EARLY CARE EXPERIENCES AND LATER FUNCTIONING OF ROMANIAN FOSTER CHILDREN

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Abstract

How do harsh early environments affect children's development? The answer to this question is complex and difficult to determine for a variety of reasons. However, data obtained from the Romanian child-welfare system provided a new opportunity to approach this question. We examined the association between the pathways children followed leading to their placement in foster families and their behaviors. The four pathways identified were: (a) children placed directly from biological families into foster families, (b) children abandoned in nurseries before placement in foster families, (c) children abandoned in maternity wards before placement in foster families, and (d) children who resided in placement centers (formerly called orphanages) before placement in foster families. Overall, children in the Placement Center Pathway showed the most psychological and behavior problems, second was the Nursery Pathway, third was the Biological Family Pathway, and finally the Maternity Pathway had the least problems. It is important to note that it is not the intention of the present study to draw a definitive causal arrow between placement centers and later functioning. Data from the present study, and future studies of this type, will help policy-makers, practitioners, and researchers ascertain existing needs of these children so that future efforts to improve foster care may be directed to these areas.

Keywords: children; foster care; institutionalization; neglect; abuse; Romania.

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Introduction

What is the effect of negative early experiences on children's later psychological and behavioral functioning? The answer to this question is complex and difficult to determine for a variety of reasons, but a reform period in the Romanian child-welfare system provided a new window for an examination of the effect of these early negative experiences. The Romanian child welfare system has undergone a well-publicized series of reforms in the last 20 years, and sweeping changes were instituted to improve the quality of children's care and to improve their behavioral and psychological outcomes relative to those that occurred during Romania's now infamous period of institution-style, state-run orphanages (NACPA & UNICEF, 2004; Stativa, Anghelescu, Mitulescu, Nanu, & Stanciu, 2005). One of the most significant trends to emerge was to remove orphans from long-term, government-run care facilities that provided extremely sub-standard care. The children were transitioned, instead, to home-based foster care services, where living conditions were significantly better (for a review, see Rus, Parris, Cross, Purvis, & Drăghici, 2011).

Romanian Child Welfare Institutions

Throughout this reform era, institutions that were the most commonly used and also the last to be phased out were nurseries (leagăne; long-term residential care centers for children ages 0 to 3) and houses for children/orphanages (case de copii). Both were designed for children without severe mental or physical problems. These were large buildings, each one housing hundreds of infants, with individual rooms (dormitories) filled with rows of iron beds arranged in the same manner as hospital beds. Most counties in Romania had only one nursery, the main reason that many children were kept in one large, crowded building (Stativa, Anghelescu, Palicari, Stanescu, & Nanu, 2002).

After 3 years of age, those who had not been absorbed into families were most commonly placed in orphanages, while some were placed in other types of institutions (more information about other institutions is forthcoming). Orphanages were organized in the same manner as 19th century boarding schools, characterized by crowded conditions and monotonous daily activities. Restrooms were also crowded, often with all children living on the same floor sharing a restroom. There was no space for socialization or recreation either inside or outside the building. In addition, building facilities were typically in a state of disrepair, with maintenance work typically done only once a year. Thus, the buildings that served as nurseries and orphanages were not adequate for the purposes in which they were used (Stativa *et al.*, 2002).

Placements were based on age alone (without consideration for individual wishes or keeping siblings together). Children were typically released from the system at age 18 (NAPCR, 2010). Nurseries and orphanages were phased out during the De-institutionalization period (2001-2004), and the Alternative to Institutionalization care period (2005-present), and replaced with family-type services, much smaller residential centers, and day care services (NACPA & UNICEF, 2004; Rus *et al.*, 2011; Stativa, Anghelescu, Mitulescu, Nanu, & Stanciu, 2005).

One of the most important trends to emerge from the Romanian child welfare reforms was the movement of children from institutions to family-type care (Cojocaru & Cojocaru, 2008; Cojocaru, 2009). These services were established to care for children who are temporarily or permanently separated from their parents. Such services are provided at the home of a person or a family, such as foster parents, extended family, or other family/person. Of these, professional foster parenting is the most prevalent type and these are salaried full-time positions. Specialized staff from the child welfare system also provides foster parents with training, support, evaluation, and activities to integrate or reintegrate children with their natural, extended, or substitute families (Romanian Association of Health Psychology, 2008; Decree no. 481/2004, and Law no. 272/2004). On September, 2009, when data for the present study was collected, there were 69,530 children in the Romanian special protection system, out of which 43,882 were cared for in family type services. Of these, 20,729 were cared for by public & private professional foster caregivers; 19,408 by extended family; and 3,745 by other persons/families (Rus *et al.*, 2011).

Children in foster families have significantly better life conditions than institutionalized children in five important ways. They have (a) direct access to health services, food, & clothing; (b) personal room and other belongings and do not struggle with overcrowded beds and other living spaces; (c) more physical, emotional, & cognitive stimulation in foster families and schools; (d) more social stimulation in foster families, new schools, clubs, and neighborhoods; and (e) less physical, emotional, and/or sexual abuse because they are cared for by more affectionate and competent caregivers (S. Cliff, personal communication, 2010; Cojocaru, 2008).

There is limited information documenting the quality of care in Romanian foster homes. An assessment of foster home care was outside the scope of this study, however, we do know that foster caregivers are required to have graduated from a lower secondary or professional school, be able to provide a child with his or her own room, have good recommendations from neighbors, and good results on psychological and medical tests. In addition, they are required to complete a minimum of 60 hours of coursework organized by the child welfare directorate consisting of legislation issues, pediatrics, and child psychology, ending in a test

of their knowledge on these topics. In addition, foster parents are supervised by both the child's case manager and a social assistant who visit the foster home on a regular basis. These supervisors keep records of their visits, and periodic psychological exams are performed on the children. If issues or problems are uncovered, these supervisors assist the foster parent by recommending supplementary trainings, and if they feel the foster parent is not taking proper care of the child they can remove the child (Romanian Association of Health Psychology, 2008). While the foster care system itself is still in its infancy in Romania, and there are still issues that are being addressed as they work toward the highest standard of care possible, based on the knowledge that is available, we have concluded that the foster care system is a better environment for children than the traditional Romanian residential institutions.

In Romania, placing institutionalized children into foster care has had a significant positive impact on their biological, psychological, and social development. These children have reduced internalizing disorders (Zeanah *et al*., 2009), increased attention and positive affect (Ghera *et al*., 2009), improved neural functioning expressed in diminished cortical hypoarousal (Moulson, Zeanah, Fox, & Nelson, 2009), increased EEG alpha power and decreased short-distance of EEG coherence (Marshall, Reeb, Fox, Nelson, & Zeanah, 2008), improved cognition (Nelson, Zeanah, Fox, Marshall, Smyke, & Guthrie, 2007) and language growth (Windsor, Glaze, Koga, & BEIP Core Group, 2007), improved sensory capacities, less self-stimulating behavior (e.g., rocking behavior), and fewer emotional and behavioral problems (Groza, Conley, & Bercea, 2003). Of the studies listed above, all but one utilized data from the Bucharest Early Intervention Project (BEIP; Zeanah *et al*., 2003) whose participants were under the age of five. The other, Groza *et al*. (2003), used data from children ages 1 – 11 years (average age 4). Thus, there is a lack of information on older Romanian foster children with histories of institutionalization.

Pathways through the Romanian Child Welfare System

During the final periods of reform, when foster families first emerged as an alternative to institutionalization, placement of children into these families was typically a complicated process that included intermediate institutions such as maternities or pediatric wards, which were not designed to care for abandoned children. For decades, medical institutions such as maternities and pediatric wards had been forced to deal with the complex challenges that arose when runaway mothers left their children behind. During the periods of transition away from institutionalization to the establishment of alternatives, there is little information about the pathways children followed until placement into foster families.

However, there is one retrospective study (Stativa *et al*., 2005) that does reveal pathways children followed within the Romanian Child Protection System up to and including the De-institutionalization period (when data was collected for that study). This study describes forty-eight pathways that start with initial place of abandonment (including abandonments that occurred in the 1980's, 1990's, and later) and end with place of residence at the time data was collected (2003-2004). Over the span of the reform periods, however, many of these original forty-eight pathways were discontinued. Fifteen of these pathways led to final placement in foster families. Of these, the four most frequent were (1) maternity ward to foster parent (12.5% of all children under County Protection Services), (2) biological family to pediatric ward to foster parent (8.1%), (3) biological family to foster parent (3.7%), and (4) biological family to placement center to foster parent (3.3%). These four pathways are essentially the same as three of the pathways identified in the present study. However, in our study, the biological family to foster parent pathway include both those who did and did not pass through pediatric wards, while the Stativa *et al*. (2005) study broke these into separate groups. Other differences between our study and the Stativa *et al*. (2005) study include: (1) they did not identify the pathway that we designated as the Nursery Pathway; (2) they included only children under age five while we focused on older children, (3) they focused on children who had been abandoned by their mothers in maternity wards, hospitals/pediatric and recovery wards, and emergency services centers, while we focused on children abandoned or initially placed in nursery, maternity wards, placement centers, and foster homes.

During the period of data collection for the Stativa *et al*. (2005) study (2003-2004), child abandonment rates in maternity wards were 1.8 per 100 births/hospital admissions and about 4,000 children in Romania were residing in maternity wards. In 2004, 24.8% of these children spent over one month in maternity wards. Reasons children were abandoned in maternity wards were listed as: runaway mother (66.9%); abandoned child (14%); child abandonment risk (6.8%); and, no information on mother's departure (3.6%). At time of discharge, 83% of the children were healthy and 14.4% had health problems.

Furthermore, the Stativa study found that child abandonment rates in hospitals/pediatric and recovery wards were 1.45 per 100 children and about 5,000 children resided at these institutions in 2004. Duration of stay was over one month for 28.8% of the children and 40.6% were 13-24 months of age, followed by 24.3% under 12 months. Reasons children were abandoned in hospitals/pediatric and recovery wards were listed as: temporarily abandoned by mother (43.4%); social-case/repeated hospitalization [including children who were repeatedly abandoned in hospitals] (32%); abandoned child (15%); runaway mother (4.9%); and, child abandonment risk (4.7%). At the time of discharge from pediatric and recovery wards 74.5% of the children were healthy and 25.5% of the children were reported as having health problems. Usually, unwanted pregnancies, low birth-weight,

children's poor health, and children with disabilities were the most frequent reasons for abandonment (UNICEF, 2006).

While maternity or pediatric wards still operate in Romania, their role has largely reverted back to their original intended purpose as medical care providers because they were not originally intended to be part of the child welfare system, and because reform efforts have alleviated much of the need for institutionalization. Unlike in the past, there are now specific rules about steps these institutions must take when children are abandoned on their premises. Overall, the goal is now to transfer these children quickly and safely to foster homes or other services designed to meet the needs of these children.

Purpose and Hypothesis of the Current Study

This study provides a snapshot of children who were in foster care in 2009 and their pathways through the Romanian child welfare system. Consequently, this study explores how children's behavioral and psychological functioning were related to their pathway to foster care. Because the standard of care was lowest in placement centers, we hypothesized that children from the Placement Center Pathway would have significantly worse behavioral and psychological functioning later in life than would children from the other three pathways. It is important to note, however, that several potential confounding variables should lead to caution in assigning causality from these data. Children were not randomly assigned to a particular pathway, and thus they were subject to a variety of circumstances that were not experimentally controlled prior to their placement (e.g., poverty, abuse, neglect, abandonment, etc.). As a result, this present study was not designed to test the hypothesis that any given pathway itself was solely responsible for children's outcomes in foster care. Instead, it provides insight into the relationship between negative early experiences and subsequent functioning. We acknowledge that children from all pathways may have experienced adverse prenatal conditions such as exposure to alcohol or other substances, malnutrition, or other risk factors. However, our prediction was based on the assumption that children from the Placement Center Pathway likely experienced additional adversities (privation, abuse, and/or neglect) that affected their emotional and behavioral development (Colvert *et al*., 2008; Fisher, Ames, Chisholm, & Savoie, 1997; Gunnar & Van Dulmen, 2007; Juffer & van IJzendoorn, 2005). We predicted this hypothesis would hold even when controlling for covariates such as number of foster placements, IQ, gender, and ethnicity.

The present research differs from other studies of foster children in Romania (BEIP, Zeanah *et al*., 2003; Groza *et al*., 2003) in four important ways. First, previous studies have not examined children's institutional pathways as a variable that could influence their behavioral outcomes. Specifically, we examined the

association between the pathways children followed leading to their placement in foster families and the behaviors of these children. The four pathways identified were: (a) placement directly from biological families into foster families, (b) abandonment in nursery before placement in foster families, (c) abandonment in maternity wards before placement in foster families, and (d) residence in placement centers/orphanages before placement in foster families. Second, the present study assessed children between the ages of 6.9 –14.6. These children were older than those assessed in previous studies. Third, the current study is one of the first studies of previously institutionalized Romanian children using the Romanian language version of the Child Behavior Checklist (CBCL/6-18) and Teacher Report Form (TRF), which assess adaptive and maladaptive behaviors (Achenbach & Rescorla, 2001). Both CBCL and TRF are considered valid tools in assessing children placed in long-term foster care (Tarren-Sweeney, Hazell, & Carr, 2004). Fourth, another distinctive feature of the current research is that the ethnic distribution of our sample (Romanian, Hungarian, and Rroma children) is more representative of the total foster child population in Romania. In particular, there is significant over-representation of Rroma (Gypsy) children in the Romanian child care system as compared with their numbers in the general population (Stativa *et al.*, 2005). This study included a large Rroma sample consistent with larger numbers of Rroma found in the Romanian foster care system.

Method

Written consent to use this archival data for research purposes was obtained from the appropriate Romanian authorities. Approval was also obtained from the appropriate Institutional Review Board for Human Subjects Research. Children's privacy was protected by replacing their names with identification numbers on all research documents and analyses.

Participants

Our study population included children under legal protection of the County Social Assistance and Child's Care Directorate (CSACCD) in one Romanian county. The supervising psychologist (presiding over all CSACCD psychologists in this county), periodically directed certain psychological assessments to be given to the CSACCD children in this county. It may be of interest to note that supervising psychologists for each county determined how often and what assessments were used in their own county. In the county where the present study was performed, the CBCL was typically included in the periodic assessments for all children over 6 years of age. However, in 2009, the TRF was included to obtain additional data for research purposes, including this study. During May and June

2009, these assessments were given to foster parents and teachers who had the option to complete the forms in the CSACCD office or take them home to complete. Of those taken home, most were returned within one or two weeks. All forms returned by the end of June 2009 were analyzed for this study. All returned forms were placed directly into the appropriate child's file at the CSACCD office and became part of the archival data for that child. Thus, all data for this study were collected from this archival data. The inclusion criteria for the current study were foster children between the ages of 6 to 18, under the protection of a specific CSACCD jurisdiction, with no diagnosis of autism, and with a completed CBCL and TRF form (completed in 2009) in their official file.

During this period of data collection, there were approximately 400 children under the legal protection of CSACCD in this county. During this assessment period (May-June 2009) approximately 130 of these children were between the ages of 6-18. Upon examination of CBCL and TRF forms for these 130 children, we found that assessments were returned for 121 children (59 boys and 62 girls) ages 6-18. Therefore, we examined forms for approximately 93.1% of the children in this county between the ages of 6-18. Of these 121 children, 9 (3 boys and 6 girls) were excluded because of incomplete data and 3 (1 girl and 2 boys) were excluded due to a diagnosis of autism. Therefore, the initial group meeting our selection criteria consisted of 109 (54 boys and 55 girls) Romanian foster children who were assessed by their caregivers, in most cases by their foster mothers using CBCL/6-18. This initial group represented 84% of all foster children between the ages of 6-18 in this county. Furthermore, of these 109 children, 68 (36 boys and 32 girls) were selected as the final sample because they were assessed both by their foster parents (CBCL/6-18) and teachers (TRF).

These analyses were run first on both evaluations for each child due to the assumption that children may behave in different ways at home than in schools (Achenbach, McConaughy, & Howell, 1987) or that teachers may report in a different manner than parents (Achenbach & Rescorla, 2001). This final group of 68 children represented approximately 52% of all foster children between the ages of 6-18 in this county. We know that the selected foster children had no diagnosed medical issues such as Down syndrome, fetal alcohol syndrome, or microcephaly. However, it is possible that these children had mental deficiencies, autism like behaviors, or other physical/psychological problems that were undiagnosed or unrecognized, and therefore not reported in the children's files.

In the present study, four reasons for children's placement in institutions or foster families were identified: (a) 38 (55.9%) were abandoned by mothers in maternity or pediatric wards, (b) 10 (14.7%) were abandoned due to socio-economic reasons (e.g., parent incapacity, parent request, parent deceased, parental poverty, etc.), (c) one (1.5%) was neglected; and (d) 19 (27.9%) were abused (type of abuse was not identified).

Measures

Dependent Variables: Behavioral and Emotional Problems

The CBCL/6-18 and TRF contain eight syndrome scales (Anxious/Depressed, Withdrawn/Depressed, Somatic, Social, Thought, Attention, Rule-Breaking Behaviour, and Aggression). TRF Attention Problems scale contains two subscales (Inattention and Hyperactivity-Impulsivity). CBCL/6-18 and TRF scales also generate composite scales. The Internalizing composite includes Anxious/Depressed, Withdrawn/Depressed, and Somatic scales; the Externalizing composite includes Rule-Breaking Behavior and Aggression scales; and the Total Problems composite includes the Internalizing composite, Externalizing composite, and other problems (problems not included in syndrome scales; Achenbach & Rescorla, 2001). For the present study, composite scales (Internalizing, Externalizing, and Total Problems scales) of both CBCL & TRF were used. The composite scales for the CBCL and TRF captured most of the behaviors that we wanted to examine, however, those not captured within these composites were reported separately. Those reported separately are the Social and Attention subscales for the both the CBCL and TRF.

CBCL and TRF are appropriate for this study because they have been validated for use with foster children in long-term foster and residential care (Albrecht, Veerman, Damen, & Kroes, 2001; Tarren-Sweeney *et al*., 2004). The CBCL and TRF have been analyzed in many societies, including Romania, and fit indices strongly support the syndrome structure of these assessments and use of these scales for these societies (Ivanova *et al*., 2007a, b).

The CBCL and TRF were translated into the Romanian language for use in Romania (Dobrean, 2004) using the translation methodology found in published studies by Hambleton (1994), Hambleton & Patsula (1998), and Geisinger (1994). Using this methodology, the CBCL was translated from English to Romanian by two translators and then translated back into English by two different translators. Finally, the first Romanian version of the CBCL was created based on these translations, and then reviewed for accuracy.

Explanatory Variable: Pathway to Foster Care

Regarding our final group of foster children (n = 68), the Biological Family Pathway (BF) consisted of 10 children placed directly from their biological families into foster families (including three children who spent an average of 0.5 years (SD = 0.9) in pediatric wards prior to placement in foster families). The Nursery Pathway (N) consisted of 21 children abandoned by their biological families in nurseries prior to placement in foster families. Children in this group spent an average of 0.9 years (SD = 0.7) in nurseries. The Maternity Pathway (M)

consisted of 18 children abandoned in maternity wards prior to placement in foster families (children may or may not have been routed through nurseries before placement in foster care). Children in this group spent an average of 0.5 years (SD = 0.7) in maternities. Placement Center Pathway (PC) consisted of 19 children living in placement centers prior to placement in foster families. Children in this group spent an average of 2.7 years (SD = 1.9) in orphanages.

Covariate Variables

Intelligence Quotient (IQ). Romanian standardized version of Raven's Standard Progressive Matrices (SPM) was used to measure children's IQ. This psychological instrument offers insight about children's capacity to observe, solve problems, and learn (Raven, Raven, & Court, 2000) but does not include language based items.

Foster placements. The number of foster home placements children had experienced was identified. Thus, out of 68 children, 49 (72.1%) had experienced one home placement and 19 (27.9%) had experienced two to five home placements (see *Table 1*). In the current study, reasons why children were shuffled between foster placements are unknown.

Children's demographic. Data on children's age, gender, and ethnicity were collected. At the time of data collection, children ranged in age from 6.9 to 14.6 years (mean age 9.9 years; see *Table 1*). Girls and boys were represented in approximately equal numbers (see *Table 1*). Also, Rroma children comprised the majority of the groups (see *Table 1*). The large Rroma sample in this study is consistent with the over-representation of Rroma children in the Romanian child welfare system. Studies have found that 51.1% of Romanian mothers who abandon children are of Rroma ethnicity (MLSSF, NACRP, & UNICEF 2005).

Age at foster care placement and time spent in each placement. Data was collected regarding age when placed in foster families, time spent with foster families, time spent with biological families, and time spent in institutions and foster families combined (see *Table 2*).

Table 1. *Demographic Characteristics of Children in Each Pathway*

			Pathways		
Child Characteristics	Biological Family (BF) ($N = 10$)	Nursery (N) ($N = 21$)	Maternity (M) ($N = 18$)	Placement Center (PC) ($N = 19$)	Total ($N = 68$)
Age in years (SD)	10.4 (1.3)	9.6 (1.1)	9.5 (1.7)	10.5 (2.0)	9.9 (1.6)
Ethnicity					
Romanian	2 (20.0)	6 (28.6)	3 (16.7)	3 (15.8)	14 (20.6)
Hungarian	0 (0)	3 (14.3)	1 (5.6)	0 (0)	4 (5.9)
Rroma	8 (80.0)	12 (57.1)	14 (77.8)	16 (84.2)	50 (73.5)
Gender					
Female	6 (60.0)	13 (61.9)	8 (44.4)	5 (26.3)	32 (47.1)
Male	4 (40.0)	8 (38.1)	10 (55.6)	14 (73.7)	36 (52.9)
Home placement					
One home	8 (80.0)	15 (71.4)	8 (44.4)	18 (94.7)	49 (72.1)
Two homes	2 (20.0)	4 (19.0)	8 (44.4)	1 (5.3)	15 (22.0)
Three homes	0 (0)	1 (4.8)	1 (5.6)	0 (0)	2 (2.9)
Four homes	0 (0)	0 (0)	1 (5.6)	0 (0)	1 (1.5)
Five homes	0 (0)	1 (4.8)	0 (0)	0 (0)	1 (1.5)

Note. Values for age in years are means with standard deviation (SD) in parentheses. Values for ethnicity, gender, and home placements are counts with percentage in parentheses.

Table 2. *Mean Age at Foster Care Placement, Time Spent in Biological Family, and Placement Type*

Child Characteristics	Biological Family (BF) ($N = 10$)	Nursery (N) ($N = 21$)	Maternity (M) ($N = 18$)	Placement Center (PC) ($N = 19$)	Total ($N = 68$)
Age when placed in foster care in years (SD)	3.6 (2.2)	1.7 (0.9)	2.7 (2.2)	3.9 (2.2)	2.8 (2.0)
Time in foster care in years (SD)	6.8 (2.8)	7.9 (1.5)	6.8 (1.4)	6.6 (2.5)	7.1 (2.1)
Time in biological family in years (SD)	3.2 (2.5)	0.7 (0.8)	0.02 (0.1)	2.5 (2.6)	1.4 (2.0)
Total time in institutions and foster care in years (SD)	7.3 (3.2)	8.9 (1.3)	9.4 (1.8)	8.0 (2.9)	8.6 (2.3)

Note. Table entries are means (years) with standard deviations (SD) in parentheses.

Results

Screening Covariates

We investigated whether pathways (Biological Family, Nursery, Maternity, and Placement Center) prior to the placement in foster families are associated with the scores of Syndrome Scales (CBCL and TRF). In order to screen for significant covariates, we ran analysis of covariance (ANCOVAs) using a two-step procedure. First, ANCOVAs were run incorporating a single covariate at a time: time spent in foster family/placement, time spent in child protection system (maternity, pediatric ward, nursery, orphanage), time spent in maternity and/or pediatric ward, time spent in nursery or orphanage, age when placed in maternity and/or pediatric ward, age when placed in nursery or orphanage, age when child was assessed, number of foster placements, IQ, gender, and ethnicity. Covariates were kept for the second step when they were significant for more than one dependent variable for each of the syndrome scales (CBCL and TRF). Second, ANCOVAs were run incorporating all significant covariates in the first step for each of the syndrome scales[7]. Based on these screening criteria, the only covariates that were significant were: number of foster placements and IQ, when children were assessed with CBCL; and foster placements, IQ, gender, and ethnicity, when children were assessed with TRF. However, to avoid confusion, all four covariates were used in analyses for both CBCL & TRF assessments. The other covariates did not reach significance and are not discussed further.

It is important to mention that *T* scores were analyzed and presented further. *T* scores were used to facilitate comparisons of the degree of deviance indicated by children's standing on the different scales of a form. Because *T* scores are based on percentiles for the normative samples, they provide convenient ways to quickly judge whether parents, teachers, and caregivers report relatively more problems compared to those reported for the normative sample (Achenbach & Rescorla, 2001).

Analysis of Covariance (ANCOVA)

Foster Parent Report (CBCL). We ran ANCOVAs with Pathway as independent variable, CBCL syndrome scale items as dependent variables, and number of foster placements, IQ, gender, and ethnicity as covariates. Most importantly, as seen in *Table 3*, there were significant group differences between Pathways for Social Problems, $F(3,54) = 3.12$, $p = .034$, $\eta^2 = .095$; Attention Problems $F(3,54) = 3.74$, $p = .016$, $\eta^2 = .109$; Internalizing Problems, $F(3,54) = 3.71$, $p = .017$, $\eta^2 =$

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[7] We ran all analyses with untransformed (raw) data and transformed data (square root) due to the presence of outliers. However, using both data sets we obtained similar significant results. Therefore, untransformed data were reported unless otherwise noted.

.143; Externalizing Problems, $F(3,54) = 3.26$, $p = .028$, $\eta^2 = .136$; and Total Problems, $F(3,54) = 4.82$, $p = .005$, $\eta^2 = .159$, when controlling for the four covariates. Tukey's HSD revealed that children from placement centers (Placement Center Pathway) had significantly higher scores (worse outcomes) on most syndrome scales than children from other pathways, when controlling for number of foster placements, IQ, gender, and ethnicity as covariates (see *Table 3*). Specifically, children in the Placement Center Pathway had higher scores on the Social, Attention, Internalizing and Total Problems scales than those in the Maternity Pathway (M). In addition, children in the Placement Center Pathway had higher scores on the Internalizing, Externalizing, and Total Problems scales than those in the Biological Family Pathway (BF). Furthermore, children in the Placement Center Pathway (PC) had significantly higher scores on the Total Problems scale than those in the Nursery Pathway (N). Children in the Nursery Pathway (N) had significantly higher scores on the Externalizing Problems scales than children in the Biological Family Pathway (BF), and higher scores on the Attention and Total Problems scales than children in the Maternity pathway (M).

Table 3. *ANCOVA of Syndrome Scales Scores as a Function of Pathway with Number of Foster Placements, IQ, Gender, and Ethnicity as Covariates when children were assessed by foster parents (CBCL)*

CBCL Syndrome Scale	Pathway				F^1	p	η^2
	BF ($N = 10$)	N ($N = 21$)	M ($N = 18$)	PC ($N = 19$)			
Social Problems	58.28[ab]	59.38[ab]	55.21[a]	62.35[b]	3.12*	.034	.095
Attention Problems	57.87[ab]	58.85[ab]	54.05[a]	62.86[b]	3.74[*]	.016	.109
Internalizing Problems	49.19[abc]	54.57[b]	47.87[c]	56.93[d]	3.71*	.017	.143
Externalizing Problems	50.58[a]	58.12[bc]	54.72[abc]	60.94[c]	3.26*	.028	.136
Total Problems	52.06[abc]	57.10[b]	50.09[c]	60.84[d]	4.82**	.005	.159

Note. BF = Biological Family Pathway; N = Nursery Pathway, M = Maternity Pathway, PC = Placement Center Pathway. F[1] Entries in this column are F statistics with 3 and 54 degree of freedom (df) for effects of Pathway controlling for number of foster placements and IQ. [†] p < .10. *p < .05. **p < .05. Adjusted means with different superscripts differed significantly by Tukey's HSD test (p < .05).

Foster Parent Report (CBCL): Covariates. One of the covariates, number of foster placements, was significantly positively related to the Social Problems scale, $F(1, 54) = 13.11$, $p = .001$, $\eta^2 = .133$, $\beta = 4.66$; Attention Problems scale, $F(1, 54) = 11.37$, $p = .001$, $\eta^2 = .111$, $\beta = 4.85$; Internalizing Problems scale, $F(1,$

54) = 7.01, p = .010, η^2 = .090, β = 4.68; and Total Problems scale, $F(1, 54)$ = 9.97, p = .003, η^2 = .109, β = 5.46, controlling for the other covariates. In addition, number of placements had a marginal significant effect on the Externalizing Problems scale, $F(1, 54)$ = 2.80, p = .099, η^2 = .039, β = 3.06. The IQ covariate was significantly negatively associated with the Social Problems scale, $F(1, 54)$ = 10.09, p = .002, η^2 = .102, β = -.20; Attention Problems scale, $F(1, 54)$ = 5.26, p = .026, η^2 = .052, β = -.16; and Total Problems scale, $F(1, 54)$ = 4.18, p = .046, η^2 = .046, β = -.17. The Externalizing and Internalizing Problems scales showed non-significant results (p > .05). Gender, however, was not associated with any of the CBCL scores when included in an ANCOVA with the other covariates (p > .05). Regarding ethnicity, Tukey's HSD showed that foster parents reported that Romanian children had significantly higher scores (worse outcomes; M = 64.06) than Rroma children (M = 57.92) on the Social Problems, $F(2, 54)$ = 5.98, p = .004, η^2 = .121, controlling for the other variables. In addition, on the same scale foster parents reported that that Romanian children had significantly higher scores (M = 64.06) than Hungarian children (M = 54.36). Furthermore, Romanian children had significantly higher scores (M = 65.97) than Rroma children (M = 56.95) on Attention Problems, $F(2, 59)$ = 9.91, p < .001, η^2 = .194, controlling for the other variable. In addition, on the same scale foster parents reported that that Romanian children had significantly higher scores (M = 64.06) than Hungarian children (M = 52.78). Furthermore, Romanian children had significantly higher scores (M = 60.96) than Rroma children (M = 54.68) on Total Problems, $F(2, 59)$ = 4.15, p = .021, η^2 = .091, controlling for the other variable. In addition, on the same scale foster parents reported that that Romanian children had significantly higher scores (M = 60.96) than Hungarian children (M = 48.69). No significant difference was found regarding ethnicity for the Internalizing and Externalizing Problems scale (p > .05).

Teacher Report (TRF). Based on the results from screening ANCOVAs with a single covariate at a time, number of foster placements, IQ, gender, and ethnicity were kept as covariates for the next ANCOVA analysis. Most importantly, as shown in *Table 4*, there were significant group differences between Pathways for the Social Problems, $F(3,59)$ = 4.71, p = .005, η^2 = .158; Attention Problems, $F(3,59)$ = 2.87, p = .044, η^2 = .105; Internalizing Problems, $F(3,59)$ = 2.79, p = .048, η^2 = .105; and Total Problems, $F(3,59)$ = 3.23, p = .029, η^2 = .116, scales, when controlling for the four covariates. In addition, the effect of Pathway was not significant for the Externalizing Problems, $F(3,59)$ = 2.16, p = .103, η^2 = .089; According to Tukey's HSD, children from the Placement Center Pathway (PC) had significantly higher scores (worse outcomes) on many of the TRF scales (see *Table 4*). Specifically, children in the Placement Center (PC) Pathway had higher scores on the Social, Attention, Internalizing, Externalizing, and Total Problems scales than those in the Maternity (M) Pathway. In addition, children in the

Placement Center (PC) Pathway had significantly higher scores on the Social Problems scale than those in Nursery (N) Pathway. Furthermore, children in the Placement Center (PC) Pathway had significantly higher scores on the Total Problems scale than those in the Biological Family (BF) Pathway. Also, children in the Maternity (M) Pathway had significantly lower scores than children in the Biological Family (BF) Pathway on the Social Problem scale.

Table 4. *ANCOVA of Syndrome Scales Scores as a Function of Pathway with Number of Foster Placements, IQ, Gender, and Ethnicity as Covariates when children were assessed by teachers (TRF)*

TRF Syndrome Scale	Pathway				F^1	p	η^2
	BF ($N = 10$)	N ($N = 21$)	M ($N = 18$)	PC ($N = 19$)			
Social Problems	63.13[a]	58.22[ab]	56.98[b]	65.59[ac]	4.71**	.005	.158
Attention Problems	56.72[ab]	57.97[ab]	54.28[a]	62.12[b]	2.87*	.044	.105
Internalizing Problems	54.94[ab]	54.63[ab]	51.28[a]	59.59[b]	2.79*	.048	.105
Externalizing Problems	58.58[ab]	59.16[ab]	56.51[a]	64.77[b]	2.16	.103	.089
Total Problems	56.56[a]	58.03[ab]	54.46[a]	63.91[b]	3.23*	.029	.116

Note. *BF = Biological Family Pathway; N = Nursery Pathway, M = Maternity Pathway, PC = Placement Center Pathway.* F[1] *Entries in this column are* F *statistics with 3 and 59 degrees of freedom (df) for effects of Pathway controlling for number of foster placements, IQ, gender, and ethnicity.* *p < .05. **p < .01. Adjusted means with different superscripts differed significantly by Tukey's HSD test (*p < .05).

Teacher Report (TRF): Covariates. The number of foster placements was significantly positively associated with the Internalizing Problems, $F(1, 59) = 4.83$, $p = .032$, $\eta^2 = .060$, $\beta = 4.45$; and Total Problems, $F(1, 59) = 4.15$, $p = .046$, $\eta^2 = .049$, $\beta = 3.52$, scales, controlling for the other variables. In addition, number of foster placements had a marginally significant effect on the Attention Problems scale, $F(1, 59) = 3.39$, $p = .070$, $\eta^2 = .041$, $\beta = 2.77$, controlling for the other variables. No significant difference was found for the Social and Externalizing Problems scales (p > .05). Moreover, IQ was significantly negatively associated only with the Social Problems scale, $F(1, 59) = 4.55$, $p = .037$, $\eta^2 = .051$, $\beta = -.15$, controlling for the other variables. Gender, however, was not associated with any of the TRF scores when included in an ANCOVA with the other covariates (p > .05). Regarding ethnicity, Tukey's HSD showed teachers reported that Romanian children had significantly higher scores (worse outcomes; $M = 64.99$) than Rroma children ($M = 59.01$) on the Social Problems scale, $F(2, 59) = 5.19$, $p = .008$, $\eta^2 = .149$, controlling for the other variables. In addition, Romanian children had

significantly higher scores ($M = 63.44$) than Rroma children ($M = 56.53$) on the Attention Problems scale, $F(2, 59) = 4.54$, $p = .015$, $\eta^2 = .111$, controlling for the other variables. Furthermore, Romanian children had significantly higher scores ($M = 64.55$) than Rroma children ($M = 56.67$) on Total Problems, $F(2, 59) = 4.50$, $p = .015$, $\eta^2 = .108$, controlling for the other variables. Moreover, there were marginally significant group differences for ethnicity for the Internalizing, $F(2, 59) = 3.05$, $p = .054$, $\eta^2 = .076$, and Externalizing Problems, $F(2, 59) = 2.51$, $p = .090$, $\eta^2 = .069$, scales, controlling for the other variables. However, Tukey's HSD revealed that Romanian children had significantly higher scores ($M = 58.84$) than Rroma children ($M = 53.73$) on the Internalizing Problems scale. In addition, Romanian children had significantly higher scores ($M = 64.83$) than Rroma children ($M = 58.52$) on the Externalizing Problems scale.

Discussion

Effects of the Pathways through the Romanian Child Welfare Institutions

The results of this study showed that children who entered foster care in Romania through a Placement Center Pathway had worse functioning than their peers who did not, a pattern of results that emerged whether the children were assessed by their foster parents or their teachers. It is important to note that it is not the intention of the present study to draw a definitive causal arrow between placement centers and later functioning. After all, very little information was available about the children's living conditions and upbringing before they entered their pathways to foster care. For many children, it could certainly be the case that their problems later in life were very much related to a chaotic period that began well before they entered the social welfare system. For others, and this seems quite plausible, it was likely an interaction between factors that included the pre-pathway environment and the pathway environment but that were not limited to these factors alone.

Placement Center Pathway

These outcomes imply that children in placement centers (orphanages) may have experienced sustained exposure to conditions of privation. It is important to mention that most of the children in the Placement Center (PC) Pathway were placed in institutions during 1998-2004, a time of intense structural reform of the Romanian child protection system (NACPA & UNICEF, 2004; Stativa *et al.*, 2005). Despite attempts to improve institutional care during the late 1990's and early 2000's, a period when large institutions were closed, rehabilitated, or re-placed with alternative services such as foster families, many of the remaining institutionalized children still had many caregivers who worked in rotating shifts

and who had minimal contact with children during -=meals and playtime (lack of caregiver consistency; Smyke, Zeanah, Fox, & Nelson, 2009; Zeanah *et al*., 2003); resided in institutions with a relatively large number of children (up to 50 children; NACPA & UNICEF, 2004; Stativa *et al*., 2005); and slept with many children in one room (four to over eight children; Stativa *et al*., 2002).

Therefore, children in our study with histories of institutionalization (Placement Center Pathway) likely suffered varying levels of privation as described by Gunnar (2001), including lack of nutritional and physical care; lack of stimulation to support sensorimotor, emotional, cognitive, and language development; and/or lack of stable long-term relationships. Consequently, the worse outcomes of children in the Placement Center Pathway may be due, in part, to their history of institutionalization which made them more vulnerable for behavioral and emotional problems. Because of this experience, children in the Placement Center Pathway may have suffered more psychological and developmental effects from institutional rearing expressed in their social and attention scales scores when assessed with CBCL, a condition also found in Gunnar and Van Dulmen's (2007) study of children with histories of institutionalization adopted from Russia and Eastern Europe. Furthermore, Fisher *et al*., (1997) found high rates of internalizing and total problems (CBCL) in children adopted from Romania and who had spent at least 8 months in institutional care. In addition, internationally adopted (mainly from Russia and Romania) children with adverse preadoption histories have been shown to exhibit externalizing and total problems (Juffer & van IJzendoorn, 2005), and adopted children from Romania have shown to exhibit emotional disturbances that may be linked with previous deprived experience in institutions (Colvert *et al*., 2008).

Outcomes may have also been significantly impacted by the presence of abuse (physical, emotional, and/or sexual) within these institutions and the surrounding schools and neighborhoods frequented by these children, hindering recovery (Gavrilovici & Groza, 2007; Rus *et al*., 2013; Stativa *et al*., 2002).

Nursery Pathway

Evidence shows that children in the Nursery Pathway had the second worse results. Our rationale for this is that these children may have experienced high levels of neglect and abuse (emotional, physical, and/or sexual) both in their biological families (from where they were removed) and also within the institutional setting of nurseries. Because nurseries were considered to be orphanages for children from 0-3 years of age, there may have been similar types of privation and maltreatment that were found in placement centers (e.g., lack of stimulation to support sensory development, lack of consistent or attentive caregiver relationships). However, while some types of abuse, such as sexual and physical abuse, and child-on-child abuse, were likely more common in institutions with

older children, we can never know the full extent of the abuse in nurseries because of children's lack of language development and inability to communicate their experiences.

Maternity Pathway

There is little published documentation about infants' experiences in Romanian maternity/pediatric wards, but there is some evidence that infants in such facilities experienced neglect and lack of resources (Ionescu, 2005). These qualities seem to be a common factor between maternity wards and residential facilities. However, our study found better outcomes for children in the Maternity Pathway and we have attempted to provide possible rationales for this finding.

First, because maternity wards were medical institutions, they likely had more staff and resources to care for infants than nurseries (which were residential institutions), even if conditions were still substandard. Thus, the possibility existed that conditions could have been better in some ways, even if only by a slight margin. Second, high levels of physical and emotional abuse, both at the hands of staff and other children have been documented in residential institutions (Rus *et al*., 2013; Gavrilovici & Groza 2007). Such abuse was less likely to occur in maternity wards. For instance, abuse by other children would not exist due to the fact that all children in maternity wards are infants. Also, abuse for discipline or behavioral reasons would be minimal since all children were infants. Third, because maternity wards are medical institutions, staff are typically trained medical personnel with different professional values than the less educated staff hired to work in residential facilities. Finally, it is possible that the specific county where our study was conducted had better maternity ward conditions than has been witnessed in other counties. We do not have a way to know for sure why the Maternity Pathway had better outcomes, but we have provided some possible explanations.

Covariates

Our results show that Rroma children had significantly lower scores (better outcomes) than Romanian children, when assessed by their foster parents and teachers. This is interesting because Rroma children are overrepresented in the Romanian education system in special education services (one estimate is 70% of children receiving special education services in Romania are of Rroma origin). Thus, while we do not know if the children in the current study were receiving special education services, teachers may have been comparing them to other children receiving special services and not the general population. In addition, previously institutionalized children are also at higher risk of receiving special education services. Thus, the likelihood of previously institutionalized Rroma children receiving special education services is very high (Walker, 2008).

The Rroma population in Romania experiences social exclusion (Fleck & Rughinis, 2008), and teachers have low expectations of Rroma children (Karagiorgi, Symeou, & Crozier, 2009). We understand that due to widespread bias against the Rroma population in Romania, some might conclude that teachers would be harsher in their scoring; however, it is also known that teachers have lower expectations of Rroma children due to societal perceptions of Rroma children as "inferior" or less-capable than other groups (Walker, 2008). These lowered expectations may cause teachers to evaluate Rroma children (both behaviorally and academically) on a more lenient basis than other ethnic groups.

Our results also show that Hungarian children had significantly lower scores than Romanian children, when assessed by their foster parents. There are a very small number of Hungarians in the general Romanian population, and this is not a marginalized group.

In the current study we found that number of foster parents/placements is a significant predictor of higher scores on several CBCL and TRF subscales. Therefore, the scores on the subscales increased as a function of the number of foster parents/placements. In other words, behavioral problems increased as the number of foster placements increased. A previous study has shown that multiple foster home placements is a risk factor for behavioral difficulties (Simmel, 2007). Also, Newton, Litrownik, & Landsverk (2000) found that multiple foster placements are correlated with internalizing and externalizing behaviors, and that externalizing behaviors were the strongest predictors of placement changes. In this study, reasons why the children were shuffled between foster placements is unknown. The most reasonable explanation may be due to administrative or logistical reasons, and/or the behavioral problems of the children which may have burdened the foster families.

The results of the current study are similar to other studies showing that IQ influences children's behavior. In this study, the prediction that children with higher IQ scores will have lower emotional and behavioral problems than children with lower IQ scores was substantiated especially when children were assessed by their foster parents (CBCL). Also, evidence suggests that better intellectual functioning during adolescence is correlated with better outcomes in academic achievement, conduct, and social competence even in the context of severe and chronic adversities (Masten *et al.*, 1999). Additionally, Masten and colleagues showed that IQ has a protective role with respect to antisocial behavior, and Tiet *et al.* (1998) found IQ to be a significant predictor of resilience in childhood and adolescence in the context of adverse life events.

Limitations of the Study

Sampling Issues and Norms

In understanding the outcomes of our study, it is important to emphasize that 73.5% percent of our sample were Rroma children compared with 26.5% of the children in the Zeanah *et al*. study (2003), and 24% of the children in Groza *et al*. (2003) study. Furthermore, within the county where our data was collected, Rroma represent only 7% of the population, Romanians 53.3%, and Hungarians 39.3%. Within the entire Romanian population, Rroma represent 2.5% and Hungarians (Maghiari) 6.6% (NIS, 2010). However, rates of abandonment (by ethnicity) in Romanian maternity wards between 2003-2004 (Stativa *et al*., 2005) were Rroma (51.1%), Romanian (48%), Hungarian (0.9%) and Turkish-Tartar (0.6%). The significant over-representation of Rroma children in the custody of child protective services compared with their proportion in the general population is evident also in our study. Socio-cultural characteristics of the normative sample used for Romanian versions of the CBCL and TRF are not available (Achenbach & Rescorla, 2001; Ivanova *et al*., 2007a, b). However, it is likely that the proportion of Rroma and Hungarian children of this normative sample were more consistent with the general population than with the proportion in our sample. Furthermore, the very small number of Hungarian children in our sample may have influenced our results. Consequently, the results of the study cannot be generalized across all Romanian child protection institutions and counties.

Individual Differences

Children's physical and mental health, familial or personal circumstances prior to or during placement in institutions and foster families, or other factors may have had an impact on children's development or had a confounding effect that we cannot control for. The variability of the results in the present study may be explained also by the individual genetic differences of the children that experienced early severe deprivation (Drury *et al*., 2010). Additionally, the design of the present study only allowed us to investigate the association between variables, but no causal relationship could be assumed.

Conclusion

The strongest statistical conclusion of the current study is that the Placement Center Pathway had worse outcomes than the other groups. Consequently, foster children who were previously institutionalized in placement centers (orphanages) had the least favorable psychological and behavioral outcomes, suggesting that

these children may have experienced high levels of privation, neglect, and/or abuse within the institutions and/or surrounding schools and neighborhoods.

The Romanian child protection system has recently undergone a period of extensive and positive changes to children's care. These changes include new caretaking standards and increased usage of foster care services. Data from the present study, and future studies of this type, will help policy-makers, practitioners, and researchers ascertain existing needs of these children so that future efforts to improve foster care may be directed to these areas.

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