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## The interactive effect of maltreatment in the family and unstable institutional caregiving in predicting behavior problems in toddlers<sup>☆</sup>



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### ABSTRACT

The current study extends research on the effects of institutionalization, most notably by examining whether—and how—both pre-institutional maltreatment in the family and the stability and consistency of institutional care interact to shape emotional and behavioral development. Fifty Portuguese children, placed in residential institutions when 8 days to 26 months of age, were evaluated using the Child Behavior Checklist when aged 18–31 months. Caregiver-rated internalizing and externalizing behavior problems proved to be unrelated to both early family and institutional experiences, as main effects, but the interaction of these factors significantly predicted externalizing problems: a history of maltreatment in the family coupled with unstable institutional caregiving arrangements predicted especially elevated levels of externalizing problems. Results are discussed in terms of the importance of more distal and proximate developmental experiences.

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Institutional care remains a major intervention worldwide for children whose parents, for various reasons, are unwilling or unable to care adequately for them (UNICEF, 2010). In Portugal around 9000 children under the age of 18 were living in residential institutions in 2012, with the majority of those (54.6%) residing there for more than 1 year (Instituto de Segurança Social, 2012). Despite the best intentions of those providing institutional care, much research chronicles a variety of mental health difficulties that plague institutionally reared children, including internalizing and externalizing disorders, often due to the limited quality of care provided (Bimmel, Juffer, van IJzendoorn, & Bakermans-Kranenburg, 2003; Hawk & McCall, 2010).

Most of the accumulated knowledge documenting such a developmental legacy of institutionalization is drawn from studies of children beyond the opening years of life, after they have departed from the institution, often due to adoption (e.g., Colvert et al., 2008; Wiik et al., 2011). This seems noteworthy given evidence that internalizing and externalizing problems often have an early onset during the toddler years (Briggs-Gowan, Carter, Skuban, & Horwitz, 2001; Campbell, Shaw, & Gilliom, 2000). Consider in this regard Ellis, Fisher, and Zaharie's (2004) findings that Romanian institutionalized children, 2–6 years of age, were already at elevated risk of oppositional defiant disorder and, relative to family-reared peers, manifesting more internalizing and externalizing problems whether still institutionalized or recently adopted (Fisher, Ames,

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Chisholm, & Savoie, 1997; Zeanah et al., 2009). Despite the undoubted importance of such work highlighting the early onset of behavioral problems, only a few studies have examined the determinants of such early emotional and behavioral functioning among toddlers still residing in institutions. This is the subject addressed in the present article.

Although considerable evidence documents the increased risk of institutionally reared children developing serious problems when exposed early in life and for long periods of such care (Sonuga-Barke, Schlotz, & Kreppner, 2010), emerging research underscores the importance of the actual developmental experience children have in institutions, especially with regard to the quality of their daily care (Bakermans-Kranenburg et al., 2011). Institutionalization has been commonly characterized as a multilevel deprivation condition, involving several deficits, not only in cognitive and motor stimulation, medical and nutritional care, but also in the opportunities for the child to establish a long-lasting and focused attachment to a significant adult (Miller, 2005; Sonuga-Barke et al., 2008; Vorria et al., 2003). In fact, institutional environments are typically characterized by the absence of individualized and stable care, and by low levels of caregiver–child social interaction—due to high staff turnover, and poor child-to-caregiver ratios, as well as large, heterogeneous, groups. Such conditions predictably culminate in increased risk of a range of negative emotional and behavioral consequences (The St. Petersburg–USA Orphanage Research Team, 2008).

The fact remains, however, that only a few studies of institutionalized children have sought to, or been positioned to, illuminate the proximate caregiving processes that foster problematic child functioning. And this is because most investigations of the development of institutionalized children rely on the *social-address* (Bronfenbrenner, 1979) of institutionalization to serve as a marker or proxy of poor quality care, based as they are on a research design that simply compares the average functioning of institutionalized children with home-reared children. As a result, *variation in the institutionalization experience* is often overlooked. The work of Smyke, Dumitrescu, and Zeanah's (2002) serves as a notable exception to the traditional *between-group* design, focusing as it did on *within-group* variation. These investigators measured quality of care, finding that poorer caregiving quality was related to more negative behavior among 5–31-month olds residing in institutions, even after taking into account child gender and length of institutionalization. Relatedly, Merz and McCall (2010) observed that 6- to 18-year-old children adopted from *globally depriving institutions*—characterized by frequent changes in caregivers and large child-to-caregiver ratios—had more behavior problems than children raised in less severely deprived institutions.

As clearly implied by the two investigations just cited, significant variation characterizes the behavioral functioning of children growing up in institutions and some of this is attributable to the daily quality of care that children experience (Bakermans-Kranenburg et al., 2011). It would likely be a mistake, however, to presume that all variation in the development of these children is the result of the institutional care experience itself. Certainly worth considering—and the focus of this article—are the experiences of children in their families prior to institutionalization. Although research addressing this issue is limited, studies that have considered the role of pre-institutional risk conditions highlight the importance of the adverse family experiences for the early onset of emotional and behavioral problems. Consider in this regard evidence indicating that 9-year-old children in residential care who experienced early family disruption displayed greater rates of behavioral and emotional disturbances than those who had not (Vorria, Rutter, Pickles, Wolkind, & Hobsbaum, 1998). As it turns out, early child maltreatment appears to be especially important when it comes to accounting for both internalizing and externalizing behavior problems among once-institutional children adopted into families (Simmel, 2007; see also Cuddihy, Dorris, Minnis, & Kovovska, 2013).

These observations, coupled with appreciation that quality of institutional care helps account for variation in the functioning of institutionalized children, highlight the need to consider, *simultaneously*, developmental experiences and exposure before and during institutionalization. The specific purpose of the research reported herein is to address this research need by examining pre-institutional and institutional determinants of early developing behavior problems among institutionally reared children. Accordingly, the current study takes into account the role of both pre-institutional maltreatment and the stability and consistency of institutional care, with the latter serving as an index of its quality (Groark, Muhamedrahimov, Palmov, Nikiforova, & McCall, 2005; Smyke et al., 2002). The present article thus addresses whether—and how—these known sources of influence operate in concert with each other to shape the behavioral development of toddlers. In line with a developmental psychopathology framework emphasizing the dynamic relation between (temporally) distal and proximal causes (Cicchetti, 2006), we predicted that the early exposure to maltreatment in the family of origin will shape vulnerability to behavior difficulties in toddlers who continue to experience inadequate care in less stable institutional environments; and that this will be so even after controlling for potentially confounding factors like gender and age at time of institutionalization, keeping with previous research (Smyke et al., 2007). In other words, we expected that the pre-institutionalization experience of maltreatment would be amplified by the anticipated adverse effects of lower quality care during institutionalization.

## Method

### Participants

Fifty children (28 boys, 56%), placed in 19 Portuguese temporary institutional care homes, were recruited from a broader research project (Soares et al., 2014). These institutions are characterized by adequate physical resources, including nutrition and medical care (Instituto de Segurança Social, 2010), but simultaneously by a high variability in the quality of their psychosocial care, including frequent changes in caregivers over time, high child-to-caregiver ratios, and a lack of warm, sensitive and responsive caregiver–child interactions (Baptista et al., 2013; Martins et al., 2013). Children were 18–31

months old ( $M=23.74$ ,  $SD=4.55$ ) by the time of assessment. The age at admission to the institution varied from 8 days to 26 months ( $M=12.16$  months,  $SD=7.66$ ). The reasons for children being withdrawn from their families and placed in the institution were varied, including negligence, physical abuse, parental psychopathology/intellectual disability, severely limited socioeconomic resources, family physical diseases requiring hospitalization, and child abandonment. The length of time in institutional care varied from 4 to 29 months ( $M=11.30$ ,  $SD=5.53$ ). Forty-four institutional caregivers participated in the study (41 women, 93.2%), aged 21–55 years ( $M=36.32$ ,  $SD=10.73$ ). Six (13.6%), of the 44 participating care providers, served as caregivers for more than one child in the current study. The maximum number of children with the same assigned caregiver was two. The majority of caregivers ( $n=25$ , 59.5%) had not received any specific training for their caregiving role. The participating institutions were capable of caring for 10 to 54 children ( $M=21.11$ ,  $SD=9.75$ ). The number of staff members ranged from 4 to 51 ( $M=16.22$ ,  $SD=10.47$ ). Most of the institutions ( $n=11$ , 57.9%) cared for children up to 12 years of age, whereas others ( $n=8$ , 42.1%) provided care for older children and adolescents, though younger children were also cared for as needed. Caregivers dedicated approximately 25 min of individual attention per day to each child ( $SD=21.41$ , range = 0–120), and were each responsible, on average, for 11 children ( $SD=5.92$ , range = 1–22) when on duty.

### Procedure

Permission to conduct the larger investigation of which the current study is a part was provided by Portuguese Social Services. This agency is responsible for managing the institutions and is the legal guardian of children while they remain there. The research project was also approved by the Portuguese National Commission for Data Protection, which is responsible for ensuring the ethical requirements in relation to human research carried out by Portuguese entities. The plan for the study was presented to the staff of 19 temporary institutional care homes from the north of the country (and thus within easy traveling distance of the research team), all of which agreed to participate. Children were recruited based on their age. Exclusion criteria were the presence of severe physical or mental impairments (e.g., cerebral palsy), genetic or neurological syndromes (e.g., Down syndrome), or fetal alcohol syndrome. Written informed consents were obtained from the biological parents and the institution director. Two children did not participate due to parental refusal. The primary institutional caregiver of each participating child was identified based on staff interviews. Specifically, caregivers were selected by asking the staff who was the key staff member who the child showed preference for and/or who knew the child best. Caregivers also provided a written informed consent.

### Measures

Primary predictor variables are delineated first, followed by the core dependent constructs and then potential covariates.

**Early Child Maltreatment.** The Modified Maltreatment Classification System (MMCS; Barnett, Manly, & Cicchetti, 1993; English & the LONGSCAN Investigators, 1997) was used to determine the presence of early maltreatment in the family of origin prior to institutionalization, based on the official records of each child reviewed at the institution. The MMCS assesses the occurrence of physical abuse, sexual abuse, physical neglect, and emotional maltreatment. Physical abuse is coded when a caregiver or responsible adult inflicts non-accidental physical injury upon the child. Sexual abuse involves attempted or actual sexual contact between the child and a family member or responsible adult. Physical neglect is coded when a caregiver or a responsible adult fails to meet the physical needs of the child, including adequate food and medical care. Emotional maltreatment involves persistent or extreme thwarting of the basic emotional needs of the child, including failure to provide for psychological safety and security. Twenty-eight children (56%) were classified as having experienced early maltreatment, of which all experienced physical neglect and seven experienced, beyond that, emotional maltreatment or physical abuse. Inter-rated agreement was calculated for each specific form of abuse based on 30% of cases and proved to be more than adequate before consensus scoring of disagreements on ratings (ICC mean  $r_{ic} = .88$ , range .77–1.00). Considering the limited number of children who had experienced any particular type or more than one type of maltreatment, the only distinction made in the analyses to be reported was presence-absence of maltreatment (of any type).

**Caregiving Stability.** The Assessment of the Quality of Institutional Care (AQIC, Silva et al., 2010) was used to measure the stability of care provided to the child, based on researchers' extensive observations during 2 years of data collection at the institutions. The AQIC evaluates structural and relational aspects of the quality of institutional care, and was used in previous research that showed that the quality of the caregiving environment assessed by this measure was associated with the existence of a preferred attachment figure at institutions for young children; for a detailed description, see Baptista et al. (2013). For the purpose of the present inquiry, the stability and consistency of caregiving scale was used, comprised of six observational items, rated on a 5-point scale (1-no/never present; 3-sometimes/somewhat; 5-yes/always present), assessing the quality of the caregiving environment in terms of the adequacy of daily child-to-caregiver ratio (Item 1), of the number of caregivers (Item 2), of the format and predictability of the working shifts (Item 3 and 4), of employee turnover (Item 5), and of the continuity of care (Item 6). The total score of the scale (coefficient alpha of .77) is calculated by summing ratings across items, with higher scores reflecting greater caregiving stability, characterized by smaller child-to-caregiver ratios (Item 1); by reduced total number of caregivers (Item 2), with fixed (as opposed to rotating), shifts (Item 3), and stable working schedules (Item 4); by reduced turnover of caregivers assigned to a group of children (Item 5); and by the stability of children within these groups (Item 6). Intraclass correlation for intercoder reliability was .83, calculated for 42% of the participating institutions ( $n=8$  institutions).

**Behavior Problems.** Caregivers completed the Portuguese version of the Child Behavior Checklist for children 1.5–5 years of age (CBCL; Achenbach & Rescorla, 2000; Gonçalves, Dias, & Machado, 2007). For each of the 100 items that describe behavioral/emotional problems, the caregiver rated the child's behavior on a 3-point scale: 0 = not true, 1 = sometimes/somewhat true, or 2 = very/frequently true. Scores on the subscale of internalizing behavior—assessing emotionally reactive, anxious/depressed, somatic complaints, and withdrawn behavior—and on the subscale of externalizing behavior—assessing attention problems and aggressive behavior—were calculated for this study. The CBCL has been extensively used and shown to have good internal consistency (internalizing subscale, coefficient alpha of .91, and externalizing subscale, coefficient alpha of .96, for a sample of children in foster care; Jonkman et al., 2014). In the present study, the internal consistency of the CBCL proved to be more than adequate, with a coefficient alpha of .79 for internalizing problems, and .82 for externalizing problems.

**Potential Covariates.** The date of birth and date of admission to the institution were obtained from the child's official records, affording calculation of the age at admission to institutional care and length of time institutionalized. Also serving as a potential covariate was child gender and age at assessment.

## Results

Data analysis proceeded in several steps. Simple bivariate relations were examined between internalizing and externalizing behavioral scores and gender, age at assessment, age at admission to institutional care and length of institutionalization, as well as early child maltreatment and caregiving stability. Then, we tested whether early child maltreatment moderated the effects of quality/stability of institutional care on internalizing and externalizing behavior problems, via a series of multiple regression analyses.

### Descriptive Statistics and Correlational Analyses

Descriptive statistics for study variables are presented in Tables 1 and 2. Preliminary analyses revealed no significant associations between either internalizing or externalizing behavior problems and gender, age at assessment, age at admission and length of time in institutional care. Likewise, no associations proved to be significant between behavior problems and early child maltreatment or caregiving stability (Table 3). These preliminary results imply no “main effects” of these developmental experiences and no need for inclusion of any of the potential covariates in the next step of analysis.

### Predicting Internalizing and Externalizing Behavior Problems

Multiple regression analyses were conducted using early child maltreatment and caregiving stability, as well as their interaction, as predictors of behavior problems. As expected given the bivariate correlational results, no significant main effects emerged when predicting either internalizing or externalizing problems. In the case of externalizing problems, however, the interaction of these two predictors proved significant (see Table 4). Consistent with the literature (e.g., MacCallum,

**Table 1**  
Descriptive statistics for study variables.

	<i>M</i>	<i>SD</i>	Min–max
Age at assessment (months)	23.74	4.55	18–31
Age at admission to the institution (months)	12.16	7.66	0–26
Caregiving stability	15.14	4.57	8–26
Internalizing problems <sup>a</sup>	10.52	5.91	1–24
Externalizing problems <sup>b</sup>	14.68	6.67	1–31
	<i>n</i>	%	
Gender, <i>girls</i>	22	44.0	
Early child maltreatment, <i>presence</i>	28	56.0	

<sup>a</sup> 10% of the children scored at or above the clinical range for the internalizing subscale.

<sup>b</sup> 12% of the children scored at or above the clinical range for the externalizing subscale.

**Table 2**  
Descriptive statistics for the individual items of the caregiving stability scale.

	<i>M</i>	<i>SD</i>	<i>Mdn</i>	Min–Max
Item 1 – child-to-caregiver ratio	2.28	.96	2.00	1–4
Item 2 – pool of caregivers	3.50	.99	3.50	2–5
Item 3 – working shifts, format	1.94	1.39	3.00	1–5
Item 4 – working shifts, predictability	2.50	1.34	2.00	1–5
Item 5 – employee turnover	3.67	1.18	4.00	1–5
Item 6 – continuity of care	2.89	.76	3.00	2–4

**Table 3**

Bivariate associations between behavior problems and predictors and potential covariates.

	Internalizing	Externalizing
<b>Predictors</b>		
Early maltreatment <sup>a</sup>	.04	.13
Caregiving stability <sup>b</sup>	-.20	-.15
<b>Covariates</b>		
Gender <sup>a</sup>	.10	.12
Age at assessment (months) <sup>b</sup>	-.03	.14
Age at admission to the institution (months) <sup>b</sup>	.05	-.01
Length of time in institutional care (months) <sup>b</sup>	-.10	.08

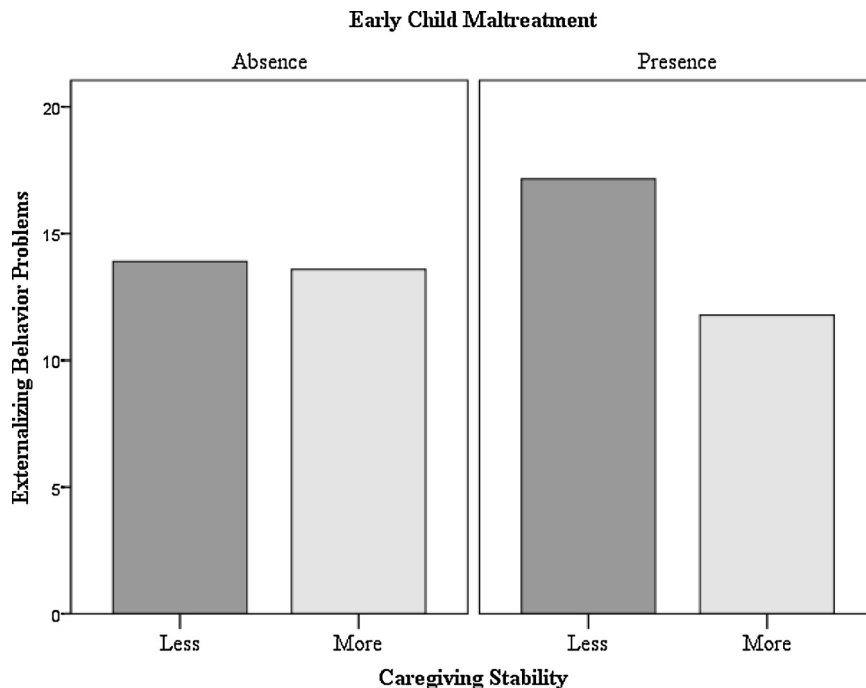
<sup>a</sup> Point-biserial coefficient correlation.<sup>b</sup> Pearson coefficient correlation.**Table 4**

Predicting internalizing and externalizing behavior problems in institutional-reared toddlers.

	Internalizing				Externalizing				
	B	SE	$\beta$	t	B	SE	$\beta$	t	
<b>Block 1</b>									
Early maltreatment	<b>R<sup>2</sup> = .04</b>				<b>R<sup>2</sup> = .04</b>				
Caregiving stability	.55	1.87	.05	.25	1.62	1.91	.12	.40	
	-.25	.19	-.20	-1.37	-.21	.20	-.14	-.98	
<b>Block 2</b>									
Early maltreatment × caregiving stability	<b>R<sup>2</sup> = .07 (<math>\Delta R^2 = .01</math>)</b>				<b>R<sup>2</sup> = .12 (<math>\Delta R^2 = .06</math>)</b>				
	.47	.37	.26	1.28	.82	.41	.40	2.03 <sup>*</sup>	

<sup>\*</sup>  $p < .05$ .

Zhang, Preacher, & Rucker, 2002), we dichotomized the caregiving stability variable using median split, in order to illuminate the nature of the interaction. As illustrated in Fig. 1, among children who experienced early maltreatment, lower caregiving stability predicted more externalizing behavior problems,  $\beta = -.41$ ,  $t = -2.26$ ,  $p = .03$ , whereas among non-maltreated children the relation was absent,  $\beta = .16$ ,  $t = .71$ ,  $p = .49$ . A post hoc analysis was conducted to examine statistical power using Cohen's criteria (1988; effect size: small = .20, medium = .50, large = .80). For the sample of 50 children, there was 63% power to detect medium effect sizes for the early maltreatment × caregiving stability interaction.

**Fig. 1.** Mean externalizing scores of maltreated and non-maltreated toddlers residing in less or more stable institutional environments.

## Discussion

The current study extends research on the effects of institutionalization, most notably by exploring the interactive effect of pre-institutional family experience (i.e., maltreatment) and the quality of institutional care experienced on behavioral problems in young children living in institutions. Although it was surprising that no main effects of the studied conditions emerged, results revealed, as expected, that children who were institutionalized due to neglect and/or abuse in the family of origin and admitted to institutions characterized by deficiencies in the stability of care, had an increased risk for externalizing behavior problems relative to other institutionalized children. Such results specifically contribute to the literature by showing that more important than the effect of any single adversity, is the interactive combination of early adversities—in this case child maltreatment and unstable institutional care—, when it comes to gaining insight into variations in externalizing behavior problems in a population at-risk for such (i.e., institutionalized children) (Evans, Li, & Whipple, 2013).

Of note is that levels of emotional and behavioral problems in the current sample were lower than what has been reported in studies of young children residing in Romanian institutions (Ellis et al., 2004), but similar to what has been detected in children living in less depriving institutional environments (Gunnar, van Dulmen, & the International Adoption Project Team, 2007). Important to appreciate, then, is that the current article pertains to children placed in institutions in Western Europe, making the rearing environment potentially different from many of the studies of institutional rearing in Eastern Europe and the former Soviet Union. These institutions have been characterized as not only having severe deficiencies in psychosocial care, but also in physical resources (Merz & McCall, 2010; Rutter et al., 2007). Taking into account the three levels of deprivation of institutional care described by Gunnar (2001), many of those institutions would be classified as level 1 due to global privation of health, nutrition, stimulation and relationship needs. Portuguese institutions, in contrast, would be classified as level 2 because they meet children's nutrition and health needs, while failing to do so with regard to cognitive stimulation and social-relational support. In fact, they might even fall into the third level, as some certainly provide sufficient support for healthy development except with regard to the need for a consistent and stable relationship of children with specific caregivers. The fact that the Portuguese institutional care is of higher quality than in so many other institutions that have been studied, probably explains our failure to replicate the well-documented dose-response effect of length of institutional care on behavior problems (Hawk & McCall, 2010). Perhaps this "failure to replicate" should have been anticipated given theory that the dose-response relation under consideration may depend on the severity of poor quality care (Bakermans-Kranenburg et al., 2011), along with evidence to this effect (Lee, Seol, Miller, Sung, & Minnesota International Adoption Project Team, 2010; Merz & McCall, 2010).

The hypothesis that early exposure to maltreatment in the family of origin, in and of itself, would predict vulnerability to internalizing behavior difficulties in toddlers exposed to less stable environments did not receive empirical support. In contrast to other research (Simmel, 2007), recall that pre-institutional maltreatment did not significantly predict internalizing behavior problems in the current study. A possible explanation is that specific types of maltreatment—such as early sexual abuse (e.g., Cicchetti, Rogosch, Gunnar, & Toth, 2010)—may be more predictive of internalizing problems than other adverse experiences, something we were not well positioned to illuminate due to sample size constraints. It may also be the case that the quality of care provided in institutions was sufficient to mitigate the otherwise anticipated effect of maltreatment.

Alternatively, children in this study may simply have been too young for the measurement of internalizing problems to be reliable, especially when evaluated by caregivers who are not with the children all day long as many parents are. In fact, as very young children have limited capacities to report their internal experiences, due to their less well-developed verbal abilities, internalizing symptoms may be more difficult to recognize and report by caregivers who have to care for multiple children simultaneously (Tandon, Cardeli, & Luby, 2009). Moreover, studies have consistently reported low cross-informant agreement between mothers' and teachers' ratings of child behavior problems (Reyes & Kazdin, 2005), especially on internalizing disorders (Berg-Nielsen, Solheim, Belsky, & Wichstrom, 2012). In a previous study carried out with post-institutionalized children, Stams, Juffer, Rispen, and Hoksbergen (2000) found that adoptive mothers tend to report more internalizing symptoms than teachers who, like caregivers, are not with the children all day. Only additional research will afford discrimination of these two alternative explanations. It will also be important to focus on the actual quality, not just stability, of the caregiver-child relationship. After all, McLaughlin, Zeanah, and Nelson (2012) found in their research on institutionalized children that greater attachment security predicted lower rates of internalizing behavior problems and, Baptista and colleagues (2013) observed that the presence of a preferred attachment relationship predicted lower levels of social withdrawal in institutionalized toddlers.

There are limitations to this article that should be noted. The sample is small, such that only medium statistical power existed. Given the sample-size constraints, it was not possible to distinguish between types of maltreatment or even between the presence of a single or multiple instances of abuse or neglect. Indeed, the presence-absence of maltreatment was the only distinction made possible in the analyses. Then there is the fact that other early family risks factors, and even different features of the caregiving environment, were not explored in this inquiry, factors and features that may potentially contribute to variations in the emotional and behavioral development of institutionalized toddlers. However, and despite such limitations, the current study underscores the importance of considering the dynamic and interactive influences of proximal and distal contextual experiences, in order to uncover the foundations of the early onset of behavior disruption among children growing up in institutions. Given that there are currently around 9000 institutionalized children in Portugal (Instituto de Segurança Social, 2012), it would seem that there is a need for the current welfare system to replace institutional care with more family-like forms of caregiving that would better suit the needs of young children (Smyke, Zeanah, Fox, Nelson, & Guthrie,

2010), especially those who have been maltreated and might benefit the most from sensitive, supportive, consistent and responsive care provided by one or perhaps two stable and reliable caregivers. Nevertheless, given the recognition that the implementation of family care alternatives is in most cases a long process (Groark, McCall, & Li, 2009), efforts should be made to improve the quality of institutional caregiving. This would seem especially so given evidence that an organized intervention, in terms of institutional structure and staff training, can yield significant emotional and behavioral benefits for children who, for various reasons, remain in institutions (see, The St. Petersburg-USA Orphanage Research Team, 2008). At the same time, the family should not be neglected. Thus, efforts to improve parenting quality so that children do not need to be placed in institutional care would also be in children's best interests.

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