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Permalink

<https://escholarship.org/uc/item/8z91v554>

Journal

Infant Mental Health Journal, 34(6)

ISSN

0163-9641

Authors

Baptista, Joana
Belsky, Jay
Martins, Carla
[et al.](#)

Publication Date

2013-11-01

DOI

10.1002/imhj.21416

Peer reviewed

SOCIAL WITHDRAWAL BEHAVIOR IN INSTITUTIONALIZED TODDLERS: INDIVIDUAL, EARLY FAMILY AND INSTITUTIONAL DETERMINANTS

JOANA BAPTISTA

University of Porto, Portugal

JAY BELSKY

University of California, Davis, King Abdulaziz University, Saudi Arabia, and Birkbeck University, London

CARLA MARTINS, JOANA SILVA, SOFIA MARQUES, ANA MESQUITA, AND ISABEL SOARES

University of Minho, Portugal

ABSTRACT: Eighty-five Portuguese children, aged 12 to 30 months, placed in residential institutions were assessed to investigate the influence of variations in the institutionalization experience of social withdrawal behavior, after taking into account potentially confounding individual characteristics and pre-admission experiences. In light of the limited attention in institutionalization research on social withdrawal, the determinants of the identified predictors of withdrawal symptoms also were examined. Current quality of care experienced in the institution, operationalized in terms of the absence (vs. presence) of a preferred attachment relationship, predicted social withdrawal, such that absence of such a relationship forecasted greater withdrawal. Moreover, existence of a preferred attachment relationship was itself predicted by better child socioemotional functioning, greater caregiver sensitive-responsiveness, and better quality of individualized care provided by the staff.

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* * *

Infants are born with biologically based capacities to participate in human interaction (Emde, 1983), to seek social stimulation (Trevarthen & Aitken, 2001), and to establish a close, emotional bond with significant adults who are capable of caring for the offspring (Bowlby, 1969/1982). The social environment in which children develop is known to influence their behavior and well-being. Indeed, extensive research and clinical work has underscored the importance of good-quality early relationships, sometimes for development well into adulthood (Bowlby, 1969/1982; Carlson & Sroufe, 1995).

During mother–infant and other social exchanges, brief moments of withdrawal are usual, allowing the infant to regulate the

rate and intensity of interactions (Brazelton, Koslowski, & Main, 1974; Puura et al., 2010; Weinberg & Tronick, 1994). In fact, relational withdrawal may be the infant's way of handling the interruption and/or violation of his or her expectations within caregiver–child interactions (Murray & Trevarthen, 1985; Puura et al., 2010). Persistent social withdrawal, however, is less common and is a distress signal, especially when accompanied by negative affect and/or limited positive emotion (e.g., smiling) or interest (e.g., eye contact) (Guedeney, 1997, 2007). Social withdrawal behavior may even reflect more serious and even organic relationship disorders (Dollberg, Feldman, Keren, & Guedeney, 2006; Guedeney & Fermanian, 2001), particularly when it leaves the child unavailable for interaction and the developmental opportunities it affords. Therefore, according to Guedeney et al. (2011), a withdrawal reaction may be a vital element in the infant's repertoire of behavioral responses to stress, and appears to be a key alarm symptom, with consequences for the child's longer term developmental trajectory.

Research has underscored the role of sustained withdrawal in the early onset of psychopathology (Guedeney, 1997, 2007). Children may appear socially withdrawn in a number of clinical disorders such as autism spectrum disorders, posttraumatic stress

This research was supported in part by Grant 13/06 from Fundação BIAL and by Grant PTDC/PSI-PCL/101506/008 from Fundação para a Ciência e Tecnologia. We are very grateful to the students who helped us in data collection and coding. Special thanks go to the children, caregivers, and other institutional staff who participated in the study.

Direct correspondence to: Isabel Soares, Department of Applied Psychology, School of Psychology, University of Minho, 4710-057 Braga, Portugal; e-mail: isoares@psi.uminho.pt.

syndrome, anxiety, and depression (Dollberg et al., 2006; Guedeney, Dumond, Grasso, & Starakis, 2004; Guedeney, Foucault, Bougen, Larroque, & Mentré, 2008). Moreover, infant social withdrawal is associated with attachment disorders (Guedeney, 1997; Zeanah, Boris, Bakshi, & Lieberman, 2000) and compromised cognitive and language development in toddlerhood (Milne, Greenway, Guedeney, & Larroque, 2009).

Having considered the nature and developmental sequelae of social withdrawal behavior, it is important to consider its determinants as well. Being premature, male, adopted, and living in foster care are all risk factors for infant social withdrawal (Guedeney et al., 2008; Guedeney, Marchand-Martin, Cote, Larroque, & the EDEN Mother–Child Cohort Study Group, 2012). Regarding child’s characteristics, Dollberg et al. (2006) showed that unpredictable temperament is associated with a tendency to rely on sustained withdrawal reaction in response to the social environment. Interactive effects of temperament and parenting also can account for social withdrawal behavior (Rubin & Coplan, 2004).

Recently, Mäntymaa et al. (2008) found that infant’s social withdrawal behavior is associated with depressed maternal behavior, possibly resulting from poorer quality of mother–child interaction (Tronick & Weinberg, 1997). Evidence also has indicated that withdrawal symptoms are related to maternal anxiety (Matthey, Guedeney, Starakis, & Barnett, 2005), lower sense of parental self-efficacy (Dollberg et al., 2006), and poorer quality caregiving. Specifically, mothers of withdrawn infants are more intrusive (Dollberg et al., 2006) and less attuned to their infant’s needs than are other mothers (Murray, Fiori-Cowley, Hooper, & Cooper, 1996).

SOCIAL WITHDRAWAL BEHAVIOR AND INSTITUTIONAL REARING

Several factors can have a detrimental effect on children’s early social and emotional development, such as early disruptions in the parent–child relationship, inadequate parental care, or living in an environment that is insufficiently stimulating (Guedeney et al., 2011). Thus, it is not surprising that there has been a steady accumulation of empirical and clinical evidence documenting links between early institutional rearing and children’s socioemotional difficulties and increased risk of psychopathology (e.g., Bos, Fox, Zeanah, & Nelson, 2009; Fisher, Ames, Chisholm, & Savoie, 1997; O’Connor et al., 2003; Smyke et al., 2007).

Recently, multiple studies on institutionalized and adopted children have revealed a link between children experiencing early adverse care and indiscriminate friendliness (IF) (Oliveira et al., 2012; Rutter, O’Connor, & the English and Romanian Adoptees Study Team, 2004; Smyke, Dumitrescu, & Zeanah, 2002; Zeanah & Fox, 2004). Yet, in contrast to IF, what might be regarded as the opposite tendency, social withdrawal behavior has not been a focus of recent work on institutionalization, even though it is frequently observed in clinical settings (Dollberg et al., 2006). In this report, we address this lacuna, examining potential effects of institutional rearing on social withdrawal behavior.

The lack of focus on social withdrawal behavior in what might be regarded as the second or modern phase of research on institutionalization stands in contrast to the first phase of work, as revealed in several classic studies on the topic (Bowlby, 1944; Goldfarb, 1945; Provence & Lipton, 1962; Spitz, 1945). After observing and recording what happened to a group of infants deprived of parental care, René Spitz (1946) described a set of symptoms for which he coined the term *anaclitic depression*. Infants suffering from this condition were unresponsive and apathetic as well as sad, apprehensive, and withdrawn, even though their basic physical and medical needs were met. In line with Spitz’s observations (1945, 1946), Goldfarb (1945) reported that children with early institutional experience were more often emotionally withdrawn in early adolescence than were children reared in their nuclear families. Provence and Lipton (1962) also found that infants, while institutionalized during their first year of life, displayed a reduced range of emotional expression and tended to not address or approach their caregivers in the institution, even when in distress. Tizard (1977) and Tizard and Rees (1975) also noted that institutionalized children who had been admitted to a residential nursery before the age of 4 months were largely unresponsive and emotionally withdrawn at age 4 years and 5 months.

Although the classic research on institutionalized children has attributed their withdrawal—and other disturbances—to institutionalization itself, given how deprived most of these contexts were, the fact is that many noninstitutional factors also may have played a role. These include genetics (Caspers et al., 2009), prenatal exposure to alcohol (Landgren, Svensson, Strömblad, & Grönlund, 2010), and individual experiences within the biological family prior to institutionalization, such as poverty, abuse, neglect, parental substance abuse, or mental illness (Kelly, Day, & Streissguth, 2000; Kobak, Cassidy, Lyons-Ruth, & Ziv, 2006; Miller, 2005). Even today, few studies of institutionalized children have assessed the role of such forces when it comes to disturbed and disordered behavior among institutionalized children, something the present inquiry is designed to do. One study meriting consideration, though, has found that children admitted to Greek orphanages because of family disruptions had an increased risk of emotional/behavioral difficulties relative to either children admitted into care for family financial reasons or noninstitutionalized controls (Voria, Rutter, Pickles, Wolkind, & Hobsbaum, 1998). Such results clearly have underscored the importance of taking into account pre-institutionalization experiences before attributing problematic functioning, including social withdrawal behavior, to experiences in the institution itself.

In any event, research consistently has indicated that the quality of institutional care is one of the most important factors predictive of individual differences in institutionalized children’s emotional and social development (Bakermans-Kranenburg et al., 2011; Smyke et al., 2007). Institutional care has been commonly characterized as a multilevel deprivation experience, involving several deficits not only in cognitive and motor stimulation as well as medical and nutritional care but also in the opportunities for social interaction and individualized caregiving (Hodges & Tizard,

1989; Sonuga-Barke et al., 2008; Tizard & Hodges, 1978). Indeed, in Muhamedrahimov's (2000) study, the socioemotional environment of children in Russian baby homes was characterized by severe deficits in the sensitivity and stability of caregivers. Caregivers rarely initiated social interaction, provided little warmth and affection, and rarely responded promptly to infants' emotional distress. The absence of a special or "primary" caregiver as well as few opportunities for social and emotional exchanges with caring adults sadly characterizes too many institutional settings (Miller, 2005); this is so even when reasonable adequate conditions exist regarding human resources and the meeting of basic needs concerning nutrition and hygiene. Vorria et al. (2003) found, for example, that Greek institutionalized infants spent most of their time in bed and, therefore, had little opportunity to interact with a caregiver.

Staff turnover and high infant/caregiver ratios are serious problems in many institutions, making it difficult, if not impossible, for the child to establish a long-lasting and unique relationship with a significant other. Sometimes, this has been due to the fact that staff have been overburdened (e.g., too many children, too few caregivers, or too much staff turnover) (Provence & Lipton, 1962). Other times, however, it was due to the fact that caregivers were discouraged from forming any type of emotional attachment to the children (Tizard, 1977). Some decades ago, Provence and Lipton (1962) noted that child characteristics of individuality, such as premature birth, may play an important role in determining which children are more and less adversely affected by the institutional care experience, and this may well be because characteristics of individuality (e.g., attractiveness, genetics, temperament) influence the care that the child receives (Bakermans-Kranenburg et al., 2011; Vorria et al., 2003; Zeanah & Fox, 2004). Not inconsistent with this claim is evidence from a study of foster mothers and their foster children that the anticipated effect of sensitivity on attachment security varied depending on the child's shyness (De Schipper, Oosterman, & Schuengel, 2012). Findings such as these underscore the possibility that children may differ in their vulnerability to institutional caregiving deprivation, depending on genetic predispositions (Stevens et al., 2009) or other factors that might influence the nature and quality of care that they receive, which in turn may affect the child-caregiver relationship (van IJzendoorn et al., 2011).

CURRENT STUDY

In 2009, a total of 9,563 children younger than 18 years of age were living in residential institutions in Portugal (Instituto de Segurança Social, 2010), of which 850 were under 3 years of age. Data collected in the same year have shown that the majority of these children (57%) spent more than 2 years in the institution, and a significant number of children (37%) remained institutionalized for more than 4 years. Although social and emotional sequelae of institutional rearing have been extensively studied by the international scientific community, there is a lack of research addressing this topic in Portugal.

Therefore, and in light of the limited attention paid to social withdrawal in recent research on institutionalization and the lack of work taking into consideration the role of pre-institutional family factors before considering effects of contextual and relationship features of the institution, the first aim of the present inquiry was to explore etiological factors associated with social withdrawal behavior in Portuguese institutionalized children, aged between 12 and 30 months. The second aim of this study was to explore the determinants of the identified predictors of social withdrawal. Incorporating a multiple-levels-of-analysis perspective (Cicchetti & Blender, 2004), the current work is the first to investigate potential predictors of social withdrawal behavior in institutionally reared children, and of the identified predictors of social withdrawal, including the etiological role of early family risk factors, as well as of individual and institutional care characteristics, crucial for the growing understanding of competent social and emotional functioning in the face of significant adversity.

METHOD

Participants

The participants in this study were 85 institutional-reared children and 65 institutional caregivers.

Institutional-reared children. Eighty-five children (44 boys, 51.8%) placed in 19 Portuguese institutional care centers participated in this study. Participants were recruited for a broader research project, and were 12 to 30 ($M = 19.22$, $SD = 6.22$) months of age by the time of assessment. Age at admission to the institution varied from 0 to 24 ($M = 8.16$, $SD = 7.38$) months. The reasons for the child being withdrawn from the family and placed at the institution were diverse: negligence, including a myriad of social and economic situations that prevented the family from assuring the child's safety and basic needs ($n = 26$; 30.6%), lack of parental skills ($n = 25$; 29.4%), severely limited socioeconomic resources ($n = 1$; 1.2%), parental psychopathology/mental retardation ($n = 8$; 9.4%), child physical abuse ($n = 5$; 5.9%), child abandonment ($n = 14$; 16.5%), family violence ($n = 5$; 5.9%), and sexual abuse ($n = 1$; 1.2%).

Twenty-five percent ($n = 21$) of children came to the institution directly from the maternity ward, having no experience of living with their biological (or any other) families. Among the children who lived with their families prior to institutionalization, 27.4% ($n = 17$) were no older than 6 months when institutionalized, 32.3% ($n = 20$) were 7 to 12 months old, and 40.3% ($n = 25$) were between 13 and 24 months old. The length of time in institutional care varied from 5 to 29 ($M = 10.58$, $SD = 4.43$) months, with 35.3% ($n = 30$) institutionalized for 1 year or more.

Assigned caregivers. Sixty-five institutional caregivers participated in the study (62 women, 95.4%) and were between 20 and 56 years of age ($M = 36.32$, $SD = 10.14$). Twenty (30.8%) of the 65 participating care providers were caregivers for more than one child. The maximum number of children with the same assigned

caregiver was 4. The majority of caregivers ($n = 41$; 63.1%) did not receive any kind of specific training for their caregiving role. Six caregivers (9.2%) completed primary school, 9 (13.8%) finished Grade 6, 27 (41.5%) completed Grade 9, 18 (27.7%) graduated from high school, and 5 (7.7%) graduated from university. Caregivers worked, on average, for 7.45 hr per day ($SD = 2.65$) and 5.49 days a week ($SD = 1.00$).

Procedure

The present study is part of a larger research project on institutionalized children in Portugal (Oliveira et al., 2012). After approval by Portuguese Social Services and the National Commission for Data Protection, the study was presented to the staff at each institution. Written informed consents were obtained from the biological parents, institution directors, and participating caregivers. After determining which children were eligible for study participation, the research team consulted institutional staff to determine the caregiver assigned to each child. Staff suggestions were confirmed by naturalistic observations of the research team. When the staff could not determine a caregiver with whom the child developed a special relationship, a caregiver that who the child well and was present in children's daily routines was selected to integrate the present study's assessments as the assigned caregiver to that child.

All assessments were conducted at the institutional setting. Observational data were obtained to assess children's social withdrawal behavior, caregiver sensitivity responsiveness, and the quality of institutional care. To enable characterization of children's early family risk circumstances prior to institutionalization, research staff gathered data from each institutionalized child's file. A trained examiner assessed each child's mental development, and the participating caregiver provided information on the child's temperament and socioemotional functioning.

Measures

Child assessment

Developmental status. To assess cognitive, language, and motor development, the Bayley Scales of Infant and Toddler Development, Third Edition (BSID-III; Bayley, 2006) were administered by trained examiners. The BSID-III is an individual measure to assess the developmental functioning of infants and toddlers. Each subscale (Cognitive, Language, and Motor) includes a series of items that are administered and scored as 1 if successfully completed by the child. A summed raw score is then computed, and the percentile ranks are determined for each subscale.

Social withdrawal behavior. The Alarm Distress Baby Scale (ADBB; Guedeney & Fermanian, 2001) was used to assess children's social withdrawal behavior and was completed by raters based on a 5-min segment of children's behavior during the administration of the BSID-III (Bayley, 2006). The ADBB requires that an unfamiliar adult initiate interaction with the child in the presence of the caregiver. The scale consists of 8 items (e.g., Item

5 - observer assesses the lack of vocalization expressing pleasure, but also lack of vocalization expressing displeasure or pain; Item 6 - observer assesses the sluggishness of response to pleasant or unpleasant stimulation during the examination), rated 0 (*No usual behavior*) to 4 (*Severe unusual behavior*). The total score is calculated based on the sum of the child's score in all items; higher scores are indicative of higher levels of social withdrawal behavior. In this sample of 85 institutionalized toddlers, the ADBB mean social withdrawal score was 3.23 ($SD = 3.58$, $Mdn = 2$, range = 0–17). Two independent teams of graduate students, previously trained by a Portuguese specialist, coded the interactions. Interrater agreement was calculated based on 37 video clips and proved to be more than adequate before consensus scoring of disagreements on ratings (ICC mean $r_{ic} = .98$, range = .92–1.00).

Temperament. To assess child's difficult temperament as perceived by the caregiver, the Infant Characteristics Questionnaire (ICQ; Bates, Freeland, & Lounsbury, 1979; Portuguese version, Magalhães et al., 2010) was completed by the assigned caregiver. This questionnaire includes 32 items, rated on a Likert scale of 1 (*optimal score for positive temperamental traits*) to 7 (*less optimal*). Only the *difficult* dimension, composed of nine items (Cronbach's $\alpha = .72$), was used in the present study; reliability and validity have been established (Bates et al., 1979). Scores are totaled and compared with empirically derived cutoff points. Higher scores indicate a more difficult temperament.

Socioemotional functioning. The Ages & Stages Questionnaire: Social-Emotional (ASQ:SE; Squires, Bricker, & Twombly, 2002a; Portuguese version, Candeias, 2010) was completed by the child's assigned caregiver to assess children's skills and difficulties regarding social and emotional functioning (e.g., "Does your child look at you when you talk to him?" "Does your child cry, scream, or have tantrums for long periods of time?"). The discriminant validity of the instrument between risk and well-functioning children, regarding socioemotional development, has been empirically demonstrated (Squires, Bricker, & Twombly, 2002b). Four age-appropriate versions were used in the present study (12, 18, 24, and 30 months). Scores are totaled and compared with empirically derived cutoff points. Higher total scores are global indicators of children's socioemotional functioning problems (Squires et al., 2002b).

Early family risk factors

FAMILY CONTEXT. A sociodemographic questionnaire about the child and his or her biological family was completed using information in the child's files at the institution. Information about whether the child lived with the biological family prior to institutionalization was obtained. In addition, three theoretically oriented risk composites, each comprised of four items, were created to capture sources of risk to the child in the biological-family context (cf. Oliveira et al., 2012). Each risk condition in each composite was scored as 0 (*absent*) or (*present*); higher scores reflected greater risk. At least three items had to be available for a composite risk score to be formulated for any child:

- *Prenatal risk composite*: This composite assessed the presence of maternal physical disease (e.g., AIDS, hepatitis), maternal substance abuse during pregnancy, pregnancy without medical surveillance, and child premature birth. The following risk composites were created considering only the children who had had experiences within the biological family prior to coming to the institution.
- *Family-relational risk composite*: This composite assessed receipt of government financial aid, domestic violence (to the children and/or between parents or other family members living in the house), family previous referral by the social workers as a risk family (based on conditions such as maltreatment, neglect, or abandonment of other children) and institutionalized or adopted siblings.
- *Emotional neglect risk composite*: This composite was created in an attempt to capture the likely unavailability of the maternal figure. This composite assessed whether parental neglect was the reason for the child's institutionalization, and whether the mother engaged in prostitution, in substance abuse, or suffered from psychopathology or mental retardation.

Institutional context

INSTITUTIONAL PLACEMENT AND DURATION. The date of admission and the birth date of the child were gathered from the child's case file in the institution. This allowed us to calculate the child's age at admission to the institution and the length of time in institutional care.

CAREGIVER SENSITIVITY RESPONSIVENESS. The Ainsworth, Blehar, Waters, and Wall (1978) Sensitivity/Insensitivity and Cooperation/Intrusiveness scales were used by highly trained raters to assess the quality of the caregiver's behavior during each of three semistructured and videotaped 5-min interaction episodes designed to challenge the dyad: play with toys, play without toys (following caregiver's departure, stranger entry, stranger departure, caregiver entry), and play with "difficult-to-use" toy. The ratings for the three episodes were averaged into one composite score. Interrater reliability was more than adequate (for sensitivity, $ICC r_{ic} = .91$; for cooperation, $ICC r_{ic} = .90$).

QUALITY OF INSTITUTIONAL CARE. Two features of the institutional care environment were measured in an attempt to capture the quality of institutional care.

- *Structural and relational characteristics of the institution.* The Assessment of the Quality of Institutional Care (AQIC; Silva et al., 2010) was used to measure structural and relational aspects of the quality of institutional care, based on researchers' extensive observations during 2 years of data collection at the institutions. Three dimensions were assessed for each institution: (a) institutional resources and routines, in terms of human resources, equipment and material resources, and basic needs routines; (b) institutional

relational care, including the developmental activities implemented at the institutional setting, and stability and consistency of caregiving; and (c) individualized care provided by the staff to each child, regarding their availability, sensitivity, acceptance, and knowledge about the child. The availability, sensitivity, and acceptance items were rated based on three scales in Ainsworth et al. (1978): Availability versus Ignoring and Neglecting, Sensitivity versus Insensitivity, and Acceptance versus Rejection, respectively. The item of knowledge about the child was rated based on a scale designed by the research team (Silva et al., 2010).

Measurement of the first two dimensions—institutional resources/routines and relational care—was based on a Likert scale ranging from 1 (*no/never present*) to 3 (*sometimes/somewhat present*) to 5 (*yes/always present*). The total score for each dimension was calculated by summing ratings across items. For the third dimension reflecting individualized care, a scale of 1 (e.g., highly inaccessible) to 9 (e.g., highly accessible) was used, for each of the four aforementioned items, as mentioned earlier. The total score for individualized care was calculated through the sum of the ratings of the four items. Interrater agreement was calculated based on intraclass correlations and proved more than adequate for all three dimensions of the AQIC: institutional resources and routines ($ICC M r_{ic} = .84$, range = .64–.97), institutional relational care ($ICC M r_{ic} = .87$, range = .75–.88), and individualized care ($ICC M r_{ic} = .79$, range = .66–.91). Because this measure was developed for use with the current sample, external measures of validity were not available.

- *Preferred caregiver.* Based on researchers' extensive observations at the institution, the existence of an individual with whom the child had developed a special relationship was assessed. Guided by attachment theory, children's behavior toward the assigned caregiver was rated on four separate scales used to determine whether the caregiver was a "preferred caregiver:" (a) "Proximity seeking" assessed whether the child regularly and actively sought to increase proximity with the caregiver, particularly in unfamiliar or stressful situations; (b) "separation distress" assessed whether the child showed signs of anxiety or distress when left by the caregiver in unfamiliar places or with unfamiliar people or even when he or she noticed that the caregiver had ended her work shift and/or was leaving the institution; (c) "positive responsiveness" assessed whether the child responded more and in a particularly positive way to the initiatives of the specific caregiver (e.g., accepting, displaying excitement, and answering in a reciprocal way) and acknowledged the presence of the caregiver after a separation period (by looking, smiling, greeting, vocalizing, showing a toy, or approaching the caregiver); and (d) "the caregiver as secure base/secure haven" assessed whether the child used the particular caregiver as a secure base for exploration, referencing him or her frequently and, if distressed, preferentially turning

to the caregiver for comfort. Each of the four scales was rated on a scale of 0 (*no evidence of the described behaviors*) to 2 (*clear and consistent evidence*). After summing ratings across the scales, the total preferred-caregiver score ranged from 0 to 8. The total score was used to make a categorical determination of whether the child had a preferred caregiver. Those children scoring equal to or greater than 7 were deemed to definitely have a preferred caregiver. Interrater agreement for the existence of the child's preferred caregiver was calculated for 9.5% of the sample and was acceptable (ICC mean $r_{ic} = .78$, range = .64–.95).

RESULTS

Data analysis proceeded in a series of steps. First, simple bivariate relations (Pearson and point-biserial correlations) were examined between the social withdrawal total score and aspects of the child, family, and institutional contexts. Next, a linear regression was conducted based on the significant bivariate relations detected in the first phase of analysis. Because the presence of a preferred caregiver emerged as a predictor of social withdrawal behavior in this second phase, subsequent analyses examined, first, the potential determinants of social withdrawal so that a path analysis subsequently could be carried out linking the predictors of preferred caregiving and social withdrawal.

Predicting Social Withdrawal Behavior

No significant bivariate associations emerged between social withdrawal behavior and child or family risk factors and measures of institutional care quality (i.e., caregiver sensitivity responsiveness, resources and routines, relational care, individualized relational care). However, children who had not lived with their biological family prior to institutionalization ($n = 21$; 25.3%) displayed significantly less social withdrawal behaviors than did those who had lived with their families prior to institutionalization ($n = 62$; 74.7%), $r_{pb} = .24$, $p = .03$. In addition, children with a preferred caregiver at the institution ($n = 23$; 37.1%) exhibited less social withdrawal behaviors relative to children who did not have one ($n = 62$; 72.9%), $r_{pb} = -.30$, $p = .005$ (see Table 1).

Based on these bivariate relations, a linear multiple regression was carried out using as predictors of social withdrawal behavior the two aforementioned variables that exhibited significant bivariate associations with it. The overall regression model was statistically significant, $F(2, 82) = 5.77$, $p = .005$, explaining 13% of the variance in social withdrawal behaviors (see Table 2), although only presence/absence of a preferred caregiver significantly predicted social withdrawal behavior, $\beta = -.27$, $t = -2.53$, $p = .01$.

Predicting Presence/Absence of a Preferred Caregiver

Discovering that absence of a preferred caregiver predicted elevated levels of social withdrawal led to analyses examining the

TABLE 1. Bivariate Associations Between Social Withdrawal Behaviors and Child, Family, and Institutional Context Characteristics (N = 85)

		Social Withdrawal
Child Characteristics	Age at Assessment ^a	.07
	Cognitive Development ^a	-.03
	Language Development ^a	-.13
	Motor Development ^a	-.07
	Temperament ^b	-.20
	Disturbed Socioemotional Behaviors ^b	.02
Family Characteristics	Early Family Risk Factors	
	Prenatal Risk ^a ($n = 79$)	-.03
	Family-Relational risk ^a ($n = 59$)	-.15
	Emotional-Neglect Risk ^a ($n = 60$)	-.09
	Living or Not With the Biological Family ^b ($n = 83$)	.24*
Institutional Characteristics	Quality of Institutional Care	
	Institutional Resources and Routines ^a	-.07
	Institutional Relational Care ^a	.03
	Individualized Relational Care ^a	-.11
	Preferred Caregiver ^b	-.30**
	Caregiver Sensitive Responsiveness ^a	.07
Age at Admission to the Institution ^a	.13	
Length of Time in Institutional Care ^a	-.12	

Note. Higher Alarm Distress Baby Scale scores are indicative of more signs of social withdrawal.

^aPearson coefficient correlation.

^bPoint-biserial coefficient correlation.

* $p < .05$. ** $p < .01$.

TABLE 2. Prediction of Social Withdrawal Behavior (N = 83)

	R^2 (Adjusted R^2)	β	t
Living or Not With the Biological Family	.13 (.10)	.20	1.86 [†]
Preferred Caregiver		-.27	-2.53*

[†] $p < .10$. * $p < .05$.

potential determinants of presence versus absence of a preferred caregiver, including child, biological family, and institutional characteristics. As can be seen in Table 3, bivariate associations revealed that children perceived by the caregiver as having more disturbed socioemotional behaviors were less likely to have a preferred caregiver, $\chi^2(1, n = 85) = 4.86$, $p = .02$, as were children who experienced lower quality of care in the institutional environment, as defined by the measurement of relational and individualized care, $r_{pb} = .26$, $p = .02$, and $r_{pb} = .33$, $p = .002$. Point-biserial correlations also revealed marginal associations indicating that the more sensitive-responsive the caregiver's care, the more likely was the child to have a preferred caregiver, $r_{pb} = .19$, $p = .09$, with the same being true of spending more time in the institution, $r_{pb} = .19$, $p = .08$. No significant relations between the preferred caregiver and early family risk factors were detected.

TABLE 3. *Bivariate Associations Between Child, Family, and Institutional Context Characteristics and Preferred Caregiver (N = 85)*

		Preferred Caregiver
Child Characteristics	Age at Assessment ^a	.08
	Cognitive Development ^a	-.08
	Language Development ^a	.16
	Motor Development ^a	.07
	Temperament ^b	.001
Family Characteristics	Disturbed Socioemotional Behaviors ^b	4.86*
	Early Family Risk Factors	
	Prenatal Risk ^a (n = 79)	.14
	Family-Relational Risk ^a (n = 59)	-.18
	Emotional-Neglect Risk ^a (n = 60)	-.06
Institutional Characteristics	Living or Not With the Biological Family ^b (n = 83)	1.94
	Quality of Institutional Care	
	Institutional Resources and Routines ^a	.09
	Institutional Relational Care ^a	.26*
	Individualized Relational Care ^a	.33**
	Caregiver Sensitive Responsiveness ^a	.19 [†]
	Age at Admission to the Institution ^a	-.06
	Length of Time in Institutional Care ^a	.19 ⁺

Note. Lack of a preferred caregiver (0) vs. existence of a preferred caregiver (1).

^aPoint-biserial coefficient correlation.

^bChi-square.

[†] $p < .10$. * $p < .05$. ** $p < .01$.

On the basis of these results, a two-stage, logistic regression analysis was undertaken. In the first stage, socioemotional functioning and length of time in institutional care served as predictors of presence/absence of a preferred caregiver. The model proved significant, $\chi^2(2, n = 85) = 8.79, p = .05$, although only child socioemotional functioning significantly contributed to the prediction of a preferred caregiver, $p = .04$. Thus, children judged by caregivers to have less disturbed behaviors were more likely to have a preferred caregiver.

In the second stage of the logistic regression, institutional quality of care variables and caregiver sensitive responsiveness were included as predictors of preferred-caregiver status along with child socioemotional functioning. The overall model proved significant, $\chi^2(5, n = 85) = 27.37, p = .005$. Table 4 indicates that child socioemotional functioning, individualized relational care,

and caregiver sensitive responsiveness individually and significantly contributed to the prediction of preferred-caregiver status. More specifically, children were more likely to have a preferred caregiver when they presented less social disturbed behaviors, experienced more sensitive-responsive care, and resided in institutions judged to offer higher quality care.

Path Analysis

The final analysis sought to tie together all significant findings reported through this point in a single model using path analysis, with preferred-caregiving status being predicted by child socioemotional functioning, individualized care, and caregiver sensitive-responsiveness, and itself predicting social withdrawal behavior. Maximum likelihood estimation was used in calculating paths, and all three predictors of preferred-caregiver status were permitted to correlate with each other (see Figure 1). The fit statistics for the model were adequate, with a significant chi-square, $\chi^2(10, n = 85) = 3.79, p = .02, CFI = .98, RMSEA = .06$. Results revealed that the better children's socioemotional functioning, the more individualized care, and the more sensitive-responsive were caregivers, the more likely the child was to have a preferred caregiver, which itself decreased the likelihood of the child showing social withdrawal behavior.

DISCUSSION

The main goal of the current study was to examine the potential influence of the quality of children's institutional experiences on social withdrawal behavior, also taking into account individual child factors and functioning and pre-institutional experiences before attributing effects to the institutional experience itself. A second objective was to explore potential determinants of the predictors of social withdrawal behavior, analyzing, again, the putative influence of individual, pre-institutional, and institutional factors.

Determinants of Social Withdrawal Behavior

Having a preferred caregiver at the institution was the only pre-institutionalization or institutionalization predictor of children's social withdrawal behavior to emerge in this inquiry. Although

TABLE 4. *Prediction of the Existence of a Preferred Caregiver (N = 85)*

Step		β	Wald's	Odds Ratio	Model
1	Disturbed Socioemotional Behaviors	-1.66	4.32*	.19	$\chi^2(2) = 8.79^*$
	Length of Time in Institutional Care	.10	2.99 [†]	1.10	
2	Disturbed Socioemotional Behaviors	-2.75	8.27**	.06	$\chi^2(5) = 27.37^{***}$
	Institutional Relational Care	.004	.003	1.00	
	Individualized Relational Care	.19	7.78**	1.21	
	Caregiver Sensitive Responsiveness	.43	4.78*	1.53	

[†] $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .005$.

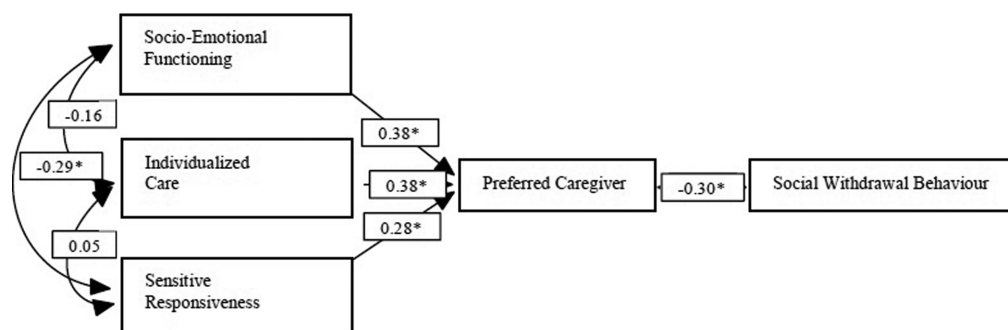


FIGURE 1. Path of influence of a child's socioemotional functioning, individualized care, caregiver's sensitive responsiveness, and the presence (vs. absence) of a preferred caregiver on social withdrawal. The path diagram includes the path coefficients. * $p < .05$.

structural and some relational aspects of the quality of institutional care failed to predict social withdrawal behavior, children who had the opportunity to establish a unique affective relationship with their caregiver were less likely than were those without one to be socially withdrawn. According to O'Connor et al. (2000), institutionalized children's atypical behavior results from the lack of a consistent caregiver rather than the absence of physical resources, including adequate nutrition and medical care. In this sense, the existence of an adult with whom the child has a special relationship at the institution seems to act as a protective factor when it comes to being socially withdrawn, reducing the likelihood of such behavior. These findings would seem to be in line, then, with those of Smyke et al. (2007), who found that "microcaregiving environment" (p. 215) predicted child functioning even after controlling for a number of child's characteristics and length of institutional care. Similarly, Ames (1997) found higher developmental ratings in postinstitutionalized children identified as favorites of the caregivers, as compared to those who were not.

How should we understand the meaning of social withdrawal? According to attachment theory, the prolonged absence of a primary caregiver, capable of stimulating and regulating the child's affect-arousal states, may result in the deactivation of the attachment system, characteristic of the avoidant pattern, excluding defensively oneself from events, feelings, and social interactions (Bowlby, 1969/1982). In this sense, sustained social withdrawal may be considered a defensive maneuver, the primary goal of which is to downregulate the attachment system, thereby avoiding the distress caused by the unavailability of a primary caregiver (Leary & Hoyle, 2009). Research on reactive attachment disorder (RAD) seems to have provided evidence that the absence of an attachment figure fosters social withdrawal. In a revision of the *Diagnostic and Statistical Manual for Mental Disorders, fifth edition* (American Psychiatric Association, 2000), Zeanah and Gleason (2010) proposed that the two RAD subtypes (American Psychiatric Association, 2000) should be separated into distinct syndromes: (a) reactive attachment disorder of infancy and early childhood (former inhibited subtype) and (b) disinhibited social engagement disorder (former indiscriminate subtype). Based on an extensive review of research, Zeanah and Gleason contended that while disinhibited social engagement disorder is more about an abnormal

social functioning, the essence of the reactive attachment disorder of infancy and early childhood, characterized by a consistent pattern of emotionally withdrawn behavior, involves the lack of a selected attachment; as a result, it also shared clinical signs with depression (Gleason et al., 2011).

In summary, having an attachment figure in the institution may reduce the likelihood of children's displaying social problems (Smyke et al., 2002), including social withdrawal. This is certainly consistent with classic findings showing that children from institutions where caregivers were discouraged from forming emotional attachments to the children had more behavior problems postinstitutionalization than did children from institutions where this was not the case (Tizard & Tizard, 1971). Such data certainly suggest that relationship experience with a special caregiver in the institution affords opportunities for emotional exchanges and exploration of the environment, experiences that consequently influence child's social and interpersonal competencies.

Determinants of Presence of a Preferred Caregiver

In view of the data showing that it was the presence/absence of a preferred caregiver that seemed most important in accounting for children's social withdrawal behavior, the question arose as to why some children developed such relationships whereas others did not. Findings pertaining to this issue have underscored the dynamics of the institutional environment, the sensitive-responsiveness of the caregiver, and the characteristics of the child. To our knowledge, this is the first study to explore the etiological factors of the existence of an individual with whom the child has developed a special relationship within the institutional environment.

Recall that the presence of a special caregiver was linked with the provision of higher quality care provided by the staff, as reflected in a caregiving pedagogy involving the provision of individualized care, thereby highlighting the putative influence of the institutional socioemotional environment on the child-caregiver relationship (Muhamedrahimov, 2000). This not-surprising result supports the idea that the way the institution is organized, in terms of its structural characteristics, may have an impact on the quality of care provided to each child and, consequently, on the caregiver-child relationship. Indeed, work by the

St. Petersburg–USA Orphanage Research Team (2008) has rather convincingly demonstrated this. When structural changes were made in Russian institutions to promote the caregiver–child relationship and a family culture, quality of care improved, and so did children’s social functioning.

Results of the current study also indicated that children were more likely to have a preferred caregiver when caregivers were more sensitively responsive and when children themselves manifested less disturbed socioemotional behavior. Considering a transactional perspective (Sameroff & Fiese, 1990), children who received better quality of caregiving—in terms of individualized care and sensitive responsiveness—may improve their social and emotional functioning and, in turn, use these competences to establish a special relation with an adult in the institutional setting. Caregiving warmth, emotional support, and contingent responsiveness in the institution may contribute to the development of several skills, including the child’s ability to regulate emotions and behavior (Merz & McCall, 2010). Responsive caregiving has long been thought, after all, to support early childhood development—across mental, social, and emotional domains (Ainsworth et al., 1978; Bornstein & Tamis-LeMonda, 1989).

Taken together, the results of this study reveal, in accordance with observations by others (e.g., Bakermans-Kranenburg et al., 2011), that the quality of the caregiving in institutional contexts is important for socioemotional development. Likewise, the results offer support to the notion that different components of the institutional experience, and also caregiver and child characteristics, may act together (van IJzendoorn et al., 2011; Vorria et al., 2003; Zeanah & Fox, 2004), promoting the quality of the institutional environment in terms of stable relationships and leading to better developmental outcomes in terms of less social withdrawal behaviors in institutionalized children.

Limitations

Results of the current study are generally consistent with empirical data that have chronicled negative social and emotional functioning associated with institutional rearing, as well as the etiological role of the quality of institutional care in undermining social well-being. Nevertheless, there are limitations to this report that should be acknowledged. First, being a cross-sectional study, information regarding children’s social withdrawal behavior and institutional quality of care was available for only a single point in time. Thus, the study design limits the interpretation of results regarding the etiological roots of social withdrawal behavior in institutionalized children. Future work should be longitudinal in design, with assessments of the child’s social withdrawal behavior at the time of admission to the institution and at subsequent moments, thereby affording the prediction of change over time. Such a design also would make possible the investigation of the development and formation of the preferred child–caregiver relationship.

Another limitation of this inquiry was that information on the families of origin was based on case reports—that routinely have missing information. This is particularly true if a problem was not

observed, leaving coders unable to be sure that a given problem was indeed absent. Hence, in future research, a more comprehensive screen for the child’s familial experiences prior to coming to the institution would be preferred.

Clinical Implications

Despite those limitations, the findings of the present study have some important implications. First, this work, by focusing on a relatively neglected aspect of social functioning in recent research on institutionalization, highlights the apparent influence of a special caregiver—or lack thereof—on children’s emotional and social development, even when basic physical and health needs appear to be met. Nonetheless, associations between social withdrawal behaviors and inhibited and disinhibited types of reactive attachment disorder as well as other developmental phenomena deserve further exploration, both during and after institutionalization. In addition, further research about the effects of a clinical intervention in sustained withdrawal behavior is essential, contributing to an evidence-based description of the problem.

Second, and regarding the establishment of a special relationship with a caregiver in an institutional setting, results of the current study point to the need of considering the influence of diverse risk and protective factors, within a broader picture in which the mutual influences of individual (child and caregiver) and contextual variables are taken into account. Finally, efforts should be carried out to improve the quality of care provided at the Portuguese institutions, such as the implementation of organized interventions (St. Petersburg–USA Orphanage Research Team, 2008) focused on institutional structure, staff training, and the improvement of the relationship between institutionalized children and their caregivers.

REFERENCES

- Ainsworth, M.D.S., Blehar, M.C., Waters, E., & Wall, S. (1978). Patterns of attachment: A psychological study of the strange situation. Hillsdale, NJ: Erlbaum.
- American Psychiatric Association. (2000). Diagnostic and statistical manual of mental disorders (4th ed., Text rev.). Washington, DC: Author.
- Ames, E.W. (1997). The development of Romanian orphanage children adopted into Canada. Final report to human resources development, Canada. Burnaby, Canada: Simon Fraser University.
- Bakermans-Kranenburg, M.J., Steele, H., Zeanah, C.H., Muhamedrahimov, R.J., Vorria, P., Dobrova-Krol, N.A. et al. (2011). Attachment and emotional development in institutional care: Characteristics and catch-up. *Monographs of the Society for Research of Child Development*, 76(4, Serial No. 301), 62–91. doi:10.1111/j.1540-5834.2011.00628.x
- Bates, J.E., Freeland, C.A., & Lounsbury, M.L. (1979). Measurement of infant difficultness. *Child Development*, 50, 794–803.
- Bayley, N. (2006). Bayley Scales of Infant and Toddler Development (3rd ed.). San Antonio, TX: Harcourt Assessment.

- Bornstein, M., & Tamis-LeMonda, C.S. (1989). Maternal responsiveness and cognitive development in children. In M.H. Bornstein (Ed.), *Maternal responsiveness: Characteristics and consequences* (pp. 49–61). San Francisco: Jossey-Bass.
- Bos, K.J., Fox, N., Zeanah, C., & Nelson, C. (2009). Effects of early psychosocial deprivation on the development of memory and executive function. *Frontiers in Behavioral Neuroscience*, 3, 1–7. doi:10.3389/neuro.08.016.2009
- Bowlby, J. (1944). Forty-four juvenile thieves: Their character and home-life. *International Journal of Psychoanalysis*, 25, 19–52.
- Bowlby, J. (1969/1982). *Attachment and loss: Vol. 1. Attachment*. New York: Basic Books.
- Brazelton, T.B., Koslowski, B., & Main, M. (1974). The origins of reciprocity: The early infant–mother interaction. In M. Lewis & L.A. Rosenblum (Eds.), *The effect of the infant on its caregiver* (pp. 49–76). New York: Wiley.
- Candeias, L. (2010). *Ages & Stages Questionnaires: Social-Emotional. Estudo exploratório de validação para crianças portuguesas dos 3 aos 65 meses de idade [Ages & Stages Questionnaire: Social-Emotional: An exploratory validity study with portuguese children between 3 and 65 months old]* (Unpublished master's thesis). Porto University, Portugal.
- Carlson, E., & Sroufe, L.A. (1995). The contribution of attachment theory to developmental psychopathology. In D. Cicchetti & D. Cohen (Eds.), *Developmental processes and psychopathology: Vol. 1. Theoretical perspectives and methodological approaches* (pp. 581–617). New York: Cambridge University Press.
- Caspers, K.M., Paradiso, S., Yucuis, R., Troutman, B., Arndt, S., & Philibert, R. (2009). Association between the serotonin transporter promoter polymorphism (5-HTTLPR) and adult unresolved attachment. *Developmental Psychology*, 45(1), 64–76. doi:10.1037/a0014026
- Cicchetti, D., & Blender, J. (2004). A multiple-levels-of-analysis approach to the study of developmental processes in maltreated children. *Proceedings of the National Academy of Sciences, USA*, 101, 17325–17326. doi:10.1073/pnas.0408033101
- De Schipper, J., Oosterman, M., & Schuengel, C. (2012). Temperament, disordered attachment, and parental sensitivity in foster care: Differential findings on attachment security for shy children. *Attachment and Human Development*, 14(4), 349–365. doi:10.1080/14616734.2012.691651
- Dollberg, D., Feldman, R., Keren, M., & Guedeney, A. (2006). Sustained withdrawal behavior in clinic-referred and nonreferred infants. *Infant Mental Health Journal*, 27(3), 292–309. doi:10.1002/imhj.20093
- Emde, R.N. (1983). *René A. Spitz: Dialogues from infancy. Selected papers*. New York: International Universities Press.
- Fisher, L., Ames, E., Chisholm, K., & Savoie, L. (1997). Problems reported by parents of Romanian orphans adopted to British Columbia. *International Journal of Behavioral Development*, 20, 67–82. doi:10.1080/016502597385441
- Gleason, M., Fox, N., Drury, S., Smyke, A., Egger, H., Nelson, C. et al. (2011). Validity of evidence-derived criteria for reactive attachment disorder: Indiscriminately social/disinhibited and emotionally withdrawn/inhibited types. *Journal of the American Academy of Child & Adolescent Psychiatry*, 50(3), 216–231. doi:10.1016/j.jaac.2010.12.012
- Goldfarb, W. (1945). Psychological privation in infancy and subsequent adjustment. *American Journal of Orthopsychiatry*, 15, 247–255.
- Guedeney, A. (1997). From early withdrawal reaction to infant depression: A baby alone does exist. *Infant Mental Health Journal*, 18(4), 339–349. doi:10.1002/(SICI)1097-0355(199724)18:4<339::AID-IMHJ2>3.0.CO;2-G
- Guedeney, A. (2007). Infant's withdrawal and depression. *Infant Mental Health Journal*, 28(4), 399–408. doi:10.1002/imhj.20143
- Guedeney, A., Dumond, C., Grasso, F., & Starakis, N. (2004). Comportement de retrait relationnel du jeune enfant: Du concept à l'outil diagnostique [Social withdrawal behavior among young children: From the concept to a diagnostic tool]. *Médecine & Sciences-Paris*, 20(11), 1046–1049. doi:10.1051/medsci/200420111046
- Guedeney, A., & Fermanian, J. (2001). A validity and reliability study of assessment and screening for sustained withdrawal reaction in infancy: The Alarm Distress Baby Scale. *Infant Mental Health Journal*, 22, 559–575. doi:10.1002/imhj.1018
- Guedeney, A., Foucault, F., Bougen, B., Larroque, B., & Mentré, F. (2008). Screening for risk factors of relational withdrawal behaviour in infants aged 14–18 months. *European Psychiatry*, 23, 150–155. doi:10.1016/j.eurpsy.2007.07.008
- Guedeney, A., Guedeney, N., Tereno, S., Dugravier, R., Greacen, T., Welniarz, B. et al. (2011). Infant rhythms versus parental time: Promoting parent–infant synchrony. *Journal of Physiology-Paris*, 105(1–3), 195–200. doi:10.1016/j.jphysparis.2011.07.005
- Guedeney, A., Marchand-Martin, L., Cote, S., Larroque, B., & the EDEN Mother–Child Cohort Study Group. (2012). Birth weight, parental vulnerabilities and social withdrawal at age one in the French EDEN Perinatal Risk Factors Study. *European Child and Adolescent Psychiatry*, 21(4), 185–191. doi:10.1007/s00787-012-0250-4
- Hodges, J., & Tizard, B. (1989). Social and family relationships of ex-institutional adolescents. *Journal of Child Psychology and Psychiatry*, 30(1), 77–97.
- Instituto de Segurança Social, Departamento de Desenvolvimento Social, Unidade de Infância e Juventude, Sector para a Qualidade do Acolhimento (2010). *Plano de intervenção imediata: Relatório de caracterização das crianças e jovens em situação de acolhimento em 2009 [A plan for immediate intervention: Report about the characterization of children and youths in residential care in 2009]*. Retrieved in 6 June, 2011 from http://www.cnpjcr.pt/preview_documentos.asp?r=2554&m=PDF.
- Kelly, S.J., Day, N., & Streissguth, A.P. (2000). Effects of prenatal alcohol exposure on social behaviour in humans and other species. *Neurotoxicology and Teratology*, 22, 143–149.
- Kobak, R., Cassidy, J., Lyons-Ruth, K., & Ziv, Y. (2006). Attachment, stress, and psychopathology: A developmental pathways model. In D. Cicchetti & D.J. Cohen (Eds.), *Developmental psychopathology: Theory and method* (pp. 333–369). New York: Wiley.
- Landgren, M., Svensson, L., Strömmland, K., & Grönlund, M.A. (2010). Prenatal alcohol exposure and neurodevelopmental disorders in chil-

- dren adopted from Eastern Europe. *Pediatrics*, 125(5), 1178–1185. doi:10.1542/peds.2009-0712
- Leary, M., & Hoyle, R. (2009). *Handbook of individual differences in social behaviors*. New York: Guilford Press.
- Magalhães, C., Dias, P., Carneiro, A., Soares, I., Rangel-Henriques, M., Silva, J. et al. (2010). Avaliação do temperamento aos 13 e aos 24 meses através do relato do educador: Validação da versão portuguesa do Infant Characteristics Questionnaire [Assessment of child's temperament at 13 and 24 months through the report of the caregiver: Validation of the Portuguese version of the Infant Characteristics Questionnaire]. *Revista Portuguesa de Investigação Educacional*, 9, 175–191.
- Mäntymaa, M., Puura, K., Luoma, I., Kaukonen, P., Salmelin, R.K., & Tamminen, T. (2008). Infants' social withdrawal and parents' mental health. *Infant Behavior & Development*, 31, 606–613. doi:10.1016/j.infbeh.2008.07.005
- Matthey, S., Guedeney, A., Starakis, N., & Barnett, B. (2005). Assessing the social behavior of infants: Use of the ADBB Scale and relationship to mother's mood. *Infant Mental Health Journal*, 26(5), 442–458. doi:10.1002/imhj.20061
- Merz, E., & McCall, R.B. (2010). Behavior problems in children adopted from psychosocially depriving institutions. *Journal of Abnormal Child Psychology*, 38(4), 459–470. doi:10.1007/s10802-009-9383-4
- Miller, L.C. (2005). *Handbook of international adoption medicine*. New York: Oxford University Press.
- Milne, L., Greenway, P., Guedeney, A., & Larroque, B. (2009). Long term development impact of social withdrawal in infants. *Infant Behavior & Development*, 32(2), 159–166. doi:10.1016/j.infbeh.2008.12.006
- Muhamedrahimov, R.J. (2000). New attitudes: Infant care facilities in St. Petersburg, Russia. In J.D. Osofsky & H.E. Fitzgerald (Eds.), *WAIMH handbook of infant mental health: Vol. 1. Perspectives on infant mental health* (pp. 245–294). New York: Wiley.
- Murray, L., Fiori-Cowley, A., Hooper, R., & Cooper, P. (1996). The impact of postnatal depression and associated adversity on early mother–infant interactions and later infant outcome. *Child Development*, 67, 2512–2526. doi:10.1111/j.1467-8624.1996.tb01871.x
- Murray, L., & Trevarthen, C. (1985). Emotional regulation of interactions between two-month-olds and their mothers. In T.M. Field & N.A. Fox (Eds.), *Social perception in infants* (pp. 177–197). Norwood, NJ: Ablex.
- O'Connor, T.G., Marvin, R., Rutter, M., Olrick, J., Britner, P., & the English and Romanian Adoptees Study Team. (2003). Child–parent attachment following early institutional deprivation. *Development and Psychopathology*, 15, 19–38.
- O'Connor, T.G., Rutter, M., & the English and Romanian Adoptees Study Team. (2000). Attachment disorder behavior following early severe deprivation: Extension and longitudinal follow-up. *Journal of the American Academy of Child & Adolescent Psychiatry*, 39, 703–712. doi:10.1097/00004583-200006000-00008
- Oliveira, P.S., Soares, I., Martins, C., Silva, J.R., Marques, S., Baptista, J., & Lyons-Ruth, K. (2012). Indiscriminate behavior observed in the Strange Situation among institutionalized toddlers: Relations to caregiver report and to early family risk. *Infant Mental Health Journal*, 33(2), 187–196.
- Provence, S., & Lipton, R. (1962). *Infants reared in institutions*. New York: International Universities Press.
- Puura, K., Mäntymaa, M., Luoma, I., Kaukonen, P., Guedeney, A., Salmelin, R., & Tamminen, T. (2010). Infant's social withdrawal symptoms assessed with a direct infant observation method in primary health care. *Infant Behavior & Development*, 33, 579–588. doi:10.1016/j.infbeh.2010.07.009
- Rubin, K.H., & Coplan, R.J. (2004). Paying attention to and not neglecting social withdrawal and social isolation. *Merrill–Palmer Quarterly*, 50, 506–534.
- Rutter, M.L., O'Connor, T.G., & the English and Romanian Adoptees (ERA) Study Team. (2004). Are there biological programming effects for psychological development? Findings from a study of Romanian adoptees. *Developmental Psychology*, 4, 81–94.
- Sameroff, A.J., & Fiese, B.H. (1990). Transactional regulation and early intervention. In S.J. Meisels & J.P. Shonkoff (Eds.), *Handbook of early childhood intervention* (pp. 119–149). New York: Cambridge University Press.
- Silva, J., Baptista, J., Marques, S., Oliveira, P., Oliveira, A., & Soares, I. (2010). Assessment of the quality of institutional care. Unpublished manuscript, University of Minho, Braga, Portugal.
- Smyke, A.T., Dumitrescu, A., & Zeanah, C.H. (2002). Attachment disturbances in young children. I: The continuum of caretaking casualty. *Journal of the American Academy of Child & Adolescent Psychiatry*, 41, 972–982. doi:10.1097/00004583-200208000-00016
- Smyke, A.T., Koga, S., Johnson, D., Fox, N., Marshall, P., Nelson, C. et al. (2007). The caregiving context in institution reared and family reared infants and toddlers in Romania. *Journal of Child Psychology and Psychiatry*, 48(2), 210–218. doi:10.1111/j.1469-7610.2006.01694.x
- Sonuga-Barke, E., Beckett, C., Kreppner, J., Castle, J., Colvert, E., Stevens, S. et al. (2008). Is sub-nutrition necessary for a poor outcome following early institutional deprivation? *Developmental Medicine & Child Neurology*, 50, 664–671. doi:10.1111/j.1469-8749.2008.03065.x
- Spitz, R.A. (1945). Hospitalism—An inquiry into the genesis of psychiatric conditions in early childhood. *Psychoanalytic Study of the Child*, 1, 53–74.
- Spitz, R.A. (1946). Hospitalism: A follow-up report. *Psychoanalytic Study of the Child*, 2, 113–118.
- Squires, J., Bricker, D., & Twombly, L. (2002a). *Ages & Stages Questionnaires: Social-Emotional*. Baltimore: Brookes.
- Squires, J., Bricker, D., & Twombly, L. (2002b). *The ASQ:SE user's guide for the Ages & Stages Questionnaires: Social-Emotional*. Baltimore: Brookes.
- St. Petersburg–USA Orphanage Research Team. (2008). The effects of early social-emotional and relationship experience on the development of young orphanage children. *Monographs of the Society for Research in Child Development*, 73(3, Serial No. 291). doi:10.1111/j.1540-5834.2008.00483.x
- Stevens, S., Kumsta, R., Kreppner, J., Brookes, K., Rutter, M., & Sonuga-Barke, E. (2009). Dopamine transporter gene polymorphism

- moderates the effects of severe deprivation on ADHD symptoms: Developmental continuities in gene–environment interplay. *American Journal of Medical Genetics Part B: Neuropsychiatric Genetics*, 150B(6), 753–761. doi:10.1002/ajmg.b.31010
- Tizard, B. (1977). *Adoption: A second chance*. New York: Free Press.
- Tizard, B., & Hodges, J. (1978). The effect of early institutional rearing on the development of eight year old children. *Journal of Child Psychology and Psychiatry*, 19(2), 99–118.
- Tizard, B., & Rees, J. (1975). The effects of early institutional rearing on the behaviour problems and affectional relationships of four-year-old children. *Journal of Child Psychology and Psychiatry*, 16, 61–73.
- Tizard, B., & Tizard, J. (1971). Social development of two year old children in residential nurseries. In H.R. Schaffer (Ed.), *The origins of human social relations* (pp. 147–163). New York: Academic Press.
- Trevarthen, C., & Aitken, K.J. (2001). Infant intersubjectivity: Research, theory and clinical applications. *Journal of Child Psychology and Psychiatry*, 42, 3–48. doi:10.1111/1469-7610.00701
- Tronick, E.Z., & Weinberg, M.K. (1997). Depressed mothers and infants: Failure to form dyadic states of consciousness. In L. Murray & P.J. Cooper (Eds.), *Postpartum depression and child development* (pp. 54–81). New York: Guilford Press.
- van IJzendoorn, M.H., Palacios, J., Sonuga-Barke, E.J.S., Gunnar, M.R., Vorria, P., McCall, R.B. et al. (2011). Children in institutional care: Delayed development and resilience. *Monographs of the Society for Research in Child Development*, 76(4, Serial No. 301), 8–30. doi:10.1111/j.1540-5834.2011.00626.x
- Vorria, P., Papaligoura, Z., Dunn, J., van IJzendoorn, M.H., Steele, H., Kontopoulou, A., & Sarafidou, Y. (2003). Early experiences and attachment relationships of Greek infants raised in residential group care. *Journal of Child Psychology and Psychiatry*, 44, 1208–1220. doi:10.1111/1469-7610.00202
- Vorria, P., Rutter, M., Pickles, A., Wolkind, S., & Hobsbaum, A. (1998). A comparative study of Greek children in long-term residential group care and in two-parent families: I. Social, emotional, and behavioral differences. *Journal of Child Psychology and Psychiatry and Allied Disciplines*, 39, 225–236.
- Weinberg, M.K., & Tronick, E.Z. (1994). Beyond the face: An empirical study of infant affective configurations of facial, vocal, gestural and regulatory behaviours. *Child Development*, 65, 1503–1515. doi:10.2307/1131514
- Zeanah, C.H., Boris, N.W., Bakshi, S., & Lieberman, A. (2000). Disorders of attachment. In J. Osofsky & H. Fitzgerald (Eds.), *WAIMH handbook of infant mental health* (pp. 92–122). New York: Wiley.
- Zeanah, C.H., & Fox, N. (2004). Temperament and attachment disorders. *Journal of Clinical Child and Adolescent Psychology*, 33(1), 32–41. doi:10.1207/S15374424JCCP3301_4
- Zeanah, C.H., & Gleason, M.M. (2010). *Reactive Attachment Disorders: A review for DSM-V*. American Psychiatric Association. Retrieved in 20 March, 2012 from <http://www.nrvcs.org/nrvattachmentresources/documents/APA20DSM-5%20Reactive%20Attachment%20Disorder%20Review%5B1%5D.pdf>