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Predictors of parent-teacher communication during infant transition to childcare in Portugal

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ABSTRACT

Although literature reports associations between parent-teacher communication and childcare quality, little is known about how such communications are related to family, child and childcare characteristics. This study examines whether child, family and childcare experience characteristics predict the level of parent-teacher communication, and differences between parents' and teachers' reports of communication. Participants were mothers of 90 infants and their teachers in childcare in Portugal. Results show that both parents and teachers report higher levels of communication in higher-quality programmes. Teachers reported more frequent communication than parents. Teachers, but not parents, reported more frequent communication when children spent fewer hours in childcare. Discussion highlights the relevance of monitoring the quality of childcare contexts, especially in early ages, and to increase parent-teacher communication when children spend more time in childcare. The importance of promoting high-quality childcare and accounting for variables at the mesosystemic level of development in teacher training are also discussed.

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Parent-teacher communication; infants; childcare; families; partnership

In many countries, both mothers and fathers of young children return to work during their infant's first 6 weeks to 12 months of life (Pronzato, 2007). Caring and educating a young infant is a challenging task for families and professionals, considering that the infant requires frequent and individualized basic care routines and frequent and warm interactions to thrive (National Association for the Education of Young Children [NAEYC], 2009). Communication between parents and childcare providers is assumed as a crucial mean to coordinate with each other in the care of the infant and to promote parents' confidence in their childcare arrangement (e.g. NAEYC, 2009; Rolfe & Armstrong, 2010).

Although good parent-teacher communication is important worldwide, it is particularly relevant in Portugal where over 60% of parents work out-of-home (Organization for Economic Co-operation and Development [OECD], 2011). In 2014, around 40% of children under 3 years of age were enrolled in childcare, and of these children enrolled in childcare, 51% were 1 year old or younger (Gabinete de Estratégia e Planeamento/Ministério da Solidariedade, Emprego e Segurança Social [GEP/MSESS], n.d.). Many children enter center-based childcare as infants because both parents are employed and regular paid parental leave in Portugal ranges from 120 to 150 days (European Foundation for the Improvement of Living and Working Conditions, 2015). Contrary to what happens in other

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countries, where women can choose between working and staying at home, given Portugal's economic reality, the majority of women must work, returning to the same workload they had prior to their pregnancies. The country's economic reality has, in fact, been implicated as a major contributor in couples' decisions to have fewer children, with a significant impact on the declining rates of fertility over the past decades (OECD, 2011).

In this context, it is particularly critical to understand and find ways to support those parents who do have children, and secondarily prevent further population decline. One way to achieve these goals may be the identification of factors that help working-parent families feel at ease using infant childcare services. Parental perceptions of the quality of their children's childcare and of the communication with teachers are thought to play important roles in parental comfort with using childcare – especially for infants (Shpancer et al., 2002). This study examines the frequency of communication among Portuguese teachers and parents who have just enrolled their infant in center-based care. By focusing on an under-represented age in the literature about parent-teacher partnership, it provides additional descriptive information and documentation of factors related to more frequent communication between parents and teachers.

Parent-teacher partnership

The partnership between parents and teachers of young children is thought to play a critical role in ensuring working parents feel they understand their child's experience outside the home and can incorporate that important part of the child's life into their parenting as well as promoting children's social and cognitive development (e.g. Castro, Bryant, & Peisner-Feinberg, 2004; Cottle & Alexander, 2014; McBride, Bae, & Wright, 2002; NAEYC, 2009). Most studies regarding parent-teacher/caregivers partnerships at very young ages operationalize this construct by focusing on common indicators, such as parent involvement and participation in education settings, communication between parents and teachers, and quality of parent-teacher relation.

Partnership between parents and teachers in general, and their communication in specific, have been shown to facilitate the transition into care and continuity between home and early childhood education and care (ECEC) for all children (e.g. McBride et al., 2002; Owen, Klausli, Mata-Otero, & Caughy, 2008; Swartz & Easterbrooks, 2014; Weiss, Lopez, Kreider, & Chatman-Nelson, 2014). However, most of the research on this has been conducted in the US, and mostly focused on preschool age children (3–6), with few studies addressing parent-teacher partnerships in infant/toddler care (e.g. Drugli & Undheim, 2012; Elicker, Noppe, Noppe, & Fornter-Wood, 1997; Owen, Ware, & Barfoot, 2000; Perlman & Fletcher, 2012).

It is noteworthy that studies on parent-teacher communication during children's first year of life are scarce because infants, perhaps even more than preschoolers, would seem to adapt to a new care environment more readily with frequent and good communication between parent and teacher regarding feeding, napping, preferences, dislikes, and activities. Infants are totally dependent on their teachers/caregivers to meet needs for food, sleep, and interactions, and are unable to communicate verbally about their experiences in one context to adults in the other context. Therefore, communication between parents and teachers/caregivers is especially important to ensure the infant feels secure. Similarly, communication between parents and teachers helps each adult caregiver to understand what the infant may want or need, and thus provide for that infant in a manner that is rewarding for the adults (Owen et al., 2000).

The infant transition from home to childcare is a period described as challenging for parents, infants and childcare professionals (Balaban 2011; Bernard, Peloso, Laurenceau, Zhang, & Dozier, 2015; Daniel & Shapiro, 1996; Merril, 2010). It is known that children experience a variety of changes during this period that go beyond the separation from parents. Infants must adjust to new routines, spaces and adults (Datler, Ereky-Stevens, Hover-Reisner, & Malmberg, 2012) and to new complex social interactions (Bernard et al., 2015). This may also be a difficult period for parents who may be anxious about placing their young child into care with adults and in places

they do not know, but expect to be secure. Literature documents that parents' main concerns about childcare are children's safety and well-being (Daniel & Shapiro, 1996). Parent-teacher communication can be an effective strategy to build parents' trust in childcare services (Owen et al., 2000).

Overall, research underlines that close partnerships allow parents and teachers to share information about the child, promoting continuity between home and early childhood education, as well as the quality of care in both settings (Dunst & Dempsey, 2007; Giovacco-Johnson, 2009; Leavitt, 1995; Owen et al., 2000). Within a bioecological perspective (e.g. Bronfenbrenner, 2005; Bronfenbrenner & Morris, 2006), parent-teacher partnership is viewed as an important factor in children's development since it can mediate the intersection between the two major contexts of the child's life.

Given the importance of calibrating care between home and childcare for infants, it would be useful to identify factors that facilitate or impair such communications. Relations between parent-teacher communication and child characteristics, family characteristics and childcare characteristics have been analyzed in previous studies and are described below.

Regarding child characteristics, some evidence suggests that educators and parents communicate more about infants/toddlers than preschoolers (e.g. Endsley & Minish, 1989; Rimm-Kaufman & Pianta, 1999), but no evidence has emerged indicating that the perceived quality of parent-teacher relationships and communication were stronger for younger children (Swartz & Easterbrooks, 2014). Some evidence also suggests relations between child temperament and parent-teacher communication in ECEC. More positive parent-teacher interactions were found when infants/toddlers were more socially oriented and had a more positive emotionality, and less communication and lower quality relationships when children were considered to have a difficult temperament (Pirchio, Taeschner, & Volpe, 2011; Swartz & Easterbrooks, 2014). Although the effect of child gender has been explored in literature on parent involvement in school years (e.g. Garbacz, McDowall, Schaughency, Sheridan, & Welch, 2015; Hossain & Anziano, 2008), to our knowledge, gender has not been considered on parent-caregiver communication in ECEC research with infants.

Regarding family characteristics, results about the effect of parent education on parent-teacher partnerships are mixed. Some studies reported positive effects of education (e.g. Shpancer, 1998; Swartz & Easterbrooks, 2014), while others reported negative effects (e.g. Pirchio et al., 2011). Although parent education and family income are frequently associated, studies examined the relation of income or related variables with parent-teacher communication in preschool ages. Two studies have reported less parent involvement in preschool among families from low-socioeconomic status (Murray, McFarland-Piazza, & Harrison, 2015; Waanders, Mendez, & Downer, 2007).

Other family characteristics have also been explored. According to Shpancer's (1998) literature review, bigger families and more traditional childrearing beliefs have been related to less frequent parent-caregiver interactions with child caregivers. Stimulating home environments, characterized by providing educational activities, were positively associated with better parent-teacher communication in preschool (Murray et al., 2015).

Finally, the extent to which characteristics of the teachers or classrooms predict parent-teacher communications has also been examined. Preschool teachers with more in-service training hours communicated with parents more often than teachers with fewer training hours in one study (Perlman & Fletcher, 2012) and less in another study (Joshi & Taylor, 2005). Other studies found no effects of teacher education or experience on parent-teacher communication and relationships (Perlman & Fletcher, 2012; Swartz & Easterbrooks, 2014). Lower adult:child ratios in preschool classrooms have been found to be associated with better parent-teacher communication in several studies (Early et al., 2006; Perlman & Fletcher, 2012; Rao, Koong, Kwong, & Wong, 2003; Zellman & Perlman, 2006). Longer hours in childcare have been negatively associated with parent-teacher partnership (e.g. Drugli & Undheim, 2012; Endsley & Minish, 1989; Zellman & Perlman, 2006). Finally, as expected, teachers who provided higher childcare quality tended to provide more frequent, pleasant and bidirectional parent-teacher communication (e.g. Endsley & Minish, 1989; Ghazvini & Readdick, 1994; Owen et al., 2000; Perlman & Fletcher, 2012). These results suggest that more research on parent-teacher communication is needed for infants to determine whether these findings are

obtained for the youngest children, who may be even more influenced, by the communication between their parents and caregivers/teachers.

Parent and teacher perceptions of parent-caregiver communication

Given both theoretical and empirical evidence indicating that communication and partnership between families and childcare providers plays a valuable role in early development, especially for very young children, it is not surprising that both mothers and ECEC professionals report that collaboration with each other is important regarding early childhood education (Leavitt, 1995). In general, parents and caregivers both report valuing communication so they can collaborate with each other in providing care for young children, but the reported levels of collaboration tend to be higher for mothers than for caregivers (Cantin, Plante, Coutu, & Brunson, 2012; Owen et al., 2000). The reasons cited for less communication from ECEC caregivers include the caregivers schedules and the demands presented by parents' working conditions (Cantin et al., 2012). In particular, it appears that communication is most difficult when children are dropped off early and/or picked up late at childcare centres, in part, because the teacher who provides the primary care during the day is not typically the teacher present very early or late in the day, and because both parents and caregivers feel rushed at these times (Drugli & Undheim, 2012; Endsley & Minish, 1989; Zellman & Perlman, 2006).

In summary, frequent and collaborative communication between parents and ECEC caregivers is thought to be important for young children, and especially for infants. Communication is essential for parents and caregivers to better understand how to meet infants' needs, and to ensure parents' confidence in childcare. This study adds to the few studies that have examined factors associated with higher levels of parent-caregiver communication during this important transition from home to childcare.

The current study

This study examined parent-teacher communication during infants' first month in center-based childcare and examined selected characteristics of children, families and childcare as predictors of parent-teacher communication. Additionally, the study explored factors that may predict differences between parent and teacher perceptions of communication. Multiple methods were used to measure different family, infant and childcare characteristics, namely observational procedures and parent and teacher reports.

Method

Participants

Ninety mothers of infants attending childcare centres and the teachers working in these classrooms participated in this study. Participants were part of a broader research project about infants' transition to childcare (see Barros et al., 2016). Centres were selected first; the 418 centres in the greater metropolitan area of Porto, Portugal, registered at the Ministry of Solidarity, Employment and Social Security website, were randomly sequenced and contacted. Of these, 232 had an infant classroom; of these, the first 90 centres that met the project criteria (namely, having at least one family who registered their infant aged between 4 and 9 months to start attending childcare between September 2013 and February 2014) were recruited. The centre directors identified the potential entering families who agreed to be contacted by researchers. In most centres, only one infant met the criteria; if more than one, researchers randomly selected the family to contact. Informed consents were obtained from parents and from the child's teacher. The Portuguese National Data Protection Authority approved all measures, data collection and confidentiality procedures.

Most of the centres in this study were private non-profit (91.1%), and 8.9% were private for-profit centres. Classrooms had 1 to 12 infants enrolled ($M = 6.38$, $SD = 2.34$) and 1 to 3 teachers ($M = 2.00$, $SD = 0.60$), with child:adult ratio ranging from 2:1 to 8:1 ($M = 3.38$, $SD = 1.49$), with one exceptionally small classroom with a ratio of 1:1. All teachers were female, ranging in age from 20 to 64 years old ($M = 42.53$, $SD = 9.97$). As Portuguese policies for childcare do not require that infant classrooms have teachers with university degree, teachers/caregivers had different education levels. Their education ranged from a basic level (5.6% had only four years of primary school) to a university degree level (22.2% had 15 or more years of formal education), with participants having a mean education of 11.10 years ($SD = 3.64$). Professional experience in childcare varied between 1 month and 37 years ($M = 8.36$, $SD = 6.5$).

Regarding maternal education, 59% of the mothers reported a university degree, 38% reported a high school degree (12 years of education), and only 3% had less than the basic level of education (less than 9 years). Mothers were, on average, 30 years old ($SD = 3.55$). The average monthly income of these families was 1622€ ($SD = 670.77$), similar to the mean income in the north of Portugal, which was about 1640€, in 2010/2011 (Instituto Nacional de Estatística [INE], 2012). Almost all mothers (83%) were employed. Infants (45 female) were on average 6 months old ($SD = 1.34$) at childcare entry, and about 42% were the family first child.

Procedures and measures

There were two waves of data collection. First, a home visit was conducted before the infants entered the childcare centre. During this visit, the quality of the home environment was observed and parents completed questionnaires about socio-demographic characteristics and child temperament. Home visits lasted, on average, two hours and all families considered mothers as the main respondent to all questionnaires.

Second, the childcare setting was observed, and both teachers and parents reported on the infants' transition to childcare during the first month of attending the ECEC centre. Classrooms were observed during two full mornings, with separate days to collect different measures. Additionally, the teacher completed the structural characteristics questionnaire. At this time parents and teachers were also asked about their communication with each other. The parent questionnaire was given to mothers with written instructions for them to complete at the end of the fourth week of their infant's attendance in childcare (end of the first month). The teacher questionnaire was completed by teachers also at the end of the fourth week.

Parent-teacher communication

Daycare experience questionnaire (DEQ)

The DEQ (translated, revised and adapted from Skouteris & Dissanayake, 2001 by Cadima, Peixoto, & Leal, 2012) was completed by parents and teachers to describe the infant's experiences during the transition into childcare. It includes items about child emotional status, maintenance of routines at childcare and home, infant overall adjustment to childcare and parental satisfaction with the transition to childcare arrangements. Authors developed one version for parents and another for teachers. Based on literature regarding infant transition and adjustment to childcare (e.g. Daniel & Shapiro, 1996; Owen et al., 2000), we developed additional items focusing on the frequency of information exchange between teachers and parents (e.g. giving information about infant routines, such as sleep and feeding; receiving information about the infant routines). The questionnaire was pretested with parents and teachers who did not participate in the present study, and improved accordingly. The questionnaire items related to the exchange of information between parents and teachers were the focus of this paper. These items were scored between: 1 (*rarely*), 2 (*sometimes*), 3 (*often*), and 4 (*every day*); and document communication reported by mothers ($\alpha = .93$) and reported by teachers ($\alpha = .70$).

Family characteristics

The home observation for measurement of the environment inventory (HOME)

The HOME (Caldwell & Bradley, 1984) assesses both quality and quantity of support and stimulation that the home environment provides for children. It includes aspects of family organization, routines, involvement with extended family and use of community resources that affect children (Bradley & Corwyn, 2005). The infant-toddler version includes 45 items organized in six subscales: Responsiveness, Acceptance, Organization, Play/Learning Materials, Involvement, and Variety of Experience. Items are scored based on direct observation of parenting behaviour and on a semi-structured interview. Several studies provide evidence for its adequacy, reliability and validity, including in Portugal (e.g. Cruz, Abreu-Lima, Barros, Costa, & Macedo, 2011). In this study, a HOME Global Quality score was computed by combining all the items from the scale. Cronbach's alpha for this variable indicates adequate reliability ($\alpha = .69$).

Child characteristics

Infant behavior questionnaire – Revised (IBQ-R)

IBQ-R (Rothbart, 1981; Rothbart & Gartstein, 2013) is a widely used measure of infant temperament. Several studies provide evidence for its adequacy, reliability and validity (e.g. Clark, Hyde, Essex, & Klein, 1997; Klein, Putnam, & Linhares, 2009; Rothbart, 1981; Sung, Beijers, Gartstein, de Weerth, & Putnam, 2015). It is organized in 14 dimensions: Activity Level, Distress to Limitations, Approach, Fear, Duration of Orienting, Smiling and Laughter, Vocal Reactivity, Sadness, Perceptual Sensitivity, High Intensity Pleasure, Low Intensity Pleasure, Cuddliness, Soothability, and Falling Reactivity. According to Gartstein and Rothbart (2003), three broad factors can be computed for IBQ-R; these factors were used in the present study: Surgency/Extraversion ($\alpha = .96$), Negative Affectivity ($\alpha = .85$), and Orienting/Regulation ($\alpha = .78$).

Childcare experience: teacher-child relationship quality

Infant/toddler environment rating scale – Revised (ITERS-R)

ITERS-R (Harms, Cryer, & Clifford, 2006) measures the overall quality of infant childcare classrooms. It includes 39 items, scored on a 7-point scale, and organized under seven conceptually defined subscales: Space and Furnishings, Personal Care Routines, Listening and Talking, Activities, Interaction, Programme Structure, and Parents and Staff. Portuguese translation (Harms, Cryer, & Clifford, 2012) was used. All observers received adequate training to ensure they were reliable on the measure. All ITERS-R indicators were scored based on a three to four hours observation, followed by an interview with the lead teacher. Regarding inter-rater reliability, two observers independently scored ITERS-R in 25.6% of classrooms; within-one point agreement averaged 92.24%, and weighted kappa averaged 0.73. For this paper, and according to previous factor analyses (Barros et al., 2016), only the Interactions and Supervision factor is used (8 items; $\alpha = .80$).

Teacher interaction scale (CIS)

CIS (Arnett, 1989) is an observational measure that captures the quality of interactions between children and their teachers in educational settings. It comprises the observation of teachers' emotional tone, discipline style, and responsiveness in classroom (Arnett, 1989). CIS includes 26 items rated on a scale ranging from 1 (*not at all*) to 4 (*very much*). This is a widely used measure with established validity and reliability, including in Portugal (Cadima et al., 2012; Colwell, Gordon, Fujimoto, Kaestner, & Korenman, 2013; Cryer, Tietze, Burchinal, Leal, & Palacios, 1999). For this study, all observers received adequate training and inter-rater reliability was monitored during data collection. Two observers independently scored 25.6% of CIS observations. Within-one point agreement was 99.02%; weighted

kappa was 0.42. Based on a previous factor analyses (see Barros et al., 2016), this study includes 21 of the 26 CIS items to create a Total Mean Score ($\alpha = .91$).

Classroom assessment scoring system – Infant (CLASS-Infant)

The CLASS-Infant (Hamre, La Paro, Pianta, & LoCasale-Crouch, 2014) measures the quality of interactions between teachers and infants in ECEC settings. The measure consists of one construct with four dimensions: Relational Climate, Teacher Sensitivity, Facilitated Exploration and Early Language Support. CLASS-Infant observations were collected in four 15-minutes cycles. For this study, all observers received training and reached the authors' training standards. Regarding inter-rater reliability, two observers independently scored 25.6% of CLASS-Infant observations. Within-one point agreement average was 99.18%; weighted kappa was 0.70.

Teacher-child relationship quality

We chose to use more than one quality measure in order to capture multiple aspects of process quality, based on its multidimensional nature (e.g. Bryant, Burchinal, & Zaslow, 2011; Burchinal & Cryer, 2003). Items of the three measures were combined into a composite score named Teacher–child Relationship Quality ($\alpha = .70$). Specifically, a single composite relationship quality index was created by computing the mean of the items related to adult–child interactions from the three global quality measures, namely the CLASS-Infant dimensions, 21 items of CIS, and the ITERS-R Interactions and Supervision items (see Barros et al., 2016). The dimensions regarding teacher–child interaction quality were moderately to strongly associated, with correlations from .46 to .81. Previous studies have found that different quality measures can be combined into a single quality factor (e.g. Burchinal & Cryer, 2003).

Childcare experience: hours per day in childcare

The number of hours that the infant spent in childcare during each day of the first and fourth weeks of attendance was recorded in a log by both parents and teachers. On average, children spent 6.54 ($SD = 2.08$) hours in childcare during the first week and 7.71 hours ($SD = 1.51$) in the fourth week. We averaged each infant's values to create a mean value representing the number of hours each infant spent in childcare *per* day during the child's first month.

Data analyses

Analyses began by examining all measures descriptively. Then repeated measures analyses of parent-teacher communication were conducted. These analyses involved examining the communication from the two reporters, parents and teachers. Reporters are regarded as repeated measures, allowing the analysis to identify factors related to the overall level communication (i.e. the average of parent and teacher levels of communication) and differences in the level of communication between the two reporters (i.e. the difference between the parent and teacher report). A General Linear Model (GLM) approach was used to analyze whether overall level of communication or the discrepancy in communication reported by parent and teacher varied as a function of child characteristics (child gender and temperament), family characteristics (home environment global quality) and childcare characteristics (teacher–child relationship quality and number of hours in childcare). Effect sizes were estimated as standardized coefficients, that is for a predictor X and outcome Y, the effect size was computed as $d = B_x * SD_x/SD_y$ to interpret significant associations. As standardized coefficients, Cohen (1992) recommended viewing $d = .1$ as modest, $d = .3$ as moderate, and $d = .5$ as large.

Results

Table 1 reports descriptive statistics for child, family and childcare variables, as well as for mother and teacher reports on the frequency of parent-teacher communication. Infants were in childcare about 7

Table 1. Descriptive statistics for parent-teacher communication, family and child care experience measures.

	N	*M* (*SD*)	Min. – Max.	Scale
Parent-teacher communication				
Mother report	82	3.35 (*0.69*)	1–4	1–4
Teacher report	85	3.75 (*0.41*)	2.57–4	1–4
Family				
Maternal education	90	14.37 (*3.57*)	4–22	
Global HOME quality	90	32.82 (*4.16*)	23–42	0–45
Child				
Negative affectivity	90	3.36 (*0.82*)	1.55–5.98	1–7
Surgency	90	4.68 (*0.87*)	2.21–6.57	1–7
Regulation	90	5.31 (*0.64*)	3.74–6.73	1–7
Child care experience				
Quality of childcare relationships	90	4.26 (*0.67*)	3.02–5.94	1–7
Hours/day -1st week	82	6.54 (*2.08*)	2.10–11.00	
Hours/day -2nd week	81	7.71 (*1.51*)	3.30–10.70	
Hours/day	87	7.04 (*1.68*)	2.50–10.60	

hours a day, in classrooms where teacher-child relationship quality was rated in the moderate range, with a mean of 4.26 (possible range 1–7).

The quality of home environments was moderate ($M = 32.82$, maximum possible score of 45), and showed a wide range. Mothers rated their infants as having 'easy temperaments' and did not view their infants as temperamentally difficult. The mean scores for Surgency ($M = 4.68$) and Regulation ($M = 5.31$) were higher than the middle scale point and the mean value for the Negative Affectivity factor ($M = 3.36$) was lower.

Ratings for parent-teacher communication show that both teachers and mothers reported a frequent bidirectional information exchange about the child routines and behaviours. Mothers reported significantly less communication than teachers, $t(81) = -5.11$, $p < .001$, $d = 0.70$; mothers' average score ($M = 3.35$) was closer to 'often' whereas teachers' average score ($M = 3.75$) was closer to 'daily.'

Table 2 shows the Pearson correlations coefficients among child, family and childcare characteristics, and mother and teacher reports about the frequency of parent-teacher communication. Results show a moderate correlation between the frequency of parent-teacher communication as reported by mothers and by teachers. Mothers reported more frequent communication when the quality of childcare relationships was higher. Teachers reported more frequent communication with parents when children attended childcare fewer hours per day. Global parent-teacher communication (average between mother and teacher reports) was positively associated with the presence of a trained teacher in the classroom (even if only part-time) and negatively associated with the adult–child ratio.

Table 3 presents the results from the GLM. As shown, the overall communication level was higher in classrooms where the teacher–child relationship quality was higher ($B = .20$, $SE = .08$, $p < .05$).

Table 2. Pearson coefficient correlations between study variables ($n = 82$).

	1	2	3	4	5	6	7	8
Parent-teacher communication								
1. Mother report	–	.27*	−.03	.11	−.05	−.13	.24*	.08
2. Teacher report		–	.19	−.02	.01	.09	.21	−.29**
Family								
3. Maternal education			–	.18	−.07	.10	−.14	−.24*
4. Global HOME quality				–	−.13	−.02	−.08	−.12
Child								
5. Negative affectivity					–	.01	.04	.06
6. Gender (male = 0; female = 1)						–	.01	.06
Child care experience								
7. Quality of childcare relationships							–	−.09
8. Hours/day								–

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

Table 3. Results for the predictions of parent- teacher frequency of communication ($n = 82$).

		Average of mothers & teachers reports of communication	Difference between mothers & teachers reports of communication
Model fit (R^2)	R^2	.10*	.15*
Intercept	B(*SE*)	2.57 (*.66*)	−2.40* (*1.01*)
Family and child			
Global HOME quality	B(*SE*)	0.01 (*.01*)	0.03 (*.02*)
Negative affectivity	B(*SE*)	−0.02 (*.06*)	−0.05(*.09*)
Gender (male = 1; female = 2)	B(*SE*)	−0.05 (*.10*)	−0.27 (*.15*)
Child care experience			
Quality of childcare relationships	B(*SE*)	0.20**(*.08*)	0.17 (*.12*)
Hours/day	B(*SE*)	−0.01 (*.03*)	0.13* (*.05*)

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

Regarding the differences in levels of communication between mother and teacher reports, only one predictor, hours per day, was statistically significant, indicating that the difference between mother and teacher reports of communication was greater when children spent more hours per day at the centre ($B = 0.13$, $SE = .05$, $p < .05$). More specifically, when children attended the centre for fewer hours, teachers and parents reported similar levels of communication, whereas when children attended the centre for more hours teachers reported significantly more communication than parents. Both effect sizes were modest. Finally, on average, mothers reported less frequent communications than teachers did ($B = -2.40$, $SE = 1.01$, $p < .05$) and the effect size was large.

Discussion

The present study examined (a) mother and teacher reports of parent-teacher communication in infant childcare in Portugal, during a particularly important period of a child's life, the transition from home to center-based childcare; and (b) the degree to which child, family and childcare characteristics predict the frequency of communication between families and teachers, as well as differences between their perceptions of communication. This study may provide one of the first reports to document communication during this important transition for infants and their parents when infants enter group childcare at a very young age, and as such may begin the process of identifying factors that promote communication among parents and their infant's teacher/caregiver.

In this study, mothers and teachers reported a fairly high frequency of communication, and tended to agree on the overall level of communication between them. These findings are in accordance with other studies that report that teachers and parents rates of childcare quality related aspects tend to be associated (e.g. Leavitt, 1995). Despite this positive association, teachers reported a significantly higher frequency of communication than mothers. This receives some support from the literature, although results are mixed across studies. For instance, Drugli and Undheim (2012) analyzed parent-teacher communication during the pick-up and drop-off situations and reported that although most parents and teachers were satisfied with their daily communication, parents felt more than teachers that the quality of communication could be improved, particularly during the pick-up moments.

The teacher–child relationship quality was the only significant predictor of teacher-parent overall communication, with more frequent communication reported in higher-quality classrooms. This finding replicates the positive associations between parent-teacher frequency of communication and process quality reported by Perlman and Fletcher (2012), in a study with preschool age children. However, we did not replicate other findings on relations between parent-teacher communication and family and child characteristics (e.g. Pirchio et al., 2011; Swartz & Easterbrooks, 2014) such as child temperament, and mothers' education. Nevertheless, it is important to highlight that previous studies examined communication in preschool classrooms or in samples including infant and toddler classrooms together. It is likely that different factors are important in

determining communication between parents and teachers during the transition to childcare for young infants, a period when communication is extremely important and perhaps more valued by parents (Daniel & Shapiro, 1996). Taking this into account, results of the current study might reflect the fact that, particularly in the transition period, parents try to have as much information as possible about their infant in childcare, regardless of their family and child specific features. Furthermore, the finding that classrooms with high-quality teacher-infant relationships are more likely to have more frequent overall communication with parents may point to the fact that these teachers are more sensitive and effective in addressing parents' needs for information about their child in the transition period, emphasizing the importance of delivering families and children high-quality services in childcare centres. This may also indicate that teachers whose relationships with children are better are more aware of the importance of establishing partnerships with families and implement strategies to engage parents in frequent sharing information moments, regardless of family and child characteristics.

From the constructs we studied, the only significant predictor of differences in ratings of communication between parents and teachers was the number of hours spent in childcare, with greater differences when children spent more hours in care. As noted earlier, previous studies have identified an association between hours in childcare and the parent-teacher partnership (e.g. Drugli & Undheim, 2012; Endsley & Minish, 1989; Zellman & Perlman, 2006). Our findings highlight the negative effects of the number of hours children spend in childcare to parent-teacher communication. The fact that the time infants spend in childcare is the best predictor of the difference between parents' and teachers' reports on the frequency of their communication probably reflects scheduling issues. It is more likely that lead teachers are not at the centre when parents pick up their infants late in the afternoon or drop-off them early in the morning. The lead teacher is likely to arrive at work after the earliest drop-off times and may leave before the latest pick-up times, and thus cannot communicate in person with parents who drop-off earlier or pick-up later (Drugli & Undheim, 2012; Endsley & Minish, 1989; Zellman & Perlman, 2006). Additionally, it is also possible that parents who pick up their children later might be busier, with more stressful work schedules or demanding jobs, and thus less available to engage in information exchanges with their children's teachers, regardless of time of day, or less accurate in assessing the amount of communication with teachers.

Furthermore, the high number of hours infants spend in childcare must be acknowledged. In their first month in childcare, the infants in this study averaged more than 7 hours per day. National data show that in 45% of childcare centres, children younger than 3 years old spend in average 8 to 10 hours in childcare (GEP/MSESS, n.d.). Several studies demonstrated the detrimental effect of a high number of hours in center-based care on several indicators, such as in some diseases (Beijers, Jansen, Riksen-Walraven, & de Weerth, 2011), cortisol levels which increase from midmorning to afternoon (e.g. Bernard et al., 2015) and, in the first year of life, more hours in childcare have been associated with less language proficiency at ages 1 to 1.5 (Luijk et al., 2015). Studies have also demonstrated the relations between extensive center-based childcare experience, noncompliance, and problem-behavior, (e.g. NICHD, 1998; Vandell & Corasaniti, 1990).

As previously mentioned, a high percentage of Portuguese parents with young children work full-time in out-of-home jobs (OECD, 2011), which has been motivating the increase of coverage rates for childcare services for children younger than 3 years old (Gabinete de Estratégia e Planeamento, n.d.a). In addition, the number of hours that childcare centres are open has also been increasing (GEP/MSESS, n.d.). This may reflect the adjustment of center-based care to families' needs, motivated by shift work (working early in the morning or late at night), and/or longer hours at work.

A gradual increase in the number of hours an infant spends in childcare during the first month is a commonly recommended practice to promote infant's smooth transition from home to childcare (Daniel & Shapiro, 1996; Peixoto et al., 2014). Our findings do show a slight increase over the first month, but the number of daily hours in the first week is fairly high, so the gradual recommendation

may not be followed by many parents. Considering the family needs in the first month of their child in childcare, related to professional demands, high-quality caregiver-child relationships must be ensured, in addition to government efforts to increase places available. Also, policies to promote more flexible working schedules in Portugal could benefit parents and children.

These findings add to the body of research on parent-teacher communication by suggesting that the number of hours a child spends in care may influence the frequency of communication between parents and teachers. When it is not possible to decrease the number of hours spent in the transition-to-care period, other strategies that would support communication could be activated, such us increasing communications by telephone or e-mail during transition, scheduling a few formal meetings, or altering teacher schedules during this time.

Limitations

Some limitations of this study should be acknowledged. As others have highlighted, due to the difficulties in effectively measuring parent-teacher partnerships (e.g. Zellman & Perlman, 2006), the measure used in this study includes only one indicator of partnership – the frequency of bidirectional communication. Although frequency of communication is a common indicator of partnerships (e.g. Perlman & Fletcher, 2012; Pirchio et al., 2011; Swartz & Easterbrooks, 2014), future studies should include a more comprehensive measure, perhaps via observation. Social desirability may also have affected answers to the self-report questionnaire on communication, resulting in a greater number of scores in the high frequency of communication rate range. Lastly, data were collected during infants' first month in childcare and it would be interesting to follow levels of communication throughout the year.

Implications and recommendations for practice and policy

Given that the importance of connecting early education centres and families has been widely highlighted in early education and development literature (e.g. Bronfenbrenner, 2005; Drugli & Undheim, 2012; Owen et al., 2008), in governmental guidelines and recommendations (e.g. NAEYC, 2009; Segurança Social, 2010), and in legislation (e.g. Portaria n.° 262/2011, August 31st), the finding that teachers in childcare classrooms with higher quality teacher–child relationships are more likely to engage parents and teachers in more frequent bidirectional communication has important implications. This is particularly relevant in Portugal, as recent studies reported the low quality of childcare services in the country (Barros & Aguiar, 2010; Barros & Peixoto, 2011; Parada, Velosa, Ribeiro, & Seabra, 2008). Therefore, to better address family, child and parent/professional needs, it is important to continue to focus on improving teacher–child relationship quality in childcare centres, especially for infants (Burchinal, Cryer, Clifford, & Howes, 2002).

Another important finding in the current study was the negative association between the number of hours infants spent in childcare and teacher reports on parent-teacher frequency of communication, with more hour in care predicting a greater discrepancy between teacher and mother reports about their communication. Taking into account that after the maternity leave, Portuguese mothers tend to return to full time jobs and maintain full-time regardless of their children's age (Eurydice, 2009), the number of hours that parents need to place their children into childcare tends to be high. Therefore, it seems important to find strategies that can support and ensure an adequate communication between teachers and full-time working parents, especially during significant transition periods such as the infant transition from home to childcare.

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