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Predictors of Parent Engagement Based on Child Care Providers' Perspectives

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Abstract

Objective: Determine the predictors of child care providers' parent engagement regarding child nutrition in child care centers (CCCs) and family child care homes (FCCHs). *Design:* Cross-sectional. *Setting:* Child care centers and FCCHs. *Participants:* Child care center directors ($n = 337$) and FCCH providers ($n = 1, 153$) completed a self-administered survey. *Main outcome measures:* Fifteen variables were examined as predictors for parent engagement: providers' perceived barriers to communication, participation in *Go Nutrition* and *Physical Self-Assessment in Child Care*, National Association for the Education of Young Children accreditation, participation in Quality Ratings and Improvement Systems, feeding practices, and professional development. *Analysis:* Structural equation modeling examined the relation between variables for CCCs and for FCCHs. *Results:* For CCCs, NAEYC accreditation, providers' perceived barriers regarding parents' cultural beliefs about food, parents not liking the taste of healthy foods, and parents prioritizing other food-related topics over healthy eating significantly predicted parent engagement. For FCCHs, participation in *Go Nutrition* and *Physical Self-Assessment in Child Care*, perceiving parents to be busy, not wanting to offend parents, and practicing family-style dining were significantly related to parent engagement. For both CCCs and FCCHs, professional development regarding child nutrition was related to parent engagement. *Conclusions and implications:* Focusing professional development on child care contexts and addressing providers' perceived barriers may improve parent engagement.

Keywords: child nutrition, child care, childhood obesity prevention, parent engagement

Introduction

The Academy of Nutrition and Dietetics' position statement on benchmarks for nutrition in child care recommends that child care providers engage parents by encouraging them to serve healthy foods at home and teach children about nutrition.¹ Parent engagement is referred to as ongoing, goal-directed relationships between staff and families that are mutual and culturally responsive and that support what is best for children and families both individually and collectively.² The National Academy of Medicine (formerly the Institute of Medicine of the National Academies) also emphasizes child care providers' role in engaging parents to increase children's healthy eating.³ In support of these recommendations, Sellars and colleagues⁴ found that when providers shared information with parents about nutrition, parents were able to provide healthier foods for their children's lunch. Parents, child care directors, and health consultants (e.g., physician, nurse) agree that nutrition education is instrumental in improving children's and families' nutrition knowledge and eating behavior.⁵

More recent research demonstrated that child care providers often do not report successful engagement of parents in topics about their children's nutrition.^{6,7} Research showed that only about 20% of providers offered nutrition education for parents.⁸ Another study found that < 50% of providers sent brochures with nutrition information to parents.⁹ Furthermore, child care directors reported that parents showed poor attendance at child care events and often did not respond to nutrition-related information sent home.⁶ Therefore, a better understanding is needed of factors that lead providers to engage parents regarding children's nutrition. Qualitative studies explored child care providers' barriers to engaging parents regarding children's nutrition. These barriers include parents being too busy to communicate with providers^{7,10,11} and the providers' hectic schedule.¹² Providers also mentioned feeling unsure about how to communicate with parents without offending them when sharing nutrition information.^{10,13,14} In addition, parents' background (e.g., culture, existing nutrition knowledge) and food preferences were reported as factors that influenced providers' ability to engage parents regarding children's nutrition.⁷

Although qualitative studies explored providers' perceptions regarding engaging parents, it is unknown whether these factors predict child care providers' ability to engage parents regarding children's nutrition. Furthermore, whether factors specific to the child care environment may also predict providers' ability to engage parents is unknown. As such, this study considered multiple factors that may be related to parent engagement, including variation in the child care context (e.g., center-based child care and family child care home [FCCH]),^{14,15} child care's participation in nutrition programs such as *Go Nutrition* and *Physical Self-Assessment in Child Care* (Go NAP SACC), accreditation from the National Association for the Education of Young Children (NAEYC), participation in Quality Ratings and Improvement Systems,^{15,17} and providers' professional development regarding child nutrition.¹² Furthermore, it is plausible that providers who offer nutrition education to children daily through mealtime conversations may be more likely to engage parents regarding their child's nutrition.¹⁰ Understanding the influence of these factors on

providers' ability to engage parents regarding the child's nutrition is a formative step in developing targeted interventions that may better enable child care providers to engage parents regarding child nutrition, improve the home environment to shape children's eating habits and dietary intake, and prevent childhood obesity.

Nebraska ranks fifth in childhood obesity in young children (aged 2–4 years) in the United States.¹⁸ In addition, a majority of preschool children in Nebraska attend child care. Specifically, an estimated 61,498 (51.2%) children are cared for in child care centers (CCCs) and 22,315 (18.6%) are cared for in FCCHs,¹⁹ which makes child care programs an ideal setting to reach parents.^{10,20} Furthermore, the *Child and Adult Care Food Program (CACFP)*, a *Supplemental Nutrition Assistance Program* of the US Department of Agriculture, provides reimbursement for meals and snacks to 86% of the programs in Nebraska.²¹ It is crucial to focus on these CACFP-funded child care programs in Nebraska because they serve children from low-income families who are at a higher risk for obesity.²² Although engaging parents offers potential opportunities to shape children's dietary behaviors, to the authors' knowledge, no published studies identified factors that predict parent engagement among child care providers. The current study addressed this knowledge gap by examining potential predictors of parent engagement regarding child nutrition in CCCs and FCCHs in Nebraska as perceived by child care providers.

Drawing from previous research, it was hypothesized that child care program's participation in nutrition programs such as Go NAP SACC, NAEYC accreditation, participation in Quality Ratings and Improvement Systems,^{15,17} providers' frequency of participation in professional development regarding child nutrition,¹² family-style dining, and providers talking about healthy foods with the children at mealtime would predict providers' engagement of parents regarding nutrition; whereas providers' barriers to engaging parents^{7,10} would predict decreased provider engagement of parents. In this exploratory, cross-sectional study, *prediction* and *predictors* refer to statistical prediction and do not imply causal relationships.

Methods

Research Design

This was an exploratory, cross-sectional study that employed a self-administered survey sent through surface mail. The University of Nebraska–Lincoln Institutional Review Board approved this study.

Sampling Methods and Recruitment Strategies

All licensed child care programs identified through a list from the Nebraska Department of Health and Human Services were contacted to participate in this study. The final sampling frame consisted of 3,014 childcare programs. Survey packets containing a cover letter, a survey booklet, a \$1 cash incentive, and a postage-paid reply envelope were sent to the sampled child care programs on January 4, 2017. A reminder postcard was sent to all nonresponders about 1 week after the initial mailing. The \$1 cash incentive was deemed appropriate following a recommendation from the Bureau of Sociological Research that bigger incentives might draw suspicion from target participants regarding the purpose of

the data. To ensure the reliability of respondents' answers to the questionnaire, the cover letter emphasized that the survey was an opportunity for them to identify their needs and barriers. In addition, the cover letter explicitly mentioned that the intent of this study was to develop a program that would benefit child care providers.

A second survey packet (excluding the \$1 incentive) was sent to all remaining nonresponders on January 26, 2017. Nonresponders were also contacted by phone from March 15 to April 10, 2017. A total of 1,592 surveys (a 54.6% response rate) were received and processed by the Bureau of Sociological Research from January through April 20, 2017. For the purpose of this article, *Head Start* programs, which composed 3.5% of the total sample ($n = 56$), were excluded. Unlike non-*Head Start* CCCs and FCCHs, *Head Start* programs are required to meet performance standards regarding child nutrition and nutrition training.²³ Participants who were not classified as CCCs or FCCHs ($n = 46$) (e.g., community center, public school) were also excluded. This brought the total sample to 1,490 child care programs.

Survey Instrument

The Healthy Children, Healthy State survey used in this study was an 86-item paper questionnaire. Items were drawn from existing surveys from published research²⁴⁻²⁷ with child care providers. Specifically, the nutrition-related best practices were drawn from Ammerman et al.²⁴ and questions regarding barriers were drawn from Whitaker et al.²⁷ The chosen items were then reviewed by an advisory committee composed of experts in early childhood education, nutrition, policy, and survey methodology. Cognitive testing of the questionnaire was then conducted with 3 FCCH and CCC providers to ensure face validity. After the providers' feedback, edits were made to improve the readability of a few survey items. The questionnaire inquired about adherence to best practices, level and difficulty, and barriers related to serving foods and beverages, mealtime feeding practices, nutrition education, engaging parents, and preferences for training. For this study, the researchers mainly used data from the engaging parents section of the questionnaire. Table 1 shows potential predictors such as individual-level and child care-level characteristics.

Statistical Analysis

Data were analyzed with structural equation modeling in Mplus (version 7.11 [Muthén and Muthén, Los Angeles, California, 2012]).²⁸ The proposed model included 1 latent construct (parent engagement) with 2 indicators, the number of engagement activities the program had used in the last year, and the frequency with which education on child nutrition was offered to families. Based on existing literature,^{7,10-14} 15 single-item measured variables were included in the model as the main predictors (8 items on potential barriers for engaging parents to encourage children's healthy eating, 3 on program participation, 2 on feeding practices, 1 on professional development regarding child nutrition, and 1 on the child-provider ratio). Given the significant differences between CCCs and FCCHs found in previous studies,^{25,29} a separate model was analyzed for each group. The researchers used a chi-square goodness of fit test to evaluate the overall model fit. However, because the chi-square test is sensitive to a large sample size,³⁰ 3 more fit indices were used in this study:

comparative fit index, standardized root mean square residual, and root mean square error of approximation.

Table 1. Potential Predictors (Individual- and Center-Level Characteristics) of Parent Engagement as Reported by Directors of Child Care Centers (CCCs) and Family Child Care Homes (FCCHs) ($n = 1\,490$)

| Variable | % CCCs ($n = 337$) | % FCCHs ($n = 1,153$) |
|--|----------------------|-------------------------|
| Participation in <i>Go Nutrition and Physical Activity Self-Assessment for Child Care</i> | 31.5 | 10.9 |
| Participation in <i>Nebraska Step Up to Quality</i> | 30.3 | 8.4 |
| Participation in National Association for the Education of Young Children | 13.9 | 5.4 |
| Frequency of providers receiving professional development | | |
| Never | 7.4 | 6.6 |
| < 1 time/y | 19.6 | 13 |
| 1 time/y | 40.9 | 34.8 |
| ≥ 2 times/y | 29.1 | 41 |
| Meals and snacks are served family-style | 36.2 | 20.2 |
| Providers talk about healthy foods with children at mealtime | 94.1 | 94.5 |
| Child-provider ratio (mean) | 5.47:1 | 9.85:1 |
| Providers' perceived potential barriers to parent engagement | | |
| Parents do not have time to talk with provider about children's nutrition | 37.7 | 24.2 |
| Parents have cultural beliefs about food that are not always consistent with healthy eating | 26.4 | 8.4 |
| Parents do not have enough money to purchase healthy foods | 33.5 | 15.3 |
| Parents are too busy to prepare healthy foods | 52.2 | 37.5 |
| Providers do not want to offend parents | 38.3 | 33.9 |
| Parents or guardians do not like the taste of healthy foods themselves | 23.1 | 15.4 |
| Providers are uncertain how to engage parents | 29.7 | 19.7 |
| Parents prioritize other food-related topics such as allergies or children's food intake over healthy eating | 42.7 | 27.9 |
| Indicators of parent engagement | | |
| Number of parent engagement activities the program has used | 1.95 (0.98) | 1.58 (0.84) |
| Frequency of offering families education on child nutrition | | |
| Never | 30.0 | 40.2 |
| < 1 time/y | 15.4 | 14.5 |
| 1 time/y | 25.5 | 16.7 |
| ≥ 2 times/y | 24.9 | 23.2 |

Results

A total of 1,490 child care programs were included in this study's analyses, with 337 CCCs and 1,153 FCCHs. Of the CCCs, 261 (77.4%) were in urban areas and 76 (22.6%) were in rural ones; of the FCCHs, 729 (63.2%) were in urban areas and 424 were in rural ones (36.2%). The distribution of type of child care (CCC and FCCHS) and geographic location (urban-rural) was representative of the state, in which there was a total of 716 CCCs and 2,105 FCCHs catering to preschool-aged children and younger.¹⁹ The majority of the child care programs (78.5%) received funding from CACFP. The majority of the respondents identified themselves as directors for CCC and providers for FCCH; only 8.9% of CCCs ($n = 30$) and 1.1 % of FCCHs ($n = 13$) identified as other (e.g., teacher, cook, home visitor). For this article, the terms *director* and *provider* are used to refer to the respondents in this study.

The majority of respondents were Caucasian American (94.2%); 73% had at least some college or higher educational attainment. An estimated 37,610 children were attending the child care programs. A total of 24,537 children (65.2%) were enrolled in CCCs and 13,073 (34.8%) were enrolled in FCCHs. On average, approximately 76 children were enrolled in each CCC and approximately 12 were enrolled in each FCCH at a given time.

For CCCs, the hypothesized model yielded good model fit statistics. The chi-square test of model fit was not significant, which indicated that the hypothesized model fit the data ($\chi^2 = 40.181$; degrees of freedom = 30; $P = .10$). Because the chi-square test is sensitive to large sample sizes, additional fit indices were used to determine model fit. The other also showed an acceptable fit, comparative fit index = .962, standardized root mean square residual = .017, and root mean square error of approximation = .036.³¹ As Table 2 shows, for the CCC group, of 15 potential predictors, 5 factors significantly predicted parent engagement. Results showed that parent engagement scores tended to be higher when providers perceived that parents had cultural beliefs that were inconsistent with healthy eating, ($\beta = .213$; $P < .05$), when directors perceived that parents did not like the taste of healthy food themselves ($\beta = .337$; $P < .001$), and when directors reported that parents' prioritizing other food-related topics over healthy eating was not a barrier ($\beta = -.265$; $P < .005$). Accreditation by NAEYC and professional development regarding child nutrition were also predictive of higher parent engagement scores ($\beta = .161$; $P < .05$ and $\beta = .438$; $P < .001$, respectively). Overall, the combined predictors accounted for 55.6% of the variance in parent engagement, suggesting a medium effect size.³²

For the FCCH group, 5 predictors emerged as significant predictors. Engagement scores were higher when providers perceived parents being too busy to prepare healthy foods to be a barrier ($\beta = .170$; $P < .05$), when providers reported that concern with offending parents was not a barrier ($\beta = -.167$; $P < .05$), and when providers practiced family-style dining ($\beta = .144$; $P < .05$). Participation in Go NAP SACC was predictive of higher parent engagement scores ($\beta = -.178$; $P < .05$). Similar to CCCs, FCCH providers' professional development regarding child nutrition was significantly related to parent engagement ($\beta = .421$; $P < .001$). All predictors accounted for 52.2% of the variance in parent engagement, indicating a medium effect size.³²

Table 2. Predictors of Parent Engagement as Reported by Directors of Child Care Centers (CCCs) and Family Child Care Homes (FCCHs): Results of Structural Equation Modeling (β Coefficient [SE])

| Predictors | CCCs | | FCCH | |
|--|-----------------------------|-----------|-----------------------------|-----------|
| | β Coefficient (SE) | <i>P</i> | β Coefficient (SE) | <i>P</i> |
| Participation in <i>Go Nutrition and Physical Activity Self-Assessment for Child Care</i> | .147 (.090) | .11 | .178 (.080) | .03* |
| Participation in <i>Nebraska Step Up to Quality</i> | .116 (.086) | .18 | .128 (.080) | .11 |
| Participation in National Association for the Education of Young Children | .161 (.078) | .05* | .136 (.079) | .09 |
| Frequency of providers receiving professional development | .438 (.071) | < .001*** | .421 (.066) | < .001*** |
| Meals and snacks are served family-style | -.019 (.073) | .80 | .144 (.068) | .04* |
| Providers talk about healthy foods with children at mealtime | -.016 (.075) | .83 | -.040 (.067) | .55 |
| Child-provider ratio | -.118 (.072) | .10 | -.085 (.064) | .18 |
| Providers' perceived potential barriers to parent engagement | | | | |
| Parents do not have time to talk with provider about children's nutrition | -.103 (.084) | .22 | -.081 (.074) | .28 |
| Parents have cultural beliefs about food that are not always consistent with healthy eating | .213 (.076) | .006** | .100 (.069) | .15 |
| Parents do not have enough money to purchase healthy foods | -.077 (.083) | .36 | .039 (.073) | .60 |
| Parents are too busy to prepare healthy foods | .124 (.086) | .16 | .170 (.081) | .04* |
| Providers do not want to offend parents | -.072 (.083) | .39 | -.167 (.084) | .05* |
| Parents or guardians do not like the taste of healthy foods themselves | .337 (.080) | < .001*** | -.030 (.078) | .70 |
| Providers are uncertain how to engage parents | -.036 (.075) | .63 | -.123 (.083) | .14 |
| Parents prioritize other food related topics such as allergies or children's food intake over healthy eating | -.265 (.081) | .002** | -.087 (.076) | .25 |
| Indicators of parent engagement | | | | |
| Number of parent engagement activities the program has used | 1.95 (0.98) | | 1.58 (0.84) | |
| Frequency of offering families education on child nutrition (%) | | | | |
| Never | 30.0 | | 40.2 | |
| < 1 time/y | 15.4 | | 14.5 | |
| 1 time/y | 25.5 | | 16.7 | |
| ≥ 2 times/y | 24.9 | | 23.2 | |

* $P < .05$, ** $P < .01$, *** $P < .001$

Discussion

This study found that many of the potential predictors that were examined were related to providers' parent engagement regarding child nutrition. Although qualitative studies reported providers' perceived barriers to parent engagement, the current study used structural equation modeling and found significant predictors for parent engagement. These findings are important to researchers, policy makers, and practitioners because they identify specific predictors of parent engagement based on provider perspectives. Focusing on these specific predictors has the potential to improve parent engagement about child nutrition in CCC and FCCH.

Findings evinced different predictors for CCCs and FCCHs. For the CCC group, 3 of the significant predictors were parent-related barriers, such as *cultural beliefs about food not consistent with healthy eating*, *parents do not like the taste of healthy foods themselves*, and *parents prioritize food-related topics (e.g., allergies) other than children's healthy eating*. These findings advance the current knowledge base and add support to qualitative, exploratory research on providers' perceptions regarding parent engagement by identifying specific parent-related barriers through quantitative analysis.^{7,10} Past qualitative research also showed that CCC providers perceived that communicating with parents regarding nutrition-related topics was more difficult when parents had other priorities or when they offered children unhealthy foods.¹⁰ However, these same predictors were not identified for the FCCH group. These divergent findings may be attributed to the differences in context between the CCC and FCCH settings, such as a smaller number of staff and children compared with CCC.^{29,33}

Providers in CCC¹⁰ and FCCH¹³ reported avoiding parental conflict as a barrier to engaging parents about child nutrition. The current study adds support to the qualitative findings by showing the statistical relationship between FCCH providers' concerns about offending parents and spending less time engaging parents about child nutrition. Furthermore, previous studies showed that a parent's busy schedule was perceived by CCC providers as a barrier to discussing nutrition-related matters with parents.^{7,10,34} However, a novel finding in the current study was FCCH providers' perception that they tried to engage parents more when they perceived parents as not having time to talk with the provider about their child's nutrition. Another finding in the FCCH model was the significant relation between practicing family-style dining and engaging parents. Family-style dining is a recommended responsive feeding practice in child care in which providers sit and eat meals with the children at mealtime.^{1,3} This relationship between practicing family-style dining and engaging parents was observed in FCCH but not CCC. Providers of FCCH are often the owner of the program;²⁹ therefore, it is possible that they engaged parents more when they were busy and adhering to best practices such as family-style dining, but they were also more cautious about offending parents and less willing to risk losing business. Family child care home providers' sense of ownership, accountability,²⁹ and personal relationship with parents may account for this finding. In comparison, CCC directors or providers may not interact with parents regularly, given the larger setting and greater number of employees.³³

Participation in Go NAP SACC was a significant predictor for FCCH providers in engaging parents, but not for CCC providers. Because Go NAP SACC focused on improving the child care nutrition environment through written policies and parent engagement, it was plausible that FCCH providers who participated in Go NAP SACC felt more accountable for the children under their care and were more likely to adhere to guidelines on engaging parents.²⁹ On the other hand, accreditation in NAEYC emerged as a significant predictor only for CCCs and not for FCCHs. This finding may be attributed to the small number of FCCH providers in the sample (5.4%) that were accredited by NAEYC. Nonetheless, findings suggest that participating in Go NAP SACC and accreditation by NAEYC, which encourage providers to offer nutrition education to families and to partner with parents, may both be instrumental in encouraging parent engagement in the preschool environment. Professional development regarding child nutrition emerged as a significant predictor of parent engagement for both FCCH and CCC, consistent with previous research.¹² This underscores the importance of participating in professional trainings for both CCC and FCCH providers to learn strategies for working with parents, particularly in increasing providers' confidence in engaging with parents and communicating nutrition-related information and practices to them.^{10,35}

Findings from this study should be interpreted in light of its limitations. First, causal inferences cannot be made about the relation between parent engagement and the predictors. Future studies should consider using at least 2 data time points to increase the predictive validity of variables on parent engagement. Furthermore, the data collected were self-reported, potentially resulting in response bias. Next, survey data were collected only from child care administrators. To ensure data triangulation, future studies might be conducted with multiple data collection methods (e.g., observation) and multiple informants, including parents, to determine whether the barriers identified in past and current studies are reflective of their experiences. Despite these limitations, the study had strengths, including using a large statewide sample representing FCCH and CCC and employing a quantitative design (structural equation modeling) to establish relations among predictors from qualitative studies with parent engagement about child nutrition.

Implications for Research and Practice

Several research implications can be drawn from this study. Given their inherent differences, CCCs and FCCHs were analyzed separately and the results provided additional information about how these 2 contexts vary in terms of factors related to parent engagement. Nonetheless, future studies are recommended to examine these differences in more depth, such as conducting qualitative interviews or controlled trials to identify specific factors to which the differences can be attributed. Another interesting finding of this study was the positive relation between family-style dining and parent engagement in the FCCH setting. It is possible that providers who practice family-style dining sit and eat meals with the children at mealtime and are aware of children's dietary intake and food preferences. Therefore, they may also be more likely to engage parents regarding their child's nutrition owing to increased knowledge of children's mealtime experiences. However, a more thor-

ough examination is also warranted of the specific pathway(s) by which family-style dining may influence parent engagement. Because this study focused on factors associated with parent engagement and not on the different strategies or types of engagement, future studies might also consider the various modalities (e.g., program level, classroom level, and individual [1-way vs. 2-way communication]) and the effectiveness of the methods by which CCC and FCCH providers effectively engage parents regarding child nutrition.

The findings also have implications for practice. First, because most of the perceived barriers were parent-related, intervention programs might address both educating child care providers and parents about promoting child nutrition. Programs are encouraged to include strategies to improve the home environment, because this could influence the way they engage with child care providers. Providers share the parents' goal of improving children's health outcomes. Thus, it would be helpful if parents were made aware that child care is an important resource with which they could learn strategies to help their children develop healthful eating behaviors. On the other hand, nutrition educators might also work with child care providers regarding effective strategies to overcome their barriers and improve providers' self-efficacy for parent engagement. Few strategies include leveraging written policy to communicate about child nutrition and avoid conflict with parents and implementing program-level practices to reinforce policies.^{10,13} Varying child care contexts such as FCCH and CCC and regulations such as state licensing present opportunities to develop targeted professional training programs for providers within these contexts.

Another of the providers' perceived barriers was that some parents may have had cultural beliefs about food that were not always consistent with healthy eating. Therefore, it is important for providers to understand cultural beliefs that underlie parents' feeding practices.³⁶ It is recommended that professional development programs include culturally responsive strategies to improve parent engagement regarding child nutrition. Evidence-based resources that include strategies to address child care providers' barriers to parent engagement may help providers feel more confident when engaging parents.

Finally, findings showed that professional development regarding child nutrition and participation in nutrition programs positively influenced child care providers' ability to engage parents. Both Go NAP SACC and NAEYC encouraged parent engagement, and other accreditation programs and professional guidelines promote engaging parents to ensure children's positive health outcomes; however, more specific strategies for effectively engaging parents might be shared with providers as part of these programs.

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