



Research paper

Infant child care quality in Portugal: Associations with structural characteristics[☆]

Sílvia Barros^{a,*}, Joana Cadima^b, Donna M. Bryant^c, Vera Coelho^b, Ana Isabel Pinto^b,
Manuela Pessanha^a, Carla Peixoto^a

^a Polytechnic Institute of Porto, School of Education, Center for Research & Innovation in Education, Portugal

^b University of Porto, Faculty of Psychology and Educational Sciences, Portugal

^c Frank Porter Graham Child Development Institute, University of North Carolina at Chapel Hill, United States

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ABSTRACT

This study examines the quality of infant center care in Portugal through a multi-measure approach and investigates the associations among process quality dimensions and structural quality indicators. Ninety infant child care classrooms were observed during two full mornings with the Infant/Toddler Environment Rating Scale (ITERS-R), the Classroom Assessment Scoring System-Infant (CLASS-Infant) and the Caregiver Interaction Scale (CIS). Results revealed that a two-factor structure of process quality with the domains (a) Relationships and (b) Use of Space and Materials provided the best fit to the data. Of the structural indicators that were examined, teacher training showed the most robust relation to both process quality domains. In addition, classrooms with smaller groups and in centers located in non-urban areas were likely to show more sensitive relationships between teachers and infants. These findings have implications for public policy and professional development efforts on infant center care.

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1. Introduction

Early childhood education and care (ECEC) for very young infants has increased in many parts of the world (Organization for Economic Co-operation and Development [OECD], 2011). Maternal employment, combined with limited maternal leave in some countries, has created a high demand for ECE. Consequently, an increasing number of infants in many countries spend a substantial amount of time in out-of-home care, much of it center-based (OECD, 2001; Ruhm & Waldfogel, 2011; White, Peter, & Redder, 2015). This study examines dimensions of quality of infant center care in Portugal, using multiple quality measures that have been used in several other countries. The first goal was to understand the level of classroom quality for Portuguese infants entering center care at about 6 months of age, especially as compared to other nations. The second goal was to study the relations among different quality measures by using a new measure along with two of the most widely used observational tools. The third goal was to assess

the degree to which structural indicators predict different indices of quality in infant classrooms, with an intent to inform program improvement efforts via policy and professional development.

The sections below describe the need for and context of infant care in Portugal and the increasing interest in quality. This is followed by a brief review of the literature on infant care quality and relations among structural and process quality indices.

1.1. The need for infant/toddler care

Across Europe, the provision of quality ECEC for very young children has been emphasized, not only to support parents' labor market participation but also as a means to enhance child development (European Commission/EACEA/Eurydice/Eurostat, 2014). Most European countries are committed to improving its access and affordability. However, particularly for infants and toddlers, the demand for ECEC is higher than supply in some regions. In addition, in some countries, such as Portugal, ECEC for infants and toddlers is not considered part of the educational system. Portugal has two different systems of ECEC: one for children between 3 years old and the beginning of mandatory school (6 years old), regulated by the Ministry of Education; and one for children under 3 years old, regulated by the Ministry of Solidarity, Employment and Social Security.

In Portugal, over 60% of children live with parents who are both working full-time (OECD, 2011). By the time their child is 3 years

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* Corresponding author at: Escola Superior de Educação do I.P.P., Rua Dr. Roberto Frias, 602, 4200-465 Porto, Portugal.

E-mail address: silviabarros@ese.ipp.pt (S. Barros).

old, a much larger percentage of Portuguese mothers are in the workforce (76%) compared to the European Union (EU) overall (57%). Unlike most EU countries, Portuguese mothers' economic activity after maternity leave remains stable regardless of their children's age (Eurydice, 2009). In Portugal formal child care settings for children under 3 years old include both center-based care and home-based care, although the latter is considerably less used. In 2013, places in these formal settings were available for 46.2% of children younger than 3 years old (Gabinete de Estratégia e Planeamento/Ministério da Solidariedade, Emprego e Segurança Social, n.d.a), a much higher proportion than the European average of approximately 30%, but still not sufficient (European Commission/EACEA/Eurydice/Eurostat, 2014). Availability varies by district; specifically, in larger urban areas such as the district of Porto where this study took place, demand is still higher than supply. The area of Porto is also distinct as it has one of the highest proportions of children under 3 in the country.

The growing numbers of infants and toddlers in ECEC has occurred during the same period of time that neuroscience research has highlighted the impact of environmental factors in brain development at young ages (e.g., Lenroot & Giedd, 2011). Although change can occur throughout life, it is during the first five years that most of the brain development occurs (Lee & Hoaken, 2007), and especially in the first two years of life. Shapiro and Applegate (2002) highlight that this period is a critical time as neurobiological foundations of adaptive capacity are in the formative stages of development. Furthermore, it has also been acknowledged that disparities in cognitive, social, behavioral, and health status between children from low-income and from higher income families appear as early as 9 months of age (Halle et al., 2009). In these first years of life, high-quality ECEC might reduce the negative impact of poverty, low maternal education, and other risk factors associated with negative child outcomes (e.g., Duncan, Brooks-Gunn, & Klebanov, 1994; Huston, McLoyd, & Coll, 1994; Love et al., 2005; National Institute on Child Health and Human Development [NICHD] Early Childhood Research Network, 2005).

1.2. Quality of ECEC for infants and toddlers

Extensive child care literature documents the quality of preschool ECEC in many parts of the world, such as in the US, Australia, and several European countries, demonstrating that children who experience higher quality care show higher levels of academic, social, and executive function skills (Burchinal, Magnuson, Powell, & Hong, 2015; Bryant et al., 2003; NICHD Early Childhood Research Network, 2000, 2006; Peisner-Feinberg & Burchinal, 1997; Peisner-Feinberg et al., 2001; Schweinhart, & Weikart, 1988). Evidence also suggests the importance of quality of care in infant and toddler classrooms for child outcomes (e.g., Burchinal, Roberts, Nabors, & Bryant, 1996; De Schipper, Van Ijzendoorn, & Tavecchio, 2004; Love et al., 2005; NICHD Early Childhood Research Network, 2000, 2006; Pessanha, Pinto, & Barros, 2009; Pinto, 2006; Pinto, Pessanha, & Aguiar, 2013; Ramey et al., 2000; White et al., 2015).

Despite the importance of quality of care, the studies that have examined infant ECEC raise questions about the quality of the education and care experiences provided to infants and toddlers, especially in terms of the quality of caregiver-infant relationships. In Portugal, a previous study of toddler ECEC found that only 39% of the 160 observed classrooms provided quality that minimally met custodial care needs and basic developmental needs (Barros & Aguiar, 2010). In the US, although quality levels are generally higher, concerns about ECEC for infants and toddlers are also evident (NICHD Early Childhood Research Network, 2000, 2005; Phillipsen, Burchinal, Howes, & Cryer, 1997). More recently, a small US study of 30 infant classrooms revealed that global qual-

ity and teacher-child interactions were in the medium range (e.g., Jamison, Cabell, LoCasale-Crouch, Hamre, & Pianta, 2014; La Paro, Williamson, & Hatfield, 2014).

Across studies, quality has been conceptualized and measured from different perspectives. Important issues in the study of quality are the distinction between structural and process quality and whether process quality is a comprehensive construct or a multidimensional one with inter-related components (Dickinson, 2003).

1.3. Conceptualizing and measuring quality in infant/toddler classrooms

Research on the quality of ECEC typically assesses two types of variables: structural indicators and process indicators (e.g., Bryant, Burchinal, & Zaslow, 2011; Cryer, 1999; Howes et al., 2008; Vandell, 2004). Structural indicators refer to aspects that are usually more quantitative and easily measured or observed, and that can be regulated, such as teacher education levels, child:adult ratios, and group size (Peisner-Feinberg & Yasejian, 2010). Structural indicators are usually regulated at the state or country level and are considered as providing the conditions for process quality (Cryer, Tietze, Burchinal, Leal, & Palacios, 1999).

Process indicators refer to children's direct and daily experiences in the classroom, such as the frequency and type of interactions children have with their caregivers and peers and the activities and materials with which they interact (Phillipsen et al., 1997; Vandell, 2004). Process quality is considered the more proximal quality measure (Helmerhorst, Riksen-Walraven, Vermeer, Fukkink, & Tavecchio, 2014). Importantly, the specific indicators that are considered crucial and the way process quality is operationalized have varied, contributing to a lack of consensus on what are the core dimensions of process quality.

For many years, the Infant/Toddler Environment Rating Scale (ITERS/ITERS-Revised; Harms, Cryer, & Clifford, 1990, 2003, 2006) has been the standard quality measure in both research and policy studies. The ITERS/ITERS-Revised has been considered mainly to be a process quality measure (e.g., Phillipsen et al., 1997; Vandell & Wolfe, 2000), and it encompasses a broad range of indicators, including the interactions between caregivers and children, the care routines and activities, and physical features of the environment such as quantity and availability of materials in the classroom. Although ITERS includes static aspects of the classroom such as space and materials, item scores rely upon the observation of how they are actually used by adults and children. Of note is that process quality as operationalized by the ITERS/ITERS-R is broader than other measures of process quality that specifically focus on teacher-child and peer interactions. Specifically, the authors assume that physical environment, child relationships with other children and with adults and instruction features are intertwined (Harms, Clifford, & Cryer, 2015). Thus, process quality as defined by this authors includes the interactions between staff and children, the interactions children have with the materials and activities in the classroom, as well as other features, namely space, schedule and materials, that support these interactions (Harms et al., 2006; Tietze & Cryer, 2004). While ITERS is intended to represent a global measure of process quality (Harms et al., 1990), empirical studies have sometimes found more than a one-factor solution (Barros & Leal, 2011; Hestenes, Cassidy, Hegde, & Lower, 2007; Tietze & Cryer, 2004). These results raise questions of whether process quality can be described as a global construct or whether there are several core domains that, even though interrelated, should be differentiated (Dickinson, 2003).

Moreover, the ITERS-R provides a broad, overall picture of what some researchers believe is the core of process quality, specifically the quality of caregiver-child interactions, which are likely to be particularly important for infants. Therefore, some authors

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