

## Predictors of Home-Based Child Care Providers' Participation in Professional Development Workshops and Coaching

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Published online: 25 May 2013  
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### Abstract

**Background** Little is known about factors that influence home-based child care providers' participation in professional development. Factors that predict participation in activities that are designed to promote the utilization and maintenance of skills taught are of particular interest.

**Objective** Our aim was to examine factors in the home-based child care context that might influence participation in professional development, including demographic variables, working conditions, preintervention skills and training, perceptions of workshop usefulness, and interpersonal factors such as job-related stress and depressive symptoms.

**Methods** In this exploratory study, we examined predictors of participation among 67 home-based child care providers in Oregon, USA, who took part in the intervention group of a randomized efficacy study on a multiphase professional development program to promote preschoolers' positive social development.

**Results** Latent class analysis of participation resulted in three distinct groups: those who participated in the initial three workshops (WS), those who participated in workshops plus maintenance activities (consultation and a booster session, WS+), and those with little to no participation (NP). The NP group was too small to include in further analysis. A multivariate logistic regression model with child care provider education, number of preschool-age children enrolled in care, child-to-caregiver ratio, and self-reported stress included as predictors significantly improved classification in the WS+ group compared to the WS group.

**Conclusions** These findings offer a preliminary look at the unique factors influencing home-based child care providers' participation in extended professional development. Relevancy of content to child care providers' situations appears to be important.

**Keywords** Home-based child care · Professional development · Predictors of participation · Early childhood · Social development

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## Introduction

Child care settings have the opportunity to facilitate positive social and cognitive development in young children; however, the global quality of home-based child care varies greatly (Fuller et al. 2004; Goelman and Pence 1990; Vandell and Corasaniti 1990). One factor that may influence quality is home-based child care providers' education and training (Bigras et al. 2010; Fuligni et al. 2009). Participation in professional development is related to greater quality in home-based child care (Burchinal et al. 2002b; Clarke-Stewart et al. 2002; Doherty et al. 2006; Norris 2001; Raikes et al. 2005; Weaver 2002). Yet, home-based child care providers are less likely than other early educators to access professional development training resources (Fuligni et al. 2009). Given that approximately 3.7 million toddlers and preschool-age children in the USA spend an average of 26 h per week in home-based child care settings (Mulligan et al. 2005), it is critical that more attention is given to providing high quality, easily accessed professional development training and resources to these settings.

The impact of professional development for early childhood educators has promising yet equivocal results (Burchinal et al. 2002a; Sandefur et al. 2010). This might be due to differences in professional development models. A model of professional development that involves workshop sessions plus on-site coaching is advocated to strengthen skills of the educator and outcomes for children. Participants can learn new skills in a workshop setting; however, implementing these newly learned skills in the child care setting takes planning and practice. Coaching provides ongoing support and feedback to those implementing newly learned practices in real-world settings, increasing the likelihood that skills are implemented (Fixsen et al. 2005). A consultation model of coaching that involves site visits from a mentor coach who guides the caregiver in practices relevant to their particular situation and setting has been applied to center-based child care (Hendrickson et al. 1993), home-based child care (Koh and Neuman 2009), and preschool settings (Kaminski and Stormshak 2006; Landry et al. 2009).

The coaching model in early education has shown promising results. For example, a language and literacy course with coaching resulted in better literacy practices by home-based child care providers than the literacy course alone (Koh and Neuman 2009). Landry et al. (2009) found that preschool teachers who participated in an internet program in language and literacy plus mentoring improved their teaching practices and children's school readiness more than those who just received the internet program. There is some evidence for the benefits of coaching on children's behavioral outcomes as well. In one study, preschool-age children decreased behavioral problems when consultation with assessment feedback was utilized (Schill et al. 1998). Much more research is needed to pinpoint the qualities and dosage of coaching necessary to be effective.

Another issue is that of maintaining effects gained in professional development and early intervention studies. In particular, the maintenance of effects in studies aimed at improving young children's behavior and social interaction skills has been a common challenge. In school-based settings, proactive behavior management practices for promoting positive behavior have been empirically tested and found to be effective; however, the difficulty is in maintaining the use of these practices over time (Sugai and Horner 1999). A study in home-based child care showed that a set of workshops on promoting social competence improved child care providers' use of effective behavior management practices, which, in turn, predicted decreases in children's problem behavior, yet those effects were not maintained after five months following intervention (Rusby et al. 2008). In a review of randomized controlled trials of parenting and classroom-based interventions

aimed at improving children's and adolescent's social interaction skills, Taylor et al. (1999b) also found evidence for short-term effects but little evidence for maintenance of the effects. The authors surmise that the programs that do result in positive outcomes tend to be lengthy. This concurs with the results of a meta-analysis of preschool prevention programs (Nelson et al. 2003), in which the length of the intervention program significantly accounted for a portion of the variance in the maintenance of positive social outcomes into elementary and middle school. However, lengthy training programs are not very practical to implement and are more likely to experience challenges in continued participation. The key is in finding a balance of efficiency and effectiveness: to successfully obtain participation from busy early childhood educators and care providers and, at the same time, provide training that supports them in maintaining the effects of their newly learned practices. Optimal participation and sustained effects would then likely result in better outcomes for young children.

Very little research has examined the rates and predictors of participation in professional development for early childhood educators, particularly for those who provide home-based child care. Research that examines predictors of participation in a training program using the coaching model is also lacking. Although a number of studies have examined predictors of parent engagement in parenting skills training such as demographic factors (e.g., Reyno and McGrath 2006; Spoth et al. 1999), family system variables (Perrino et al. 2001), severity of child problems (e.g., Baydar et al. 2003), frustration with the parent–child relationship (Bloomquist et al. 2009), and life stressors (Gorman-Smith et al. 2002), we cannot assume that the same predictors are relevant for home-based child care providers. There is little in the early education literature to inform this work.

One study examined predictors of preschool teachers' implementation of skills learned in training; job satisfaction and perception of director support predicted the extent of implementation whereas experience, education, ethnicity, and self-efficacy did not (Baker et al. 2010). Variables that are related to job satisfaction may also impact the extent to which child care providers participate in job-related training opportunities. For home-based child care providers, depressive symptoms and job-related stress are of interest. Caregivers in home-based child care reporting lower job-related stress were more committed to their jobs (Kontos and Riessen 1993), yet higher stress and less training was associated with greater job turnover rates of home-based child care providers (Todd and Deery-Schmitt 1996). For caregivers providing home-based child care, depression was related to less sensitive caregiving, lower education, and providing care in the absence of another adult (Hamre and Pianta 2004). Similarly, higher levels of job stress of home child care providers was related to working in isolation, fewer positive interactions with children, higher caregiver-rated child problem behaviors, and lower tolerance for those behaviors (Rusby et al. 2012). Those factors related to stress and depression in child care providers such as working in isolation, the quality of caregiving, child behavior problems, and tolerance levels may also be important factors that affect participation in job-related training.

We expect that predictors of participation in professional development and implementation of concepts learned in early childhood settings to vary by child care context. In particular, unique predictors for home-based child care providers are expected, as these caregivers are independent business operators who often provide care by themselves. Many desire professional development training, and opportunities for networking and supportive social relationships (Lanigan 2011; Taylor et al. 1999a). Yet, competing responsibilities, long work hours, isolation, financial constraints, and lack of access to training opportunities hinder their ability to participate (Bailey and Osborne 1994; Gable and Halliburton 2003; DeBord 1993; Walker 2002). Home-based child care providers cite distance to training and inconvenient

scheduling as limiting their ability to engage in professional development (Gable and Halliburton 2003). The number and length of trainings as well as time of day affect their ability to attend (Kontos 1992). Further, care providers' perceptions of the relevance and usefulness of professional development are important factors in overcoming barriers to engaging in professional development. Many training opportunities do not tailor their content and process to the unique features of home-based child care (Lanigan 2011; Taylor et al. 1999a).

The purpose of this study was to examine the predictors of engagement of home-based child care providers in professional development that involves workshop attendance, coaching, and a booster workshop. As there is a lack of research to date to inform hypotheses, this study was exploratory and descriptive. The potential predictors that we explored have been drawn from the research on predictors of engagement in parenting training, factors associated with caregiver job satisfaction, and the sparse literature on predictors of early childhood educators' engagement in professional development training and implementation. We included demographic variables (i.e., education, experience, race/ethnicity) and job conditions (such as number of children, number of hours providing care, whether the caregiver is providing care alone vs. having a coworker), as well as preintervention skills (quality of the child care environment and effective behavior management practices), perceptions of child behavior problems and tolerance for those problems, workshop usefulness, barriers to implementation, and interpersonal factors such as depressive symptoms and feelings of job-related stress. This descriptive study was conducted to inform professional development efforts for home-based child care providers focusing in the area of promoting positive social development in early childhood.

## Methods

### Design

Participation and predictors of participation are from baseline data of the intervention group in a randomized controlled efficacy study of the Carescapes program (Rusby 2005). Home-based child care providers were randomized into condition following the collection of baseline data. Carescapes is a professional development program designed for home-based child care providers with the aim of promoting positive social development in preschool-age children. All procedures for the current study were approved by the Oregon Research Institute's Institutional Review Board.

### Participants

A total of 155 home-based child care providers from six different counties in the state of Oregon in the USA agreed to participate in the efficacy study. In child care homes with more than one caregiver, the lead child care provider was asked to participate—there was one child care provider participating per child care home. Child care providers were stratified by community and randomized into the immediate intervention group or the waitlist control group following the collection of baseline data. Prior to randomization, 21 child care providers dropped from the study, and 67 of the remaining 134 child care providers were randomized to participate in the intervention group. Four additional participants dropped from the study prior to intervention, with 63 intervention group participants remaining for these analyses. Child care providers received nominal payment for participating in the questionnaire and telephone interview research assessments.

The majority of participants in the intervention group were female (96 %), 53 % were white non-Hispanic, 10 % Hispanic, 8 % African American, 5 % Asian or Hawaiian, 2 % Native American, 6 % other, and 16 % did not report their race or ethnicity. On average, caregivers were 42 years old, ranging in age from 23 to 59; only 3 % were under 30, 19 % were 50 or older, and 16 % did not report their age. Education levels for this sample were as follows: 2 % had some high school education, 16 % had graduated from high school or obtained a General Educational Development degree, 43 % reported some college education, 13 % had received an Associate of Arts degree, 11 % had received a bachelor's degree or higher, and 16 % did not report their education. There were no differences between the intervention and waitlist control groups on these demographic variables.

### Intervention Model

The content and format of the Carescapes program was developed specifically for home-based child care providers, with sensitivity to the factors unique to home-based child care settings that affect access and engagement in professional development. The program consisted of three 3-hour workshops, approximately one month apart, and additional maintenance activities to strengthen skills learned in the workshops: coaching consultation and a six-month follow-up booster workshop. Child care providers received professional development hours for attending. The professional development aligned with learning and training objectives adopted by the state of Oregon for licensed child care providers and met the Set 2 Standards (intermediate level) on the Oregon Registry.

In scheduling the workshops, caregivers were given options from a menu of training dates and times. The workshops and booster session were held during times when home-based care providers are generally available to attend (evenings and weekends) and took place in a group setting to provide informal social support. The three workshop sessions were delivered in sequence, each reinforcing and building upon the previous activities.

As this is an efficacy trial (Flay et al. 2005), the facilitators of the workshops were either the developer of the program, who is a researcher and an Oregon Registry Master Trainer with a Ph.D., or her colleague, who also is a Ph.D. researcher with much experience in intervention development and small-group training of caregivers. The facilitators were assisted by interventionists who were in their final year of a master's level early childhood education program or who had a BA or master's degree in education, psychology or other relevant field.

Session content focused on promoting research-based environmental features and caregiving skills and practices for fostering positive social development in preschool-age children: (1) Setting up to Support Social Development, (2) Approaches for Guiding Children's Behavior, and (3) Understanding and Dealing with Challenging Behavior. The workshops incorporated multimedia instructional materials, including video vignettes featuring children and caregivers in home-based child care settings; a manual with illustrations, summary of the main ideas, and practice activities; and supportive print materials. During the workshop, the program facilitator presented a number of short video vignettes and each were followed by a guided discussion and activities to provide active practice and encourage care providers to apply the ideas, practices, and skills to their own child care home. Approximately 30 min were spent watching video vignettes and 2½ h were spent in discussion and practice activities per workshop. At the beginning of the second and third workshops participants had time to review what they learned in the previous workshop, discuss strategies they had tried, describe successes, and problem-solve any difficulties they experienced in implementing the ideas, skills, and practices.

To maximize workshop dosage, care providers who had to miss a session were given home-study modules that could be completed at home using their manual and DVD. Workshop leaders then discussed the home-study lesson at the next workshop session to assess care providers' learning and reinforce key concepts.

To be most effective, maintenance activities ideally will occur when intervention effects are likely to decrease (Whisman 1990). Effects for the Carescapes training were found to decrease approximately four to six months following the training workshops (Rusby et al. 2008). Thus, the timing of the consultation sessions and booster session were planned to occur during this time frame.

Three months after the third workshop, the workshop leaders and interventionists who were trained in the concepts and practices of the Carescapes program offered individual coaching consultations to each child care provider. The goal of the coaching sessions was to extend learning from the workshop environment into providers' own child care homes and to provide individual support to caregivers as they put what they learned into practice. The first coaching session focused on the child care environment and proactive caregiving practices, and the second focused on challenging individual child behaviors or challenging situations in the child care home (e.g., transitions, clean-up time, lunch time). The coaching followed a strengths-based approach and involved defining the caregiver's goals, observing the situation on site, and providing feedback and ideas. Each consultation visit lasted one to 3 h, depending on the amount of time needed to address the care provider's goals. Subsequent support was offered via telephone as needed.

Approximately two months following the coaching sessions, the child care providers were invited to a 2-h booster workshop. During the booster session, care providers discussed application of key ideas they had learned in their child care homes, discussed successes, and problem-solved challenges.

## Measures

Baseline data were collected prior to randomization of home-based child care sites into intervention and waitlist control conditions. The lead child care provider completed a questionnaire on demographics, child care characteristics, caregiving practices, rates of child behavior problems, and on their feelings of stress, depressive symptoms, and tolerance for child problem behaviors. During the baseline phase, research assistants conducted three site visits at each participating child care home. Ratings on the physical child care environment were collected once, and direct observations of caregiver practices and child behavior were collected on three separate visits. One-way random effects intraclass correlation coefficients (ICC; McGraw and Wong 1996; Shrout and Fleiss 1979) were used to calculate interrater reliability of the observation data.

## Demographics

On the caregiver questionnaire, lead child care providers were asked to report their race, ethnicity, education, and number of years of experience providing child care.

## Child Care Variables

The lead child care provider also answered questions about the child care home on the questionnaire. These included the total number of children enrolled, the number of children

in each age range (infants, toddlers, preschool-age, and school-age), the number of hours opened per week, and the number of child care providers at each child care home. On average, 11 children were enrolled in participating child care homes, with an average of four preschoolers (ages 2½–5). Child care homes were open for an average of 61 h per week. Slightly more than half (53 %) of caregivers provided care alone, with no assistance.

### *Caregiver Psychological Well-Being*

Participating child care providers also completed the 9-item Public Health Questionnaire (PHQ-9) to assess caregiver symptoms of depression. The PHQ-9 has been well validated (Kroenke et al. 2001; Martin et al. 2006; Spitzer et al. 1999) and has high internal consistency (.86; Rief et al. 2004). In the present study, the alpha for this measure was .83. Caregivers also completed the Index of Teaching Stress (ITS; Greene et al. 1997). This measure was adopted for use by child care providers; small wording changes were made to reflect the relevant setting (e.g., *school* was changed to *child care home*). The subscales on *self-doubt* and *loss of satisfaction* were combined into one scale for this study, to measure stress with a higher score indicating lack of self-efficacy and low job satisfaction. These two subscales were highly correlated ( $r = .82, p < .001$ ) and the scale reliability was .93.

### *Caregiver Report of Frequency of and Tolerance for Child Problem Behavior*

Child care providers also answered questions regarding the frequency with which problem behaviors occurred in their child care home. The five items—arguing, refusing to obey, losing temper or getting angry, saying mean things to other children, and hitting, pushing, or physically fighting other children—were asked on a 7-point scale (from *never in the past month* to *5 or more times a day*). Caregivers were asked how tolerable the five behavior problems were on a 5-point scale (from *not at all tolerable* to *extremely tolerable*). The reliability alpha for frequency of behavior problems was .86 and for tolerance was .90.

### *Child Care Environment and Caregiver Practices*

Research assistants conducted site visit assessments of the child care environment and caregiver practices. Two scales from the Child Care Ecology Inventory (CCEI; Rusby et al. 2013), *organized environment* (alpha = .83, interrater ICC = .55) and *enriched environment* (alpha = .88, interrater ICC = .65) were combined for this study for measuring the quality of the physical child care environment (alpha = .91). Each scale is rated on a 4-point scale from *not at all in place* to *consistently in place*. Six items measure environment organization: clearly defined activity centers, lack of overcrowding, space designed to promote intended activities, adjacent spaces are compatible, toys/materials are organized, and toys/materials are accessible. The remaining six items measure environment enrichment: activity centers are designed to promote social interaction, materials encourage variety of play, adequate number of toys, children are engaged with materials in all activity areas, variety of toys/materials available, and toys/materials match developmental level of children.

During the site visits, ratings of observed child care provider behavior management practices also were collected. The 14 items on effective behavior management (EBM) were adapted from the coder impression inventory on preschool teacher classroom management skills (Webster-Stratton et al. 2001) and are rated on a 5-point scale, from *did not occur* to *constantly occurred*. These items include: encouraged active participation, gave clear instructions or directions, prepared children for transitions, monitored children, gave

reminders of expected behavior, had good influence on children, was responsive to children's individual differences, modeled positive behaviors, problem-solved with children, was positive and reinforcing toward children, and consistent with rules and consequences. Reverse-coded items were: made unreasonable requests, intrusive, and had little or no influence over children. Good internal consistency ( $\alpha = .83$ ) was obtained for EBM.

### *Observed Child Behavior Problems*

Research assistants conducted three site visits prior to intervention to observe children's behavior in the child care home. Each direct observation lasted approximately 20 min. Using a paper–pencil system, the assistants tallied the number of times any preschool-age child in the child care home engaged in physical aggression towards another child (such as hitting, pushing, taking a toy away) and in noncompliance (did not follow a caregiver's direction to do something or to stop doing something). The rate-per-minute (frequency divided by the number of minutes observed) of each of these child behavior codes was added to create a composite score of children's negative behavior. The interrater ICC was .67. The composite scores of observed child negative behavior were averaged across the three time points for analysis.

### *Social Validity of Workshops*

Following the three workshops and the booster session, participating child care providers reported on the number of useful new skills gained, extent to which they planned to make changes in their child care home based on ideas from the workshop, and barriers they expected when trying to implement what they learned. A 5-point scale was used to rate the usefulness of the workshop (*no new skills* to *very many new skills*) and plans for making changes (*nothing new* to *very many new things*). A checklist of barriers to carrying out the ideas learned in the workshop was listed and caregivers selected all that applied—materials cost too much, no time to make changes, I don't have enough information about it, I disagree with the ideas presented, improvements are not needed in my child care home, and other. Barriers were counted with a total possible range of 0–6.

### *Workshop Participation*

For each intervention activity (workshop, consultation, and booster), a participant was identified as either completing or not completing the activity. Each intervention activity was scored as completed or not completed (1 = *completed*, 0 = *did not complete*). Satisfactory completion for the workshops was assessed by workshop attendance or the completion of the corresponding home study. Satisfactory consultation was assessed via a consultation log for each participant; a total of two consultation sessions were possible. Attendance at the booster workshop counted as completion since there was no home study for the booster session.

### *Analytic Procedures*

Using the dichotomous participation measures of the intervention activities, a latent class analysis (LCA) was used to explore possible subgroups (classes) of participation based on participation patterns. The LCA models were evaluated based on model fit, the probability diagnostics of class membership, and sample size per class. A series of ANOVAs were



conducted to test for differences between the participation classes identified with the LCA on demographic, child care, caregiver, and child variables expected to impact the level of participation in intervention activities. Variables with medium or larger effect sizes (effect sizes greater than .50) and  $p$  values  $< .10$  were considered to be meaningful contributors of participation. This criterion was chosen since this analysis of the intervention participation is underpowered (only half the sample is used in the analysis) and its purpose is descriptive.

Using the ANOVA results, variables indicating meaningful differences in participation classes were included in a logistic regression (Howell 2002) to examine predictors of intervention engagement. The logistic regression provided a measure of explained variance and the percent of cases accurately classified.

## Results

### Participation Rates and Classes of Participation

The percentage of child care providers who participated in each activity are presented in Table 1. The percentage of caregivers who attended the workshops increased from 71 to 78 % from the first workshop to the third. The percentage of caregivers who participated by either attending the workshop or completing the home study decreased slightly from 87 to 84 %. Participation in the maintenance activities was lower, with 68 % participating in the first consultation, and dropping to 37 % participation in the second consultation and the booster session. LCA of participation resulted in three distinct classes—those who participated in most workshops plus maintenance activities (WS+,  $n = 32$ ), those who mainly participated in the workshops and not in maintenance activities (WS,  $n = 22$ ), and the nonparticipants, who had little to no participation (NP,  $n = 9$ ), as shown in Fig. 1. The probability of being classified in WS+ accurately was 95 %, in WS was 78 %, and in NP was 100 %.

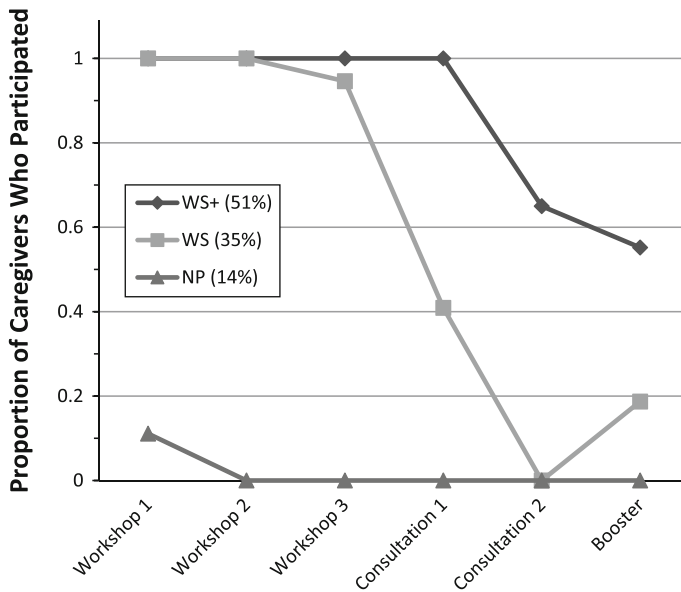
### Descriptives of Participation Classes

Table 2 displays the means and standard deviations of caregiver characteristics (child care provider demographic information, well-being, and tolerance for child problem behavior), child care characteristics (child care conditions, environment organization and enrichment, caregiver practices, and child behavior), and the social validity of workshops for each of the three participation classes. Given the low number of participants in the NP class, caution is needed in interpreting the descriptive information for this class; therefore, tests

**Table 1** Child care provider participation percentages for each intervention activity

Intervention activity	Percent attending	Percent home study	Percent participation
Workshop 1	71	16	87
Workshop 2	76	10	86
Workshop 3	78	6	84
Consultation 1	–	–	68
Consultation 2	–	–	37
Booster session	–	–	37

Home study available for workshops 1–3 only



**Fig. 1** Latent class analysis of caregiver participation in professional development

of mean differences were computed between the WS+ and WS classes only. Five variables met the criteria for a meaningful contribution to participation: caregiver education ( $d = .59$ ,  $p = .078$ ), caregiver reported job-related stress ( $d = .61$ ,  $p = .060$ ), number of children enrolled ( $d = .53$ ,  $p = .095$ ), number of preschool-age children enrolled ( $d = .56$ ,  $p = .083$ ), and child-to-caregiver ratio ( $d = .57$ ,  $p = .088$ ). Participants in the WS+ class had more education, greater work-related stress, more children enrolled, including more preschool-age children, and a greater child-to-caregiver ratio. None of the workshop social validity variables contributed to participation class.

#### Predictors of Participation

A dichotomous measure for participation class was computed, where WS+ = 1 and WS = 0, and caregiver education, caregiver work-related stress, number of preschool children enrolled, and child-to-caregiver ratio were tested as predictors of participation class in a multivariate logistic regression. Since number of children and number of preschool children enrolled were highly correlated ( $r = .68$ ), both variables were not included in the model. We decided to include the number of preschool children enrolled, as the intervention focused on preschool-age children. Results of the multivariate logistic regression are in Table 3. The individual predictor variables had a partial  $r$  between .06 and .15, indicating the proportion of explained variance in participation class, though, because of low power, the individual contributions of the covariates were nonsignificant. The multivariate test of meaningful variables predicted participation class better than chance,  $X^2(4, n = 54) = 13.641$ ,  $p = .009$ . This model improved classification accuracy from the null model, the model without predictors, from 36 to 73 % of the cases. Misclassifications were fairly balanced in the model with predictors; 11 % of participants were misclassified into the WS group and 16 % were misclassified into the WS+ group.

**Table 2** Means and standard deviations of child care variables for participation classes

Variables	WS+ ( <i>n</i> = 32)		WS ( <i>n</i> = 22)		NP ( <i>n</i> = 9)	
	Mean	SD	Mean	SD	Mean	SD
Caregiver characteristics						
Education	4.50*	1.38	3.82*	.88	4.50	.55
# Years of experience (home-based care)	9.70	8.15	10.00	6.45	9.40	4.93
# Years of experience (center-based care)	3.31	5.21	1.20	3.32	2.83	5.60
White non-Hispanic versus other (%)	.23	.43	.18	.39	.50	.55
Depressive symptoms	.46	.55	.32	.27	.19	.29
Job-related stress	2.47*	0.81	2.00*	0.74	1.99	0.98
Tolerance of child problem behaviors	2.37	1.03	2.19	.94	2.46	1.75
Child care characteristics						
# Children enrolled	12.03*	5.00	9.59*	4.17	8.67	2.58
# Preschool-age children enrolled	5.03*	2.86	3.65*	1.97	3.17	2.79
Child-to-caregiver ratio	7.73*	3.61	5.95*	2.57	6.50	2.72
Hours worked per week	57.33	18.32	60.29	15.76	68.00	21.97
Provide child care alone (%)	.52	.51	.56	.51	.50	.55
Organized and enriched environment	1.90	.59	2.11	.45	1.92	.50
Caregiver effective behavior management	3.67	.48	3.82	.30	3.63	.21
Caregiver report: child problem behaviors	3.21	1.36	3.27	1.51	3.76	1.47
Observed child problem behaviors	.05	.06	.07	.07	.09	.06
Workshop social validity						
Usefulness of workshops	3.44	.73	3.55	.58	–	–
Plans to make changes based on workshops	3.28	.77	3.49	.72	–	–
Barriers to implementation	.36	.38	.37	.48	–	–

Mean differences were only tested for WS+ and WS groups due to the low *n* in the NP group

\* Cohen's *d* ≥ .50 and *p* value ≤ .10

## Discussion

Professional development is associated with improved quality in the child care setting and is viewed as an important factor in preparing early childhood professionals to support young children's healthy social and emotional development. In particular, professional development training that includes ongoing coaching and consultation is associated with immediate skill development and an increased likelihood that newly learned skills are sustained over time in the real-world setting. Yet, compared with preschool teachers and

**Table 3** Multivariate logistic regression predicting WS+ class membership compared to WS

Predictor variable	Odds ratio	95 % CI of odds ratio	Partial <i>r</i>
Caregiver education	.580	[.284, 1.185]	.064
Child-to-caregiver ratio	.804	[.619, 1.043]	.110
Number of preschool-aged children	.743	[.531, 1.039]	.132
Caregiver stress	.376	[.132, 1.067]	.153

$\chi^2$  (4, *n* = 54) = 13.641, *p* = .009. 73 % of cases were accurately classified

caregivers in center-based care, home-based child care providers are less likely to access professional development. Few studies have examined factors that influence home-based child care providers' decision to engage in varied levels of professional training.

The current exploratory study contributes to our understanding of predictors of home-based child care providers' participation in a multiphase program designed to promote preschoolers' positive social development. We examined factors unique to the home-based child care setting that might be related to participation in professional development, including demographic variables, working conditions, preintervention skills and training, and interpersonal factors such as stress and depression. A multivariate logistic regression model significantly improved the accuracy of classification into participation class. Caregivers with higher levels of education, greater numbers of preschool-age children, a higher child-to-caregiver ratio, and who reported more stress were more likely to participate in the full professional development program that included three workshops plus maintenance activities (two consultations and one booster session).

Participation in the initial set of three workshops was generally high (only 14 % of caregivers had little to no participation). Although research examining participation rates in professional development among child care providers is sparse, the parenting literature suggests that it is difficult to keep parents engaged in group-based parenting interventions (Breitenstein et al. 2010; Katz et al. 2001; Orrell-Valente et al. 1999; Powell 1984; Reid et al. 2004). The Carescapes program was designed to maximize engagement. The workshops were designed specifically for home-based child care providers with content targeted to their context and needs. Inherent in the Carescapes model is a consideration of the unique challenges home-based child care providers face in engaging in professional development and the inclusion of factors to keep caregivers involved. Such factors include the opportunity for informal support via the group format, professional development credit, holding the workshops at a time when home-based care providers are generally available, and offering home study opportunities for caregivers who had to miss a workshop so that they did not feel left behind. The gain of attendance in workshops over time indicates that the home study may have been effective in engaging those who missed the first session and in likelihood would have otherwise dropped out. A similar gain in workshop attendance was found when home study was offered to caregivers who missed a workshop session (Rusby et al. 2008).

Although careful consideration of barriers to participation was made, only 51 % of the home-based child care providers who attended the initial set of three workshops participated in the maintenance activities. As noted earlier, research suggests that effects gained in professional development training are more likely to be sustained when caregivers receive follow-up coaching and consultation. Yet, little is known about the factors influencing participation in these activities, particularly in the context of home-based care.

One might expect that long work hours could affect participation. Home-based care providers typically work 40–50 h per week (Atkinson 1992; Curbow et al. 2000; Todd and Deery-Schmitt 1996); care providers averaged 60 h per week in the current sample. However, number of hours worked per week did not differentiate participation between WS and WS+. This finding is consistent with other research showing no relation between home-based care providers' engagement in professional development and their work hours (i.e., Walker 2002).

Length of experience providing child care did not differentiate participation, but those who had higher levels of education were more likely to engage in the maintenance activities. A caregiver's beliefs about the importance of education can affect their motivation to engage in professional development (Gable and Hansen 2001). While some

earlier studies indicated that some home-based child care providers saw their primary responsibility as keeping a home-like atmosphere (Divine-Hawkins 1981; Eheart and Leavitt 1989) and viewed experience as a mother as important qualifying training (DeBord 1993), more recent studies suggest that home-based child care providers view outside training and education as important. One study of 230 center-based and 325 home-based providers showed no difference between the two groups in their perceptions of the importance of training and education (Gable and Halliburton 2003).

Another consideration for busy home-based child care providers is their perception of the relevance or usefulness of a professional development activity. In the current study, the presence of preschool-age children predicted membership in the group who participated in maintenance activities. This makes sense, given the focus on preschoolers in workshop content. Care providers who had a higher child-to-caregiver ratio and endorsed lack of self-efficacy and stress related to child behavior were also more likely to participate in maintenance activities. It might be that the extra challenges associated with having more children in care made the prospect of one-on-one consultation and continued training more appealing, particularly in light of the intervention focus on social development. On the other hand, caregiver-reported tolerance for and frequency of child behavior problems were not related to participation in the consultation activities nor was observed child problem behavior. It might be that some other factor is influencing care providers' stress related to child behavior. Given the exploratory nature of this study and the lack of evidence in the field, more research is needed to shed light on these findings.

While it might be expected that home-based child care providers' perception of workshop usefulness predicts participation in maintenance activities, this was not the case in the current study. This finding could be a reflection of limited range due to the overall high ratings of workshop usefulness, or it might be related to the nature of the activities. Caregiver isolation also did not differentiate between WS and WS+ participation. It is possible that the opportunity for informal support in the initial set of workshops was more appealing than one-on-one consultation. The literature on what home-based child care providers want in professional development would support this. Home-based care providers indicate that a primary draw in their professional development participation is the opportunity for informal support (Kontos 1992) and supportive social relationships (Lanigan 2011). Home-based child care providers reported the most interest in receiving professional development via local workshops and home study, whereas fewer were interested in individual consultation (Rusby 2002). These studies do not explain lack of participation in the booster session, however. It might be that care providers' overall engagement in the intervention activities waned over the six months that elapsed between workshops and booster session. There is a substantial drop in participation from 68 % in Consultation 1 to 37 % in Consultation 2 and 37 % in the Booster Session, suggesting that a briefer maintenance period might be beneficial. Another possibility would be to offer consultation immediately after each of the three workshops, rather than waiting until after the set of workshops has ended, a model that has been successful in promoting effective literacy-building practices in home-based child care settings (Koh and Neuman 2009).

The results of this exploratory study offer a preliminary glimpse of factors that might influence home-based child care providers' participation in professional development. Considering the known benefits of the inclusion of intervention maintenance activities and the current lack of research in home-based context, there is need for a more fine-grained examination of issues that affect participation in extended professional development among home-based child care providers. Of particular interest is how we can design interventions that consider the context of home-based child care and provide efficient

training that supports the long term maintenance of key skills and practices. Optimal participation and sustained effects would then likely result in better outcomes for young children.

**Acknowledgments** This research was supported by Grant R324A090044A from the Institute of Education Sciences, US Department of Education. Authors wish to acknowledge Myra Classen, Jessica Lockhart, Katherine Reed, Alethea Barlowe, Candee Cole, and Corrinne Kaleese for their assistance with workshops and coaching consultation and Susan Long for her editorial expertise.

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