, 2012) by delineating the impact of enhanced parenting skills and improved family relationships on youth outcomes. In addition, Tighe and colleagues observed two process of change in MST that had not been identified previously: the development of positi-
ve goals and future aspirations by the youth, and concerns about the negative consequences of their behavior on the family. Together, these findings both support the centrality of family functioning in the MST theory of change and reflect the complexity of effective treatment of serious antisocial behavior in adolescents.

**Uses Home-Based Model of Treatment Delivery**

MST uses a home-based model of treatment delivery to further facilitate family engagement and remove barriers to service access. Key components of this approach include (a) provision of treatment at home, school, and other community locations; (b) appointments scheduled at the family's convenience, including evening and weekend hours; (c) 24-hour per day, 7-day per week availability of therapists to address crises that might threaten treatment success; (d) caseloads of four to six families per therapist to enable the provision of intensive services titrated to family need; and (e) the inclusion of two to four full-time therapists in each MST team to provide increased continuity of treatment (e.g., therapists can rotate an on-call schedule during evening, weekend, and holiday hours).

The home-based model of service delivery has been extremely effective at reducing the high rates of treatment dropout historically observed in the treatment of children and their families (Kazdin, 1996). For example, MST treatment completion rates have been greater than 95% in clinical trials with substance abusing juvenile offenders (Henggeler, Pickrel, Brondino, & Crouch, 1996) and youth presenting psychiatric emergencies (Henggeler, Rowland et al., 1999). Moreover, in 2010 the treatment completion rate was 84% among MST programs worldwide <www.mstinstitute.org>. Such evidence from clinical trials and the field attest to the power of the home-based model, especially when combined with the aforementioned MST clinical engagement strategies (Tuerk et al., 2012).

**Integrates Evidence-Based Intervention Techniques**

Many of the specific interventions delivered by MST therapists take advantage of the advances achieved by treatment developers and investigators in the broader fields of child, family, and adult psychotherapy (Weisz & Kazdin, 2010). In addition to the serious antisocial behavior presented by youth in MST programs, family members often present co-occurring problems that function as barriers to treatment success (e.g., caregiver mental health and substance abuse disorders), and therapists are trained to address any and all such barriers. Thus, therapists not only draw on structural (Minuchin, 1974), strategic (Haley, 1987), and social learning (Munger, 1999; Robin & Foster, 1989) formulations to improve instrumental (i.e., supervision, discipline) and affective (i.e., warmth, conflict) aspects of family relations, but also integrate evidence-based interventions that are focused on broader social systems as well as individuals.

The primary MST clinical text (Henggeler, Schoenwald et al., 2009), for example, includes chapters on peer interventions, strategies for promoting educational and vocational success, and individually-oriented interventions. Peer interventions include strategies for decreasing association with deviant peers and increasing affiliation with prosocial peers as well as social skill training procedures for socially rejected or neglected youth. The chapter on promoting educational and vocational success provides suggestions for engaging teachers and other school personnel, designing interventions that fit the school context, and cultivating effective family-school collaboration. The chapter on individually-oriented interventions describes several types of cognitive-behavioral techniques that have proven effective in treating adult depression and anxiety (Leahy, 2003) as well as childhood anxieties and the symptoms of posttraumatic stress disorder (Cohen, Mannarino, & Deblinger, 2006; March & Mulle, 2008), and several evidence-based pharmacotherapies are described as well (Daley, Xanthopoulos, Stephan, Cooper, & Brown, 2007). All interventions, however, are fully integrated into the broader MST treatment model and quality improvement system (discussed subsequently). Thus, for example, caregivers are actively engaged in the delivery of a cognitive-behavioral intervention for their adolescent’s depression, outcomes are monitored continuously, the broader systemic context of the intervention is articulated, barriers to intervention delivery are removed, and the quality of therapist’s work is assessed weekly.

**Clinical Decision Making Based on Treatment Principles and Structured Analytic Process**

As outlined recently by Schaeffer, McCart, Henggeler, and Cunningham (2010) and detailed in the primary MST treatment manual (Henggeler, Schoenwald et al., 2009), MST is highly individualized and does not follow a rigid manualized plan for treatment. Instead, nine treatment principles provide the underlying structure and framework upon which therapists build their interventions (see Table 1). The second treatment principle, for example, emphasizes that all aspects of MST must be strength-based. Therapists communicate an optimistic perspective to the family and other members of the youth’s ecology throughout the assessment and treatment process. Therapists look for potential strengths within the contexts of the child (e.g., hobbies and interests, academic skills), family (e.g., problem-solving ability, affective...
bonds), peers (e.g., prosocial activities, achievement orientation), school (e.g., management practices, prosocial after-school activities), and the neighborhood/community (e.g., concerned and involved neighbors, voluntary associations such as Boys and Girls clubs). Identified strengths then are leveraged in interventions. For example, a neighbor or extended family member might be enlisted to assist with monitoring the youth after school until a caregiver gets home from work. Importantly, the nine treatment principles are applied using an analytical/decision-making process that structures the treatment plan, its implementation, and the evaluation of its effectiveness. Specific goals for treatment are set at individual, family, peer, and social network levels. Moreover, as noted previously, the adolescent’s caregivers are viewed as key to achieving desired outcomes and as crucial for the generalizability and sustainability of treatment gains.

Figure 2 depicts the MST analytic process that serves as a broad road map for treatment planning and intervention. Early in the treatment process, the problem behaviors to be targeted are specified clearly from the perspectives of key stakeholders (e.g., family members, teachers, juvenile justice authorities), and ecological strengths are identified. Then, based on multiple perspectives, the ecological factors that seem to be driving each problem are organized into a coherent conceptual framework (e.g., the youth’s marijuana use seems to be associated with a lack of caregiver monitoring, association with substance using peers, and poor school performance). Next, the MST therapist, with support from other team members (other therapists, supervisor, consultant), designs specific intervention strategies to target those “drivers.” Strategies incorporate interventions from empirically-supported treatments noted previously. Importantly, these interventions are highly integrated and are delivered in conjunction with interventions that address other pertinent ecological drivers of the identified problems (e.g., supporting caregivers in advocating for more appropriate school services, connecting caregivers with the parents of the youth’s peers to support monitoring and supervision).

Intervention effectiveness is monitored continuously from multiple perspectives. When interventions are ineffective, identified drivers are reconceptualized, and modifications are made until an effective strategy is developed. This iterative process reinforces two important features of the MST model. First, MST teams strive to never give up on youth and families, doing “whatever it takes” to help families reach treatment goals. Second, when interventions are not successful, the failure is the team’s rather than the family’s. In other words, when the team develops accurate hypotheses of the drivers, identifies barriers to implementation success, and delivers corresponding interventions appropriately, families tend to achieve their goals, and conduct problems among youth usually diminish.

**Uses a Comprehensive Quality Assurance and Improvement System**

The MST quality assurance and improvement system includes three broad interrelated components (i.e., training, organizational support, and implementation measurement and reporting) that are integrated into a feedback loop to support youth outcomes, therapist and supervisor fidelity to MST protocols, and the fidelity and sustainability of the MST program (Henggeler, Schoenwald et al., 2009). Training components include specification of treatment, supervisor, expert consultant, and program manuals; an initial 5-day orientation; quarterly booster training; weekly case supervision; weekly case consultation; and supervisor and consultant training. Organizational support for MST programs includes a program operations manual, extensive support for program development (e.g., needs assessment, site readiness review, staff recruitment and orientation training), ongoing imple-
mentation reviews (e.g., problem solving organizational and stakeholder barriers to implementation), and support for program and agency leadership. Implementation measurement and reporting is ongoing and includes validated measures of therapist, supervisor, and consultant adherence to respective protocols; and a web-based system to track critical aspects of performance, including youth outcomes. A pictorial representation of this quality assurance system is provided in Figure 3.

The validation of key components of the quality improvement system has been led by Schoenwald (e.g., Schoenwald, 2008, 2012), and the most critical aspect of this system is the link between therapist fidelity to MST treatment principles and youth outcomes. Therapist adherence to MST was first measured in a two-site effectiveness study with serious juvenile offenders in which a key aspect of the quality improvement system had been removed (Henggeler, Melton, Brondino, Scherer, & Hanley, 1997). In that

Figure 3. MST Quality Assurance/Improvement System
study, high therapist adherence predicted lower rates of arrests, incarceration, and youth symptoms. Examination of the associations between therapist adherence and youth outcomes in a subsequent trial with substance abusing juvenile offenders (Henggeler, Pickrel, & Brondino, 1999) produced less consistent results (Schoenwald, Henggeler, Brondino, & Rowland, 2000), but latent variable path analyses (Huey et al., 2000) replicated the associations reported for Henggeler et al. (1997). Therapist adherence improved family functioning, which decreased delinquent peer affiliation, which led, in turn, to decreased delinquent behavior. Therapist adherence was also associated with decreased rates of rearrest as well as increased social competence and resilience in a Swedish trial (Sundell et al., 2008). Findings from Schoenwald’s transportability study that included almost 2,000 families also demonstrated significant associations between treatment fidelity and youth outcomes. Therapist adherence was associated with decreased externalizing and internalizing symptoms at post treatment (Schoenwald, Sheidow, Letourneau, & Liao, 2003) and decreased externalizing symptoms at 1-year follow-up (Schoenwald, Sheidow, & Chapman, 2009). Moreover, therapist adherence predicted decreased criminal charges at a 4-year follow-up (Schoenwald, Chapman, Sheidow, & Carter, 2009). Together, this body of work along with findings showing the roles that MST supervision (Schoenwald, Sheidow, & Chapman, 2009) and consultation (Schoenwald, Sheidow, & Letourneau, 2004) play in promoting therapist adherence, support the importance of focusing on treatment fidelity in promoting the effective transport of MST to community settings.

Thus, with the large-scale transport of MST programs nationally and internationally, the MST quality assurance and improvement system aims to assure that youth and families in MST programs in North America, Europe, and Australia receive the same high level of MST services. To meet the growing demand for MST, organizations with a strong record of starting and implementing MST programs collaborated with MST Services, which is licensed by the Medical University of South Carolina for the transport of MST technology and intellectual property, to become Network Partners. Network Partners are locally controlled organizations committed to making sure that the MST treatment model is followed with integrity. These organizations employ staffs that are fully trained in program development, and MST Services maintains working relationships with each partner that focuses on staff development, quality improvement, and quality assurance. Network Partners in Europe currently include: Norwegian Centre for the Studies of Conduct Problems and Innovative Practice; De Viersprong, Forensic Youth Psychiatry (Netherlands); MST Denmark; and MST-Sverige (Sweden).

**MST Outcome Research**

MST outcome research has transitioned from small efficacy studies in which an MST treatment developer provided all of the clinical training, supervision, and quality assurance for graduate student therapists to multisite transportability trials conducted internationally using community-based practitioners and with no involvement of an MST developer. This transition has produced a range of successes and failures, with both informing subsequent efforts to transport MST to community settings – primarily by contributing to the continuous refinement of the MST quality assurance and improvement system (Henggeler, 2011).

**Efficacy Studies**

Efficacy studies typically aim to optimize the probability of observing treatment effects by, for example, including highly motivated therapists with intensive training, supervision, and fidelity monitoring from the treatment developer and removing organizational barriers to treatment implementation (e.g., excessive productivity or administrative demands, concerns with interagency relations, policies on salary and compensation). The first two controlled evaluations of MST were conducted with doctoral students in clinical psychology as the therapists and Henggeler providing all the training and clinical supervision. The first MST outcome study used a quasi-experimental study with juvenile offenders (Henggeler et al., 1986) and demonstrated favorable decreases in behavioral problems and association with deviant peers for juvenile offenders and improved relations (e.g., increased warmth, decreased aggressive communications) for their families. The second evaluated the effectiveness of MST with maltreating families (Brunk, Henggeler, & Whelan, 1987) in a randomized design. MST was more effective than behavioral parent training at improving aspects of parent-child interactions that are associated with child maltreatment. These results were promising and set the stage for efficacy trials with serious juvenile offenders that included follow-ups for recidivism.

The three MST studies with the largest effect sizes have been conducted by Borduin and colleagues. Doctoral students in clinical psychology served as therapists, and Borduin provided all training and clinical supervision. In the largest of these studies (N = 176 violent and chronic juvenile offenders; Borduin et al., 1995), MST demonstrated extensive improvements in family relations and, most significantly, a 63% decrease in recidivism at a 4-year follow-up. Moreover, in one of the longest follow-ups in the child psychotherapy literature, Sawyer and Borduin (2011) showed that MST produced a 36% reduction in felony rearrests and a 33% reduction in days in adult confinement 22...
years post treatment. Similarly strong results were observed in two randomized trials with juvenile sex offenders conducted by Borduin and colleagues. As shown in Table 2, the initial study (Borduin, Henggeler, Blaske, & Stein, 1990) demonstrated large MST reductions in sexual offending and other criminal offending at a 3-year follow-up. A larger subsequent study (Borduin, Schaeffer, & Heiblum, 2009) also demonstrated very substantive reductions in sexual offending and other criminal offending for MST through a 9-year follow-up. Additional MST outcomes included an 80% reduction in days sentenced to incarceration as well as improved family relations, peer relations, and academic performance.

In sum, these rigorous efficacy trials (e.g., randomized design, use of intent-to-treat analyses, long-term follow-up) clearly demonstrated the capacity of MST to achieve favorable outcomes with youth presenting very serious clinical problems and their families. The attainment of favorable clinical outcomes in university studies under near ideal conditions, however, is not the same as achieving such outcomes in community settings.

**Effectiveness Studies**

The first MST effectiveness study was a randomized trial conducted through a community mental health center with violent and chronic juvenile offenders at imminent risk of incarceration (Henggeler, Melton, & Smith, 1992). Therapists and the supervisor were employed by the mental health center, and Henggeler provided the initial training and ongoing consultation to support practitioner fidelity to the MST model. At a 59-week follow-up, youth in the MST condition evidenced a 43% reduction in recidivism and a 64% reduction in out-of-home placement. Moreover, MST recidivism effects remained significant at a 2.4-year follow-up (Henggeler, Melton, Smith, Schoenwald, & Hanley, 1993). Similarly, Borduin recently provided ongoing consultation to a community-based randomized trial of MST for juvenile sex offenders (Letourneau et al., 2009). At 12-month follow-up, MST produced a 59% reduction in out-of-home placement and a 30% decrease in self-reported delinquency. Although treatment effects in these studies were not quite as powerful as those observed in the efficacy studies, this work demonstrated the successful transport of MST programs to community-based providers.

In the two preceding effectiveness studies, an MST treatment developer did not give direct supervision, but did provide ongoing expert consultation (i.e., weekly phone consultation focusing on treatment fidelity and achieving targeted outcomes – the role that the MST consultant plays in the current MST quality assurance and improvement system). Henggeler et al. (1997) examined the necessity of such consultation in the transport of MST. Therapists and supervisors in two community mental health centers received MST training, but not ongoing expert consultation. Participants again were serious juvenile offenders at imminent risk of incarceration and their families. Results at a 1.7-year follow-up from this randomized trial revealed that MST was effective in reducing incarceration (53% reduction, see Table 2), but not recidivism (26% reduction, not statistically significant). In anticipation of possible implementation problems, however, the investigators assessed therapist fidelity to MST using a newly developed adherence measure (Henggeler & Borduin, 1992). As noted previously, analyses showed a significant association between therapist fidelity and youth recidivism – higher

### Table 2. MST Effects on Recidivism and Out-of-Home Placement

<table>
<thead>
<tr>
<th>Study</th>
<th>Reduction in Recidivism</th>
<th>Reduction in Placements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Borduin et al. (1990)</td>
<td>72%</td>
<td>not assessed</td>
</tr>
<tr>
<td>Henggeler et al. (1992)</td>
<td>43%</td>
<td>64%</td>
</tr>
<tr>
<td>Borduin et al. (1995)</td>
<td>63%</td>
<td>57%</td>
</tr>
<tr>
<td>Henggeler et al. (1997)</td>
<td>26%</td>
<td>3%</td>
</tr>
<tr>
<td>Henggeler, Pickrel et al. (1999)</td>
<td>19%</td>
<td>50%</td>
</tr>
<tr>
<td>Henggeler, Rowland et al. (1999)</td>
<td>not assessed</td>
<td>49%</td>
</tr>
<tr>
<td>Ogden &amp; Halliday-Boykins (2004)</td>
<td>not assessed</td>
<td>78%</td>
</tr>
<tr>
<td>Rowland et al. (2005)</td>
<td>34%</td>
<td>68%</td>
</tr>
<tr>
<td>Timmons-Mitchell et al. (2006)</td>
<td>37%</td>
<td>not assessed</td>
</tr>
<tr>
<td>Stambough et al. (2007)</td>
<td>not assessed</td>
<td>54%</td>
</tr>
<tr>
<td>Ellis, Naar-King et al. (2008)</td>
<td>not appropriate</td>
<td>47%</td>
</tr>
<tr>
<td>Sundell et al. (2008)</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>LeTourneau et al. (2009)</td>
<td>not assessed</td>
<td>59%</td>
</tr>
<tr>
<td>Borduin et al. (2009)</td>
<td>50%</td>
<td>80%</td>
</tr>
<tr>
<td>Glisson et al. (2010)</td>
<td>not assessed</td>
<td>53%</td>
</tr>
<tr>
<td>Butler et al. (2011)</td>
<td>41%</td>
<td>41%</td>
</tr>
</tbody>
</table>

JJ = juvenile justice.
Hybrid Efficacy-Effectiveness Studies with New Clinical Populations

Following the successful focus of MST developers on chronic and violent juvenile offenders in the early-mid 1990s, two research groups began to direct their attention to the adaptation and validation of MST for treating other serious clinical problems presented by adolescents and their families (i.e., serious emotional disturbance, substance abuse, physical abuse, and chronic health care problems). On the efficacy side of the efficacy-effectiveness continuum, these studies were conducted under the auspices of the investigators’ respective academic departments. Therapists were typically hired off research grants, and the supervisors were usually faculty members trained in MST. Consistent with the central purpose of efficacy research, the primary aim of these studies was to determine whether the MST adaptation could be effective with the new population. On the effectiveness side of the continuum, participants reflected real world clinical populations, and, importantly, neither Henggeler nor Borduin provided ongoing clinical oversight. Thus, clinical outcomes were dependent on the guidance of a second generation of MST expert consultants.

Youth with serious emotional disturbance. Two studies evaluated an adaptation of MST for treating serious emotional disturbance in adolescents (Henggeler, Schoenwald et al., 2002). Using a randomized design, Henggeler, Rowland et al. (1999) evaluated this MST adaptation (i.e., lower caseloads, psychiatric support, integration of evidence-based pharmacotherapy, addition of crisis caseworker) as an alternative to the inpatient hospitalization of youth in psychiatric crisis (i.e., suicidal, homicidal, psychotic). In comparison with the hospitalization condition, MST was more effective at decreasing youth psychiatric symptoms and preventing hospitalization (73% reduction) and other out-of-home placements (49% reduction) at post treatment and at reducing rates of attempted suicide at a 16-month follow-up (Huey et al., 2004). In contrast with significant long-term outcomes for MST with juvenile offenders, but consistent with other evidence-based treatments of childhood internalizing disorders (Weersing & Weisz, 2002), the favorable MST symptom and out-of-home placement outcomes dissipated by the 16-month follow-up (Henggeler et al., 2003). A second randomized trial compared MST with Hawaii’s intensive continuum of care in treating youth with serious emotional disturbance (Rowland et al., 2005) and replicated the short-term findings of Henggeler, Rowland et al. (1999). At 6 months post referral, youth in the MST condition had a greater decrease in psychiatric distress and a 68% reduction in days in out-of-home placement.

Juvenile offenders with substance use disorders. Additional support for the capacity of second generation MST experts to sustain effective MST implementation was obtained in two randomized trials with substance abusing juvenile offenders. In the first, MST was compared with usual community services in the treatment of juvenile offenders who met diagnostic criteria for a substance abuse disorder (Henggeler, Pickrel, & Brondino, 1999). Findings at an 11-month follow-up showed that MST was more effective than usual services at decreasing youth substance use and out-of-home placement (50% reduction), but not recidivism (19% reduction, nonsignificant). At a 4-year follow-up (Henggeler, Clingempeel, Brondino, & Pickrel, 2002), however, MST participants evidenced decreased violent crime and increased marijuana abstinence. More recently, in a relatively complex four condition study (Henggeler et al., 2006) with substance abusing juvenile offenders, MST enhanced the drug related outcomes of juvenile drug court, but did not seem to improve criminal or placement outcomes in comparison with juvenile drug court. The fact that all youth in the MST conditions also were enrolled in juvenile drug court clouds interpretations of the MST-related findings (e.g., drug court enrollment includes intensive surveillance, which, in turn, is linked with an increased probability of being arrested). Nevertheless, the overall results of the MST psychiatric and substance abuse trials support the capacity of second generation MST experts to achieve favorable outcomes with very challenging clinical populations, which, in turn, has favorable implications for the effective transport of the model.

Physically abused adolescents. Building on findings from the early efficacy trial with maltreating families (Brunk et al., 1987), Swenson and colleagues developed an adaptation of MST for child abuse and neglect (MST-CAN; Swenson, Penman, Henggeler, & Rowland, 2010) and evaluated its effectiveness in comparison with a group-based parent training approach in a randomized design (Swenson, Schaeffer, Henggeler, Faldowski, & Mayhew, 2010). Consistent with effectiveness research, both interventions were delivered by therapists employed at a community mental health center. MST-CAN was more effective than parent training in reducing youth mental health symptoms, caregiver emotional distress, and parenting behaviors associated with maltreatment; and at increasing caregiver social support. At 16-months post baseline, youth in the MST-CAN condition were also less likely to be placed out of the home and spent 63% fewer days in placement. Although youth in the MST-CAN condition experienced a lower rate of reabuse...
corresponding youth outcomes were substantially lower in one of the four sites. Subsequently, a benchmarking study that included the three MST adherent sites in Norway (Ogden, Hagen, & Anderson, 2007) showed that outcomes from mature MST programs were equal to or superior to those achieved in successful randomized trials. Similar results were observed in a benchmarking study conducted in New Zealand (Curtis, Ronan, Heiblum, & Crellin, 2009).

More recently, Butler, Baruch, Hickley, and Fonagy (2011) conducted an independent randomized trial of MST with juvenile offenders in England. In comparison with an intensive control condition (i.e., a tailored range of extensive and multicomponent evidence-based interventions), MST improved parenting and reduced self-reported and parent reported delinquency and psychopathic symptoms. In addition, offenses and placements were each reduced by 41% during the last 6 months of the 18-month follow-up. A large and complex MST randomized trial is currently being conducted by these investigators across multiple sites in England.

Three successful independent replications have also been conducted in the U.S. In the first (Timmons-Mitchell, Bender, Khisha, & Mitchell, 2006), juvenile felons at imminent risk of incarceration were randomized to MST versus usual services conditions. At about 12 months post recruitment, youth in the MST condition showed improved mood and school/work functioning, and decreased substance use. Moreover, at about 2 years post recruitment, youth in the MST condition evidenced a 37% decrease in rearrests. The second replication (Stambaugh et al., 2007) used a quasi-experimental design to compare the effectiveness of MST versus Wraparound (Burns & Goldman, 1999) for youth with serious emotional disturbance at risk for out-of-home placement. Results at an 18-month follow-up showed that MST was more effective at decreasing youth symptoms, improving youth functioning, and decreasing out-of-home placements (54% decrease). In the third (Glisson et al., 2010), 14 rural Appalachian counties were randomized to receive MST programs or not, and 615 juvenile offenders at risk of out-of-home placement and their families participated. Counties were also randomized to an organizational intervention in a 2 (MST vs. usual services) x 2 (organizational intervention vs. usual services) design. Outcome analyses showed that MST was associated with a 53% reduction in the odds of out-of-home placement. In addition and consistent with aforementioned findings for youth with serious emotional disturbance (Henggeler et al., 2003), when MST was delivered in the sites that also received organizational interventions, treatment effects on symptom reduction (externalizing and internalizing symptoms combined) were observed at 6 months post recruitment, but dissipated by 18 months post recruitment.

In contrast with the five successful independent replications, a four-site randomized trial conducted in

(4.5% vs. 11.9% for the comparison condition), this difference was not statistically significant.

**Adolescents with chronic health care conditions.**

A pediatric research group has adapted and tested MST for youth with serious health care problems. Along with several uncontrolled trials (e.g., Ellis, Naar-King, Cunningham, & Secord, 2006), Ellis and Naar-King have published three randomized trials of MST health care adaptations. A second generation MST expert served in the consultation role in each of these trials. In a randomized pilot study, Ellis et al. (2004) showed that MST was more effective than standard care in improving metabolic control and preventing hospital admissions among adolescents with poorly controlled type 1 diabetes. These findings were replicated in a larger randomized trial (Ellis et al., 2005) – at 7 months post recruitment the adolescents with poorly controlled type 1 diabetes showed improved metabolic control and decreased inpatient admissions relative to youth in usual care. In addition, a 12-month follow-up showed that decreases in hospitalization were sustained (43% decrease), though favorable outcomes for metabolic control dissipated. Most recently, Naar-King et al. (2009) demonstrated favorable outcomes for an MST adaptation for primary obesity. In comparison with a family group weight management program, MST was more effective at decreasing youth percent overweight, body fat, and body mass index.

Together, these sets of findings support the generalizability of MST to a range of serious clinical problems presented by adolescents and their families as well as the potential viability of using second generation MST experts to support the larger scale transport of the model. Next, independent replication studies that included 3rd generation MST experts (i.e., experts trained by second generation experts and not directly associated with MST developers) are reviewed.

**Independent Replications and Transportability Trials**

Several independent replications of MST have been conducted in Europe and the U.S. The first was a four-site randomized trial conducted by Ogden and colleagues in Norway with youth presenting serious antisocial behavior and their families. In comparison with usual child welfare services, youth in the MST condition had decreased externalizing and internalizing symptoms, a 78% reduction in out-of-home placements, and increased social competence at 6 months post recruitment (Ogden & Halliday-Boykins, 2004). A 24-month follow-up (Ogden & Hagen, 2006) showed that MST effects on youth internalizing symptoms and out-of-home placements (56% decrease) were sustained. Importantly, this study also demonstrated site effects, where MST implementation fidelity and corresponding youth outcomes were substantially lower in one of the four sites. Subsequently, a benchmarking study that included the three MST adherent sites in Norway (Ogden, Hagen, & Anderson, 2007) showed that outcomes from mature MST programs were equal to or superior to those achieved in successful randomized trials. Similar results were observed in a benchmarking study conducted in New Zealand (Curtis, Ronan, Heiblum, & Crellin, 2009).

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In contrast with the five successful independent replications, a four-site randomized trial conducted in...
Sweden with youth meeting diagnostic criteria for conduct disorder failed to replicate favorable MST outcomes (Sundell et al., 2008). At 7-months post recruitment, analyses comparing MST with usual child welfare services revealed no MST effects across a broad array of outcome measures. Several potential explanations were offered for this failure to replicate, the most viable of which pertain to the low treatment fidelity observed for the MST therapists, the strength of interventions received by the comparison group relative to juvenile justice services in the U.S. (i.e., youth in the MST condition showed decreases in symptoms similar to those observed in other MST clinical trials, but youth receiving Swedish services showed much larger decreases in symptoms than observed in U.S. control groups), and a poor match between the immigrant families (47% of sample) and Swedish therapists. Similarly, MST effects were not observed at a 2-year follow-up (Lofholm, Olsson, Sundell, & Hansson, 2009) and, as expected given the lack of treatment effects, MST was not cost-effective (Olsson, 2009). Recently, based adherence and outcome measures for 973 families that received MST in Sweden during and since the study (i.e., 2003-2009), Sundell (2012) observed that MST adherence scores and outcomes across multiple sites have improved dramatically. These findings support the view that the failure of the randomized was due, at least in part, to poor treatment adherence during the introduction of MST to Sweden.

Conclusion

Research in Europe and the U.S. has demonstrated the capacity of MST to be effective in treating youths presenting serious antisocial behavior and their families. Across cultures, the family is critical to achieving favorable clinical outcomes for children, and MST interventions have produced high levels of family engagement in treatment and changes in the types of family functioning (e.g., positive parenting, supervision, monitoring) that are key mediators of therapeutic change. Research has also demonstrated the critical importance of therapist adherence to MST treatment principles in achieving favorable youth outcomes. When fidelity is high, treatment success is enhanced; and when fidelity is low, success is endangered. This relationship between treatment fidelity and youth outcomes is the basis for the intensive MST quality assurance system, which is being implemented effectively by several Network Partners in Europe.

Author’s note

Dr. Henggeler is a board member and stockholder of MST Services, LLC, the Medical University of South Carolina-licensed organization that provides training in MST.

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Multidimensional Treatment Foster Care: An Alternative to Residential Treatment for High Risk Children and Adolescents*

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2 University of Oregon, USA

Abstract. This paper describes the Multidimensional Treatment Foster Care program (MTFC), an evidence based approach for providing psychotherapeutic treatment for very troubled children and adolescents that is an alternative to residential care. Versions of the MTFC program have been developed and validated for young children with a history of maltreatment as well as for older children and adolescents who are involved with the youth justice system. In the paper we describe the development of the MTFC program and its foundations in the social learning model that originated at the Oregon Social Learning Center in the 1960’s and 70’s. We present information about program elements. We then review the research that has been conducted on MTFC.

Keywords: foster care, multidimensional treatment foster care, problem behavior, serious juvenile-offenders.

When children exhibit problem behaviors such as aggression, defiance, difficulties in social relationships with peers, conflict with parents, or acting out at school, they are often referred for treatment to psychotherapists. There has long been recognition that, since children exist in an environment of family relationships, it may be effective not only to treat children themselves for these sorts of problems, but also to work with their families (Forehand, King, Peed, & Yoder, 1975; Snyder, 1977; Patterson, 1982; Patterson, 2002). As such, many programs, including a number of those highlighted in this special issue, have been developed to treat children from a family-based perspective. Many of these programs have their roots in the social learning model that was promulgated by Gerald Patterson and colleagues at the Oregon Social Learning Center beginning in the 1960s (Patterson & Fagot, 1967; Patterson, 1982; Patterson, Dearyshe, & Ramsey, 1989). This approach, which developed out of extensive longitudinal research on families, focuses on key elements of parenting found to be highly predictive of child and adolescent problem behavior (Loebel & Dishion, 1983; Patterson, Dishion, & Bank, 1984). In particular, the use of harsh and inconsistent discipline, lack of positive reinforcement for prosocial behaviors, and failure to adequately monitor and supervise a child, both in the home and in the larger community, are key targets of these intervention approaches (Patterson & Forgatch, 1987; Forgatch & Patterson, 1989). Numerous studies to evaluate these interventions have found positive impact on a variety of outcomes including an overall reduction in aversive behaviors and improvement in key parenting practices, (e.g., Patterson, 1974; Wiltz & Patterson, 1974; Webster-Stratton, 1985; Patterson, Chamberlain, & Reid,

*Versión en castellano disponible en [spanish version available at]: www.psyhosocial-intervention.org
Many interventions follow a process of “efficacy trials to effectiveness trials” in the establishment of an evidence base (Hoagwood, Hibbs, Brent, & Jensen, 1995). Put simply efficacy trials are those conducted within specialized settings such as universities or private mental health clinics, with the maximum amount of support and resources as well as highly trained staff. These trials represent a “best case scenario” in the sense that they are designed to determine whether intervention delivered under optimal conditions can impact outcomes. Following the successful completion of an efficacy trial researchers then implement and evaluate the intervention within community settings. These effectiveness studies, which tend to occur under “real world” conditions, test whether promising interventions remain effective once transferred into the context in which they are most likely to be delivered (Wells, 1999). Alternatively, some researchers have argued that it may be useful to circumvent the initial efficacy trial to begin with effectiveness evaluations because there is little utility in showing that interventions only work under the best case scenario conditions, and there is considerable cost and time involved in undertaking either efficacy or effectiveness trials (Hoagwood, Jensen, Petti, & Burns, 1996; Kazdin, 1997; Nelson & Steele, 2006).

In the area of treatment and prevention of child problem behavior involving family-based interventions, many evidence-based interventions exist (for review, see Eyberg et al., 2008). However, in cases of severe problem behaviors in children and adolescents, it becomes increasingly challenging to consider intervening with the child in the context of their family. Children with extremely aggressive or self-injurious behaviors, those whose behavior includes criminality in such ways that make it difficult for the child to be safe in community settings, and children whose family circumstances preclude the ability of caregiving adults to provide the necessary parenting support (e.g., abusive parents, parents in the criminal justice system, and parents with drug and alcohol problems) have historically been referred to residential treatment and other out-of-home placements (Chamberlain & Reid, 1998).

The use of residential and other forms of congregate care is logical for especially high-risk children, for several reasons (Fisher & Chamberlain, 2000). First, to the extent that the children pose a safety concern, placement in settings that limit their access to community individuals may seem warranted. Second, since families in which these children are living may have limited ability to provide the level of care needed, residential treatment may seem like the only option. However, extensive research has shown that housing extremely high-risk children with their peers is a questionable intervention strategy (Elliot, Huizinga, & Ageton, 1985; Dishion, McCord, & Poulin, 1999). Research on so-called “iatrogenic effects” shows that a process known as peer contagion may operate in congregate care settings, in which children with antisocial behavior problems essentially reinforce each other’s negative behavior (Dishion, Spracklen, Andrews, & Patterson, 1996; Dishion, Eddy, Haas, Li, & Spracklen, 1997). In such contexts it may be very difficult for staff who work with these children to provide sufficiently reinforcing interactions for effective intervention (Buehler, Patterson, & Furniss, 1966). Notably, research by Chamberlain & Reid (1998) found that children in group care situations reported much lower levels of supervision and consistent consequences for behavior than did the adult staff charged with caring for these children. Inasmuch as consequences and supervision are critical components of effective intervention for highly troubled children, low levels of these therapeutic processes in group care is highly problematic.

Not only is group care questionable in its effectiveness, it is also quite costly. In order to run a group care facility it is necessary to have staff working with the children around-the-clock. Usually multiple staff who work directly with the children are required as well as a constellation of other professionals that may include psychologists, psychiatrists, program managers, and others. From an economic perspective the limited benefits of this approach combined with the high costs make it a questionable undertaking (Aos, Miller, & Drake, 2006). Nevertheless, in the United States, Europe, and elsewhere residential treatment for highly troubled youths is still an extremely prevalent approach to treatment. Clearly alternative strategies that can deliver more positive outcomes for lower costs are warranted.
Multidimensional Treatment Foster Care (MTFC; Chamberlain, 2003) is an approach for working with children and families who are in need of a high level of support due to high levels of abuse and neglect, severe mental health and behavioral problems, and problems with juvenile delinquency. MTFC is considered to be an evidence-based program based on randomized clinical trial studies that have been employed to evaluate the program (Eyberg et al., 2008). Developmentally specific versions of the MTFC program exist for preschoolers (ages 3-5; MTFC-P; Fisher, Burraston, & Pears, 2005), school aged children (6-12; Chamberlain & Smith, 2003), and adolescents (12-18; MTFC-A; Chamberlain & Smith, 2003). The program is intended to be used for children in foster care and youth justice programs as an alternative to more restrictive placements, and as an approach that allows children and youth to receive services in the naturalistic context of a family setting while remaining in the communities in which they live. Although MTFC was originally developed in Oregon, USA, the program has been successfully implemented at over 50 sites in the United States as well as at over 15 sites in England, and 20 sites in Norway, Denmark, Sweden, the Netherlands, and elsewhere in Europe.

**MTFC program philosophy and goals.** The philosophy behind the MTFC program is that long-term outcomes for troubled youth may be most successfully promoted when treatment occurs in the context of family and community. Rather than remove the child from these naturalistic settings and place him or her in residential care, MTFC services are delivered in the context of specially trained and highly supervised foster parents and through school consultation. As such, the child learns what is expected from him or her in a typical family situation, and while the child is in foster care those who will be providing the long-term care for him or her (i.e., the biological family, relatives, or others with whom the child will live after completing treatment) are instructed in the same sorts of parenting strategies that the child is being exposed to in the foster home. By maintaining consistency in the discipline strategies as well as in the support for positive behavior across these contexts, the program’s goals are to make it possible for the child to function in family and school settings over the long term. Specific targets of MTFC treatment are shown in Table 1.

**MTFC Program Components.** MTFC is a multicomponent program that includes services to children, foster parents, and to long-term placement resources including birth families and or adoptive families. A key underlying principle of MTFC is that services should be delivered in a proactive manner. That is, rather than waiting until children’s problems reach a point where their placement may be compromised, program staff work collaboratively with foster parents to prevent problems from escalating. In this section, we describe the various program components.

Recruitment of foster parents. MTFC foster parents are recruited in a variety of ways. This includes via advertisements in local newspapers, through postings in public places such as community centers and schools, and via word-of-mouth. One of the most effective strategies employed for recruiting MTFC foster parents has been through individuals who are currently serving in this role for the program. Current MTFC foster parents know what the program requires, are familiar with the types of support provided to foster parents, and often are strong advocates for the program in ways that individuals unfamiliar with the program are not able to be.

Recruitment of foster parents begins with a screening telephone call by the foster parent recruiter. This is then followed by a home visit. During a visit the details of the MTFC program are presented to prospective foster parents. A home visit also allows the foster parent recruiter to determine if the home environment would be appropriate for caring for a high needs child of the type that are referred to MTFC.

MTFC foster parents are a diverse group. Over the several decades in which this program has been operating, foster parents have included married couples, single parents, individuals with and without prior parenting experience, individuals of varying economic status, sexual orientation, and cultural background. The main quality that distinguishes MTFC foster parents is their interest in being part of a “treatment team” and having a considerable amount of contact with program staff. Individuals who are not interested in such a high level of contact, who are unwilling to participate in the program activities as described below, or whose schedules preclude them from participating do not make good MTFC foster parents. Otherwise, there are no specific criteria for individuals to be selected as foster parents.

### Table 1. Targets of MTFC treatment.

- Reinforce normative and prosocial behaviors.
- Provide the youth with close supervision.
- Closely monitor peer associations.
- Specify clear and consistent limits and follow through on rule violations with nonviolent consequences.
- Encourage youths to develop positive work habits and academic skills.
- Support family members to increase the effectiveness of their parenting skills.
- Decrease conflict between family members.
- Teach use of new skills for forming relationships with positive peers and for bonding with adult mentors and role models.
Foster parent training. The training of MTFC foster parents consists of 20 hours of instruction over the span of one weekend and a following weekday evening. During the training, foster parents are introduced to the specific behavioral management models that are employed with the children in the age group that they are planning to have in their home. Details of the program staffing structure and services available to parents and children are also provided. Considerable emphasis during the training is placed on providing children with positive support for prosocial behavior. This includes the use of concrete reinforcement strategies. Some prospective foster parents are extremely resistant to the idea of rewarding children for positive behavior. In some instances it is possible to work through some of this concern by helping foster parents understand that such measures are necessary in order to reverse the negative patterns of interaction to which the child has grown accustomed. However, for individuals simply unwilling to provide a high level of positive reinforcement, ongoing participation as foster parents is discouraged. Essentially the goal of training is to identify individuals who share the philosophy of the program, even if it is not one that they have a great deal of experience employing.

Ongoing services to foster parents. After child is placed in the MTFC foster home, direct services begin in earnest. Based on information available in the child’s case file an initial individualized daily treatment program is developed by program staff in consultation with the foster parents. From the first day of placement, foster parents have daily contact with the program. This comes in the form of a telephone call to collect information about problem behaviors that have occurred in the past 24 hours. The telephone call uses a standardized checklist called Parent Daily Report (PDR; Chamberlain & Reid, 1987). Parents are asked if each behavior on the PDR checklist occurred or did not occur, and which of the behaviors that occurred were stressful for them to deal with. The information collected via this telephone call, which takes approximately 5 to 10 min., is critical for ongoing case planning. It allows program staff to identify specific problems that are most commonly occurring and also which of those behaviors are most stressful. This provides clear targets for the child’s behavior management program. In addition, because problem behaviors can be summed for each day (i.e., a daily “total problem behavior” score), the PDR provides a method for assessing treatment progress over time. Finally, to the extent that foster parents reported a great deal of stress or distress on a particular day, program staff can follow up with more intensive contact in order to support the family.

In addition to daily telephone contact for PDR, all foster parents participate in a weekly support group meeting. At this meeting, program staff members review the progress of each child using weekly PDR data. Foster parents have a chance to present particular situations that were either particularly challenging or positive for them. Other foster parents provide peer support and assistance in problem solving around problem behaviors. The foster parent support group meeting lasts for approximately 2 hours, and during this time child care is provided. Often snacks or a light meal are also provided as a way of indicating additional support from the program to the foster parents.

Program staff also provide behavioral support to the child’s school. This may include direct consultation with teachers as well as attendance at school planning meetings. Program staff help to put a positive behavior support plan in place, which may include the child carrying a “school card” to each class in order to have the teacher provide information about the child’s behavior and completion of assignments to the foster parents and program. Monitoring and supporting performance at school is an important part of the child’s overall behavior management program (see below).

Program staff also provide support for emergency or crisis situations at all times. Although in some locations in which MTFC has been implemented, accommodations have needed to be made in order to fit within a country’s labor laws, the idea that someone from the program is always available to help with difficult situations is a critical component contributing to success. Moreover, by being proactive about crisis management, the program is able to prevent foster parents from feeling overwhelmed and alone when dealing with difficult circumstances, and this may contribute to the low disruption rates that have been observed among MTFC foster homes.

Services to children. MTFC foster children receive a comprehensive program of services. All MTFC children are placed on a behavior management program that is developmentally appropriate for their age. For older children and adolescents a “level system” is employed, within which supervision and privileges vary according to the specific level that the child is on. At each level children earn points throughout the day for participation in home and school activities including chores, attending class, and completion of homework. Points are lost for violations of program rules. Children spend approximately 3 weeks on Level I when they enter a new foster home. They receive points for such basic expectations as getting out of bed on time and having a positive attitude. Points earned on one day are traded for privileges on the following day. Once the child has accrued enough points, they are able to move to Level II. On this level there are expanded privileges, they are earned on a weekly rather than daily basis, and there are more opportunities for independence. If the child has a particularly difficult day on Level II, however, they can be returned to Level I, at which point they will have fewer privileges and independence. Once their behavior improves, they are then returned to Level II. A third
level (Level III) exists for children who have been in the program for a long time and demonstrated an ability to function with a high level of independence. At Level III, there are expanded opportunities to earn privileges, and there is an expectation that children will participate in typical community activities such as sports and after school programs.

Behavior management programs for younger children and children who have significant developmental delays are simpler than the level system. Often they involve more immediate forms of reinforcement such as stickers or the use of star charts. Program expectations are that foster parents will maintain some sort of concrete reinforcement program with children in their care for the duration of the time the children are in the program.

Across all age groups who receive MTFC services, behavior programs are continually adjusted over time in order to meet the individualized needs of the child. Foster parents provide input to the program staff via the above-mentioned individual and group meetings to identify specific problems that require attention, as well as to provide information about methods of reinforcing positive behavior that are especially effective. The expectation is that focal issues will change over the course of time that the child is in the program. The high degree of contact between program staff and foster parents allows the child’s individual needs to be addressed on an ongoing basis.

In addition to the behavior management program, support to children varies as a function of the age of the child. For older children and adolescents, individual services via a “skills coach” are provided to teach problem solving and other prosocial skills. For younger children, a therapeutic play group is provided in order to help the children learn skills they will need to be successful in school but from both a social perspective and an academic perspective.

Services to biological parents and other long-term placement resources. During the time that the child is in MTFC, the program collaborates with local authorities to identify who is likely to be a long-term family for the child. In many instances this is the biological family from which the child came prior to being placed in foster care. In other instances, depending on the circumstances of the child and the country in which the program is being implemented, long-term care may be provided by a close relative of the child such as a grandparent, aunt and uncle, or by a non-relative adoptive family. Whoever the long-term placement family is, program staff members work with those individuals to help teach them the same parenting and behavior management skills that are being employed in the foster home. As noted above, for older children and adolescents this includes the use of a level system and for younger children involves the use of a concrete system for reinforcing prosocial behavior. Families also learn the use of effective strategies to set limits around negative behavior without being overly harsh and coercive. This includes the use of timeout for younger children, and chores combined with removal of privileges for older children. Program staff members support the long-term placement family during the transition of the child from the foster home into the permanent home. (It is noteworthy that in some instances children stay with the MTFC foster family indefinitely rather than moving to another family. This may be especially important with young children for the development of healthy attachment relationships). Services to the long-term family continue until the child is stable in the home, at which point services are discontinued.

Program staffing structure. One of the unique aspects of the MTFC program is the use of a team approach to providing services. Each treatment team contains a group of staff with clearly defined roles. These roles are stratified and as such contain very little overlap. Treatment teams usually work with approximately 12 to 15 children at one time. Roles of the team members include the following.

The team leader is the program supervisor. This individual is responsible for coordinating the activities of all other team members, and for serving as liaison between the program and any other services that the child and family may be receiving. The program supervisor is also the primary authority figure for the child and the foster family. To the extent that limits need to be set or rules need to be enforced by the program, it falls to the program supervisor to do this. The program supervisor also runs foster parent support group meetings.

The foster parent consultant provides additional support to the foster family. This individual is often a former foster parent and therefore is able to take the perspective of the foster family. The foster parent consultant delivers services via a home visit and telephone, and also participates as a coleader in the weekly foster parent support group meeting. This individual is usually a masters or doctoral level professional.

The child receives support via individual sessions with the behavior support specialist. This individual is often a university student or other young person who is able to establish rapport with the children in the program. As noted above behavior support specialists often deliver services in the context of community settings in order to help the child learn more prosocial skills in their naturalistic environment.

A family therapist works with the biological or other long-term placement family in order to prepare them to receive the child back following placement in foster care. The specific strategies employed are described above. The strategies are derived directly from parent training approaches that were developed at the Oregon Social Learning Center. The family therapist is usually a masters or doctoral level professional.

The PDR caller is the individual who maintains daily contact between foster families and program.
This individual is often a clerical level staff such as a secretary. It is essential that they are able to establish good rapport with foster families and take information accurately over the telephone. Moreover these individuals need to be able to identify when foster families are having a difficult time and alert program staff to this so that they may follow-up with the foster parent.

A consulting psychiatrist is employed in order to facilitate consistency in the child’s medication management. Although not all children in the program receive psychiatric medications, in many countries where MTFC is implemented, enough children are on medications that it is helpful to have a single provider coordinating care in this area. Consulting psychiatrists work not only with the child in their foster family but also with program staff to ensure that they have a complete picture of the child’s needs.

For programs that are running the preschool age version of MTFC, additional staff take the place of the behavior support specialist in order to run playgroup. These include a playgroup lead teacher and an assistant teacher. These are usually individuals with early childhood education experience or in university programs to train teachers.

**Populations served by MTFC.** MTFC was originally developed to serve the needs of adolescents in the youth justice system who had problems with juvenile delinquency (Chamberlain & Reid, 1998; Fisher & Chamberlain, 2000; Chamberlain, 2003). The intensive nature of the program is specifically designed to provide levels of support and supervision necessary to maintain such youth in community settings. Subsequently, the program was adapted downward developmentally to serve school-aged children and children in preschool age range who were on the cusp of beginning primary school (Fisher, Burraston, & Pears, 2005). The original MTFC program was designed to address the needs of boys in particular, however over time the program has been adapted for girls as well (Leve, Chamberlain, & Reid, 2005; Leve & Chamberlain, 2007; Chamberlain, Leve, & DeGarmo, 2007). As such, the MTFC program represents a comprehensive system of care for children aged 3 to 18 of both genders.

Most of the children served by MTFC programs have severe behavior problems and significant histories of trauma and maltreatment. They may have spent very little time and had very little experience with typical family environments. As such, they may require a considerable period of adjustment before they begin to behave in accordance with the expectations of the families with whom they are placed. This is one of the reasons that the program provides such extensive support to foster families and care for MTFC children. The stress on children and foster parent during this period of adjustment can be considerable, and it is unrealistic to expect that individuals will be successful on their own. Helping children and families see that they are not alone and that there exist effective strategies to help children adjust is a critical component of successful treatment. It allows children to remain in family and community settings as opposed to ending up in residential care.

**MTFC evaluation research.** MTFC has been evaluated for use with a variety of child and adolescent populations, including those specified above. In comparison to other treatment as usual conditions involving residential care, MTFC has been shown to affect important outcome variables, such as number of violent offenses (Eddy, Whaley, & Chamberlain, 2004) and post-treatment rates of institutionalization and incarceration (Chamberlain, 1990; Chamberlain, Leve, & DeGarmo, 2007). Importantly, a positive impact on specific targets of the program, including family management practices and deviant peer association, appear to be effectiveness factors driving MTFC treatment effects on antisocial behavior (Eddy & Chamberlain, 2000). More detailed descriptions of randomized clinical trials of MTFC for adolescents (MTFC-A) and MTFC for pre-schoolers (MTFC-P) appear below.

**Results of MTFC-A evaluation research.** Chamberlain and colleagues first evaluated the use of MTFC as an alternative to incarceration for seriously delinquent youth. Compared to youth who were placed in group care, those in MTFC remained in their 6 month placements longer and spent less time incarcerated two years post-treatment (Chamberlain, 1990). Similar results were seen with a group of youth randomly assigned to MTFC after release from a state psychiatric hospital (Chamberlain & Reid, 1991). A larger randomized trial with chronic juvenile offenders comparing MTFC to group care further demonstrated MTFC to be superior in affecting positive change in this difficult population in the form of fewer criminal referrals and fewer days spent in detention (Chamberlain & Reid, 1998). Youth in the MTFC group committed fewer violent offenses, received fewer criminal referrals (Eddy, Whaley, & Chamberlain, 2004) and had lower rates of substance abuse (Smith, Chamberlain, & Eddy, 2010) than those in group care at 2-year follow-up. As noted above, MTFC has also been adapted and evaluated for use with female juvenile offenders and shown to be efficacious in reducing the number of days spent in locked settings and increasing school attendance and homework completion (Leve, Chamberlain, & Reid, 2005; Leve & Chamberlain, 2007). Long-term improvements in important delinquency outcomes such as number of criminal referrals were also seen in the MTFC girls (Chamberlain, Leve, & DeGarmo, 2007)

**Results of MTFC-P evaluation research.** Fisher and colleagues (1999) adapted the MTFC program to meet the needs of a younger population (ages 3 to 5) in the U.S. foster care system. A variety of factors, including early disruption of attachment relationships, prenatal drug and alcohol exposure, abuse, and neglect, make...
this population a particularly high-risk group of children (Klee, Kronstadt, & Zlotnick, 1997; Fisher, Ellis, & Chamberlain, 1999; Fisher, Burraston, & Pears, 2005). MTFC-P was designed to address three main target areas for this population: behavior problems, emotion regulation, and developmental delays. In a comparison between MTFC-P and regular foster care, MTFC-P was shown to be effective in improving the behavioral adjustment of participating pre-schoolers, while behavioral problems in comparison groups of regular foster care pre-schoolers increased (Fisher, Gunnar, Chamberlain, & Reid, 2000). Improvements in attachment behaviors (Fisher & Kim, 2007) and placement stability have also been demonstrated in children participating in MTFC-P (Fisher, Kim, & Pears, 2009). Importantly, MTFC-P has shown the power of intervention to enact change in neurobiological systems negatively affected by early life stress. Fisher, Gunnar, Dozier, Bruce, and Pears (2006) as well as others (Fisher, Stoolmiller, Gunnar, & Burraston, 2007) have shown the capacity for MTFC-P to mitigate the dysregulation of the hypothalamic-pituitary-adrenal (HPA) axis (as measured by the “stress hormone” cortisol) often associated with experiences of stress early in life. Additionally, intervention effects on electrophysiological measures of cognitive control have also been demonstrated, such that children receiving regular foster care services showed deficits in performance monitoring not shown in children receiving MTFC-P (Bruce, McDermott, Fisher, & Fox, 2009). Evaluation research of MTFC-P has thus incorporated a variety of outcome measures, both behavioral and neurophysiological, to demonstrate the efficacy of the intervention in improving outcomes for preschoolers in foster care.

**Summary and conclusions.** In this paper we have provided a description of the MTFC program and its origins in the social learning model developed at the Oregon Social Learning Center. We have described the program components and staffing structure. Finally, we have provided evidence from evaluation studies of the programs’ effectiveness for children and adolescents. MTFC is being widely implemented throughout the United States and Europe and has many proponents. Given the high cost and limited effectiveness of residential care for children and adolescents with severe behavior problems and/or juvenile delinquency, MTFC is a positive alternative.

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Blueprints for Europe: Promoting Evidence-Based Programs in Children’s Services*

Blueprints para Europa: Promoviendo Programas Basados en la Evidencia en los Servicios de Atención a la Infancia

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Abstract. This article describes the Blueprints database of evidence-based programs (EBPs) and its potential application in children’s services in European countries. It outlines relevant aspects of the European context, including a tendency to be skeptical about programs imported from the US, and the need for a pan-European source of information about EBPs across multiple outcome areas. It then describes the standards of evidence used by Blueprints, which cover intervention specificity, evaluation quality, intervention impact, and system readiness. The criteria for determining that a program is ‘Model’ and ‘Promising’ are outlined. The article then summarizes the process by which the standards were developed and some of the issues that were harder to resolve. It also sketches the process by which a program reaches the Blueprints database, and provides three examples of programs approved by Blueprints and implemented in Europe: a home-visiting program for mothers of infants; a parent skills training program; and a therapeutic intervention for families of chronic offenders. A brief indication is also given of how the wider pool of programs reviewed fare against the standards of evidence. Finally, the article summarizes future directions for the work, with a particular emphasis on how Blueprints might become widely used in Europe.

Keywords: child well-being, Europe, evidence-based program, program evaluation.

The last decade has seen growing interest in evidence-based programs (EBPs) in developed countries. A ‘program’ is a discrete, organized package of practices, spelled out in guidance – sometimes called a manual or protocol – that explains what should be delivered to whom, when, where and how. A program is ‘evidence-based’ when it has been evaluated robustly, typically by randomized controlled trial (RCT) or quasi-experimental design (QED), and found unequivocally to have a positive effect on one or more relevant child outcomes (Social Research Unit, 2012a).

There are now many such programs, covering all areas of children’s lives, including education, behaviour, health, relationships and emotional well-being. However, their market penetration is very poor. They are rarely adopted,
and, when they are, implementation is often poor and programs fizzle out when initial funding ends (Bumbarger & Perkins, 2008). This holds in the US, where most EBPs originate, and even more so in Europe, where countries are increasingly importing these programs.

There are various possible reasons for this state of affairs (Little, 2010). First, there is a lack of knowledge among policy makers and senior practitioners regarding the existence and nature of EBPs. Some arguably place little value on evidence. Second, there is confusion about what constitutes ‘evidence-based’ and what is an appropriate standard. Third, there is anxiety about whether these programmes can be implemented in real-world settings, and what human and financial resources this requires.

Such obstacles to implementing EBPs are magnified in Europe, where there is some resistance both to the concept of a program and the fact that most of the best-known EBPs originate in the US (the two ideas tend to get conflated in debate). States with social-democratic or Catholic welfare regimes tend to be skeptical about programs from the US (Grietens, 2010). This is partly because some programs have had mixed or disappointing outcomes when implemented in Europe. For instance, Multisystemic Therapy performed only a little better than services as usual in the UK (Butler, Baruch, Hickey, & Fonagy, 2011), whereas in Sweden regular services did equally well (Sundell et al., 2008).

The hesitancy also reflects cultural differences in service provision between Europe and the US. The US has a minimal welfare state. North European countries, by contrast, have more redistributive policies and provide universal welfare (Rowlands, 2010). They also invest in professionalizing children’s services staff, notably through social pedagogues who are trained in child development and work therapeutically with children and families in many settings (Petrie, Boddy, Cameron, Wigfall, & Simon, 2006). There is a reluctance to adopt practices from a country (the US) that routinely performs poorly in international league tables of child well-being, particularly since many European countries, especially those in Scandinavia, perform relatively well (UNICEF, 2007).

Compounding this skepticism, there is no pan-European source of information on EBPs for a European audience. The best-known clearinghouses of EBPs are published in English and aimed primarily at American providers. Hardly any European programs feature. Similar ventures in Europe tend to be country-specific (examples include SFI Campbell, Denmark, MOVISIE, Netherlands, Ungsinn, Norway, and Metodguiden and SBU, Sweden), or focused on a single subject, such as drug prevention and treatment (for example, the best practice portal of the European Monitoring Centre for Drugs and Drug Addiction, EMCDDA). There is a recognized need for outlets in diverse languages and aimed at diverse cultures (Soydan, Mullen, Alexandra, Rehnman, & Li, 2010).

European children’s services providers also need guidance on how to select and adapt programs for a different context. This includes information on which children and families programs succeed with.

This article discusses Blueprints, a resource that will provide policy makers and practitioners in Europe with high-quality information about programs that meet a high standard of evidence and are ready for implementation in service systems. Blueprints is designed to lead to the greater awareness and use of EBPs and improved well-being for the children and families who receive them. Before going any further it is helpful to provide some historical background.

Blueprints started in the US with a focus on violence prevention following the Columbine school massacre in 1993, in which two High School students killed 12 fellow students and a teacher. This was the catalyst for the Center for the Study and Prevention of Violence, part of the University of Colorado in nearby Boulder, to start compiling a list of evidence-based programs specifically aimed at preventing violence (Elliott, 2010). In 2010, the Annie E. Casey Foundation funded the Social Research Unit (SRU) at Dartington, UK, and the Social Development Research Group (SDRG) at the University of Washington, US, to develop a method to help system leaders and communities to work better together to implement EBPs at scale. The idea was to bring together the centers’ respective Common Language and Communities that Care methods (Axford & Morpeth, 2012; Hawkins & Catalano, 2002). The project necessitated the development of a menu of programs that cover all key developmental outcomes, and so work began on a database of EBPs.

The researchers behind Blueprints for Violence Prevention were involved in developing the standards of evidence to underpin the Evidence2Success database (see below). They also recognized the value in broadening the scope of Blueprints, both in terms of outcomes and geography, hence the partnership with Casey and the Social Research Unit. With funding from Casey, Blueprints for Violence Prevention:

• Was re-named 'Blueprints for Youth Development’, becoming the database for Evidence2Success (there is no separate E2S database).
• Adopted the standard of evidence developed for Evidence2Success (this involved making some changes to both sets of existing standards in order to align them).
• Broadened its remit to include programs seeking to improve children’s health, education, relationships, emotional well-being, and behavior.
• Opened a European office in London, staffed by the Social Research Unit.
• Appointed its first European representative on the Board.
• Re-designed its US website and started work on a European website (both are powered by the same database to ensure consistency in key content).
The remainder of this article describes the standards of evidence used to select programs for the new Blueprints, how they were developed, the process by which a program reaches the website, the kind of programs that have been approved, how programs fare against the standards, and future directions for the work with particular reference to Europe.

The standards of evidence

The standards of evidence that underpin Blueprints today cover four dimensions:
1. **Evaluation quality** – whether the investigation into the efficacy and effectiveness of the program produces valid and reliable findings.
2. **Intervention impact** – how much positive change in key developmental outcomes can be attributed to the program.
3. **Intervention specificity** – whether the program is focused, practical and logical.
4. **System readiness** – whether the program is accompanied by the necessary support and information to enable its successful implementation in public service systems.

Within each dimension, the Standards contain ‘Good enough’ and ‘Best’ criteria. The ‘Good enough’ criteria set a basic minimum standard, while the ‘Best’ criteria strengthen confidence in a program’s scientific rigour, impact on outcomes, intervention specificity or readiness to be taken to scale. The four dimensions are now elaborated.

**Evaluation quality**

In order for a program to appear on Blueprints, it must have been evaluated by at least one good randomized controlled trial (RCT) or two good quasi-experimental design (QED) studies. ‘Good’ refers to aspects of methodological quality, specifically that:
- The method of assignment to intervention and control is at the appropriate level (eg. individual, school).
- The measurement instruments are suitable for the intervention population of focus and desired outcomes.
- Analysis is based on ‘intent-to-treat’.
- The statistical procedures and tests are appropriate.
- Intervention and control groups are equivalent at baseline on key outcomes.

Such studies must also meet the following criteria. It must be clear with whom the program was tested and what was actually received by the intervention and comparison groups. The measures used must be valid and reliable, capture a relevant outcome, and not be tied to the program under scrutiny. In order to minimize bias, someone without a vested interest in the program must have applied the measures.

The extent to which participants dropped out during the study is also looked at. Some drop-out is common, but it is problematic if many youth drop out, if some categories of youth drop out a lot more than others (eg. boys more than girls), or if the drop-out rate and type of person dropping out differ significantly between the program and control groups.

There are several ‘Best’ evaluation quality criteria. One is simply if there are two RCTs or one RCT and one QED that meet the ‘good enough’ criteria. Generally there can be more confidence in findings if a program has been evaluated well more than once. Many evaluations only look at impact at the end of the program, which is a problem as impact often fades with time. For this reason, evidence of a longer-term effect – at least 12 months after the program ends – is also credited.

Signs that evaluators have sought a finer-grained understanding of program impact are also recognized. For instance, they might have tested for the relationship between implementation fidelity and outcome, or between the amount of program received and outcome. If a program has been delivered well, or if some youth or families have had more of it, a stronger effect would be expected. Some studies examine whether the program works better for some sub-groups of than others, focusing on gender, ethnicity and socio-economic status. Studies may also test whether the logic that underpins the program actually holds up; do effects take place for the reasons that were expected? Both of these are also ‘Best’ criteria.

**Intervention impact**

Programs that appear on Blueprints must have a positive effect on a relevant outcome, the size of which is known, and have no known harmful effects. Only evaluation studies that meet all ‘good enough’ evaluation quality criteria may be considered when making this judgment.

A majority of studies that meet this threshold must show that the program has a positive effect on a relevant outcome in order for it to be judged to have an overall positive effect. A ‘positive effect’ means that program group youth or families did better relative to youth or families in the comparison group. It is important that this effect is not likely to be the result of chance, so it has to be ‘statistically significant’. The size of this positive effect should also be provided.

There should be no evidence of the program having a harmful effect on youth or families. This includes all outcomes and all sub-groups. For example, a program would not be approved if it improves adolescents’ relationships with peers but at the expense of their use of...
illicit substances increasing. Equally, if the program decreases substance use for boys but not girls, it might be approved for boys only.

There are two ‘Best’ criteria for Intervention impact. One is the existence of several studies meeting the ‘good enough’ evaluation quality criteria, a majority of which show a statistically significant positive impact. The other is evidence that children who received a larger amount of the program did better than those who received a smaller amount: in other words, there is a positive dose-effect relationship.

**Intervention specificity**

Programs need to be clear about what outcomes they target and which group of children will benefit. There should be a clear description of what the program comprises, and an explanation of why and how the program should work – in other words, how the program will address the risk and protective factors as a means of achieving the outcomes.

There is one ‘Best’ criterion for Intervention specificity, which is the existence of compelling research evidence to support the program logic. This must explain why and how the program is likely to benefit the children and youth it is aimed at. For example, if a parenting program encourages parents to practise certain skills to deal with their children’s poor behavior, have other studies shown that doing this works?

**System readiness**

Programs that are accepted for the database also need to demonstrate that they can be implemented at scale in service systems. At the simplest level, the program that was evaluated should still be available. Next, it should be clear how to get the program to the right children, youth and families. A manual and training and implementation materials are also needed, because these will help ensure that the program is implemented consistently (or with fidelity). The financial and human resources needed for implementation should be stated.

There are several ‘Best’ System readiness criteria, starting with the availability of technical support with implementation and a checklist to help monitor fidelity. Recognition is given to programs that are currently being disseminated widely, or that have been tested and found effective when delivered by regular practitioners in normal settings. Many programs are tested initially under special conditions – for example, they are delivered in university clinics by research staff. Policy makers can have more confidence in programs that have been tested when delivered by the kinds of people who normally provide similar services in their daily work.

**Developing the standards**

In their work on *Evidence2Success*, the SRU, SDRG and Annie E. Casey Foundation recognized that there are already over 25 databases of evidence-based programs and, accordingly, several sets of standards. In an attempt to build some consensus, the decision was taken to develop the *Evidence2Success* standards of evidence – since adopted by Blueprints – by involving experts who had previously developed other sets of standards of evidence, all of which but the last listed below have been used to inform databases of EBPs:

- Blueprints for Violence Prevention (Delbert S. Elliott, University of Colorado, US).
- LINKS (LifeCourse Interventions Nurturing Kids Successfully) (Kristen Moore, Child Trends, US).
- Communities that Care (J. David Hawkins and Richard F. Catalano, SDRG, University of Washington, US).
- Greater London Authority Project Oracle (Michael Little, SRU at Dartington, UK).

These experts met regularly over a six-month period and tested prototype standards empirically to see how easy they were to apply and which programs would meet them. Consideration was also given to other sets of standards, such as those developed by the Society for Prevention Research (Flay et al., 2005) and the CONSORT guidelines on reporting RCTs. During this period several issues arose that required discussion. Most concerned evaluation quality and intervention impact. Some of the more important ones are now outlined briefly.

There was discussion about whether the amount of attrition from a study was important and whether a level at which it becomes problematic should be specified. However, it was argued that this would penalise follow-up studies, which the standards encourage, since these tend to have higher attrition. The expert group therefore decided to focus mainly on differential rather than overall attrition.

Another issue concerned the value of independent replication, in other words a study not involving the program developer that nevertheless shows an impact. The rationale was that developer involvement seems to introduce bias (Eisner, 2009). The expert group agreed that while independent replication is desirable, to insist on it now would result in a very short list and remove stronger programs, such as Nurse Family Partnership.

There was considerable discussion about the acceptability of evidence of impact derived solely from self-report measures. In criminal justice, such measures are generally considered acceptable. In education, they are unacceptable if used alone; observations, teacher ratings, and academic test scores are preferred. The expert group decided that the focus should be on...
whether measures are appropriate: no form of measurement is wrong per se. They insisted, however, that measures cannot be applied solely by the person delivering the program because this can introduce bias.

There was also extensive debate over the requirement for evidence of sustained impact 12 months after the intervention ended. The worry was expressed that very few educational programs would qualify because the last measure is usually taken at the end of the intervention. Evidence of a sustained impact was therefore made a ‘best’ rather than a ‘good enough’ criterion.

The main issue on intervention impact concerned the requirement for a statistically significant effect size. It was argued that in many studies with large clusters (such as schools) it is difficult to obtain large enough sample sizes to permit analysis at the cluster level. However, unbiased and meaningful estimates can be obtained using participant-level analyses when sample sizes at the participant level are large. The expert group therefore agreed to have as an alternative a sample size weighted mean effect size of 0.2, with a sample size of more than 500 individuals across all studies.

Finally, a decision needed to be made about the criteria for determining a program’s overall status. Blueprints categorizes programs as either ‘Model’ or ‘Promising’. It was agreed that a program must meet all ‘good enough’ criteria across all four dimensions to be deemed ‘Promising’ and that a program is designated ‘Model’ if it meets these criteria and:

- It has (a) two or more good enough randomised controlled trials or (b) at least one good enough randomised controlled trial and one good enough quasi-experimental design evaluation.
- It shows a positive effect and no negative effect.
- There is evidence of a sustained impact (at least 12 months after the end of the program).

How programs get onto Blueprints

These standards are applied to programs that seek to achieve outcomes in areas of behavior, emotional well-being, educational skills and attainment, health (particularly as it relates to behavioral issues, such as smoking, eating, drinking), and relationships (primarily with parents and peers). There are four steps in the process for Blueprints to approve a program.

First, all relevant scientific literature on the program is identified (at present this is restricted to English-language publications). The research team sifts through the primary journals in all areas of child health and development on a regular basis to identify literature that might suggest new programs for inclusion or add to or challenge programs on the database. Information submitted by program developers or purveyors is also considered.

Second, this literature is analyzed against the standards of evidence by a team of trained reviewers based at the University of Colorado in the US and the Social Research Unit in the UK. The result is a structured narrative description of each study and a quantitative summary of whether overall the program meets each of the criteria contained within the standards. The reviews focus primarily on intervention specificity, evaluation quality and intervention impact. Each review must be approved for quality by a review coordinator.

Third, programs that are deemed to have a good chance of meeting the standards of evidence are forwarded to the Blueprints Board for consideration. The Board comprises eight leading prevention scientists from the US and Europe and meets twice a year. The Board decides whether or not programs meet the standards in terms of evaluation quality and intervention impact and can therefore potentially be recommended for dissemination.

Fourth, the review team checks the system readiness of programs approved by the Blueprints Board. This is done by consulting program websites and by asking developers or purveyors to complete a written questionnaire. The questionnaire covers subjects such as the availability of materials and training, fidelity monitoring procedures, and human resource requirements. If extra information is needed once this is submitted than follow-up questions are sent. Two members of the review team – at least one with extensive experience of delivering and managing services – discuss the information received and determine if the program is ‘system ready’. At this stage a program is formally approved.

The list of approved programs is updated regularly. Regular literature searches are undertaken using a consistent process to identify new studies showing positive or even negative findings for programs already on the list. Similarly, studies on new programs are reviewed if they seem likely to meet the standards of evidence. Particular efforts are being made to identify programs originating in Europe since most programs approved to date were developed in the US. Program developers and evaluators may also submit their program for consideration.

Programs approved for Blueprints

At the time of writing there are 11 ‘Model’ programs and 22 ‘Promising’ programs on Blueprints. This is from over 700 programs reviewed. However, several new programs will shortly be added to the list, largely as the result of the decision described earlier in this article to extend the remit of Blueprints of beyond violence prevention (the initial focus) to encompass other areas of child and youth development, such as education and health.

Some examples of programs appearing on the Blueprints website follow. They represent different...
types and levels of intervention and have all been implemented in Europe. The descriptions outline briefly how each of the programs meets the standards and where they are delivered.

Nurse Family Partnership is a home-visiting program that involves nurses making home-visits to young, often teenage, vulnerable first-time parents, starting in early pregnancy and lasting until children are 24 months old. The program aims to promote prenatal health, improve child well-being and development through better parenting, and encourage parental self-sufficiency through education, employment, or planning future pregnancies. Specially trained nurses pay weekly or fortnightly structured home-visits to families. Home-visits allow nurses to prepare young people for parenthood and guide them to adopt healthier lifestyles, take good care of their babies, and plan for their future. Key to the program is the strong therapeutic relationship built between nurse and family.

Rigorous scientific evaluations show that NFP leads to a range of improvements in child health and development, such as better behavior and academic achievement, more positive parenting practices, reductions in child maltreatment, and increased parental independence including reduced welfare use (e.g., Olds, Henderson, Chamberlin, & Tatelbaum, 1986; Olds & Kitzman, 1990). These impacts are sustained long after the programme finishes, for example children in FNP are less likely to be involved in the juvenile justice system in adolescence (e.g., Eckenrode et al., 2010).

Nurse Family Partnership is accompanied by an extensive package of support, including manuals, training and technical assistance. It has been implemented in the UK and the Netherlands. Every dollar invested in the US version of the program (applicable when delivered in Washington State) for low-income families yields a return of $3.23 (Aos et al., 2011).

The second program described here, Incredible Years BASIC, is designed for parents of children aged 2-10 years with conduct problems. It seeks to improve family interaction and prevent early and persistent anti-social behavior in these children.

The program comprises a 12-week course of two-hour sessions delivered to a group of about 12 parents by two specially trained leaders. Parents are taught strategies to help them manage their child’s problem behaviors, such as aggression, tantrums, and acting out. They also learn how to promote their child’s social skills through emotion regulation. Sessions involve group discussion, videotape modelling, and the rehearsal of parenting techniques.

Incredible Years BASIC has been evaluated by RCT in several countries, including the US, UK, and Norway. These evaluations show consistently that the program increases the use of positive parenting strategies, reduces the use of harsh and inconsistent discipline, and reduces deviant behavior in children (e.g., Webster-Stratton, Kolpacoff, & Hollinsworth, 1988; Hutchings et al., 2007; Larsson et al., 2009; Scott et al., 2010; Little, 2012; McGilloway et al., 2012).

Incredible Years BASIC has extensive group leader manuals, DVDs, books, CDs, handouts, and recommended activities and reading between sessions. Group leaders receive initial three-day training and ongoing technical support and supervision to assist successful implementation. The program has been provided in mental health agencies, public health centers and schools in the US, UK, Ireland, Norway, Germany, Denmark, Netherlands, Norway, Portugal and Sweden. For every $1 invested the program produces a return of $1.20 (applicable when delivered in Washington State) (Aos et al., 2011).

The third program, Multisystemic Therapy (MST), is an intensive family-based intervention for adolescents who are chronic offenders; typically they have committed serious crimes and have substance abuse problems. MST aims to reduce anti-social behavior and criminal activity, as well as improve parenting skills, family relations, school grades and involvement with positive peers and activities. A therapist works with the adolescent in their daily surroundings – with their family, friends, at school and in their community. Together with the family, the therapist designs a treatment plan to tackle identified risks and encourage protective influences in the adolescent’s environment. Various strategies are employed, such as CBT or coaching. The therapist becomes a single point of contact for the family, available 24/7. A typical MST intervention lasts 3-5 months and involves 3-6 sessions weekly, each up to two hours long.

MST has been proven to work in multiple high-quality RCTs. It reduces criminal recidivism rates and anti-social behavior, including conduct problems and aggression, and also improves emotion management and family cohesion (e.g., Henggeler, Melton, & Smith, 1992; Timmons-Mitchell, Bender, Kishna, & Mitchell, 2006). Some effects are long-lasting, with improvements still visible several years after treatment (e.g., Henggeler, Clingempeel, Brondino, & Pickrel, 2002).

A US-based organisation ‘MST Services’ provides training, technical support, monitoring, materials including treatment manuals, and licensing. It is delivered by experienced therapists, each of whom receive five days training and ongoing support. MST has been delivered extensively in the US, and in several European countries, including Norway, Spain, Sweden, Denmark, Netherlands, Iceland and the UK. A UK cost-benefit analysis reveals that every pound spent on MST (applicable when the program is delivered in England and Wales) produces a return of £1.77 (Social Research Unit, 2012b).
How programs fare against the standards of evidence

It is instructive to reflect briefly on how programs perform against the standards of evidence. Here the focus is on the 100 programs reviewed against the standards in 2011 as part of the Annie E. Casey Foundation Evidence2Success project. These represent a spread of programs in terms of child developmental stage and outcomes targeted, and were deliberately selected because the expert group deemed them to be the best available.

*Intervention specificity* was generally good, with most programs reviewed meeting each of the ‘good enough’ criteria on this dimension. *Evaluation quality* was much more variable. The ‘good enough’ evaluation quality criteria that tended to be better addressed in program evaluations concerned: the appropriateness of measures (reflecting outcomes, not being tied to intervention, not being rated solely by the implementer); having a clear statement of demographics; and assigning cases to program and comparison groups at the appropriate level (although they are not always analyzed at the correct level). There was less clarity about: what the control group received; how the intervention that was actually delivered compares with intervention as it was designed to be delivered; if or how clustering is controlled for in analyses, for example when the unit of allocation is schools; whether there is equivalence between the program and control groups at baseline on outcome measures; whether analysis was intent-to-treat or not; and whether there was differential attrition.

Regarding the ‘best’ evaluation quality criteria, 12-month follow-up was available in fewer than half of cases, as was sub-group analysis. It was rare for there to be any analysis of the relationship between fidelity and outcomes or of the role played by mediating factors. Dose-response analysis – in the proper sense of setting out deliberately to vary the dose and comparing, for example, a full-length version and a shorter version of the program – was extremely rare.

*On intervention impact*, about half of the programs indicated effect size. As regards *system readiness*, it was generally difficult to establish system readiness without contacting the program developer; the information supplied on program websites, for example, is inadequate for that purpose. Usually the program that was evaluated is still available, although this can be difficult to detect as programs ‘morph’ over time, notably to make improvements or to be more suitable for a different population or setting. Most programs reviewed had a manual and training but information about financial and human resources was much less readily available. The extent of dissemination and ‘real world’ testing was often unclear, and although many programs purport to have a fidelity protocol it was less clear whether this is suitable for use beyond research studies, in other words in orthodox service settings.

The Blueprints websites

Until now, the work of Blueprints has been disseminated through a website managed by the Blueprints for Violence Prevention team at the University of Boulder Colorado. The new Blueprints will have two websites. The main site is aimed primarily at a US provider audience. It is designed and maintained to enable policy makers and providers to access readily the information they need on each approved program. The approach taken is similar to that used in ‘Consumer Report’ (in the US) or ‘Which?’ (UK) magazines. Instead of searching for and comparing cameras or washing machines, website users can search for suitable programs by outcome, target group, and risk and protective factors. It is not possible here to give an exhaustive list of the information supplied about each program but the main fields include:

- Program objectives.
- Program recipients.
- Level of intervention (e.g., universal prevention, selected prevention, treatment).
- Setting (e.g., school, community, home).
- A brief description of the program.
- A brief description of the outcomes achieved by the program.
- A brief description of the methodology used in the relevant evaluation studies.
- Financial information (e.g., unit cost, cost-benefit ratio, potential funding strategies).
- Training and technical assistance information.
- Contact information for both the program designer and the purveyor.

Users can print a fact sheet containing this information and also compare different programs against the same criteria.

A sister website aimed at European providers will have essentially the same functions and be powered by the same database, ensuring consistency of content, but it will contain less text, include a handful of different fields (e.g., evidence of dissemination of the program in question in Europe) and be translated into European languages (initially Spanish, French and German). Users wishing to obtain further information will be able to link to the US website.

Both websites are ongoing projects. It is planned in due course to add new fields, including a visual logic model, video content (e.g., the program developer summarizing the program), the facility to explore the likely impact of implementing a *portfolio* of programs on costs, benefits and outcomes, and subjective feedback from policy makers, practitioners, children and families who have experience of the programs.
Future developments

The work described here will develop in at least seven ways. First, it is expected that the Blueprints standards, which already set a high bar in the child welfare field, will become higher as understanding of the science of evidence-based programs and their implementation improves and as the quality of studies improves in response to standards such as these. For example, the stipulation of sustained impact at 12-month follow-up might move from being a ‘best’ criterion to become a ‘good enough’ criterion, and the requirement for an independent replication might be added. Second, continuing efforts will be made to build consensus in the field regarding standards. For example, there will be ongoing discussions with groups such as the Cochrane Collaboration, the Society for Prevention Research, and in Europe it will be imperative to gain the support and approval from the research and intervention communities in participating countries – including those representing existing clearinghouses and members of the European Society for Prevention Research. Such collaboration will contribute to the wider use of Blueprints.

Third, new programs will be approved. Concerted efforts are being made to identify programs developed in Europe and rate them against the standards of evidence. Several that stand a reasonable chance of meeting the standards are known of but they need to be reviewed and, if successful, disseminated more widely (e.g., Atria & Spiel, 2007; Faggiano et al., 2008; Salmivalli, Kärnä, & Poskiparta, 2011; Stemmler et al., 2012). In addition, and with a view to the longer-term, work is underway to show how the standards can be used to help practitioners to take programs on the journey from innovation to model program. This argues that innovations should be strengthened and tested with a level of rigor appropriate to their stage of gestation (Little, 2012). For example, new programs might warrant a pre-post or even a small comparison group study, with progress to larger RCTs conditional on positive results.

Fourth, Blueprints will begin to seek institutions in Europe that are interested in contributing to the work. Better coverage of programs offered in Europe requires the systematic review of published and non-published (grey literature) outcome studies. This will need to be conducted in local languages by people with in-depth knowledge of the local contexts. The aim will be to find organizations that can undertake program reviews and/or report data for inclusion in the database. Additionally, the Social Research Unit, which is translating the Washington economic model that underpins the cost-benefit work for use in the UK, is interested in identifying European partners to translate the economic model for use in their own countries.

Fifth, Blueprints will need careful marketing in Europe. The aim should be to embed the standards, database and economic model within government structures of specified European states and/or the European Union. The strong alliances forged by Blueprints with key experts and decision makers in the US need to be replicated in Europe. This will require written materials as well as conferences and meetings to understand potential users’ needs and concerns and encourage them to use the website. Training materials on the standards and using the websites needs to be developed for end-users.

Sixth, research is needed on the transportability of programs from one context to another – whether from the US to Europe, or between US states, or from one European country to another. As indicated earlier, a growing number of studies show that the success of imported programs is mixed. What is effective in one context might not be effective in another, and what is culturally appropriate in one context may not be in another. Further, the costs and benefits of programs may differ across countries due to differences in welfare systems, hence the importance of the translation of the Washington economic model referred to above.

Lastly, Blueprints focuses on programs but there is growing interest in the idea of kite-marking policy and in identifying effective practices (e.g., Barth et al., 2012), given the difficulties and limitations often of implementing programs in children’s services systems (Little, 2010). For this reason, new standards of evidence will be developed and used to identify evidence-based practices, policies and processes (e.g., assessment methods) that should be recommended for widespread dissemination.
References


**Footnotes**

1 The authors can supply a list of these if required.
2 http://www.bestevidence.org/
3 http://www.colorado.edu/cspv/blueprints/
4 http://www.childtrends.org/links/
5 The Prevention Strategies Guide that was informed by the Communities that Care standard is no longer available. CTC specifically directs sites to Blueprints.
6 http://www.london.gov.uk/priorities/crime-community-safety/ti me-action/project-oracle
7 http://www.consort-statement.org/

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Return on Investment. The Evaluation of Costs and Benefits of Evidence-Based Programs

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Abstract. Better quality data on costs and benefits of competing investment options in children’s services is becoming available. In this paper, we describe the translation of one model developed for Washington State translated for use in the UK. The paper describes the approach and method used to develop the economic model, and adapt it for use in another country. Results from the United States are compared with those from the United Kingdom. The opportunity to apply these methods to improve child outcomes at reduced cost to the taxpayer is explored. The limitations and need for future development of the methods are outlined.

Keywords: child development, children’s services, cost-benefit, impact, outcome, program evaluation.

Resumen. En la actualidad se dispone de mejores datos sobre los costes y beneficios de las distintas alternativas de inversión en servicios de atención a la infancia. En el presente artículo describimos la translación al Reino Unido de un modelo desarrollado para el Estado de Washington. El artículo se describe la perspectiva adoptada y el método empleado en el desarrollo y adaptación del modelo de financiación para su implementación en otro país. Se comparan los resultados obtenidos en Estados Unidos con los del Reino Unido. Además, se examina la posibilidad de aplicar estos métodos de mejora de resultados en la infancia con un coste menor para el contribuyente. Finalmente, se subrayan las limitaciones actuales y la necesidad del desarrollo futuro de estos métodos.

Palabras clave: coste-beneficio, desarrollo infantil, evaluación del programa, impacto, resultado, servicios de atención a la infancia.

Public policy in Europe has reached a crossroads. The economic crisis facing the continent is driving apparently conflicting demands of greater social need—produced by unemployment, homelessness and other stresses on communities and families— but fewer financial resources to meet that need.

The Social Research Unit (SRU) is an independent, internationally active centre dedicated to better outcomes for children. Supplying accessible high quality data on ‘what works’ and the costs and benefits of competing investment decisions, it has sought to inform policy-makers and commissioners, responsible for purchasing decisions, in children’s services, health, education, social care and youth justice.

With respect to cost-benefit data, SRU has collaborated with and built up the good work produced by the Washington State Institute for Public Policy—a model that has been used by the Washington legislature to inform important public policy decisions, including greater investment in prevention and less reliance on prisons.

Important cultural and policy differences between the US and Europe require a translation of the Washington model for a European context. In this paper, the UK translation of the model, applicable to England and Wales, is described, alongside some emerging findings and a short commentary on the future direction of this kind of economic analysis.

Cost-Benefit Analysis

Evaluation research is getting increasingly sophisticated in calculating the impact of an intervention on child outcomes, on their health and development. Another class of studies is applying monetary value to these estimates. Economic analyses use different metrics and therefore apply a different value to child outcomes.

There are many ways of conducting economic evaluation. In recent years it has become common for children’s services organisations to calculate their social return on investment (SROI) (e.g., The New Economics Founda-
tion & Action for Children, 2009). This method asks for the organisation’s stakeholders to put financial ‘proxy’ values on all of the perceived impacts of it’s work, for example the saved costs of a child not coming into foster care following the work of an NGO providing family support. SROI is in essence working out the monetary value stakeholders place on the impacts they perceive to be attributable to the work of an NGO, or a single intervention.

Cost-effectiveness studies assess how many units of an outcome, for example less criminal anti-social behaviour, are produced for an amount of spending. Cost-effectiveness analysis enables a comparison between the relative costs and outcomes of two or more courses of action by comparing the extra cost of providing an intervention with the extra benefits (see Drummond, O’Brien, Stoddart, & Torrance, 1997). Put simply, the financial assessment is on the intervention not the outcome, and the result is the ratio of pounds, euros or dollars spent for each outcome obtained.

Cost-benefit analysis takes cost-effectiveness analysis a step further by putting a monetary value not only on the intervention but also on the outcomes (see Layard & Glaister, 1994). So, cost-benefit analysis of interventions to reduce smoking would transform a quitter’s improved health or longer life into a monetary value. These values are generally tangible, for example the actual costs saved due to reduced health care or the actual benefits that follow from someone living longer, earning more and making a greater contribution to the tax burden. Some cost-benefit analyses also include intangible benefits, for example by putting a value on the improved quality of life that non-smokers enjoy compared to smokers.

Since these benefits are often long-term, cost-benefit analysis adjusts for the value of money over time, working out how much, say, a prison bed will cost today and also what it will cost next year, the year after etcetera. These calculations of costs and financial benefits result in what is called a ‘net present value’.

There are many more than these three methods of economic evaluation of human development outcomes, and each has it’s contribution to make to evaluation of social interventions. SROI helps NGO’s think about how their work brings perceived financial value to society. Cost-effectiveness research helps policy-makers and purchasers of services compare the amount and type of impact on health and development that can be achieved with available resources. Cost-benefit analysis calculates the financial return to individuals, agencies and society as a whole that accrues from each pound, euro or dollar spent on contrasting interventions.

Applications of Cost-Benefit Analysis

For roughly five decades, cost-benefit analysis has embedded itself in policy appraisal and public policy-making, informing investments in utilities, water, gas and electricity, and transport. In the UK, it was used to calculate the returns that resulted from a road building programme (Coburn, Beesley, & Reynolds, 1960) and the London Victoria underground railway (Foster & Beesley, 1963) in the 1960s.

The methods have been adapted to help modern health care purchasers, generally governments in European countries, make smarter use of their limited resources (Sorenson, Drummond, & Kanavos, 2008). In health, the approach depends much on estimates of the ‘quality-adjusted life year’ (QALY), a measure of health that combines length of life and the number of years lived without impairment resulting from poor health (Räsänen et al., 2006; Rawlins & Culyer, 2004). The analysis provides estimates of the number of QALYs produced by, say, spending on a pharmaceutical intervention versus a surgical intervention, and the financial benefits associated with these QALYs. (Any cost-benefit analysis is only as good as the assumptions and data on which it is based. Early evaluations of road building did not calculate impact on the environment (Coburn, 1960; Pearce, 1998) and there is much dispute among economists about how best to calculate a QALY).

The investment in experimental evaluation of interventions designed to improve child development in the US in the 1960s was followed by the first attempts to calculate costs and benefits associated with children’s services interventions. The earliest example examined the Perry Preschool Project, an early years intervention in Ypsilanti Michigan. This experiment examined the impact of a well-designed preschool programme on outcomes such as high school graduation, stable employment and income (Schweinhart, Barnes, & Weikhart, 1993; Schweinhart et al., 2005), all of which could be monetised. The cost-benefit analysis by James Heckman and colleagues (Heckman, Moon, Pinto, Savelyev, & Yavitz, 2010; see also Barnett, 1993) shows that, although expensive, compared to the control group, as adults the Perry Preschool beneficiaries paid more money in federal taxes and used less government resource in criminal justice and welfare systems (again, cost-benefit analysis is only as strong as the experimental, longitudinal and other data on which it is based. A single trial beginning in the early 1960s involving 123 children would not be counted by all observers as sufficiently robust to inform public policy).

In recent years, several other US groups have developed robust methods for calculating costs and benefits of social interventions. The RAND Corporation has done a significant amount of work on early childhood intervention and crime (Karoly et al., 1998; Greenwood, Model, Rydell, & Chiesa, 1998). The MacArthur Foundation established the Benefit-Cost Analysis Center at the University’s Evans School of Public Affairs to set standards of evi-

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dence and improve the precision of estimates. The National Research Council and the Institute of Medicine (2009) is also invested in improving methods and their application to policy decisions. In England and Wales, the ‘Green Book’ published by the UK Government’s finance department provides guidance on how other government departments can make better investment decisions (HM Treasury, 2003).

The most significant investment in cost-benefit analysis by a single US state has been made by Washington. Since 1983, it has funded the independent Washington State Institute for Public Policy (WSIPP). In 1997, the legislature directed WSIPP to examine costs and benefits of policy strategies in juvenile justice and adult corrections. In the early 2000s the Institute was directed to apply the same evidence-based and benefit-cost approach to other public policy areas. The WSIPP model is now being translated for use in England and Wales. This work will inform potential development of the model in other European states.

The WSIPP Method

The charge of WSIPP, to provide consistent, independent investment advice on a range of interventions, demands the deployment of several methods. The analytic strategy passes through four phases.

First, for any given policy area, youth justice, child protection or children’s mental health for example, evidence on the effectiveness of interventions is considered. All available papers, published and unpublished, are gathered. Those that meet specified entry criteria go forward to the next stage of analysis. At a minimum, only studies that comprise a robust comparison group that seeks to control for selection and other bias are included (Lee et al., 2012a).

A meta-analysis is undertaken on studies that meet entry criteria, resulting in a standardised effect size indicating the amount of impact an intervention has on a range of child development outcomes. WSIPP applies a series of ‘discounts’ to this effect size that take into account potential inflation of the effect size when, for example, programme developers are involved in the evaluation (Lee et al., 2012a).

This first phase of work exemplifies the cautious nature of the WSIPP approach, including only robust evaluations and marking down results to achieve estimates that are more likely to be found in real-world dissemination of the interventions. The final product of this stage of work is a ‘discounted effect size’ for each outcome resulting from intervention in the selected policy area. This forms the basis for the next phases of work.

Second, the costs and benefits of each intervention are calculated. The analytic approach generally follows the procedures described by Heckman and colleagues (2010) in their estimation of return on invest-

ment from the Perry Preschool intervention. For further details on the sources, assumptions, and computational methods used in WSIPP’s cost-benefit model, see a technical report by Lee and colleagues (2012a).

WSIPP have published the evidence delivered to the Washington State legislature for more than a decade (available for download at http://www.wsipp.wa.gov/). A short, selective overview is provided here of the many messages relevant to public policy in the UK.

Firstly, the WSIPP analysis has provided a significant boost for ‘evidence-based programmes’. These are tightly defined interventions that generally cross traditional public policy domains, such as youth justice or social care, that have proven impact on children’s health and development. A typical example is Functional Family Therapy (FFT), a treatment intervention for adolescents with conduct disorder and problems with substance abuse, delinquency and/or violence. Evidence-based programmes like FFT are not only typically less expensive than traditionally provided interventions but they also provide significant returns on investment consequent on the recipient’s reduced use of high end services throughout the life course.

Second, unlike services that provide information on what works, like Blueprints for Europe, WSIPP shares data on interventions that do not work. For example Scared Straight, a programme that is widely applied in the UK, has been shown by repeated evaluations to increase, not decrease, anti-social behaviour in the already troubled young people it targets. In these instances, WSIPP identifies the true cost of providing the intervention. Scared Straight costs, on average, just $65 per young person to deliver, but the eventual cost to society adds up to $5,014 (2011 dollars) (Lee et al., 2012b).
Third, the addition of money as a metric brings a new perspective on public policy choices. WSIPP has identified several interventions, for example high-quality early years provision such as Even Start and Early Head Start in the US, that have an impact on children’s health and development but do not produce an economic return on the initial investment (Lee et al., 2012b). (This is not an argument against such provision but an additional point of information for policymakers trying to make the most of scarce resources). WSIPP also helps managers of the public purse to compare the relative merits of targeted interventions like Multisystemic Therapy (MST) that produce a large return on a small investment for a small group of young people compared to universal interventions like Life Skills Training that deliver a relatively small return multiplied by the broad population base that benefits (Lee et al., 2012b).

Fourth, WSIPP reminds of the range of interventions that not only improve children’s health and development but also deliver economic benefits to central and local government. Over the last decade, WSIPP has estimated the effects of changing teachers’ pay, or of altering class sizes. There is support for evidence-based programmes such as those described above, and also for practices such as Victim Offender Mediation where victim and offender sit down together with a trained mediator in order to determine appropriate restitution for the harm done. There is support for public health approaches like the aforementioned Life Skills Training, but also targeted prevention such as Incredible Years Basic Parenting programme, early intervention, Nurse Family Partnership for instance, and treatments for young people with developed mental health disorders.

Fifth, the WSIPP results emphasise the inter-dependency of agencies working to improve children’s health and development. Many interventions delivering a return on investment bring economic benefits to several agencies and over a long period of time. A good exemplar is Nurse Family Partnership, a programme delivered in the first two years of a child’s life, which produces financial returns to education, social care, youth justice and adolescent mental health agencies, and continues to produce benefits in the adult years (Lee et al., 2012b).

Finally, and the major attraction of the WSIPP model for the SRU, the results come in a format that is understandable to policy-makers, so much so that they have been used by the Washington legislature to substantially alter government investments in public services over the last decade.

UK translation of the method

The WSIPP results have had a major effect on public policy in Washington State but the results are context specific. Some programmes included in the WSIPP meta-analysis may not be relevant to the UK, and likewise some excluded may be relevant. The empirical calculations that led to the discounting of effect sizes may differ in the UK. Naturally, the costs entered into the economic model will vary, but so too will some of the benefits. Washington, like the rest of the US, has only a nascent universal health care system and the mesh in the safety net to catch those falling out of other systems is more widely sewn than in the UK. These are among a range of reasons why a cost-benefit ratio from WSIPP cannot be directly applied to the UK or any other European state. Translation of the model is required.

The translation work is structured around the following three steps in the WSIPP model: the meta-analysis to arrive at a discounted effect size, the cost-benefit analysis based on those effect sizes, and the ‘Monte-Carlo’ simulation.

Effect size calculation

The translation of the meta-analysis part of the WSIPP approach began with a review of the policy areas relevant to the UK context. Questions that interest the Washington legislature, such as what are the costs and benefits of the ‘Title IV-E waivers’ that allowed states flexibility in spending federal dollars previously earmarked for foster care maintenance, are of less concern to commissioners of children’s services in the UK. Similarly, there will in future be policy challenges that are European specific and not covered by WSIPP, demanding fresh reviews.

It was necessary to reflect on the applicability of the criteria used to decide which studies to include in the effect size calculation. WSIPP apply a high standard, consistent with the contribution the SRU seeks to make to UK children’s services, but it is not yet aligned with our Standards of Evidence (Elliott et al., in press) that underpin the Blueprints for Europe initiative, an attempt to provide a reliable list of interventions with proven impact on all aspects of children’s health and development. Given the different foci of these projects it was decided to stick with the WSIPP standard for assessing the quality of evidence and to review the fit with Blueprints for Europe once the first round of translation is complete.

Translation also involved a review of the discounts applied by WSIPP to the effect sizes emerging from the meta-analysis (Lee et al., 2012a). Given the long history of analysis and the amount of external expertise brought to bear on this problem by the WSIPP team, as yet no alteration to the discounts has been made. However, a question remains over whether to introduce a discount that accounts for loss of impact when a programme is tested in one context – for example in the US – and implemented in another – say...
Europe. Initial exploration found little systematic bias. For example the impact from a programme like Incredible Years on child externalising problems is similar in evaluations in the US, Norway, Canada, Wales and England (e.g., Webster-Stratton & Hammond, 1997; Reid, Webster-Stratton, & Beauchaine, 2001; Larsson et al., 2009; Letarte, Normandeau, & Allard, 2010; Hutchings et al., 2007; Scott et al., 2001). However, this is a fast evolving area and the discounts will be reviewed as new evidence comes to light.

**Cost-benefit calculation**

The first step in adapting the cost-benefit dimension of the WSIPP approach was to alter the structure of the US model so that it matches the way UK children’s services, youth justice, education, child protection and so on go about their business. The cost-benefit analysis is based on a map of each system, charting in the case of youth justice the process from arrest to prosecution to court hearing and disposal. These processes differ from country to country and therefore the structure of the cost-benefit model requires adaptation. In practice, differences in some areas, youth justice being one, are few but in others, child protection for example, they are greater.

Once the structure of the model is established, the benefits for each outcome and other inputs of the cost-benefit model (e.g., a GDP deflator, tax rates) have to be re-estimated to reflect the UK context. There are direct relationships between each programme and the outcomes that may lead to the economic benefits to the participant, taxpayers and others in society to be estimated. Taking youth justice, the first part of the model to be translated, this has involved charting the population characteristics of UK young offenders, estimating the number of people processed through the justice system, the probabilities of a court passing the variety of sentences available to it, the unit costs of youth justice services, earnings data by age and education status, as well as intervention unit costs when delivered in the local setting.

There are also indirect relationships to chart, what WSIPP refer to as linked effect sizes. This means working out how each outcome is linked to other outcomes to which a monetary value can be estimated. For example, Incredible Years reduces children’s externalising behaviour. It is known from separately analysed longitudinal research that externalising behaviour is causally related to a probability of offending. Although evaluations of Incredible Years have not followed children into adolescence and demonstrated an impact on offending, there is a body of research to indicate a causal link between externalising behaviour and crime. This way, the benefits of crime can also be estimated. Naturally, the longitudinal studies used to establish temporal ordering (first outcome such as externalising behaviour precedes another outcome such as crime) in this part of the analysis should, wherever possible, be relevant to UK populations.

**Monte-Carlo simulations**

The final step in the WSIPP approach has, to date, required the least attention in the translation process. The Monte-Carlo simulation is essentially exactly the same in the UK as it is in the US, the model is run at least 500 times varying certain parameters, like effect size, to chart the proportion of times that an intervention produces benefits that exceed costs.

**Early Results from the UK Translation**

The UK translation of the WSIPP model, applicable to England and Wales, has focused on five policy areas of greatest interest to UK policy-makers and commissioners of children’s services: child and adolescent mental health, child protection, education and early years, public health, and youth justice. At the time of writing, translation of the education and youth justice parts of the model have allowed the preparation of initial publications (The Social Research Unit, 2012a, b). It is planned to complete the first round of translation for all dimensions by the Spring of 2013. What has been learned from this early work?

Although not systematic, most interventions have a high unit cost and deliver fewer returns on investment when delivered in a UK context compared to a US context. On the expenditure side, this could be explained by higher labour and overhead costs in the UK. On the benefits side, the greater reluctance of UK policy-makers, commissioners and courts to use expensive interventions such as holding students back a grade in education or sending young offenders to custody in justice partly explains the lesser return on proven models like MST. When MST is delivered in the US, it costs $7,370 per person and produces net benefits of $24,751 (2011 dollars) over the life-course of the participant (Lee et al., 2012b). This translates into £4,598 and £15,440 respectively. However, when MST is delivered in England and Wales, it costs £9,529 to deliver and produces net benefits of £7,374 (2011 pounds) (The Social Research Unit, 2012b).

The differential earnings of people in the US and UK will also make a difference. On average, a young person doing well in school will earn much more in the US (and contribute much more to the tax burden) over the life course than in the UK. For MST, the benefits from earnings via high-school graduation are $4,218 in 2011 dollars (Lee et al., 2012b). This translates into £2,631. However, the increased earnings from achieving A-levels (equated with high-school graduation in
the UK translation) are £2,186 in 2011 pounds (The Social Research Unit, 2012b).

Unfortunately, a common feature of WSIPP and SRU analyses are the US-developed evidence-based programmes. The greater investment in science in the US means that there is a relative abundance of reliable data on what works. Although it is reasonable to assume that Europeans are as inventive and that interventions designed with a European context in mind can have significant impact on children’s health and development, few evaluations hit the standard for inclusion in the first meta-analytic stage of the cost-benefit approach adopted in this work. On the plus side, if the supply of high quality European evaluations can be increased, the results can be included in the meta-analysis.

An important difference between the US and the UK is the audience for the emerging results. WSIPP’s work is commissioned in law by the Washington State legislature, and the Institute prepares publications and other outputs with the legislature in mind. In the UK, and in most other European contexts, detailed decisions about public expenditure are not made by elected members to central government but by unelected local commissioners of services who are accountable to local government for finance and central government laws (in England, about £55 billion is spent on children’s services through this mechanism).

The publications emerging from the UK analysis are therefore prepared with the local commissioner of services in mind. Small amounts of accessible information on costs and benefits across the agencies that manage local budgets are provided on a regular basis, allowing updating for changes in economic conditions, evidence about effectiveness and improvements in the translation of the model.

The data used in the cost-benefit analysis and a description of how the analysis has been undertaken can be found in a technical report (The Social Research Unit, 2012c).

Conclusion

In an age of austerity, with growing need and diminished resources to meet that need, there will be an increased focus on the economics of services to improve children’s health and development. Washington State Institute’s work in this area is not unique, but it has the advantage of being backed up by more than a decade of analysis and refinement, being conservative in its estimate of impact and benefit, consistency across policy domains and having been used in the real-world context of the Washington legislature.

The word ‘translation’ suggests a one-off process to make the US model applicable to a UK context, or possibly later to other European states. In reality, the conversion is akin to maintaining a road or rail bridge, requiring constant attention to review standards of evidence, apply those standards to emerging research, improving the assumptions, computational methods and data used in the cost-benefit model, plus ever better ways of disseminating to and testing results with the target population of commissioners of children’s services.

It is hoped that the collaboration between the SRU and WSIPP will encourage others to develop similar economic models. In the world of private finance it is common for investors to at least consider and sometimes to use several independent advisors, estimating their trust in each. Competition can only improve the quality of advice available for public sector commissioners of children’s services.

The translation process is in its infancy, but already it is revealing important differences between the US and Europe, for example in the lesser economic benefits from proven models, partly explained by the lower use of high cost interventions, such as custody, that evidence-based programmes avoid. Other cultural differences in the relationship between state, family and child will emerge as translation work advances.

Of course, any economic model is only as good as its inputs. The focus on interventions for which there are robust evaluations means that, to date, poorly researched policies, programmes, processes and practices do not feature in the results. What, for example, are the economic costs and benefits of cohesive communities or children staying in the family home until the early 30s – as is common in some European cultures – compared with greater labour mobility that is more typical in the US?

Our aspirations for this collaboration are to better inform policy-makers’ and commissioners’ decision-making, but also to encourage a re-examination of broader public policy decision-making through a new lens.

References


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