IMPROVEMENTS IN EARLY CARE IN RUSSIAN ORPHANAGES AND THEIR RELATIONSHIP TO OBSERVED BEHAVIORS

CHRISTINA J. GROARK
University of Pittsburgh

RIFKAT J. MUHAMEDRAHIMOV AND OLEG I. PALMOV
St. Petersburg State University

NATALIA V. NIKIFOROVA
Baby Home 13, St. Petersburg

ROBERT B. MCCALL
University of Pittsburgh

ABSTRACT: This article describes a unique study that attempts to promote positive social-emotional relationships and attachment between caregivers and children in orphanages in St. Petersburg, Russia. The children who reside in these orphanages are typically between birth and 48 months of age; approximately 50% are diagnosed with disabilities, and approximately 60% leave through foreign adoption. Initially, their orphanage caregivers showed a high level of current anxiety and depression and were detached from and communicated little with the children. Likewise, during baseline observations, the children demonstrated poor attachment behaviors such as indiscriminant friendliness, lack of eye contact with adults, aggression, and impulsive behavior. Two interventions were used in a quasiexperimental design: (a) training of caregivers to promote warm, responsive caregiving and (b) staffing and structural alterations to support relationship building, especially increasing the consistency of caregivers. The methodology required that both the training and staffing interventions be provided to one orphanage, only the training to a second, and neither to a third. (At any one time, ns $= 80–120$ in each condition.) Initial informal observations reveal positive behaviors for both the caregivers and the children, such as increased two-way conversations, animated and enthusiastic emotional responses, and positive social and language interactions. Early data analyses show an increase in the consistency and stability of caregivers and increased scores for caregivers on every subscale of the HOME Scales. Children showed improvements in physical growth, cognition, language, motor, personal-social, and affect, with children having severe disabilities improving the most. The implications of these findings suggest that training staff with modest educational backgrounds and structural changes are effective, can increase socially responsive caregiving behaviors, and improves social interactions of children, at least temporarily.

RESUMEN: Este artículo describe un estudio peculiar que intenta promover positivas relaciones y afectivi-

dades socio-emocionales entre niños y quienes les prestan cuidado en orfanatos en St. Petersburg, Rusia. Los niños que residen en estos orfanatos van típicamente de los recién nacidos a los que no tienen más de 48 meses de nacidos; aproximadamente al 50% se le ha diagnosticado con impedimentos o incapacidades, y aproximadamente el 40% deja el orfanato por haber sido adoptados en el extranjero. Inicialmente, quienes les prestaban cuidado en el orfanato mostraban un alto nivel de ansiedad y depresión y, por lo tanto, estaban desligados de los niños y se comunicaban poco con ellos. De igual manera, durante las observaciones básicas, los niños demostraban débiles conductas de afectividad, tales como simpatía indiscriminante, falta de contacto visual con los adultos, agresión, así como una conducta impulsiva. Se usaron dos intervenciones en un diseño cuasi experimental: 1) entrenamiento de quienes prestaban el cuidado para promover una más cálida sensibilidad y 2) cambios en las estructuras y en el personal para apoyar el establecimiento de relaciones afectivas, especialmente incrementar la frecuencia con que el personal trabajaba. La metodología requirió que tanto el entrenamiento como las intervenciones con el personal se le proveyeran a uno de los orfanatos; al segundo sólo se le ayudó con el entrenamiento; y al tercero no se les prestó ninguna ayuda (a cualquier punto Ns = 80–120 en cada una de las condiciones). Las observaciones informales iniciales revelan conductas positivas tanto para quienes prestan el cuidado como para los niños, tales como el incremento de la conversación mutua, respuestas emocionales animadas y entusiastas, así como positivas interacciones sociales y de lenguaje. Los primeros análisis de la información muestran un incremento en la consistencia y estabilidad del personal y un aumento en los puntajes para los que prestan cuidado en cada una de las subescalas de la Escala HOME. Los niños mejoraron en cuanto al crecimiento físico, la percepción, el lenguaje, el movimiento, los aspectos socio-personales, y el afecto. Los niños que presentaban incapacidades severas mejoraron más que todos. Las implicaciones de estos resultados sugieren que el entrenamiento del personal que posee un trasfondo educativo bajo y los cambios estructurales son efectivos, pueden incrementar la sensibilidad de la conducta de atención a niños, así como mejorar las interacciones sociales de los niños por lo menos temporalmente.

RÉSUMÉ: Cet article décrit une étude unique qui essaie de promouvoir des relations sociales et émotionnelles positives et un attachement positif entre les modes de soin et les enfants dans des orphelinats à Saint Pétersbourg en Russie. Les enfants qui résident dans ces orphelinats ont typiquement entre l'âge de la naissance et 48 mois. 50% de ces enfants environ sont diagnostiqués avec des handicaps et à peu près 40% d'entre eux sont adoptés à l'étranger. Initialement, leurs modes de soin à l'orphelinat faisait preuve de hauts niveaux d'anxiété et de dépression et étaient détachés des enfants ou leur parlaient peu. De même, au cours des observations de base, les enfants faisaient preuve de comportements d'attachement très faibles, tel qu'une gentillesse sans discrimination, un manque de contact visuel avec les adultes, de l'aggressivité, et un comportement impulsif. Deux interventions ont été utilisées dans une conception quasi expérimentale: 1) la formation de modes de soin pour promouvoir un mode de soin réceptif et chaleureux et 2) des modifications dans le personnel et des modifications structurelles pour soutenir la construction de relations, plus particulièrement en augmentant la cohérence des modes de soin. La méthodologie a exigé que les interventions sur la formation et le personnel soient toutes deux faites à un orphelinat, la formation uniquement dans un second orphelinat, et aucune intervention dans un troisième orphelinat (à tout moment Ns = 80–120 dans chaque condition). Des observations informelles initiales ont révélé des comportements positifs à la fois pour les modes de soin et les enfants, tel que des conversations à deux plus fréquentes, des réponses émotionnelles animées et enthousiastes, et des interactions sociales et verbales positives. Les premières analyses de données montrent une augmentation de la cohérence et de la stabilité des modes de soin et des scores plus élevés pour les modes de soin à chaque sous échelle HOME. Les enfants ont fait preuve d'améliorations dans leur développement physique, cognitif, verbal, moteur, personnel-social, et dans l'affect. Les enfants ayant les handicaps les plus sévères ont été les témoins des plus grandes améliorations. Les implications de ces résultats suggèrent que le fait de former le personnel dont les connaissances sont modestes et de procéder à des changements structurels sont des démarches efficaces. Cela peut augmenter les comportements socialement réceptifs des modes de soin et améliorer les interactions entre les enfants, au moins temporairement.

ZUSAMMENFASSUNG: Dieser Artikel beschreibt eine einmalige Studie bei der versucht wurde positive sozial-emotionale Beziehungen und Bindungen zwischen Kindern und ihren Bezugspersonen in Wais-

enhäusern in St. Petersburg, Russland, herzustellen. Die Kinder in diesen Waisenhäusern sind typischerweise Neugeborene und sind sie bis zu 48 Monaten alt; ungefähr 50% leiden an Behinderungen und ungefähr 40% verlassen das Waisenhaus mittels Adoption. Anfangs zeigten die Bezugspersonen im Waisenhaus ein hohes Angstniveau und Depression und waren weit weg und kommunizierten wenig mit ihren Kindern. Entsprechend zeigten die Kinder bei der ersten Beobachtung ein schlechtes Bindungsverhalten, wie Freundlichkeit zu Jedem, Mangel an Augenkontakt mit Erwachsenen, Aggressionen und impulsives Verhalten. Zwei Interventionen wurden in einem quasi experimentellen Design verwandt: 1. Ein Training, um den Bezugspersonen ein warmes und schwingungsfähiges Betreuen zu ermöglichen und 2. Eine Strukturänderung in der Diensteinteilung, um Beziehungsentwicklung zu unterstützen, insbesondere, um die Verlässlichkeit der Bezugspersonen zu erhöhen. Die Methodologie verlangte es, dass beides (Training und Strukturänderungen) nur einem Waisenhaus zu Gute kamen, Training bei einem zweiten und weder noch bei einem dritten (in allen zu einem Zeitpunkt 80–120 Kinder in jedem Haus). Die anfängliche, informelle Beobachtung zeigt ein positives Verhalten sowohl der Bezugspersonen, wie auch der Kinder, so wie erhöhte Zweiwegkommunikation, lebhafte und enthusiastische Gefühlsäußerungen und positive soziale und sprachliche Interaktionen. Vorläufige Datenanalysen zeigen eine Erhöhung in der Verlässlichkeit und Stabilität der Bezugspersonen und erhöhte Werte der Bezugspersonen beim HOME Fragebogen. Die Kinder zeigten Verbesserungen im körperlichen Wachstum, Kognition, Sprache, Motorik, persönliche Sozialfähigkeiten und Gefühlen, die sich bei den Behinderten am meisten besserten. Die Implikationen dieser Ergebnisse weisen darauf hin, dass ein Training für die Mitarbeiter mit einem mittleren Bildungsstand, sowie Strukturänderungen hilfreich sein können bei der Verbesserung eines schwingungsfähigen Verhaltens der Bezugspersonen und es verbessert sid das Sozialverhalten der Kinder, jedenfalls vorübergehend.

抄録：この論文は、ロシアの St. Petersburg の児童養護施設において、養育者と子どもの間に陽性の社会的−情緒的関係性と愛着を促進するように試みる、ユニークな研究について、記述する。これらの児童養護施設に生活している子ども達は、典型的には出生後から月齢48か月までであり、約50％は、障害をもつと診断されており、約40％は外国への養子によって、施設を出る。当初は、児童養護施設の養育者は高い水準の現時点での不安と抑うつを示し、子どもから距離を取り、ほとんどコミュニケーションしなかった。同様に、基礎的な観察の間、無差別に友好的であること、大人とのアイコンタクトの欠如、攻撃性、および衝動的行動のような、愛着行動の乏しさを、子ども達は示した。二つの介入が、実験に準ずる設定の中で使われた。それらは１）暖かくて応答的な養育を促進するような養育者の訓練と、２）関係性を築くための、特に養育者の一貫性を増加させるような、スタッフの配置と構造の変化である。訓練とスタッフの配置の介入が一つの児童養護施設に提供され、別の施設には訓練のみが、そしてもう一つの施設にはどちらも提供されないことが、方法論から要求された（どの時点でも、それぞれの設定で Ns = 80-120だった）。最初の非公式な観察から、２方向性の会話の増加、生き生きとして熱心な情緒応答、そして陽性の社会的で言語的な相互作用のような、陽性の行動が、養育者と子どもの両者に明らかにされる。早期のデータ分析は、養育者の一貫性と安定性の増加と、HOME尺度のすべての下位尺度に養育者の評点の増加を示す。子どもは、身体的な成長、認知、言語、運動、個人的−社会的、及び感情に、改善を示した。そして重い障害がある子ども達が、最も改善した。これらの所見の意味から、適度な教育的バックグラウンドをもつ教育的スタッフと構造の変化は効果的であり、社会的に応答的な養育行動を増加させることができ、少なくとも一時的には子どもの社会的相互作用を改善することが、示唆される。

*   *   *

Children who are emotionally well-adjusted have a better chance of future success, and those who experience early emotional distress have increased risk of poor outcomes (Raver, 2002). A basic premise is that a child must experience positive early-attachment relationships to be well adjusted emotionally (e.g., Bowlby, 1969), and such attachment relationships require stability or consistency of caregivers and socially responsive and developmentally appropriate (i.e., "sensitive" or "responsive") caregiving behaviors (e.g., DeWolff & van IJzendoorn, 1997). While correlational evidence exists, there is little experimental evidence that demonstrates that these two specific characteristics causally produce the hypothesized beneficial outcomes of improved short- and long-term development and mental health of children.

BACKGROUND

Theoretically, the root of long-term mental health is tied directly to early social-emotional development, especially to secure early-attachment relationships (e.g., Ainsworth, 1979, Ainsworth, Bell, & Stayton, 1974; Bowlby, 1969). Secure attachment, at least for home-reared children, is derived from socially-responsive and developmentally appropriate caregiving behaviors that are provided over a sustained period of time by a small number of caregivers (DeWolff & van IJzendoorn, 1997). Effective behaviors include reciprocal exchange, nurturance, positive attitudes, and appropriate stimulation.

Alternatively, disturbances in the attachment relationship during the first 2 years of life among high-risk, home-reared infants are associated with poor mental health consequences and undesirable behavioral outcomes (Fonagy, Steele, et al., 1995; Fonagy, Target, et al., 1997). When infants learn that caregivers are available, they seek comfort with confidence (Sroufe, 1989); however, when caregivers are not responsive to the need for reassurance, babies appear indifferent or avoidant (Dozier, Stovall, Albus, & Bates, 2001). Similarly, the NICHD Early Child Care Research Network (1997) found that children under age 2 who had insensitive or unresponsive mothers and either more than 10 hr of poor quality care per week or more than one childcare setting were more likely to be insecurely attached. Presumably, such children have less sensitive interactions and thus more insecure attachments.

In turn, maternal sensitive responsiveness and early secure attachment are associated with children's adaptive functioning with respect to social, personality, and cognitive development and reduced incidence of behavior problems (e.g., Rothbaum & Weisz, 1994; Stams, Juffer, & van IJzendoorn, 2002; van IJzendoorn, Dijkstra, & Bus, 1995). Moreover, positive mental, social, and developmental gains from four major enrichment programs occurred primarily to the extent that parents became more socially responsive with their children (Mahoney, Boyce, Fewell, Spiker, & Wheeden, 1998).

The evidence for consistency of caregivers is more limited, but the more marital or non-marital changes of partners in a child's life, the greater the likelihood of behavioral problems in the children (Ackerman, Brown, D'Eramo, & Izard, 2002). In addition, adopted children show higher rates of behavior problems and are overrepresented in mental health settings (Stams, Juffer, Rispens, & Hoksbergen, 2000; Wierzbicki, 1993).

Therefore, it appears that early responsive and sensitive behaviors from a few consistent caregivers benefit children, and the out-of-home care environment for children may foster behaviors likely to enhance interactions, attachment, and appropriate social-emotional development (Phillips & Adams, 2001). According to Edwards and Raikes (2002), characteristics of such programs include (a) scheduling staff in a way that supports continuity and builds

strong relationships with children, (b) supporting "family groups" that include a staff person and children who remain together for a prolonged period of time, (c) implementing practices such as multiage grouping or looping (allowing a teacher to stay with a group of children across age rather than changing teachers periodically), (d) promoting consistency in staff beyond the primary caregiver (e.g., assigning a consistent secondary staff person across shift changes), (e) avoiding overly large rooms that necessitate large groups of children, and (f) using space in a way that allows children to be with one primary caregiver.

INSTITUTIONALIZED CHILDREN

Research indicates dire consequences to children who are raised in severely depressed institutional environments, typically in foreign countries, that lack these characteristics. For instance, such children may be malnourished, have intestinal disorders and skin diseases, be of smaller stature and weight, display marked developmental delays, eat voraciously, fail to eat solids, lie quietly in bed without calling or trying to get up, exhibit stereotyped behaviors, withdraw from other children, shift from early passivity to later aggressive behavior, are overactive and distractible, are unable to form deep or genuine attachments, are indiscriminately friendly, and have difficulty establishing peer relationships (Ames, et al., 1997). Even children from relatively good orphanages may display some of these characteristics (Ernst, 1988).

Two recent studies of Romanian orphans adopted into Canada and Great Britain directed by Elinor Ames and Michael Rutter, respectively, document the existence of greater rates of attachment disorders, especially disinhibited (O'Connor, Rutter, & the ERA Study Team, 2000) and defended/coercive atypical (Rutter & the ERA Study Team 1998), insecure attachments (Ames et al., 1997) that continue for some years after adoption. While such children improve immediately and substantially upon adoption, they nevertheless persist in displaying indiscriminate friendliness, poor peer relations, behavior problems, lower IQ at 4½ years, poor school readiness, impulsive behavior, smaller height and weight, more externalizing behavior problems, frequent social problems, and more frequent need for specialized education.

Rutter (1972) and O'Connor et al. (2000) suggested that these undesirable behavioral and mental health outcomes are *not* primarily a result of malnutrition, physical and sexual abuse, lack of stimulation, cognitive impairment, and even the lack of reasonable care, but rather result from the *lack of a consistent and responsive caregiver*. Testing one version of this proposition is the principal aim of the St. Petersburg study.

PRACTICAL IMPLICATIONS

In addition to the theoretical issues discussed earlier, there are many practical questions that the St. Petersburg study may answer. For instance, with limited resources, are facilities and medical care a priority or should resources be targeted at the number, stability, and responsiveness of caregivers? If the latter is chosen, will deliberate increases in caregiver stability/consistency produce improved development for children? While training in sensitive responsiveness can change parents and increase attachment security (Bakermans-Kranenburg, van IJzendoorn, & Juffer, 2003), will such training increase the social responsiveness of otherwise untrained caregivers in an institutional environment, and importantly, will it improve children's development?

This study also may answer whether such interventions produce benefits in early social relationships and reduce later mental health problems in the children who are adopted into the United States. In addition, important to many services in the United States and elsewhere, can

staff with modest educational backgrounds be trained to provide effective caregiving, and will this training improve their job satisfaction and mental health?

In short, this study is unique in several respects. Specifically, it is (a) one of the few attempts to focus more exclusively on the effects of the stability and responsiveness of early caregiving on child development, (b) the largest intervention study in non-USA orphanages, (c) the largest follow-up of children adopted from substandard orphanages in which we know details of the early institutional environment, (d) the largest longitudinal study birth to 4 years of children with a wide range of disabilities, and (e) the most comprehensive assessment of both caregivers and children before and after an early childhood training intervention.

This article describes the institutional context, the interventions, some data demonstrating that the interventions were implemented successfully, and early informal observations of the changes in children and caregiver behavior before and after interventions.

PRE-INTERVENTION CHARACTERISTICS

In 2002, there were 249 orphanages in the Russian Federation with an enrollment of approximately 19,337 children from birth to 3 to 4 years of age (Ministry of Health of the Russian Federation, 2003). But the quality of care in these orphanages varies substantially, and the orphanages used in this study displayed reasonable environments in terms of cleanliness, toys, nutrition, and medical care. Unfortunately, complicated economic situations are not conducive to supporting new systems of care for children left without parents (e.g., foster care, adoption); therefore, orphanages in the Russian Federation are still the main institutions in which babies are placed, and change is likely to be slow in coming.

By standards in the United States, it is relatively easy for parents to relinquish rights to their child in the Russian Federation. Furthermore, the report of the Government of the Russian Federation on the Condition of Children (Muhamedrahimov, 2000) stated that about 1% of neonates become orphans in the first hours of life as a result of mothers rejecting them in maternity homes. Other reasons for institutionalizing babies include social and financial destitution, serious illness of parents, inappropriate living conditions for children, mothers serving prison sentences, and morbidity of the child.

Caregiving Characteristics

The orphanages used in this study operate under the Ministry of Health; therefore, they emphasize health-related aspects of care rather than the social-emotional development or early education of the children. Caregivers in the orphanages have little training, and the job is low paying and low status, making hiring difficult and turnover substantial. Until recently, even professionals were not trained in caring for or educating children birth to 4 years; however, the orphanages of St. Petersburg tend to be adequate on all important aspects of early care except for the instability of caregivers and their lack of socially responsive caregiving behaviors (Muhamedrahimov, Palmov, Nikiforova, Groark, & McCall, this issue). For example, a child may experience 50 to 100 different caregivers in the first 2 years of life. Further, caretaking is performed in a businesslike, perfunctory manner with minimum talking and very little social interaction of any kind. Specifically, Muhamedrahimov (2000) reported that in a 3-hr observation during the most intensive part of the day, caregivers in one of the orphanages in this study initiated free interaction for only 19 min with 3- to 10-month-old children, and they responded to the infants' behavior for only 1.1 min. Crying went unanswered for 10 to 12 min.

Therefore, this project provides two interventions—one to increase the stability of caregivers and support relationship building and the other to train and promote sensitive responsive

caregiving—in an attempt to more closely isolate the effects of these two aspects of early caregiving on the physical, mental, and social-emotional development of the children. The aim was to implement these changes in a way that could be maintained after the project was finished and transferred to other orphanages. Furthermore, this study can have implications for the caregiving in other countries, since the United States has similar needs for stable and adequately trained caregivers of infants and young children, especially with respect to home childcare and foster care.

THE INTERVENTIONS

The main purpose of both interventions was to provide the children with a caregiving experience more typical of family child rearing and one that would foster attachment between the children and a few adult caregivers. More specifically, one intervention, called "training," was designed to directly train caregivers to provide socially responsive interactions with the children. The second intervention, called "structural changes," was designed principally to reduce the number of different caregivers a child experienced and to increase the number of consecutive days the child had contact with two "primary" caregivers. These two interventions were viewed as supporting each other, both fostering responsive, warm, and caring relationships between children and caregivers.

The Training Intervention

The primary purpose of the training intervention was to teach caregivers to be more socially responsive in their interactions with children in every aspect of life in the orphanage. The training imparted new information, such as positioning and handling of children with severe physical disabilities, and encouraged behaviors more typical of parents, such as contingent and appropriate interactions and play and reciprocal exchange in conversation.

The "train-the-trainer" approach was used for two reasons. First, the trainers who were St. Petersburg specialists working in the orphanage could modify the U.S. training materials to fit the local culture and the context of the orphanage. Second, the St. Petersburg trainers could teach new and replacement staff and, in the future, caregivers and trainers in other orphanages; however, training in this way also meant that certain elements had to be added to the curriculum to support the trainers as future teachers and ultimately as supervisors of the caregivers. The St. Petersburg trainers from the orphanage had minimum formal training in modern approaches that promote development in infants and toddlers or that motivate and teach adult learners. Moreover, supervision is not common in the Russian Federation orphanages, yet the American research literature on training indicates that training alone without on-the-ward follow-up and supervision is relatively ineffective (Kelley, 1999); consequently, material on observational skills, reflective supervision, self-assessment, and team building was included.

Further, to achieve cultural appropriateness as well as professional competencies, the training program was the result of a collaborative partnership of the Russian and American investigators. It was designed to be sensitive, both in the prepared materials and the training process (e.g., length of sessions and time of day), to the values and philosophy of the people in the Russian Federation toward children and toward lifelong learning. At the same time, it followed the lead of contemporary Russian Federation professionals (e.g., Galiguzova, Mescheriakova, & Tcaregurodtceva, 1990) who advocate more socially responsive caregiving and more attention to social and emotional development in the caregiving of orphanage children, which many people of the Russian Federation follow in rearing their own children at home.

Structural Change Intervention

The main purpose of the structural change intervention was to complement the training intervention by supporting the development of more intense and persistent relationships between children and caregivers. Structural changes, which are described more fully by Muhamedrahimov et al. (this issue), consisted of several components:

1. The original groups of 12 to 13 children were divided into subgroups of 6 to 7, in which the entire group slept in a common room, but each subgroup had its own living/dining room.

2. Each subgroup was assigned two primary caregivers, each of whom worked 5 days a week for 40 hrs in staggered shifts so that one primary caregiver was available every day to provide children with concentrated exposure to at least two caregivers.

3. Family Hour was created in which an hour in the morning and an hour in the afternoon was reserved for children being in their subgroups with their primary caregivers without visitors or other disturbances to provide a regular context in which the primary caregivers and children could play and develop relationships.

4. The periodic graduations of children as they reached different ages to new sets of caregivers was terminated, and children remained with their caregivers at least through the first 2 years of life in the Baby Home, a change that drastically reduced the number of different caregivers children were exposed to in the early years of residency.

5. Groups and subgroups were integrated by age and disability status as children left the Baby Home, which provided a more familylike atmosphere and which allowed caregivers to provide children of different ages and ability status more individualized attention (e.g., caregivers could play with older children when infants slept, and older children could play independently when infants needed to be fed). These structural changes all provided the opportunity for children to develop relationships with fewer caregivers and in an environment that was more conducive to interactions and relationship building.

OBSERVATIONS ON WARDS

Observers from the research team (University of Pittsburgh, Pittsburgh, PA, USA and St. Petersburg State University, Russian Federation) spent 15 to 30 min every 3 to 4 months in unannounced visits to each ward. Staff were asked to continue as they would on a typical day. Visitors observed, wrote notes after leaving the ward, then discussed their observations with the entire team. Conclusions of these observations were recorded, and a distillation of those written observations follows.

Pre-Intervention

Pre-intervention, the orphanage environment was orderly, but somewhat stark and devoid of emotion. The atmosphere was quiet and strained, hurried, and impersonal; there was no enthusiasm from the caregivers or from the children.

Caregivers. The caregivers reflected the detached attitudes of Russian Federation society to children who are orphaned and the low status of jobs for those who work with these children. Depressed affect and very little social interaction were apparent in most caregivers. There were few warm, nurturing adults, and even those who were nurturing were not socially or emotionally

demonstrative. Generally, the caregivers displayed little animation and no responsiveness to children's behaviors. Often, children's crying and aggressive behaviors went without response. Caregivers did little talking with the children, avoided eye contact, and seldom, if ever, got down on the floor with the children. Feeding, diapering, bathing, and other maintenance chores were done in totally adult-directed, routine, mechanical-like motions, typically without eye contact or talking. If caregivers did attend to children, they generally selected children who were active and social at the exclusion of the others.

Children.   Even the infants and toddlers showed limited social interest in the strange observers entering the room. Smiling in young babies (less than 5 months) was automatic, but among 6- to 18-month-old children, there was no stranger anxiety and very limited social interest in new adults, even when they were close and at eye level. Most children stared blankly at a visitor with an unchanging facial expression. Older children often displayed inappropriate behaviors such as open aggression, avoidant behaviors, or indiscriminant friendliness.

Many children displayed stereotypy and self-stimulation behaviors such as rocking and head banging. Children were left in cribs and expected to stay there whether asleep or not, and they did so quietly. They were put on pots for toileting for extended periods and rarely tried to get up while the adult ignored them and attended to other tasks. Bath time elicited fearful crying and resistance because they were often "hosed down ready-or-not" with a small hand-held shower. Children with physical disabilities were often left unattended and lying flat on their backs or in infant seats with no toys, music, or stimulation of any kind. Contorted tiny bodies were left with no support and no adaptive positioning.

Child peer interactions also were observed as generally either nonexistent or negative. There was much grabbing by more able children, hitting, pushing, and other aggressive be-haviors. Older children were observed outdoors on a playground doing nothing. They would be standing and looking around or quietly riding a gross motor toy in isolation. Indoors, toys remained on the shelves, neatly labeled, but rarely on the floor. In short, the children displayed most of the "institutionalized" behaviors described earlier by Ames et al. (1997).

Post-Intervention

In the post-intervention orphanage environment, there was life, laughter, and emotion.

Caregivers.   In general, during the postintervention phase of this project, caregivers in the dual intervention orphanage were found talking with all children regardless of their age or disability. The adults were actively engaged with the children; toys were out on the floor and being used appropriately or guided by the adult. Even the adults were on the floor with the children. The caregivers smiled, talked, and were animated with the children as well as with visitors. They were especially animated when talking with pride about the successes of their children, some-thing reportedly not common in the Russian Federation. They responded to the children's requests when needed, and all the children were doing something. Limits were set on behaviors when necessary in a firm, but kind, manner. They fed infants at a slower pace, adjusting to individual needs, talking gently much of the time. Toileting and diaper changing times were used as opportunities for interactions. The caregivers also attended to each child, not just the socially responsive ones.

Children.   Children also appeared happy, spirited, and enthused. While caregivers can change their behaviors to please observers, children do not. They were engaged in age-appropriate, constructive activities and were less regimented. The older children played independently or

positively with each other and with caregivers. There were fewer aggressive interactions with peers, more laughter in the room, and more obvious signs of affection toward caregivers such as hugging and kissing. They also seemed to anticipate social interactions with caregivers, such as being picked up or having a two-way conversation. Older children responded appropriately to strangers with eye contact, wariness, or appropriate interactions—they responded to strangers as people, not objects. They engaged them appropriately without the indiscriminate friendliness of the past.

RESULTS

Very preliminary data from only Baby Home 13, which experienced the double intervention, were available at this writing. These early results indicate that the interventions have been successfully implemented, that caregivers have changed their behaviors with the children on the wards, and that children have improved in their physical, cognitive, language, personal-social, and affective development. In the case of general development, the children with the most severe disabilities, who were ignored the most prior to the interventions, have improved the most.

Interventions Were Implemented

Official employment records indicate that prior to the structural change intervention, caregivers of all types worked only an average of 1.25 consecutive days in the Baby Home. After structural changes, staff who became primary caregivers increased the number of consecutive days worked during the month to an average of 4 to 5. In contrast, other caregivers did not change their work patterns and continued to be present an average of 2 consecutive days. These data clearly show that primary caregivers were employed on a different schedule than they were previously and substantially increased the number of consecutive days worked.

Similarly, prior to the interventions, caregivers worked between 20 and 40% of the days in a month. After structural changes, primary caregivers worked 50 to 65% of the days in a month whereas the other caregivers remained steady at 30 and 40% of the days. Other aspects of structural changes also were implemented as planned.

These data demonstrate that the structural change intervention was successfully implemented, specifically in terms of increasing the number of consecutive days and the number of days during the month in which primary caregivers were available to children in their subgroup.

Improved Caregiver Behavior and Attitudes

The training intervention taught caregivers new knowledge about the development of children birth to 4 years of age, which was demonstrated by an increase in scores on a 40-item, multiple-choice, parallel forms test administered before and after the classroom training. But training was mainly intended to improve the behavior of caregivers with the children, especially to replace the institutional culture of businesslike caregiving and stoicism with more natural interactions between caregivers and children that emphasized responsivity, acceptance, involvement, and positive emotions. An institutional version of the HOME scale, which reflects these characteristics, was administered prior to implementing the double intervention and after both interventions were fully in place. These results showed a 16% improvement on the total HOME scale, with significant improvements on the subscales ranging between 7 and 19% (70% for variety). Therefore, the training intervention, at least in the context of structural changes, produced the desired changes in caregiver behavior on the ward.

Caregivers also showed less traditional attitudes toward taking care of the children in the Baby Homes. Specifically, caregivers became less traditional on the Schaffer and Edgerton (1985) Parental Attitude Modernity Scale (i.e., less adult dominated, less emphasis on children's conformity and obedience), and they reduced their inflexibility and rigidity on other questionnaire scales, as one would expect from the interventions. In addition, caregivers declined in anxiety and depression. A multivariate reduction in anxiety and depression with a univariate decrease in usual anxiety occurred in a multivariate analysis of scores on the Spielberger (1972) Usual and Current Anxiety Scale, the Zung (1965) Depression Scale, and the Beck Depression Inventory (Beck, Steer, & Garbin, 1988). These questionnaire results seemed to conform to the casual observations of a much happier and positive social-emotional atmosphere on the wards and a greater willingness of caregivers to be responsive and flexible in dealing with the children.

Improvements in the Children

Although the caregivers knew from their training and from the imposition of structural changes what the project intended for them to do and they easily could have "performed" while being observed on the wards and when responding to questionnaires, children ages birth to 4 do not put on acts for researchers, professionals, or assessors. Nevertheless, children improved in almost every aspect of development.

Physical growth. Specialists in the physical growth of children reared in orphanages describe a syndrome of "psychosocial short stature," in which the children eat as much or more than would be expected, but grow less in height, weight, head circumference, and chest circumference than would otherwise be typical (e.g., Blizzard, 1990; Johnson, 2000). Such children show rapid gains in physical growth once they are adopted out of the institutions into private families, and it is widely believed that it is the lack of social interaction in the orphanage that produces the observed growth retardation.

Our preliminary data on the physical growth of the children in the double-intervention Baby Home provides one of the more systematic, quasi-experimental demonstrations that changing the social-emotional climate of an orphanage can produce increases in physical-growth measures. After correcting for normal age differences and expected no-treatment growth profiles, a preliminary sample of 57 typically developing children and 21 children with moderate disabilities showed significant improvements in weight, height, head circumference, and chest circumference ranging from 1.7 to 17.2%. A sample of 27 children with severe disabilities showed significant improvements in weight and chest circumference (14.1 & 5.2%, respectively), but not in height and head circumference, which are influenced more by skeletal stature and are typically slower to demonstrate improvements.

General development. In similar analyses of the Battelle Developmental Inventory (LINC Associates, 1988), significant improvements on Battelle total score were observed for typically developing children (9.8%), children with moderate disabilities (15.0%), and children with severe disabilities (39.6%), with improvements increasing significantly with the degree of disability.

On the Battelle subscales, a distinct pattern emerged in which all children regardless of their disability status improved on personal-social, communication, and cognitive subscales while children with severe disabilities improved on every subscale in amounts ranging from

26.5 to 51.9%. The gross motor, fine motor, and adaptive subscales represent areas emphasized by the caregivers prior to the interventions, thus we might expect less improvement in these areas, except for the children with severe disabilities who were largely ignored prior to the interventions.

Personal-social development. A preliminary analysis of factor scores on the Parent–Child Emotional Relationships Assessments (Clark, 1985), revealed significant improvements on three of three caregiver factors, two of three child factors, and two of two dyadic factors. These results indicated (a) more caregiver positive affect, involvement, and scaffolding and less negative affect, insensitivity, inconsistency, and anxiety; (b) a better quality of play, interest, and attention and less dysregulation and irritability by the children; and (c) dyads that showed greater mutuality and reciprocity and less disorganization and tension.

Similarly, on very preliminary examinations of scores on the Infant Affect Manual (Osofsky, Muhamedrahimov, & Hammer, 1998) from assessments that included free play and two separation and reunion episodes, young children who were 2.7 to 4.6 months at baseline (and therefore approximately 12–18 months at posttest) showed increases in positive affect when they were with the caregiver, but no increases when the child was alone (during separation). This pattern could be interpreted as showing more positive affect toward the caregiver and some wariness at her departure. Older infants and toddlers (10.9–29.7 months at baseline and therefore much older at outcome assessment) showed very substantial increases in positive affect when the children were with the caregiver (free play plus reunion).

CONCLUSIONS AND IMPLICATIONS

The interventions appear to have been implemented successfully. For example, physical environments were changed, staffing schedules were altered, and data indicate that primary caregivers increased the number of consecutive days and the number of days per month that they worked. There was a more stable and smaller set of caregivers for each child.

The "train-the-trainer" design was accomplished by St. Petersburg trainers conducting the caregiver sessions over a 4-month period. Pre-/posttest improvement of the participants indicated that new information was imparted, and improvements in supervisory observation records and caregiver behaviors have documented the use of "best practices."

Informal observation points to improved environments and child and caregiver behaviors. These include smaller group sizes, smaller room configurations and more inviting room furniture; implementation of primary and secondary caregivers who are obviously known to the children; and integration of children by age and disability status into subgroups. In addition, there are obviously improved social relations between children and caregivers, as indicated by warm and nurturing gestures from children and adults, more smiling and talking among peers and between adults and children, and increased reciprocal interactions. These observations are supported by preliminary data indicating that caregivers improved their behavior on the HOME Scale, had less traditional attitudes toward children, and less anxiety and depression. Children improved over no-treatment maturation levels in physical, mental, social, and emotional development.

These early findings indicate that training can increase socially responsive caregiving behaviors in staff and has the further effect of improving the social interactions of the children— at least temporarily. These observations also seem to indicate that such training is effective with staff with modest educational backgrounds.

REFERENCES

Ackerman, B.P., Brown, E.D., D'Eramo, K.S., & Izard, E.E. (2002). Maternal relationship instability and the school behavior of children from disadvantaged families. Developmental Psychology, 38, 694–704.

Ainsworth, M.D.S. (1979). Attachment as related to mother–infant interaction. In J.S. Rosenblatt, R.A. Hinde, C. Beer, & M. Busnel (Eds.), Advances in the study of behavior (pp. 1–51). New York: Academic Press.

Ainsworth, M.D.S., Bell, S.M., & Stayton, D.J. (1974). Infant–mother attachment and social development: Socialization as a product of reciprocal responsiveness to signals. In M.P.M. Richards (Ed.), The integration of the child into a social world (pp. 99–135). Cambridge, England: Cambridge University Press.

Ames, E.W., Chisolm, K., Fisher, L., Morison, S.J., Thompson, J., & Mainemer, H. (1997). The development of Romanian orphanage children adopted to Canada. Final report to the National Welfare Grants Program, Human Resources Development, Canada.

Bakermans-Kranenburg, M.J., van IJzendoorn, M.H., & Juffer, F. (2003). Less is more: Meta-analyses of sensitivity and attachment interventions in early childhood. Psychological Bulletin, 129, 195–215.

Beck, A.T., Steer, R.A., & Garbin, M.G. (1988). Psychometric properties of the Beck Depression Inventory: Twenty-five years of evaluation. Clinical Psychology Review, 8(1), 77–100.

Blizzard, R.M. (1990). Psychosocial short stature. In F. Lifshitz (Ed.), Pediatric endocrinology (pp. 77–91). New York: Marcel Dekker.

Bowlby, J. (1969). Attachment and loss: Vol. 1. Attachment (2nd ed.). New York: Basic Books.

Clark, R. (1985). The Parent–Child Early Relational Assessment instrument and manual. Madison, WI: Author.

DeWolff, M.S., & van IJzendoorn, M. (1997). Sensitivity and attachment: A meta-analysis on parental antecedents of infant attachment. Child Development, 68, 571–591.

Dozier, M., Stovall, K.C., Albus, K.E., & Bates, B. (2001). Attachment for infants in foster care: The role of caregiver state of mind. Child Development, 72, 1467–1477.

Edwards, C.P., & Raikes, H. (2002). Extending the dance: Relationship-based approaches to infant/toddler care and education. Young Children, 57, 10–17.

Ernst, C. (1988). Are early childhood experiences overrated? A reassessment of maternal deprivation. European Archives of Psychiatry and Neurological Science, 237, 80–90.

Fonagy, P., Steele, M., Steele, H., Leigh, T., Kennedy, R., Mattoon, G., & Target, M. (1995). Attachment, the reflective self, and borderline states. In S. Goldberg, R. Muir, & J. Kerr (Eds.), Attachment theory: Social developmental, and clinical perspectives (pp. 233–278). Hillsdale, NJ: Academic Press.

Fonagy, P., Target, M., Steele, M., Steele, H., Leigh, T., Levinson, A., & Kennedy, R. (1997). Crime and attachment: Morality, disruptive behavior, borderline personality, crime, and their relationships to security of attachment. In L. Atkinson & K. Zucker (Eds.), Attachment and psychopathology. New York: Guilford Press.

Galiguzova, L.N., Meshcheryakova, S. Yu., & Tsaregorodtseva, L.M. (1990). Psikhicheskie aspekty vospitaniya detej v domakh rebenka i detskikh domakh [Psychological aspects of children's upbringing in baby homes and children homes]. Voprosy Psikologii, 6, 17–25.

Johnson, D.E. (2000). Long-term medical issues in international adoptees. Pediatric Annals, 29, 234–241.

Kelley, S., (1999). Regulatable factors in early child care. Developments. Pittsburgh, PA: University of Pittsburgh Office of Child Development.

LINC Associates. (1988). The Batalle Developmental Inventory. Itasca, IL: Riverside.

Mahoney, G., Boyce, G., Fewell, R.R., Spiker, D., & Wheeden, C.A. (1998). The relationship of parent–child interaction to the effectiveness of early intervention services for at-risk children and children with disabilities. Topics in Early Childhood Special Education, 18, 5–17.

Ministerstvo Zdravookhraneniya Rossijskoj Federatsii [Ministry of Health of the Russian Federation]. (2003). Sluzhba okhrany zdorov̀ya materi i rebenka v 2000 godu [Services for mother and child protection in 2002]. Moscow.

Muhamedrahimov, R.J. (2000). New attitudes: Infant care facilities in Saint-Petersburg (Russia). In J.D. Osofsky & H.E. Fitzgerald (Eds.), WAIMH handbook of infant mental health (Vol. 1, pp. 247–294). New York: Wiley.

Muhamedrahimov, R.J., Palmov, O.I., Nikiforova, N.V., Groark, C.J., & McCall, R.B. (2004). Institution-based early intervention program. Infant Mental Health Journal, 25, 488–501.

NICHD Early Child Care Research Network. (1997). The effects of infant childcare on infant–mother attachment security: Results of the NICHD Study of Early Child Care. Child Development, 68, 860–879.

O'Connor, T.G., Rutter, M., & the English and Romanian Adoptees (ERA) Study Team. (2000). Attachment disorder behavior following early severe deprivation: Extension and longitudinal follow-up. Journal of the American Academy of Child and Adolescent Psychiatry, 39, 703–712.

Osofsky, J.D., Muhamedrahimov, R.J., Hammer, B.A. (1998). The infant affect manual. New Orleans, LA: Authors.

Phillips, D., & Adams, G. (2001). Child care and our youngest children. The Future of Children, 11, 35–51.

Raver, C.C. (2002). Emotions matter: Making the case for the role of young children's emotional development for early school readiness. Society for Research in Child Development Social Policy Report, 16(3).

Rothbaum, R., & Weisz, J.R. (1994). Parental caregiving and child externalizing behavior in nonclinical samples: A meta-analysis. Psychological Bulletin, 116, 55–74.

Rutter, M. (1972). Maternal deprivation reassessed. London: Penguin.

Rutter, M., & the English and Romanian Adoptees (ERA) Study Team. (1998). Developmental catch-up, and deficit, following adoption after severe global privation. Journal of Child Psychology and Psychiatry, 39, 465–476.

Schaefer, E., & Edgerton, M. (1985). Parental and child correlates of parental modernity. In I.E. Sigel (Ed.), Parental belief systems: The psychological consequences for children (pp. 287–318). Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.

Spielberger, C.D. (Ed.). (1972). Anxiety: Current trends in theory and research (Vol. 2). New York: Academic Press.

Sroufe, L.A. (1989). Relationships and relationship disturbances. In A.J. Sameroff & R.N. Emde (Eds.), Relationship disturbances in early childhood (pp. 97–124). New York: Basic Books.

Stams, G.-J.J.M., Juffer, F., Rispens, J., & Hoksbergen, R.A.C. (2000). The development and adjustment of 7-year-old children adopted in infancy. Journal of Child Psychology and Psychiatry, 41, 1025–1037.

Stams, G.-J.J.M., Juffer, F., & van IJzendoorn, M.H. (2002). Maternal sensitivity, infant attachment, and temperament in early childhood predict adjustment in middle childhood: The case of adopted children and their biologically unrelated parents. Developmental Psychology, 38, 806–821.

van IJzendoorn, M.H., Dijkstra, J., & Bus, A.G. (1995). Attachment, intelligence, and language: A meta-analysis. Social Development, 4, 115–128.

Wierzbicki, M. (1993). Psychological adjustment of adoptees: A meta-analysis. Journal of Clinical Child Psychology, 22, 447–454.

Zung, V. (1965). Self-rating depression scale. Archives of General Psychiatry, 12, 63–70.