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Committed to Caring: Cluster-Analysis of Appraisals and Feelings of Family Childcare Work

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Abstract

Background There is a concern regarding the decreasing number of family childcare (FCC) providers, due to the population that primarily relies on it. Compared to studies of center- and school-based preschool practitioners, the FCC literature is lacking robust workforce studies, including examinations of whether and how FCC providers' workplace appraisals of and feelings while at work are associated with indicators of interaction quality (relationships with families, relationships with children, and responsiveness to children's negative emotions) and the quality of their interactions with children and families.

Objective The present study examines how groups of FCC providers, categorized based on differences in appraisals of and feelings experienced at work, differ in the quality of interactions with children and families. The study seeks to extend the FCC literature by also describing socio-ecological factors, such as provider and program characteristics, of these different groups of providers.

Method Survey data was collected through a national study of FCC providers (N = 888). A person-centered analysis using hierarchical clustering was used to classify providers into groups based on their workplace appraisals and feelings experienced at work.

Results A person-centered cluster analysis identified four groups. Indicators of interaction quality varied between groups. Group membership was associated with FCC providers' professional commitment, job satisfaction, and emotional exhaustion.

Conclusions Findings from the current study support calls to increase investment in the support of the FCC workforce by addressing FCC providers' needs through recognition of differences in workplace appraisals and provider feelings at work. In particular, reducing FCC providers' emotional exhaustion may be an effective way to increase the quality of their interactions with children and families.

Keywords Early childhood workforce · Family childcare · Professional commitment · Family relationships · Social–emotional teaching

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Introduction

Family Child Care (FCC) is non-parental care provided by caregivers in their own home. Often caring for children in mixed-aged groups ranging from infants to school-age children, licensed and regulated FCC providers serve over 750,000 0–5-year old children across the United States (National Center on Early Childhood Quality Assurance, 2020). Between 2005 and 2017, tens of thousands of child care slots were lost when the number of licensed small FCC facilities dropped by over 50%. However, during that same time period, the number of large FCC facilities with two or more people providing care showed a slight increase (National Center on Early Childhood Quality Assurance, 2020). This overall decrease in the FCC workforce has been attributed to a decline in enrollment, as families withdraw children from care, and new licensing requirements and provider requirements are implemented (National Center on Early Childhood Quality Assurance, 2015). This decline in the workforce is concerning because the children who rely on FCC are mostly the infants and toddlers of working families, often living in communities historically under-served by center-based childcare (National Survey of Early Child Care & Education Project Team, 2016; Porter et al., 2010).

Despite the sizeable number of children that depend on FCC, relatively little is known about the workforce compared to that of center-based programs (Morrissey & Banghart, 2007; Porter, et al., 2010). FCC providers' perceptions of their work experiences have been understudied, and it is unclear whether their perceptions are associated with their interactions and relationships with children and families. A recent literature review of the FCC workforce identified factors that might contribute to the decline in the FCC workforce. The authors describe challenges with working conditions, sustaining a business, and navigating the early childhood education (ECE) system (Bromer et al., 2021). Challenges in FCC providers' working conditions include working alone without other adults to help provide care, resulting in feelings of isolation and working long hours (Porter & Bromer, 2020).

Today, as early childhood educators are faced with the Covid-19 pandemic, FCC providers are also experiencing anxiety as they cope with inconsistencies in policy changes around health and safety regulations (Porter et al., 2020). In addition, the lack of benefits, such as health insurance, makes this workforce population vulnterable and fearful of their own health during the pandemic (Porter et al., 2020).

The same characteristics that make FCC popular with families (their small size, intimate home-based setting, and linguistic and cultural congruence with families; Porter et al., 2010) also facilitate providers' supportive relationships with children and families and support of children's social and emotional development (Bromer & Henly, 2004; Denham et al., 2012). While forming meaningful relationships with children and parents in early childhood has long been described as a reason teaching is a highly rewarding occupation (Jorde-Bloom, 1986; Thomason & La Paro, 2013), the work is also described as emotionally challenging (e.g., Johnson et al., 2005). Early childhood educators report experiencing more stress and being less physically healthy than their non-teaching peers (Whitaker et al., 2013). In a longitudinal study, FCC providers who experienced higher amounts of workplace stress and burnout were more likely to leave the profession (Todd & Deery-Schmitt, 1996). Root causes of their distress and dissatisfaction range from poor compensation and lack of respect (Phillips et al., 2016) to difficulty responding to children's challenging emotions and behaviors (Hoover et al., 2012). These negative appraisals of work and feelings experienced while at work contribute to the overall high turnover rate and turmoil in the early childhood workforce.

Prior studies have examined daily instructional practices (Tonyan, 2015), job demands, and providers' motivations as predictors of childcare quality in home-based childcare settings (Forry et al., 2013; Lee et al., 2019; Porter et al., 2010). The present study seeks to examine these associations by extending the socio-ecological model of teacher job satisfaction (Jorde-Bloom, 1986) from its original center-based care context into FCC settings. In this conceptual model, teachers' positive appraisals of their work—their satisfaction, commitment, and sense of efficacy—is dependent on there being a "good fit" between their needs, abilities, and work challenges (Jorde-Bloom, 1986, p. 171). This person-environment interaction model acknowledges that what one teacher may find stressful, another may find enjoyably challenging. When there is congruity between what a teacher needs and the demands of their work environment, in this case their own home as a FCC, a provider should evaluate their work positively and experience minimal distress. Subsequently, teachers who are satisfied, committed, and emotionally healthy are better situated to build positive, supportive relationships and respond sensitively to young children's needs. There is evidence for these associations in center-based care systems. For instance, teachers who are highly stressed or emotionally exhausted have higher conflict in relationships with children (Hoglund et al., 2015; Whitaker et al., 2015). The quality of interactions between teachers and children in center-based care can also be explained by teachers' feelings of commitment and job satisfaction (Thomason & La Paro, 2013).

Given the unique nature of FCC wherein a provider's workplace is their personal home, such an analytical approach may generate unique insights into providers' experiences of and practice within their individual home-work environments. We found one study using person-centered analyses to identify profiles of FCC providers based on quality of care (Forry et al., 2012). Person centered-analytic approaches have not been used extensively in FCC settings, and we provide an updated examination of the FCC workforce. Specifically, in this study, we examined whether providers with similar appraisals of work and the feelings they experience during work engage differently in supporting children's early social and emotional development and form different types of relationships with children and families.

FCC Providers' Workplace Appraisals and Feelings While at Work

Across industries, individuals' evaluations of their work play a significant role in their workplace behavior and effectiveness. Research on workplace productivity recommends that organizations work to reduce employee stress, boost job satisfaction (Halkos & Bousinakis, 2010), and develop professional commitment (Meyer & Herscovitch, 2001) to enhance job performance. Likewise, in studies of center-based early childhood programs, teachers' positive workplace appraisals, such as high levels of professional commitment, high job satisfaction (Thomason & La Paro, 2013), and high perceived competence (Hamre et al., 2008) are predictive of supportive teacher–child relationships and interactions. In contrast, having negative work appraisals can hinder teachers' ability to respond to children's emotional needs (Buettner et al., 2016) and increase the likelihood of student–teacher conflict. In line with Jorde-Bloom's model (1986), center-based care teachers' professional commitment is negatively associated with their feelings of stress and emotional exhaustion and positively associated with positive reactions to children's negative emotions (Buettner et al., 2016). Preschool teachers who report feeling highly stressed at work have also been observed to provide less emotional support in the classroom (Zinsser

et al., 2013) and perceive more conflict in their relationships with children (Whitaker et al., 2015).

Given that FCC providers work within their own homes, associations among providers' appraisals of work and feelings experienced while at work may be more nuanced than variable-centered analyses of center-based care data have revealed. Providers go to great lengths to convert their personal homes into safe and certified FCC settings, which could make leaving the profession seem cost prohibitive. Likewise, for some FCC providers, personal stressors may be intertwined with work-related feelings of stress and exhaustion while caring for children in their own homes. For instance, some FCC providers report family members expressing resentment due to having childcare in the home and having conflicts between their responsibilities to the children in their care and those to family members (Layzeret al., 2007). FCC provider experiences of stress are also associated with considerations of leaving the profession (Swartz et al., 2016). Understanding how providers appraise and feel about their work is critical to understanding why so many are leaving the workforce. By identifying commonalities within groups using person-centered approaches, results from this study may reveal important distinctions to inform retention efforts for this essential workforce. Furthermore, to the extent that clusters of providers based on work appraisals and feelings differ in their relationships with children and families and supportive responses to children's emotions, findings could identify targeted opportunities to support the FCC workforce.

Quality of Interactions with Children and Families

Definitions of high-quality care routinely emphasize the importance of developing positive relationships with children and families and responding sensitively to children's emotional needs (NAEYC, 2019; National Center on Early Childhood Quality Assurance, 2017; U.S Department of Health & Human Services, n.d.);. The current manuscript focuses on three constructs, relationships with children, relationships with families, and responsiveness to children's emotions, to determine the interaction quality of FCC providers varying in appraisals and feelings about FCC work.

Relationships with Children

 Close teacher–child relationships are critical for student success and have been associated with academic achievement (Burchinal et al., 2002; Hamre & Pianta, 2008) and social skill development (Howes et al., 1992). Longitudinally, early positive relationships with an early childhood provider are associated with lower levels of externalizing behavior in adolescents (Vandell et al., 2010). However, when these relationships are marked by conflict, children have poorer educational outcomes (Hamre & Pianta, 2001). Promoting these desirable relationships between early childhood professionals and the children they care for may require addressing how teachers feel about their work, such as whether they experience stress or emotional exhaustion. In center-based care samples, teachers' conflictual relationships with children are associated with their reported workplace stress (Whitaker et al., 2015). In addition, positive appraisals, like higher perceived competence, is also predictive of perceptions of closeness in teacher–child relationships in preschool settings (Chung et al., 2005). Despite the importance of teacher–child relationships, there is inadequate research regarding how FCC providers' feelings about and appraisals of FCC work are associated with the quality of their relationships with children.

Relationships with Families

When teachers and parents get along, they are able to easily communicate and collaborate in supporting children's development and learning. In an observational study of childcare provider and parent interactions, more frequent sharing of information about the child by the parent and the childcare provider were predictive of more sensitive caregiving practices by the childcare provider (Owen et al., 2000). Positive parent-teacher relationships also promote children's academic performance and social behavior (e.g., Mendez, 2010). In center-based childcare, interactions with families are also highly correlated with feelings of emotional exhaustion (Løvgren, 2016). In addition, there is evidence that negative appraisals, such as perceptions of incompetence, are predictive of a lack of family involvement practices by teachers (Garcia, 2004).

Compared to center-based care, where teachers frequently indicate it is hard to communicate with families (e.g., Barnes et al., 2006; Epstein, 1995; Hooper-Dempsey et al., 2002) the structure of FCC (smaller size and sometimes caring for multiple siblings concurrently) may make forming close relationships with families easier (Forry et al., 2012; Gibbon, 2002). Additionally, often being a member of the community, FCC providers may be in a position to establish stronger provider-family relationships and address a range of family needs (Bromer & Henly, 2004). At the same time, some FCC providers report that interactions with families are challenging and stressful (Porter et al., 2010). Conflict can arise when parents and providers hold differing beliefs about their roles and responsibilities, such as not being perceived as a professional (Gerstenblatt et al., 2014), or use contrasting caregiving styles (Tuominen, 2003).

FCC provider characteristics, such as education or years of experience (Knoch et al., 2009), contribute to providers developing relationships with families. Prior researchers have called for greater training and support for FCC providers in developing positive relationships with families (Forry et al., 2012; Knocheet et al., 2010; Porter et al., 2010); however, without a greater understanding of providers' appraisals of their work and the feelings they experience while they work as FCC providers, the effectiveness of any professional development is likely to be diminished.

Responsiveness to Children's Emotions

In addition to the benefits of forming positive relationships with children and their families, early childhood educators provide critical experiences to promote the development of children's social and emotional skills (Denham et al., 2012). In particular, validating and supportive responses to children's expressed emotions shape their understanding of their own and others' feelings. Over time, these contingent responses contribute to children's own emotion regulation skills (Morris et al., 2013) and benefit their social skills (Eisenberg et al., 1996). Teachers' supportive responses to children's emotions have also been linked to decreases in parent-reported problem behaviors and improved peer relationships (Rusby et at., 2016). But adults' ability to respond skillfully and sensitively to children's emotions is dependent on their own emotions in the moment. Prior work in early childhood settings has shown that teachers' feelings of stress at work are associated with less sensitive responses to children's feelings of frustration and anger (Zinsser et al., 2013). Likewise, teachers' appraisals of the work and sense of satisfaction on the job contribute to their ability to skillfully respond to children's emotions (Thomason & La Paro, 2013). Conversely, Head Start teachers who reported lower levels of professional commitment and feeling

highly stressed at work were observed to provide less emotional support in the classroom (Buettner et al., 2016). Understanding how FCC providers feel about and appraise their work and how these sentiments and appraisals are associated with their support of children's emotional development is an important step towards ensuring high-quality care.

FCC Provider and Program Characteristics

According to Jorde-Bloom's conceptual model (1986), providers' appraisals of work and feelings experienced while at work are derived from a good fit between who the provider is and the context in which they work. Thus, it is critical to consider provider- and program-level characteristics when examining the associations between providers' appraisal of and feelings about their work with the ways they interact with children and families. Prior studies have shown that many of these factors are inter-related. Provider characteristics, such as having more experience and being older, are associated with greater professional commitment (Holochwost et al., 2014). Likewise, early childhood educators' levels of education and engagement in in-service professional development are associated with ratings of the quality of their practice (Clarke-Stewart et al., 2002; Raikes et al., 2005).

At the same time, where a provider works and the characteristics of their workplace are likely associated with their feelings at work. While in studies of center-based care professionals, these factors may include the size of the center and provision of supervisor support, FCC providers typically work alone (or with one other assistant) out of their own home. Thus, experiences of isolation and access to professional networks and resources in the community may be more appropriate factors to consider when examining providers' workplace appraisals (Jeon et al., 2018; Rusby, 2002). In addition, in a study on home-based childcare, profiles of providers differing in engagement in professional development activities and caregiving practices varied in provider characteristics, such as educational attainment (Hooper & Hallam, 2019). Additionally, financial concerns such income fluctuations and lack of benefits are likely to be especially salient sources of stress for FCC providers and could contribute to decisions to leave the field (Helburn et al., 2002; Morrissey & Banghart, 2007). In testing whether and how FCC providers cluster around their appraisals of and feelings about work, it will be important to understand how these individual- and program-level factors vary across groups.

Current Study

Although studies using variable-based approaches help us understand the associations among characteristics, they disregard the natural clustering of certain appraisals and feelings experienced while at work. Therefore, as has been done in studies of preschool (Jeon et al., 2016) and home-based childcare (Hooper & Hallam, 2019), we use a person-based approach that considers broader contextual factors, such as program and provider characteristics, to examine the potential associations between the appraisals of and feelings about FCC work with indicators of interaction quality.

Person-centered analytical approaches, including cluster analysis, are used to identify the dynamics of subpopulations in a sample based on a set of chosen variables (Howard & Hoffman, 2018). The power of such an approach is two-fold—first, it respects the diversity of experience in the FCC workforce and allows us to consider a multitude of characteristics simultaneously. Second, it describes whole people (rather than a single set of parameters), which facilitates ecological validity and can directly inform the tailoring of intervention

efforts (Henry et al., 2005). Recently, Hooper and Hallam (2019) identified profiles of home-based childcare providers based on their levels of engagement in professional development and instructional practices. The authors examined group differences in workforce characteristics (e.g., education) and neighborhood characteristics (e.g., poverty, urbanicity) (Hooper & Hallam, 2019). The current study is an attempt to build upon the literature on home-based childcare by focusing specifically on the licensed and listed FCC workforce.

The study is intended to describe how provider and program characteristics may look based on providers' feelings about and appraisals of FCC work. We hypothesize that groups of providers (identified through cluster analysis) with positive appraisals and positive feelings about FCC work will have characteristics such as higher education, more experience, and professional development experiences. These FCC providers may also have program characteristics such as having other adult assistant caregivers. Additionally, we seek to determine whether their appraisal of FCC work and feelings while at work are associated with interaction quality. When there is a good fit between the FCC provider and the environment, the appraisal can be expected to be positive and marked by higher levels of job satisfaction and commitment, as well as with greater perceived competence. FCC providers experiencing a good fit may also feel more positively about FCC work, with lower levels of work-related stress and emotional exhaustion (Jeon et al., 2018; Chang, 2009; Forry et al., 2013; Kontos & Riessen, 1993). We predict that FCC providers with more positive appraisals of and positive feelings about FCC work will demonstrate higher ratings across all indicators of interaction quality, such as having positive relationships with family, positive relationships with children, and appropriate responses to children's negative emotions.

The purpose of this study is to answer the following research questions:

1. How do FCC workplace and provider characteristics differ across clusters based on provider appraisals and experiences of FCC work?
2. Is group membership based on how FCC providers appraise FCC work and feel while at work associated with the quality of interactions with children and families?

Method

Procedures

Data for this study are drawn from a larger mail survey study of small FCC providers that is designed to explore FCC providers' unique experiences related to their capacity to provide better social and emotional learning environments for children (Jeon et al., 2018). The data were collected in 2014 from 888 small, licensed FCC providers. A distribution list of licensed small FCC providers across the U.S. was developed using information requested from state government offices (17 states) and available on states' childcare services and childcare referral agency websites (23 states). Using a list of licensed small FCC providers from each state, we randomly selected a total of 5000 participants across the states. We proportionally sampled participants from each state based on the total number of FCC providers licensed in each state. Our goal was to represent all states in the United States; however, we were unable to gather a list of licensed FCC providers for some states: A total of 11 states were dropped from the study due to inability to contact state agencies and obtain a list of FCC providers (n=3), because licensure for FCC wasn't available for the state (n=5), or because FCC provider lists were not accessible due to state policy (n=2). One

state was also dropped because there were too few licensed small FCC providers. A total of 40 states were, therefore, included in the recruitment of FCC providers.

Although states vary in their definitions of small FCC, programs were eligible for inclusion in this study if they were licensed as small FCC providers. The maximum number of children small FCC providers can serve according to state licensing regulations varied from four to 12 children. Completed surveys were received from 888 FCC providers (18.25% response rate).

Participants

Responding providers were mostly female, White, and with a mean age of 49.1 years (youngest = 20, oldest = 69, SD = 11.87). Most respondents (76%) had not completed a four-year college degree, had taken a child development or early childhood education (ECE) course beyond high school (76%), and participated in professional development (80%). See Table 1 for additional demographic information.

Measures

For the present study, a subset of questions from the FCC provider survey (Jeon et al., 2018) described above were used. Variables describing appraisals of FCC work (professional commitment, job satisfaction, and perceived competence) and feelings while at work (stress, emotional exhaustion) were used as clustering variables based on prior literature (Jeon et al., 2016; Forry et al., 2013; Kontos & Riessen, 1993). Variables measuring interaction quality, such as the quality of relationships with family, quality of relationships with children, and responsiveness to children's emotions were also used.

Program Characteristics

Providers were asked about the size of their program, i.e., the total number of children in their care each week, including their own children. Questions also included about whether they have any adult assistant caregivers, including a family member or paid caregiver, and whether children in their care receive any subsidized childcare funding. Program characteristics also include the hours of care provided each week and whether providers are caring for mixed-aged children.

Provider Characteristics

Questions about provider characteristics included age, years of experience as a licensed home caregiver, and income as FCC providers. Providers were asked about training including educational attainment and whether they had taken coursework in ECE or child development. Professional development involvement and access were measured using the two items: "Have you participated in professional development programs in the last 12 months?" and "Do you have any formal or information relationships with schools or programs that give to resources or professional development programs for caring for children under age 13?".

Providers were also asked about their motivations for working in FCC by responding to a four-option forced-choice item ("How would you describe your job as a family childcare provider?") (Kontos et al., 1995). Options included: "It is my chosen occupation," "It is

good while my children are young," "It is a stepping stone to related work," and "It is a temporary occupation."

Appraisals of FCC Work

Variables used to describe appraisals of FCC work included professional commitment, job satisfaction, and perceived competence. *Professional commitment* was measured via two items from the Schools and Staffing Survey (SASS; National Center for Education Statistics, 2012), responded to on a 5-point Likert scale. Items included: "Knowing what I do now, if I could decide all over again, I would become a childcare provider again" and "Within the next 12 months, I will continue to be a childcare provider." With a Cronbach's alpha of 0.576, items were entered separately into the cluster analysis. *Job satisfaction* ("I am satisfied with being a home care provider") and *perceived competence* ("I feel competent in my work") were each 1-item questions on a 7-point Likert scale (1 = Strongly Disagree, 7 = Strongly Agree).

FCC Provider Feelings While at Work

Variables of stress and emotional exhaustion are used to describe how FCC providers feel during work. We captured providers' sources and experiences of stress to describe their workplace stressors overall. Sources of *stress* was measured via nine items, with responses given on a 5-point Likert scale (1 = No Stress, 5 = A Great Deal of Stress). Sample items included: "Expectations of the parents of the children in my care," "Income fluctuations," and "Dealing with licensing rules/ regulations/ inspection." Additionally, providers responded to six items about their experiences of stress specific to working as a FCC provider on a 5-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree). Some of the items were: "It is hard to ask my own family members to adhere to licensing regulations," "The wear and tear on our home is difficult for my financially," and "I feel guilty about my children having to share space, toys, and my attention." When source and experience items were combined, Cronbach's alpha was high (0.88), and therefore the items were aggregated for analysis. Providers were asked to rate their *emotional exhaustion* using an item originally developed for this survey ("I am emotionally exhausted by my work") on a 7-point Likert scale (1 = Strongly Disagree, 7 = Strongly Agree).

Interaction Quality

Interaction quality included three indicators: (a) quality of relationships with children, (b) quality of relationships with families, and (c) providers' responsiveness to children's negative emotions. To measure *quality of relationships with children*, providers self-reported on the style of their interaction with the children in their care using an adapted version of the Student–Teacher Relationship Scale (STRS; Pianta, 2001) modified for the Staff Wellness Survey (Whitaker et al., 2015). The modified STRS Staff Wellness Survey version has moderate reliability (Conflict α = 0.73, Closeness α = 0.72) and subscales are correlated in the expected direction ($r = -0.37$; Whitaker et al., 2015). In general, STRS scores are mildly negatively skewed, indicating that teachers tend to view relationships with students positively (Pianta, 2001). To the best of our knowledge, the STRS has not previously been used in FCC samples. For this study, providers rated the level of *conflict* (negativity, insecurity, and hostility) and *closeness* (warmth, security, and openness) in their relationships

with children on average using a 5-point Likert scale (1 = Definitely does not apply to 5 = Definitely applies). Example items include "If upset, the children will seek comfort from me," and "Dealing with the children drains my energy." Conflict items were reverse coded prior to analyses. Conflict and closeness subscales were examined separately in the cluster analysis.

Quality of relationships with families was measured using six items adapted from the Scales Measuring Aspects of Childcare Quality, a subscale of the Measuring the Quality of Childcare from the Parent's Perspective scale (Emlen et al., 2000). The original instrument was validated across multiple types of childcare settings (Emlen et al., 1999) and ranges of household income. Providers rated their relationships with families via six items on a 4-point Likert scale (1 = Never to 4 = Always, e.g., "Family members are supportive of me as a caregiver"). Items were aggregated because the original scale's reliability was strong ($\alpha = 0.91$; Emlen et al., 2000) and was similarly relatively high in this sample ($\alpha = 0.78$).

Provider responsiveness to children's displays of negative emotions, a key component of emotion socialization (Denham et al., 2012), was assessed with an adapted version of the Coping with Children's Negative Emotions Scale (CCNES; Fabes et al., 1990). For each of the six scenarios, providers rated the likelihood of them having negative (distress, punitive, and minimization) and positive reactions (expressive encouragement, emotion-focused, and problem-focused) to children's negative emotional displays on separate 7-point Likert scales (1 = Very Unlikely, seven = Very Likely). In our analysis, we used the three-factor structure derived previously (Lang et al., 2017). Providers' responses will be categorized as negative reactions ($\alpha = 0.82$), expressive encouragement ($\alpha = 0.77$), and positively-focused reactions ($\alpha = 0.76$).

Design

The project was approved by the Institutional Review Board (IRB) to ensure protection of human subjects in this study analyzing secondary data. All analyses were conducted in R (Version 3.5.1; R Core Team, 2018). To answer question 1, we conducted a hierarchical cluster analysis using the *diana* function in the *cluster* package was used to complete the divisive hierarchical cluster analysis (Version 2.0.7–1; Maechler, 2017). Multivariate analyses of variance (MANOVAs) were completed to conduct group comparisons (question 2). For these analyses, we used Pillai's trace (*V*) as the test statistic, as it is thought to be the most robust test statistic with the most power when group sizes are uneven (Pillai, 1955).

Results

We conducted an item analysis to identify variables to include in the cluster analysis and detect any missing data. With less than 5% of data missing per variable, we used listwise deletions to address missing data. Initial descriptive analyses and bivariate correlations between clustering and predictive variables were examined (See Table 2). Results of the Pearson correlation indicated several significant correlations within clustering variables and within predictor variables. Between clustering and predictor variables, higher conflict in provider-child relationships was correlated with FCC providers' desire to work in FCC again, higher job satisfaction, and higher perceived competence. Conflict in provider-child relationships was correlated with lower emotional exhaustion.

Determining Group Differences in FCC Providers' Appraisals and Feelings While at Work

To address our first research question, we first needed to determine whether FCC providers clustered around their appraisals and experience of FCC work. A hierarchical cluster analysis was conducted to create data-driven groups. The variables describing appraisals (professional commitment, job satisfaction, perceived competence) of and feelings (stress and emotional exhaustion) about FCC work were entered into the cluster analysis. The silhouette method, which is used to determine the final number of groups (Roux, 2018; See Fig. 1), found four distinct groups.

Cluster labels, relative sizes, and scores on clustering variables are all presented in Table 3. We tested whether the groups differed significantly on the clustering variables via analysis of covariance (ANCOVA). Groups significantly diverged along both aspects of professional commitment (Again, $F(1, 865) = 66.76$, $p < 0.001$; 12 months, $F(1, 865) = 25.56$, $p < 0.001$), job satisfaction ($F(1, 865) = 74.78$, $p < 0.001$), and emotional exhaustion ($F(1, 865) = 3.98$, $p = 0.046$). Contrary to the hypothesis, ratings on stress, $F(1, 865) = 0.38$, $p = 0.538$, and perceived competence, $F(1, 865) = 1.05$, $p = 0.307$, did not significantly differ between groups. In the following sections, we describe the groups identified by the cluster analysis in more detail.

We labeled the first and largest group *positive appraisals/feelings* (73.51%, $n = 641$). FCC providers in this group had the most positive appraisals, with the highest ratings of professional commitment and job satisfaction, and the most positive feelings, with the lowest ratings for emotional exhaustion compared to the other cluster group. The second largest group is labeled *moderate appraisals/feelings* (17.43%, $n = 152$). FCC providers in this group have positive appraisals of FCC work, scored moderately high on professional commitment and job satisfaction, and have the second lowest ratings for emotional exhaustion. FCC providers in the *negative appraisals/ emotionally exhausted* (6.54%, $n = 57$) group had the most negative appraisals of FCC work, with the lowest levels of professional commitment and job satisfaction. Their ratings of emotional exhaustion were higher than those two of the other groups. The fourth and smallest group is labeled *moderate appraisals/ emotionally exhausted* (2.52%, $n = 22$). FCC providers in this group had moderate appraisals of FCC work, with moderately low professional commitment and moderately high job satisfaction. They had the highest level of emotional exhaustion.

Program and Provider Characteristics by Group

With defined groups, we could proceed to address our first research question—What are the attributes of the FCC providers who fell into each cluster? We identified several program and provider characteristic differences between the groups. Descriptive data for provider characteristics are presented in Table 1 and program characteristics are presented in Table 4. We saw partial support for our hypothesis. While we did identify some provider characteristic differences between groups, there were fewer differences in program characteristics across clusters. The program characteristics of having adult caregivers who help provide care were the most different between clusters. In addition, program and provider characteristics and the association with appraisals of and feelings about FCC work was not linear.

FCC providers in the *positive appraisals/feelings* cluster were on average older and had more experience as licensed caregivers than those in other clusters. Income from FCC

work was the main source of household income. While they did not have the highest level of education, a higher percentage of FCC providers participated in professional development opportunities and had formal or informal relationships with schools or programs that provided access to resources. Most FCC providers in this cluster reported that FCC was a temporary occupation.

In comparison, FCC providers in the *moderate appraisals/feelings* cluster were the least likely to have relationships with other programs or schools for access to professional development resources. FCC providers in the *negative appraisals/emotionally exhausted* cluster look similar in program and provider characteristics, except they were the most likely to have an adult caregiver who helped provide care.

The *moderate appraisals/emotionally exhausted* cluster was the smallest cluster. FCC providers in this group were the youngest, most educated, and had the fewest years of experience as a licensed home caregiver. None of the FCC providers in this cluster had another adult caregiver to help provide care. Most providers indicated that FCC was their chosen occupation. With the lowest income as an FCC compared to the other clusters, income as an FCC was not the main source of household income, unlike providers in the other clusters.

FCC Provider Differences in Interaction Quality

A multivariate analysis of variance (MANOVA) was used to test for differences among clusters in our interaction quality variables. There were significant differences among the clusters with regard to their relationships with families and children, $V = 0.76$, $F(3, 2586) = 7.501$, $p < 0.001$, $\eta^2 = 0.025$, and their responsiveness to children's negative emotions, $V = 0.177$, $F(3, 2547) = 17.735$, $p < 0.001$, $\eta^2 = 0.059$. Univariate ANOVAs were conducted to determine which variables were significant in the omnibus MANOVA. Consistent with our hypotheses, significant univariate effects for clusters were obtained for relationships with family, $F(3, 862) = 10.17$, $p < 0.001$, partial $\eta^2 = 0.034$; relationships with children in subscales for conflict with children, $F(3, 862) = 6.192$, $p < 0.001$, partial $\eta^2 = 0.021$, and closeness with children $F(3, 862) = 15.759$, $p < 0.001$, partial $\eta^2 = 0.052$. Confirming our hypotheses, significant univariate effects for clusters were obtained for responsiveness to children's negative emotions with the subscales of expressive encouragement of emotions, $F(3, 849) = 40.255$, $p < 2.2e\text{-}16$, partial $\eta^2 = 0.125$; negative reactions, $F(3, 849) = 2.669$, $p = 0.04658$, partial $\eta^2 = 0.009$; positive reactions, $F(3, 849) = 45.423$, $p < 2.2e\text{-}16$, partial $\eta^2 = 0.138$.

To answer the second research question, pairwise Tukey HSD comparisons were performed to determine which cluster differed across the variables. The results suggest partial support of the hypothesis that appraisals of and feelings about FCC would be associated with the interaction quality of providers. While FCC providers with the most positive appraisals and feelings did demonstrate higher indicators of interaction quality, FCC providers with more negative and moderate appraisals and feelings about FCC work varied in interaction quality. FCC providers in the *positive appraisals/feelings* cluster had the highest ratings across all indicators of interaction quality. Compared to providers in the *moderate appraisals/feelings* cluster, they had significantly higher ratings of closeness in relationships with children, $t(862) = 6.403$, $p < 0.001$, $d = 0.57$, and higher ratings of quality in family relationships, $t(864) = 5.437$, $p < 0.001$, $d = 0.49$. FCC providers in the *positive appraisals/feelings* cluster also had higher ratings of closeness in relationships with children than providers in the *moderate appraisals/emotionally exhausted* cluster, $t(862) = 2.621$,

$p = 0.0406$, $d = 0.61$, and less conflict in relationships with children compared to the *negative appraisals/ emotionally exhausted* cluster, $t(864) = 5.437$, $p < 0.001$, d = -0.31. Group comparisons are summarized in Fig. 2.

There were also significant differences between clusters and partial support of the hypothesis that appraisals and feelings about FCC work are associated with providers' responsiveness to children's negative emotions. FCC providers in the *positive appraisals/ feelings* cluster also reported were more responsive to children's negative emotions. Specifically, these providers had significantly higher ratings of expressive encouragement, $t(863) = 10.674$, $p < 0.001$, $d = 0.97$, more positively-focused reactions, $t(859) = 11.758$, $p < 0.001$, $d = 1.08$, and less negative reactions, $t(849) = -2.547$, $p = 0.0536$, $d = -0.23$, compared to the *moderate appraisals/feelings* cluster. FCC providers in the *moderate appraisals/feelings* cluster also had lower ratings of expressive encouragement, $t(863) = 4.867$, $p < 0.001$, $d = 0.79$, and positively-focused reactions, $t(859) = 5.649$, $p < 0.001$, $d = 0.77$, compared to FCC providers in the *negative appraisals/emotionally exhausted* cluster. FCC providers in the *moderate appraisals/feelings* cluster also had lower ratings of expressive encouragement compared to FCC providers in the *moderate appraisals/emotionally exhausted* cluster, $t(863) = -2.583$, $p = 0.488$, $d = -0.46$. Group comparisons are summarized in Fig. 3.

Discussion

In the present study, we sought to investigate how FCC providers appraise their work and feel at work. Specifically, to inform future intervention and workforce retention initiatives, we sought to understand whether FCC providers clustered around similar ratings of professional commitment, job satisfaction, and perceived competence, and their emotional experiences (how stressed and emotionally exhausted they feel). Next, we compared these groups to understand whether and how they differed in the indicators of interaction quality.

In the following discussion, we will highlight several notable findings. Firstly, four distinct groups of FCC providers were identified based on their appraisals of and emotional experiences at work. Furthermore, there was partial support for our hypotheses that these clusters of FCC providers would differ with regard to the types of relationships they form with children and families. Finally, we found that one cluster was consistently less emotionally supportive of children than the other three. In the following discussion, we stay true to this study's person-centered approach by discussing the findings holistically while also situating these findings in the extant literature. Implications for future workforce development and support initiatives are also examined.

Clustering by Appraisals of and Feelings About Work

The majority of FCC providers in this sample fit within the cluster labeled *positive appraisals/feelings*. The three smaller clusters were all experiencing a combination of moderate to high levels of negative appraisal and emotional exhaustion. Unexpectedly, the clusters did not differ on their reported levels of stress or perceived competence. Stress is a commonly cited experience of FCC providers (Atkinson, 1992); however, it is possible that the challenges and stressors captured by the survey items were so ubiquitous and known to providers before entering the field (e.g., knowing that their family will have to adhere to licensing regulations) that there was insufficient variance across groups. In addition, challenges

navigating the ECE system is a potential contributor to FCC providers' stress and decision to leave the workforce (Bromer et al., 2021), thus not being captured in the current sample.

While on the surface, it may be comforting to know that most FCC providers are committed, satisfied, and feel positive about their work with young children, it is likely that response bias resulted in a lower representation of unsatisfied or emotionally exhausted FCC providers. This could either be because the effort involved in responding to the survey would be especially aversive for exhausted providers or because those who are least committed have already left the profession. Regardless of their relative proportion, these findings do reveal that there are distinct profiles of FCC providers in the workforce and that providers do not constitute a monolithic population. And in fact, cluster membership was associated with significant differences in interaction quality. In the following sections we discuss these group differences by each indicator of interaction quality: relationships with children and families and the ways they engage in social–emotional teaching.

Family and Child Relationships by FCC Cluster

In examining FCC providers' reports of relationships with children in their care, we see that those who appraise their work positively reported more success. Specifically, FCC providers with *positive appraisals/feelings* had the most positive relationships with children, meaning they scored lowest on ratings of conflict in their relationships with children and highest in ratings of closeness in relationships with children across the four groups. Their ratings were significantly different from the other three groups, but there was no significant difference among those clusters who experienced some negativity in their appraisals or experiences.

Interestingly, the lowest levels of closeness in relationships with children were reported by the two groups who had moderate levels of emotional exhaustion, but still had positive or moderate appraisals of work (*moderate appraisals/feelings* and *moderate appraisals/ emotionally exhausted*). It is possible that for these groups, the emotional toll of caring for young children impeded the formation of positive close relationships. However, we would expect then that those falling within the *negative appraisals/emotionally exhausted* cluster would similarly rate their relationships less close. Thus, there is likely some moderating influence of FCC providers' commitment to the job—when they feel a strong commitment to the work but do not have the types of relationships they want and know to be beneficial, this may contribute to their emotional exhaustion. This especially could apply to the *moderate appraisals/ emotionally exhausted* group, among whom 90% indicated that FCC was their chosen occupation.

Across the full sample, FCC providers reported having generally positive relationships with families, but comparisons across the identified clusters showed significant differences between the *positive appraisals/feelings* and *moderate appraisals/feelings* clusters. Specifically, FCC providers with positive appraisals and positive feelings at work reported much better relationships with families than did those in the second-largest group who felt highly committed but were burning out. The direction of this effect is unclear. It is possible that feeling less supported by the families they work with leads some FCC providers to expend additional emotional energy. Conversely, those who are already emotionally exhausted by their work may experience interactions with families more negatively. Given the preponderance of research into the importance of family engagement to adequate child development, understanding the direction of this association will be key. Addressing FCC providers' underlying emotional health may be an important prerequisite before encouraging them to

participate in professional development opportunities related to increasing family engagement. In a study of FCC providers, respondents reported that building relationships with families is a challenge to being a caregiver and is a major source of workplace stress (Corr et al., 2014). However, further work is needed to examine the association between feelings of emotional exhaustion and the quality of FCC provider relationships with families.

Social–Emotional Teaching by FCC Cluster

As we've seen above, FCC providers are not a monolith and cluster around their workplace appraisals and how they feel during work. As such, the final research question this study addressed pertains to how these clusters differ in the ways they respond to children's emotions—a key component of emotion teaching. We found partial support for our hypothesis that FCC providers with positive workplace appraisals and feelings at work are more responsive to children's negative emotions. Specifically, we found a greater number of significant differences between clusters for the encouraging and positively-focused reactions subscales and only one within the negative Reactions subscale. Measuring FCC providers' engagement in these practices is important because they are associated with the development of children's emotional competence and social skills in other early childhood samples (Buettner et al., 2016; Fabes et al., 2002). When teachers provide more supportive and validating responses to children's emotions, children are more likely to develop emotional regulation and conflict resolution skills (Buettner et al., 2016). On the other hand, when adults respond to children's negative emotions in a negative or invalidating way, children are more likely to exhibit behavior problems and difficulty with emotional regulation (Eisenberg et al., 1996). In these data, FCC providers in the *negative appraisals/emotionally exhausted* cluster who identified as committed but burning out engaged in the least expressive encouragement. This group was also the lowest-scoring with regard to their positive reactions to children's emotions. Their rate of positive reactions was significantly lower than that for both the *positive appraisals/feelings* and the *negative appraisals/emotionally exhausted* clusters. Similarly, in a center-based sample, teachers experiencing emotional exhaustion were more likely to react negatively to children's emotions (Buettner et al., 2016). In addition, teachers with positive coping strategies were more likely to provide expressive encouragement and positive reactions to children's negative emotions (Buetter et al., 2016). FCC providers in the *negative appraisals/emotionally exhausted* cluster may need support in developing positive coping strategies to address the experience of emotional exhaustion and negative appraisals of FCC work.

Putting it all Together

The existence of multiple clusters reporting some degree of emotional exhaustion is concerning. These three groups were also the same ones that were least committed and least satisfied. The connection between workers' emotional experiences at work and their appraisals of the work is not unique to FCC providers. Improving workers' emotional health has often been lauded as a way of increasing productivity and reducing turnover (e.g., Halkos & Bousinakis, 2010). Attending to the ways FCC providers evaluate and feel about their work is important because prior research with center-based early childhood professionals has demonstrated that these factors are associated with the quality of their interactions with children (e.g., Thomason & La Paro, 2013). Our use of a cluster analysis approach additionally reveals important nuance beyond these prior variable analyses.

Descriptively, these three less-positive groups had some shared and some unique experiences that align with the socio-ecological framing of this study. In general, compared to the *positive appraisals/feelings* cluster, these other three were less-well compensated for their work, were somewhat more educated, less experienced, and yet were less likely to indicate that being an FCC was a temporary occupation. One explanation could be that for FCC providers in the *positive appraisals/feelings* cluster, income from FCC work makes up a greater percentage of household income compared to other clusters, and thus they are less likely to be able to leave the profession. In comparison, FCC providers in the *moderate appraisals/emotionally exhausted* cluster have the highest household income with the lowest income from FCC work. The lack of benefits and low income is seen as a reason for FCC providers leaving the profession (Bromer et al., 2021) and could explain why the *moderate appraisals/emotionally exhausted* cluster is small in number. As theorized by Jorde-Bloom's model, this lack of a "good fit" between their needs, goals, and skills has implications for the quality of their interactions with children and families. Across all three indicators of interaction quality (relationships with families and children and responses to children's emotions), the *positive appraisals/feelings* cluster outperformed the more negative clusters.

However, there is more nuance beyond just replicating the linear association between work appraisals and feelings about work teachers' interaction quality that has been demonstrated previously (e.g., Thomason & La Paro, 2013). Looking within the three negatively valenced clusters, we see that they are also distinct from one another in their relationships with children and families and social–emotional teaching practices. More specifically, the *moderate appraisals/feelings* cluster, the second-largest cluster in this sample, was significantly lower than at least one of the other clusters on nearly all of the dependent variables. Of those who feel negatively about their work, this was the only cluster to score high on commitment. Nearly all of the FCC providers in this group intended to continue in their role as an FCC provider and were satisfied with their work. At the same time, they are not reaping the emotional benefits of interacting with children and families and struggled to maintain positive and supportive relationships. Understanding the experiences of these highly committed educators could be an important step toward both increasing the retention of the workforce and enhancing the quality of FCC providers' interactions with children and families. Unlike the other two negatively valenced clusters, this group does not need training or programming that promotes their satisfaction but instead may be more likely to benefit from interventions such as infant and early childhood mental health consultation (IECMHC). As an intervention, IECMHC specifically aims to cultivate FCC providers' skills around building positive relationships with children and families and nurturing children's emotional development (Cohen & Kaufman, 2005). The key mechanism driving the significant effects of consultation is the consultative alliance and rapport developed between the consultant and the provider (Davis et al., 2020). Such a relationship-based intervention may be especially restorative for committed but emotionally exhausted FCC providers.

Looking across results related to FCC providers' relationships with children and families, further consideration of providers' intentions and motivations also seems warranted. For FCC providers, the belief that FCC is a temporary occupation may serve as a potentially protective factor against emotional exhaustion due to factors such as financial instability and lack of benefits.

Although it is the smallest group, the *moderate appraisals/emotionally exhausted* cluster also stands out from the other two negatively valenced groups. Compared to these other groups, FCC providers in this group were more likely to hold an advanced degree and were

also the only group to endorse being an FCC provider because it was their chosen occupation (as opposed to a temporary or stepping stone position). Similar inverse relationships between emotional exhaustion and permanency have been identified in other workforce populations. For example, in studies of burnout amongst nurses, Jurado and colleagues (2018) found that those in temporary positions reported less emotional exhaustion than those with more permanent contracts.

FCC providers in this *moderate appraisals/emotionally exhausted* cluster perceive their work as a calling, but they are overqualified for the position. These individuals made a conscious decision to enter into a career that lacks many of the professional supports accessible in other workplaces, including center-based ECE settings (Kontos & Reissen, 1988). Given that they have a much lower average number of years of experience, they may not yet have developed strategies to cope with emotional exhaustion.

Limitations and Future Directions

Although the total sample was quite large and represented most states, low overall response rates and the exclusion of unlicensed FCC providers compromise the generalizability of our findings. In addition, despite research suggesting that 40% of the FCC workforce are women of color (Whitebook et al., 2018), this diversity was not reflected in our sample. The lack of a more diverse sample is a limitation that may reduce the generalizability of our findings. FCC providers of color may be experiencing more stressors, including stress from racialized experiences, that may impact their feelings of emotional exhaustion. Bromer and colleagues (2021) describe how quality standards for FCC are not responsive to the diverse experiences and cultural values of FCC providers and the communities they serve. Future research should consider oversampling FCC providers of color in assessing the appraisals and feelings of FCC work.

It is likely that response rates were most suppressed among practitioners experiencing extremely high levels of stress, emotional exhaustion, and/or have negative appraisals of their work. Those who are less committed to the profession would also be less likely to complete the voluntary survey, even if they were still in the workforce. Therefore, the results of the current study may be biased towards FCC providers who have more positive appraisals of the profession. In addition, the *moderate appraisals/emotionally exhausted* group was the smallest and demonstrated the most variability; therefore, we are cautious about our interpretations of the results for this group of FCC providers. Further work is needed to understand FCC providers in this group.

The current study also relied on self-report data from one time point, which does not allow for discussions of causality. Future research can use longitudinal methods beginning with preservice early childhood teachers interested in FCC to examine the dynamics of socio-ecological factors influencing the quality of relational practices. Despite the limitations on generalizability and an inability to draw causal conclusions from this correlational data, the current study contributes to the literature on the FCC workforce. In line with calls to create professional development that is more responsive to appraisals and feelings about work (Jeon et al., 2016; Porter et al., 2010) among early childhood educators, findings from this study suggest that future work is needed to develop supports tailored to specific groups of FCC providers based on socio-ecological factors.

Implications

Findings for the current study echo the need to increase access to resources and professional development (Jeon et al., 2018). For instance, FCC providers who may identify with *moderate appraisals/feelings* may benefit from focused professional development around social–emotional teaching or forming effective relationships with families. With nearly a quarter of respondents indicating a moderate or high level of emotional exhaustion, more research on initiatives to promote FCC providers' positive feelings at work are critical, and findings from this study point to ways that interventions can be tailored. General interventions to decrease exhaustion have had mixed effects (Ahola et al., 2017), but targeting programming to specific populations can enhance their impact. Although they were the smallest group, these findings suggest that it may be beneficial to proactively intervene to support FCC providers who enter the field as their chosen profession and who have less experience—the distinguishing characteristics of the moderate appraisal but an emotionally exhausted cluster.

The findings also suggest that efforts aimed at supporting FCC providers to increase appraisals and feelings experienced at work may also allow teachers to engage in quality interactions. FCC providers who develop coping strategies to address emotional exhaustion, become more committed to FCC work, and more satisfied with their job may also have more emotional bandwidth to form more positive relationships with families and children in their care. FCC providers are likely to also be able to respond to children's negative emotions in more positive and encouraging ways.

Appendix 1

See Tables 1,2,3,4.

Table 1 FCC provider characteristics for overall sample and by cluster group

Variable	Mean (SD) or frequency (%)	Positive appraisals/feelings (n=641)	Moderate appraisals/feelings (n=152)	Negative appraisals/emotionally exhausted (n=57)	Moderate appraisals/emotionally exhausted (n=22)
Female (n(%))	868 (98.4%)	628 (98.0%)	149 (98.0%)	54 (94.7%)	21 (95.4%)
Race/ethnicity (%) White, non-hispanic	663 (78.7%)	479 (77.5%)	122 (81.9%)	44 (81.5%)	18 (85.7%)
Black/African American	126 (15.0%)	101 (16.3%)	16 (10.7%)	8 (14.8%)	1 (4.8%)
Multi-racial	30 (3.6%)	24 (3.9%)	4 (2.7%)	1 (1.9%)	1 (4.8%)
Hispanic	49 (5.7%)	28 (4.4%)	14 (9.2%)	4 (7.0%)	0 (0.0%)
Other	23 (2.7%)	14 (2.3%)	7 (4.7%)	1 (1.9%)	1 (4.8%)
Age (M(SD))	49.1 (11.8)	50.5 (11.3)	44.9 (11.4)	45.8 (14.0)	44.7 (13.1)
Marital status (M(%)) married	611 (71.4%)	445 (70.6%)	108 (71.5%)	41 (75.9%)	17 (81.0%)
divorced/separated	137 (16.0%)	99 (15.7%)	26 (17.2%)	10 (18.5%)	2 (9.5%)
Co-habiting	24 (2.8%)	19 (3.0%)	4 (2.6%)	1 (1.9%)	0 (0.0%)
Single	84 (9.9%)	67 (10.6%)	13 (8.6%)	2 (3.7%)	2 (9.6%)
Household income (M)	$35,001–$40,000	$35,001–$40,000	$35,001–$40,000	$35,001–$40,000	$40,001–$50,000
Income as FCC (M)	$25,001–$30,000	$25,001–$30,000	$20,001–$25,000	$20,001–$25,000	$15,001–$20,000
Educational attainment					
Less than high school, no GED	8 (0.9%)	8 (1.3%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
High school diploma or GED	214 (24.7%)	181 (28.4%)	26 (17.3%)	5 (8.9%)	2 (9.1%)
Some college, no degree	292 (33.8%)	212 (33.3%)	54 (54.0%)	19 (33.9%)	7 (31.8%)
Associate degree	143 (16.5%)	102 (16.0%)	26 (17.3%)	15 (26.8%)	0 (0.0%)
Bachelor's degree	146 (16.9%)	91 (14.3%)	35 (23.3%)	13 (23.2%)	7 (31.8%)
Beyond bachelor's degree	62 (7.2%)	43 (6.8%)	9 (6.0%)	4 (7.2%)	6 (27.2%)
Years experience	13.37	15.15	11.02	11.73	6.95
Taken CD or ECE course beyond high school	648 (76.1%)	476 (76.2%)	111 (73.5%)	41 (75.9%)	22 (90.9%)
PD participation	661 (79.6%)	81.10%	75.20%	75.90%	57.10%

Table 1 (continued)

Variable	Mean (SD) or frequency (%)	Positive appraisals/ feelings (n=641)	Moderate appraisals/ feelings (n=152)	Negative appraisals/ emotionally exhausted (n=57)	Moderate appraisals/ emotionally exhausted (n=22)
Relationship with schools/programs that provide resources	510 (59.7%)	61.20%	54.30%	58.50%	57.10%
Motivation for FCC entry					
Chosen occupation		0.16%	5.52%	1.89%	90.48%
Good while my children are young		3.27%	4.14%	1.89%	9.52%
Stepping stone to related work		12.58%	40.69%	67.92%	0.00%
Temporary occupation		83.99%	49.66%	28.30%	0.00%

ECE Early childhood education, *CD* Child development

Table 2 Bivariate correlation of variables

Variable	1	2	3	4	5	6	7	8	9	10	11	12
1. Professional commitment (again)												
2. Professional Commitment (12 months)	0.56											
3. Job satisfaction	0.82**	0.58*										
4. Perceived competence	0.54	0.40	0.77**									
5. Emotional exhaustion	−0.75**	−0.50	−0.79**	−0.57								
6. Stress	−0.81**	−0.57	−0.87**	−0.63*	0.82**							
7. Family relationships	0.39	0.13	0.43	0.34	−0.61*	−0.60*						
8. Child relationship (conflict)	−0.64*	−0.44	−0.66*	−0.62*	0.69*	0.63*	−0.62*					
9. Child relationship	0.29	0.14	0.32	0.39	−0.47	−0.45	0.59*	−0.68*				
10. CCNES (expressive Encouragement)	0.30	0.05	0.36	0.34	−0.48	−0.45	0.41	−0.54	0.49			
11. CCNES (negative reactions)	−0.42	−0.32	−0.42	−0.53	0.30	0.35	−0.42	0.57	−0.61*	−0.51		
12. CCNES (positively-focused reactions)	0.37	0.09	0.43	0.47	−0.55	−0.52	0.48	−0.64*	0.63*	0.77**	−0.56	
N	882	881	887	881	883	887	883	880	880	883	866	879
Mean	4.33	4.63	5.89	6.44	3.59	2.13	3.54	2.05	4.75	5.11	1.65	6.10
SD	1.00	0.92	1.36	1.00	1.89	0.93	0.46	0.60	0.33	0.98	0.75	0.77

Professional Commitment (Again): "Knowing what I do now, if I could decide all over again, I would become a childcare provider again;" Professional Commitment (12 months), "Within the next 12 months, I will continue to be a childcare provider;" CCNES: Coping with Children's Negative Emotions scale; * indicates $p < 0.05$. ** indicates $p < 0.01$

Table 3 Mean FCC provider appraisal and experience of FCC work ratings by cluster group

	Scale	F	Positive appraisals/feelings (n=641)	Moderate appraisals/feelings (n=152)	Negative appraisals/emotionally exhausted (n=57)	Moderate appraisals/emotionally exhausted (n=22)
% of sample in cluster			72.2%	17.12%	6.4%	2.5%
Workplace appraisals						
Commitment: i would be a FCC provider again**	1–5	66.76**	4.51 (0.85)	3.98 (1.03)	3.37 (1.48)	3.95 (1.17)
Commitment: within the next 12 months**	1–5	25.56**	4.87 (0.42)	4.77 (0.47)	1.95 (1.11)	3.59 (1.44)
Job satisfaction**	1–7	74.78**	6.29 (1.01)	5.02 (1.35)	4.23 (1.89)	4.32 (1.81)
Perceived competence	1–7	1.05	6.62 (0.78)	5.99 (1.16)	5.74 (1.71)	6.23 (1.23)
Feelings at work						
Emotional exhaustion*	1–7	3.98*	3.35 (1.88)	4.22(1.71)	4.28 (1.95)	4.32 (2.12)
Stress	1–5	0.38	1.99 (0.88)	2.38 (0.92)	2.82 (1.04)	2.50 (1.02)

Standard deviations reported parenthetically. Significant analysis of covariance (ANCOVA) comparisons are marked; $* = p < .05$. $** = p < .0001$

Table 4 FCC program characteristics by cluster group

Variable	Positive appraisals/ feelings (n=641)	Moderate appraisals/ feelings (n=152)	Negative appraisals/ Emotionally exhausted (n=57)	Moderate appraisals/ emotionally exhausted (n=22)
Have adult caregivers who help provide care (%)	35.3%	27.0%	61.8%	0.0%
Children in care each week (M)	8.3	7.7	7.4	7.6
FCC receiving subsidized care funding (%)	44.5%	41.5%	35.1%	45.5%
Hours of care per week (M)	51.2	50.7	51.7	50.9
Caring for mixed-age children (%)	91.6%	94.1%	93.0%	86.4%

*ECE Early childhood education, CD Child development

Appendix 2

See Figs.

- Definition: Color graphic with shading
- Visualization in R (fviz_cluster)
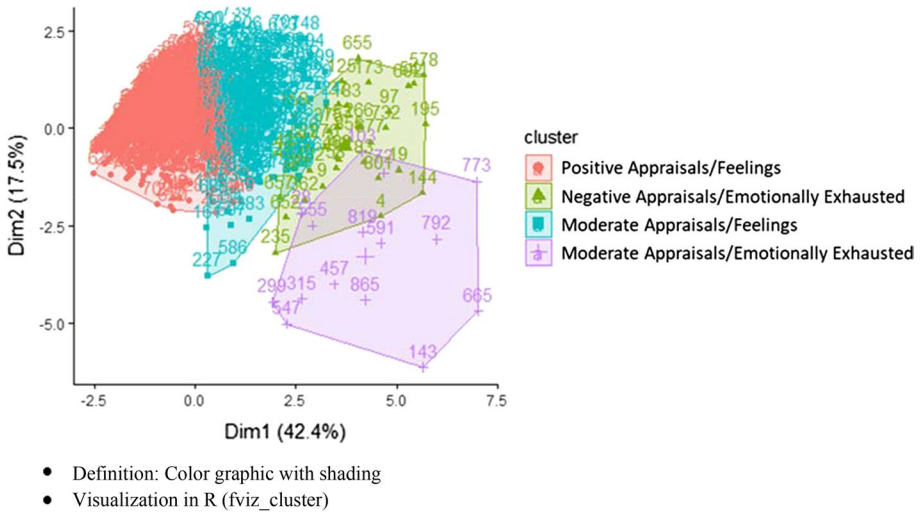
**Fig. 1** Visualization of cluster analysis. Participants are represented by points on the scatterplot

- Definition: Black and white graphic with shading
- Visualization in Excel
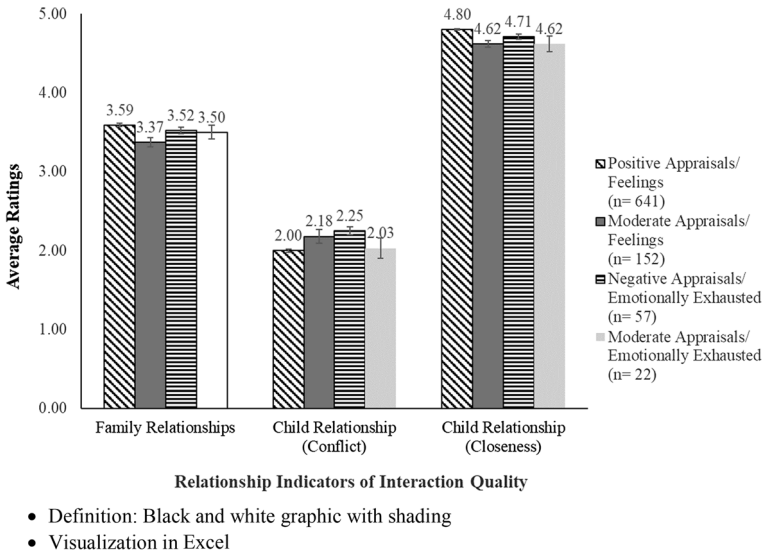
Fig. 2 Provider relationships with families and children by cluster group
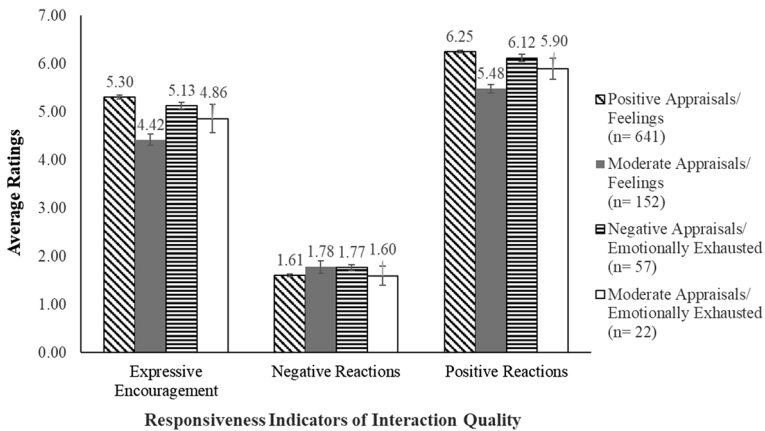
- Definition: Black and white graphic with shading
- Visualization in Excel

Fig. 3 Provider ratings in responsiveness to children's negative emotions by cluster group

Declarations

Conflict of interest The authors declare that they have no conflict of interest.

Ethics Approval The project was approved by the authors' university Institutional Review Boards (IRB) to ensure protection of human subjects in this study analyzing secondary data.

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