

2010

Family child care provider beliefs and program quality: A longitudinal study investigating the role of consultation

Amanda G. Stein
Iowa State University

Follow this and additional works at: <https://lib.dr.iastate.edu/etd>

 Part of the [Family, Life Course, and Society Commons](#)

Recommended Citation

Stein, Amanda G., "Family child care provider beliefs and program quality: A longitudinal study investigating the role of consultation" (2010). *Graduate Theses and Dissertations*. 11642.
<https://lib.dr.iastate.edu/etd/11642>

This Dissertation is brought to you for free and open access by the Iowa State University Capstones, Theses and Dissertations at Iowa State University Digital Repository. It has been accepted for inclusion in Graduate Theses and Dissertations by an authorized administrator of Iowa State University Digital Repository. For more information, please contact digirep@iastate.edu.

**Family child care provider beliefs and program quality:
A longitudinal study investigating the role of consultation**

by

Amanda Stein

A dissertation submitted to the graduate faculty
in partial fulfillment of requirements for the degree of

DOCTOR OF PHILOSOPHY

Major: Human Development and Family Studies

Program of Study Committee:
Kere Hughes-Belding, Co-Major Professor
Susan Hegland, Co-Major Professor
Fred Lorenz
Gayle Luze
Carla Peterson

Iowa State University

Ames, Iowa

2010

Copyright © Amanda Stein, 2010. All rights reserved

TABLE OF CONTENTS

LIST OF TABLES	v
ABSTRACT	vii
CHAPTER I: GENERAL INTRODUCTION	1
1.1 Introduction	1
1.1.1 Beliefs and Practice	2
1.1.2 Beliefs of Family Child Care Providers	3
1.1.3 Intervention or Evaluation Research	4
1.2 Description of the Current Study	4
1.3 Dissertation Organization	5
1.4 References	7
CHAPTER II: UNDERSTANDING THE RELATIONSHIP OF PROVIDER BELIEFS AND STRUCTURAL CHARACTERISTICS TO PROCESS QUALITY IN FAMILY CHILD CARE PROGRAMS	12
2.1 Abstract	12
2.2 Introduction	12
2.3 Quality Matters	13
2.3.1 Examinations of Family Child Care Quality	16
2.4 Beliefs and Practice	19
2.4.1 Types of Beliefs	21
2.4.1.1 Beliefs About the Understanding of Best Practices with Young Children	21
2.4.1.2 Beliefs About Motivation, Satisfaction, and Job-Related Stress	24
2.4.2 Beliefs of Early Childhood Teachers	26
2.4.3 Beliefs of Family Child Care Providers	27
2.4.4 Comparing the Beliefs of Teachers and Family Child Care Providers	29
2.5 Intervention or Evaluation Research	29
2.6 Conclusion	32
2.7 References	34
CHAPTER III: STRUCTURAL FEATURES OF FAMILY CHILD CARE AND PROVIDERS' BELIEFS: ASSOCIATIONS WITH PROGRAM QUALITY	43
3.1 Abstract	43
3.2 Introduction	44
3.2.1 Defining Child Care Quality	47
3.2.2 Child Care Provider Beliefs and Quality	48
3.2.2.1 Beliefs About Best Practices	48
3.2.2.2 Beliefs About Job Motivation and Stress	49

3.3 Purpose of the Current Study	50
3.4 Method	52
3.4.1 Participants	52
3.4.2 Procedure	53
3.4.2.1 Provider Selection Criteria	53
3.4.2.2 Training and Reliability of Data Collectors	54
3.4.2.3 Family Child Care Provider Interview	55
3.4.2.4 Observations of Family Child Care Program Quality	55
3.4.3 Measures	55
3.4.3.1 Family Child Care Provider Beliefs Measures	55
3.4.3.2 Quality Observational Measures	59
3.4.3.3 State as a Predictor Variable	62
3.5 Results	63
3.5.1 Descriptive Data on Family Child Care Provider Characteristics and Beliefs	63
3.5.1.1 Provider Structural Characteristics	63
3.5.1.2 Provider Beliefs Measures	64
3.5.2 Descriptive Data on Program Characteristics and Quality Outcomes	65
3.5.2.1 Program Structural Characteristics	65
3.5.2.2 Observed Program Quality	66
3.5.3 Intercorrelations Among Variables	68
3.5.4 Hierarchical Linear Regressions for Structural Characteristics and Quality	69
3.5.5 Hierarchical Linear Regressions for Beliefs Variables and Quality	72
3.6 Discussion	74
3.6.1 State as Predictor Variable	75
3.6.2 Structural Characteristics and Quality	76
3.6.3 Beliefs and Quality	81
3.7 Implications and Recommendations	82
3.8 References	84
3.9 Tables	93

CHAPTER IV: FAMILY CHILD CARE PROVIDERS BELIEFS AND PROGRAM QUALITY: A LONGITUDINAL STUDY INVESTIGATING THE ROLE OF CONSULTATION

4.1 Abstract	103
4.2 Introduction	105
4.2.1 A Closer Look at Family Child Care	105
4.2.2 Quality in Family Child Care	108
4.2.2.1 Education and Training Related to Quality	109
4.2.2.2 Group Size and Ratio Related to Quality	110
4.2.2.3 Caregiver Experience Related to Quality	111
4.2.2.4 Child Care Provider Beliefs and Quality	111
4.2.3 Intervention or Evaluation Research Related to Child Care Quality	113
4.3 The Current Study	116

4.3.1 Research Questions	118
4.4 Method	120
4.4.1 Participants	120
4.4.2 Procedure	123
4.4.2.1 Random Selection and Recruitment	123
4.4.2.2 Provider Selection Criteria	124
4.4.2.3 Observations of Family Child Care Program Quality	125
4.4.2.4 Family Child Care Provider Interview	125
4.4.2.5 Training and Reliability of Data Collectors	126
4.4.2.6 Attrition	127
4.4.3 Measures	128
4.4.3.1 Family Child Care Provider Beliefs Measures	128
4.4.3.2 Quality Observational Measures	132
4.5 Results	135
4.5.1 Change Scores T-Tests	135
4.5.1.1 Paired-Samples T-Tests for Immediate Changes in Beliefs and Quality	136
4.5.1.2 Paired-Samples T-Tests for Sustained Changes in Beliefs and Quality	137
4.5.2 Hierarchical Multivariate Linear Regressions with Residualized Change Scores	138
4.5.2.1 Hierarchical Multivariate Linear Regressions for Immediate (Time 2 – Time 1) Changes in Quality	141
4.5.2.2 Hierarchical Multivariate Linear Regressions for Sustained (Time 3 – Time 1) Changes in Quality	145
4.6 Discussion	148
4.6.1 The Impact of PFI Consultation on Program Quality and Providers' Beliefs	149
4.6.2 Structural Characteristics and Changes in Observed Quality	152
4.6.3 Providers' Beliefs and Changes in Observed Quality	156
4.6.4 Strengths and Limitations	157
4.6.5 Implications and Conclusions	158
4.7 References	160
4.8 Tables	169
4.9 Figure	189
 CHAPTER V: GENERAL CONCLUSIONS	 190
5.1 Review of Results	190
5.2 Practice and Policy Implications	192
5.3 Future Research Directions	195
5.4 References	196
 APPENDICES	 199

LIST OF TABLES

Chapter III

Table 3.1	Family Child Care Provider Characteristics and Beliefs	93
Table 3.2	Family Child Care Program Characteristics and Quality	95
Table 3.3	Intercorrelations for Beliefs Variables Only	97
Table 3.4	Intercorrelations for Structural, Beliefs, and Process Quality Variables	98
Table 3.5	Univariate Effects for the Multivariate OLS Regression Model with State and Structural Characteristics as Predictors and FDCRS Scales and ECERS-E as Outcomes	99
Table 3.6	Univariate Effects for the Multivariate OLS Regression Model with State and Structural Characteristics of Family Child Care Providers and Their Programs on CIS Total Mean and Subscales	100
Table 3.7	Univariate Effects for the Multivariate OLS Regression Model with State and Beliefs Variables as Predictors and FDCRS Total Mean, FDCRS Factors, and ECERS-E Total Mean as Outcomes	101
Table 3.8	Univariate Effects for the Multivariate OLS Regression Model with State and Beliefs Variables as Predictors and CIS Total Mean and Subscales as Outcomes	102

Chapter IV

Table 4.1	Time 1 Family Child Care Provider Characteristics and Beliefs	169
Table 4.2	Time 1 Family Child Care Program Characteristics and Quality	170
Table 4.3	Family Child Care Provider Beliefs and Observed Quality at All Three Time Points	171
Table 4.4	Internal Consistency of Family Providers' Beliefs and Observed Quality Measures at 3 Time Points	173
Table 4.5	T-tests for Immediate Change Scores (Time 2 – Time 1) on Beliefs and Quality Variables	175
Table 4.6	T-tests for Sustained Scores (Time 3 – Time 1) on Beliefs and Quality Variables	176

Table 4.7	Hierarchical Multivariate Linear Regression Model for FDCRS Total Immediate (Time 2 – Time 1) Residualized Change Score	177
Table 4.8	Hierarchical Multivariate Regression Model for FDCRS Factor 1: Teaching and Interactions Immediate (Time 2 – Time 1) Residualized Change Score	178
Table 4.9	Hierarchical Multivariate Regression Model for FDCRS Factor 2: Tone and Discipline Immediate (Time 2 – Time 1) Residualized Change Score	179
Table 4.10	Hierarchical Multivariate Regression Model for FDCRS Factor 3: Provisions for Learning and Health Immediate (Time 2 – Time 1) Residualized Change Score	180
Table 4.11	Hierarchical Multivariate Linear Regression Model for ECERS-E Total Immediate (Time 2 – Time 1) Residualized Change Score	181
Table 4.12	Hierarchical Multivariate Linear Regression Model for CIS, Total Immediate (Time 2 – Time 1) Residualized Change Score	182
Table 4.13	Hierarchical Multivariate Linear Regression Model for FDCRS Total Sustained (Time 3 – Time 1) Residualized Change Score	183
Table 4.14	Hierarchical Multivariate Regression Model for FDCRS Factor 1: Teaching and Interactions Sustained (Time 3 – Time 1) Residualized Change Score	184
Table 4.15	Hierarchical Multivariate Regression Model for FDCRS Factor 2: Tone and Discipline Sustained (Time 3 – Time 1) Residualized Change Score	185
Table 4.16	Hierarchical Multivariate Regression Model for FDCRS Factor 3: Provisions for Learning and Health Sustained (Time 3 – Time 1) Residualized Change Score	186
Table 4.17	Hierarchical Multivariate Linear Regression Model for ECERS-E Total Sustained (Time 3 – Time 1) Residualized Change Score	187
Table 4.18	Hierarchical Multivariate Linear Regression Model for CIS Total Sustained (Time 3 – Time 1) Residualized Change Score	188

ABSTRACT

Considering the large numbers of young children being cared for in family child care programs and acknowledging the general lack of regulations and supports for these home-based providers, an examination of factors influencing the quality of care children experiences in these settings is imperative. The present studies examine the relations among structural indicators often association with quality, providers' beliefs about best practices with young children and beliefs about professional motivation, job-related stress, and observed quality in family child care programs. Interviews were used to gather data about provider beliefs and program structural characteristics. In addition, observational data about the global process quality and the quality of adult-child interactions were collected in a sample of 343 home-based family child care providers in five states who had agreed to participate in an intervention study on the effectiveness of a model of consultation aimed at quality enhancement. The overall purpose of these studies was to address the shortage of research in family child care and to examine the gaps in defining child care quality by investigating both structural characteristics and beliefs as predictors of quality.

Chapter III, the first empirical article, provides a detailed description of this sample of family child care providers and their beliefs, the characteristics of their programs, and ratings of observed process quality. Data for this study come from the Quality Interventions in Early Care and Education (QUINCE) study designed to investigate a quality enhancement initiative and consist of information obtained prior to any consultation intervention. In addition, this study examines the relations among provider and program structural characteristics, measures of beliefs, and the quality of care being provided in this sample of family child care

homes. Overall, the observed global and education quality in this sample of family child care programs is low. Results indicate a relationship for having a two-year degree related to early childhood, more hours of professional development training, and more years of experience in the field of child care to better program quality. In addition to more commonly measured structural characteristics, having more progressive beliefs about child rearing, a better understanding of developmentally appropriate practices, and less job stress were all significant predictors of global quality. Providing professional development and support to family child care providers for understanding appropriate developmental practices and how to effectively guide children is critical for quality improvement efforts. In addition, providing support for decreasing job stress is an important factor in improving quality. The implications of these findings for future research and efforts directed toward quality enhancement in family child care settings are discussed. Chapter IV, the second empirical study, focuses on structural characteristics of programs, beliefs of family child care providers, and the impact of participation in the Partnerships for Inclusion (PFI) model of consultation and on the associations of these variables to observed quality both immediately after completing consultation and in sustained change (six months later). Findings indicate mixed results for the influence of structural characteristics on changes in program quality. Results of this study also suggest that having lower levels of job dissatisfaction and stress was related to both immediate and sustained changes in quality and provided additional prediction of process quality for family child care homes above the prediction from structural characteristics.

Overall, the receipt of PFI consultation was associated with improved process quality soon after the completion of consultation and in sustained change, even after controlling for

the influence of the state in which the program operated, structural characteristics, provider beliefs, and baseline assessments of quality. However, participation in PFI consultation was not found to be related to changes in the quality of adult-child interactions. Therefore, intensive, on-site consultation has notable benefits for improving family child care program quality. In addition, providing support for decreasing job stress and improving job satisfaction has implications for quality of early care. These findings are of critical importance considering the large numbers of young children receiving care in home-based programs and consistent reports of low quality and lack of regulations in these settings. Findings from these studies contribute to the limited body of knowledge and research related to intervention and evaluation of family child care and provide direction for future quality enhancement efforts.

CHAPTER I: GENERAL INTRODUCTION

Introduction

With the number of young children participating in non-parental child care arrangements continuing to grow as the number of dual-income families and working single parents steadily increases (National Survey of America's Families, 2002), there has been an increased interest in factors related to high quality early child care programming as well as increased investments in quality enhancement initiatives (Martinez-Beck & Zaslow, 2006). An examination of data from the 2001 Survey of Income and Program Participation revealed that 13.7% of all working mothers in the United States utilized a home-based, family child care provider (i.e., other than a relative) as their primary child care arrangement for their child (ren) younger than age six (Boushey & Wright, 2004). This proportion of use increases to 18.0% for families where the mother works between 30 – 39 hours per week (Boushey & Wright, 2004). Furthermore, the quality of child care, including that of family child care, has been linked to children's cognitive, language, and socio-emotional outcomes; enhanced school readiness; later school achievement; and other successes later in life in multiple longitudinal investigations (Campbell & Ramey, 1995; Howes & Stewart, 1987; NICHD Early Child Care Research Network, 1996, 1998, 1999, 2000, 2001, 2002, 2003; Peisner-Feinberg & Burchinal, 1997; Peisner-Feinberg et al., 2001). Previous researchers have indicated that children experiencing poor quality care are less likely to demonstrate significant developmental gains, which compromises their school readiness, and may place them at further developmental risk or threaten their health and safety (Peisner-Feinberg et al., 2001). Of particular concern are the findings that many child care programs could be classified as mediocre/minimal or even poor quality (e.g., Bryant, Burchinal, Lau, &

Sparling, 1994; Helburn, 1995; Whitebook, Howes, & Phillips, 1989). However, compared to center-based care, much less is known about factors influencing quality in family child care (e.g., Burchinal, Howes, & Kontos, 2002; Clarke-Stewart, Vandell, Burchinal, O' Brien, & McCartney, 2002) and regulations of home-based programs are often less stringent or non-existent in many states (Galinsky, Howes, Kontos, & Shinn, 1994; NACCRRA, 2010).

Additionally, aside from features of care that are more easily translated into regulations, relatively little research examines other factors that might impact child care quality, namely practitioners' beliefs. The continuing prevalence of low quality early child care and the significant numbers of children being cared for in home-based settings emphasizes the need for further investigation into provider, program, and state level characteristics related to improved quality in family child care and better outcomes for children.

Beliefs and Practice

Research evaluating the link between teacher beliefs and practice is critical to furthering the field of early childhood teacher training and professional development. Researchers have repeatedly confirmed that early childhood teachers' beliefs about best practice and how young children learn play a critical role in influencing actual teaching practices and decision making in the classroom setting (Maxwell, McWilliam, Hemmeter, Ault, & Schuster, 2001; McMullen, 1999; Pajares, 1992). In other words, teachers' self-reported beliefs have been shown to relate to the process quality of the early childhood environment and interactions. Findings have indicated that even when teachers are hearing information for the first time they filter this information through their personal beliefs (Kagan, 1992). Still, research has indicated that teachers with more education are more likely to hold developmentally appropriate beliefs and implement developmentally appropriate practice (Cassidy, Buell,

Pugh-Hoese, & Russell, 1995; McMullen, 1999). Researchers have also identified a discrepancy, or only a minimal correlation between these self-reported beliefs and teachers' observed behaviors (Bryant, Clifford, & Peisner, 1991; Charlesworth, Hart, Burts, & Hernandez, 1991). Early childhood teachers report holding more progressive, child-centered beliefs, but they are observed engaging in more traditional or developmentally inappropriate practices. However, most of this research related to beliefs focuses on the population of early childhood educators in center-based settings.

Beliefs of Family Child Care Providers

Of the relatively few studies that have investigated factors related to the quality of care in family child care settings, only two were found to have examined some variable related child care provider beliefs. In the first of these, *The Study of Children in Family Child Care and Relative Care*, care providers demonstrating what researchers termed “intentionality”, were more likely to offer more responsive, sensitive, and better overall quality care to children in their setting (Galinsky et al., 1994; Kontos, Howes, Shinn, & Galinsky, 1995). In general, indicators of an intentional approach to child care that are most predictive of program quality included seeking out training opportunities to learn more about child development and best practice, networking with other child care providers, purposely planning activities for children in their care, choosing family child care based on child related motives, and identifying family child care as a long term profession rather than a temporary occupation (Galinsky et al., 1994; Kontos et al., 1995). Another more recent study used data from the NICHD Study of Early Child Care and Youth Development study and found that family providers had less formal education and less professional development than center teachers (Dowsett, Huston, Imes, & Gennetian, 2008). Furthermore, they found that the

beliefs of center teachers were more child-centered and less didactic, or teacher-directed, than were the beliefs of family child care providers. In addition, findings from an investigation using the data from the same sample indicated a positive relationship between family child care providers' beliefs about job motivation and intentionality and program quality (Doherty, Forer, Lero, Goelman, & LaGrange, 2006). Thus early childhood educators' beliefs have implications for the quality of care being provided and children's daily experiences.

Intervention or Evaluation Research

Even less research has investigated the impact of intervention or professional development experiences on the beliefs of individuals working in the field of child care, especially those in family child care. One of the few intervention studies related for family child care found that family child care providers who participated in a specific model of training demonstrated improved scores on measures of global quality compared to providers who did not receive the training. However, limited investigations of this nature exist. With much more variability among the family child care work force, it is even more critical that we understand the mechanisms leading to quality improvements among program and provider level structural characteristics and providers' belief systems.

Description of the Current Study

The current dissertation uses data from the Quality Interventions in Early Care and Education (QUINCE) study to examine the influence of both structural characteristics and provider beliefs on observed process quality in family child care homes. The QUINCE study was a longitudinal investigation of the effectiveness of the Partnerships for Inclusion (PFI; Palsha & Wesley, 1998; Wesley, 1994) model of consultation in five states in a randomly

selected sample of home-based family child care providers. The overall goal of the QUINCE study was to determine the conditions under which a very specific assessment-based, on-site consultation PFI model of professional development/training would enhance the quality and beliefs of family child care providers.

Dissertation Organization

The organization of this dissertation follows the alternative dissertation format. It includes three manuscripts to be submitted for publication. Chapter II contains the first article, a literature review titled, “Understanding Predictors of Quality in Family Child Care Programs: Where Do Provider Beliefs Fit In?” An empirical research article follows in Chapter III and is titled “Structural Features of Family Child Care and Providers’ Beliefs: Associations with Program Quality.” Chapter IV includes a second research article that is titled “Family Child Care Providers Beliefs and Program Quality: A Longitudinal Study Investigating the Role of Consultation.” These three articles are then reviewed in a brief summary chapter.

The first article, Chapter II, provides a review of the relevant research literature and a discussion of the role of structural factors and early care providers’ beliefs in relation to program quality to be submitted to *Early Education and Development*. The manuscript describes the value of examining structural features and beliefs in relation quality practice in early childhood programs, specifically family child care. In addition the article reviews previous investigations relating program quality to children’s developmental outcomes, explores various types of beliefs that have been shown to be related to practice, and concludes by emphasizing the need for a thorough investigation into the associations between

these variables and quality in family child care programs, preferable through a longitudinal study examining potential quality enhancement interventions.

The second article, Chapter III, “is an empirical manuscript prepared for submission to *Early Education and Development* as well. This chapter is an empirical investigation of the relationship between structural features of family child care programs, providers’ self-reported beliefs, and observed process quality in a large sample of family child care providers. Measures in this study were baseline assessments of a longitudinal investigation of a consultation-based model of program quality enhancement. Results describe this sample prior to participation in this treatment. It was hypothesized that provider and program structural characteristics (e.g., education, training, experience, and ratio) and providers’ self-reported beliefs about best practices with young children and beliefs about job motivation and stress would be related to observed program quality. The study advances the existing literature on child care quality by examining variables related to program quality and describing a large sample of family child care providers in home-based settings who provide unique set of circumstances and characteristics to child care options available to parent consumers.

The third article, Chapter IV, is an empirical manuscript prepared for submission to *Early Childhood Research Quarterly*. This study focuses on the structural characteristics and beliefs of family child care providers and the impact of the Partnerships for Inclusion model of consultation and its relationship to changes in quality, immediately after completing consultation and six months later. Findings indicate mixed results for the influence of structural characteristics. Moreover, beliefs variables show little prediction of immediate change but significant associations emerge, especially for those providers receiving PFI

consultation, in terms of sustained improvements. Finally, Chapter V contains a general discussion of the previous chapters and provides a summary of the main findings of the empirical studies in Chapter III and Chapter IV. Findings are discussed in relation to previous research and implications for practices, policy, and future research in the field of early child care are presented. Lastly, recommendations specific to future quality enhancement and interventions efforts are highlighted.

References

- Boushey, H., & Wright, J. (2004). *Working moms and child care*. Washington, DC: Center for Economic and Policy Research.
- Burchinal, M., Howes, C., & Kontos, S. (2002). Structural predictors of child care quality in child care homes. *Early Childhood Research Quarterly, 17*(1), 87-105.
- Bryant, D. M., Burchinal, M., Lau, L. B., & Sparling, J. J. (1994). Family and classroom correlates of Head Start children's developmental outcomes. *Early Childhood Research Quarterly, 9*, 289-309.
- Bryant, D., Clifford, R., & Peisner, E. (1991). Best practices for beginners: Developmental appropriateness in kindergarten. *American Educational Research Journal, 28*, 783-803.
- Campbell, F., & Ramey, C. (1995). Cognitive and school outcomes for high risk African American students at middle adolescence: Positive effects of early intervention. *American Educational Research Journal, 32*, 743-772.
- Cassidy, D. J., Buell, M. J., Pugh-Hoese, S., & Russell, S. (1995). The effect of education on child care teachers' beliefs and classroom quality: Year one evaluation of the

- T.E.A.C.H. early child associate degree scholarship program. *Early Childhood Research Quarterly*, 10, 171–183.
- Charlesworth, R., Hart, C., Burts, D., & Hernandez, S. (1991). Kindergarten teachers' beliefs and practices. *Early Development and Care*, 70, 17–35.
- Clarke-Stewart, K. A., Vandell, D. L., Burchinal, M., O'Brien, M., & McCartney, K. (2002). Do regulable features of child-care homes affect children's development? *Early Childhood Research Quarterly*, 17, 52–86.
- Doherty, G., Forer, B., Lero, D., Goelman, H., & LaGrange, A. (2006). Predictors of quality in family child care. *Early Childhood Research Quarterly*, 21, 296–312.
- Dowsett, C. J., Huston, A. C., Imes, A. E., & Gennetian, L. (2008). Structural and process features in three types of child care for children from high and low income families. *Early Childhood Research Quarterly*, 23, 69–93.
- Galinsky, E., Howes, C., Kontos, S., & Shinn, M. (1994). *The study of children in family child care and relative care: Highlights of findings*. New York: Families and Work Institute.
- Helburn, S. W. (Ed.). (1995). *Cost, quality, and child outcomes in child care centers: Technical report*. Denver, CO: Department of Economics, Center for Research in Economic and Social Policy, University of Colorado at Denver.
- Howes, C., & Stewart, P. (1987). Child's play with adults, toys, and peers: An examination of family and child care influences. *Developmental Psychology*, 23, 423–430.
- Kagan, D. (1992). Implications of research on teacher belief. *Educational Psychologist*, 27, 65–90.

- Kontos, S., Howes, C., Shinn, M., & Galinsky, E. (1995). *Quality in family child care and relative care*. New York, NY: Teachers College Press.
- Martinez-Beck, I., & Zaslow, M. (2006). The context for critical issues in early childhood professional development. In M. Zaslow & I. Martinez-Beck (Eds.), *Critical issues in early childhood professional development* (pp. 1–16). Baltimore, MD: Brookes Publishing.
- Maxwell, K. L., McWilliam, R. A., Hemmeter, M. L., Ault, M. J., & Schuster, J.W. (2001). Predictors of developmentally appropriate classroom practices in kindergarten through third grade. *Early Childhood Research Quarterly, 16*, 421–452.
- McMullen, M. B. (1999). Characteristics of teachers who talk the DAP talk and walk the DAP walk. *Journal of Research in Childhood Education, 13*(2), 216–230.
- National Association of Child Care Resource & Referral Agencies (NACCRRA). (2010). *Leaving children to chance: 2010 update: NACCRRA's ranking of state standards and oversight of small family child care homes*. Retrieved from <http://www.naccrra.org/publications/naccrra-publications/leaving-children-to-chance-2010.php>
- National Survey of America's Families. (2002). *Assessing the new federalism*. Washington, DC: National Academy Press.
- NICHD Early Child Care Research Network. (1996). Characteristics of infant child care: Factors contributing to positive caregiving. *Early Childhood Research Quarterly, 11*, 269–306.

- NICHD Early Child Care Research Network. (1998). Early child care and self-control, compliance, and problem behavior at twenty-four and thirty-six months. *Child Development, 69*, 1145–1170.
- NICHD Early Child Care Research Network. (1999). Child outcomes when child care center classes meet recommended standards for quality. *American Journal of Public Health, 89*, 1072–1077.
- NICHD Early Child Care Research Network. (2000). The relation of child care to cognitive and language development. *Child Development, 71*, 960–980.
- NICHD Early Child Care Research Network. (2001). Child care and children's peer interaction at 24 and 36 months: The NICHD study of early child care. *Child Development, 72*, 1478–1500.
- NICHD Early Child Care Research Network. (2002). Child care structure → process → outcome: Direct and indirect effects of child-care quality on young children's development. *Psychological Science, 13*, 199–206.
- NICHD Early Child Care Research Network. (2003). Does amount of time spent in child care predict socioemotional adjustment during the transition to kindergarten? *Child Development, 74*, 976–1005.
- Pajares, M. F. (1992). Teachers' beliefs and educational research: Cleaning up a messy construct. *Review of Educational Research, 62*(3), 307–32.
- Palsha, S., & Wesley, P. (1998). Improving quality in early childhood environments through on-site consultation. *Topics in Early Childhood Special Education, 18*, 243-253.

- Peisner-Feinberg, E. S. & Burchinal, M. R. (1997). Relations between preschool children's child care experiences and concurrent development: The cost, quality, and outcomes study. *Merrill-Palmer Quarterly*, *43*, 451–477.
- Peisner-Feinberg, E. S., Burchinal, M. R., Clifford, R. M., Culkin, M. L., Howes, C., Kagan, S. L., & Yazejian, N. (2001). The relation of preschool child-care quality to children's cognitive and social developmental to children's cognitive and social developmental trajectories through second grade. *Child Development*, *72*(5), 1534-1553.
- Wesley, P. (1994). Providing on-site consultation to promote quality in integrated child care programs. *Journal of Early Intervention*, *18*, 391-402.
- Whitebook, M., Howes, C., & Phillips, D. (1989). *Who cares? Child care teachers and the quality of care in America. Final report of the National Child Care Staffing Study*. Oakland, CA: Child Care Employee Project.

CHAPTER II: UNDERSTANDING PREDICTORS OF QUALITY IN FAMILY CHILD
CARE PROGRAMS: WHERE DO PROVIDER BELIEFS FIT IN?

A paper to be submitted to *Early Childhood Research Quarterly*

Amanda Stein, Kere Hughes-Belding, and Susan Hegland

Abstract

This manuscript provides a review of the relevant research literature and a discussion of the role of structural factors and early care providers' beliefs in relation to program quality in family child care settings. In addition the article reviews previous investigations relating program quality to children's developmental outcomes, explores various types of beliefs that have been shown to be related to practice, and concludes by emphasizing the need for a thorough investigation into the associations between these variables and quality in family child care programs, preferable through a longitudinal study examining potential quality enhancement interventions.

Introduction

In the field of education, researchers have evaluated the relationship between an early childhood educators' behaviors in the early care and education setting and children's outcomes. From intervention studies to randomized controlled trials to qualitative research, early childhood researchers want to know how caregivers' impact the children they care for, what constitutes high quality teaching and interactions, and what practices lead to optimal child outcomes. Early research had a unidirectional emphasis focusing on associations between observable behaviors of early childhood educators and children's academic achievement (Fang, 1996). What had been emphasized less was the role of early childhood

educators' beliefs, motivation, thinking, planning, and decision-making processes that together influence their actions, and consequently impact young children.

Quality Matters

The number of young children participating in non-parental child care arrangements continues to grow as the number of dual-income families and working single parents steadily increases. Current estimates from the U.S. Census Bureau (2002) indicate that around 63% of children under the age of five are participating in some type of nonmaternal child care for an average of 32 hours per week. Furthermore, an examination of data from the 2001 Survey of Income and Program Participation revealed that 13.7% of all working mothers in the United States utilized a home-based, family child care provider (i.e., other than a relative) as their primary child care arrangement for their child (ren) younger than age six (Boushey & Wright, 2004). This proportion of use increases to 18.0% for families when the mother works between 30 – 39 hours per week (Boushey & Wright, 2004). Additionally, children under the age of two are more likely to be cared for in family child care than in center-based programs (Zigler & Gilman, 1996). However, relatively few of these homes are regulated by state-level authorities (Galinsky, Howes, Kontos, & Shinn, 1994).

Due to the large number of children in out-of-home care and the lack of consistent regulation and standards for family child care programs, the quality of these child care settings has become a major focus of parental concern, state legislation, and research in the field of child development. In fact, the quality of early child care experiences has been shown to be one of the most important predictors of later child outcomes not only in the short term (NICHD Early Child Care Research Network, 1996, 1998, 1999, 2000, 2001, 2002, 2003; Peisner-Feinberg & Burchinal, 1997) but also in the long term as well (Campbell &

Ramey, 1995; Peisner-Feinberg et al., 2001). Therefore, the identification of those structural aspects and the beliefs of the early child care workforce working in early childhood programs that are the most predictive of good child care quality is a critical goal of child development professionals, public policy makers, and parent consumers.

Of particular concern are the findings that many of these child care programs could be classified as mediocre/minimal or even poor quality care (e.g., Bryant, Burchinal, Lau, & Sparling, 1994; Helburn, 1995; Whitebook, Howes, & Phillips, 1989). Previous research has indicated that children experiencing poor quality care are less likely to demonstrate significant developmental gains, which compromises their school readiness, and may place them at further developmental risk or threaten their health and safety (Peisner-Feinberg et al., 2001). The continuing prevalence of low quality early child care emphasizes the need for further investigation into provider, program, and state level characteristics that are related to improved quality care and better outcomes for children.

It is generally accepted by researchers, practitioners, and policymakers alike that the effects of early child care experiences on children's developmental outcomes depends largely on the quality of children's daily experiences and interactions in the child care setting. This lived daily experience is often referred to as process quality and is typically assessed through some form of observation. Process components of the early childhood setting incorporate those aspects of the environment most readily experienced by children including their interactions with care providers and peers, protection of children's health and safety, as well interactions with and availability of developmentally appropriate, stimulating materials and activities within the program. However, debate continues as to what constitutes good quality and how quality can best be measured.

Previous longitudinal examinations of the quality of child care programs such as the National Day Care Study, the National Child Care Staffing Study, the Cost, Quality and Child Outcomes Study, the NICHD Study of Early Child Care, and the State-wide Early Education Program Study have explored the relationship between various structural indicators of quality and observed process quality, as well as how quality of care relates to children's developmental outcomes. Such process-related characteristics of child care programs have been shown to be related to various structural dimensions of child care such as caregiver qualifications, child:adult ratios, providers' wages, parents' fees, and other easily measurable and often-regulated indicators of quality (Burchinal, Cryer, Clifford, & Howes, 2002; Phillips, Mekos, Scarr, McCartney, & Abbott-Shim, 2000; Phillipsen, Burchinal, Howes, & Cryer, 1997). These structural indicators of quality are those aspects of child care programs which are often amenable to regulation and have less measurement error, such as group size, child:adult ratio, caregiver qualifications including education, training, and years of experience, provider wages and benefits, and parent fees to name a few. Structural dimensions of child care have been shown to be related to various process-related characteristics of child care programs. Therefore, it is understood that structural components of early care settings comprise basic inputs that increase the likelihood that child care programs and providers will provide safe, responsive, and developmentally appropriate caregiving that characterizes high quality child care environments (Peisner-Feinberg & Burchinal, 1997; Phillips et al., 2000). As a result of these large scale, longitudinal studies finding positive effects of high quality child care on children's cognitive development, recent efforts (e.g., statewide child care quality rating systems, implementation of coaching-based consultation, etc.), have been undertaken to better understand what characteristics of

providers and environments are related to or predictive of high quality care experiences and how to effectively train and support the early child care workforce to promote those characteristics.

Much research has examined the relationship among both structural and beliefs variables that influence process quality in center-based child care setting (NICHD Early Child Care Research Network, 1996, 1998, 1999, 2000, 2001, 2002, 2003; Peisner-Feinberg & Burchinal, 1997). Comparatively fewer studies have explored this relationship in family child care homes. In addition, research has indicated that the family child care provider workforce differs largely from early childhood teachers working in centers. One recent study that examined some of these differences utilized data from the NICHD Study of Early Child Care and Youth Development and found that family providers had less formal education and less professional development than center teachers (Dowsett, Huston, Imes, & Gennetian, 2008). These authors also found that the beliefs of center teachers were more child-centered and less didactic, or adult-directed, than were the beliefs of family child care providers. Considering the large numbers of young children being cared for in family child care programs, the differences between center teachers and home-based care providers, and the more limited research based from which to draw conclusions to inform practice and policy, further exploration of how certain variables interact with each other to influence process quality in these settings is warranted.

Examinations of Family Child Care Quality

Early work by Fischer and Eheart (1991) found that child care training contributed most significantly to the variance in family child care provider practices as measured by the Family Day Care Rating Scale (FDCRS; Harms & Clifford, 1989). In addition to level of

training, provider use of support services such as child care provider associations and community resource and referral agencies and to a lesser degree their general level of education were contributed significantly to the model explaining process quality.

Similarly, the Relative and Family Day Care Study (Kontos, Howes, Shinn, and Galinsky, 1995) provides a perspective on quality of care in homes. FDCRS scores were obtained in 226 child care homes and relative care settings in three communities. In that study, 34 percent of the child care homes received quality ratings that identified the quality of their program to be “inadequate,” 58 percent were “adequate/custodial,” and 8 percent were “good.” Kontos and colleagues (1995) hypothesized that both provider-level (e.g., level of experience, education, and training) and program-level (e.g., group size and ratio) structural characteristics were related to the quality of care provided. In addition to the quality of the work environment, which was defined as income from providing care, level of perceived job stress, level of job satisfaction, and commitment to providing family child care as a career were also hypothesized to be related to process quality. Indeed, positive correlations were found between all of these predictor variables and scores on the FDCRS and the Caregiver Interaction (CIS) Sensitivity subscale (Arnett, 1989), with the exception of provider years of experience, which was found to be negatively related to quality. In addition, results from these analyses indicated that provider sensitivity was related to provider commitment and intentionality in choosing the profession of family child care. One unexpected finding was that level of job stress had a positive relationship with quality. A possible explanation purported by Kontos et al. (1995) was that family child care providers reporting more stress were those who were more likely to be invested in their work and to take their job more seriously.

One of the best available longitudinal investigations of process quality in a variety of early child care and education settings is provided by the NICHD Study of Early Child Care. Observations were conducted in nine states and included urban, suburban, and rural communities. The distribution of child care regulations in those states paralleled those in the United States. Extensive information about the children, the families and child care was collected during home visits (1, 6, 15, 24, and 36 months), child care visits (6, 15, 24, and 36 months), and laboratory assessments (15, 24, and 36 months) with some data being collected even beyond these ages. Phone interviews were conducted every 3 months to track hours and types of child care. Observations were conducted in all types of nonmaternal care settings, including grandparents, in-home caregivers, child care homes, and centers.

Research using data from the NICHD Study of Early Child Care identified significant relationships between what researchers defined as regulable and non-regulable features of child care and the quality of care being provided in home-based settings by a non-relative (Clarke-Stewart, Vandell, Burchinal, O'Brien, & McCartney, 2002). Regulable features of child care were identified as the amount of caregiver education and training, the total number of children (weighted by age), and whether or not the family child care home was licensed by a state level agency (Clarke-Stewart et al., 2002). Those variables characterized as non-regulable aspects of child care included the level of caregiver professionalism as identified by the provider's involvement in professional activities, the number of years of experience in child care, the age of the caregiver, the caregiver's beliefs about children, level of caregiver depressive symptoms, and the presence of the provider's own child (ren) (Clarke-Stewart et al., 2002). Results indicated that care providers with higher education levels and those who had received more recent and a greater amount of training were found to provide higher

quality environments, based on scores on the child-care Home Observation for the Measurement of the Environment Inventory (HOME: Caldwell & Bradley, 1984), and more positive caregiving as measured by the Observational Record of the Caregiving Environment (ORCE: NICHD Early Childhood Research Network, 1996; Clarke-Stewart et al., 2002). Caregiver's beliefs about how to handle children mediated the effects of caregivers' training on child care quality (Clarke-Stewart et al., 2002). In addition, caregivers who were not in compliance with recommended age-weighted group size cut-offs received lower ratings of caregiving behaviors (Clarke-Stewart et al., 2002). Overall, children in higher quality child care homes had care providers who were more attentive, responsive, and emotionally supportive (Clarke-Stewart et al., 2002). However, there was no relationship between quality of care and the total number of children enrolled in the child care home, the provider's age, mental health status, experience, professionalism, or presence of the provider's own child in the care setting (Clarke-Stewart et al., 2002).

Beliefs and Practice

Research evaluating the link between teacher beliefs and practice is critical to furthering the field of early childhood teacher training and professional development. Researchers have repeatedly confirmed that early childhood teachers' beliefs about best practice and how young children learn play a critical role in influencing actual teaching practices and decision making in the classroom setting (Maxwell, McWilliam, Hemmeter, Ault, & Schuster, 2001; McMullen, 1999; Pajares, 1992). In other words teachers' self-reported beliefs have been shown to relate to the process quality of the early childhood environment and interactions. Findings have indicated that even when teachers are hearing information for the first time, they filter this information through their personal beliefs

(Kagan, 1992). Still, research has indicated that teachers with more education are more likely to hold developmentally appropriate beliefs and implement developmentally appropriate practice (Cassidy, Buell, Pugh-Hoese, & Russell, 1995; McMullen, 1999).

However, other researchers have identified a discrepancy, or only a minimal correlation, between these self-reported beliefs and teachers' observed behaviors (Bryant, Clifford, & Peisner, 1991; Charlesworth, Hart, Burts, & Hernandez, 1991). It is often the case in such studies that show evidence of a discrepancy between beliefs and practice, that early childhood teachers report holding more progressive, child-centered beliefs and then are observed engaging in more traditional or developmentally inappropriate practices.

Research describing the congruence between teachers' reported beliefs about appropriate practice and how children learn to observed classroom practices has been mixed. For example, Bryant and colleagues found a significant association between teachers' knowledge and attitudes and scores on the Early Childhood Environmental Rating Scale (ECERS: Harms & Clifford, 1980), a well known observation measure of classroom quality (Bryant et al., 1991). Furthermore, Charlesworth and associates identified an association between kindergarten teachers' beliefs and both their reported and observed practices (Charlesworth, Hart, Burts, Thomasson, Mosley, & Fleege, 1993).

Other researchers have found discrepancies between reported teacher beliefs and observed practice (Charlesworth et al., 1991). Many possible causes may lead to teachers not implementing practices that are entirely consistent with their beliefs. Sources of pressure to teach differently from what is believed or valued may come from administration, teachers of upper grades, center, school, or district policies, and parents (Haupt & Ostlund, 1997). In fact, one research study found that some kindergarten teachers reported experiencing

pressure to emphasize basic skills more than they would have liked to (Hitz & Wright, 1998). However, previous research has indicated that a change in practice has been related to a change in teacher beliefs (Peterson, Fennema, Carpenter, & Loef, 1989). Other research has found that beliefs are resistant to change (e.g., Brousseau, Book, & Byers, 1988), indicating the critical importance of providing pre-service early childhood professionals with a strong foundational knowledge and belief system about early education and children's development.

Types of Beliefs

In a study of Head Start, kindergarten, first, second, and third grade teachers' beliefs and practices, teachers with fewer years of teaching experience and an educational background in early childhood, were more likely to believe in and use more developmentally appropriate practices (Vartuli, 1999). This findings could be indicative of recent efforts in the early childhood education field emphasizing the value of implementing developmentally appropriate practice (DAP) to best support children's learning and development, as well as what such practices entail. However, it is also possible that with more years of teaching experience beliefs become less adaptable or flexible, or teachers move toward a more basic skills oriented approach.

Beliefs about the understanding of best practices with young children. Theories of how children develop often serve as the basis for teachers' beliefs, whether they are supported by research evidence, professional development efforts, or personal experiences. One common delineation that exists regarding young children's learning and development involves the differences between Piagetian theory of cognitive development and learning theory. According to Piaget, children construct knowledge by directly experiencing and interacting with materials in their environment while exploring, noticing, and problem

solving. Child-centered practices, which involve providing young children with open ended opportunities to explore materials and interact with peers, are most commonly associated with Piaget's theory of learning (Stipek & Byler, 1997). Congruent with Piagetian theory, the National Association for the Education of Young Children (NAEYC) provides evidence based guidelines for individuals working with children ages birth to eight which recommend that the teacher's primary role be to support and guide children's self initiated activities (Copple & Bredekamp, 2009). Instruction is not direct but rather embedded in play and other every day, meaningful activities. The NAEYC guidelines are the most widely accepted recommendations for practice with young children and are generally supported by research on the effects of pedagogical approaches on children's learning and motivation (Hart, Burts, & Charlesworth, 1997).

In contrast to the discovery learning process of Piagetian theory, stands the idea of basic skills instruction for learning, which involves using more teacher directed, highly structured activities than child-initiated activities. This basic skills approach is linked to behaviorism and learning theory, in that knowledge and therefore, cognitive abilities are acquired best through repetition and reinforcement. According to this theory, learning occurs by breaking down responses into discrete, sequenced steps, correction of children's errors, repetition, and practice. A smaller segment of early childhood education experts are proponents of the basic skills orientation (Carnine, Carnine, Karp, & Weisberg, 1988), while other researchers have found that although teachers may indicate that their beliefs support the child-centered approach, observations of their practice reveal the use of primarily teacher directed, structured activities (Charlesworth, et al., 1991).

Stipek and Byler (1997) developed and administered a questionnaire that included a scale measuring teachers' endorsement of practices associated with a basic skills or a child-centered orientation in a sample of 60 preschool, kindergarten, and first grade teachers. The 31 item measure was rated on a 5-point Likert scale indicating the degree to which the teacher agreed or disagreed with the statement and included two subscales (Stipek & Byler, 1997). The basic skills orientation belief subscale included items that indicated beliefs in the effectiveness of highly structured, teacher directed activities (Stipek & Byler, 1997). The child-centered orientation belief subscale was comprised of items emphasizing child-initiated activities and exploration, consistent with NAEYC developmentally appropriate practice (Stipek & Byler, 1997). Scores on this measure of child-initiated vs. basic skill beliefs was found to be related to teachers' current practice and their perspectives on the goals and policies related to early childhood education.

Similarly, Charlesworth and colleagues developed the Teacher Beliefs Scale, a 36 item measure of teacher beliefs about developmentally appropriate and inappropriate practices (Charlesworth et al., 1993). Respondents rate items on a 5-point scale ranging from "not important at all" to "extremely important", as to how important each practice was for their classroom. This same scale, in addition to the Early Childhood Survey of Beliefs and Practices (Marcon, 1988), was used by Vartuli (1999). Results from a sample of 137 educators teaching in classrooms from Head Start through third grade indicated that self reported beliefs related to observed practice at all grade levels (Vartuli, 1999). Although beliefs and practice were correlated, a disconnect between beliefs and practice existed in that beliefs were significantly more developmentally appropriate than practice at every grade level (Vartuli, 1999). In other words, teachers were found to not be putting into practice

everything that they claimed to believe regarding developmental appropriateness. Furthermore, an increase in grade level was associated with a decrease in developmental appropriateness of beliefs and practice; with Head Start and kindergarten teachers rating DAP practices higher than teachers in later grades (Vartuli, 1999). More recent researchers Lee, Baik, and Charlesworth (2006) identified Korean kindergarten teachers as developmentally appropriate (DAP) or developmentally inappropriate (DIP) based on their responses to the Teachers Beliefs Scale (Charlesworth et. al., 1993). After completing an in service training on scaffolding skills and strategies, DAP teachers made significantly greater gains on a measure of scaffolding ability than the DIP teachers (Lee et al., 2006).

Beliefs about motivation, satisfaction, and job-related stress. Another type of belief that has the potential to impact practice in child care settings are teachers' and providers' feelings related to job stress. Research has previously investigated the types of stressors most commonly experienced by individuals working in the early childhood field and the potential effects of these stressors on their job satisfaction and rates of turnover. McClelland (1986) found the job satisfaction of child care workers to be associated with pay and benefits, working conditions, relationships on the job, perceived level of control, and interactions with children and parents. Deery-Schmitt and Todd (1995) developed a conceptual model focusing on the high rates of turnover among family child care providers and dividing stressors into those related to work conditions (e.g., pay, hours, benefits) and those related to clients (e.g., group size, ages of children, matching with parents on child rearing philosophies, etc.). More recently, Curbow, Spratt, Ungaretti, McDonnell, and Breckler (2000) developed an inventory of sources of job stress for individuals in the child care field that would allow for a comparison between child care environments, track levels of

stress over time, and identify possible resources that might alleviate some of the impact of job related stress. The measure, which included three subscales specific to child care workers: job demands, job control, and job resources, was found to have high levels of internal reliability, convergent validity when compared to more general measures of job stress, and discriminate validity in its ability to detect a meaningful pattern of differences between the beliefs of center teachers and family child care providers in a sample of 196 randomly selected child care workers (Curbow et al., 2000). Further research utilizing this measure of job stress among child care workers, found that in a sample of 119 preschool teachers elevated teacher job stress (as evidenced by scores on the job demands subscale) was predictive of the likelihood of expulsion of a student and contributed to the prediction of expulsion even when class setting, size, and student age were controlled; whereas job resources served as a protective factor against expulsion (Gilliam & Shahar, 2006).

Researchers have defined the job-related motivation and intentionality of early child care providers in a variety of ways. One indicator of intentionality that would be deemed a structural characteristic of a program is whether a family child care provider has chosen to have his or program licensed or registered with county or state agencies. Although licensed programs have been found to offer higher quality care than those who are unlicensed (e.g., Kontos et al., 1995; Pence & Goelman, 1991), the requirements for a family child care home to achieve this status vary widely by regulatory body. In addition to licensure status, membership in a professional association, participation in a food program, and involvement in the family child community as a means of work-related support have all been found to be associated with better quality care (Kontos et al., 1995; Galinsky et al., 1994; Pence & Goelman, 1991). In terms of caregivers' job motivation and satisfaction, high quality family

child care providers were more likely to view their work as their career and participate in good business practices, such as holding liability and property insurance, than providers offering lower quality care (Helburn, Morris, & Modigliani, 2002; Kontos, Howes, & Galinsky, 1996; Kontos, et al., 1995).

Beliefs of Early Childhood Teachers

Teachers of young children, similar to elementary, secondary, and high school teachers are constantly making decisions about their practice, behavior, and interactions with children. For example, teachers and care providers in early childhood must decide whether an activity is going to be child directed or teacher initiated, whether children should be engaged mostly in play and active exploration or focused on learning basic skills for academic success, whether children are learning independently, in small groups with peers, or in a larger group of children, and how to manage the classroom setting and respond to challenging behaviors. Often these decisions are being made “in the moment” while surrounded by a room full of children with varying and significant needs. Teachers of young children must make some different decisions than teachers working with much older children; decisions that should be guided by what has been identified as “best practice” in the realm of early childhood. The question remains, however, “are early childhood teachers making decisions based on their knowledge of child development, evidence based practice, and information specific to the individual child or on something else?” Relatively little research has examined the beliefs, motivations, and decision making process of early childhood educators and care providers.

Much of the research that does exist on early childhood teacher beliefs examines the connection between teacher reported beliefs about appropriate practices and their actual

practices. Previous research indicates that teachers' practices are associated with their beliefs (Charlesworth et al., 1991; Stipek & Byler, 1997). For instance, Stipek and Byler (1997) found a significant association between preschool and kindergarten teachers' beliefs about appropriate practice and the practices they were observed implementing in their classrooms. Additionally in this study, teachers' beliefs about how children learn and their actual practices corresponded with the goals that they had for their own programs; with preschool teachers using child-centered practices rating self concept as a priority for children and kindergarten teachers implementing child-centered practices identifying basic skill acquisition as a relatively unimportant goal (Stipek & Byler, 1997).

Beliefs of Family Child Care Providers

Of the relatively few studies that have investigated factors related to the quality of care in family child care settings, only two were found to have examined some variable related child care provider beliefs. The first of these, *The Study of Children in Family Child Care and Relative Care*, researchers proposed a theoretical model that both structural quality (e.g., group size, ratio, experience, level of education, and child care training) and quality of the adult work environment contribute a direct influence on observed process quality in family child care homes (Kontos et al., 1995). In this study, components of the quality of work environment included the providers' level of perceived job stress, level of satisfaction with work, and commitment to the provision of family child care (Kontos et al., 1995). While level of job satisfaction was not found to be a significant predictor of observed quality, a positive relationship was found between provider commitment to family child care and quality as measured by the FDCRS (Harms & Clifford, 1989) and the Sensitivity subscale of CIS (Arnett, 1989). An unexpected positive correlation was found between scores on these

measures of quality and perceived job stress. Kontos et al., (1995) speculated that child care providers reporting more stress were most likely providers who took their jobs more seriously. Overall, care providers demonstrating what researchers termed “intentionality”, were more likely to offer more responsive, sensitive, and better overall quality care to children in their setting (Galinsky et al., 1994; Kontos et al., 1995). In general, indicators of an intentional approach to child care included seeking out training opportunities to learn more about child development and best practice, networking with other child care providers, purposely planning activities for children in their care, choosing family child care based on child-related motives, and identifying family child care as a long term profession rather than a temporary occupation (Galinsky et al., 1994; Kontos et al., 1995).

Similarly in a study investigating variables contributing to process quality in a large sample of Canadian regulated family child care providers ($N = 236$), the degree of provider intentionality was included as the third block in a hierarchical linear regression model (Doherty, Forer, Lero, Goelman, & LaGrange, 2006). In this study, providers were asked to identify why they had become chosen to become regulated versus remaining an unlicensed program as an indicator of intentionality and a sense of responsibility to demonstrate a certain standard of quality being indicators of provider intentionality. Providers were also asked to identify the three most positive aspects of being a family child care providers and if they would choose family child care as a career again and why. All of these indicators of intentionality were found to be significantly predictive of observed program quality. Unlike Kontos and colleagues (1995), Doherty and associates (2006) did not find a correlation between quality of care provided and level of job stress.

Comparing the Beliefs of Teachers and Family Child Care Providers

One study compared traditional beliefs about child rearing among caregivers in three types of child care settings; center based, family child care home (non-relatives), and relative care using a measure of parental modernity whereby higher scores were indicative of more authoritarian or strict attitudes regarding raising children and discipline (Dowsett et al., 2008). This study used data from the National Institute of Child Health and Development (NICHD) Study of Early Child Care and Youth Development and evaluated the structural and process features of child care settings based upon the experiences of 651 children at age two, 844 children at age three, and 1,075 children at age four and a half, with a total of 381 children who had valid data across all three time points (Dowsett et al., 2008). Overall, center teachers were found to have higher levels of education, more training, and less traditional beliefs than other care providers in the study. In comparison, relative caregivers had the lowest level of education and training and more traditional beliefs about child rearing. Family child care home providers fell in between center teachers and relatives. In other words, center teachers were less likely to endorse the ideas that “children should not question the authority of parents” or “children will be bad unless they are taught what is right.” These differences between the beliefs of child caregivers in different settings were found to be independent of family and child characteristics.

Intervention or Evaluation Research

Very little research has investigated the impact of intervention or professional development efforts on the beliefs of individuals working in the field of child care. One program designed to address the lack of education, poor compensation, and high rates of turnover in the early childhood workforce that is currently underway in some capacity in 21

states is the Teacher Education and Compensation Help (T.E.A.C.H.) Early Childhood project. This project gives scholarships to child care workers to complete coursework in early childhood education and increase their compensation. Evaluation studies have investigated the impact of the T.E.A.C.H. program on the quality of care being provided as well as the beliefs of participants (Cassidy et al., 1995). In one study, comparing a small sample of T.E.A.C.H. scholarship recipients ($N = 19$) to a comparison group of child care teachers ($N = 15$) using a pre test, post test design, results indicated that after completing only 12 – 20 credits hours of community college coursework, teachers in the scholarship program reported more developmentally appropriate beliefs, as measured by the Teacher Beliefs Scale (Schaefer & Edgerton, 1985), and made significant gains on measures rating global quality. Further evaluation of the T.E.A.C.H. program investigated the quality of care being provided, as well as beliefs about developmentally appropriate practice via the Teachers Beliefs Scale and attitudes about their work environment, professional motivation, and job satisfaction of scholarship recipients over the course of the a five year period (Miller & Bogatova, 2009). This particular examination of the program represented those T.E.A.C.H. “scholars” in one state who had agreed to participate in the research study (i.e., having an observation of their classroom quality and completing a questionnaire) and that completed the requirements of the T.E.A.C.H. program, which was defined as the completion of one contract period (typically a year) and meeting that obligations of that contract including completing a certain number of credit hours and achieving satisfactory grades. Of those teachers who agreed to be in the study and completed the requirements of their T.E.A.C.H. contract, they demonstrated a significant increase in developmentally appropriate beliefs and a significant decrease in developmentally inappropriate beliefs as measured by the Teacher Beliefs Scale. However,

participants did demonstrate a decrease in participation in “professional orientation” activities (Professional Activities Questionnaire; Bloom, 1989) such as attending conferences and workshops or reading publications. A possible explanation for this decrease in professionally oriented behaviors by participants is time constraints, considering the fact that most of the providers were working full time and all of them were in school. Additionally, program participants experienced a decrease in Job Satisfaction as measured by the Job Satisfaction Questionnaire (Bloom, 1988; Bloom, Sheerer, & Britz, 1991), including satisfaction with supervisors, coworkers, and working conditions. The dissatisfaction of caregivers with factors related to their job could potentially be a byproduct of their participation in higher educational attainment, which could come with a widening gap between what early childhood teachers expect and what they actually experience. Moreover, one concerning finding of this study is that participants were found to demonstrate an increase in the level of punitive interactions with children as measured by the CIS. The authors describe a need for more ongoing classroom support and one-on-one consultation to aid teachers in putting into practice what they are learning (Miller & Bogatova, 2009).

In contrast to efforts comparable to the T.E.A.C.H. program and its evaluation, concerted endeavors and evaluations of these efforts to improve the skills, knowledge, beliefs, and/or qualifications of individuals providing home-based family child care are lacking. One study looked at the impact of a training program entitled Family-to-Family implemented in three states in a sample of 112 regulated providers (Kontos et al., 1996). This training varied by location, ranged between 15 – 25 hours of class time, and in some instances involved a home visit (Kontos et al., 1996). Observed quality was measured prior to training and six months after beginning the training (Kontos et al., 1996). Results

indicated that family child care providers who participated in the Family-to-Family model of training demonstrated improved scores on the FDCRS global measure of quality, but not improved adult-child interactions as measured by the CIS and Adult Involvement Scale (AIS; Howes & Stewart, 1987). Furthermore, global quality was higher in family child care programs in which the provider had participated in training when compared to the quality scores of comparison group of regulated family child care providers in the same community who were not involved in the training under investigation. Similarly, one study that measured the level of participation in a range of quality enhancement initiatives that included but was not limited to trainings, on-site mentoring, and/or grants to help purchase materials found that family child care providers participating in a greater number of these activities received higher ratings of global quality (Peisner-Feinberg et al., 2001). However, neither study involved random assignment leaving the possible explanation family child care providers operating higher quality programs are more likely to seek out training and support opportunities than providers offering lower quality care. In addition, both of these studies involved participation in “interventions” that primarily included workshop-style trainings with no consistency in length or content of trainings and it was up to the provider to self-select their participation in these activities. The emphasis of this “intervention” was on the classroom component of training over more individualized, rigorous coaching, mentoring, or consultation that can occur during home visits and is more likely to lead to changes in practice and beliefs (Galinsky, Howes, & Kontos, 1995).

Conclusion

Overall, in comparison to center-based care, much less is known about factors influencing quality in family child care (e.g., Burchinal, Howes, & Kontos, 2002; Clarke-

Stewart et al., 2002). However, the quality of family child care programs has been observed to be of mediocre or even poor quality (e.g., Bryant et al., 1994; Helburn, 1995; Whitebook, et al, 1989). Of particular concern is that researchers have indicated that children experiencing poor quality care are less likely to demonstrate significant developmental gains. Thus, poor quality compromises their school readiness, and may place them at further developmental risk or threaten their health and safety (Peisner-Feinberg et al., 2001). This is particularly worrisome considering that children enrolled in family child care settings may be considered “at-risk” due to other factors such as living in a low-income household, having an identified disability, or being a second language learner. Spending time in a poor quality family child care program could place these children at further risk in terms of their developmental outcomes. The continuing prevalence of low quality family child care emphasizes the need for further investigation into of provider, program, and state level characteristics related to improved quality care and better outcomes for children.

Investigations of predictors of quality in early childhood programs have found a link between providers’ beliefs about best practices when working with young children and process quality (Charlesworth et al., 1991; Charlesworth et al., 1993; Maxwell et al., 2001; McMullen et al., 2006). Furthermore, a considerable body of research indicates that the beliefs of individuals working in child care settings directly and indirectly influence decision-making, practices, and the observed quality of care being provided in these classrooms (Abbott-Shim, Lambert, & McCarty, 2000; Cassidy et al., 1995; Doherty et al., 2006; Miller & Bogatova, 2009). In addition, findings have indicated a positive relationship between family child care providers’ beliefs about job motivation and intentionality (Doherty et al., 2006). Thus early childhood educators’ beliefs have implications for the quality of care

being provided and children's daily experiences. A thorough examination of quality in family child care should therefore, move beyond investigating the role of commonly examined, yet valuable, structural components of care, to move towards a better understanding of the role early child care providers' beliefs as well.

Finally, research examining quality in home-based child care programs must move beyond correlational analyses relating provider and program structural characteristics (e.g., education, professional development training, experience, child:adult ratio, etc.) to ratings of program quality to more stringent evaluations of targeted interventions. In general, little effort has been made to improve quality and evaluate those quality improvement efforts in family child care settings beyond identifying the impact of requirements and regulations for licensing, which is oftentimes insufficiently monitored. Furthermore, very little research has investigated the impact of intervention or professional development efforts on the beliefs of individuals working in child care. Research has indicated, however, that training primarily based in workshops or classroom trainings can increase knowledge and awareness, but does little to affect behavioral change or improved practices (Wesley, 1994) and rarely addresses providers' beliefs. Therefore to create more substantial improvements in quality and sustained changes in the practices of family child care providers, larger investments in resources, effort, time, and funds must be made and an evaluation of these types of efforts is necessary.

References

Abbott-Shim, M., Lambert, R., & McCarty, F. (2000). Structural model of Head Start classroom quality. *Early Childhood Research Quarterly, 15*, 115–134.

- Arnett, J. (1989). Caregivers in day care centers: Does training matter? *Journal of Applied Developmental Psychology, 10*, 541-552.
- Bloom, P. J. (1988). Assess the climate of your center: Use the early childhood work environment survey. *Day Care and Early Education, Summer*: 9-11.
- Bloom, P. J. (1989). *Measuring work attitudes: Technical manual for the early childhood job satisfaction survey and the early childhood work environment survey*. Brandon, VT: Psychology Press.
- Bloom, P. J., Sheerer, M., & Britz, J. (1991). *Blueprint for action: Achieving center-based change through staff development*. Lake Forest, IL: New Horizons.
- Boushey, H., & Wright, J. (2004). *Working moms and child care*. Washington, DC: Center for Economic and Policy Research.
- Brousseau, B., Book, C., & Byers, J. (1988). Teacher beliefs and the culture of teaching. *Journal of Teacher Education, 39*, 33-39.
- Bryant, D. M., Burchinal, M., Lau, L. B., & Sparling, J. J. (1994). Family and classroom correlates of Head Start children's developmental outcomes. *Early Childhood Research Quarterly, 9*, 289-309.
- Bryant, D., Clifford, R., & Peisner, E. (1991). Best practices for beginners: Developmental appropriateness in kindergarten. *American Educational Research Journal, 28*, 783-803.
- Burchinal, M., Cryer, D., Clifford, R., & Howes, C. (2002). Caregiver training and classroom quality in child care centers. *Applied Developmental Science, 6*, 2-11.
- Caldwell, B., & Bradley, R. (1984). *Home Observation for Measurement of the Environment*. Little Rock, AR: University of Arkansas at Little Rock.

- Campbell, F., & Ramey, C. (1995). Cognitive and school outcomes for high risk African American students at middle adolescence: Positive effects of early intervention. *American Educational Research Journal*, 32, 743–772.
- Carnine, D., Carnine, L., Karp, J., & Weisberg, P. (1988). Kindergarten for economically disadvantaged children: The direct instruction component. In C. Warger (Ed.), *A resource guide to public school early childhood programs* (pp. 73–98). Alexandria, VA: Association Supervision and Curriculum.
- Cassidy, D. J., Buell, M. J., Pugh-Hoese, S., & Russell, S. (1995). The effect of education on child care teachers' beliefs and classroom quality: Year one evaluation of the T.E.A.C.H. early child associate degree scholarship program. *Early Childhood Research Quarterly*, 10, 171–183.
- Charlesworth, R., Hart, C., Burts, D., & Hernandez, S. (1991). Kindergarten teachers' beliefs and practices. *Early Development and Care*, 70, 17–35.
- Charlesworth, R., Hart, C., Burts, D., Thomasson, R., Mosley, J., & Fleege, P. (1993). Measuring the developmental appropriateness of kindergarten teachers' beliefs and practices. *Early Childhood Research Quarterly*, 8, 255–276.
- Clarke-Stewart, K. A., Vandell, D. L., Burchinal, M., O'Brien, M., & McCartney, K. (2002). Do regulable features of child-care homes affect children's development? *Early Childhood Research Quarterly*, 17, 52–86.
- Copple, C. & Bredekamp, S. (2009). *Developmentally appropriate practice in early childhood programs serving children birth through age 8*. Washington, DC: National Association for the Education of Young Children.

- Curbow, B., Spratt, K., Ungaretti, A. McDonnell, K., & Breckler, S. (2001) Development of the child care worker job stress inventory. *Early Childhood Research Quarterly, 15*(4), 515-536.
- Deery-Schmitt, D. M., & Todd, C. M. (1995). A conceptual model for studying turnover among family child care providers. *Early Childhood Research Quarterly, 10*, 121–143.
- Doherty, G., Forer, B., Lero, D., Goelman, H., & LaGrange, A. (2006). Predictors of quality in family child care. *Early Childhood Research Quarterly, 21*, 296–312.
- Dowsett, C. J., Huston, A. C., Imes, A. E., & Gennetian, L. (2008). Structural and process features in three types of child care for children from high and low income families. *Early Childhood Research Quarterly, 23*, 69–93.
- Fang, Z. (1996). A review of research on teacher beliefs and practices. *Educational Research, 38*, 47–65.
- Fischer, J. L. & Eheart, B. K. (1991). Family day care: A theoretical basis for improving quality. *Early Childhood Research Quarterly, 6*, 549–563.
- Galinsky, E., Howes, C., & Kontos, S. (1995). *The family child care training study: Highlights of findings*. New York, NY: Families and Work Institute.
- Galinsky, E., Howes, C., Kontos, S., & Shinn, M. (1994). *The study of children in family child care and relative care: Highlights of findings*. New York: Families and Work Institute.
- Gilliam, W. S., & Shahar, G. (2006). Prekindergarten expulsion and suspension: Rates and predictors in one state. *Infants and Young Children, 19*, 228-245.

- Harms, T., & Clifford, R. (1980). *Early Childhood Environment Rating Scale*. New York: Teachers College Press.
- Harms, T., & Clifford, D. (1989). *Family Day Care Rating Scale*. New York: Teachers College Press.
- Hart, C. Burts, D. & Charlesworth, R. (1997). Integrated developmentally appropriate curriculum: From theory to research to practice. In C. Hart, D. Burts, R. Charlesworth (Eds.), *Integrated curriculum and developmentally appropriate practice: Birth to age eight* (pp. 1–27). Buffalo, NY: SUNY Press.
- Haupt, J. & Ostlund, M. (1997). Informing parents, administrators, and teachers about developmentally appropriate practices. In C. Hart, D. Burts, & R. Charlesworth (Eds.), *Integrated curriculum and developmentally appropriate practice: Birth to age eight* (pp. 417–447). Buffalo, NY: SUNY Press.
- Helburn, S. W. (Ed.). (1995). *Cost, quality, and child outcomes in child care centers: Technical report*. Denver, CO: Department of Economics, Center for Research in Economic and Social Policy, University of Colorado at Denver.
- Helburn, S., Morris, J., & Modigliani, K. (2002). Family child care finances and their effect on quality and incentives. *Early Childhood Research Quarterly*, 17, 512-538.
- Hitz, R., & Wright, D. (1988). Kindergarten issues: A practitioners' survey. *Principal*, 67, 28–30.
- Howes, C. & Stewart, P. (1987). Child's play with adults, toys, and peers: An examination of family and child care influences. *Developmental Psychology*, 23, 423–430.
- Kagan, D. (1992). Implications of research on teacher belief. *Educational Psychologist*, 27, 65–90.

- Kontos, S., Howes, C., & Galinsky, E. (1996). Does training make a difference to quality in family child care? *Early Childhood Research Quarterly, 11*(4), 427-445.
- Kontos, S., Howes, C., Shinn, M., & Galinsky, E. (1995). *Quality in family child care and relative care*. New York, NY: Teachers College Press.
- Lee, Y. S., Baik, J., & Charlesworth, R. (2006). Differential effects of kindergarten teachers' beliefs about developmentally appropriate practice on their use of scaffolding following in-service training. *Teacher and Teacher Education, 22*, 935-945.
- Marcon, R. A. (1988, August). *Cluster analysis: Creating independent variables in evaluation research*. Paper presented at the meeting of the American Psychological Association, Atlanta, Georgia.
- Maxwell, K. L., McWilliam, R. A., Hemmeter, M. L., Ault, M. J., & Schuster, J.W. (2001). Predictors of developmentally appropriate classroom practices in kindergarten through third grade. *Early Childhood Research Quarterly, 16*, 421-452.
- McClelland, J. (1986). Job satisfaction of child care workers: A review. *Child Care Quarterly, 15*, 82-89.
- McMullen, M. B. (1999). Characteristics of teachers who talk the DAP talk and walk the DAP walk. *Journal of Research in Childhood Education, 13*(2), 216-230.
- Miller, J. A. & Bogatova, T. (2009). Quality improvements in the early care and education workforce: Outcomes and impact of the T.E.A.C.H. Early Childhood Project. *Evaluation and Program Planning, 32*, 257-277.
- NICHD Early Child Care Research Network. (1996). Characteristics of infant child care: Factors contributing to positive caregiving. *Early Childhood Research Quarterly, 11*, 269-306.

- NICHD Early Child Care Research Network. (1998). Early child care and self-control, compliance, and problem behavior at twenty-four and thirty-six months. *Child Development, 69*, 1145–1170.
- NICHD Early Child Care Research Network. (1999). Child outcomes when child care center classes meet recommended standards for quality. *American Journal of Public Health, 89*, 1072–1077.
- NICHD Early Child Care Research Network. (2000). The relation of child care to cognitive and language development. *Child Development, 71*, 960–980.
- NICHD Early Child Care Research Network. (2001). Child care and children's peer interaction at 24 and 36 months: The NICHD study of early child care. *Child Development, 72*, 1478–1500.
- NICHD Early Child Care Research Network. (2002). Child care structure → process → outcome: Direct and indirect effects of child-care quality on young children's development. *Psychological Science, 13*, 199–206.
- NICHD Early Child Care Research Network. (2003). Does amount of time spent in child care predict socioemotional adjustment during the transition to kindergarten? *Child Development, 74*, 976–1005.
- Pajares, M. F. (1992). Teachers' beliefs and educational research: Cleaning up a messy construct. *Review of Educational Research, 62*(3), 307–332.
- Peisner-Feinberg, E. S. & Burchinal, M. R. (1997). Relations between preschool children's child care experiences and concurrent development: The cost, quality, and outcomes study. *Merrill-Palmer Quarterly, 43*, 451–477.

- Peisner-Feinberg, E. S., Burchinal, M. R., Clifford, R. M., Culkin, M. L., Howes, C., Kagan, S. L., & Yazejian, N. (2001). The relation of preschool child-care quality to children's cognitive and social developmental to children's cognitive and social developmental trajectories through second grade. *Child Development, 72*(5), 1534-1553.
- Pence, A. R., & Goelman, H. (1987). Silent partners: Parents of children in three types of day care. *Early Childhood Research Quarterly, 2*, 103–118.
- Peterson, P. Fennema, E., Carpenter, T., & Loef, M. (1989). Teachers' pedagogical content beliefs in mathematics. *Cognition and Instruction, 6*, 1–40.
- Phillips, D., Mekos, D., Scarr, S., McCartney, K., & Abbott-Shim, M. (2000). Within and beyond the classroom door: Assessing quality in child care centers. *Early Childhood Research Quarterly, 15*, 475–496.
- Phillipsen, L., Burchinal, M., Howes, C., & Cryer, D., (1997). The prediction of process quality from structural features of child care. *Early Childhood Research Quarterly, 12*, 281–303.
- Stipek, D. J. & Byler, P. (1997). Early childhood education teachers: Do they practice what they preach? *Early Childhood Research Quarterly, 12*, 305–325.
- U.S. Census Bureau. (2002). *Who's minding the kids? Child care arrangements: Winter 2002*. Retrieved from <http://www.census.gov/prod/2005pubs/p70-101.pdf>
- Vartuli, S. (1999). How early childhood teacher beliefs vary across grade level. *Early Childhood Research Quarterly, 14*, 489–514.
- Wesley, P. (1994). Providing on-site consultation to promote quality in integrated child care programs. *Journal of Early Intervention, 18*, 391-402.

Whitebook, M., Howes, C., & Phillips, D. (1989). *Who cares? Child care teachers and the quality of care in America. Final report of the National Child Care Staffing Study.*

Oakland, CA: Child Care Employee Project.

Zigler, E. F. & Gilman, E. (1996). Not just any care: Shaping a coherent child care policy. In

E. F. Zigler, S. L. Kagan, & N. W. Hall (Eds.), *Children, families, and government:*

Preparing for the twenty-first century (pp. 94–116). New York: University of

Cambridge Press.

CHAPTER III: STRUCTURAL FEATURES OF FAMILY CHILD CARE AND
PROVIDERS' BELIEFS: ASSOCIATIONS WITH PROGRAM QUALITY

A paper to be submitted to *Early Education and Development*

Amanda Stein, Kere Hughes-Belding, and Susan Hegland

Abstract

Considering the substantial number of young children receiving care in family child care settings, the purpose of the current study is to describe the structural characteristics, both at the level of the provider and the program, beliefs about best practices when working with young children, beliefs about job-related motivation and stress, as well as the program quality in a sample of 343 home-based, family child care providers across five states. In addition, this study examines the influence of both structural characteristics and provider beliefs on observed global quality and adult-child interactions in family child care homes. Participants had agreed to participate in the Quality Interventions for Early Care and Education (QUINCE) study. This was a longitudinal study of the effectiveness of a specific model of consultation on quality improvement in child care. Data for the current study consists of information obtained prior to any consultation intervention. Findings indicate that having an educational background in early childhood or a related field, more years of experience, and achieving a threshold of 30 hours of professional development training is predictive of global program quality. The state in which the provider offered care was related to the Family Day Care Rating Scale (FDCRS) factors of Tone and Discipline, Provisions for Learning and Health, and the Caregiver Interaction Scale (CIS) subscales of provider Permissiveness and Harshness. Family child care providers' with more progressive beliefs about child rearing and less stress were found to demonstrate more positive tone and

discipline. Finally, more developmentally appropriate beliefs predict the quality of FDCRS Teaching and Interactions, as well as the provision of literacy and numeracy activities.

Implications for providing education and support to early child care providers for understanding appropriate developmental expectations for children and how to effectively guide children and their role in quality improvement efforts are discussed. In addition, the importance of providing support for improving professional motivation and decreasing job stress are highlighted and directions for future research are described.

Introduction

In recent years the importance of the quality of early care and its impact on children's outcomes, particularly as they relate to school readiness, have come to the forefront of research, practice, and policy realms. With the number of young children participating in non-parental child care arrangements continuing to grow as the number of dual-income families and working single parents steadily increases (National Survey of America's Families, 2002), there has been an increased interest in factors related to high quality early child care programming as well as increased investments in quality enhancement initiatives (Martinez-Beck & Zaslow, 2006). In fact, according to the U.S. Census Bureau (2002), 63% of children five years or younger were spending an average of 32 hours per week in some type of non-parental child care arrangement. Furthermore, an examination of data from the 2001 Survey of Income and Program Participation revealed that 13.7% of all working mothers in the United States utilized a home-based, family child care provider (i.e., other than a relative) as their primary child care arrangement for their child (ren) younger than age six (Boushey & Wright, 2004). This proportion of use increases to 18.0% for families where the mother works between 30 – 39 hours per week (Boushey & Wright, 2004). Additionally,

children under the age of two are more likely to be cared for in family child care than in center-based programs (Zigler & Gilman, 1996). However, relatively few of these family child care homes are regulated by state level authorities (Galinsky, Howes, Kontos, & Shinn, 1994).

Due to the large number of children in out-of-home care, research investigating the effects of child care and other early care and education programs on children's developmental outcomes has increased considerably in recent years. Results from this stream of research indicates that high-quality programs can produce significant benefits for children in cognitive, language, and social development; enhanced school readiness; later school achievement; and other successes later in life (NICHD Early Childhood Research Network, 1996, 1998, 1999, 2000, 2001, 2002, 2003; Peisner-Feinberg & Burchinal, 1997; Peisner-Feinberg, et al., 2001). Associations between children's outcomes and the quality of early child care experiences have been maintained even after controlling for child and family factors (e.g., socioeconomic status, gender, and race/ethnicity) known to be linked to children's developmental outcomes and child care quality. The identification of those aspects of child care programs and qualities and beliefs of early child care professionals that are the most predictive of good child care quality is a critical goal of early childhood professionals, public policy makers, and parent consumers. Therefore, in recent years increased investments have been made toward improving the availability and accessibility of high quality child care programs (e.g., Quality Rating and Improvement Systems; QRIS). These efforts involve professional development training, support, and technical assistance with the overall goal of improving child care quality. However, few of these efforts have been directed toward family child care providers and settings (e.g., only 17 states currently

include family child care in their state-wide QRIS) and the standards and requirements are often less stringent when compared to those for center-based programs (NACCRRA, 2010). In fact, one study investigating states' regulations and standards for family child care and reporting a ranking for all states found that only four states were meeting minimal basic requirements needed to ensure that children are in care that safeguards their health and safety and promotes development and learning (NACCRRA, 2010). These findings indicate a need for research specific to family child care provider and program level factors that impact the quality of care and education being provided in these settings. Furthermore, due to a wide variation in state level regulations, monitoring systems, and priority given to funding quality enhancement and support efforts targeting home-based family child care, investigations of child care quality sampling programs in multiple states should account for these likely influential state-level variations.

Related to this, many research initiatives have found that a majority of child care settings are rated as providing mediocre or low quality care (e.g., Bryant, Burchinal, Lau, & Sparling, 1994; Hegland & Oesterreich, 2005; Helburn, 1995; Peisner-Feinberg, Bernier, Bryant, & Maxwell, 2000; Whitebook, Howes, & Phillips, 1989). Children experiencing poor quality care are less likely to demonstrate significant developmental gains. Thus poor quality care, compromises children's school readiness, and may place them at further developmental risk or threaten their health and safety (Peisner-Feinberg et al., 2001). The continuing prevalence of low quality early child care emphasizes the need for further investigation of setting, care provider, and state level characteristics related to improved quality care and better outcomes for children.

Defining Child Care Quality

Defining what constitutes quality in the field of early child care and education has been a topic of considerable debate. The way in which researchers and those who determine policies and regulations related to child care define and measure quality is of critical importance, especially considering the relations between high-quality child care in the early years and children's later developmental outcomes (Peisner-Feinberg et al., 2001). Various investigators have used a variety of indicators comprised by the term "quality." One common method of categorizing variables related to child care quality is the distinction between structure and process. Structural indicators of quality are those dimensions of child care programs that are easily measured and often regulated. Structural aspects within early child care settings that have been studied include group size; child:adult ratio; the education, training and previous experience of staff; and fiscal aspects of child care such as parent fees and staff wages and benefits (Helburn, 1995; Phillips, Mekos, Scarr, McCartney, & Abbott-Shim, 2000; Phillipsen, Burchinal, Howes, & Cryer, 1997; Scarr, Eisenberg, & Deater-Deckard, 1994; Whitebook et al., 1989).

Process components of child care settings incorporate those aspects of the environment that are most readily experienced by children including their interactions with care providers and peers, as well interactions with and accessibility of materials and activities within the program. Such process-related characteristics of child care programs are related to various structural dimensions of child care such as provider qualifications, child:adult ratios, staffs' wages, parents' fees, and other easily measurable and often-regulated indicators of quality (Burchinal, Cryer, & Clifford, 2002; Phillips et al., 2000; Phillipsen et al., 1997). It is therefore assumed that structural components of early care settings are comprised of basic

necessities that ensure children will be safe and will have responsive, developmentally appropriate experiences (Peisner-Feinberg & Burchinal, 1997; Phillips et al., 2000).

Child Care Provider Beliefs and Quality

Beliefs about best practices. A considerable body of research indicates that the beliefs of individuals working in child care settings directly and indirectly influence decision-making, practices, and the observed quality of care being provided in these classrooms (Abbott-Shim, Lambert, & McCarty, 2000; Cassidy, Buell, Pugh-Hoese, & Russell, 1995; Doherty, Forer, Lero, Goelman, & LaGrange, 2006; Miller & Bogatova, 2009). An early evaluation of the T.E.A.C.H. (Teacher Education and Compensation Helps) Early Childhood Associate Degree Scholarship Program found a direct relationship between participation in relevant college level coursework and positive changes in developmentally appropriate beliefs in a small sample of scholarship recipients (Cassidy et al., 1995). Furthermore, in a sample of Head Start teachers and aides, beliefs were found to influence classroom quality indirectly through a reduction in the use of inappropriate instructional activities (Abbott-Shim et al., 2000).

One set of beliefs that have been investigated in early childhood education is developmentally appropriate practices (DAP) with young children. In general, there is agreement among early childhood scholars and practitioners about the philosophical content for the pre-service education and in-service training for those working in the early childhood field. Specifically, curricula, environments, activities, and interactions built upon the principles of DAP as a philosophy (Bredekamp, 1987; Bredekamp & Copple, 1997; Copple & Bredekamp, 2009) are the foundation of many courses and trainings for aimed at early childhood professional development. For example, McMullen and Alat (2002) found that

preschool caregivers and teachers with a bachelor's degree or higher more strongly espoused DAP-aligned beliefs as measured by the Teacher Beliefs Scale than providers with a lower level of education.

Beliefs about job motivation and stress. A second set of provider beliefs that have been examined in relation to child care program quality includes beliefs about job-related motivation, satisfaction, and level of stress. For instance, the Relative and Family Day Care Study (Kontos, Howes, Shinn, and Galinsky, 1995) provides a perspective on quality of care in homes. Ratings of observed program quality were obtained in 226 child care homes and relative care settings in three communities. In addition to the quality of the work environment, which was defined as income from providing care, level of perceived job stress, level of job satisfaction, and commitment to providing family child care as a career were also hypothesized to be related to process quality. Indeed, positive correlations were found between all of these predictor variables and quality ratings of both global process and adult-child interactions. One unexpected finding was that level of job stress had a positive relationship with quality. A possible explanation purported by Kontos et al. (1995) was that family child care providers reporting more stress were those who were more likely to be invested in their work and to take their job more seriously. Furthermore, in terms of caregivers' job motivation and satisfaction, high quality family child care providers have been identified as more likely to view their work as their career and participate in good business practices, such as holding liability and property insurance, than providers offering lower quality care (Helburn, Morris, & Modigliani, 2002; Kontos, Howes, & Galinsky, 1996; Kontos, et al., 1995).

Purpose of the Current Study

Much less research about the quality of family child care programs exists when compared to the wealth of studies investigating indicators of quality, characteristics of the early child care workforce, and outcomes for children in center-based settings. Furthermore, even fewer studies have investigated the role of quality improvement initiatives or professional development efforts in a large sample of home-based, family child care providers. This first purpose of the current study was to describe a large sample of family child care providers who had agreed to participate in an intervention study on the effectiveness of a model of consultation on improving program quality. Specifically, the sample was described in terms of structural characteristics of both the provider and family child care program, the providers' beliefs about best practices when working with young children, beliefs about job motivation and work-related stress, and the observed process quality of care being offered in the program. A thorough examination of quality in family child care should therefore, move beyond investigating the role of commonly examined, yet valuable, structural components of care, to move towards a better understanding of the role early child care providers' beliefs as well. Research has found a link between providers' beliefs about best practices when working with young children and process quality (Charlesworth, Hart, Burts, & Hernandez, 1991; Charlesworth, Hart, Burts, Thomasson, Mosley, & Fleege, 1993; Maxwell, McWilliam, Hemmeter, Ault, & Schuster, 2001; McMullen et al., 2006). In addition, findings have indicated a positive relationship between family child care providers' beliefs about job motivation and intentionality (Doherty et al., 2006). Thus early childhood educators' beliefs have implications for the quality of care being provided and children's daily experiences. Therefore, the second purpose of this study

is to examine the relationships of structural characteristics and providers' beliefs to the quality of care being provided prior to consultation. More specifically, this study is designed to determine what factors are predictive of initial levels of quality in a diverse sample of family child care providers seeking the services of community agencies providing support services and/or technical assistance in one of five states.

Communities, states, parent consumers, and policymakers should be interested in the characteristics of family child care providers willing to make efforts in terms of training, time, environmental changes, and costs to improve the quality of their program. The family child care providers in the current sample are representative of this population. This information is critical for understanding participation in and the influence of quality enhancement efforts, professional development activities, and technical assistance/support systems targeting family child care providers. Furthermore, policymakers and stakeholders allocating funding directed towards improving the quality of child care offered to young children and establishing regulations, licensing standards, or monitoring systems should also be interested in the findings of the current study in order to better identify variables that most readily contribute to the quality of family child care programs. Therefore the following research questions were addressed:

1. What are provider and program level characteristics (including structural characteristics, beliefs, and observed process quality) of a large sample of family child care providers from five states who had agreed to participate in a longitudinal investigation of a model of on-site, consultation designed to improve program quality?

2. Do structural characteristics (e.g., child-adult ratio, level and type of education, professional development training, and experience) relate to observed process quality for family providers in the current sample?
3. Do providers' beliefs about best practices for children, job-related motivation, and/or stress relate to observed process quality for family providers in the current sample?

Method

Participants

Data were initially collected from 343 family child care providers in five states (California, Iowa, Minnesota, Nebraska, and North Carolina) who were receiving services from a community-based resource and referral agency. Providers had agreed to participate in an intervention study on the effectiveness of the Partners for Inclusion (PFI; Wesley, 1994) model of consultation designed to improve program quality and enhance child outcomes. Investigators at leading research universities in each state partnered with community agencies for the purposes of the study. Based on the agency organization, family child care providers were randomly assigned to a consultant from one of these agencies who was using the PFI model of consultation or a consultant offering the “typical” technical assistance and services of their agency. If a family child care provider was not randomly assigned to a consultant, the provider was randomly selected from consultants' caseloads to be included as a provider receiving PFI consultation or a provider receiving typical services.

Measures included in the current study were completed prior to beginning participation in this intervention. Thus this data set represented those family child care providers who had agreed to receive technical assistance services from an early care

consultant in their area for a period of at least 10 months. These included unregistered or license-exempt family child care providers as well as regulated (i.e., licensed or registered) providers. Participants had also agreed to complete three on-site observations of approximately three-to-four hours in length and three in-depth interviews over the course of their participation in the study (approximately 16 months). Therefore, family child care providers in the present study could represent a different population than providers who did not consent to receiving consultation or participating in the research study.

Family child care providers in the present sample of 343 providers averaged 37.64 years of age, had over nine years of early child care experience on average, and 62% had less than an A.A. degree. Provider ethnicity was: 74.3% Caucasian; 11.4%; African American; 9.9% Hispanic; 1.5% Asian; and 4.7% other, respectively. They cared for an average of 6.78 children and 23.7% had a paid assistant.

Procedure

Provider selection criteria. Criteria for a family child care provider to participate in the study were that they (1) be at least 18 years old, (2) not have a bachelor's degree with a major in early childhood education or related field, (3) communicate with the children in their care in English or Spanish, (4) planned to serve children for at least one more year, (5) served at least two children who were not their own, (6) served at least one child that was at least 20 months of age at the beginning of their participation in the study and not older than 50 months (so that infant assessments would not be conducted and recruited children would not enter kindergarten between the first and second child assessments), and (7) served children for at least 20 hours per week including some morning hours (e.g., no after-school only family child care providers were included). It should be noted that in the first year of

the study, participation was limited to providers who did not have a bachelor's degree. However, this was found to be too limiting to recruit an adequate number of providers, so the education criterion was relaxed to include family child care providers with bachelor's degrees in areas unrelated to early childhood in the second year of the study (Bryant et al., 2009).

Training and reliability of data collectors. Initial training of data collectors took place in a group meeting the summer before each data collection year with the goals of orienting them to the purposes of the study, the procedures required of them, and ethical principles of assessment and data handling, followed by specific training on the measures they would collect: the observations of child care environments and interviews. Training of data collectors on the observation instrument took place initially in Chapel Hill, North Carolina with a day of orientation from one of the contributors to the development of the FDCRS (Harms & Clifford, 1989), Debby Cryer, and 2-3 days in the field practicing the measure with a gold standard observer from the Frank Porter Graham Child Development Institute (FPG). More practice was required in their own communities and then the gold standard study coordinator visited each site for final reliability checks. At each site, the most accurate and/or experienced data collector was deemed the gold standard for that site. Data collectors hired mid-year were trained and supervised by the PI and the local gold standard observer. Each year the FPG gold standard observer visited each site to complete reliability checks with each local gold standard observer. A total 8.5% of observational visits for the study were collected by a gold standard and a data collector or two data collectors together. On these visits, the gold standard's data were entered into the study database. Kappas were calculated for each measure after each visit. Retraining and rechecks were conducted

whenever the kappa between a gold standard observer and another observer fell below .60 (Bryant et al., 2009).

Family child care provider interview. A trained research assistant interviewed providers in their home or over the phone. The 18-page interview included questions about demographic information and structural characteristics of the provider such as questions about education, work experiences, training and professional development, sources of professional support, and a self rating of their health status. The interview also included items assessing the providers' beliefs about best practices when working with children, attitudes about professional motivation, and level of job-related stress experienced. The separate scales included in the interview are described in greater detail below. Finally, several questions about their program were included such as the number of paid or unpaid assistants, the number of children served, and characteristics of the enrollees (e.g., age range, proportion subsidized, identified disabilities, and home language).

Observations of family child care program quality. To measure process quality in family child care homes, observations were completed by trained observers using the Family Day Care Rating Scale (FDCRS; Harms & Clifford, 1989) as well as portions of the Early Childhood Environment Rating Scale-Extension (ECERS-E; Sylva, Siraj-Blatchford, & Taggart, 2003), and the Caregiver Interaction Scale (CIS; Arnett, 1989). For purposes of data collection, researchers typically spent three hours or more in a home setting completing an observation.

Measures

Family child care provider beliefs measures. Information about family child care providers' beliefs were collected as part of the interview and included: modernity (holding

more child-centered, progressive beliefs about child rearing), beliefs aligning with the principles of developmentally appropriate practice, professional motivation and satisfaction, and potential work-related stressors.

Beliefs about best practices with young children.

Modernity scale. The Parental Modernity scale is a 30 item scale designed to measure the beliefs of parents about child care and children, specifically whether their beliefs are traditional authoritarian or progressive authoritative in nature (Schaefer & Edgerton, 1985). Traditional beliefs reflect the idea that children should closely follow adult directives. In contrast, progressive beliefs are indicative of a parental attitude favoring more child-initiated behaviors. Each item is rated on a 5-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). Three scores are computed, Progressive Beliefs, Traditional Beliefs, and a Total score (a sum of the Traditional items and the Progressive items, with the Traditional items reverse scored). For the Total score, a higher value reflects more child focused, authoritative child rearing beliefs. For the original Parental Modernity scale internal consistencies ranged from .88 to .94, with a test retest reliability of .84 (Schaefer & Edgerton, 1985).

For the current study, the first 16 items of the 30 item Parental Modernity scale were used to create the Modernity scale, which was administered to child care providers. Although this scale was developed for use with parents, it has been used in several recent studies with child care providers and preschool teachers (e.g., Dowsett, Huston, Imes, & Gennetian, 2008; La Paro et al, 2009). The scale included items such as, “In my opinion, children will not do the right thing unless they are told what to do” and “In my opinion, children have a right to their own point of view and should be allowed to express it.”

Internal consistency scores for family child care providers, were .29 for Progressive beliefs, .81 for Traditional beliefs, and .78 for the Total Modernity score.

Teacher Beliefs Scale. The Teacher Beliefs Scale (TBS; Burts, Hart, Charlesworth, & Kirk, 1990) is a 30 item scale designed to measure teachers' philosophy regarding developmentally appropriate practice. Teachers rate statements about teaching practices with children on a 5-point scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree) with higher scores indicating stronger beliefs on that dimension. Items included statements such as "Children should be allowed to select from a variety of learning activities that the teacher/provider has prepared" and "Children should work silently and alone on seatwork." Scores were summed and the items representing developmentally inappropriate practice were reverse scored. More recent research by the Head Start FACES study reduced the scale to 15 items and established a general summary scale score called Developmentally Appropriate Attitude scale composed of nine items with factor loadings of .40 or higher (Administration for Children and Families, 2003). The current study uses the FACES reduced-item version. When completing this scale, participants were asked to think about the statements in relation to working with children three-, four-, and five-years-old. The internal consistency of this scale was .69.

Beliefs about motivation and job satisfaction.

Professional motivation. This scale was a 13 item adaptation of a measure used to assess family child care providers' views of their current child care position. The original scale created by Kontos and colleagues asked child care providers list their reasons and motivations for being a child care provider and then rank them in order of importance (Kontos et al., 1995). The psychometric properties of this scale have not been thoroughly

examined; however, the original scale did show differences in scores relating to providers' beliefs about job motivation between individuals working in early care programs that were regulated and unregulated, as well as relatives providing care (Kontos et al., 1995).

For the current study, the response scale ranged from 1 (Not at all the way I feel) to 5 (Exactly the way I feel). The scale included items such as "I see my current child care position as work I feel committed to" and "I see my current child care position as something to do while my children are young." Due to the uncertainty of the components that may emerge from this measure because of a lack of previous examinations of the psychometric properties of this measure, an exploratory factor analysis under maximum likelihood estimation with an oblimin rotation was conducted. Two uncorrelated factors ($r = -.16$) emerged – Professional Motivation ($\alpha = .69$) and Dissatisfaction ($\alpha = .50$).

Child Care Worker Job Stress Inventory. The Child Care Worker Job Stress Inventory (CCW-JSI; Curbow, Spratt, Ungaretti, McDonnell, & Breckler, 2001) is a 51 item scale developed to assess the amount of stress experienced by providers caring for young children. This scale was shortened to a 21 item version through work by Walter Gilliam for the purposes of the National PreK Study, with the goal of shortening the length of administration of the measure while maintaining desirable psychometric properties (Bryant et al., 2009). This shortened version is utilized in the current study. Items on this measure result in four subscales related to child care provider stress: Job Demands, Job Specific Demands, Job Rewards (called Resources in the original), and Job Control. Each of these shortened versions of the subscales were found to correlate highly with the Total score ($r = .73 - .88$). Items are rated on a scale ranging from 1 (Never) to 5 (Most of the time). Job Demands includes six questions regarding interactions with parents, dealing with children's

challenging behaviors, and trying to meet many children's needs at the same time. A lower score on this factor indicates fewer demands (i.e., better working conditions) than a higher score. The Job Specific Demands score includes five additional questions that apply to only family child care providers. Job Rewards includes five questions about receiving praise and respect for the work of child care and seeing that one's work makes a difference for children and parents. Job Control includes five items related to availability of supplies, having a reasonable class size, and getting parents to cooperate on managing behavior. Higher scores on the Rewards and Job Control scales indicate more positive working conditions. To obtain an overall measure of job stress, all items on this measure were coded so that a higher score was indicative of a greater level of stress reported by the child care provider. These scores on these items were then summed and divided by the total number of items to obtain a mean level of job stress ($\alpha = .80$). Internal consistencies for family child care providers in the current sample were .66 for Job Demands, .47 for Job Specific Demands, .81 for Job Rewards, and .51 for Job Control.

Quality observational measures. Observations of program quality were conducted during on-site visits to family child care programs sampled. Measures assessed program quality in terms of global processes, educational activities such as numeracy and literacy, and interactions between children and adults.

Family Day Care Rating Scale (FDCRS). The FDCRS (Harms & Clifford, 1989) was used to assess global quality in home based child care settings. The FDCRS consists of 32 items rated from 1 to 7 with lower scores representing poorer quality and the overall mean score used as a measure of the developmental appropriateness or global quality of a child care program. To maintain consistency with other research studies using this measure, the

adult needs items, which are scored based on interviews rather than observations, were not included in the overall family child care quality scores. The authors reported adequate inter rater reliability ($r = .86$; Harms & Clifford, 1989).

Factors for this measure have not been previously reported so a confirmatory factor analysis was conducted for 258 home-based programs in the QUINCE sample. The sample included in the factor analysis did not include providers with incomplete FDCRS data. The factors were extracted under unweighted least squares estimation with an oblimin rotation. Examination of the scree plot indicated elbow points at one, three, and five factors. eigenvalues at these points were 7.49, 1.47, and 1.07, respectively, with the three factor solution explaining about 84% of the variance. After the third factor, the eigenvalues approached one and the change in variance explained became increasing smaller (adding a fourth factor explains an additional six percent and a fifth only an additional five percent of variance explained). Finally, the three factor solution provided theoretically meaningful and useful factors, including two (“Teaching and Interactions” and “Provisions for Learning and Health”) that were analogous to previously identified factors of a similar measure for center-based classrooms, the Early Childhood Environment Rating Scale-Revised (ECERS-R; Harms, Clifford, & Cryer, 1998; Cassidy, Hestenes, Hegde, Hestenes, & Mim, 2005; Clifford et al, 2005).

For each factor, only items with loadings higher than .30 were considered as contributing to that factor. The first factor was named “Teaching and Interactions” and consisted of loadings from 12 individual items: Furnishings for routine care, Child related display, Informal use of language (2 years and older), Helping children understand language (infants/toddlers), Helping children understand language (2 years and older), Helping

children use language, Helping children reason, Eye-hand coordination, Music and movement, Sand and water play, Dramatic play, and Cultural awareness. The second factor, termed “Tone and Discipline”, consisted of loadings from nine items: Nap/rest, Informal use of language (infant/toddler), Informal use of language (2 years and older), Helping children understand language (infants/toddlers), Helping children reason, Music and movement, Supervision of play, Tone, and Discipline. The third factor, labeled “Provisions for Learning and Health” consisted of loadings from 11 items: Indoor space arrangement, Active physical play, Space to be alone (infants/toddlers), Space to be alone (2 years and older), Arriving/leaving, Meals/snacks, Nap/rest, Personal grooming, Health, Safety, and Schedule of daily activities. Internal consistency scores were .85, .79, and .78 for each of the factors respectively.

Early Childhood Environment Rating Scale – Extended (ECERS-E). The ECERS-E (Sylva et al., 2003) was designed as a companion scale to the ECERS-R (Harms et al., 1998). The ECERS-E includes subscales that have academic achievement orientation including literacy, mathematics, science and environment, and diversity. In a study of 3,000 children aged three to five in British preschools, the ECERS-E was a better predictor of children’s cognitive and language development than the ECERS-R. Data collectors completed this observational measure on the same day as the FDCRS. The scoring scale for the ECERS-E is very similar to the FDCRS (range = 1 – 7): an overall score from 1 to 2.9 is considered poor quality; scores from 3 to 4.9 are considered medium to good quality; and scores of 5 or greater are considered good to excellent quality. The QUINCE study used the 6 items comprising the Literacy subscale, the 4 items comprising the Numeracy subscale, and the single item Diversity scale items that result in three subscales (Bryant et al., 2009). An

ECERS-E Total score was also created that, for this study, is the sum of the Literacy and Numeracy subscales ($\alpha = .82$).

Caregiver Interaction Scale (CIS). Like the FDCRS, the CIS (Arnett, 1989) was also completed during each family child care program observation. The CIS is a 26 item observational rating scale rated from 1 – 4 that focuses on adult-child interactions in child care settings. The CIS has four subscales measuring positive interactions/sensitivity, detachment, permissiveness, and punitiveness/harshness in provider-child interactions and is often used in conjunction with more general measures of child care quality, such as the ECERS-R or FDCRS, to expand the assessment of interactions between the provider and children. The CIS items yield four separate subscale scores: sensitivity, harshness, detachment, and permissiveness. Items on the CIS can also be coded in a positive direction and summed to create one overall score.

Jaeger and Funk (2001) reported interrater reliability coefficients ranging from .75 to .97 between a certified observer and trainees. Layzer, Goodson, and Moss (1993) measured concurrent validity and found correlation coefficients of .43–.67 between the CIS and several other measures of child care quality (e.g., ECERS, Assessment Profile for Early Childhood Programs, Description of Preschool Practices). In the present sample the CIS was found to have a Total scale internal consistency of .86 for the family child care providers. Internal consistencies for the subscales ranged between .45 and .87 in the current sample.

State as a predictor variable. To regulate child care programs, states establish standards, some of which apply to all types of child care and others of which may apply only to center-based programs or family child care homes. There is considerable variation among the states in what they include in their child care standards for both centers and family child

care homes (NACCRRA, 2009). Standards may or may not include minimums for the ratio of adults to children, educational qualifications of providers, provider training or professional development requirements (pre-service and/or on-going); program health and safety requirements, or criminal background checks. Furthermore, there is variation in both the degree to which states monitor child care programs for compliance with their standards, and the consequences for non-compliance (NACCRRA, 2009). In addition, states vary in the amount and types of services, supports, and technical assistance provided to those in the early child care workforce, as well as the levels of funding of these types of efforts. Therefore, for the above mentioned reasons, state has been included as a variable in all regression models based on its potential influence on the quality of care being provided in family child care homes sampled.

Results

Descriptive Data on Family Child Care Provider Characteristics and Beliefs

To address the provider level characteristics identified in the first research question, descriptive analyses were conducted for structural characteristics and providers' self-reported beliefs about best practices, job motivation or satisfaction, and beliefs about work-related stress. Table 3.1 provides the means, standard deviations, minimum and maximum values for both structural characteristics and the provider beliefs variables for the sample of family child care providers.

Provider structural characteristics. Structural characteristics included in Table 3.1 are those related to the family child care providers' level and type of education, professional development training, and experience in the early childhood field. On average, family child care providers in the current sample had completed high school and had some educational

experiences beyond high school but had not earned a higher education degree ($M = 13.19$ years, $SD = 1.56$ years). In addition, 7.37% of providers had earned a CDA credential and 23.9% had received an associate's degree in early childhood education or a related field. Recall that none of these were bachelors or master's degrees related to early childhood because of limitations on sampling criteria for providers specified by the project's funders. Seventeen percent of providers reported having a year or less of experience working in child care, 26.3% had worked between one and five years, 43% had 5 – 20 years of experience, and 13.2% of providers had over 20 years of experience in the field. Almost 30% of providers had one or more of their own children included in their child care program.

In addition, family child care providers reported receiving an average of almost 30 hours of professional development training. However, the range of professional development training hours that providers reported completing in the past two years was quite large (0 – 426 hours) and not normally distributed. Therefore, to adjust for the influence of outliers and to create a closer to normal distribution, training hours were placed into four categories: less than 10 hours, 11 – 20 hours, 21 – 30 hours, and more than 30 hours of training. Twenty-five percent of the providers sampled had completed over 30 hours of relevant professional development training in the past two years.

Provider beliefs measures. In addition Table 3.1 provides descriptives for the total scale score and the subscales for the four provider beliefs measures: the Parental Modernity scale adapted for child care providers, the Teacher Beliefs Scale (TBS) FACES version, the Kontos Professional Motivation scale, and the Child Care Worker Job Stress Inventory (CCW-JSI). For each of the scales a mean score was calculated by totaling the response on each items and then dividing by the number of items on the total scale or the subscale.

Beliefs about best practices when working with young children. On average, family child care providers reported relatively progressive ($M = 4.08$; $SD = .51$ on 5-point scale) and developmentally appropriate beliefs ($M = 3.52$; $SD = .49$ on a 5-point scale) about best practices when working with young children, as measured by the Parental Modernity Progressiveness subscale and the Teacher Beliefs Scale Total scores, respectively. However, family child care providers also indicated a wide range (range = 1.00 – 4.83) of agreement on items that reflected more traditional child-rearing practices (e.g., “in order to be fair a child care provider must treat all children the same” or “the most important thing to teach children is absolute obedience to whoever is in authority”).

Beliefs about job-related motivation and stress. Providers reported high levels of motivation ($M = 4.24$; $SD = .51$ on a 5-point scale) and generally low levels of dissatisfaction ($M = 2.02$; $SD = .73$ on a 5-point scale). Scores on the CCW-JSI indicated that although most providers reported their overall job stress to be low ($M = 2.34$; $SD = .44$ on a 5-point scale), some individuals reported higher levels of Job Demands (range = 1.00 - 4.50) or low levels of job resources (range = 2.20 – 5.00) and Job Control (range = 1.60 – 5.00).

Descriptive Data on Program Characteristics and Quality Outcomes

To address the program level characteristics specified in the first research question, descriptive analyses were conducted for structural program characteristics and all observed measures of program quality. Table 3.2 provides the means, standard deviations, minimum and maximum values for both program-level structural characteristics for the entire sample and similar descriptives for the measures of observed process quality.

Program structural characteristics. Structural characteristics displayed in Table 3.2 include a description of the type of area in which the program is located, hours of

program operation, the number of children enrolled, the composition of children enrolled, and types of support received. The average group size observed was about five children, ranging from only one child being present during an observation up to 17 children. The number of children enrolled in the family child care program was often much larger than the number of children present during the observation ($M = 6.78$ children, $SD = 3.11$, range = 1 – 26). There was only one program that identified having more than 17 children enrolled. However, only six children were present during the observation at this particular program. Family child care programs with smaller numbers of children could be representative of providers who were just starting out in the family child care business and had not yet built up a large clientele. Recall that 17% of providers sampled had one year or less of experience working in child care. Furthermore, 71.4% of providers were licensed, 21% were registered and 4.1% were neither licensed nor registered. States varied in regard to their requirements for licensure and registration; however, programs that were operating without a license were typically required to have fewer children than a licensed program.

On average, programs were open to families for over 67 hours per week with some providers offering extended hours of care in the evenings or on the weekends (up to 168 hours). In addition, 32.75% of programs served families with annual incomes that were less than \$30,000 and 19.06% of families received partial or full-time subsidies to pay for care, indicating a substantial portion of families with limited income enrolling their children in the family child care settings sampled. A small percentage of programs served children with identified special needs (2.34%) or whose parents had limited English proficiency (1.43%).

Observed program quality. In addition Table 3.2 provides descriptives for the total scale score and the subscales (or factors) for the three observational measures of quality: the

FDCRS, the ECERS-E, and the CIS. For both the FDCRS and the ECERS-E a mean was calculated for the Total score, for each of the three FDCRS factors identified in the factor analysis previously conducted on this sample; Teaching and Interactions, Tone and Discipline, and Provisions for Learning and Health, and for the three ECERS-E subscales; Literacy, Numeracy, and Individualization. On the FDCRS, a mean score below 3 is indicative of care that fails to protect children's health and/or safety. Scores near a mean of 3 indicate a custodial level of care where health and safety is provided but there is little to no stimulation for children. Scores between 4 and 5 reflect family child care programs where health and safety are protected and there are some materials, activities, and/or interactions that promote children's development. Scores that are higher than 5 indicate programs that provide high quality child care that is individualized and promotes children's development (Harms & Clifford, 1989). The ECERS-E has an identical scoring scale to the FDCRS, but scores reflect the quality of activities and interactions related to literacy, numeracy, and individualizing to meet children's educational and developmental needs in contrast to a more global indicator of quality.

In the present study, the mean Total FDCRS score was 3.20 ($SD = .82$, range = 1.41 – 6.48). Almost 42% ($n = 143$) of family child care programs in this sample received a mean Total score of 3 or less, 55.4% ($n = 191$) had scores between 3.00 and 4.99, and 2.6% ($n = 9$) received a mean Total score of 5 or greater on the FDCRS indicating an acceptable to high level of quality. To continue, the mean Total ECERS-E was 1.90 ($SD = .67$, range = 1.09 – 5.27). A total of 91.3% ($n = 313$) of family child care programs received a score of 3 or less, 5.8% ($n = 20$) had scores between 3.00 and 4.99, and 3.0% ($n = 10$) received a mean Total score of 5 or greater on the ECERS-E indicating an acceptable to high level of quality.

Overall, global program quality and the quality of more academically-oriented activities, such as literacy and numeracy were low.

Similarly, for the CIS a mean was calculated for the Total score and for each of the four previously identified subscales: Sensitivity, Permissiveness, Detachment, and Harshness. Higher scores on the CIS Total and Sensitivity subscale were indicative of more positive ratings of adult-child interactions. Conversely, higher scores on the Permissiveness, Detachment, or Harshness subscales indicated a poorer quality rating of interactions between children and adults. Because ratings on this scale can only range between a one and a four, it is often common to experience floor or ceiling effects. For example 79.6% ($n = 273$) and 99.4% ($n = 341$) of the current sample received scores of 3 or greater on the CIS Total and CIS Sensitivity subscale, respectively. In regard to the more “negative” subscales of the CIS, 1.20% ($n = 4$; for Permissiveness), .03% ($n = 1$; for Detachment), and .07% ($n = 2$; for Harshness) of the family child care providers in current study received extremely poor ratings (3 or greater on the scale) of their interactions with children in their program. Overall, scores on the CIS reflected mostly positive interactions between the children and adults in the family child care programs sampled.

Intercorrelations Among Variables

The intercorrelations using pairwise deletion among the beliefs total and subscale scores can be found on Table 3.3. A few correlations on this table stand out (i.e., those with p-values below .05). First, the TBS (FACES) version which measures an early child care providers’ reported beliefs about developmentally appropriate practices was found to be statistically significantly correlated with the Modernity Total ($r = .59$) and Traditional ($r = -.54$) scales, both measuring the child-centeredness of a providers’ beliefs. Additionally,

providers' reported level of overall job stress as measured by CCW-JSI Total scale was statistically significantly negatively correlated with the Kontos Total measure of job satisfaction and motivation ($r = -.40$). Furthermore, the level of Job Resources indicated by family child care providers was positively associated with both the Kontos Total ($r = .50$) and Professional Motivation subscales ($r = .44$). Overall, correlations were in the expected directions. Table 3.4 reports the intercorrelations for the variables used in the following hierarchical linear regressions.

Hierarchical Linear Regressions for Structural Characteristics and Quality

To examine the relationship of provider and program level structural characteristics to observed process quality separate hierarchical linear regressions for each of the quality measures were conducted. Tables 3.5 and 3.6 show the full model univariate effects of the hierarchical linear regressions of the structural predictor variables previously found to be related to program quality with the measures of observed process quality. Consistent with prior research studies, state was entered first into each model. In cross-state studies (e.g., Peisner-Feinberg & Burchinal 1997), state accounts for significant variance because the regulations, monitoring, professional development, and technical support systems differ across states. Note that the parameter estimates in both blocks are from the full model. As can be seen in Table 3.5, the univariate tests of the block one models with state were significant for three of the five outcome variables: FDCRS Total, FDCRS Tone and Discipline, and FDCRS Provisions for Learning and Health (all $p < .001$). This finding indicates that the variable "state" which serves as a proxy for more specific measures of state-level variation in regulations and supports of family child care programs was a significant predictor of the quality of care measured in this sample of family child care

programs. After the block of structural variables was entered, significant effects for the impact of differences in states remained only for those outcomes in which state alone was a statistically significant predictor ($p < .001$).

In terms of structural predictor variables, significant unique contributions for having an associate's degree related to early childhood, receiving over 30 hours of professional development training, and for having more experience in the early childhood field were found for the FDCRS Total, FDCRS Teaching and Interactions, FDCRS Tone and Discipline, and ECERS-E (all $p < .05$). For all of these predictor variables higher levels were associated with better family child care program quality. Additionally, significant effects for provider years of education were found for FDCRS Tone and Discipline, and FDCRS Provisions for Learning and Health (both $p < .05$). Similarly, child:adult ratio had a statistically significant negative contribution to FDCRS Tone and Discipline, indicating that having a larger number of children present in relation to the number of adults present results in lower quality of care being provided.

Finally, all of the full models, including both the proxy variable for state and all structural variables, with FDCRS outcomes were significant, (all $p < .001$). In addition, the full model with all predictor variables was statistically significant for the ECERS-E as well, $F(8, 246) = 8.92, p < .001$. State differences alone accounted for roughly .8 – 10.4% of the variance in FDCRS Total and FDCRS factor scores and a negligible .3% of the variance in the ECERS-E. Structural variables predicted an additional 9-20% of the variance in FDCRS Total and FDCRS factor scores and 22% on the variance in ECERS-E. Therefore, the full model predicted 17-21% of the variance in FDCRS Total and factors and 23% of the variance in ECERS-E.

Table 3.6 shows the results of the multivariate hierarchical linear regressions for all CIS outcomes with state as a proxy variables and structural characteristics entered as predictors. The univariate tests of the block one models with state entered were statistically significant for two of the five outcome variables: CIS, Permissiveness and CIS, Harshness (both $p < .05$). This finding indicates that the variable “state” which serves as a proxy for more specific measures of state-level variation in regulations and supports of family child care programs was a significant predictor the amount of permissiveness and harshness demonstrated by providers in their interactions with children in their care. After the block of structural variables was entered, statistically significant effects for state differences remained for only those outcomes in which state alone was a statistically significant predictor ($p < .05$).

In regard to the impact of structural predictor variables, a positive statistically significant unique contribution was found for years of experience ($p < .01$) to the CIS, Sensitivity subscale. Additionally, a statistically significant negative effect of having attended over 30 hours of professional development training in the past two years ($p < .05$) was found for the CIS Detachment subscale. This relationship between training participation and provider detachment may be an indicator of professional motivation in that providers who are more motivated and committed to family child care as a profession are more likely to seek out professional development opportunities and to be less detached in their interactions with children.

Finally, only one of the five full models with CIS outcomes was significant; CIS, Sensitivity, $F(8, 251) = 3.44, p < .001$. State as a proxy variable by itself accounted for less than 3% of the variance in any of the CIS scores. Structural variables predicted an additional 2-10% of the variance in CIS Total and subscale scores. Therefore, the full models only

predicted 4-10% of the variance in CIS, indicating that other variables are likely to be more influential on the quality of adult-child interactions in family child care programs.

Hierarchical Linear Regressions for Beliefs Variables and Quality

Tables 3.7 and 3.8 show the full model univariate effects of the hierarchical linear regressions of the providers' beliefs predictor variables with the measures of process quality. Note that the parameter estimates in both blocks are from the full model. As can be seen in Table 3.7, the univariate tests of the one-block models with state entered as a proxy variable were significant for all four of the FDCRS Total and FDCRS factors (all $p < .01$) but not for the ECERS-E. After the block of structural variables was entered, significant effects of the proxy variable for state remained for only those outcomes in which state alone was a statistically significant predictor ($p < .001$). In addition, significant negative unique contributions for level of Total Job Stress as measured by the CCW-JSI (all $p < .01$) were found for FDCRS Total and FDCRS Tone and Discipline. To continue, more developmentally appropriate beliefs as measured by the TBS Total (FACES version) were significantly positively related to FDCRS Total, FDCRS Teaching and Interactions, and the ECERS-E (all $p < .01$). Additionally, provider Modernity was statistically significantly related to both the FDCRS Total and FDCRS Tone and Discipline (both $p < .05$). Professional motivation and satisfaction assessed using Kontos' measure was not found to be statistically significantly related to quality as measured by the FDCRS or ECERS-E.

Finally, all of the full models with FDCRS outcomes were significant, (all $p < .001$). In addition, the full model with state as a proxy variable and all beliefs variables was statistically significant for the ECERS-E, $F(5, 204) = 6.77, p < .001$. State as a proxy variable in a model by itself accounted for roughly 2.9 – 7.5% of the variance in FDCRS

Total and FDCRS factor scores and a negligible .6% of the variance in the ECERS-E. Beliefs variables predicted an additional 10-19% of the variance in FDCRS Total and FDCRS factor scores and 14% of the variance in ECERS-E. Therefore, the full model predicted 18-24% of the variance in FDCRS Total and FDCRS factors and 38% of the variance in the ECERS-E.

Table 3.8 shows the results of the hierarchical linear regressions for all CIS outcomes with state (serving as a proxy variable) and mean scores on the beliefs measures entered as predictors. The univariate tests of the block one models with state as a proxy variable were significant for two of the five outcome variables: CIS, Permissiveness and CIS, Detachment (both $p < .05$). After the block of beliefs variables was entered, significant effects for state as a proxy variable remained for only those outcomes in which state alone was a statistically significant predictor (both $p < .05$). We found unique contributions for Total Job Stress as measured by the CCW-JSI (both $p < .05$) and the TBS Total score (both $p < .05$) for the CIS Total and CIS Sensitivity scales only. In fact, more developmentally appropriate beliefs and lower levels of stress were related to more positive adult-child interactions as measured by these two CIS scales.

Finally, four of the five full models with CIS outcomes were significant (only CIS Detachment was not significant), all $p < .05$. State as a proxy variable in a model by itself accounted for less than 4.3% of the variance in any of the CIS scores. Beliefs variables predicted an additional 2-14% of the variance in CIS total and subscale scores. Therefore, the full models only predicted 4-14% of the variance in CIS.

Discussion

Overall the quality of family child programs in the current sample was low. Forty-two percent of family child care homes in a sample of 343 from five states were offering poor quality or minimal, custodial levels of care as measured by program observations using the FDCRS (scores below 3). In addition to low levels of global process quality, 92% of child care providers were typically providing only limited educational opportunities in terms of literacy and numeracy activities as demonstrated by scores on the ECERS-E (lower than 3). The low level of observed quality is comparable to findings from other studies identifying many child care programs to be of mediocre or even poor quality care (e.g., Bryant et al., 1994; Helburn, 1995; Whitebook, et al, 1989). Researchers have indicated that children experiencing poor quality care are less likely to demonstrate significant developmental gains. Thus, poor quality compromises their school readiness, and may place them at further developmental risk or threaten their health and safety (Peisner-Feinberg et al., 2001). This is particularly worrisome considering that children enrolled in family child care settings may be considered “at-risk” due to other factors such as living in a low-income household, having an identified disability, or being a second language learner. Spending time in a poor quality family child care program could place these children at further risk in terms of their developmental outcomes. The continuing prevalence of low quality family child care emphasizes the need for further investigation into of provider, program, and state level characteristics related to improved quality care and better outcomes for children.

In contrast to more global measures of quality such as the FDCRS and ECERS-E, family child care providers were still observed engaging in positive adult-child interactions with almost every provider (99.4%) receiving high ratings on the Sensitivity subscale of the

CIS. Similarly only 1% or fewer providers received high scores (greater than 3) on the negative subscales of the CIS including harshness, detachment, and permissiveness. One possible explanation for these discrepancies in measures of observed program quality is that the FDCRS Total score offers more of a global perspective of program quality and practices. In comparison, the CIS focuses on a narrower aspect of quality related to the interactions between children and adults in an early child care settings. Additionally, the CIS has a more limited rating scale (4-point versus 7-point) than the FDCRS, permitting less variation in quality scores. Finally, the CIS has the potential for greater measurement error because it assesses the more subjective construct of interactions compared to many items on the FDCRS that assess more objective program characteristics (e.g., materials present, environmental arrangement, hand washing procedures, etc.).

State as a Predictor Variable

Including state where the provider worked as a variable in the analyses examining the relationship between structural characteristics and providers' beliefs to observed quality was intended to serve as a proxy for variations in regulatory standards and provider supports for family child care programs across the five states sampled in the study. Policies and regulations regarding early child care provider qualifications, professional development requirements, minimal acceptable health and safety practices, maximum group size or ratio, the frequency of monitoring and consequences of compliance with standards in early care settings, and incentives to programs for offering certain levels of quality (e.g., QRIS systems) are most often determined at the state-level and therefore can vary widely between states (Raikes, Raikes, & Wilcox, 2005). In fact, in the current study state was found to be a significant predictor of observed quality as measured by scores on the FDCRS Total and the

subscales of Tone and Discipline and Provisions for Learning and Health. These findings indicate that state level variations have the potential to impact the quality of care being offered in family child care programs. However, the current study did not include a measure of what these variations in either state regulations, levels of monitoring, or systems of technical assistance and support.

In contrast having state as a proxy variable not predict the quality of adult-child interactions as measured by the CIS subscales or the Teaching and Interactions subscale of the FDCRS. It would serve to reason that the daily interactions between early care providers and the children in their program would be something much more difficult to prescribe, regulate, or monitor. In other words, because variations at the state level of regulations, standards, and monitoring of programs are most likely to enforce minimal standards to ensure young children's health and safety, states are less likely to impact the types of behaviors of providers that would be assessed by items included in the FDCRS Teaching and Interactions factor (e.g., "helping children to understand language and reason" or promoting "cultural awareness") or the CIS.

Structural Characteristics and Quality

Findings from the current study indicate that level of education was only predictive of family child care providers' tone and discipline and the provisions for learning and health being provided as measured by the corresponding FDCRS factors. Conversely, years of education was not related to scores on any measure of adult-child interactions. This finding is contradictory to an analysis of the sample of family child care homes in the NICHD Study of Early Child Care in which better educated caregivers provided more sensitive interactions and richer learning environments resulting in children's higher scores on measures of

cognitive and language development (Clarke-Stewart, Vandell, Burchinal, O'Brien, & McCartney, 2002). Similarly, in a sample of licensed, registered, or license-exempt family child care in four Midwestern states, higher levels of provider education and training were associated with better overall quality and provider sensitivity, particularly for providers offering care in areas with less government regulation of home-based child care (Raikes et al., 2005). However, one must exercise caution when interpreting findings related to educational level in the current study because of the truncated range of level of education in the present sample. Specifically, based on stipulations set forth by the study's funding agency, no family child care providers participating in the current study had higher than a bachelor's degree and those providers who did have a BA did not receive them in early childhood education or any related field. Therefore, more research regarding the impact of education on program quality needs to be completed with a sample of individuals in the early child care workforce whose educational experiences are representative of the population of both regulated and unregulated family child care providers caring for young children in their homes.

In comparison to level of education, having an associate's degree in early childhood or a related field was positively related to the level of quality and amount of education stimulation (as measured by the ECERS-E) that providers were offering children in their care. However, type of education was not related to adult-child interactions as measured by the CIS. This finding indicates that in this large sample of family child care providers who had agreed to receive services from their local resource and referral agency providers with a two-year degree related to early childhood would begin this process of receiving technical assistance demonstrating a higher initial level of program quality. Similar results were found

in a sample of 203 licensed family child care homes in Massachusetts with a CDA being the most predictive characteristic of observed quality of care, as measured by the FCDRS (Marshall et al., 2003). In a smaller sample of 65 family child care providers, those individuals who indicated a greater commitment to the field and were observed providing higher quality care were more likely to seek out opportunities for additional credentials and training related to early childhood (Weaver, 2002). It remains to be seen whether providers with a child-specific educational background will experience greater gains in quality following consultation than those without that type of two-year degree. Finally, without including providers with bachelor's degrees related to early childhood it is impossible to determine if family child care providers with the combination of this level and type of education would provide significantly higher quality care than providers without this background.

Some states or local child care provider agencies require registered or licensed family child care providers to participate in a certain number of professional development training hours on an annual basis. Previous research using combined data from the Study of Family Child Care and Relative Care and the California Licensing Study with a comparable sample size (326 family child care homes) found that provider training was a better predictor of the quality of care than group size or ratio (Burchinal, Howes, & Kontos, 2002). Related to this, findings from the current study indicate a threshold at which professional development training impacts program quality. Specifically, in comparison to family child care providers with less than 10 hours of training in the past two years, those providers participating in 30 or more hours of professional development activities had significantly higher levels of observed program quality according to all of the FDCRS scales and the ECERS-E. Additionally, a

small impact of training was found on providers' detachment. Specifically, participants with over 30 hours of training were found to be less detached. Two possible explanations exist for these findings. One is that over 30 hours of professional development training in a period of two years directly impacts family child care providers' behaviors related to quality. For example, it is possible that the content of these trainings relate to items measured on the FDCRS such as setting up an appropriate early learning environment or implementing health and safety practices correctly. However, another possible explanation for this finding is that those family child care providers completing a large number of trainings are simply more motivated towards their profession and are therefore, more "invested" in offering quality services than providers participating in less professional development opportunities.

Providers with more years of experience in the early childhood field were observed to be providing more sensitive care, more literacy and numeracy activities, and more positive teaching, interactions, and discipline. However, previous results regarding the impact of caregiver experience on the quality of care have been inconsistent (Burchinal et al., 2002). Clarke-Stewart and colleagues (2002) did not find a relationship between caregiver experience and quality of care in their longitudinal analysis of regulable features of child care homes. Although the range of child care experience in the NICHD sample of family child care providers (Clarke-Stewart et al., 2002) was similar to the range identified in the present study, the average years of experiences was much lower ($M = 6$ years, SD not provided) than the current sample ($M = 9.49$, $SD = 8.78$). This difference in mean years of experience in early child care indicates that the NICHD sample had more family child care providers who were in the early years of their family child care career. It is possible that providers offering

poorer quality care are more likely to end their role in family child care after only a few years of experience.

To continue, the ratio of children to adults in a program was only found to relate to scores on the FDCRS Tone and Discipline factor, which is surprising considering the large range (range = .50 – 12.00) in ratio observed in the present sample. Similarly, Burchinal and associates (2002) found child:adult ratio to be less predictive of quality than a provider's level of training; but those family child care programs with greater proportions of infants and toddlers offered lower quality care. One possible explanation for the lack of a relationship between ratio and most of the measures of quality included in this study is that the number of children in a family child care program is the most likely feature of care to be regulated and is most easily monitored compared to other structural characteristics. Since state was entered as a proxy variable in the first step of all regression models predicting quality in the current study, any effect of ratio on quality may have been already accounted for; indicating a level of collinearity between the state in which a family child care program operates and the ratio of children to adults in the program.

Overall, when adding structural variables to the model with quality measured by the FDCRS or ECERS-E as the outcome, these characteristics explained between 9 to 22 percent of the variance in observed quality beyond what state as a proxy variable alone could explain. The ability of these structural characteristics to explain program quality as measured by the CIS was less impressive, explaining only 3 to 10 percent additional variance beyond state. Again, the CIS is a measure of a more narrow aspect of quality often found to have a ceiling or floor effect. In addition, the general lack of a relationship between provider and program structural characteristics and the quality of observed adult-child interactions could be due to

the limited variation in scores. With most family child care providers in the sample scoring very high on the measure of sensitivity and very low on the more negative subscale this could have produced a ceiling effect.

Beliefs and Quality

In addition to investigating the relationship between the typical structural predictors associated with quality in child care settings, the current study examines the relationship between the beliefs of family child care providers and the quality of care they are providing. Specifically family child care providers with more child-focused, authoritative beliefs about child rearing were logically found to have more positive tone and discipline when interacting with children in their care. In terms of beliefs about best practices when working with young children, family child care providers who held more “developmentally appropriate” beliefs as measured by the TBS, were observed engaging in more positive teaching and interactions and were also found to have more sensitive interactions with children. However, caution should be used when interpreting the findings related to the TBS primarily because items in this measure are based on the original edition of NAEYC’s guidelines for Developmentally Appropriate Practices (Bredekamp & Copple, 1987). This early version was criticized for its negative biases towards any activities that were teacher-guided in an early childhood setting, for undue emphasis on child development to the exclusion of children whose development does not follow a typical developmental course (Mallory, 1992; Carta, Schwartz, Atwater, & McConnell, 1991), and for the guidelines’ failure to account for variations in cultural context (Mallory & New, 1994). Since this point, understandings of best practices in the field and profession of early childhood have changed dramatically. Specifically, NAEYC’s guidelines for Developmentally Appropriate Practice have been revised to recommend more balance

between teacher-guided and child-initiated activities in child care settings, as well as the individualization of such practices for children with special needs and those for whom English is not a first language (Bredekamp & Copple, 1997; Copple & Bredekamp, 2009). Therefore, a critical need for an updated measure reflecting early child care providers' beliefs related to our current understanding of what constitutes developmentally and culturally appropriate best practices exists.

To continue, family child care providers who reported that they were experiencing a higher level of stress were observed to provide poorer quality care in terms of their tone and discipline and also had less sensitive or positive interactions with children. Another study found that providers with a higher level of job stress were more likely to leave the family child care profession (Todd & Deery-Schmitt, 1996). However, the current results did not reveal a relationship between process quality and providers' job-related motivation and satisfaction. Overall, providers' beliefs about best practices, job motivation and satisfaction, and level of stress explained an additional 10 to 19 percent of the variance in global program quality and between 2 to 14 percent of the variance in the quality of adult-child interactions beyond the influence of state as a variable.

Implications and Recommendations

The continuing prevalence of low quality early child care emphasizes the need for further investigation of provider, program, and state level characteristics related to improved quality care and better outcomes for children. In addition, a variety of factors including family needs, income level, expectations, and developmental characteristics of children dictate that settings for quality child care other than center-based are available, affordable, and accessible to families. Therefore it is critical that both researchers and policymakers

have a clearer understanding of the unique qualifications, program characteristics, and beliefs of family child care providers and their programs that are most conducive to high quality care and education.

Furthermore developing a strong research base of knowledge of the combination and critical values of structural components of child care programs, especially family child care homes, such as child:adult ratios, provider education level and type, experience, and professional development training can help policymakers in developing regulations and monitoring of child care programs that ensure good quality care is being provided. A clear understanding of those structural aspects and provider belief characteristics that best support, a culture of high quality in child care programs can serve to inform state quality improvement initiatives. Future work might address threshold levels for these child care provider characteristics, or the point at which further improvements in structural quality do not yield additional developmental benefits for children.

With children of working mothers spending an average of 30 – 39 hours per week in some type of child care setting, including a large portion receiving care in family child care homes, it is imperative that regulations and policies are in place. Such policies should strive to protect children's health and safety and to ensure high quality programming is being offered to encourage children's development and growth through both stricter regulations and more frequent, thorough monitoring of family child care.

Finally, future research should attempt to sample child care programs from states with a wider range of regulations and to include a measure of compliance with regulatory context. Based on current early childhood initiatives at the state level, it may also be informative to examine the influence of quality rating systems on the quality that is actually observed in

family child care programs. Further research in this area would benefit from inclusion of a measure of program compliance with state regulatory standards. Finally, continuing research is needed to link provider beliefs and provider and program structural characteristics that are able to be regulated and those that are more challenging to regulate to program quality as well as to child outcomes.

References

- Abbott-Shim, M., Lambert, R., & McCarty, F. (2000). Structural model of Head Start classroom quality. *Early Childhood Research Quarterly, 15*, 115–134.
- Administration for Children and Families. (2003). *Head Start Family and Child Experiences Survey (FACES) 2000: A whole child perspective on program performance (Fourth progress report)*. Washington, DC: U.S. Department of Health and Human Services.
- Arnett, J. (1989). Caregivers in day care centers: Does training matter? *Journal of Applied Developmental Psychology, 10*, 541-552.
- Boushey, H. & Wright, J. (2004). *Working moms and child care*. (Data Brief No. 3). Washington, DC: Center for Economic and Policy Research.
- Bredekamp, S. (Ed.). (1987). *Developmentally appropriate practice in early childhood programs serving children from birth through age eight*. Washington, DC: National Association for the Education of Young Children.
- Bredekamp, S., & Copple, C. (1997). (Eds.). *Developmentally appropriate practice in early childhood programs* (Rev. ed.). Washington, DC: National Association for the Education of Young Children.

- Bryant, D. M., Burchinal, M., Lau, L. B., & Sparling, J. J. (1994). Family and classroom correlates of Head Start children's developmental outcomes. *Early Childhood Research Quarterly, 9*, 289–309.
- Bryant, D., Wesley, P., Burchinal, M., Sideris, J., Taylor, K., Fenson, C., & Iruka, I. (2009). *The QUINCE-PFI study: An evaluation of a promising model for child care provider training. Final report.* Frank Porter Graham Child Development Institute: The University of North Carolina at Chapel Hill.
- Burchinal, M., Cryer, D., & Clifford, R. (2002). Caregiver training and classroom quality in child care centers. *Applied Developmental Science, 6*, 2-11.
- Burchinal, M., Howes, C., & Kontos, S. (2002). Structural predictors of child care quality in child care homes. *Early Childhood Research Quarterly, 17*(1), 87-105.
- Burts, D. C., Hart, C. H., Charlesworth, R., & Kirk, L. (1990). A comparison of frequencies of stress behaviors observed in kindergarten children in classrooms with developmentally appropriate versus developmentally inappropriate instructional practice. *Early Childhood Research Quarterly, 5*, 407-423.
- Carta, J. J., Schwartz, I. S., Atwater, J. B., & McConnell, S. R. (1991). Developmentally appropriate practice: Appraising its usefulness for young children with disabilities. *Topics in Early Childhood Special Education, 11*, 1-20.
- Cassidy, D. J., Buell, M. J., Pugh-Hoese, S., & Russell, S. (1995). The effect of education on child care teachers' beliefs and classroom quality: Year one evaluation of the T.E.A.C.H. early child associate degree scholarship program. *Early Childhood Research Quarterly, 10*, 171–183.

- Cassidy, D. J., Hestenes, L. L., Hegde, A., Hestenes, S., & Mims, S. (2005). Measurement of quality in preschool child care classrooms: An exploratory and confirmatory factor analysis of the Early Childhood Environment Rating Scale-Revised. *Early Childhood Research Quarterly, 20*, 345–360.
- Charlesworth, R., Hart, C., Burts, D., & Hernandez, S. (1991). Kindergarten teachers' beliefs and practices. *Early Development and Care, 70*, 17–35.
- Charlesworth, R., Hart, C., Burts, D., Thomasson, R., Mosley, J., & Fleege, P. (1993). Measuring the developmental appropriateness of kindergarten teachers' beliefs and practices. *Early Childhood Research Quarterly, 8*, 255–276.
- Clarke-Stewart, K. A., Vandell, D. L., Burchinal, M., O'Brien, M., & McCartney, K. (2002). Do regulable features of child-care homes affect children's development? *Early Childhood Research Quarterly, 17*, 52–86.
- Clifford, R.M., Barbarin, O., Chang, F., Early, D.M., Bryant, D., Howes, C., . . . Pianta, R. (2005). What is pre-kindergarten? Characteristics of public prekindergarten programs. *Applied Developmental Science, 9*(3), 126-143.
- Copple, C. & Bredekamp, S. (2009). *Developmentally appropriate practice in early childhood programs serving children birth through age 8*. Washington, DC: National Association for the Education of Young Children.
- Curbow, B., Spratt, K., Ungaretti, A. McDonnell, K., & Breckler, S. (2001) Development of the child care worker job stress inventory. *Early Childhood Research Quarterly, 15*(4), 515-536.
- Doherty, G., Forer, B., Lero, D., Goelman, H. & LaGrange, A. (2006). Predictors of quality in family child care. *Early Childhood Research Quarterly, 21*(3), 296-312.

- Dowsett, C. J., Huston, A. C., Imes, A. E., & Gennetian, L. (2008). Structural and process features in three types of child care for children from high and low income families. *Early Childhood Research Quarterly, 23*, 69–93.
- Galinsky, E., Howes, C., Kontos, S., & Shinn, M. (1994). *The study of children in family child care and relative care*. New York: Families and Work Institute.
- Harms, T., & Clifford, D. (1989). *Family Day Care Rating Scale*. New York: Teachers College Press.
- Harms, T., Clifford, R., & Cryer, D. (1998). *The Early Childhood Environment Rating Scale -Revised*. Columbia, NY: Teachers College Press.
- Hegland, S. & Oesterreich, L. (2005). *Observed quality in Iowa classrooms serving preschoolers with IEPs: A report to the Iowa Department of Education*.
- Helburn, S. W. (Ed.). (1995). *Cost, quality, and child outcomes in child care centers: Technical report*. Denver, CO: Department of Economics, Center for Research in Economic and Social Policy, University of Colorado at Denver.
- Helburn, S., Morris, J., & Modigliani, K. (2002). Family child care finances and their effect on quality and incentives. *Early Childhood Research Quarterly, 17*, 512-538.
- Jaeger, E., & Funk, S. (2001). *The Philadelphia child care quality study: An examination of quality in selected early education and care settings*. Philadelphia, PA: Saint Joseph's University.
- Kontos, S., Howes, C., & Galinsky, E. (1996). Does training make a difference to quality in family child care? *Early Childhood Research Quarterly, 11*(4), 427-445.
- Kontos, S., Howes, C., Shinn, M., & Galinsky, E. (1995). *Quality in family child care and relative care*. New York, NY: Teachers College Press.

- La Paro, K. M., Hamre, B. K., Locasale-Crouch, J., Pianta, R. C., Bryant, D., Early, D., . . . Burchinal, M. (2009). Quality in kindergarten classrooms: Observational evidence for the need to increase children's learning opportunities in early education classrooms. *Early Education & Development, 20*, 657-692.
- Layzer, J. I., Goodson, B. D., & Moss, M. (1993). *Life in preschool: Observational study of early childhood programs, final report* (Vol. 1). Cambridge, MA: ABT Associates, Development Assistance Corporation and RMC Research Corporation.
- Mallory, B.L. (1992). Is it always appropriate to be developmental? Convergent models for early intervention practice. *Topics in Early Childhood Special Education, 11*(4), 1-12.
- Mallory, B.L., & New, R.S. (1994). Social constructivist theory and principles of inclusion: Challenges for early childhood special education. *Journal of Special Education, 28*(3), 322-337.
- Marshall, N. L., Creps, C. L., Burstein, N. R., Cahill, K. E., Robeson, W. W., Wang, S. Y., . . . Glantz, F. B. (2003). *Massachusetts family child care today: A report of the findings from the Massachusetts cost and quality study*. Wellesley, MA: Wellesley Centers for Women and Abt Associates, Inc.
- Martinez-Beck, I., & Zaslow, M. (2006). The context for critical issues in early childhood professional development. In M. Zaslow & I. Martinez-Beck (Eds.), *Critical issues in early childhood professional development* (pp. 1-16). Baltimore, MD: Brookes Publishing.
- Maxwell, K. L., McWilliam, R. A., Hemmeter, M. L., Ault, M. J., & Schuster, J.W. (2001). Predictors of developmentally appropriate classroom practices in kindergarten through third grade. *Early Childhood Research Quarterly, 16*, 421-452.

- McMullen, M. B., & Alat, K. (2002). Education matters in the nurturing of the beliefs of early childhood professionals. *Early Childhood Research and Practice, 4*(2). Retrieved from <http://ecrp.uiuc.edu/v4n2/index.html>
- McMullen, M. B., Elicker, J., Goetze, G., Huang, H., Lee, S. Mathers, C., . . . Yang, H. (2006). Using collaborative assessment to examine the relationship between self-reported beliefs and the documentable practices of preschool teachers. *Early Childhood Education Journal, 34*(1), 81-91.
- Miller, J. A. & Bogatova, T. (2009). Quality improvements in the early care and education workforce: Outcomes and impact of the T.E.A.C.H. Early Childhood Project. *Evaluation and Program Planning, 32*, 257–277.
- National Association of Child Care Resource & Referral Agencies (NACCRRA). (2009). *We can do better: 2009 update: NACCRRA's ranking of state child care center standards and oversight*. Retrieved from http://www.naccrra.org/publications/naccrra-publications/publications/We%20Can%20Better%202009_MECH-screen.pdf
- National Association of Child Care Resource & Referral Agencies (NACCRRA). (2010). *Leaving children to chance: 2010 update: NACCRRA's ranking of state standards and oversight of small family child care homes*. Retrieved from <http://www.naccrra.org/publications/naccrra-publications/leaving-children-to-chance-2010.php>
- National Survey of America's Families. (2002). *Assessing the new federalism*. Washington, DC: National Academy Press.

- NICHD Early Child Care Research Network. (1996). Characteristics of infant child care: Factors contributing to positive caregiving. *Early Childhood Research Quarterly, 11*, 269–306.
- NICHD Early Child Care Research Network. (1998). Early child care and self-control, compliance, and problem behavior at twenty-four and thirty-six months. *Child Development, 69*, 1145–1170.
- NICHD Early Child Care Research Network. (1999). Child outcomes when child care center classes meet recommended standards for quality. *American Journal of Public Health, 89*, 1072–1077.
- NICHD Early Child Care Research Network. (2000). The relation of child care to cognitive and language development. *Child Development, 71*, 960–980.
- NICHD Early Child Care Research Network. (2001). Child care and children's peer interaction at 24 and 36 months: The NICHD study of early child care. *Child Development, 72*, 1478–1500.
- NICHD Early Child Care Research Network. (2002). Child care structure → process → outcome: Direct and indirect effects of child-care quality on young children's development. *Psychological Science, 13*, 199–206.
- NICHD Early Child Care Research Network. (2003). Does amount of time spent in child care predict socioemotional adjustment during the transition to kindergarten? *Child Development, 74*, 976–1005.
- Peisner-Feinberg, E., Bernier, K., Bryant, D., & Maxwell, K. (2000). *Family child care in North Carolina*. Chapel Hill: University of North Carolina, FPG Child Development Center.

- Peisner-Feinberg, E. S. & Burchinal, M. R. (1997). Relations between preschool children's child care experiences and concurrent development: The cost, quality, and outcomes study. *Merrill-Palmer Quarterly*, *43*, 451–477.
- Peisner-Feinberg, E. S., Burchinal, M. R., Clifford, R. M., Culkin, M. L., Howes, C., Kagan, S. L., & Yazejian, N. (2001). The relation of preschool child-care quality to children's cognitive and social developmental to children's cognitive and social developmental trajectories through second grade. *Child Development*, *72*(5), 1534-1553.
- Phillips, D.A., Mekos, M., Scarr, S., McCartney, K., & Abbott-Shim, M. (2000). Within and beyond the classroom door: Assessing quality in child care centers. *Early Childhood Research Quarterly*, *15*, 475–496.
- Phillipsen, L. C., Burchinal, M., Howes, C., & Cryer, D. (1997). The prediction of process quality from structural features of child care. *Early Childhood Research Quarterly*, *12*, 281–303.
- Raikes, H. A., Raikes, H. H., & Wilcox, B. (2005). Regulation, subsidy receipt, and provider characteristics: What predicts quality in child care homes? *Early Childhood Research Quarterly*, *20*(2), 164-184.
- Scarr, S., Eisenberg, M., Deater-Deckard, K. (1994). Measurement of quality in child care centers. *Early Childhood Research Quarterly*, *9*, 131-151.
- Schaefer, E. S., & Edgerton, M. (1985). Parental and child correlates of parental modernity. In I. Sigel (Ed.), *Parental belief systems: The psychological consequences for children* (pp. 287-317). Hillsdale, NJ: Erlbaum.

- Sylva, K., Siraj-Blatchford, I., & Taggart, B. (2003). *Assessing quality in the early years: Early Childhood Environment Rating Scale-Extension (ECERS-E): Four curricular subscales*. Stoke-on Trent: Trentham Books.
- Todd, C. M., & Deery-Schmitt, D. M. (1996). Factors affecting turnover among family child care providers: A longitudinal study. *Early Childhood Research Quarterly, 11*(3), 351-376.
- U.S. Census Bureau. (2002). *Who's minding the kids? Child care arrangements: Winter 2002*. Retrieved from <http://www.census.gov/prod/2005pubs/p70-101.pdf>
- Weaver, R. H. (2002). Predictors of quality and commitment in family child care: Provider education, personal resources, and support. *Early Education and Development, 13*(3), 265-282.
- Wesley, P. (1994). Providing on-site consultation to promote quality in integrated child care programs. *Journal of Early Intervention, 18*, 391-402.
- Whitebook, M., Howes, C., & Phillips, D. (1989). *Who cares? Child care teachers and the quality of care in America. Final report of the National Child Care Staffing Study*. Oakland, CA: Child Care Employee Project.
- Zigler, E.F., & Gilman, E. (1996). Not just any care: Shaping a coherent child care policy. In E. F. Zigler, S.L. Kagan, & N.W. Hall (Eds.), *Children, families, and government: Preparing for the twenty-first century* (pp.94-116). Cambridge: Cambridge University Press.

Table 3.1

Family Child Care Provider Characteristics and Beliefs

	<i>M</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>
Structural Characteristics				
Education in years (<i>N</i> = 333)	13.19	1.56	8.00	16.00
Education level				
Less than high school (%)	3.50			
High school (%)	57.10			
Some college or technical degree (%)	3.20			
Associate's degree (%)	16.60			
BA or more (%)	16.60			
CDA (<i>N</i> = 312; %)	7.37	.26		
Of A.A.s, % in ECE or education (<i>N</i> = 318; %)	23.90	42.7		
Professional development training hrs. (<i>N</i> = 277)	29.75	33.61	.00	426.00
< 10 hours of training in past 2 years (%)	15.5			
11 – 20 hours of Training in past 2 years (%)	16.9			
21 – 30 hours of Training in past 2 years (%)	23.3			
> 30 hours of Training in past 2 years (%)	25.1			
Currently taking college courses (%)	7.37	26.17		
Years experience in child care (<i>N</i> = 330)	9.49	8.78	.00	37.00

Table 3.1 Continued

	<i>M</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>
Beliefs Variables (all scales = 1 – 5)				
Modernity Total score (<i>N</i> = 332)	3.31	.58	1.50	4.88
Modernity Progressiveness (<i>N</i> = 332)	4.08	.51	2.25	5.00
Modernity Traditional (<i>N</i> = 332)	2.94	.74	1.00	4.83
Teacher Beliefs Scale (TBS) - FACES adaptation, Total score (<i>N</i> = 218)	3.52	.49	1.78	5.00
Kontos Total score (<i>N</i> = 337)	4.04	.47	2.69	5.00
Kontos Professional Motivation (<i>N</i> = 332)	4.24	.51	1.43	5.00
Kontos Dissatisfaction (<i>N</i> = 332)	2.02	.73	1.00	4.00
CCW-JSI Total score (<i>N</i> = 332)	2.34	.44	1.19	3.57
CCW-JSI Job Demands (<i>N</i> = 332)	2.69	.62	1.00	4.50
CCW-JSI Job Specific Demands (<i>N</i> = 332)	2.67	.59	1.00	4.40
CCW-JSI Job Resources (<i>N</i> = 332)	4.18	.66	2.20	5.00
CCW-JSI Job Control (<i>N</i> = 332)	3.89	.68	1.60	5.00

Table 3.2

Family Child Care Program Characteristics and Quality

	<i>M</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>
Program Descriptives				
Type of area where care is provided, (<i>N</i> = 324, %)				
Rural, small, or medium Town (0-50,000 pop.; %)	50.10			
Large town, urban, or suburban (\geq 50,001 pop.; %)	44.30			
Observed group size, mean (<i>N</i> = 341)	5.22	2.31	1.00	17.00
Number of children enrolled (<i>N</i> = 334)	6.78	3.11	1.00	26.00
Child per adult ratio (<i>N</i> = 340)	4.41	1.88	.50	12.00
Hours of program operation each week (<i>N</i> = 332)	67.69	32.74	14.00	168.00
Program Composition				
% girls enrolled in home	46.65	22.65	.00	100.00
% children w/ family income < \$30,000 (<i>N</i> = 285; %)	32.75	36.36	.00	100.00
% children receiving subsidy (<i>N</i> = 324; %)	19.06	28.72	.00	100.00
% children with an IEP or IFSP (<i>N</i> = 327; %)	2.34	6.60	.00	50.00
% parents w/ limited English prof. (<i>N</i> = 330; %)	1.43	7.16	.00	83.33
% caring for their own children (<i>N</i> = 334; %)	38.90			
Support Received				
Has paid assistant (<i>N</i> = 333; %)	23.72	42.60		
Has unpaid assistant (<i>N</i> = 333; %)	3.44	4.76		
Participates in CACFP ^a (<i>N</i> = 326; %)	7.67	4.23		
Received quality enhancement grant (<i>N</i> = 113; %)	2.39	4.28		

Table 3.2 Continued

	<i>M</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>
Family home accredited by NAFCC ^b (<i>N</i> = 305; %)	5.25	2.23		
Process Quality Variables (FDCRS & ECERS-E scale =				
FDCRS Total score (<i>N</i> = 342)	3.20	.82	1.41	6.48
FDCRS Teaching & Interaction (<i>N</i> = 342)	3.23	1.01	1.23	6.79
FDCRS Tone & Discipline (<i>N</i> = 342)	3.81	1.07	1.56	7.00
FDCRS Provisions/Health (<i>N</i> = 342)	2.75	.87	1.09	6.20
ECERS-E, Overall score (<i>N</i> = 334)	1.90	.67	1.09	5.27
ECERS-E, Literacy (<i>N</i> = 334)	2.35	.85	1.00	6.17
ECERS-E, Numeracy (<i>N</i> = 334)	1.44	.69	1.00	4.75
ECERS-E, Individualizing (<i>N</i> = 332)	1.07	.45	1.00	5.00
CIS, Total score (<i>N</i> = 342)	3.33	.36	2.04	4.00
CIS, Permissiveness (<i>N</i> = 340)	1.61	.55	1.00	3.67
CIS, Detachment (<i>N</i> = 342)	1.48	.48	1.00	3.50
CIS, Sensitivity (<i>N</i> = 341)	2.89	.58	1.30	4.00
CIS, Harshness (<i>N</i> = 342)	1.28	.38	1.00	3.44

Note. ^a CACFP = Child and Adult Care Food Program

^b NAFCC = National Association of Family Child Care Providers

Table 3.3

Intercorrelations for Beliefs Variables Only

	1	2	3	4	5	6	7	8	9	10	11
1. Modernity Total	--										
2. Modernity Traditional	-.97	--									
3. Modernity Progressive	.34	-.12	--								
4. TBS, FACES version	.59	-.54	.31	--							
5. Kontos Total	-.09	.13	.13	.20	--						
6. Kontos Professional Motivation	-.07	.11	.17	.14	.83	--					
7. Kontos Dissatisfaction	-.02	.02	-.01	-.23	-.66	-.27	--				
8. CCW-JSI Total Stress	-.04	.02	-.08	-.18	-.40	-.24	.32	--			
9. CCW-JSI Job Demands	-.12	.11	-.06	-.03	-.08	.03	.17	.69	--		
10. CCW-JSI Job Specific Demands	.07	-.06	.03	-.15	-.34	-.16	.35	.64	.35	--	
11. CCW-JSI Job Rewards	-.04	.06	.04	.09	.50	.44	-.26	-.69	-.21	-.22	--
12. CCW-JSI Job Control	.09	-.06	.15	.24	.18	.10	-.12	-.75	-.32	-.28	.47

Note. **Bolded** = $p < .05$

Table 3.4

Intercorrelations for Structural, Beliefs, and Process Quality Variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Education	--													
2. A.A. in ECE	.11	--												
3. Training	.06	.24	--											
4. Experience	-.09	.17	.20	--										
5. Ratio	.09	-.14	-.04	.03	--									
6. Modernity Total	.19	.10	-.06	.06	.03	--								
7. TBS Total	.13	.26	.15	.27	.02	.60	--							
8. Kontos Total	-.10	.16	.18	.40	-.12	-.06	.26	--						
9. Stress, Total	-.08	-.10	-.20	-.21	.01	-.04	-.26	-.39	--					
10. FDCRS Total	.23	.32	.23	.22	.02	.25	.30	.20	-.19	--				
11. FDCRS Teach. & Int.	.18	.29	.20	.28	.04	.22	.31	.21	-.15	.93	--			
12. FDCRS Tone & Dis.	.24	.27	.13	.14	.07	.31	.31	.12	-.20	.88	.80	--		
13. FDCRS Prov. Learn/Health	.21	.26	.24	.14	.02	.16	.27	.13	-.10	.86	.67	.68	--	
14. ECERS-E, Total	.17	.25	.21	.39	.02	.18	.30	.21	-.20	.75	.79	.70	.57	--
15. CIS, Total	.12	.06	.12	.09	-.12	.19	.26	.13	-.22	.46	.36	.59	.33	.33

Note. **Bolded** = $p < .05$

Table 3.5

Univariate Effects for the Multivariate OLS Regression Model with State and Structural Characteristics as Predictors and FDCRS Scales and ECERS-E as Outcomes

Source	FDCRS Total	FDCRS Factor 1 Teach & Inter.	FDCRS Factor 2 Tone & Discipline	FDCRS Factor 3 Provisions/Health	ECERS-E Total
State	$F = 11.64^{***}$	$F = 2.02$	$F = 13.00^{***}$	$F = 30.03^{***}$	$F = .68$
Education	.11 (1.80)	.02 (.34)	.13 (2.17)*	.16 (2.68)**	.04 (.72)
A.A. in ECE	.17 (2.84)**	.20 (3.23)***	.13 (2.08)*	.10 (1.56)	.16 (2.57)**
Prof. Development Hours					
11 – 20 vs. ≤ 10	.09 (1.27)	.13 (1.78)	.03 (.36)	.08 (1.02)	.18 (2.45)*
21 – 30 vs. ≤ 10	.15 (1.98)*	.15 (1.98)*	.08 (1.04)	.10 (1.23)	.13 (1.69)
≥ 30 vs. ≤ 10	.28 (3.63)***	.26 (3.38)***	.18 (2.33)*	.25 (3.23)***	.31 (4.01)***
Years Experience in EC	.18 (3.02)**	.30 (5.02)***	.15 (2.47)**	.03 (.48)	.32 (5.31)***
Child per Adult Ratio	-.12 (-1.92)	-.05 (-.85)	-.17 (-2.65)**	-.10 (-1.51)	-.07 (-1.12)
Model F	7.80 (8, 252)*** $R^2 = .20,$ $\Delta R^2 = .16$ $\Delta F = 6.98^{***}$	8.36 (8, 252)*** $R^2 = .21,$ $\Delta R^2 = .20$ $\Delta F = 9.20^{***}$	6.23 (8, 252)*** $R^2 = .17,$ $\Delta R^2 = .12$ $\Delta F = 5.06^{***}$	7.54 (8, 252)*** $R^2 = .19,$ $\Delta R^2 = .09$ $\Delta F = 3.98^{***}$	8.92 (8, 246)*** $R^2 = .23,$ $\Delta R^2 = .22$ $\Delta F = 10.08^{***}$

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. For each equation the standardized Beta (t -value) are reported.

Table 3.6

Univariate Effects for the Multivariate OLS Regression Model with State and Structural Characteristics of Family Child Care Providers and Their Programs on CIS Total Mean and Subscales

Source	CIS Total	CIS, Permissiveness	CIS, Detachment	CIS, Sensitivity	CIS, Harshness
State	$F = 1.65$	$F = 5.68^*$	$F = .32$	$F = .04$	$F = 9.11^{**}$
Education	.09 (1.40)	-.03 (-.47)	.01 (.09)	.07 (1.12)	-.11 (-1.78)
A.A. in ECE	.04 (.65)	.07 (1.10)	-.06 (-.96)	.12 (1.82)	.08 (1.16)
Prof. Development Hours					
11 – 20 vs. ≤ 10	.02 (.26)	-.20 (-.25)	-.06 (-.92)	-.01 (-.10)	.01 (.06)
21 – 30 vs. ≤ 10	.01 (.07)	-.05 (-.56)	-.13 (-1.55)	-.02 (-.28)	.06 (.73)
≥30 vs. ≤ 10	.12 (1.43)	.05 (.65)	-.21 (-2.42)*	.12 (1.45)	-.04 (-.51)
Years Experience in EC	-.08 (-1.21)	.07 (1.09)	.05 (.70)	.20 (3.13)**	-.01 (-.13)
Child per Adult Ratio	-.08 (-1.21)	.05 (.66)	.11 (1.55)	-.04 (-.53)	.08 (1.15)
Model F	1.59 (8, 252) $R^2 = .05$, $\Delta R^2 = .04$ $\Delta F = 1.58$	1.58 (8, 250) $R^2 = .05$, $\Delta R^2 = .03$ $\Delta F = 1.00$	1.14 (8, 252) $R^2 = .04$, $\Delta R^2 = .03$ $\Delta F = 1.25$	3.44 (8, 251)*** $R^2 = .10$, $\Delta R^2 = .10$ $\Delta F = 3.93^{***}$	1.90 (8, 252) $R^2 = .06$, $\Delta R^2 = .02$ $\Delta F = .88$

Note: * $p < .05$, ** $p < .01$, *** $p < .001$. For each equation the standardized Beta (t -value) are reported.

Table 3.7

Univariate Effects for the Multivariate OLS Regression Model with State and Beliefs Variables as Predictors and FDCRS Total Mean, FDCRS Factors, and ECERS-E Total Mean as Outcomes

Source	FDCRS Total	FDCRS Factor 1 Teach & Inter.	FDCRS Factor 2 Tone & Discipline	FDCRS Factor 3 Provisions/Health	ECERS-E Total
State	$F = 11.67^{***}$	$F = 6.33^{**}$	$F = 8.74^{**}$	$F = 17.55^{***}$	$F = 1.21$
Modernity Total	.16 (2.07)*	.11 (1.45)	.25 (3.09)**	.12 (1.54)	.06 (.66)
TBS (FACES), Total	.22 (2.72)**	.27 (3.33)***	.13 (1.55)	.13 (1.59)	.24 (2.78)**
Kontos Total	.11 (1.57)	.11 (1.50)	.05 (.73)	.11 (1.48)	.12 (1.60)
CCW-JSI Job Stress Total	-.17 (-2.50)**	-.11 (-1.68)	-.18 (-2.70)**	-.13 (-1.89)	-.13 (-1.80)
Model F	13.05 (5, 211)*** $R^2 = .24,$ $\Delta R^2 = .19$ $\Delta F = 12.75^{***}$	10.79 (5, 211)*** $R^2 = .20,$ $\Delta R^2 = .18$ $\Delta F = 11.59^{***}$	10.80 (5, 211)*** $R^2 = .20,$ $\Delta R^2 = .17$ $\Delta F = 10.91^{***}$	8.95 (5, 211)*** $R^2 = .18,$ $\Delta R^2 = .10$ $\Delta F = 6.36^{***}$	6.77 (5, 204)*** $R^2 = .38,$ $\Delta R^2 = .14$ $\Delta F = 8.12^{***}$

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. For each equation the standardized Beta (t -value) are reported.

Table 3.8

Univariate Effects for the Multivariate OLS Regression Model with State and Beliefs Variables as Predictors and CIS Total Mean and Subscales as Outcomes

Source	CIS Total	CIS, Permissiveness	CIS, Detachment	CIS, Sensitivity	CIS, Harshness
State	$F = 1.31$	$F = 9.51^{**}$	$F = 1.05$	$F = .00$	$F = 4.82^*$
Modernity Total	.07 (.88)	.04 (.44)	-.03 (-.35)	.08 (.93)	-.07 (-.86)
TBS (FACES), Total	.19 (2.17)*	.04 (.51)	-.14 (-1.59)	.23 (2.71)**	-.09 (-1.03)
Kontos Total	-.12 (-.16)	.11 (1.48)	.00 (-.06)	.02 (.33)	.03 (.34)
CCW-JSI Job Stress	-.17 (-2.34)*	-.01 (-.19)	.08 (1.04)	-.20 (-2.88)**	.09 (1.27)
Total					
Model F	4.69 (5, 211)*** $R^2 = .10,$ $\Delta R^2 = .09$ $\Delta F = 5.50^{***}$	2.83 (5, 210)* $R^2 = .06,$ $\Delta R^2 = .02$ $\Delta F = 1.15$	1.82 (5, 211) $R^2 = .04,$ $\Delta R^2 = .04$ $\Delta F = 2.00$	6.95 (5, 211)*** $R^2 = .14,$ $\Delta R^2 = .14$ $\Delta F = 8.68^{***}$	2.40 (5, 211)* $R^2 = .05,$ $\Delta R^2 = .03$ $\Delta F = 1.78$

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. For each equation the standardized Beta (t -value) are reported.

CHAPTER IV: FAMILY CHILD CARE PROVIDERS BELIEFS AND PROGRAM
QUALITY: A LONGITUDINAL STUDY INVESTIGATING THE ROLE OF
CONSULTATION

A paper to be submitted to *Early Childhood Research Quarterly*

Amanda Stein, Kere Hughes-Belding, and Susan Hegland

Abstract

Considering the large numbers of young children being cared for in family child care programs and acknowledging the general lack of regulations and supports for these home-based providers, an examination of factors influencing quality and an evaluation of an intervention designed to improve quality in these settings is imperative. The present study describes the impact of an intensive model of on-site consultation aimed at improving quality through the use of quality assessment tools and individualized action plans in family child care homes as part of the Quality Interventions in Early Care and Education (QUINCE) study. Specifically this study examines the relations of structural indicators often associated with quality, providers' beliefs about best practices with young children and beliefs about professional motivation, job-related stress, and the impact of participation in the Partnerships for Inclusion (PFI) model of consultation to observed quality both immediately after completing consultation and in sustained change (six months later). Interviews were used to gather data about provider beliefs and program structural characteristics. In addition, observational data about global process quality and the quality of adult-child interactions were collected in a sample of 343 home-based family child care programs in five states. Included in this sample were "control" family child care providers receiving the "business as usual" model of supports and services available in their community.

Multiple hierarchical linear regression analyses were used to examine the contribution of structural characteristics and providers' beliefs to predicting changes in observed quality over the course of working with a consultant after controlling for treatment group, the state in which the program operated, and baseline assessments of quality. Overall, participation in PFI consultation was related to improved ratings of program quality both immediately following the completion of consultation and six months later compared to providers receiving the "typical" support services from their community resource and referral agencies. Findings indicated mixed results for the influence of structural characteristics on changes in program quality. Results of this study also suggest that having lower levels of job dissatisfaction and stress was related to both immediate and sustained changes in quality and provided additional prediction of process quality for family child care homes above the prediction from structural characteristics. Implications for practitioners and future quality enhancement efforts and research are discussed.

Introduction

Quality of early child care is a significant focus of practitioners, parents, researchers, and social policies. Underpinning this focus on quality is solid evidence that key structural and process features of high quality early care can produce dramatic benefits for children's developmental outcomes (e.g., NICHD Early Childhood Research Network, 1996, 1998, 1999, 2000, 2001, 2002, 2003; Peisner-Feinberg & Burchinal, 1997; Peisner-Feinberg, et al., 2001; Phillips, Mekos, Scarr, McCartney, & Abbott-Shim, 2000). Compared to center-based care, much less is known about factors influencing quality in family child care (e.g., Burchinal, Howes, & Kontos, 2002; Clarke-Stewart, Vandell, Burchinal, O' Brien, & McCartney, 2002). Additionally, aside from features of care that are more easily translated

into regulations, relatively little research examines other factors that might impact child care quality, namely practitioners' beliefs. Furthermore, there is a dearth of information, research, and intervention efforts aimed at improving the quality of family child care in particular.

A Closer Look at Family Child Care

Overall, the number of young children participating in non-parental child care arrangements continues to grow as the number of dual-income families and working single parents steadily increases (National Survey of America's Families, 2002). Current estimates from the U.S. Census Bureau (2002) indicate that around 63% of children under the age of five are participating in some type of nonmaternal child care for an average of 32 hours per week. Furthermore, an examination of data from the 2001 Survey of Income and Program Participation revealed that 13.7% of all working mothers in the United States utilized a home-based, family child care provider (e.g., other than a relative) as their primary child care arrangement for their child (ren) younger than age six (Boushey & Wright, 2004). This proportion of use increases to 18.0% for families where the mother works between 30 – 39 hours per week (Boushey & Wright, 2004). Additionally, children under the age of two are more likely to be cared for in family child care than in center-based programs (Zigler & Gilman, 1996). However, relatively few of these family child care homes are regulated by state level authorities (Galinsky, Howes, Kontos, & Shinn, 1994).

In recent years considerable investments have been made toward increasing the availability and accessibility of child care programs and quality enhancement efforts (e.g., Quality Rating and Improvement Systems; QRIS) involving professional development training, support, and technical assistance with the goal of generating improvements in the overall quality of care and education. However, fewer of these efforts have been directed

towards family child care providers and settings (e.g., only 17 states currently include family child care in their state-wide QRIS) and the standards and requirements of are often less stringent when compared to center-based programs (NACCRRA, 2010). In fact, one study investigating states' regulations and standards for family child care and reporting a ranking for all states found that the regulatory systems in only four states were requiring programs to meet the minimal requirements needed to ensure that children are in family child care that safeguards their health and safety and promotes development and learning (NACCRRA, 2010). Although some states are making attempts to regulate home-based programs in some way, most family child care continues to operate "invisibly" or outside the realm of regulations and monitoring. Despite this variability, there is some evidence that family child care homes that are licensed provide higher quality and more sensitive care compared to unlicensed programs (Burchinal, Howes, & Kontos, 2002). However, in a large sample of child care homes in nine states, licensing status was not predictive of quality (Clarke-Stewart et al., 2002). Clarke-Stewart and associates (2002) speculated that the lack of effect of licensing status could be "masked" by collinearity between having a licensed program and those factors that are often regulated by licensing bodies (e.g., training, education, group size, etc.). Furthermore, due to a wide variation in state level regulations, monitoring systems, and priority given to funding quality enhancement and support efforts targeting home-based family child care, investigations of child care quality sampling programs in multiple states should account for these likely influential state-level variations.

Lower levels of regulations and fewer efforts aimed at providing training, support, or technical assistance to home-based child care providers is a major concern. Specifically, many investigations have indicated that a majority of early childhood program settings are

rated as providing mediocre or low quality care (e.g., Bryant, Burchinal, Lau, & Sparling, 1994; Hegland & Oesterreich, 2005; Helburn, 1995; Kontos, Howes, Shinn & Galinsky, 1995; Whitebook, Howes, & Phillips, 1989). Children experiencing poor quality care are less likely to demonstrate significant developmental gains. Thus poor quality care compromises children's school readiness and may place them at further developmental risk or threaten their health and safety (Peisner-Feinberg et al., 2001). These associations between children's outcomes and quality of early child care experiences have remained even after statistically controlling for child and family factors (e.g., socioeconomic status, gender, and race/ethnicity) known to be linked to children's developmental outcomes and child care quality (Burchinal, Roberts, Riggins, Zeisel, Neebe, & Bryant, 2000; Howes, Phillips, & Whitebook, 1992; NICHD Early Childhood Research Network, 1999, 2000; Peisner-Feinberg & Burchinal, 1997; Peisner-Feinberg, et al., 2001). It is increasingly clear that child care quality makes a difference in children's development and therefore important to identify what variables are most likely to improve quality in family child care settings, especially when taking into account the large numbers of children enrolled in this type of care and the potential impact on their development.

In relation to findings that link that quality of early care to children's outcomes, there has been an increased interest in factors related to high quality early programming as well as increased investments in quality enhancement initiatives and the professional development and support of the early child care workforce (Martinez-Beck & Zaslow, 2006). The identification of structural aspects, beliefs of the early child care workforce, and effective interventions related to improved quality in family child care must become a major focus of parental concern, early childhood professionals, public policy and legislation, and research in

the field of child development. This is particularly crucial considering the prevalence of low quality care and the fact that family child care is the most prevalent out-of-home care arrangement for the most vulnerable populations, including children under three years of age (NCES, 1996) and children from low income households (Coley, Chase-Lansdale, & Li-Grining, 2001).

Quality in Family Child Care

Various aspects of the child care environment have been linked both conceptually and empirically to observed process quality. Those structural characteristics of child care programs that are typically examined in relation to quality include the number of children in the setting, the ratio of children to adults, and provider characteristics such as education, training, and experience. In comparison, process components of the early childhood setting incorporate those aspects of the environment most readily experienced by children including their interactions with care providers and peers, as well interactions with and availability of materials and activities within the program. Such process-related characteristics of child care programs have been shown to be related to various structural dimensions of child care such as provider qualifications, child:adult ratios, staffs' wages, parents' fees, and other easily measurable and often-regulated indicators of quality (Burchinal, Cryer, & Clifford, 2002; Phillips et al., 2000; Phillipsen, Burchinal, Howes, & Cryer, 1997). It is therefore assumed that structural components of early care settings comprise basic inputs that increase the likelihood that child care programs and providers will provide safe, responsive, and developmentally appropriate caregiving that characterizes high quality child care environments (Peisner-Feinberg & Burchinal, 1997; Phillips et al., 2000). Previous research has further defined process quality in child care programs in terms of the care providers'

behavior and interactions (Arnett, 1989) or in terms of more global indicators observed in the physical and social environment (Harms & Clifford, 1989).

Education and training related to quality. Research indicates that among family child care programs teacher education and training predict process quality (Burchinal, Howes, & Kontos, 2002; Clarke-Stewart et al., 2002; Doherty, Forer, Lero, Goelman, & LaGrange, 2006; Kontos et al., 1995). Evidence further indicates that specialized professional development training in child care or early child development is significantly predictive of the quality of care and education being offered (Burchinal, Cryer, & Clifford, 2002, Clarke-Stewart et al., 2002, et al., 1995, NICHD Early Child Care Research Network, 2000, 2002, Raikes, Raikes, & Wilcox, 2005) and of more sensitive caregiving and teaching (Kontos et al., 1995; Kontos, Howes, & Galinsky, 1996) when compared to providers trained in other disciplines. For example, the NICHD Study of Early Child Care followed over 1000 children to explore the effects of participating in child care programs after adjusting for the influence of child, family, and home variables (NICHD Early Child Care Research Network, 2001, 2002, 2003). In a sample combining data from child care centers and home-based programs, mediated paths were found from caregiver training through observed process quality to children's cognitive and social competence (NICHD Early Child Care Research Network, 2002). However, in a smaller sample of only regulated family child care providers, family child care training was not found to be predictive of quality (Doherty et al., 2006). However, training was defined more stringently in this study as the completion of a structured, post-secondary training, specific to the provision of family child care. In considering quantity and longevity of training, Norris (2001) found that family child care providers who continuously participated in training offered higher quality care than providers

who attended training intermittently or never participated in training. In addition, the completion of more recent training (i.e., within the year) and higher levels of child-related training was a predictor of family child care providers offering a richer learning environment and more sensitive caregiving (Clarke-Stewart et al., 2002). However, a limitation of earlier research is that there is not a clear differentiation between level of education (e.g., high school, bachelor's, etc.), type of educational background (e.g., degree program), and specialized "in-service" trainings related to child care.

Group size and ratio related to quality. In contrast to more consistent findings linking caregiver education and training to higher quality care, the ratio of children to adults or total group size has not been a consistent predictor of program quality in family child care settings. In some investigations, such as the NICHD Study of Early Child Care, group size was the strongest single predictor of positive home-based care provider behavior (Clarke-Stewart, Gruber, & Fitzgerald, 1994). This link between the number of children in a program and the quality of care being provided has not always been found (Clarke-Stewart et al., 2002; Burchinal, Howes, & Kontos, 2002; Kontos, Hsu, & Dunn, 1994). In fact, research from the Family and Relative Care Study (Kontos et al., 1995) found the opposite to be true; family child care providers caring for more children received higher scores on a measure of global quality than providers caring for fewer children. One possible explanation for this discrepancy in study findings could be that a relationship between the number of children a provider chooses to care for is related to the provider's level of applicable training, motivation, or commitment to the profession of child care. However these factors were not controlled for in the statistical analyses of group size on quality (Kontos et al., 1995).

Caregiver experience related to quality. The amount of time that a caregiver has spent caring for children is another variable that has been found to have varying and inconsistent relationships to program quality. Some studies have failed to find a link between experience in child care and quality (Bordin, Machida, & Varnell, 2000, Clarke-Stewart et al., 2002). In other investigations of family child care, experience has been negatively associated with quality. For example, in a secondary analysis of over 200 child care homes from the Relative and Family Child Care Study and the California Licensing Study, more provider experience in the early childhood field was related to lower scores on the Family Day Care Rating Scale (FDCRS; Harms & Clifford, 1989) and more detachment (Burchinal, Howes, & Kontos, 2002). Similarly, Galinsky and colleagues (1994) reported that experienced providers had more detached and harsher interactions with children in their care and were less likely to have participated in professional development training than less experienced providers.

Child care provider beliefs and quality.

Beliefs about best practices. A thorough examination of quality in family child care should therefore, move beyond investigating the role of commonly examined, yet valuable, structural components of care, to move towards a better understanding of the role early child care providers' beliefs as well. Research has found a link between providers' beliefs about best practices when working with young children and process quality (Charlesworth, Hart, Burts, & Hernandez, 1991; Charlesworth, Hart, Burts, Thomasson, Mosley, & Fleege, 1993; Maxwell, McWilliam, Hemmeter, Ault, & Schuster, 2001; McMullen et al., 2006). In addition, findings have indicated a positive relationship between family child care providers' beliefs about job motivation and intentionality (Doherty et al., 2006). Thus early childhood

educators' beliefs have implications for the quality of care being provided and children's daily experiences.

Another set of beliefs regarding children that has been measured are beliefs about child-rearing practices. Measures originally designed to assess parents' attitudes about raising children in terms of being more traditional compared to more progressive beliefs were later applied to early child care providers. Namely, family child care providers who reported holding more authoritative, child-centered beliefs initiated more stimulating environments, more educational opportunities, and higher quality caregiving for children (Clarke-Stewart et al., 2002). However research using data from the NICHD Study of Early Child Care found that the beliefs of center teachers were more child-centered and less didactic, or teacher-directed, than were the beliefs of family child care providers (Dowsett, Huston, Imes, & Gennetian, 2008). Such findings about family child care providers' beliefs about best practices and attitudes when working with young children have potential implications for their interactions with children in their care.

Beliefs about job-related motivation and stress. In the Family Child Care and Relative Study, family child care providers who were more motivated and committed to providing care for children tended to offer higher quality care (Kontos et al., 1995). Concerns about the extent to which family child care supports and enhances children's development and opinions on how to best influence the quality of care being offered in these programs continue to be expressed (Bordin et al., 2000; Clarke-Stewart et al., 2002, Doherty et al., 2006). These concerns combined with the large number of children in family child care settings underlies the importance of understanding contributors to family child care quality and how intervention may potentially affect factors influencing child care quality.

These findings highlight the need for a thorough examination of factors associated with the quality of family child care settings and the effectiveness of targeted quality enhancement efforts.

Intervention or Evaluation Research Related to Child Care Quality

Beyond examining the relationship of structural characteristics at the program and provider level to process quality as it currently exists, little effort has been made to improve quality and evaluate those quality improvement efforts in family child care settings beyond identifying the impact of requirements and regulations for licensing which is oftentimes insufficiently monitored. Furthermore, very little research has investigated the impact of intervention or professional development efforts on the beliefs of individuals working in child care. One program designed to address the low levels of education, poor compensation, and high rates of turnover in the early childhood workforce that is currently underway in some capacity in 21 states is the Teacher Education and Compensation Help (T.E.A.C.H.) Early Childhood Project. This project gives scholarships to child care workers to complete coursework in early childhood education and increase their compensation. Evaluation studies have investigated the impact of the T.E.A.C.H. program on the quality of care being provided as well as the beliefs of participants and found that teachers in the scholarship program reported more developmentally appropriate beliefs, as measured by the Teacher Beliefs Scale, and made significant gains on measures rating global quality in the classroom (Cassidy, Buell, Pugh-Hoese, & Russell, 1995).

Further evaluation of the T.E.A.C.H. program, investigated the quality of care being provided, as well as beliefs about developmentally appropriate practice via the Teachers Beliefs Scale and attitudes about their work environment, professional motivation, and job

satisfaction of scholarship recipients over the course of a five year period (Miller & Bogatova, 2009). Those teachers who agreed to be in the study and completed the requirements of their T.E.A.C.H. contract, they demonstrated a significant increase in developmentally appropriate beliefs and a significant decrease in developmentally inappropriate beliefs as measured by the Teacher Beliefs Scale. However, participants did demonstrate a decrease in participation in “professional orientation” activities (Professional Activities Questionnaire; Bloom, 1989) such as attending conferences and workshops or reading publications. A possible explanation for this decrease in professionally oriented behaviors by program participants was simply due to time constraints considering the fact that most of them were working full time and all of them were in school. Additionally, program participants experienced a decrease in Job Satisfaction as measured by the Job Satisfaction Questionnaire (Bloom, 1988; Bloom, Sheerer, & Britz, 1991), including satisfaction with supervisors, coworkers, and working conditions. The dissatisfaction of these scholarship recipients with factors related to their job could potentially be a byproduct of their participation in higher educational attainment, which could come with a widening gap between what is expected in their work and is actually experienced. The authors describe a need for more ongoing classroom support and one-on-one consultation to aid teachers in putting into practice what they are learning (Miller & Bogatova, 2009).

While evaluation studies of the T.E.A.C.H. program describes an education-focused effort to improve the knowledge and skills of individuals in the early education workforce, these scholarship recipients only worked in center-based settings. Concerted endeavors and evaluations of these efforts to improve the skills, knowledge, beliefs, and/or qualifications of individuals providing home-based family child care are lacking. One study looked at the

impact of a training program entitled Family-to-Family implemented in three states in a sample of 112 regulated providers (Kontos et al., 1996). This training varied by location, ranged between 15 – 25 hours of class time, and in some instances involved a home visit (Kontos et al., 1996). Observed quality was measured prior to training and six months after beginning the training (Kontos et al., 1996). Results indicated that family child care providers who participated in the Family-to-Family model of training demonstrated improved scores on the FDCRS global measure of quality, but not improved adult-child interactions as measured by the CIS and Adult Involvement Scale (AIS; Howes & Stewart, 1987). Furthermore, global quality was higher in family child care programs in which the provider had participated in training when compared to the quality scores of comparison group of regulated family child care providers in the same community who were not involved in the training under investigation. However, only 19% of those providers participating in the training demonstrated observable improvements in program quality (i.e., improving FDCRS scores from a lower category to a higher category) as opposed to a simply statistically significant improvement and 8% of providers actually demonstrated worse quality following training (Kontos et al., 1996). In addition, the emphasis of this “intervention” was on the classroom component of training over more individualized, rigorous coaching, mentoring, or consultation that can occur during home visits (Galinsky, Howes, & Kontos, 1995).

Similarly, one study that measured the level of participation in a range of quality enhancement initiatives that included but was not limited to trainings, on-site mentoring, and/or grants to help purchase materials found that family child care providers participating in a greater number of these activities received higher ratings of global quality (Peisner-Feinberg et al., 2001). Neither study involved random assignment leaving the possible

explanation family child care providers operating higher quality programs are more likely to seek out training and support opportunities than providers offering lower quality care. In addition, both of these studies involved participation in “interventions” that primarily included workshop-style trainings with no consistency in length or content of trainings and it was up to the provider to self-select their participation in these activities. To continue, research has indicated that training primarily based in workshops or classroom trainings can increase knowledge and awareness, but does little to affect behavioral change or improved practices (Wesley, 1994) and rarely addresses providers’ beliefs. Therefore to create more substantial improvements in quality and sustained changes in the practices of family child care providers, larger investments in resources, effort, time, and funds must be made and an evaluation of these types of efforts is necessary.

The Current Study

While the research on T.E.A.C.H. Early Childhood project investigates the impact of the completion of early childhood related coursework at the associate level in a group of center based teachers on quality and beliefs, the Quality Interventions in Early Care and Education (QUINCE) study examines the influence of a professional development training and technical assistance initiative that took place in family child care homes. Specifically, the QUINCE study involved the use of an assessment based, on-site consultation model (Partnerships for Inclusion; Palsha & Wesley, 1998, Wesley, 1994) in five states in a randomly selected sample of both center based teachers and home based family child care providers. The overall goal of the QUINCE study was to determine the conditions under which very specific assessment based, on-site consultation model of targeted technical assistance would enhance the quality and beliefs of teachers and family child care providers

and would also result in positive child change. The present study focuses on factors related to improvement in program quality over time, including immediately following participation in intervention and six months later for the sample for of family child care providers only.

Partnerships for Inclusion (PFI; Palsha & Wesley, 1998; Wesley, 1994) is an intensive, collaborative model of on-site consultation designed to enhance the quality of care being provided in child care settings. Typically, a PFI consultant would make between 12 and 17 visits to a family child care home over a period of 6 to 10 months. The role of the consultant was to guide the consultee through an assessment-based, six-stage consultation process to improve quality. The consultee should play an active role in decision making related to the consultation process including when to meet, needs to be addressed, and the identification of goals and priorities. Therefore PFI consultation should be responsive to the needs of the consultee and should be evaluated throughout the consultation process. Another goal of PFI consultation was to promote the consultee's ability to develop strategies for identifying and meeting needs after the consultant is gone. One of the primary components of the PFI model of consultation was the use of an environmental rating scale (i.e., FDCRS) to conduct a joint needs assessment; meaning that both the consultant and the child care provider are completing an assessment of the program using the same rating scale. Together they set goals and developed an action plan based on the findings of their assessments. Further on-site visits supported changes to enhance program quality based on goals defined in the action plan, culminating in a re-evaluation using the FDCRS to document change by both consultant and consultee (Bryant et al., 2009).

Using data from the QUINCE study, the current study will focus on the structural characteristics and beliefs of family child care providers and their programs, the relationship

of these characteristics and beliefs to practice, and the impact of the PFI model of consultation by addressing the following research questions:

Research Questions

1. Does the receipt of PFI consultation lead to improvements in family child care program quality immediately following completion of consultation when compared to the quality of a control group of providers experiencing “business as usual” services? Similarly, does PFI consultation have an effect on sustained change (i.e., six months after consultation) in quality for family child care providers?

It is hypothesized that the group of family child care providers receiving intensive, on-site PFI consultation will demonstrate larger gains in the quality of care and education being provided soon after the completion of the consultation process. Furthermore, it is predicted that PFI family child care providers will sustain these improvements in program quality. In comparison, the control group of providers being offered the “typical” services of their local resource and referral agencies is not expected to demonstrate significant improvements in the quality of care being provided.

2. Immediately following participation in PFI consultation, do family child care providers report significant changes in their beliefs about best practices and/or beliefs about job-related motivation and stress in comparison to providers not receiving this intensive support (i.e., the control group)? Similarly, does involvement in the PFI consultation process lead to sustained changes (i.e., six months after consultation) in beliefs?

Although changing beliefs is not the focus of the PFI model of consultation, changing practices to improve program quality is. Based on previous literature describing the

associations between beliefs and practice, it is predicted that the group of family child care providers participating in intensive PFI consultation will have more appropriate beliefs about best practices with young children and report less job dissatisfaction and stress soon after completing the consultation process and that these changes in beliefs will be maintained six months later. In comparison, the control group of providers being offered the “business as usual” services, supports, or technical assistance from their local resource and referral agencies are not expected to demonstrate changes in their beliefs primarily due to the relative infrequency of on-site visits and lower intensity of support related to making improvements in program quality.

3. If PFI consultation has an effect on change in quality either right after completing the consultation process and/or for sustained change (i.e., six months after consultation) for family child care providers, is this effect influenced by providers’ beliefs, after controlling for the influence of state, baseline assessments of quality, and main effects of structural characteristics typically associated with quality (e.g., ratio, provider education, training, experience)?

Prior to adding beliefs to the model, it is hypothesized that family child care providers with more years of education, a background in early childhood education or a related field, that have recently participated in greater numbers of professional development training hours, and those with more experience working in child care will receive higher quality ratings. This study examines if providers’ beliefs add uniquely to the prediction of process quality, the use of educational activities and materials, and interactions beyond the influence of state, baseline quality level, and structural characteristics. It is predicted that family child care providers’ beliefs about best practices and beliefs about job motivation and stress will

account for additional significant variance in observed program quality beyond structural predictors immediately following completion of on-site consultation and after a period of six months has passed. This relationship is hypothesized to exist even after controlling for the influence of treatment group, state, and baseline assessments of quality. Specifically, structural characteristics of family child care (e.g., child:adult ratio, group size, participation in training), particularly those delineated by state regulatory bodies, may help to ensure a minimal level of custodial care. However, considering the large variation in qualifications, regulations, and the lack of supports (e.g., supervisor and peer support, evaluation, expectations of practices, etc) of the family child care provider workforce illustrated in the research literature, especially when compared with early childhood teachers working in center-based settings, the importance of beliefs related to working with children and attitudes about the job may be even more critical. Therefore, more appropriate beliefs about best practices with children, high job motivation and satisfaction, and less stress are expected to relate to higher quality practices in our sample of family child care programs. Finally, it is hypothesized that participation in PFI consultation will continue to be a significant predictor of immediate and sustained change in quality after all other variables are accounted for.

Method

Participants

Data were collected from 343 family child care providers in five states who were receiving services from a community-based resource and referral agency. Providers had agreed to participate in an intervention study on the effectiveness of the PFI model of consultation to improve program quality and enhance child outcomes. Based on the agency organization, family child care providers were either randomly assigned to a PFI or control

consultant (i.e., offering technical assistance and services “as usual”) or were randomly selected from consultants’ caseloads to be included as either providers receiving PFI consultation or typical services (i.e., from control consultants). Family child care providers in the present sample averaged 37.64 years of age, had over 9 years of early childhood experience on average, and 62% had less than an A.A. degree. Provider ethnicity was: 74.3% Caucasian; 11.4%; African American; 9.9% Hispanic; 1.5% Asian; and 4.7% other, respectively. They cared for an average of 6.78 children and 23.7% had a paid assistant.

Table 4.1 provides a detailed description of the demographic characteristics of family child care providers at the beginning of the study including education level and type, information about professional development training, and experience. On average, family child care providers in the current sample had completed high school and had some educational experiences beyond high school but had not earned a higher education degree ($M = 13.19$ years, $SD = 1.56$ years). In addition, 7.37% of providers had earned a CDA credential and 23.9% had received an associate’s degree in early childhood, education, or a related field. Recall that none of these were bachelors or master’s degrees related to early childhood because of limitations on sampling criteria for providers specified by the project’s funders. Seventeen percent of providers reported having a year or less of experience working in child care, 26.3% had worked between one and five years, 43% had 5 – 20 years of experience, and 13.2% of providers had over 20 years of experience in the field. Family child care providers reported receiving an average of almost 30 hours of professional development training. Furthermore, almost 30% of family child care providers in the sample were caring for one or more of their own children.

Additionally, Table 4.2 displays program level information about the family child care homes sampled including the type of area in which the program was located, group size, child:adult ratio, percent offering care to low-income families and children with special needs, support received, and accreditation status. The average group size observed was about 5 children, ranging from only one child being present during an observation up to 17 children. The number of children enrolled in the family child care program was often much larger than the number of children present during the observation ($M = 6.78$ children, $SD = 3.11$, range = 1 – 26). There was only one program that identified having more than 17 children enrolled. However, only six children were present during this observation. Programs with small numbers of children could be representative of providers who were just starting out in the family child care business and had not yet built up a large clientele. Recall that 17% of providers sampled had one year or less of experience working in child care. Furthermore, 71.4% of providers were licensed, 21% were registered and 4.1% were neither licensed nor registered. States varied in regards to their requirements for licensure and registration; however, programs that were unlicensed were typically required to have fewer numbers of children.

On average, programs were open to families for over 67 hours per week with some providers offering extended hours of care in the evenings or on the weekends (up to 168 hours). In addition, 32.75% of programs served families with annual incomes that were less than \$30,000 and 19.06% of families received partial or full-time subsidies to pay for care, indicating a substantial portion of families with limited income enrolling their children in the family child care settings sampled. A small percentage of programs served children with identified special needs (2.34%) or whose parents with limited English proficiency (1.43%).

Independent samples t-tests conducted in previous analyses of Time 1 data indicated that family child care providers in the PFI treatment group did not demonstrate statistically significant differences on any of these demographic characteristics when compared to family child care providers in the control group. Furthermore the only statistically significant difference on any program-level characteristics between the treatment and control groups was the total number of children being served ($t = 2.23, p < .05$). The mean group size in treatment group providers' programs was 7.21 ($SD = 3.40$) while the mean group size in control group providers' programs was slightly smaller, 6.49 ($SD = 2.90$).

Procedure

Random selection and recruitment. Randomization occurred at both the level of the consultant who was providing some kind of technical assistance or quality enhancement services to the child care provider and at the level of the provider. See Figure 4.1 for an illustration of the study design. The consultants were randomly assigned to be either a control consultant that continued to offer quality enhancement activities as typically provided by their agencies ("business as usual") or a PFI consultant who implemented the PFI model of consultation after completing an intensive one week training and using the model under supervision with a pilot site. Following the random assignment of consultants to deliver either treatment or control services, family child care providers were randomly selected from the consultants' caseloads. This took place in one of two ways. If an agency had both PFI and control consultants, providers were randomly assigned to work with one consultant. If an agency had only one consultant (whether PFI or control) or assigned providers to consultants in geographic areas where only one consultant was available, providers were randomly selected from lists of those seeking quality enhancement services from the

participating agency and were asked to participate in the study. Thus, about 50% of study providers were randomly assigned to a consultant and about 50% were randomly selected to be in the study (Bryant et al., 2009).

Provider recruitment occurred at the large group orientation meetings that were typical in some agencies, as providers contacted agencies to request services, and/or with help from the consultants who distributed study information to family child care providers who were potential study participants. Then, members of the research team talked with each family child care provider in person or on the phone to determine that he or she was indeed eligible for the study, to answer questions, review the timeline of the study, and obtain oral and, eventually, a signed consent.

Provider selection criteria. Criteria for family child care providers to participate in the study included that the providers (1) be at least 18 years old, (2) not have a bachelor's degree with a major in early childhood education or a related field, (3) communicate with the children in their care in English or Spanish, (4) plan to serve children for at least one more year, (5) serve at least two children who were not their own, (6) serve at least one child that was at least 20 months of age at the beginning of their participation in the study and not older than 50 months (so that infant assessments would not be conducted and recruited children would not enter kindergarten between the first and second child assessments), and (6) serve children for at least 20 hours per week for some morning hours (e.g., no after school family child care providers were included). It should be noted that in the first year of the study, participation was limited to providers who did not have a bachelor's degree. However, this was found to be too limiting in terms of provider recruitment and the education criterion was relaxed to include family child care providers with bachelor's degrees in areas unrelated to

early childhood in the second year of the study. Following recruitment into the study, family child care providers were asked to allow a researcher to make 3 visits to their home setting to conduct an observation and complete an interview. Providers received \$50 for the Time 1 visit that occurred shortly before or after the provider entered the study (pre-intervention), \$75 for the Time 2 visit at the end of their consultants' period of working with them or a maximum of 10 months (post-intervention), and \$100 for the Time 3 visit that occurred six months after the intervention was finished (follow-up).

Observations of family child care program quality. To measure process quality in family child care homes, observations were completed by trained observers using the FDCRS (Harms & Clifford, 1989) as well as portions of the Early Childhood Environment Rating Scale-Extension (ECERS-E; Sylva, Siraj-Blatchford, & Taggart, 2003), and the CIS (Arnett, 1989). For purposes of data collection, researchers typically spent three hours or more in a home setting completing an observation. Observation of program quality occurred at three time points: pre-intervention (Time 1), shortly after the provider became a study participant, post-intervention (Time 2; at the end of consultation or a maximum of 10 months after Time 1), follow-up (Time 3; six months after intervention was completed).

Family child care provider interview. Providers were interviewed in their home or over the phone by a trained research assistant at three points during the study, corresponding with the observations of program quality: (Time 1) pre-intervention, (Time 2) post-intervention, and (Time 3) follow-up. The 18-page interview included questions about demographic information and structural characteristics of the provider such as questions about education, work experiences, training and professional development, sources of professional support, and a self-rating of their health status. Finally, several questions about

their program were included such as the number of paid or unpaid assistants, hours of program operation, charges for care, the number of children served, and characteristics of the enrollees (e.g., age range, proportion subsidized, those with identified disabilities, and home language spoken).

Training and reliability of data collectors. Initial training of data collectors took place in a group meeting the summer before each data collection year with the goals of orienting them to the purposes of the study, the procedures required of them, and ethical principles of assessment and data handling, followed by specific training on the measures they would collect: the observations of family child care programs and interviews. Training of data collectors on the observation instrument took place initially in Chapel Hill, North Carolina with a day of orientation from one of the contributors to the development of the FDCRS (Harms & Clifford, 1989), Debby Cryer, and 2-3 days in the field practicing the measure with a gold standard observer from the Frank Porter Graham Child Development Institute (FPG). More practice was required back in their community and then the gold standard study coordinator visited each site for final reliability checks. At each site, the most accurate and/or experienced data collector was deemed the gold standard for that site. Data collectors hired mid-year were trained and supervised by the PI and the local gold standard observer. Each year the FPG gold standard observer visited each site to complete reliability checks with each local gold standard observer. A total 8.5% of observational visits for the study were collected by a gold standard and a data collector or two data collectors together. On these visits, the gold standard's data were entered into the study database. Kappas were calculated for each measure after each visit. Retraining and rechecks were conducted

whenever the kappa between a gold standard observer and another data collector fell below .60 (Bryant et al., 2009).

Attrition. The attrition rate of family child care providers in the QUINCE study was higher than expected. When initially recruiting providers to be randomly assigned to a consultant or randomly selected from the consultant's case list, 321 family child care providers consented to be in the study and 37% of them (for a total of 120 providers) left the study prior to completing the final follow-up observation visit (typically about 16 - 18 months after baseline). Therefore, observational measures and data collected from the interview were not available for all family child care providers at all time points. Some providers left the study prior to any data collection (16 sites did not end up qualifying and 18 providers consented but decided not to participate). Some of those family child care providers who were randomly assigned to the PFI treatment group left the study for reasons related to consultation including 12 providers who indicated that consultation was "too much" for them to handle and 6 providers leaving after their consultant quit the study. Fourteen other providers left the profession all together, closing their program and taking another job. Other reasons for family child care providers not completing their participation varied and included 14 providers who were unable to be contacted to schedule an observation, 11 providers who moved, 11 providers with personal and medical reasons for leaving the study, and 18 providers ending their participation without providing an explanation (Bryant et al., 2009).

Analyses were completed to test for group differences in attrition rates including differences between family child care providers who completed a Time 2 data collection visit versus those who only had a Time 1 visit, and the differences between those providers who

completed all three visits versus providers who only completed the first two. In the control group, the education level of those family child care providers who left the study before Time 2 was significantly lower than those who had a Time 2 visit ($p < .001$, 4.8 vs. 10.2). For control and PFI family child care providers, quality scores were significantly lower for those who only had a Time 1 visit compared to those with both Time 1 and 2 data ($p < .001$ on FDCRS Total score, 2.7 vs. 3.3 for control, 2.8 vs. 3.7 for PFI). Quality scores were also significantly lower for those who had data at times 1 and 2 compared to family child care providers who stayed in the study until time 3 (FDCRS Total score for control: 2.8 vs. 3.4, $p < .01$; for PFI: 2.9 vs. 3.7, $p < .001$). Attrition was significantly higher for PFI family child care providers than for those in the control group (Bryant et al., 2009).

Measures

Family child care provider beliefs measures. Information about family child care providers' beliefs were collected as part of the interview and included a measure of: modernity (holding more child-centered, progressive beliefs about child rearing), beliefs aligning with the principles of developmentally appropriate practice, professional motivation and satisfaction, and potential work-related stressors (including job demands, job-specific demands, job resources, and job control). Internal consistencies for all four measures and their subscales at the three time points are available in Table 4.4. The separate scales included in the interview are described in greater detail below and can be seen in Appendices A – D.

Beliefs about best practice with young children.

Modernity scale. The Parental Modernity scale is a 30 item scale designed to measure the beliefs of parents about child care and children, specifically whether their beliefs are

traditional authoritarian or progressive authoritative in nature (Schaefer & Edgerton, 1985). Traditional beliefs reflect the idea that children should closely follow adult directives. In contrast, Progressive beliefs are indicative of a parental attitude favoring child-initiated behaviors. Each item is rated on a 5-point scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). Three scores are computed, Progressive Beliefs, Traditional Beliefs, and a Total score (a sum of the Traditional items and the Progressive items, with the Traditional items reverse scored). For the Total score, a higher value reflects more child focused, authoritative child rearing beliefs. For the original Parental Modernity scale internal consistencies ranged from .88 to .94, with a test retest reliability of .84 (Schaefer & Edgerton, 1985).

For the current study, the first 16 items of the 30 item Parental Modernity scale were used to create the Modernity scale, which was administered to child care providers. The scale included items such as, “In my opinion, children will not do the right thing unless they are told what to do” and “In my opinion, children have a right to their own point of view and should be allowed to express it.” Internal consistency scores for family child care providers in this study, respectively, ranged from .29 - .45 from Time 1 to Time 3 for Progressive beliefs, .81 at all three time points for Traditional beliefs, and .78 - .80 from Time 1 to Time 3 for the Total Modernity score. The mean Total Modernity score is used in further analyses in the current study.

Teacher Beliefs Scale. The Teacher Beliefs Scale (TBS; Burts, Hart, Charlesworth, & Kirk, 1990) is a 30 item scale designed to measure teachers’ philosophy regarding developmentally appropriate practices. Teachers rate statements about teaching practices with children on a 5-point scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree)

with higher scores indicating stronger beliefs on that dimension. Items included statements such as “Children should be allowed to select from a variety of learning activities that the teacher/provider has prepared” and “Children should work silently and alone on seatwork.” Scores are summed and the items representing developmentally inappropriate practice are reverse scored. More recent research by the Head Start FACES study reduced the scale to 15 items (Administration for Children and Families, 2003). A Total scale score with developmentally inappropriate items reverse coded is used in the current study. For the Total score, a higher value reflects the child care provider holding more developmentally appropriate beliefs about best practices when working with young children. Internal consistencies ranged from .64 - .66 between Time 1 and Time 3 in the current sample of family child care providers.

Beliefs about job-related motivation and stress.

Professional motivation. This scale was a 13 item adaptation of a measure used to assess family child care providers’ views of their current child care position. The original scale created by Kontos and colleagues asked child care providers to rank order their reasons and motivations for being a provider (Kontos et al., 1995). The psychometric properties of this scale are not well understood; however, the original scale did show differences in scores between early care programs that were regulated and unregulated, with regulated providers being more motivated (Kontos et al., 1995).

For the current study, a response scale was developed ranging from 1 (Not at all the way I feel) to 5 (Exactly the way I feel). The scale included items such as “I see my current child care position as work I feel committed to” and “I see my current child care position as something to do while my children are young.” Due to the uncertainty of the components

that may emerge from this measure, an exploratory factor analysis under maximum likelihood estimation with an oblimin rotation was conducted. Two uncorrelated factors ($r = -.16$) emerged – Professional Motivation ($r = .69$) and Dissatisfaction ($r = .50$). Internal consistency scores for family child care providers in this study, respectively, ranged from .61 - .71 between Time 1 and Time 3 for the Professional Motivation subscale, from .50 - .69 from Time 1 to Time 3 for the Dissatisfaction subscale, and .63 - .74 from Time 1 to Time 3 for the Total Kontos scale (with all items coded to reflect more motivation and less dissatisfaction). The mean Dissatisfaction subscale score is used in further analyses in the current study.

Child Care Worker Job Stress Inventory. The Child Care Worker Job Stress Inventory (CCW-JSI; Curbow, Spratt, Ungaretti, McDonnell, & Breckler, 2000) is 51 item scale developed to assess the amount of stress experienced by providers caring for young children that has been shortened to a 21 item scale by Walter Gilliam for the purposes of the National PreK Study, with the goal of shortening the length of administration of the measure while maintaining desirable psychometric properties (Bryant et al., 2009). This measure includes 21 items that result in four subscales of Job Demands, Job Specific Demands, Job Rewards (called Resources in the original), and Job Control. Each of these shortened versions of the subscales were found to correlate highly with the Total score from the larger version of the corresponding of the subscales ($r = .73 - .88$). Items are rated on a scale ranging from 1 (Never) to 5 (Most of the time). Job Demands includes six questions regarding interactions with parents, dealing with children's challenging behaviors, and trying to meet many children's needs at the same time. A lower score on this factor indicates fewer demands (i.e., better working conditions) than a higher score. The Job Specific Demands

score includes five additional questions that apply to only family child care providers. Job Rewards includes five questions about receiving praise and respect for the work of child care and seeing that one's work makes a difference for children and parents. Job Control includes five items related to availability of supplies, having a reasonable class size, and getting parents to cooperate on managing behavior. Higher scores on the Rewards and Control scales indicate more positive working conditions. Internal consistencies for family child care providers in the current sample were .66 for Job Demands, .47 for Job Specific Demands, .81 for Job Rewards, and .51 for Job Control, and .88 for the Total scale. The Total scale score is utilized in further analyses in the present study with higher scores representing more stress.

Quality observational measures. To measure process quality in family child care homes, observations were completed by trained observers using the Family Day Care Rating Scale (FDCRS; Harms & Clifford, 1989) as well as portions of the Early Childhood Environment Rating Scale-Extension (ECERS-E; Sylva et al., 2003), and the Caregiver Interaction Scale (CIS; Arnett, 1989). For purposes of data collection, researchers typically spent three hours or more in a home setting completing an observation that included all three of these measures.

Family Day Care Rating Scale (FDCRS). The FDCRS (Harms & Clifford, 1989) was used to assess global quality in home based child care settings. The FDCRS consists of 32 items rated from 1 to 7 with lower scores representing poorer quality and the overall mean score used as a measure of the global quality of a child care program. To be consistent with other research, the adult needs items were not included in the overall family child care quality scores. The authors reported adequate inter rater reliability ($r = .86$) and significant

positive relationships with independent home visitor quality ratings (Harms & Clifford, 1989).

Factors for this measure have not been previously reported so a confirmatory factor analysis was conducted on family child care homes in the QUINCE sample. The factors were extracted under unweighted least squares estimation with an oblimin rotation. Examination of the scree plot indicated elbow points at one, three, and five factors. Eigenvalues at these points were 7.49, 1.47, and 1.07, respectively, with the three-factor solution explaining about 84% of the variance. After the third factor, the eigenvalues dropped below one and the change in variance explained became increasingly smaller (adding a fourth factor explains an additional six percent and a fifth only an additional five). Finally, the three-factor solution provided theoretically meaningful and useful factors, including two (“Teaching and Interactions” and “Provisions for Learning and Health”) that were analogous to previously uncovered factors of the Early Childhood Environment Rating Scale-Revised (ECERS-R; Harms, Clifford, & Cryer, 1998; Cassidy, Hestenes, Hegde, Hestenes, & Mims, 2005; Clifford et al., 2005).

For each factor, only items with loadings higher than .30 were considered as contributing to that factor. The first factor was named “Teaching and Interactions” and consisted of loadings from 12 individual items: Furnishings for routine care, Child related display, Informal use of language (2 years and older), Helping children understand language (infants/toddlers), Helping children understand language (2 years and older), Helping children use language, Helping children reason, Eye-hand coordination, Music and movement, Sand and water play, Dramatic play, and Cultural awareness. Internal consistency scores from Time 1 to Time 3 ranged from .83 to .89. The second factor, termed

“Tone and Discipline”, consisted of loadings from nine items: Nap/rest, Informal use of language (infant/toddler), Informal use of language (2 years and older), Helping children understand language (infants/toddlers), Helping children reason, Music and movement, Supervision of play, Tone, and Discipline. Internal consistency scores from Time 1 to Time 3 ranged from .78 - .84. The third factor, labeled “Provisions for Learning and Health” consisted of loadings from 11 items, Indoor space arrangement, Active physical play, Space to be alone (infants/toddlers), Space to be alone (2 years and older), Arriving/leaving, Meals/snacks, Nap/rest, Personal grooming, Health, Safety, and Schedule of daily activities (alphas ranged from .76 to .82 from Time 1 to Time 3). Total scale internal consistencies ranged from .90 to .93 from Time 1 to Time 3 in the current study.

Early Childhood Environment Rating Scale – Extended (ECERS-E). The ECERS-E (Sylva et al., 2003) was designed as a companion scale to the ECERS-R (Harms et al., 1998). The ECERS-E includes subscales that have academic achievement orientation including literacy, mathematics, science and environment, and diversity. In a study of 3,000 children aged 3 - 5 in British preschools, the ECERS-E better predicted children’s intellectual and language progress than the ECERS-R. Data collectors completed this observational measure on the same day as the FDCRS. Scoring on the ECERS-E is like the ECERS-R and FDCRS: an overall score from 1 to 2.9 is considered poor quality; scores from 3 to 4.9 are considered medium to good quality; and scores of 5 or greater are considered good to excellent quality. The QUINCE study used the 6 items comprising the Literacy subscale, the 4 items comprising the Numeracy subscale, and the single item Diversity scale. An ECERS-E Total score was also created that, for this study, is the sum of Literacy, Numeracy, and

Individualization items. The Chronbach's alpha for the Total ECERS-E scale was .82 at all three time points. This mean Total score is used for further analyses.

Caregiver Interaction Scale (CIS). Like the FDCRS, the CIS (Arnett, 1989) was also completed during each family child care program observation. The CIS is a 26 item observational rating scale that focuses on adult-child interactions in child care settings. The CIS has four subscales measuring positive interactions/sensitivity, detachment, permissiveness, and punitiveness/harshness in provider-child interactions and is often used in conjunction with more general measures of child care quality, like the ECERS-R or FDCRS, to expand the assessment of interactions between the provider and children. The CIS items yield four separate subscale scores: sensitivity, harshness, detachment, and permissiveness. Items on the CIS can also be coded in a positive direction and summed to create one overall score.

Jaeger and Funk (2001) reported interrater reliability coefficients ranging from .75 to .97 between a certified observer and trainees. Layzer, Goodson, and Moss (1993) in measuring concurrent validity found correlation coefficients of .43-.67 between the CIS and several other measures of child care quality (e.g., ECERS, Assessment Profile for Early Childhood Programs, Description of Preschool Practices). However, the authors did not expect large coefficients because the CIS focuses more narrowly on an aspect of early child care provider behavior than the other observational measures.

Results

Change Scores T-Tests

To initially address the first and second research questions regarding the differences in family child care providers' beliefs and observed program quality over time between

treatment (i.e., providers receiving PFI consultation) and control groups (i.e., providers receiving “typical” services) an immediate and sustained change score was first calculated for each participant for each measure. Scores for family child care providers on all measures of beliefs and program quality at all three time points can be found in Table 4.3. Immediate change was calculated by subtracting Time 1 mean scores for each quality measure on data gathered prior to treatment intervention for either a total scale or subscale from the individual’s mean Time 2 score on the same measure of quality gathered soon after completing consultation (or approximately 10 months from the baseline data collection). Similarly sustained change was calculated by subtracting Time 2 mean scores for each quality measure for either a total scale or subscale from the individual’s mean Time 3 score on that same measure gathered approximately six months after completing consultation (or about 16 months from the beginning on data collection). After calculating immediate and sustained change scores, paired-samples t-tests were conducted comparing providers in the treatment and control groups on the mean level of change on measures of beliefs and observed process quality. Results for immediate change t-tests are reported in Table 4.5 and results for the sustained change t-tests can be found in Table 4.6.

Paired-samples t-tests for immediate changes in beliefs and quality. These analyses indicated that statistically significant differences in gains in the immediate change scores for measures of observed process quality were found between the treatment and control groups. Specifically, providers receiving PFI consultation demonstrated a statistically significant improvement on the mean FDCRS Total score following the completion of their consultation with a mean change score of 0.37 on a 7-point scale compared to the negligible 0.06 mean change score demonstrated by providers in the control

group ($t = 3.19, p < .05$). Similar statistically significant immediate improvements were demonstrated on all three FDCRS factors by the providers in the treatment group compared to the in the control group, with the providers involved in PFI consultation receiving higher ratings: FDCRS Teaching and Interactions, 0.53 vs. 0.18 mean change in scores; FDCRS Tone and Discipline, 0.22 vs. -0.07 mean change score; FDCRS Provisions for Learning and Health, 0.26 vs. -0.02 mean change in scores. Furthermore, a statistically significant difference in immediate improvement in literacy and numeracy activities as evidenced by Total mean scores on the ECERS-E was demonstrated by providers in the PFI group (0.27 vs. 0.01 for control; $t = 3.03, p < .05$). However, there were no differences in the immediate mean change score between the treatment and control groups on the CIS Total score or any of the subscales. Finally, there was not a statistically significant difference between treatment and control groups on the levels of self-reported beliefs about best practices or beliefs about job motivation and stress immediately following the completion of their intervention.

Paired-samples t-tests for sustained changes in beliefs and quality. The PFI consultation-based intervention was found to make a considerable difference in sustained quality changes. While the observed program quality of providers in the control group decreased or stayed about the same as indicated by Total FDCRS, FDCRS factors, and ECERS-E overall scores between baseline measurement and follow-up measurement (range: -0.19 to 0.08 on 7-point scale), providers receiving PFI consultation demonstrated statistically significant sustained mean change scores on all of these measures (range: 0.58 to 0.26 on a 7-point scale). Furthermore, the group of providers receiving PFI consultation also showed significantly improved interactions with children as measured by the CIS Total (an

increase of 0.09 in mean change score on 4-point scale), the CIS Permissiveness subscale (a decrease of 0.30 in mean change score on a 4-point scale), and the CIS Detachment subscale (a decrease of 0.05 in mean change score on a 4-point scale) between Time 1 and Time 3. Conversely, sustained changes in adult-child interactions for family child care providers in the control group occurred in undesired directions with a CIS Total decrease of 0.04 in mean change score, a CIS Sensitivity mean decrease of 0.05, and CIS detachment mean increase of 0.12. Although, providers in the control group reported a mean change score decrease in Permissiveness of 0.06, the decrease reported by providers in the treatment group of 0.30 was significantly larger ($t = -2.48, p < .05$).

Only one significant difference was found between the treatment and control groups of providers in terms of sustained change in scores on the measures of beliefs. Namely, family child providers receiving PFI consultation had a significantly larger decrease six months after consultation in overall job stress (-0.10 vs. 0.03; $t = -2.20, p < .05$) as measured by the CCW-JSI compared to providers in the control group who were receiving the “business as usual” model of services. No other statistically significant differences in sustained mean change scores for beliefs were found between the treatment and control groups.

Hierarchical Multivariate Linear Regressions with Residualized Change Scores

To further analyze the relationship among family child care providers’ beliefs about best practices and job-related motivation and stress to global quality while considering the impact of structural features of care (e.g., educational background, professional development training, previous experience working with children, child:adult ratio) and treatment group, hierarchical multivariate linear regressions with residualized change scores were conducted.

The process of creating a residualized change score involves first regressing the outcome variable (e.g., any of the measures of quality at Time 2 for immediate change or at Time 3 for the sustained residualized change score) against the outcome variable value at Time 1 and then regressing the residuals from this initial regression on the predictor variables. This two-step process is completed simultaneously in a regression model containing both the outcome variable and predictor variables at Time 1 as predictors. The latter description explains the process used to analyze residualized change scores in the current study. The quality outcome variables included the change scores for each of the following measures: FDCRS Total score, the FDCRS Teaching and Interactions factor, the FDCRS Tone and Discipline factor, the FDCRS Provisions for Learning and Health factor, the ECERS-E overall score, and the CIS Total. Separate hierarchical multivariate analyses were conducted for each quality outcome measures examining both immediate and sustained changes.

To better understand the unique contributions of key predictor variables to the dependent quality variables, the model was run with data entered in four blocks. Due to the fact that results have already indicated an impact of the treatment in this study (i.e., PFI consultation) and to further examine the impact of intervention independent of other variables, experimental group (PFI treatment or control) was entered alone in the first block. In the second block, state as a proxy variable and the Time 1 (initial) value of the corresponding outcome variable scale (e.g., Time 1 FDCRS Total) were entered as control variables. State was entered as a control variable as each state had very unique requirements and regulations for family child care programs that could potentially affect quality outcomes primarily due to their relationships with many structural features of care (e.g., limitations on group size, ratio requirements, minimal educational achievement, etc.). In addition, because

the initial scores on any one of the quality outcome measures has the potential to greatly influence the immediate and sustained change in scores on that measure and to facilitate the calculation of a residualized change score, Time 1 scores were entered along with state in the second block. In the third block structural characteristics including years of education, whether or not the child care provider had earned an associate's degree or certificate in early childhood education or a related field (i.e., not a bachelor's degree, as this was one exclusion criterion of the study), hours of professional development training in the past two years, years of experience in child care since age 18, and child:adult ratio obtained during the observation. The final block included variables measuring providers' beliefs as covariates including: Modernity Total score (with higher scores indicating more child-centered beliefs), the TBS Total score (with higher scores indicating more developmentally appropriate beliefs), the Kontos Dissatisfaction subscale (with higher scores indicating more job dissatisfaction), and the CCW-JSI Total Job Stress (with higher scores indicating the provider reporting greater levels of job-related stress). In addition, models with a fifth block of predictor variables that included interaction terms between treatment group and beliefs measures were tested to determine if a certain level of belief prior to beginning intervention had differential effects depending on whether a provider was randomly assigned to receive the treatment or control model of consultation. However, these interaction terms did not contribute uniquely to the model or provide additional explanation of variance in quality. Including the block of interaction terms actually reduced the effects of predictor variables in previously entered blocks indicating possible multicollinearity with those variables. For parsimony, final models are presented without this block of interaction terms. The total variance accounted for by the model (R^2) was computed for each block as was the change in

variance accounted for by the addition of each block (ΔR^2). Within each block, model testing began with an assessment of multivariate effects, followed by assessment of the univariate models. These analyses were conducted separately for each one of the process quality outcomes measures for both immediate change (Time 2 – Time 1) and sustained change (Time 3 – Time 1). Results for regressions with immediate mean change scores as the outcome variables are reported in Tables 4.7 – 4.12 and results for regressions with sustained mean change scores as the outcome variables can be found in Tables 4.13 – 4.18.

Hierarchical multivariate linear regressions for immediate (Time 2 – Time 1) changes in quality.

FDCRS total and factor immediate change scores as outcomes. Tables 4.7 – 4.12 show four regression models predicting the immediate mean change scores (Time 2 – Time 1) for family child care providers on the FDCRS Total and the three factors. In each of the four one-block models the effect of treatment was found to be statistically significant for the immediate residualized change scores on all four FDCRS outcome variables (all $p < .05$). Interestingly, state was not found to be a significant predictor in any of the models with FDCRS as outcomes. However, the models with the first two blocks entered that included treatment group, state, and Time 1 scores were significant for the immediate change scores on all four FDCRS outcome variables (all $p < .001$). To continue, the tests of the models with three blocks entered, the third of which included a group of structural features of care, were also significant for immediate change scores on all four FDCRS measures (all $p < .001$). Finally the full models with the blocks of beliefs variables entered all indicated statistically significant effects for the four FDCRS scales (all $p < .001$).

We found years of education to be a unique contributor (all $p < .05$) for all of the FDCRS outcomes with exception of FDCRS Tone and Discipline. In addition, child:adult ratio had a unique significant contribution to FDCRS Total ($\beta = .06, p < .05$), FDCRS Teaching and Interactions ($\beta = .07, p < .05$), and FDCRS Provisions for Learning and Health ($\beta = .07, p < .05$). After the block of belief variables was entered, significant effects for years of education and child:adult ratio remained. Surprisingly, upon the addition of the block of belief variables to the hierarchical regression analyses for FDCRS Teaching and Interactions, significant unique contributions of experience ($\beta = -.02, p < .05$) and ratio ($\beta = .07, p < .05$) were found that had not previously existed in any of the reduced models. In addition, there were significant unique contributions for the measure of provider dissatisfaction for the models with FDCRS Total ($\beta = -.14, p < .05$) and FDCRS Teaching and Interactions ($\beta = -.24, p < .01$) as outcome variables, indicating that job dissatisfaction had a significant effect on immediate change in the quality of care provided by family child care providers in the sample. A unique contribution of job stress was found to be significant for FDCRS Provisions for Learning and Health only ($\beta = -.26, p < .05$). There were no statistically significant effects of having an associate's degree in early childhood, the amount of professional development training, or any of the other measures of providers' beliefs on the immediate mean change scores for any of the FDCRS outcomes.

Finally, the models with treatment group, state as proxy variable, Time 1 values, and structural characteristics accounted for roughly 19-40% of the variance in FDCRS Total and factor scores. Beliefs predicted an additional 2-7% of the variance in FDCRS Total and factor scores. Overall, the full model predicted 27-43% of the variance in immediate mean change scores in the FDCRS Total and three FDCRS factors.

ECERS-E immediate change score as outcome. Table 4.11 shows results from the hierarchical multivariate linear regression model predicting the immediate residualized change scores (Time 2 – Time 1) for family child care providers on the ECERS-E Total score. In the one-block model with the effect of treatment group entered, a statistically significant effect on immediate mean change scores for the ECERS-E Total was found, $F(1, 190) = 13.33, p < .001$. Interestingly, state was not found to be a significant predictor of immediate change in any of the regression models with ECERS-E Total as the outcome. However, the model with the first two blocks entered that included treatment group, state as a proxy variable, and Time 1 scores was significant for the immediate change scores on the ECERS-E, $F(3, 188) = 18.92, p < .001$. The test of the model with three blocks entered, the third of which included a group of structural features of care, was also significant for immediate change scores, $F(8, 183) = 8.09, p < .001$. Finally the full model with the block of beliefs variables entered indicated statistically significant effects for the ECERS-E Total scales, $F(12, 179) = 6.34, p < .001$.

We found a significant unique contribution for years of education ($\beta = -.06, p < .05$) on immediate change in ECERS-E scores in only the model with three blocks of predictor variables entered. After the block of belief variables was entered, none of the structural variables continued to be significant. In addition, there was a significant unique contribution for scores on the Kontos measure of dissatisfaction ($\beta = -.14, p < .05$) indicating that job dissatisfaction had a significant effect on immediate change in the quality of care provided by family child care providers in the sample as measured by the ECERS-E. Finally, the model with treatment group, state, Time 1 values, and structural characteristics accounted for 26% of the variance in the ECERS-E Total scores. Beliefs predicted an additional 4% of the

variance with the full model predicting 30% of the variance in immediate change scores in the ECERS-E.

CIS immediate change score as outcome. Table 4.12 shows results from the hierarchical linear regression model predicting the immediate change scores (Time 2 – Time 1) for family child care providers on the CIS Total scale. No statistically significant effect of treatment group on immediate mean change scores for the CIS Total score was found in any of the four models. Similar to the other regression models examining immediate change in quality, state entered as a proxy variable for state level variations in regulations was not found to be a significant predictor in any of the regression models with CIS Total as the outcome. However, the model with the first two blocks entered that included treatment group, state, and Time 1 scores significantly predicted immediate change scores on the CIS Total, $F(3, 198) = 27.01, p < .001$. The test of the model with three blocks entered, the third of which included a group of structural features of care, was also significant for immediate change scores, $F(8, 193) = 11.31, p < .001$. Finally, the full model with the block of beliefs variables entered indicated statistically significant effects for the CIS Total immediate change scores, $F(12, 189) = 8.47, p < .001$. However, it appears that Time 1 scores on the CIS Total were the primary contributor to the explanation of variance in immediate mean change scores in all of these models.

There were no significant multivariate effects found for any of the structural features or beliefs variables in relation to the immediate residualized mean change in CIS Total scores. Finally, the model with treatment group, state as proxy variable, Time 1 values, and structural characteristics accounted for 32% of the variance in the CIS Total score change.

Beliefs predicted an additional 3% of the variance with the full model predicting 35% of the variance in immediate change scores in the CIS Total.

Hierarchical multivariate linear regressions for sustained (Time 3 – Time 1) changes in quality.

FDCRS total and factor sustained change scores as outcomes. Tables 4.13 – 4.16 show four regression models predicting the sustained mean change scores (Time 3 – Time 1) for family child care providers on the FDCRS Total and the three factors. In each of the four one-block models the effect of treatment was found to be a statistically significant predictor of the residualized sustained change scores on all four FDCRS outcome variables (all $p < .05$). The models with the first two blocks entered that included treatment group, state as a proxy variable, and Time 1 scores were also significant for the sustained change scores on all four FDCRS outcome variables (all $p < .001$). The tests of the models with three blocks entered, the third of which included a group of structural features of care, were also significant for sustained change scores on all four FDCRS measures (all $p < .001$). Finally the full models with the blocks of beliefs variables entered all indicated statistically significant effects for the four FDCRS scales (all $p < .001$).

We found a significant unique contribution of years of experience for the FDCRS Tone and Discipline ($\beta = .02, p < .05$) and FDCRS Provisions for Learning and Health ($\beta = .02, p < .05$), but this relationship of experience to quality disappeared upon the addition of the block of beliefs variables. Child:adult ratio made a statistically unique contribution to the FDCRS Total ($\beta = .06, p < .05$) and FDCRS Provisions for Learning and Health ($\beta = .07, p < .05$) sustained mean change scores. After the block of beliefs variables was entered the

significant unique contribution of child:adult ratio in predicting the FDCRS Provisions for Learning and Health factor remained ($\beta = .08, p < .05$).

In addition, a unique contribution of the measure provider dissatisfaction was found to significant in predicting sustained change scores for the FDCRS Total ($\beta = -.18, p < .01$), FDCRS Teaching and Interactions ($\beta = -.16, p < .05$), and FDCRS Tone and Discipline ($\beta = -.22, p < .05$). To continue, there was a unique contribution of job stress on the sustained residualized change score on the FDCRS Total ($\beta = -.18, p < .01$), FDCRS Teaching and Interactions factor ($\beta = -.34, p < .05$), and the FDCRS Provisions for Learning and Health factor ($\beta = -.41, p < .01$). In general, higher levels of stress were significantly negatively related to sustained changes in quality as measured by the FDCRS scales.

The models with treatment group, state as a proxy variable, Time 1 values, and structural characteristics accounted for 24-37% of the variance in FDCRS Total and factor scores. Beliefs predicted an additional 6-10% of the variance in FDCRS Total and factor scores. Overall, the full model predicted 33-44% of the variance in sustained residualized change scores in the FDCRS Total and three FDCRS factors.

ECERS-E sustained change score as outcome. Table 4.17 shows results from the hierarchical multivariate linear regression model predicting the sustained residualized change scores (Time 3 – Time 1) for family child care providers on the ECERS-E Total score. In the one-block model with the effect of treatment group entered, a statistically significant effect on sustained mean change scores for the ECERS-E Total was found, $F(1, 168) = 14.92, p < .001$. State entered as a proxy for state level variation in family child care regulations was found to be a unique statistically significant predictor of sustained mean change in all of the regression models with ECERS-E overall as the outcome (all $p < .001$). Additionally, the

model with the first two blocks entered that included treatment group, state as a proxy variable, and Time 1 scores was significant for the sustained change scores on the ECERS-E Total, $F(3, 166) = 33.36, p < .001$. The test of the model with three blocks entered, the third of which included a group of structural features of care, was also significant for sustained change scores on the ECERS-E, $F(8, 161) = 13.10, p < .001$. Finally the full model with the block of beliefs variables entered indicated statistically significant effects for the ECERS-E Total scale, $F(12, 157) = 9.56, p < .001$. There were no significant unique effects found for any of the structural features of the family child care programs in relation to the sustained change in ECERS-E Total scores. In addition, there were no significant unique effects for any of the beliefs predictors in the models.

Finally, the model with treatment group, state as a proxy variable, Time 1 values, and structural characteristics accounted for 39% of the variance in the ECERS-E Total scores. Beliefs predicted an additional 3% of the variance with the full model predicting 42% of the variance in sustained change scores in the ECERS-E.

CIS sustained change score as outcome. Table 4.18 shows results from the hierarchical linear regression model predicting the sustained residualized change scores (Time 3 – Time 1) for family child care providers on the CIS Total scale. In the one-block model with the effect of treatment group entered, a statistically significant effect on sustained change scores for the CIS Total score was found, $F(1, 178) = 3.99, p < .05$. State entered as a proxy variable was found to be a unique predictor in the two-block regression model ($\beta = .13, p < .05$) with sustained change scores in the CIS Total as the outcome; however this relationship ceased to exist upon the addition of the block of structural variables to the model. The model with the first two blocks entered that included treatment group, state as a

proxy variable, and Time 1 scores was significant for the sustained change scores on the CIS, $F(3, 176) = 14.24, p < .001$. To continue, the test of the model with three blocks entered, the third of which included a group of structural features of care, was also significant for sustained residualized change scores, $F(8, 171) = 6.75, p < .001$. Finally the full model with the block of beliefs variables entered indicated statistically significant effects for the CIS Total sustained change scores, $F(12, 167) = 5.71, p < .001$.

We found a unique contribution of child:adult ratio to the prediction of sustained change in the CIS Total score to be significant for both the three-block and full models (both $p < .01$). In addition, there was a statistically significant unique contribution of the measure of provider Modernity to the sustained change in the quality of adult-child interactions as measured by the CIS Total score ($\beta = .13, p < .05$). Finally, the model with treatment group, state as a proxy variable, Time 1 values, and structural characteristics accounted for 24% of the variance in the CIS Total score sustained change. Beliefs predicted an additional 5% of the variance with the full model predicting 29% of the variance in sustained change scores in the CIS.

Discussion

The present study included a sample of 343 family child care providers who had been either randomly assigned or randomly selected to receive intensive on-site PFI consultation (i.e., the intervention) aimed at quality enhancement or the “business as usual” model of services from a consultant in their local resource and referral agency. We investigated changes in observed process quality and providers’ self-reported beliefs between treatment and control providers immediately following completion of consultation and sustained changes six months later. In addition to the impact of participation in treatment (i.e., PFI

consultation), the present study also examined the influence of structural provider and program characteristics and providers' beliefs about best practices and job-related motivation and stress in predicting changes in observed quality. This study provides a much-needed contribution to the limited research base on interventions or evaluations of methods designed to improve quality in family child care homes (for examples see Kontos et al., 1996; Peisner-Feinberg et al., 2001). Most importantly the present study involves random assignment of providers to either receive PFI consultation or the "typical" services of an agency; a valuable research design component absent from all other intervention or evaluation studies in family child care.

The Impact of PFI Consultation on Program Quality and Providers' Beliefs

The longitudinal design of the present study allowed for an examination of changes in program quality soon after completing the process of consultation and during a follow-up assessment six months later, including differences in change in quality experienced by providers receiving intensive PFI consultation and providers participating in "typical" services. Those family child care providers receiving the PFI model of consultative services demonstrated more significant gains on measures of process quality including the FDCRS and its factor scores and the ECERS-E immediately after completing consultation when compared to family child care providers experiencing the typical model of consultation (i.e., the control group) offered to child care providers in their area. This finding indicates that after only 10 months of receiving consultation service, family child care providers who experienced the PFI model of consultation were found to be offering higher quality programming to children in their care.

However, no immediate improvements were found in observed scores on the CIS and its subscales that measure quality of adult-child interactions, a more narrow aspect when compared to the global process quality assessed by the FDCRS measures. Furthermore, no significant differences in changes scores were found on self-reports of providers' beliefs about best practices with young children or beliefs related to job motivation or stress immediately following participation in consultation for either the treatment or control group. These differences in the impacts of PFI consultation on more global measures quality in comparison to the quality of adult-child interactions and/or providers' beliefs, were not surprising given that the FDCRS and ECERS-E were used as self-assessments and as the basis for the quality improvement action plan goals that PFI consultants developed with their assigned family child care providers. In other words, the CIS and measures of providers' beliefs were not the targeted areas of change for PFI consultation. Overall our hypothesis that the group of family child care providers receiving intensive, on-site PFI consultation would demonstrate larger gains in program quality soon after the completion of the consultation process compared to providers not involved in this model of consultation (i.e., control providers) was supported. However, support for the role of participation in PFI consultation in affecting immediate change in providers' beliefs was not found.

Findings related to sustained improvements in quality were much more robust. In particular, providers participating in PFI consultation demonstrated meaningful improvements in scores on both the FDCRS Total and factors and the ECERS-E, indicating positive changes in global quality and the quality of educational (i.e., literacy and numeracy) activities as assessed by an impartial data collector via observation. Specifically, family child care providers receiving PFI consultation experienced an increase in mean scores on the

FDCRS Total, FDCRS factors, and ECERS-E Total between 0.26 – 0.58, indicating significant improvement on measures rating quality on a 7-point scale. Conversely, providers in the control group actually experienced decreases in program quality between baseline (pre-consultation) and follow-up (six months after completion of consultation) measurement on the FDCRS Total, FDCRS factors, and ECERS-E Total between 0.01 – 0.19 points. This finding points to the inability of typical services and supports available to family child care providers to maintain improvements in quality once the support person (e.g., a consultant) has ended their involvement with the provider and program. In fact family child care providers in the control group only experienced one improvement in terms of quality ratings. But the 0.18 point overall improvement on the FDCRS Teaching and Interactions factor paled in comparison to the gain of over half a point more on the same scale by providers in the treatment group. Again these findings of sustained improvements in program quality for providers receiving PFI consultation even after consultation had ended support our hypothesis and provide evidence of the lasting effects of this model of support and technical assistance for family child care providers.

Supporting the idea that beliefs are more difficult to change than practice, especially when those practices and their corresponding measures are the focus of consultation-based plans and activities aimed at quality improvement, findings related to the impact of PFI consultation on providers' beliefs were less substantial. Specifically, significant sustained differences between the providers in the treatment and control groups in terms of self-reported overall job stress were found for the follow-up measurement (six months after completing work with a consultant), with providers involved in PFI consultation experiencing a decrease in job stress. This finding indicates that participation in this model

of consultation offered family child care providers a sense of reprieve from some of their work-related stressors. Furthermore, those family child care providers assigned to receive the “business as usual” model of consultation (i.e., the control group) actually reported a slight increase in job stress. One surprising finding related to the measures of beliefs used in the current study was that providers involved in PFI consultation identified an increase in work-related dissatisfaction between Time 1 and Time 3. Although there was not statistically significant difference in the mean sustained change scores related to the measure of dissatisfaction when compared to providers in the control group, this finding was still contrary to the hypothesized improvements in satisfaction for providers in the treatment group. This finding of a reported decrease in job satisfaction by the recipients of an intervention intended to benefit child care providers is comparable to research results from an evaluation of center-based teachers participating in the T.E.A.C.H. scholarship program (Miller & Bogatova, 2009). This change in satisfaction in an unexpected direction could be in part a byproduct of participation in the PFI consultation model where providers were asked to self-assess weaknesses in the quality of early care and education that they are providing to young children and develop an action plan to address changes in these areas. Bringing to light challenges in program quality may create a sense of dissatisfaction until such issues are resolved. It is also possible that these feelings of dissatisfaction may be exacerbated once the regular support of a consultant has ended. However, this finding is interesting in light of the improvements experienced in work-related stress.

Structural Characteristics and Changes in Observed Quality

In addition to independently addressing differences between treatment groups in immediate and sustained changes in beliefs and program quality, the current study proposed a

model that examined the influence of structural characteristics (e.g., provider education, training, experience, child:adult ratio) and beliefs of family child care programs as predictors of observed process quality over time. Furthermore these analyses included treatment group (PFI vs. control), the state that the family child care program was located in, and Time 1 scores on measures of quality as control variables. Results of the analyses for immediate change indicated that providers receiving PFI consultation were more likely than providers in the control group to experience greater improvements in quality measured by the FDCRS and ECERS-E, supporting the hypothesized effect of treatment immediately after completing consultation. This treatment effect was not found to be significant for the CIS scale. This lack of effect could be due to the more limited scale and range of scores on this measure. A lack of effect of intervention on CIS scores is supported by research findings that interactions between children and adults may be more challenging to impact training or technical support than more concrete aspects of family child care such as changes in the environment, health and safety, or curriculum-related practices (e.g., Kontos et al., 1996).

One particularly interesting finding was that state as a proxy variable for state level variations in regulations was not found to be an influential predictor in any of the models examining change in observed process quality soon after completion of the consultation process. In previous cross-state studies (e.g., Peisner-Feinberg & Burchinal 1997), state has accounted for significant variance in child care program quality because the regulations, monitoring, professional development, and technical support systems differ across states. Therefore, the results of the current study contradict previous research indicating that greater levels of state regulations were associated with higher program quality for family child care providers in four Midwestern states (Raikes et al., 2005). One possible explanation for this

difference in findings is that states sampled in the present study did not vary in their levels of regulations or that these variations were only related to initial levels of program quality rather than change in quality. A more plausible explanation is that utilizing the state in which a family child care program is located as a proxy for differences between states in terms of regulations, services, and supports for family child care is insufficient to capture potentially meaningful and influential variations, indicating a need for better measurement of these state level differences in future child care quality research.

On the other hand, some structural characteristics included in these analyses were found to be strong individual predictors of immediate change in quality scores. Specifically, years of provider education was found to uniquely predict immediate but not sustained changes in the quality of providers' teaching and interactions, provisions for learning and health, and the overall level of program quality. This result is surprising considering the limited variation in provider education level due to limitations (i.e., no providers with bachelor's degrees in early childhood or a related field) put in place by the project's funders. However, this finding is comparable to other studies linking higher levels of educational attainment to better quality of care (Norris, 2001; Raikes et al., 2005). Unfortunately, higher levels of education have also been associated with increased rates of turnover for family child care providers (Todd & Deery-Schmitt, 1996). Although the current study does not include measures of rates or factors related to turn over, it is possible that an important subsection of family child care providers achieving more education have been excluded, limiting the generalizability of the studies' findings.

Another structural predictor that was found to be significantly related to both immediate and sustained change in global program was the ratio of children to adults in a

family child care program. Specifically, programs with fewer children in relation to the number of adults present offered higher quality teaching and interactions and better provisions for learning and health. Similarly, findings from the NICHD Study of Early Child Care, indicated that overall group size was the strongest single predictor of positive home-based care provider behavior (Clarke-Stewart et al., 1994). In contrast, one study with a large sample of licensed family child care providers found ratio and group size to be less significant predictors of program quality than provider training (Burchinal, Howes, & Kontos, 2002). Most likely with inappropriate child:adult ratios (e.g., too many children per adult present) improvements in the quality of care and education provided would be limited. This finding has implications for state-mandated regulations of group size and ratio to ensure that family child care providers are offering an adequate level of quality to parent consumers.

Having a higher educational background related to early childhood, participating in more hours of professional development training, and more years of experience in child care were not predictive of changes in quality in the current sample. However, these provider characteristics have typically been found to be related to the quality of family child care programs (e.g., Clarke-Stewart et al., 2002; Kontos et al., 1996). Again it is possible that some structural characteristics may have an association with initial levels of quality but may not be strong predictors of changes in quality scores over relatively short periods of time (i.e., less than 2 years), such as is described in the present study. Another possible explanation for the lack of a relation between these typically assessed structural characteristics and observed changes in quality is that treatment group, state as a proxy variable, and baseline assessments of quality could be explaining a majority of the variance in change in quality. In general, adding structural variables to the model explaining immediate change scores in observed

quality only added 2 – 5 % additional variance and 1 – 7% of the variance in sustained quality change scores.

Providers' Beliefs and Changes in Observed Quality

In general the addition of beliefs variables to the models significantly improved the prediction of change in program quality beyond that accounted for by often more regulable structural characteristics. To be more specific, adding beliefs variables to the model predicting change in program quality accounted for additional significant variance (e.g., 2 – 7% of the variance in immediate and 3 – 10% of the variance in sustained change scores) beyond that accounted for by all other predictor variables included in the models. In other words, measures of providers' self reported beliefs were helpful in predicting changes in the quality of care being provided. However, only two the beliefs' measures offered relatively consistent significant contributions to the prediction of quality. Namely, family child care provider's dissatisfaction was predictive of changes in global program quality and teaching and interactions; but was not related to provisions for learning and health, provider's tone and discipline, or interactions with children. Similarly, Kontos and fellow researchers (1995) reported that child care providers with more work satisfaction and job commitment were observed to be more nurturing and involved with children in their care. Also, self-reported overall job stress had a significant association with changes in provisions for learning and health both immediately following consultation and six months after consultation. Stress was also related to sustained change in global quality and teaching and interactions with family child care providers' reporting lower levels of stress exhibiting higher scores on these dimensions of program quality. This finding is comparable to research indicating that higher

stress levels negatively influence interactions between the provider and children in their program (Kontos et al., 1995).

Upon examining the sustained change analyses, treatment group continued to be a significant factor in determining process quality in family child care programs. Specifically, providers involved in PFI consultation continued to make gains in quality of care offered even six months after completing the consultation process when compared to family child care providers in the control group. The level of associations between treatment group and quality remained comparable to those found in the analyses of immediate change scores. Furthermore, although state was not a significant variable in any of the immediate change models explaining quality, state did emerge as a significant time-invariant predictor in some the sustained change analyses. Specifically, state was found to be a significant predictor of sustained change in the FDCRS Teaching and Interactions, FDCRS Tone and Discipline, ECERS-E, and CIS Total scores.

Strengths and Limitations

The primary limitation of the current study is that the statistical analyses utilized did not account for the nested nature of the data, other than including state in the regression models as a proxy variable for state level variations affecting family child care. Specifically, family child care providers were first nested within one of the 76 consultants that they were assigned to work with based most often on geographic location. Consultants were then nested within one of the 23 agencies that agreed to participate in the study and agencies were obviously nested within one of the five states sampled. However, conducting comparable multi-level analyses using residualized change scores as the quality outcomes would have reduced statistical power because of the smaller number of family child care providers in

each cell. We acknowledge that in ignoring the nested nature of the data we run the risk of inadvertently concealing potentially influential effects of working with different individual consultants.

Another potential limitation of the present study is the limited range in terms of level and type of education. Specifically, the funding agency requested that providers with bachelor's degrees in any field related to early childhood education be excluded from the sample. However, a significant effect of total years of experience on changes in observed program quality was still identified in the present sample.

One of the most notable strengths of the current study is that large sample size ($N = 343$) of family child care providers from multiple states. Additionally, the research design of the study is a strength in that a pre-, post-, and delayed-post set of measures including data obtained through both interview and observation were obtained. Most notably the present study provides evidence of the effectiveness of the PFI model of on-site consultation in affecting program change both immediately after consultation and during a follow-up assessment in a investigation employing both a longitudinal design and random assignment of family child care providers to receive either treatment or control (i.e., "business as usual") services.

Implications and Conclusions

Family needs, income, expectations, and developmental characteristics of children dictate that settings offering high quality child care other than center-based programs are available, affordable, and accessible to families. The wide range of licensing requirements and state level regulations across the United States serves to confuse practitioners, parents, and researchers alike, and may even unintentionally neglect children cared for and educated

in home-based, family child care settings. Of particular concern was the low level of quality observed in family child care settings in the present sample prior to intervention. The most promising finding is that those providers randomly assigned to receive PFI consultation showed significant gains in global quality and the quality of educational activities being offered when compared to observations of program quality in the control group of providers experiencing “typical” agency support services. These gains in program quality were sustained for family child care provider assigned to receive PFI consultation during follow-up assessments. However, future intervention research could benefit from the inclusion of a measure of fidelity of implementation of the particular model of intervention being studied. At this point, social policy based on research in family child care may provide one of the only avenues to address levels of quality care for our youngest and most vulnerable children. Therefore, it is critical that both researchers and policymakers examine the unique qualifications, structural characteristics, beliefs, and stress of family child care providers and their programs that are most conducive to the provision of high quality care and education for young children.

Knowledge of the combination and critical values of structural components of early child care programs such as child:adult ratios, caregiver education and experience, amount and type of professional development training and provider’s beliefs about best practice, job motivation, and work-related stressors can help policymakers in developing regulations of family child care programs which ensure good quality care is being provided. The current study supports these endeavors by highlighting the significant contributions of higher levels of provider education and lower child:adult ratios to improved ratings of observed quality in family child care, even after controlling for the influence of treatment group, the location

(i.e., state) in which the program operated, and initial levels of quality. Furthermore, a clear understanding of those structural aspects and provider belief characteristics, which best support, a culture of high quality in child care programs can serve to inform state quality improvement initiatives. In conclusion, given the large numbers of children receiving care in home-based programs and the current movements towards better regulations and supports of family child care in the attempt to approve the quality of available care, further research on the effectiveness of methods to enhance child care quality in an effective and efficient manner is critical. Future investigations of methods of quality enhancement should be linked to children's outcomes.

References

- Administration for Children and Families. (2003). *Head Start Family and Child Experiences Survey (FACES) 2000: A whole child perspective on program performance (Fourth progress report)*. Washington, DC: U.S. Department of Health and Human Services.
- Arnett, J. (1989). Caregivers in day care centers: Does training matter? *Journal of Applied Developmental Psychology, 10*, 541-552.
- Bloom, P. J. (1988). Assess the climate of your center: Use the early childhood work environment survey. *Day Care and Early Education, Summer*, 9-11.
- Bloom, P. J. (1989). *Measuring work attitudes: Technical manual for the early childhood job satisfaction survey and the early childhood work environment survey*. Brandon, VT: Psychology Press.
- Bloom, P. J., Sheerer, M., & Britz, J. (1991). *Blueprint for action: Achieving center-based change through staff development*. Lake Forest, IL: New Horizons.

- Bordin, J., Machida, S., & Varnell, H. (2000). The relation of quality indicators to provider knowledge of child development in family child care homes. *Child & Youth Care Forum, 29*(5), 323-341.
- Boushey, H., & Wright, J. (2004). *Working moms and child care*. Washington, DC: Center for Economic and Policy Research.
- Bryant, D. M., Burchinal, M., Lau, L. B., & Sparling, J. J. (1994). Family and classroom correlates of Head Start children's developmental outcomes. *Early Childhood Research Quarterly, 9*, 289-309.
- Bryant, D., Wesley, P., Burchinal, M., Sideris, J., Taylor, K., Fenson, C., & Iruka, I. (2009). *The QUINCE-PFI study: An evaluation of a promising model for child care provider training. Final report*. Frank Porter Graham Child Development Institute: The University of North Carolina at Chapel Hill.
- Burchinal, M., Cryer, D., & Clifford, R. (2002). Caregiver training and classroom quality in child care centers. *Applied Developmental Science, 6*, 2-11.
- Burchinal, M., Howes, C., & Kontos, S. (2002). Structural predictors of quality in family child care homes. *Early Childhood Research Quality, 17*, 87-105.
- Burchinal, M.R., Roberts, J. E., Riggins, R., Zeisel, S., Neebe, E., & Bryant, M. (2000). Relating quality of center child care to early cognitive and language development longitudinally. *Child Development, 71*, 339-357.
- Burts, D. C., Hart, C. H., Charlesworth, R., & Kirk, L. (1990). A comparison of frequencies of stress behaviors observed in kindergarten children in classrooms with developmentally appropriate versus developmentally inappropriate instructional practice. *Early Childhood Research Quarterly, 5*, 407-423.

- Cassidy, D. J., Buell, M. J., Pugh-Hoese, S., & Russell, S. (1995). The effect of education on child care teachers' beliefs and classroom quality: Year one evaluation of the TEACH early child associate degree scholarship program. *Early Childhood Research Quarterly, 10*, 171–183.
- Cassidy, D. J., Hestenes, L. L., Hegde, A., Hestenes, S., & Mims, S. (2005). Measurement of quality in preschool child care classrooms: An exploratory and confirmatory factor analysis of the early childhood environment rating scale-revised. *Early Childhood Research Quarterly, 20*, 345–360.
- Charlesworth, R., Hart, C., Burts, D., & Hernandez, S. (1991). Kindergarten teachers' beliefs and practices. *Early Development and Care, 70*, 17–35.
- Charlesworth, R., Hart, C., Burts, D., Thomasson, R., Mosley, J., & Fleege, P. (1993). Measuring the developmental appropriateness of kindergarten teachers' beliefs and practices. *Early Childhood Research Quarterly, 8*, 255–276.
- Clarke-Stewart, K.A., Gruber, C. P., & Fitzgerald, L. M. (1994). *Children at home and in day care*. Hillsdale, NJ: Erlbaum.
- Clarke-Stewart, K. A., Vandell, D. L., Burchinal, M., O'Brien, M., & McCartney, K. (2002). Do regulable features of child-care homes affect children's development? *Early Childhood Research Quarterly, 17*, 52–86.
- Clifford, R.M., Barbarin, O., Chang, F., Early, D.M., Bryant, D., Howes, C., . . . Pianta, R. (2005). What is pre-kindergarten? Characteristics of public prekindergarten programs. *Applied Developmental Science, 9*(3), 126-143.

- Coley, R., Chase-Lansdale, P. L., & Li-Grining, C. (2001). *Child care in the era of welfare reform: Quality, choices, and preferences. Policy brief 01-04 from welfare, children & families: A three-city study*. Baltimore: Johns Hopkins University, Baltimore.
- Curbow, B., Spratt, K., Ungaretti, A. McDonnell, K., & Breckler, S. (2001) Development of the child care worker job stress inventory. *Early Childhood Research Quarterly, 15*(4), 515-536.
- Doherty, G., Forer, B., Lero, D., Goelman, H., & LaGrange, A. (2006). Predictors of quality in family child care. *Early Childhood Research Quarterly, 21*, 296–312.
- Dowsett, C. J., Huston, A. C., Imes, A. E., & Gennetian, L. (2008). Structural and process features in three types of child care for children from high and low income families. *Early Childhood Research Quarterly, 23*, 69–93.
- Galinsky, E., Howes, C., & Kontos, S. (1995). *The family child care training study: Highlights of findings*. New York, NY: Families and Work Institute.
- Galinsky, E., Howes, C., Kontos, S., & Shinn, M. (1994). *The study of children in family child care and relative care*. New York: Families and Work Institute.
- Harms, T., & Clifford, D. (1989). *Family Day Care Rating Scale*. New York: Teachers College Press.
- Harms, T., Clifford, R., & Cryer, D. (1998). *The Early Childhood Environment Rating Scale -Revised*. Columbia, NY: Teachers College Press.
- Hegland, S. & Oesterreich, L. (2005). *Observed quality in Iowa classrooms serving preschoolers with IEPs: A report to the Iowa Department of Education*.

- Helburn, S. W. (Ed.). (1995). *Cost, quality, and child outcomes in child care centers: Technical report*. Denver, CO: Department of Economics, Center for Research in Economic and Social Policy, University of Colorado at Denver.
- Howes, C., Phillips, D. A., & Whitebook, M. (1992). Thresholds of quality: Implications for the social development of children in center-based child care. *Child Development, 53*, 449–460.
- Howes, C. & Stewart, P. (1987). Child's play with adults, toys, and peers: An examination of family and child care influences. *Developmental Psychology, 23*, 423–430.
- Jaeger, E., & Funk, S. (2001). *The Philadelphia child care quality study: An examination of quality in selected early education and care settings*. Philadelphia, PA: Saint Joseph's University.
- Kontos, S., Howes, C., & Galinsky, E. (1996). Does training make a difference to quality in family child care? *Early Childhood Research Quarterly, 11*(4), 427-445.
- Kontos, S., Howes, C., Shinn, M., & Galinsky, E. (1995). *Quality in family child care and relative care*. New York, NY: Teachers College Press.
- Kontos, S. Hsu, H., & Dunn, L. (1994). Children's cognitive and social competence in child-care centers and family day-care homes. *Journal of Applied Developmental Psychology, 15*(3), 387-411.
- Layzer, J. I., Goodson, B. D., & Moss, M. (1993). *Life in preschool: Observational study of early childhood programs, final report (Vol. 1)*. Cambridge, MA: ABT Associates, Development Assistance Corporation and RMC Research Corporation.
- Martinez-Beck, I., & Zaslow, M. (2006). The context for critical issues in early childhood professional development. In M. Zaslow & I. Martinez-Beck (Eds.), *Critical issues in*

- early childhood professional development (pp. 1–16). Baltimore, MD: Brookes Publishing.
- Maxwell, K. L., McWilliam, R. A., Hemmeter, M. L., Ault, M. J., & Schuster, J.W. (2001). Predictors of developmentally appropriate classroom practices in kindergarten through third grade. *Early Childhood Research Quarterly, 16*, 421–452.
- McMullen, M. B., Elicker, J., Goetze, G., Huang, H., Lee, S. Mathers, C., . . . Yang, H. (2006). Using collaborative assessment to examine the relationship between self-reported beliefs and the documentable practices of preschool teachers. *Early Childhood Education Journal, 34*(1), 81-91.
- Miller, J. A. & Bogatova, T. (2009). Quality improvements in the early care and education workforce: Outcomes and impact of the T.E.A.C.H. early childhood project. *Evaluation and Program Planning, 32*, 257–277.
- National Association of Child Care Resource & Referral Agencies (NACCRRA). (2010). *Leaving children to chance: 2010 update: NACCRRA's ranking of state standards and oversight of small family child care homes*. Retrieved from <http://www.naccrra.org/publications/naccrra-publications/leaving-children-to-chance-2010.php>
- National Center for Educational Studies (NCES). (1996). *1996 National Household Education Survey*. Washington, DC: U.S. Department of Education Office of Educational Research and Improvement.
- National Survey of America's Families. (2002). *Assessing the new federalism*. Washington, D.C.: National Academy Press.

- NICHD Early Child Care Research Network. (1996). Characteristics of infant child care: Factors contributing to positive caregiving. *Early Childhood Research Quarterly, 11*, 269–306.
- NICHD Early Child Care Research Network. (1998). Early child care and self-control, compliance, and problem behavior at twenty-four and thirty-six months. *Child Development, 69*, 1145–1170.
- NICHD Early Child Care Research Network. (1999). Child outcomes when child care center classes meet recommended standards for quality. *American Journal of Public Health, 89*, 1072–1077.
- NICHD Early Child Care Research Network. (2000). The relation of child care to cognitive and language development. *Child Development, 71*, 960–980.
- NICHD Early Child Care Research Network. (2001). Child care and children's peer interaction at 24 and 36 months: The NICHD study of early child care. *Child Development, 72*, 1478–1500.
- NICHD Early Child Care Research Network. (2002). Child care structure → process → outcome: Direct and indirect effects of child-care quality on young children's development. *Psychological Science, 13*, 199–206.
- NICHD Early Child Care Research Network. (2003). Does amount of time spent in child care predict socioemotional adjustment during the transition to kindergarten? *Child Development, 74*, 976–1005.
- Norris, D. J. (2001). Quality of care offered by providers with differential patterns of workshop participation. *Child & Youth Care Forum, 30*(2), 111-121.

- Palsha, S., & Wesley, P. (1998). Improving quality in early childhood environments through on-site consultation. *Topics in Early Childhood Special Education, 18*, 243-253.
- Peisner-Feinberg, E. S. & Burchinal, M. R. (1997). Relations between preschool children's child care experiences and concurrent development: The cost, quality, and outcomes study. *Merrill-Palmer Quarterly, 43*, 451-477.
- Peisner-Feinberg, E. S., Burchinal, M. R., Clifford, R. M., Culkin, M. L., Howes, C., Kagan, S. L., & Yazejian, N. (2001). The relation of preschool child-care quality to children's cognitive and social developmental to children's cognitive and social developmental trajectories through second grade. *Child Development, 72*(5), 1534-1553.
- Phillips, D.A., Mekos, M., Scarr, S., McCartney, K., & Abbott-Shim, M. (2000). Within and beyond the classroom door: Assessing quality in child care centers. *Early Childhood Research Quarterly, 15*, 475-496.
- Phillipsen, L. C., Burchinal, M., Howes, C., & Cryer, D. (1997). The prediction of process quality from structural features of child care. *Early Childhood Research Quarterly, 12*, 281-303.
- Raikes, H. A., Raikes, H. H., & Wilcox, B. (2005). Regulation, subsidy receipt, and provider characteristics: What predicts quality in child care homes? *Early Childhood Research Quarterly, 20*(2), 164-184.
- Schaefer, E. S., & Edgerton, M. (1985). Parental and child correlates of parental modernity. In I. Sigel (Ed.), *Parental belief systems: The psychological consequences for children* (pp. 287-317). Hillsdale, NJ: Erlbaum.

- Sylva, K., Siraj-Blatchford, I., & Taggart, B. (2003). *Assessing quality in the early years: Early Childhood Environment Rating Scale-Extension (ECERS-E): Four curricular subscales*. Stoke-on Trent: Trentham Books.
- Todd, C. M., & Deery-Schmitt, D. M. (1996). Factors affecting turnover among family child care providers: A longitudinal study. *Early Childhood Research Quarterly, 11*(3), 351-376.
- U.S. Census Bureau. (2002). *Who's minding the kids? Child care arrangements: Winter 2002*. Retrieved from <http://www.census.gov/prod/2005pubs/p70-101.pdf>
- Wesley, P. (1994). Providing on-site consultation to promote quality in integrated child care programs. *Journal of Early Intervention, 18*, 391-402.
- Whitebook, M., Howes, C., & Phillips, D. (1989). *Who cares? Child care teachers and the quality of care in America. Final report of the National Child Care Staffing Study*. Oakland, CA: Child Care Employee Project.
- Zigler, E.F., & Gilman, E. (1996). Not just any care: Shaping a coherent child care policy. In E. F. Zigler, S.L. Kagan, & N.W. Hall (Eds.), *Children, families, and government: Preparing for the twenty-first century* (pp. 94-116). Cambridge: Cambridge University Press.

Table 4.1

Time 1 Family Child Care Provider Characteristics and Beliefs

	<i>M</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>
Structural Characteristics				
Education in Years (<i>N</i> = 333)	13.19	1.56	8.00	16.00
Education Level				
Less than High School (%)	3.50			
High School (%)	57.10			
Some College (technical degree; %)	3.20			
Associate's degree (%)	16.60			
BA or more (5)	16.60			
CDA (<i>N</i> = 312; %)	7.37	0.26		
Of A.A.s, % in ECE or Education (<i>N</i> = 318; %)	23.90	42.7		
Professional Development Training Hrs (<i>N</i> = 277)	29.75	33.61	0.00	426.00
< 10 hours of Training in past 2 years (%)	15.5			
11 – 20 Hours of Training in past 2 years (%)	16.9			
21 – 30 Hours of Training in past 2 years (%)	23.3			
> 30 Hours of Training in past 2 years (%)	25.1			
Currently taking college courses (%)	7.37	26.17		
Years Experience in Child Care (<i>N</i> = 330)	9.49	8.78	0.00	37.00

Table 4.2

Time 1 Family Child Care Program Characteristics and Quality

	<i>M</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>
Program Descriptives				
Type of Area where care is provided, (<i>N</i> = 324, %)				
Rural, Small, or Medium Town (0-50,000 pop.; %)	50.10			
Large town, Urban, or suburban (%)	44.30			
Observed group size, mean (<i>N</i> = 341)	5.22	2.31	1.00	17.00
Number of children enrolled (<i>N</i> = 334)	6.78	3.11	1.00	26.00
Child per Adult Ratio (<i>N</i> = 340)	4.41	1.88	0.50	12.00
Hours of program operation each week (<i>N</i> = 332)	67.69	32.74	14.00	168.00
Program Composition				
% girls enrolled in home	46.65	22.65		
% children w/ family income < \$30,000 (<i>N</i> = 285; %)	32.75	36.36	0.00	100.00
% children receiving subsidy (<i>N</i> = 324; %)	19.06	28.72	0.00	100.00
% children with an IEP or IFSP (<i>N</i> = 327; %)	2.34	6.60	0.00	50.00
% parents w/ Limited English Proficiency (<i>N</i> = 330; %)	1.43	7.16	0.00	83.33
Support Received				
Has paid assistant (<i>N</i> = 333; %)	23.72	42.60		
Has unpaid assistant (<i>N</i> = 333; %)	3.44	4.76		
Participates in CACFP (<i>N</i> = 326; %)	7.67	4.23		
Received Quality Enhancement grant (<i>N</i> = 113; %)	2.39	4.28		
Family home accredited by NAFCC (<i>N</i> = 305; %)	5.25	2.23		

Note. * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 4.3

Family Child Care Provider Beliefs and Observed Quality at All Three Time Points

	PFI Treatment Group			Control Group		
	Time 1 (<i>N</i> = 127)	Time 2 (<i>N</i> = 96)	Time 3 (<i>N</i> = 89)	Time 1 (<i>N</i> = 216)	Time 2 (<i>N</i> = 180)	Time 3 (<i>N</i> = 161)
Beliefs Predictor Variables						
(All Scales = 1 – 5)						
Modernity Total Score	3.31	3.36	3.42	3.32	3.40	3.36
Modernity Progressiveness	4.08	4.10	4.11	4.08	4.03	4.02
Modernity Traditional	2.95	2.89	2.81	2.93	2.82	2.86
Teacher Beliefs Scale						
(TBS) – FACES, Total	3.50	3.58	3.61	3.53	3.56	3.56
Kontos Total Score	4.06	3.94	3.93	4.03	4.02	3.98
Kontos Prof. Motivation	4.28	4.13	4.18	4.21	4.18	4.13
Kontos Dissatisfaction	1.99	2.08	2.14	2.04	2.01	2.09
CCW-JSI – Job Stress	2.33	2.31	2.25	2.34	2.33	2.35
CCW-JSI Job Demands	2.68	2.61	2.58	2.69	2.69	2.73
CCW-JSI Job Spec. Dem.	2.65	2.60	2.60	2.68	2.62	2.66
CCW-JSI Job Resources	4.18	4.16	4.21	4.17	4.20	4.15
CCW-JSI Job Control	3.88	3.85	4.01	3.90	3.87	3.91

Table 4.3 Continued

Quality Variables (FDCRS/ ECERS-E Scale = 1 – 7, CIS Scale = 1 – 4)	PFI Treatment Group			Control Group		
	Time 1 (<i>N</i> = 127)	Time 2 (<i>N</i> = 96)	Time 3 (<i>N</i> = 89)	Time 1 (<i>N</i> = 216)	Time 2 (<i>N</i> = 180)	Time 3 (<i>N</i> = 161)
FDCRS Total Score	3.15	3.63	3.66	3.24	3.38	3.31
FDCRS Teach. & Int.	3.20	3.86	3.91	3.24	3.54	3.42
FDCRS Tone & Discipline	3.77	4.05	4.12	3.84	3.85	3.75
FDCRS Provisions/Health	2.70	3.05	3.06	2.79	2.83	2.81
ECERS-E, Overall Score	1.91	2.21	2.23	1.90	1.98	1.90
ECERS-E, Literacy	2.36	2.73	2.77	2.34	2.43	2.35
ECERS-E, Numeracy	1.44	1.69	1.72	1.44	1.54	1.44
ECERS-E, Individualizing	1.08	1.13	1.16	1.07	1.12	1.05
CIS, Total Score	3.32	3.37	3.41	3.34	3.31	3.32
CIS, Permissiveness	1.67	1.43	1.36	1.57	1.50	1.53
CIS, Detachment	1.48	1.51	1.46	1.47	1.55	1.58
CIS, Sensitivity	2.87	2.92	2.99	2.89	2.84	2.88
CIS, Harshness	1.29	1.26	1.25	1.27	1.29	1.29

Table 4.4

Internal Consistency of Family Providers' Beliefs and Observed Quality Measures at 3 Time Points

Beliefs Measures	Items	Time 1	Time 2	Time 3
Modernity Total Scale	16	0.78 (<i>N</i> = 313)	0.77 (<i>N</i> = 261)	0.80 (<i>N</i> = 227)
Modernity Progressive	4	0.29 (<i>N</i> = 329)	0.43 (<i>N</i> = 267)	0.45 (<i>N</i> = 231)
Modernity Traditional	12	0.81 (<i>N</i> = 315)	0.81 (<i>N</i> = 261)	0.81 (<i>N</i> = 227)
Teacher Beliefs Scale (TBS; FACES adapt.)	14	0.66 (<i>N</i> = 205)	0.63 (<i>N</i> = 259)	0.64 (<i>N</i> = 220)
Kontos Total Scale	13	0.63 (<i>N</i> = 314)	0.69 (<i>N</i> = 245)	0.74 (<i>N</i> = 216)
Kontos Professional Motivation	7	0.62 (<i>N</i> = 321)	0.61 (<i>N</i> = 257)	0.71 (<i>N</i> = 222)
Kontos Dissatisfaction	4	0.50 (<i>N</i> = 327)	0.62 (<i>N</i> = 258)	0.69 (<i>N</i> = 223)
Child Care Worker Job Stress Inventory (CCW-JSI: Gilliam adapt.)	21	0.80 (<i>N</i> = 313)	0.83 (<i>N</i> = 253)	0.86 (<i>N</i> = 222)
CCW-JSI: Job Demands Subscale	6	0.67 (<i>N</i> = 321)	0.64 (<i>N</i> = 262)	0.69 (<i>N</i> = 223)
CCW-JSI Job-Specific Demands Subscale	5	0.46 (<i>N</i> = 326)	0.50 (<i>N</i> = 262)	0.60 (<i>N</i> = 228)
CCW-JSI: Job Resources Subscale	5	0.81 (<i>N</i> = 329)	0.81 (<i>N</i> = 265)	0.86 (<i>N</i> = 229)
CCW-JSI: Job Control Subscale	5	0.69 (<i>N</i> = 328)	0.73 (<i>N</i> = 266)	0.74 (<i>N</i> = 228)
Quality Measures				
FDCRS Total Score	32	0.90 (<i>N</i> = 248)	0.92 (<i>N</i> = 200)	0.93 (<i>N</i> = 182)
FDCRS Factor 1: Teaching & Interaction	12	0.83 (<i>N</i> = 275)	0.88 (<i>N</i> = 222)	0.89 (<i>N</i> = 203)
FDCRS Factor 2: Tone & Discipline	9	0.78 (<i>N</i> = 274)	0.82 (<i>N</i> = 224)	0.84 (<i>N</i> = 202)
FDCRS Factor 3: Provisions/Health	11	0.76 (<i>N</i> = 253)	0.78 (<i>N</i> = 205)	0.82 (<i>N</i> = 187)

Table 4.4 Continued

	Items	Time 1	Time 2	Time 3
ECERS-E, Overall Score	11	0.82 (<i>N</i> = 327)	0.82 (<i>N</i> = 257)	0.82 (<i>N</i> = 240)
CIS Total Score	26	0.86 (<i>N</i> = 331)	0.87 (<i>N</i> = 256)	0.89 (<i>N</i> = 231)

Table 4.5

T-tests for Immediate Change Scores (Time 2 – Time 1) on Beliefs and Quality Variables

	PFI	Control	<i>t-value</i>	<i>df</i>
Belief Variables (Scales = 1 – 5)	Mean Change (<i>t</i> ; <i>N</i>)	Mean Change (<i>t</i> ; <i>N</i>)		
Modernity Total	0.33(5.84; <i>N</i> = 91)	1.34 (6.96; <i>N</i> = 171)	-1.17	260
TBS (FACES), Total	0.13 (0.41; <i>N</i> = 53)	0.02 (0.39; <i>N</i> = 121)	1.65	172
Kontos Dissatisfaction	0.10 (0.64; <i>N</i> = 91)	0.01 (0.67; <i>N</i> = 172)	1.02	261
CCW-JSI Total Job Stress	-0.02 (0.36; <i>N</i> = 91)	0.00 (0.37; <i>N</i> = 172)	-0.28	261
Quality Variables				
(Scales: FDCRS/ ECERS-E = 1 – 7, CIS = 1 – 4)				
FDCRS Total	0.37 (0.75; <i>N</i> = 96)	0.06 (0.79; <i>N</i> = 180)	3.19*	274
FDCRS Teach. & Interact.	0.53 (0.87; <i>N</i> = 96)	0.18 (0.89; <i>N</i> = 180)	3.12**	274
FDCRS Tone & Discipline	0.22 (1.02; <i>N</i> = 96)	-0.07 (1.14; <i>N</i> = 180)	2.08*	274
FDCRS Provisions/Health	0.26 (0.99; <i>N</i> = 96)	-0.02 (0.94; <i>N</i> = 180)	2.28*	274
ECERS-E, Overall Score	0.27 (0.75; <i>N</i> = 96)	0.01 (0.63; <i>N</i> = 180)	3.03*	257
CIS, Total Score	0.04 (0.35; <i>N</i> = 95)	-0.04 (0.43; <i>N</i> = 180)	1.63	273
CIS, Permissiveness	-0.22 (0.65; <i>N</i> = 91)	-0.09 (0.65; <i>N</i> = 177)	-1.53	266
CIS, Detachment	0.01 (0.57; <i>N</i> = 94)	0.09 (0.66; <i>N</i> = 180)	-1.07	272
CIS, Sensitivity	0.03 (0.48; <i>N</i> = 94)	-0.09 (0.65; <i>N</i> = 180)	1.58	272
CIS, Harshness	-0.03 (0.38; <i>N</i> = 95)	-0.02 (0.43; <i>N</i> = 180)	-0.91	273

Note. * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 4.6

T-tests for Sustained Scores (Time 3 – Time 1) on Beliefs and Quality Variables

	PFI	Control	t-value	df
Belief Variables (Scales = 1 – 5)	Mean Change (<i>t</i> ; <i>N</i>)	Mean Change (<i>t</i> ; <i>N</i>)		
Modernity Total	1.62 (7.02; <i>N</i> = 79)	0.79 (7.26; <i>N</i> = 148)	0.83	225
TBS (FACES version), Total	0.16 (0.52; <i>N</i> = 46)	0.04 (0.40; <i>N</i> = 103)	1.50	147
Kontos Dissatisfaction	0.17 (0.62; <i>N</i> = 79)	0.01 (0.75; <i>N</i> = 148)	1.71	225
CCW-JSI Overall Job Stress	-0.10 (0.43; <i>N</i> = 78)	0.03 (0.39; <i>N</i> = 148)	-2.20*	224
Quality Variables				
(Scales: FDCRS/ ECERS-E = 1 – 7, CIS = 1 – 4)				
FDCRS Total	0.41 (0.82; <i>N</i> = 89)	-0.01 (0.74; <i>N</i> = 161)	4.02***	248
FDCRS Teach. & Interact.	0.58 (0.89; <i>N</i> = 89)	0.08 (0.86; <i>N</i> = 161)	4.35***	248
FDCRS Tone & Discipline	0.30 (1.17; <i>N</i> = 89)	-0.19 (1.07; <i>N</i> = 161)	3.37***	248
FDCRS Provisions/Health	0.26 (0.99; <i>N</i> = 89)	-0.05 (0.89; <i>N</i> = 161)	2.47**	278
ECERS-E, Overall Score	0.28 (0.76; <i>N</i> = 82)	-0.03 (0.70; <i>N</i> = 155)	3.18**	235
CIS, Total Score	0.09 (0.41; <i>N</i> = 89)	-0.04 (0.42; <i>N</i> = 162)	2.32*	249
CIS, Permissiveness	-0.30 (0.64; <i>N</i> = 87)	-0.06 (0.76; <i>N</i> = 160)	-2.48*	245
CIS, Detachment	-0.05 (0.67; <i>N</i> = 89)	0.12 (0.65; <i>N</i> = 160)	-2.04*	247
CIS, Sensitivity	0.10 (0.61; <i>N</i> = 88)	-0.05 (0.63; <i>N</i> = 162)	1.79	248
CIS, Harshness	-0.02 (0.36; <i>N</i> = 89)	0.04 (0.44; <i>N</i> = 162)	-1.04	249

Note. * $p < .05$, ** $p < .01$, *** $p < .001$

Table 4.7

Hierarchical Multivariate Linear Regression Model for FDCRS Total Immediate (Time 2 – Time 1) Residualized Change Score (N =204)

Source	Equation 1 ^a	Equation 2 ^a	Equation 3 ^a	Equation 4 ^a
Constant	0.01 (0.13)	1.40 (5.71)***	2.36 (4.82)***	2.72 (4.16)***
Treatment Group	0.36 (3.06)**	0.34 (3.16)**	0.32 (2.97)**	0.32 (3.05)**
State		-0.04 (-0.89)	-0.06 (-1.24)	-0.05 (-1.00)
FDCRS Total Time 1		-0.38 (-5.73)***	-0.39 (-5.61)***	-0.41 (-5.95)***
Education			-0.09 (-2.73)**	-0.09 (-2.70)**
A.A. in ECE			0.10 (0.78)	0.07 (0.56)
Prof. Dev. Training			0.00 (1.09)	0.00 (0.95)
Experience			0.00 (0.29)	-0.01 (-0.77)
Ratio			0.06 (2.04)*	0.06 (2.18)*
Modernity Total				-0.10 (-0.93)
TBS (FACES), Total				0.21 (1.59)
Kontos Dissatisfaction				-0.14 (-2.05)*
CCW-JSI Job Stress				-0.18 (-1.50)
Model <i>F</i>	9.39 (1, 202)** $R^2 = 0.04$, $\Delta R^2 = 0.04$ $\Delta F = 9.39$ **	15.78 (3, 200)*** $R^2 = 0.19$, $\Delta R^2 = 0.15$ $\Delta F = 18.18$ ***	7.72 (8, 195)*** $R^2 = 0.24$, $\Delta R^2 = 0.05$ $\Delta F = 2.52$ *	6.56 (12, 191)*** $R^2 = 0.29$, $\Delta R^2 = 0.05$ $\Delta F = 3.47$ **

Note. * $p < .05$, ** $p < .01$, *** $p < .001$.

^a For each equation the unstandardized Beta (*t*-value) are reported.

Table 4.8

Hierarchical Multivariate Regression Model for FDCRS Factor 1: Teaching and Interactions Immediate (Time 2 – Time 1) Residualized Change Score (N =204)

Source	Equation 1 ^a	Equation 2 ^a	Equation 3 ^a	Equation 4 ^a
Constant	0.14 (1.72)	1.14 (4.34)***	2.02 (3.40)***	2.48 (3.16)**
Treatment Group	0.46 (3.41)***	0.45 (3.52)***	0.45 (3.51)***	0.47 (3.72)***
State		0.01 (0.15)	-0.01 (-0.24)	0.01 (0.08)
FDCRS Total Time 1		-0.30 (-4.89)***	-0.30 (-4.53)***	-0.31 (-4.92)***
Education			-0.08 (-2.05)*	-0.08 (-1.95)*
A.A. in ECE			0.08 (0.55)	0.04 (0.25)
Prof. Dev. Training			0.00 (1.48)	0.00 (1.32)
Experience			-0.01 (-1.29)	-0.02 (-2.42)*
Ratio			0.06 (1.82)	0.07 (1.97)*
Modernity Total				-0.10 (-0.84)
TBS (FACES), Total				0.24 (1.51)
Kontos Dissatisfaction				-0.24 (-2.94)**
CCW-JSI Job Stress				-0.19 (-1.34)
Model <i>F</i>	11.60 (1, 202)*** $R^2 = 0.05$, $\Delta R^2 = 0.05$ $\Delta F = 11.60$ ***	12.25 (3, 200)*** $R^2 = 0.16$, $\Delta R^2 = 0.10$ $\Delta F = 11.94$ ***	5.78 (8, 195)*** $R^2 = 0.19$, $\Delta R^2 = 0.04$ $\Delta F = 1.77$	5.75 (12, 191)*** $R^2 = 0.27$, $\Delta R^2 = 0.07$ $\Delta F = 4.79$ ***

Note. * $p < .05$, ** $p < .01$, *** $p < .001$.

^a For each equation the unstandardized Beta (t-value) are reported.

Table 4.9

Hierarchical Multivariate Regression Model for FDCRS Factor 2: Tone and Discipline Immediate (Time 2 – Time 1) Residualized Change Score (N = 204)

Source	Equation 1 ^a	Equation 2 ^a	Equation 3 ^a	Equation 4 ^a
Constant	-0.15 (-1.54)	2.19 (7.36)***	2.86 (4.44)***	2.54 (2.88)**
Treatment Group	0.37 (2.23)*	0.33 (2.33)*	0.30 (2.07)*	0.30 (2.11)*
State		0.00 (0.00)	-0.03 (-0.41)	-0.02 (-0.26)
FDCRS Total Time 1		-0.58 (-8.81)***	-0.58 (-8.44)***	-0.58 (-8.20)***
Education			-0.07 (-1.60)	-0.07 (-1.56)
A.A. in ECE			0.11 (0.64)	0.07 (0.39)
Prof. Dev. Training			0.00 (0.18)	0.00 (0.13)
Experience			0.01 (0.72)	0.00 (0.03)
Ratio			0.06 (1.44)	0.06 (1.45)
Modernity Total				-0.07 (-0.47)
TBS (FACES), Total				0.23 (1.31)
Kontos Dissatisfaction				-0.17 (-1.83)
CCW-JSI Job Stress				0.04 (0.24)
Model <i>F</i>	4.99 (1, 202)* $R^2 = 0.02$, $\Delta R^2 = 0.02$ $\Delta F = 4.99^*$	29.01 (3, 200)*** $R^2 = 0.30$, $\Delta R^2 = 0.28$ $\Delta F = 40.06^{***}$	11.62 (8, 195)*** $R^2 = 0.32$, $\Delta R^2 = 0.02$ $\Delta F = 1.13$	8.31 (12, 191)*** $R^2 = 0.34$, $\Delta R^2 = 0.02$ $\Delta F = 1.46$

Note. * $p < .05$, ** $p < .01$, *** $p < .001$.

^a For each equation the unstandardized Beta (t-value) are reported.

Table 4.10

Hierarchical Multivariate Regression Model for FDCRS Factor 3: Provisions for Learning and Health Immediate (Time 2 – Time 1) Residualized Change Score (N =204)

Source	Equation 1 ^a	Equation 2 ^a	Equation 3 ^a	Equation 4 ^a
Constant	-0.08 (-0.92)	1.88 (8.67)***	2.72 (5.19)***	3.23 (4.48)***
Treatment Group	0.30 (2.03)*	0.25 (2.12)*	0.23 (1.89)	0.22 (1.88)
State		-0.00 (-0.02)	-0.03 (-0.51)	-0.03 (-0.43)
FDCRS Total Time 1		-0.67 (-9.87)***	-0.66 (-9.29)***	-0.66 (-9.35)***
Education			-0.09 (-2.38)*	-0.09 (-2.41)*
A.A. in ECE			0.09 (0.66)	0.07 (0.50)
Prof. Dev. Training			0.00 (0.97)	0.00 (0.75)
Experience			0.01 (0.79)	-0.00 (-0.07)
Ratio			0.07 (1.98)*	0.07 (2.15)*
Modernity Total				-0.11 (-0.93)
TBS (FACES), Total				0.18 (1.22)
Kontos Dissatisfaction				-0.07 (-0.89)
CCW-JSI Job Stress				-0.26 (-1.95)*
Model <i>F</i>	4.13 (1, 202)* $R^2 = 0.02$ $\Delta R^2 = 0.02$ $\Delta F = 4.13^*$	38.10 (3, 200)*** $R^2 = 0.36$ $\Delta R^2 = 0.34$ $\Delta F = 54.01^{***}$	16.27 (8, 195)*** $R^2 = 0.40$ $\Delta R^2 = 0.04$ $\Delta F = 2.38^*$	11.90 (12, 191)*** $R^2 = 0.43$ $\Delta R^2 = 0.03$ $\Delta F = 2.29$

Note. * $p < .05$, ** $p < .01$, *** $p < .001$.

^a For each equation the unstandardized Beta (t-value) are reported.

Table 4.11

Hierarchical Multivariate Linear Regression Model for ECERS-E Total Immediate (Time 2 – Time 1) Residualized Change Score (N = 192)

Source	Equation 1 ^a	Equation 2 ^a	Equation 3 ^a	Equation 4 ^a
Constant	-0.04 (-0.68)	0.72 (4.03)***	1.41 (3.18)**	1.86 (3.07)**
Treatment Group	0.39 (3.65)***	0.34 (3.49)***	0.31 (3.21)**	0.33 (3.46)***
State		0.03 (0.84)	0.03 (0.74)	0.05 (1.16)
FDCRS Total Time 1		-0.42 (-6.34)***	-0.45 (-6.24)***	-0.47 (-6.63)***
Education			-0.06 (-1.98)*	-0.05 (-1.56)
A.A. in ECE			0.01 (0.13)	-0.01 (-0.11)
Prof. Dev. Training			0.00 (0.95)	0.00 (0.87)
Experience			0.01 (0.87)	0.00 (0.25)
Ratio			0.03 (0.95)	0.03 (1.01)
Modernity Total				-0.01 (-0.08)
TBS (FACES), Total				0.01 (0.05)
Kontos Dissatisfaction				-0.14 (-2.13)*
CCW-JSI Job Stress				-0.13 (-1.21)
Model <i>F</i>	13.33(1, 190)*** $R^2 = 0.07$ $\Delta R^2 = 0.07$ $\Delta F = 13.33$ ***	18.92 (3, 188)*** $R^2 = 0.23$ $\Delta R^2 = 0.17$ $\Delta F = 20.37$ ***	8.09 (8, 183)*** $R^2 = 0.26$ $\Delta R^2 = 0.03$ $\Delta F = 1.45$	6.34 (12, 179)*** $R^2 = 0.30$ $\Delta R^2 = 0.04$ $\Delta F = 2.36$

Note. * $p < .05$, ** $p < .01$, *** $p < .001$.

^a For each equation the unstandardized Beta (*t*-value) are reported

Table 4.12

Hierarchical Multivariate Linear Regression Model for CIS, Total Immediate (Time 2 – Time 1) Residualized Change Score (N = 202)

Source	Equation 1 ^a	Equation 2 ^a	Equation 3 ^a	Equation 4 ^a
Constant	-0.06 (-1.59)	2.15 (8.39)***	2.30 (7.16)***	2.09 (5.44)***
Treatment Group	0.08 (1.29)	0.08 (1.53)	0.06 (1.25)	0.07 (1.31)
State		-0.02 (-1.11)	-0.04 (-1.53)	-0.03 (-1.30)
FDCRS Total Time 1		-0.63 (-8.87)***	-0.63 (-8.73)***	-0.66 (-9.12)***
Education			-0.02 (-1.35)	-0.02 (-1.28)
A.A. in ECE			0.08 (1.27)	0.05 (0.86)
Prof. Dev. Training			0.00 (-0.21)	-0.00 (-0.13)
Experience			0.00 (1.39)	0.00 (0.95)
Ratio			0.02 (1.49)	0.02 (1.25)
Modernity Total				0.07 (1.49)
TBS (FACES), Total				0.04 (0.68)
Kontos Dissatisfaction				-0.06 (-1.77)
CCW-JSI Job Stress				0.03 (0.47)
Model <i>F</i>	1.66 (1, 200) $R^2 = 0.01$ $\Delta R^2 = 0.01$ $\Delta F = 1.66$	27.01 (3, 198)*** $R^2 = 0.29$ $\Delta R^2 = 0.28$ $\Delta F = 39.37$ ***	11.31 (8, 193)*** $R^2 = 0.32$ $\Delta R^2 = 0.03$ $\Delta F = 1.63$	8.47 (12, 189)*** $R^2 = 0.35$ $\Delta R^2 = 0.03$ $\Delta F = 2.21$

Note. * $p < .05$, ** $p < .01$, *** $p < .001$.

^a For each equation the unstandardized Beta (*t*-value) are reported.

Table 4.13

Hierarchical Multivariate Linear Regression Model for FDCRS Total Sustained (Time 3 – Time 1) Residualized Change Score (N =179)

Source	Equation 1 ^a	Equation 2 ^a	Equation 3 ^a	Equation 4 ^a
Constant	-0.10 (-1.38)	0.91 (3.52)***	0.99 (1.88)	1.68 (2.49)*
Treatment Group	0.49 (4.11)***	0.49 (4.32)***	0.44 (3.89)***	0.44 (3.99)***
State		0.06 (1.11)	0.04 (0.75)	0.07 (1.39)
FDCRS Total Time 1		-0.35 (-4.82)***	-0.37 (-4.99)***	-0.42 (-5.66)***
Education			-0.03 (-0.78)	-0.02 (-0.66)
A.A. in ECE			0.12 (0.85)	0.05 (0.40)
Prof. Dev. Training			0.00 (0.73)	0.00 (0.29)
Experience			0.01 (1.73)	0.01 (0.78)
Ratio			0.06 (1.92)	0.06 (2.08)*
Modernity Total				-0.01 (-0.10)
TBS (FACES), Total				0.15 (1.02)
Kontos Dissatisfaction				-0.18 (-2.54)**
CCW-JSI Job Stress				-0.30 (-2.48)**
Model <i>F</i>	16.86 (1, 177)*** $R^2 = 0.09$, $\Delta R^2 = 0.09$ $\Delta F = 16.86$ ***	14.03 (3, 175)*** $R^2 = 0.19$, $\Delta R^2 = 0.11$ $\Delta F = 11.61$ ***	6.76 (8, 170)*** $R^2 = 0.24$, $\Delta R^2 = 0.05$ $\Delta F = 2.12$	7.11 (12, 166)*** $R^2 = 0.34$, $\Delta R^2 = 0.10$ $\Delta F = 6.16$ ***

Note. * $p < .05$, ** $p < .01$, *** $p < .001$.

^a For each equation the unstandardized Beta (*t*-value) are reported.

Table 4.14

Hierarchical Multivariate Regression Model for FDCRS Factor 1: Teaching and Interactions Sustained (Time 3 – Time 1) Residualized Change Score (N =179)

Source	Equation 1 ^a	Equation 2 ^a	Equation 3 ^a	Equation 4 ^a
Constant	0.01 (0.17)	0.80 (3.03)**	0.80 (1.28)	1.41 (1.75)
Treatment Group	0.62 (4.43)***	0.63 (4.82)***	0.62 (4.66)***	0.61 (4.68)***
State		0.13 (2.25)*	0.11 (1.77)	0.14 (2.33)*
FDCRS Total Time 1		-0.33 (-5.31)***	-0.35 (-5.10)***	-0.38 (-5.60)***
Education			-0.01 (-0.32)	-0.01 (-0.31)
A.A. in ECE			0.12 (0.73)	0.04 (0.27)
Prof. Dev. Training			0.07 (1.12)	0.03 (0.51)
Experience			-0.00 (-0.18)	-0.01 (-1.13)
Ratio			0.04 (1.00)	0.05 (1.33)
Modernity Total				-0.12 (-0.90)
TBS (FACES), Total				0.29 (1.73)
Kontos				-0.16 (-1.95)*
Dissatisfaction				
CCW-JSI Job Stress				-0.34 (-2.37)*
Model <i>F</i>	19.59 (1, 177)*** $R^2 = 0.10$ $\Delta R^2 = 0.10$ $\Delta F = 19.59$ ***	18.31 (3, 175)*** $R^2 = 0.24$ $\Delta R^2 = 0.14$ $\Delta F = 16.01$ ***	7.17 (8, 170)*** $R^2 = 0.25$ $\Delta R^2 = 0.01$ $\Delta F = 0.61$	6.91 (12, 166)*** $R^2 = 0.33$ $\Delta R^2 = 0.08$ $\Delta F = 5.03$ ***

Note. * $p < .05$, ** $p < .01$, *** $p < .001$.

^a For each equation the unstandardized Beta (t-value) are reported.

Table 4.15

Hierarchical Multivariate Regression Model for FDCRS Factor 2: Tone and Discipline Sustained (Time 3 – Time 1) Residualized Change Score (N =179)

Source	Equation 1 ^a	Equation 2 ^a	Equation 3 ^a	Equation 4 ^a
Constant	-0.32 (-3.12)**	1.48 (4.51)***	1.42 (2.00)*	1.55 (1.66)
Treatment Group	0.53 (3.04)**	0.51 (3.31)***	0.47 (3.05)**	0.46 (3.01)**
State		0.15 (2.21)*	0.15 (2.09)*	0.18 (2.53)**
FDCRS Total Time 1		-0.55 (-7.48)***	-0.57 (-7.51)***	-0.63 (-8.03)***
Education			-0.03 (-0.48)	-0.02 (-0.36)
A.A. in ECE			0.09 (0.50)	0.03 (0.16)
Prof. Dev. Training			0.10 (1.39)	0.06 (0.89)
Experience			0.02 (2.12)*	0.01 (1.47)
Ratio			0.02 (0.54)	0.02 (0.49)
Modernity Total				0.21 (1.35)
TBS (FACES), Total				0.08 (0.38)
Kontos Dissatisfaction				-0.22 (-2.19)*
CCW-JSI Job Stress				-0.20 (-1.19)
Model <i>F</i>	9.24 (1, 177)** $R^2 = 0.05$ $\Delta R^2 = 0.05$ $\Delta F = 9.24^{**}$	22.82 (3, 175)*** $R^2 = 0.28$ $\Delta R^2 = 0.23$ $\Delta F = 28.20^{***}$	9.98 (8, 170)*** $R^2 = 0.32$ $\Delta R^2 = 0.04$ $\Delta F = 1.92$	8.36 (12, 166)*** $R^2 = 0.38$ $\Delta R^2 = 0.06$ $\Delta F = 3.78^{**}$

Note. * $p < .05$, ** $p < .01$, *** $p < .001$.

^a For each equation the unstandardized Beta (t-value) are reported.

Table 4.16

Hierarchical Multivariate Regression Model for FDCRS Factor 3: Provisions for Learning and Health Sustained (Time 3 – Time 1) Residualized Change Score (N =179)

Source	Equation 1 ^a	Equation 2 ^a	Equation 3 ^a	Equation 4 ^a
Constant	-0.15 (-1.67)	1.36 (6.00)***	1.40 (2.52)**	2.40 (3.25)***
Treatment Group	0.36 (2.39)*	0.35 (2.75)**	0.29 (2.33)**	0.27 (2.18)*
State		0.08 (1.28)	0.05 (0.83)	0.08 (1.31)
FDCRS Total Time 1		-0.60 (-8.02)***	-0.59 (-7.92)***	-0.60 (-8.12)***
Education			-0.05 (-1.11)	-0.04 (-1.05)
A.A. in ECE			0.20 (1.31)	0.09 (0.65)
Prof. Dev. Training			0.07 (1.21)	0.03 (0.50)
Experience			0.02 (2.47)*	0.01 (1.72)
Ratio			0.07 (1.95)*	0.08 (2.31)*
Modernity Total				0.13 (0.11)
TBS (FACES), Total				0.41 (0.26)
Kontos Dissatisfaction				-0.12 (-1.44)
CCW-JSI Job Stress				-0.41 (-3.07)**
Model <i>F</i>	5.72(1, 177)*	25.05 (3, 175)***	12.51 (8, 170)***	10.65 (12, 166)***
	$R^2 = 0.03$	$R^2 = 0.30$	$R^2 = 0.37$	$R^2 = 0.44$
	$\Delta R^2 = 0.03$	$\Delta R^2 = 0.27$	$\Delta R^2 = 0.07$	$\Delta R^2 = 0.06$
	$\Delta F = 5.72^*$	$\Delta F = 33.66^{***}$	$\Delta F = 3.79^{**}$	$\Delta F = 4.73^{***}$

Note. * $p < .05$, ** $p < .01$, *** $p < .001$.

^a For each equation the unstandardized Beta (t-value) are reported.

Table 4.17

Hierarchical Multivariate Linear Regression Model for ECERS-E Total Sustained (Time 3 – Time 1) Residualized Change Score (N = 170)

Source	Equation 1 ^a	Equation 2 ^a	Equation 3 ^a	Equation 4 ^a
Constant	-0.08 (-1.30)	0.57 (3.18)**	1.03 (2.28)*	1.29 (2.16)*
Treatment Group	0.44 (3.86)***	0.43 (4.55)***	0.40 (4.12)***	0.40 (4.08)***
State		0.16 (4.11)***	0.16 (3.78)***	0.18 (4.13)***
FDCRS Total Time 1		-0.56 (-7.92)***	-0.60 (-7.72)***	-0.63 (-8.08)***
Education			-0.04 (-1.32)	-0.04 (-1.21)
A.A. in ECE			0.02 (0.18)	-0.02 (-0.16)
Prof. Dev. Training			0.01 (0.33)	0.00 (0.32)
Experience			0.01 (1.09)	0.00 (0.73)
Ratio			0.02 (0.89)	0.03 (0.93)
Modernity Total				0.05 (0.48)
TBS (FACES), Total				0.04 (0.30)
Kontos Dissatisfaction				-0.09 (-1.40)
CCW-JSI Job Stress				-0.14 (-1.36)
Model <i>F</i>	14.92 (1, 168)*** $R^2 = 0.08$ $\Delta R^2 = 0.08$ $\Delta F = 14.92$ ***	33.36 (3, 166)*** $R^2 = 0.38$ $\Delta R^2 = 0.30$ $\Delta F = 39.18$ ***	13.10 (8, 161)*** $R^2 = 0.39$ $\Delta R^2 = 0.02$ $\Delta F = 0.97$	9.56 (12, 157)*** $R^2 = 0.42$ $\Delta R^2 = 0.03$ $\Delta F = 1.90$

Note. * $p < .05$, ** $p < .01$, *** $p < .001$.

^a For each equation the unstandardized Beta (*t*-value) are reported.

Table 4.18

Hierarchical Multivariate Linear Regression Model for CIS Total Sustained (Time 3 – Time 1) Residualized Change Score (N = 180)

Source	Equation 1 ^a	Equation 2 ^a	Equation 3 ^a	Equation 4 ^a
Constant	-0.08 (-2.18)*	1.77 (5.81)***	1.72 (4.61)***	1.81 (4.26)***
Treatment Group	0.13 (2.00)*	0.13 (2.16)*	0.10 (1.68)	0.08 (1.42)
State		-0.03 (-1.27)	-0.05 (-2.02)*	-0.05 (-1.88)
FDCRS Total Time 1		-0.52 (-6.13)***	-0.49 (-5.72)***	-0.55 (-6.33)***
Education			-0.02 (-0.89)	-0.02 (-0.97)
A.A. in ECE			0.07 (0.94)	0.05 (0.68)
Prof. Dev. Training			-0.00 (-0.10)	-0.01 (-0.51)
Experience			0.00 (0.77)	0.00 (0.48)
Ratio			0.05 (2.76)**	0.04 (2.68)**
Modernity Total				0.13 (2.24)*
TBS (FACES), Total				-0.01 (-0.14)
Kontos Dissatisfaction				-0.04 (-1.08)
CCW-JSI Job Stress				-0.07 (-1.13)
Model <i>F</i>	3.99 (1, 178)* $R^2 = 0.02$ $\Delta R^2 = 0.02$ $\Delta F = 3.99*$	14.24 (3, 176)*** $R^2 = 0.20$ $\Delta R^2 = 0.17$ $\Delta F = 18.96***$	6.75 (8, 171)*** $R^2 = 0.24$ $\Delta R^2 = 0.05$ $\Delta F = 2.02$	5.71 (12, 167)*** $R^2 = 0.29$ $\Delta R^2 = 0.05$ $\Delta F = 2.99*$

Note. * $p < .05$, ** $p < .01$, *** $p < .001$.

^a For each equation the unstandardized Beta (*t*-value) are reported.

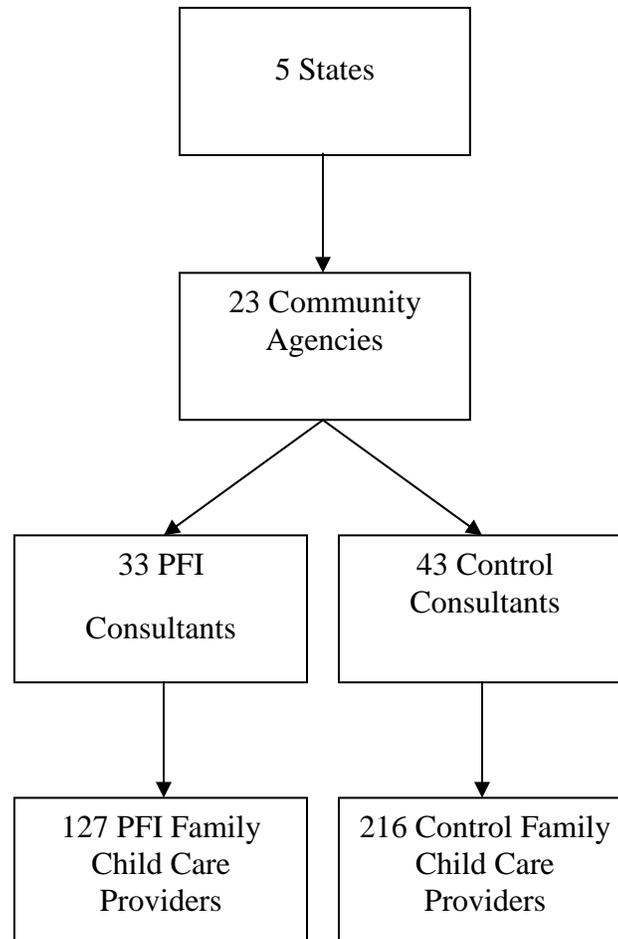


Figure 4.1 Study Design

CHAPTER V: OVERALL SUMMARY AND GENERAL CONCLUSIONS

Review of Results

Given the considerable number of children receiving care in family child care programs (Boushey & Wright, 2004), the minimal level of regulations, supports and services offered to these providers (NACCRRA, 2009, 2010), and the lack of research on methods to enhance quality in these home-based settings, it is important to further investigate predictors of quality in family child care. In comparison to center-based care, much less is known about factors influencing quality in family child care (e.g., Burchinal, Howes, & Kontos, 2002; Clarke-Stewart, Vandell, Burchinal, O' Brien, & McCartney, 2002). Research has also indicated that young children receiving higher quality care from family child care providers who were more nurturing and responsive to their needs, demonstrated improved cognitive and language outcomes over time (Clarke-Stewart et al., 2002). Additionally, home-based providers that are more educated, participate in greater amounts of professional development training, and offer low child:adult ratios in their programs are rated as provided higher quality care than providers not possessing these characteristics (e.g., Clarke-Stewart et al., 2002, Doherty, Forer, Lero, Goelman, & LaGrange, 2006; Kontos, Howes, & Galinsky, 1996). Aside from features of care that are more easily translated into regulations, relatively little research examines other factors that might impact child care quality, namely practitioners' beliefs.

The first article presented in Chapter II provides a review of the relevant research literature and a discussion of the role of structural factors and early care providers' beliefs in relation to program quality. Specifically, the manuscript describes the value of examining

structural features and beliefs in relation quality practice in early childhood programs, with a focus on family child care. In addition the article reviews previous investigations relating program quality to children's developmental outcomes, explores various types of beliefs that have been shown to be related to practice, and concludes by emphasizing the need for a thorough investigation into the associations between these variables and quality in family child care programs, preferable through a longitudinal study examining potential quality enhancement interventions. The two studies that follow use data from the Quality Interventions in Early Care and Education (QUINCE) study to address some of these issues.

The second article examined the relationship between structural features of family child care programs, providers' self-reported beliefs, and observed process quality in a large sample of family child care providers. Measures in this study were baseline assessments of a longitudinal investigation of a consultation-based model of program quality enhancement. Results describe this sample prior to participation in this treatment.

Findings from the first article suggest that the global quality of care and the quality of educational activities in the family child care programs sampled was low. However, having an educational background in early childhood or a related field, more years of experience, and achieving a threshold of 30 hours of professional development training was predictive of global program quality. Moreover, family child care providers' with more progressive beliefs about child rearing and less stress were found to demonstrate more positive tone and discipline. Finally, more developmentally appropriate beliefs predict the quality of teaching and interactions with children, as well as the provision of literacy and numeracy activities.

The third article focused on the structural characteristics and beliefs of family child care providers and participation in the Partnerships for Inclusion (PFI) model of consultation

as predictors of change in program quality immediately after completing consultation and six months later. Interviews were used to gather data about provider beliefs and program structural characteristics. In addition, observational data about global process quality and the quality of adult-child interactions were collected in a sample of 343 home-based family child care programs in five states. Included in this sample was a control group of family child care providers randomly assigned to receive the “business as usual” model of supports and services available in their community.

Overall, findings from the third article suggest that participation in PFI consultation was related to improved ratings of program quality both immediately following the completion of consultation and six months later compared to providers receiving the “typical” support services from their community resource and referral agencies. Results of multiple hierarchical linear regression analyses indicated mixed results for the influence of structural characteristics on changes in program quality. Results of this study also suggest that having lower levels of job dissatisfaction and stress was related to both immediate and sustained changes in quality and provided additional prediction of process quality for family child care homes above the prediction from structural characteristics. Finally, the impact of treatment on improvements in program quality remained for many of the quality outcomes assessed even after controlling for the influence of the state in which the program operated, baseline assessments of quality, structural characteristics and provider beliefs.

Practice and Policy Implications

This research has implications for practitioners in the early child care field and for parent consumers of these services. The expectations for the various abilities of family child care providers are high. Every day family providers must anticipate and prevent problems,

respond to challenging behaviors, offer opportunities for exploration and cognitive development, all while being enthusiastic and constantly alert. They are typically the sole person responsible for meeting the many needs of all of the children in their care. They must communicate and interact effectively with the children and their parents, as well as with other child care providers and any individuals offering program improvement or support services. The level at which family child care providers are able to perform successfully perform these types of tasks on a daily basis underlies the quality of their program and quality has been repeatedly linked to children's developmental outcomes (Clarke-Stewart et al., 2002; Howes & Stewart, 1987; Kontos, Howes, Shinn, & Galinsky, 1995; NICHD Early Child Care Research Network, 1999), although this research in family child care settings has been limited. Of particular concern are the findings that many child care programs could be classified as mediocre/minimal or even poor quality (e.g., Bryant, Burchinal, Lau, & Sparling, 1994; Helburn, 1995; Whitebook, Howes, & Phillips, 1989). Similar to findings from Kontos and colleagues (1995) from the Relative and Family Day Care Study, who found 32% of family child programs sampled to be offering inadequate care, results from the present study indicated that 42% of family child care programs sampled were rated as providing poor or custodial levels of care (i.e., mean total scores below 3 on the FDCRS). Furthermore, an even larger percentage of child care providers (i.e., 91%) in the current sample were offering a low quality of academically-oriented activities, such as those involving literacy and numeracy. Therefore, concerns about the quality of care that young children receive in family child care programs are well founded and support the need for additional support, technical assistance, and regulations for home-based providers.

The U.S. Department of Labor, Bureau of Labor Statistics (2008) predicts that in the next decade we will see an increase of 11% of the number of individuals in the early childhood workforce. Therefore, in recent years increased investments have been made toward improving the availability and accessibility of high quality child care programs (e.g., Quality Rating and Improvement Systems; QRIS). These efforts involve professional development training, support, and technical assistance with the overall goal of improving child care quality. However, few of these efforts have been directed toward family child care providers and settings (e.g., only 17 states currently include family child care in their state-wide QRIS; NACCRRA, 2010). Currently there is no uniform way in which states regulate family child care programs. In fact, many states exempt certain providers typically those serving smaller numbers of children from licensing or regulation, likely leaving a large number of young children being served in unregulated settings at a time in their life when the quality of care received is most critical. Furthermore, state requirements are generally higher and more stringent for workers in child care centers than for family child care providers (NACCRRA, 2009). The current study also found that state, when entered as proxy variable for state level variations in regulations and supports was predictive of sustained changes in program quality, but lacked a relationship with changes in quality immediately following consultation. Future investigations would benefit from a more thorough measure of state level variations in regulations, monitoring, and technical support systems for family child care providers when employing the use of cross-state samples of programs or providers.

With significant scientific evidence that the quality of early care predicts later child outcomes, it is astonishing that so little is still done in terms of policies and regulations related to family child care. Both empirical studies in this dissertation provide support for

the relationship between structural features of care such as providers' education level and type (i.e., a higher education degree related to early childhood), amount of professional development training, experience, and child:adult ratio to the quality of care being provided in family child care settings. However, the most significant unique predictors in the more rigorous analyses using random assignment and looking at changes in quality over time (i.e., the third study in Chapter IV), were having an associate's degree related to early childhood and having lower child:adult ratios. In addition to more frequently evaluation structural characteristics, providers with more job dissatisfaction and stress were found to be offering poorer quality care. Therefore, these findings would suggest that regulations or incentives to support family child care providers' in achieving at least an associate's degree related to early childhood, maintaining lower numbers of children in their care, and decreasing job dissatisfaction and stress would be beneficial in improving quality in these settings. Although not all characteristics of providers and programs were not found to be highly predictive of change in quality, years of education, amount of training, and years of experience in child care were significantly associated with the initial level of care being provided and should therefore be taken into consideration for future policies and funding efforts aimed at quality enhancement and support endeavors for early childhood educators and programs, especially home-based family child care.

Future Research Recommendations

Overall, more research investigating quality in family child care is necessary to continue to fill in the gaps in our understanding of what goes on in these programs, what features should be regulated, how providers can be supported, and if regulations and/or supports improve the quality of care children receive. Furthermore, in order to develop a

more cohesive system of child care that ensures that high quality family child care programs are accessible to all interested families with young children and that all programs adhere to the necessary regulations and receive appropriate supports, more longitudinal research is essential. Further investigations of the effectiveness of interventions aimed at quality enhancement efforts in family child care, with a keen focus on the fidelity of implementation of specific models of intervention (e.g., pre-service, in-service, on-site, or web-based training, coaching, consultation, etc), are also warranted. Such intervention research goes beyond more common examinations of existing relationships between state-level regulations, program and provider-level structural characteristics to overall process quality. Results from both of the current empirical studies also indicate that an examination of the role of providers' beliefs and levels of stress would be beneficial in future investigations of the quality of family child care. One caution is the measures of belief may need to be updated and psychometrically evaluated to reflect more current professionally accepted standards of best practices when working with young children. Finally, future research must explore links between the quality of family child care and child outcomes.

References

- Boushey, H., & Wright, J. (2004). *Working moms and child care*. Washington, DC: Center for Economic and Policy Research.
- Bryant, D. M., Burchinal, M., Lau, L. B., & Sparling, J. J. (1994). Family and classroom correlates of Head Start children's developmental outcomes. *Early Childhood Research Quarterly, 9*, 289–309.
- Burchinal, M., Howes, C., & Kontos, S. (2002). Structural predictors of child care quality in child care homes. *Early Childhood Research Quarterly, 17*(1), 87-105.

- Clarke-Stewart, K. A., Vandell, D. L., Burchinal, M., O'Brien, M., & McCartney, K. (2002). Do regulable features of child-care homes affect children's development? *Early Childhood Research Quarterly, 17*, 52–86.
- Doherty, G., Forer, B., Lero, D., Goelman, H., & LaGrange, A. (2006). Predictors of quality in family child care. *Early Childhood Research Quarterly, 21*, 296–312.
- Kontos, S., Howes, C., & Galinsky, E. (1996). Does training make a difference to quality in family child care? *Early Childhood Research Quarterly, 11*(4), 427-445.
- Kontos, S., Howes, C., Shinn, M., & Galinsky, E. (1995). *Quality in family child care and relative care*. New York, NY: Teachers College Press.
- Helburn, S. W. (Ed.). (1995). *Cost, quality, and child outcomes in child care centers: Technical report*. Denver, CO: Department of Economics, Center for Research in Economic and Social Policy, University of Colorado at Denver.
- Howes, C. & Stewart, P. (1987). Child's play with adults, toys, and peers: An examination of family and child care influences. *Developmental Psychology, 23*, 423–430.
- National Association of Child Care Resource & Referral Agencies (NACCRRA). (2010). *Leaving children to chance: 2010 update: NACCRRA's ranking of state standards and oversight of small family child care homes*. Retrieved from <http://www.naccrra.org/publications/naccrra-publications/leaving-children-to-chance-2010.php>
- National Association of Child Care Resource & Referral Agencies (NACCRRA). (2009). *We can do better: 2009 update: NACCRRA's ranking of state child care center standards and oversight*. Retrieved from http://www.naccrra.org/publications/naccrra-publications/publications/We%20Can%20Better%202009_MECH-screen.pdf

NICHD Early Child Care Research Network. (1999). Child outcomes when child care center classes meet recommended standards for quality. *American Journal of Public Health*, 89, 1072–1077.

U.S. Department of Labor, Bureau of Labor Statistics. (2009). *Occupational outlook handbook: 2010-11 edition: Child care workers*. Retrieved from <http://www.bls.gov/oco/ocos170.htm>

Whitebook, M., Howes, C., & Phillips, D. (1989). *Who cares? Child care teachers and the quality of care in America. Final report of the National Child Care Staffing Study*. Oakland, CA: Child Care Employee Project.

Appendix A

Parental Modernity (Schaefer & Edgerton, 1985)

Please circle the appropriate number that indicates how strongly you personally agree with the following statements.

	In my opinion	Strongly Agree	Mildly Agree	Not Sure	Mildly Disagree	Strongly Disagree
a.	since parents lack special training in education, they should not question the provider's teaching methods.	1	2	3	4	5
b.	children should be treated the same regardless of differences among them.	1	2	3	4	5
c.	children should always obey the child care provider.	1	2	3	4	5
d.	preparing for the future is more important for a child than enjoying today.	1	2	3	4	5
e.	children will not do the right thing unless they are told what to do.	1	2	3	4	5
f.	children should be allowed to disagree with their parents if they feel their own ideas are better.	1	2	3	4	5
g.	children should be kept busy with work and study at home and at child care settings.	1	2	3	4	5
h.	the major goal of education is to put basic information into the minds of the children.	1	2	3	4	5
i.	in order to be fair, a child care provider must treat all children alike.	1	2	3	4	5
j.	the most important thing to teach children is absolute obedience to whoever is in authority.	1	2	3	4	5
k.	children learn best by doing things themselves rather than listening to others.	1	2	3	4	5
l.	children must be carefully trained early in life or their natural impulses will make them unmanageable.	1	2	3	4	5
m.	children have a right to their own point of view and	1	2	3	4	5
n.	children's learning results mainly from being presented basic information again and again.	1	2	3	4	5
o.	children like to teach other children.	1	2	3	4	5
p.	the most important thing to teach children is absolute obedience to parents.	1	2	3	4	5

Appendix B

Teacher Beliefs Scale (Burts, Hart, Charlesworth & Kirk, Adapted from FACES 2000)

Please circle the appropriate number that indicates how strongly you personally agree with the following statements. For these items, think about when you are working with 3-5 year old children.

	When working with children 3, 4, and 5 years old, in my opinion...	Strongly Disagree	Mildly Disagree	Not Sure	Mildly Agree	Strongly Agree
a.	Activities in child care settings should be responsive to individual differences in development.	1	2	3	4	5
b.	Each curriculum area should be taught as a separate subject at separate times.	1	2	3	4	5
c.	Children should be allowed to select from a variety of learning activities that the teacher/provider has prepared.	1	2	3	4	5
d.	Children should be allowed to cut their own shapes, perform their own steps in an experiment, and plan their own creative drama, art, and writing activities.	1	2	3	4	5
e.	Children should work silently and alone on seatwork.	1	2	3	4	5
f.	Children should learn through active exploration.	1	2	3	4	5
g.	Teachers/providers should use treats, stickers, or stars to encourage appropriate behavior.	1	2	3	4	5
h.	Teachers/providers should use punishments or reprimands to encourage appropriate behavior.	1	2	3	4	5
i.	Children should be involved in establishing rules for the child care setting.	1	2	3	4	5
j.	Children should be instructed in recognizing the single letters of the alphabet, isolated from words.	1	2	3	4	5
k.	Children should learn to color within predefined lines.	1	2	3	4	5
l.	Children should learn to dictate stories to the teacher/provider.	1	2	3	4	5
m.	Children should know their letter sounds before they learn to read.	1	2	3	4	5
n.	Children should form letters correctly before they are allowed to create a story.	1	2	3	4	5

Appendix C

Professional Motivation and Satisfaction (Adapted from Kontos, Howes, Shinn & Galinsky, 1995)

Please circle the number on the scale that best matches your beliefs about child care.

	I see my current child care profession...	Not at all the way I feel	Not really the way I feel	No Opinion	Mostly the way I feel	Exactly the way I feel
a.	my career or profession.	1	2	3	4	5
b.	a stepping stone to a related career or profession.	1	2	3	4	5
c.	a job with a paycheck.	1	2	3	4	5
d.	a way of helping someone out.	1	2	3	4	5
e.	something to do while my children are young.	1	2	3	4	5
f.	a personal calling.	1	2	3	4	5
g.	something I feel stuck in due to few other employment opportunities.	1	2	3	4	5
h.	work I put a lot of effort into.	1	2	3	4	5
i.	work I feel committed to.	1	2	3	4	5
j.	a job I frequently feel like quitting.	1	2	3	4	5
k.	work that is very difficult.	1	2	3	4	5
l.	work I feel I am able to do well.	1	2	3	4	5
m.	a job in which I have the opportunity to learn and grow.	1	2	3	4	5

Appendix D

Child Care Worker Job Stress Inventory (Gilliam adaptation of the Job Stress Inventory from Curbow, Spratt, Ungaretti, McDonnell, & Breckle, 2000)

Think about the parents and children who participate in your family child care program. By “parent” we mean the parent or other adult who is most responsible for the children (e.g., grandparent, guardian, or other). Circle the number on the scale that best matches your beliefs and feelings about these statements.

	How often do the following things happen at work?	Never	Seldom	Some times	Often	Most of the time
a.	Parents don't let me know where they are during the day.	1	2	3	4	5
b.	Parents blame their children's bad behavior on child care.	1	2	3	4	5
c.	Children have behavior problems that are hard to deal with.	1	2	3	4	5
d.	Parents bring in children who are sick.	1	2	3	4	5
e.	I feel like I have to be a parent and a teacher to the children.	1	2	3	4	5
f.	All of the children need attention at the same time.	1	2	3	4	5
g.	I get praise from the parents for the work that I do.	1	2	3	4	5
h.	I feel respected for the work that I do.	1	2	3	4	5
i.	I feel like I am helping the children grow and develop.	1	2	3	4	5
j.	I see that my work is making a difference with a child.	1	2	3	4	5
k.	I feel the satisfaction of knowing that I am helping parents.	1	2	3	4	5
l.	I juggle schedules for children who are different ages.	1	2	3	4	5
m.	I feel cut off from other adults during the day.	1	2	3	4	5
n.	I must do my own chores or personal business while I am working.	1	2	3	4	5
o.	I feel that my licensing specialist makes problems for me.	1	2	3	4	5
p.	I feel there are too many government rules and regulations.	1	2	3	4	5

Appendix D Continued

How much control do you have over the following things at work?		Very Little	Little	Some	Much	Very Much
q.	The availability of supplies that you need	1	2	3	4	5
r.	Getting the parents to work with you on a behavior problem	1	2	3	4	5
s.	Getting parents to be consistent with you on how to deal with a child	1	2	3	4	5
t.	The number of children you have to care for	1	2	3	4	5
u.	When the parents pick up their children	1	2	3	4	5