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Latino Family Child Care Providers Role Modeling

Running head: Latino Family Child Care Providers Modeling

Easier Said Than Done: Exploring Latino Family Child Care Home Providers as Role Models for Healthful Eating and Physical Activity Behaviors

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Ethical Standards Disclosure: This study was approved by the Institutional Review Board for the Protection of Human Subjects at the Harvard T. H. Chan School of Public Health. Written and oral informed consent was obtained from all participants.

Data Sharing: Data and all other materials for this study are kept at the Department of Exercise and Health Sciences, University of Massachusetts Boston. The datasets generated during and/or analyzed during the current study are not publicly available due the terms of consent to which participants agreed to, but are available from the corresponding author on reasonable request.

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ABSTRACT

Objective: Child care providers influence the eating and physical activity behaviors of children in their care on a daily basis and therefore are important targets for interventions aimed at prevention of childhood obesity in this setting. There is a paucity of research examining how child care providers model healthful eating and physical activity behaviors. This study explored Latino family child care home providers' beliefs and practices related to healthful eating and physical activity, and providers' views of their ability to serve as role models for these behaviors for children in their care.

Methods: Qualitative study. Six focus groups conducted in Spanish with a sample of 44 state-licensed Latino family child care home providers. Transcripts were analyzed using thematic analyses to code data in phases to identify meaningful patterns.

Results: Analyses revealed Latino family child care home providers have positive beliefs and attitudes about the importance of healthful eating and physical activity for children in their care, but struggle themselves with eating healthfully, being physically active, and maintaining a healthy weight status. The ability of Latino family child care home providers to model these behaviors may be limited.

Conclusions: Health promotion interventions to improve healthful eating and physical activity behaviors of children in family child care homes should include components that address providers modeling of these health behaviors. Quantitative studies should examine the association between Latino family child care home providers' role modeling of healthful eating and physical activity behaviors and these behaviors of children in their care.

Keywords: Latino; role modeling; eating and physical activity; family child care homes; preschool.

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Strengths and limitations of this study:

- Prior research documents that child care providers influence the eating and physical activity behaviors of children in their care on a daily basis and therefore are important targets for interventions aimed at prevention of childhood obesity in child care settings.
- To our knowledge, this is the first study to examine Latino family child care home providers' view of their ability to serve as role models for healthful eating and physical activity behaviors of children in these settings.
- The study is based on a nonrandom, purposive, and relatively small sample of low-income, Latino FCCH providers in four selected communities in the state of Massachusetts, United States.
- Findings revealed Latino family child care home providers struggle with eating healthfully, being physically active, and maintaining a healthy weight status. Providers reported lack of time and daily life demands, including work, as main barriers to focusing on their own health behaviors and weight status. Several providers expressed the desire to change their eating and physical activity habits and to improve their personal health.
- Interventions and policies aimed at improving the eating and physical activity environments of FCCHs should target providers' personal behaviors and incorporate training resources and support that promote behavioral change of providers' own eating and physical activity and improve their weight status.
- Findings from the present study add to the scant literature examining FCCH providers' personal health behaviors and highlight the need for increased attention to FCCH providers' own health behaviors as a means of promoting providers' own health as well as healthful eating and physical activity among young children in these settings.

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INTRODUCTION

Although recent data indicate a decrease in rates of child obesity in the United States, it remains a significant public health problem.[1] Children in low-income Latino families are at elevated risk of becoming overweight and obese, making childhood obesity among Latinos a pressing public health concern as childhood weight status tracks into adulthood.[1] Substantive efforts are needed to prevent and control obesity among Latino children if future trends in chronic diseases are to be altered in this population.

Early care and education (ECE) settings are important social environments that influence the eating and physical activity habits of children attending these institutions.[2,3] Rising ECE attendance rates and increasing time spent in these settings make ECE settings important venues for health promotion and obesity prevention interventions targeting young children.[4] Family child care homes (FCCHs) are a type of ECE setting where providers care for children other than their own in the providers' own home.[4,5] More than 1.9 million pre-school children attend FCCHs, and this ECE setting is the second largest provider of non-relative care for children up to 5 years old in the United States.[6]

Latino families may prefer FCCHs to other ECE settings due to cultural preferences for family-like care, flexible hours, and lower costs, thus making FCCHs an ideal setting for obesity prevention efforts designed for Latino families and children.[7] Latino parents who enroll their children in an FCCH believe that these settings are instrumental in shaping and reinforcing their children's healthful eating and physical activity habits.[8,9] In fact, recent research suggests that FCCH providers may be more influential than, or equally as important as, parents in shaping food preferences of young children.[3,10] FCCH providers, like parents, help establish and reinforce early healthful eating and physical activity habits among young children on a daily

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basis and therefore are key players in preventing childhood obesity by developing an FCCH environment that fosters healthful eating behaviors among children.[10,11] FCCH providers influence behavior in many ways (e.g., knowledge of nutrition, food selection, meal structure, etc.), but recent research suggests that role modeling may be particularly influential in young children developing lifelong habits that contribute to normal weight or to overweight and obesity.[12] *Social cognitive theory* (SCT) posits that behavior acquisition is directly related to observing others within the context of social interactions and experiences.[13,14,15] Bandura[16] has shown that children learn through observing the behaviors of others and the reinforcements they receive. Many types of behaviors, including eating and physical activity behaviors, can be learned through observing influential others such as caregivers and peers. In the context of FCCH, the caregiver may be particularly influential serving as a role model of healthful behaviors.[17]

Much of the research examining intervention targets for obesity prevention in FCCH settings has focused on improving the eating and physical activity environment and providers' feeding and physical activity practices.[9,18-22] Providers' beliefs, attitudes, and practices related to these health behaviors have been examined to identify potential targets for intervention.[18,20-24] However, there is a paucity of research examining FCCH providers' personal eating and physical activity behaviors and examining how these behaviors may influence the behaviors of children in their care. Therefore, this qualitative study explored how Latino FCCH providers view their ability to serve as role models of healthful eating and physical activity behaviors for young children in these settings.

METHODS

Study Design, Setting, and Sample

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This study was part of a multi-component qualitative research project exploring factors influencing eating, physical activity, and sedentary behaviors among Latino preschool-age children attending FCCHs in Massachusetts (MA). As noted in previous studies,[9,19] we worked with FCCH regulators to enroll a random sample of providers from each area of the state (North Shore, Greater Boston, Central MA, and Western MA). We mailed each selected provider a flyer in Spanish outlining the study that included a phone number to call for additional information. Interested providers were screened for eligibility (e.g., being Latino, having at least three children aged 2–5 in the FCCH). A confirmatory/reminder phone call was made one to two days before the scheduled focus group session.

Data Collection

A native Spanish speaker trained in qualitative research methods moderated all focus groups in Spanish using a piloted discussion guide with open-ended questions and probes. The guide explored FCCH providers: (1) beliefs and attitudes related to eating and physical activity, (2) barriers to having and/or maintaining healthful eating and physical activity habits, (3) perceptions of their influence on the eating and physical activity behaviors of children in their care, and (4) perception of their ability to serve as role models of healthful eating and physical activity behaviors for young children in their care. Focus groups, held in meeting rooms of public libraries between April and September 2015, lasted approximately 90 minutes and were audiotaped after participants provided signed informed consent. Before each group, participants completed a brief, self-administered questionnaire assessing education, marital status, country of origin, and length of time living in the United States. Participants received a $25 gift card for their participation. This study was approved by the Institutional Review Board for the Protection of Human Subjects of the Harvard T.H. Chan School of Public Health.

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Data Analysis

Audiotapes were transcribed verbatim in Spanish and translated into English without identifiers by a bilingual and native Spanish speaker using forward-backward techniques to establish semantic equivalence in translation. This process ensured that the integrity and equivalence of the data were not lost in the process of translation.

Transcripts were analyzed using thematic analyses, an iterative process of coding data in phases to identify meaningful patterns.[25] Analytic phases included data familiarization, generation of initial codes, identifying patterns and themes, and defining and naming themes.[26,27] Two authors, experienced qualitative researchers, independently coded all transcripts and identified emergent themes. These two authors then checked for consistency between their analyses and discussed any differences until consensus was reached. An inductive approach was used, where emerging data was used to develop, refine and verify themes and findings. Descriptive statistics were calculated for the socio-demographic data using Microsoft Excel 2008®.

RESULTS

In total, 44 providers (41 female, 3 male), all of whom identified as Hispanic/Latino, participated in six focus groups. About one third of participants (n = 14; 31.8%) had graduated from high school or earned their general education diploma (GED), and close to forty percent (n = 17, 38.6%) had attended some college. Themes that emerged during the qualitative analyses are discussed below, with quotes used to illustrate the themes.

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Theme 1: Providers Believe Healthful Eating and Physical Activity Are Important

Across all focus groups, providers appeared aware of the benefits of eating healthfully and being physically active and believed that these practices are an integral influence on one's overall health. As one provider explained:

"Eating well and being physically active is an important part of being healthy. Past generations have known this for ages."

Overwhelmingly, providers believed in the importance of healthful eating and being physically active for children's overall health and socio-emotional wellbeing. As one provider said:

"Healthy eating and being physically active are very important for children's health and well-being…. Children are growing and learning and developing these habits while they are young. These [behaviors] will help them later in life."

Theme 2: Providers Recognize Their Eating and Physical Activity Habits Could Improve

Nearly all providers spoke of needing to improve their personal eating and physical activity habits because these behaviors would promote weight loss and ultimately improve their overall health. One provider stated:

"I know I need to improve my eating habits, start eating more healthy foods, and keep away from the junk food. I know that if I change the way I eat, I will lose some weight, and I really need to do that for my health."

Several providers discussed struggling with excessive weight, and a few described their unhealthy weight status as affecting their energy levels and overall health, with a few expressing concerns for their current health status. One provider stated:

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"Since I had my kids and gained weight, I have tried to lose, but it's not easy. You lose the weight and then gain it again."

Another provider mentioned:

"I would like to lose some weight and be more active. I know I need to do it. I am aware that my weight is a problem and that it affects my health."

Moreover, most providers reported being told by their healthcare providers that they needed to lose weight to improve their overall health issues (e.g., arthritis, hypertension, type 2 diabetes, etc.). As one provider stated:

"The last time I saw my doctor, he told me I needed to lose weight if I did not want to become diabetic … so, I am trying for my health."

Theme 3: Personal Barriers to Healthful Eating and Physical Activity Behaviors

Providers discussed daily life obligations such as work, competing demands, and limited resources as being barriers to being healthy. One provider said:

"You know, I always say, we are in the business of taking care of others, we are not good about taking care of ourselves even though we know we need to … there is very little time … and when there is any time, you are just tired."

Another provider added:

"I have a busy schedule with work, and when I am not working, I am trying to take care of the house, my family. It's a busy life. There's barely any time for taking care of myself …. Just taking time off to go to a doctor's appointment is difficult."

Another provider explained:

"You get caught up with work and daily life, and at the end, there is little time to take care of oneself."

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248 Some providers spoke of attempting to change their personal eating and physical activity
249 habits without success, and a few voiced a lack of confidence in their ability to overcome the
250 obligations and demands of day-to-day life to focus on and succeed in this change. One provider
251 mentioned:

252 "You know, I have tried many times. It starts well. I plan my food in advance, I start
253 going for walks, but then something happens, and it gets me off track and when I realize,
254 I am back to the same old habits…. It's hard when you have to take care of so many
255 things, with long and demanding working hours, and you don't have the time to focus on
256 yourself."

257 When asked to think about how their jobs as FCCH providers and education and training
258 opportunities to learn about healthful eating and physical activity impacted their personal health
259 lifestyles, several providers responded that although they know about the importance of healthful
260 eating and physical activity, this knowledge did not translate into their being physically active
261 and eating healthfully. Providers appeared aware that their knowledge was important, but it was
262 not sufficient to change their behaviors. As one provider said:

263 "It's, what they say, it's easier said than done .... We know it's important to eat healthy
264 and be physically active and not sit around and just watch TV, etcetera, but putting these
265 to practice is not as easy as just saying it."

266 ***Theme 4: Providers Are Confident in Their Abilities to Help Children Develop Healthful***
267 ***Eating and Physical Activity Habits***

268 Across all focus groups, Latino providers spoke of their influential role in educating
269 children about healthful eating and physical activity habits. As one provider said:

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> "We are teaching the children not only how to get along with one another, but we teach them that it's important to eat healthy, to be active and healthy! .... I have parents thank me for teaching their children how to be healthy. The parents don't have the time. They are not with the kids during the day. They get home and they are tired; after working long hours, they don't have time."

Providers mentioned using strategies such as telling the children about the importance of being healthy—eating healthfully and being active. One provider stated:

> "I am always telling the children that it's really important to eat healthy foods and be active if they want to grow up and be healthy."

Most providers spoke of being confident about their abilities to help children develop healthful eating and physical activity habits. Providers saw themselves as being educators with the necessary knowledge to teach children and their families about healthful diets and physical activity. One provider said:

> "I feel very confident in my ability to help the children be healthy—eat well, be active.... We are always going to trainings, reading the materials; we have to keep well informed."

Theme 5: Providers View Themselves as Role Models

Providers spoke of being role models for children in their care, despite the majority acknowledging that their own eating and physical activity health behaviors need to improve. As one provider stated:

> "We know that it's important that we set a good example for the children, and I try my best. We want to do the right thing for the children, even if you don't do it for yourself."

Another provider added:

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292 "It's important for the children to see us [adults] choosing healthy foods. Children want
293 to copy what others do … so if they see you eating fruits, they will want to eat fruits, but
294 if they see you eating chips, that's what they will want to eat."

295 Finally, some providers reported that improving their own personal eating and physical
296 activity behaviors would make them better role models for children. As one provider mentioned:

297 "Kids observe what we [adults] do, and they learn by seeing and copying what we
298 [adults] do. So, I do all I can to help and teach the children to eat healthy and be
299 physically active, but I know that if I am not doing it, it does not set a good example for
300 them. I know that if they see me eating healthy and being active, they will want to eat
301 healthy and be active … they copy our [adults] habits."

302 **DISCUSSION**

303 This study explored how Latino FCCH providers perceive their role in promoting
304 healthful eating and physical activity behaviors for children attending FCCHs. Despite the
305 growing interest in FCCHs as an important social setting that contributes to young children's
306 early eating and physical activity habits and prevention of child obesity, to date limited research
307 has explored how FCCH providers view their ability to serve as role models for these health
308 behaviors of young children in these settings. In addition, to our knowledge, none have focused
309 on Latino FCCH providers. This information is needed given that FCCH providers care for a
310 large number of racial/ethnic minority children, including Latinos—a group at high risk of
311 childhood obesity. It is particularly important given that health-related behaviors learned early in
312 life are likely to persist, as children get older.[2,3,10]

313 Latino providers participating in this qualitative study viewed themselves as being
314 knowledgeable about nutrition and physical activity and playing an influential role in helping

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children in their care develop and maintain healthful eating and physical activity habits. Nonetheless, the majority of providers reported that their own eating and physical activity behaviors needed to improve. These findings are consistent with a recent study conducted with a convenience sample of 166 FCCH providers in North Carolina that found that almost all providers (89.8%) were overweight or obese; approximately half did not meet guidelines for physical activity and fruit and vegetable intake.[28]

Social cognitive theory posits that behaviors are influenced by many factors with one of them being observational learning. Therefore, improving Latino providers' health behaviors would not only be beneficial for the providers' own health status, but would also be an important target in the promotion of children's healthful eating and physical activity behaviors.[29-31] Our findings suggest that providers perceive their own behaviors as having an influence on the children they take care of and acknowledge that their behaviors need to improve. Providers also believed that improving their own eating and physical activity habits would make them better role models for children in their care. This finding is important and should be considered when designing interventions to prevent obesity among children attending FCCHs to incorporate not only targeting children's behaviors but also targeting those of providers.

Most providers in the current study reported lack of time and resources as being barriers to improving their own personal eating and physical activity behaviors. FCCH providers need time, resources, and support to improve their own eating and physical activity habits. Interventions and policies aimed at improving the eating and physical activity environments of FCCHs should target providers' personal behaviors and incorporate training resources and support that promote behavioral change of providers' own eating and physical activity and improve their weight status.

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338 Findings from the present study add to the scant literature examining FCCH providers' personal health behaviors and highlight the need for increased attention to FCCH providers' own health behaviors as a means of promoting providers' own health as well as healthful eating and physical activity among young children in these settings.

342 Study results should be considered in light of some limitations. Findings are based on a nonrandom, purposive, and relatively small sample of low-income, Latino FCCH providers in four selected communities in MA. Furthermore, FCCH providers who participated in this study may have been more aware of and more concerned with promoting health behaviors among children in their care and more aware of their own health behaviors. Future research can address these limitations by exploring influences on Latino providers' beliefs, attitudes, and practices from other communities across the United States. In addition, quantitative research that builds on the qualitative findings reported here is needed to quantify Latino providers' own eating and physical activity behaviors and quantify how these behaviors may influence the eating and physical activity behaviors of preschool children attending FCCHs.

352 CONCLUSION

353 Given evidence of the important role of FCCH providers in promoting healthful eating and physical activity of young children under their care and evidence from the general literature of the importance of a caregiver's role modeling in influencing children's behaviors, health promotion interventions targeting FCCH settings should consider health promotion activities for FCCH providers' personal eating and physical activity behaviors. It is likely that these efforts would not only result in improvements of FCCH providers own healthful eating and physical activity behaviors but also have the potential to further promote healthful eating and physical activity behaviors and health outcomes of children attending FCCHs.

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Abbreviations

ECE: Early Care and Education; FCCHs: Family Child Care Homes; SCT: Social Cognitive Theory; MA: Massachusetts; GED: General Educational Diploma.

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Running head: Latino Family Child Care Providers as Role Models

Easier Said Than Done: A Qualitative Study Conducted in the U.S. Exploring Latino Family Child Care Home Providers as Role Models for Healthy Eating and Physical Activity Behaviors

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Data Sharing: Data and all other materials for this study are kept at the Department of Exercise and Health Sciences, University of Massachusetts Boston. The datasets generated during and/or analyzed during the current study are not publicly available due the terms of consent to which participants agreed to, but are available from the corresponding author on reasonable request.

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67 **ABSTRACT**

68 **Objective:** Latinos are the largest and most rapidly growing minority population group in the
69 United States (U.S.) and are disproportionally affected by obesity and related chronic diseases.
70 Child care providers likely influence the eating and physical activity behaviors of children in
71 their care on a daily basis and therefore are important targets for interventions designed to
72 prevent childhood obesity. Nonetheless, there is a paucity of research examining the behaviors of
73 Family Child Care Home (FCCH) providers and how they model healthy eating and physical
74 activity behaviors. Therefore, this study explored Latino FCCH providers' beliefs and practices
75 related to healthy eating, physical activity and sedentary behaviors, and how they view their
76 ability to serve as role models for these behaviors for young children in their care.
77 **Methods:** A qualitative study consisting of six focus groups conducted in Spanish with a sample
78 of 44 state-licensed Latino FCCH providers in the state of Massachusetts, United States.
79 Translated transcripts were analyzed using thematic analyses to code data in phases to identify
80 meaningful patterns.
81 **Results:** Analyses revealed that Latino FCCH providers have positive beliefs and attitudes about
82 the importance of healthy eating and physical activity for children in their care, but struggle
83 themselves with these same behaviors, and maintaining a healthy weight status. The ability of
84 Latino FCCH providers to model healthy eating and physical activity may be limited by their
85 self-efficacy to be physically active, eat a healthy diet, and maintain a healthy weight.
86 **Conclusions:** Interventions designed to improve healthy eating and physical activity behaviors
87 of children enrolled in FCCHs should include components that address FCCH providers' own
88 health behaviors, as well as their modeling of these health behaviors. Future research should
89 build on the qualitative findings of this study by quantifying Latino providers' own healthy

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eating and physical activity behaviors, and determining how these behaviors influence behaviors and health outcomes of children in their care.

Keywords: Latino; role modeling; eating and physical activity; family child care homes; preschoolers.

Strengths and limitations of this study:

- Prior research documents that child care providers influence the eating and physical activity behaviors of children in their care on a daily basis and therefore are important targets for interventions aimed at prevention of childhood obesity in child care settings.
- To our knowledge, this is the first study to examine Latino family child care home (FCCH) providers' view of their ability to serve as role models for healthy eating and physical activity behaviors of children in these settings.
- Findings revealed Latino FCCH providers have positive beliefs and attitudes about the importance of healthy eating and physical activity for children in their care, and overall are knowledgeable about these behaviors, but struggle with eating a healthy diet, being physically active, and maintaining a healthy weight. Providers reported lack of time and daily life demands, including work, as main barriers to focusing on their own health behaviors and weight status. Several providers expressed the desire to change their eating and physical activity habits and to improve their personal health.
- Interventions and policies aimed at improving eating and physical activity behaviors of children attending FCCHs should target providers' self-efficacy and personal behaviors by providing training resources and support providers' changing their own eating and physical activity behaviors and improving their weight status.

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- Findings from the present study add to the scant literature examining FCCH providers' personal health behaviors and highlight the need for increased attention to FCCH providers' own health behaviors as a means of promoting providers' own health as well as healthy eating and physical activity among young children in these settings.
- Study results should be considered in light of some limitations. Findings are based on a nonrandom, purposeful, and relatively small sample of low-income, Latino FCCH providers in four selected communities in Massachusetts, United States, which limits generalizability. There is possibility of selection bias as it may be that providers with a heightened interest in promoting health behaviors were more willing to take part in the study. In addition, providers aware of the importance of health behaviors may have been inclined to give socially desirable responses.

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124 **INTRODUCTION**

125 Latinos are the largest and most rapidly growing minority population group in the United
126 States (U.S.)[1] and are disproportionally affected by obesity and related chronic diseases.[2]
127 Although recent data indicate a decrease in rates of child obesity in the U.S., it remains a
128 significant health problem.[3] Children in low-income Latino families are at elevated risk of
129 becoming overweight and obese, making childhood obesity among Latinos a pressing public
130 health concern as childhood weight status tracks into adulthood.[3] Substantive efforts are needed
131 to prevent and control obesity among Latino children if future trends in chronic diseases are to be
132 altered in this population.

133 Early care and education (ECE) settings are important social environments that influence
134 the eating and physical activity behaviors of children attending these institutions.[4,5] Increasing
135 ECE attendance rates and time spent in these settings make ECEs important venues for health
136 promotion and obesity prevention interventions targeting young children.[6] Family Child Care
137 Homes (FCCHs) are a type of ECE setting where providers care for children other than their own
138 in their own home.[6,7] More than 1.9 million preschool children attend FCCHs, and this ECE
139 setting is the second largest provider of non-relative care for children up to 5 years old in the
140 United States.[8]

141 Latino families may prefer FCCHs to other ECE settings due to cultural preferences for
142 family-like care, flexible hours, and lower costs, thus making FCCHs an ideal setting for obesity
143 prevention efforts designed for Latino families and children.[9] Latino parents who enroll their
144 children in an FCCH believe that these settings are instrumental in shaping and reinforcing their
145 children's healthy eating and physical activity habits.[10,11] In fact, recent research suggests that
146 FCCH providers may be more influential than, or equally as important as, parents in shaping

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food preferences of young children.[5,12] FCCH providers, like parents, help establish and reinforce early healthy eating and physical activity behaviors among young children on a daily basis by developing an FCCH environment that fosters healthy behaviors.[12,13] FCCH providers influence behavior in many ways (e.g., knowledge of nutrition and physical activity, selection of daily activities, food selection, meal structure, etc.).[12,13] Research suggests that children model the behaviors of others and that this modeling helps young children develop lifelong habits that contribute to healthy weight or to overweight and obesity.[14] Social cognitive theory (SCT) posits that behavior acquisition is directly related to observing others within the context of social interactions and experiences.[15,16,17] Bandura[17] suggests that children learn through observing the behaviors of others and the reinforcements they receive. Many types of behaviors, including eating and physical activity, can be learned through observing influential others such as caregivers and peers. For children attending FCCHs, the FCCH provider may be a particularly influential role model for healthy behaviors.[18]

Much of the obesity prevention research in FCCH settings has focused on improving the eating and physical activity environments of these settings and changing providers' feeding and physical activity practices.[11,19-23] For example, providers' beliefs, attitudes, and practices related to these health behaviors have been examined to identify potential targets for intervention.[19,22-26] However, there is a paucity of research examining FCCH providers' personal eating and physical activity behaviors and how these behaviors may influence the behaviors of children in their care. Therefore, this qualitative study explored Latino FCCH providers' beliefs and practices related to healthy eating, physical activity and sedentary behaviors, and how providers view their ability to serve as role models for these behaviors for young children in their care.

METHODS

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3 170 ***Study Design, Setting, and Sample***

This study was part of a larger multi-component exploratory qualitative research project guided by the socio-ecological model to systematically explore multi-level factors influencing eating, physical activity, and sedentary behaviors among Latino preschool-age children (2-5 years) attending FCCHs in Massachusetts (MA).[10,11] Recognizing the value of qualitative methodology in formative research, we employed a focus group design with a phenomenological approach to both data collection and analysis with the purpose of understanding providers' perceptions, perspectives and understandings of their ability to serve as role models for health behaviors (e.g., physical activity and healthy eating) of children in their care (phenomenon). Focus group discussions (FGD) were conducted because they are an important technique for conducting research in diverse cultural settings and provide valuable information.[27] Moreover, the synergistic effects of the group setting elicit ideas and discussions that may not arise in individual interviews.[28]

As noted in previous studies, FCCH regulators were identified and contacted by research staff to help develop a list of licensed FCCH from four areas in Massachusetts (North Shore, Greater Boston, Central, and Western).[10,11] Using this compiled list of licensed FCCH providers, 22 licensed providers were randomly selected from each of the four areas of Massachusetts (total 88 providers) and each selected provider was mailed a flyer in Spanish outlining the study that included a phone number to call for additional information. Interested providers were screened for eligibility (e.g., self-identified as Latino, having at least three children aged 2–5 in the FCCH). A confirmatory/reminder phone call was made one to two days before the scheduled FGD.

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192 ***Data Collection***

193 A native Spanish speaker trained in qualitative research methods moderated all FGD in
194 Spanish with assistance from the first author, using a piloted discussion guide with open-ended
195 questions and probes. The pilot-tested guide explored FCCH providers': (1) beliefs and attitudes
196 related to eating and physical activity, (2) barriers to having and/or maintaining healthy eating
197 and physical activity habits, (3) perceptions of their influence on the eating, physical activity and
198 sedentary behaviors of children in their care, and (4) perception of their ability to serve as role
199 models of healthy eating and physical activity behaviors for young children in their care. The
200 same FGD guide was used for all FGDs.

201 All FGDs were held in meeting rooms of public libraries between April and September
202 2015, and lasted approximately 90 minutes. All FGDs were audiotaped after participants
203 provided signed informed consent. Before each FGD, the moderator explained procedures and
204 participants completed a brief, self-administered questionnaire assessing education, marital
205 status, country of origin, and length of time living in the U.S. A bilingual (Spanish and English)
206 qualitative researcher served as an assistant moderator (ACL) and took notes during each
207 session. The moderator and assistant moderator convened for 15 minutes at the end of the FGD
208 in a private room and discussed any new or recurring themes heard during the session, which
209 were entered into a grid of major themes and subthemes. This grid system was used to closely
210 follow the emergence of new themes and subthemes and to determine when data saturation was
211 achieved.

212 Participants received a $25 gift card for their participation. This study was approved by
213 the Institutional Review Board for the Protection of Human Subjects of the Harvard T.H. Chan
214 School of Public Health.

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215 ***Data Analysis***

216 Audiotapes were transcribed verbatim in Spanish and translated into English without
217 identifiers by a bilingual and native Spanish speaker using forward-backward techniques to
218 establish semantic equivalence in translation. This process ensured that the integrity and
219 equivalence of the data were not lost in the process of translation.

220 Transcripts were analyzed using thematic analyses, an iterative process of coding data in
221 phases to identify meaningful patterns.[28] Analytic phases included data familiarization,
222 generation of initial codes, identifying patterns and themes, and defining and naming themes.[29,30]
223 Two authors, experienced qualitative researchers, independently coded all transcripts and
224 identified emergent themes. These two authors then checked for consistency between their
225 analyses and discussed any differences until consensus was reached. An inductive approach was
226 employed, where emerging data was used to develop, refine and verify themes and findings.
227 Descriptive statistics were calculated for the socio-demographic data using Microsoft Excel
228 2008®.

229 **RESULTS**

230 Six FGDs with a total of 44 providers (41 female, 3 male), all of whom self-identified as
231 Hispanic/Latino, were conducted before thematic saturation was reached, with no new themes or
232 subthemes emerging during the sixth focus group. As seen in Table 1, about one third of
233 participants had graduated from high school (n = 10; 22.7%) or earned their general education
234 diploma (GED) (n = 4; 9.2%), and close to forty percent (n = 17; 38.5%) had attended some
235 college. Approximately 95.5% were born outside of the U.S., and had lived in the U.S. for an
236 average of 22 years. All reported Spanish was the main language spoken at home. Themes that

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emerged during the qualitative analyses are discussed in the following section, with quotes used to illustrate the themes.

Theme 1: Providers Believe Healthy Eating and Physical Activity Are Important

Across all focus groups, providers appeared aware of the benefits of eating healthy (e.g., eating fruits and vegetables, avoiding "junk" food, drinking water and avoiding sugar-sweetened beverages, etc.) and being physically active, and believed that these practices are an integral influence on one's overall health. As one provider explained:

> "Eating well and being physically active is an important part of being healthy. Past generations have known this for ages." Female Provider (FP) #10, Dominican Republic

Overwhelmingly, providers believed in the importance of healthy eating and being physically active for children's overall health and socio-emotional wellbeing. As one provider said:

> "Healthy eating and being physically active are very important for children's health and well-being…. Children are growing and learning and developing these habits while they are young. These [behaviors] will help them later in life." FP#23, Mexico

Providers also recognized that children are exposed to and spend many hours on sedentary activities (e.g., video games, TV watching, use of electronics), and felt it was important to minimize the use of electronics.

> "I don't really allow any use of electronics. It's really hard, but nowadays even little kids and babies have so much access to electronics. My policy is that kids cannot bring any electronics to daycare." FP#11, Colombia

Furthermore, most providers felt that screen-time should be regulated, and several spoke of not allowing children to spend more than one hour of screen-time per day. Watching TV was

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260 the most common type of screen-time providers reported allowing children to have, and that they
261 most often allowed this during transitions such as drop-off, pickup, and meal preparation. Some
262 providers reported that they regulated screen-time in hopes of increasing children's PA.

263 "I feel that we need to regulate how much TV and electronics we allow to make sure that
264 the kids are active. In our daycare we [couple-run FCCH] only allow it during drop-off
265 and pick-up and sometimes when we both need to prepare lunch" Male Provider (MP)#3,
266 Colombia

267 ***Theme 2: Providers Recognize Their Eating and Physical Activity Habits Could Improve***

268 Nearly all providers spoke of needing to improve their own eating and physical activity
269 habits, to promote weight loss and improve their overall health. One provider stated:

270 "I know I need to improve my eating habits, start eating more healthy foods, and keep
271 away from the junk food. I know that if I change the way I eat, I will lose some weight,
272 and I really need to do that for my health." FP#18, Dominican Republic

273 Several providers discussed struggling with excessive weight, and a few described their
274 unhealthy weight status as affecting their energy levels and overall health, with a few expressing
275 concerns for their current health status. One provider stated:

276 "Since I had my kids and gained weight, I have tried to lose, but it's not easy. You lose
277 the weight and then gain it again." FP#6, Colombia

278 Another provider mentioned:

279 "I would like to lose some weight and be more active. I know I need to do it. I am aware
280 that my weight is a problem and that it affects my health." FP#17, Puerto Rico

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Moreover, most providers reported being told by their healthcare providers that they needed to lose weight to improve various health issues (e.g., arthritis, hypertension, type 2 diabetes, etc.). As one provider stated:

"The last time I saw my doctor, he told me I needed to lose weight if I did not want to become diabetic … so, I am trying for my health." FP#4, Guatemala

Theme 3: Personal Barriers to Healthy Eating and Physical Activity Behaviors

Providers discussed daily life obligations such as work, competing demands, and limited resources as being barriers to being healthy. One provider said:

"You know, I always say, we are in the business of taking care of others, we are not good about taking care of ourselves even though we know we need to … there is very little time … and when there is any time, you are just tired." FP#38, Colombia

Another provider added:

"I have a busy schedule with work, and when I am not working, I am trying to take care of the house, my family. It's a busy life. There's barely any time for taking care of myself…. Just taking time off to go to a doctor's appointment is difficult." FP#8, Dominican Republic

Another provider explained:

"You get caught up with work and daily life, and at the end, there is little time to take care of oneself." FP#33, Puerto Rico

Some providers spoke of attempting to change their personal eating and physical activity habits without success, and a few voiced a lack of confidence in their ability to overcome the obligations and demands of day-to-day life to focus on and succeed in this change. One provider mentioned:

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"You know, I have tried many times. It starts well. I plan my food in advance, I start going for walks, but then something happens, and it gets me off track and when I realize, I am back to the same old habits…. It's hard when you have to take care of so many things, with long and demanding working hours, and you don't have the time to focus on yourself." FP#2, Honduras

Furthermore, providers reported that although they were aware about the importance of healthy eating and physical activity, this knowledge did not always translate into them being physically active and eating healthy. As one provider said:

"It's, what they say, it's easier said than done...We know it's important to eat healthy and be physically active and not sit around and just watch TV, etcetera, but putting these to practice is not as easy as just saying it." FP#12, Dominican Republic

Theme 4: Providers Are Confident in Their Abilities to Help Children Develop Healthy Eating and Physical Activity Habits

Across all FGDs, Latino providers spoke of their influential role in educating children about healthy eating and physical activity habits. As one provider said:

"We are teaching the children not only how to get along with one another, but we teach them that it's important to eat healthy, to be active and healthy! .... I have parents thank me for teaching their children how to be healthy. The parents don't have the time. They are not with the kids during the day. They get home and they are tired; after working long hours, they don't have time." FP#41, Colombia

Providers mentioned using strategies such as telling the children about the importance of being healthy—eating healthy and being active. One provider stated:

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"I am always telling the children that it's really important to eat healthy foods and be active if they want to grow up and be healthy." FP#27, Peru

Most providers had high self-efficacy about their abilities to help children develop healthy eating and physical activity habits. Providers were confident in their ability to serve as educators with the necessary knowledge to teach children and their families about healthy diets and physical activity. One provider said:

"I feel very confident in my ability to help the children be healthy—eat well, be active.... We are always going to trainings, reading the materials; we have to keep well informed. MP#1, Dominican Republic

Theme 5: Providers View Themselves as Role Models

Providers spoke of being role models for children in their care, despite the majority acknowledging that their own eating and physical activity health behaviors need to improve. As one provider stated:

"We know that it's important that we set a good example for the children, and I try my best. We want to do the right thing for the children, even if you don't do it for yourself." FP#36, Ecuador

Another provider added:

"It's important for the children to see us [adults] choosing healthy foods. Children want to copy what others do … so if they see you eating fruits, they will want to eat fruits, but if they see you eating chips, that's what they will want to eat." FP#13, Colombia

Finally, some providers reported that improving their own personal eating and physical activity behaviors would make them better role models for children. As one provider mentioned:

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348 "Kids observe what we [adults] do, and they learn by seeing and copying what we
349 [adults] do. So, I do all I can to help and teach the children to eat healthy and be
350 physically active, but I know that if I am not doing it, it does not set a good example for
351 them. I know that if they see me eating healthy and being active, they will want to eat
352 healthy and be active … they copy our [adults] habits." FP#5, Guatemala

353 **DISCUSSION**

354 Building on our prior research examining providers' beliefs about healthy eating,
355 physical activity and sedentary behaviors[11], this study explored how Latino FCCH providers
356 view their ability to serve as role models for healthy eating and physical activity behaviors for
357 young children in their care. Mounting evidence suggests that child care providers influence the
358 development of children's health behaviors through modeling of behaviors.[4,10,11,13,31,32]
359 Nonetheless, to date, limited research has explored how FCCH providers view their ability to
360 serve as role models for young children in these settings. For young children, caregivers are
361 important role models,[10, 11,13,31,32] as parents increasingly rely on child care settings for their
362 children at continually younger ages making child care providers influential in promoting healthy
363 behaviors for children in their care. Therefore, it is critical to understand how providers' view
364 their role and ability in promoting healthy behaviors, as health-related behaviors learned early in
365 life are likely to persist as children age.[4,5,12] To our knowledge, no studies have focused on
366 Latino FCCH providers as role models. This information is needed given that FCCH providers
367 care for a large number of racial/ethnic minority children, including Latinos—a group at high
368 risk of childhood obesity.[3-8] The present study addresses this research gap in the current
369 literature.

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Latino Family Child Care Providers as Role Models

370 Latino providers participating in this qualitative study viewed themselves as being
371 knowledgeable about nutrition and physical activity, and being influential in helping children in
372 their care develop and maintain healthy eating and physical activity habits. Moreover, study
373 findings suggest that providers perceive that their own behaviors influence those of the children
374 in their care. Nonetheless, the majority of providers reported that their own eating and physical
375 activity behaviors needed to improve. These findings are consistent with a recent study
376 conducted with a convenience sample of FCCH providers (n=166) in North Carolina that found
377 that almost all providers (89.8%) were overweight or obese; approximately half did not meet
378 guidelines for physical activity and fruit and vegetable intake.[31]

379 Findings of the current study suggest that Latino FCCH providers' ability to model
380 healthy eating and physical activity behaviors for children in their care may be limited by their
381 lack of self-efficacy to participate in these behaviors themselves and indicate that interventions
382 should focus not only on providers' knowledge, but also on helping providers increase their self-
383 efficacy for these behaviors. SCT posits that behaviors are influenced by many factors with one
384 of them being observational learning and that people model behaviors of others.[15,16,17] Therefore,
385 improving Latino providers' health behaviors would not only be beneficial for the providers'
386 own health status, but would also be an important target in the promotion of children's healthy
387 eating and physical activity behaviors.[33-35]

388 Most providers participating in this study reported lack of time and resources as being
389 barriers to improving their own personal eating and physical activity behaviors. FCCH providers
390 need time, resources, and support to improve their own eating and physical activity habits.
391 Interventions and policies aimed at improving the eating and physical activity environments of
392 FCCHs should target providers' personal behaviors and incorporate training resources and

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support that promote behavioral change of providers' own eating and physical activity and improve their weight status. Effective interventions will be those developed to take into account the busy lives of FCCH providers and the limited resource setting of FCCHs.

In conclusion, findings from the present study add to the scant literature examining child care providers' personal health behaviors and the potential influence of providers' modeling of health behaviors for children in their care.[31,36,37] Findings highlight the need for increased attention to FCCH providers' own health behaviors as a means of promoting providers' own health as well as health behaviors of young children in these settings. Future research should build on the qualitative findings of this study by quantifying Latino providers' self-efficacy to perform healthy eating and physical activity, and sedentary behaviors, as well as their self-efficacy to perform these behaviors. In addition, future quantitative studies are needed to determine how FCCH providers' health behaviors influence the behaviors and health outcomes of children in their care.

Study results should be considered in light of some limitations. Findings are based on a nonrandom, purposeful, and relatively small sample of low-income, Latino FCCH providers in four selected communities in MA. All of these factors limit the generalizability of the findings. There is possibility of selection bias as it may be that providers with a heightened interest in promoting health behaviors were more willing to take part in the study. Furthermore, providers aware of the importance of health behaviors may have been inclined to give socially desirable responses. In addition, we do not have data on providers who did not join the study, and therefore, we are unable to assess the extent to which the providers in our sample represented the broader group of Latino FCCH providers. Thus, further research is needed to establish generalizability of the findings of this current study and to explore if they are applicable to other

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416 ethnic groups of FCCH providers in other parts of the country. Providers participating in this
417 study focused on physical activity and did not discuss sedentary behaviors as much. This may
418 have been due to the construction of the FGD guide, but could also indicate the need for further
419 education on the distinction between physical activity and sedentary behaviors. Finally, despite
420 the use of a rigorous process of backward-forward translation to ensure that the integrity and
421 equivalence of the data were not lost in the process, it is possible that some loss of meaning
422 might have occurred. Future research can address these limitations by exploring influences on
423 Latino providers' beliefs, attitudes, and practices from other communities across the United
424 States, selecting a larger sample size and using multiple methods of data collection including
425 direct observations.

426 **CONCLUSION**

427 Given evidence of the important role FCCH providers play in promoting healthy eating
428 and physical activity of young children in their care and evidence from the general literature of
429 the importance of a caregiver's role modeling in influencing children's behaviors, health
430 promotion interventions targeting FCCH settings should consider health promotion activities to
431 increase FCCH providers' self-efficacy and to improve their personal eating and physical activity
432 behaviors. It is likely that these efforts would not only result in improvements of FCCH
433 providers own healthy eating and physical activity behaviors, but also have the potential to
434 further promote healthy eating and physical activity behaviors and positive health outcomes of
435 children attending FCCHs.

436 **Abbreviations**

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ECE: Early Care and Education; FCCHs: Family Child Care Homes; SCT: Social Cognitive Theory; MA: Massachusetts; GED: General Educational Diploma; FGD: Focus Group Discussion; FP: Female Provider; PM: Male Provider.

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Table 1. Socio-demographic and acculturation characteristics of focus group participants (n = 44).

Age	**Mean ±SD**	**N (%)**
	41 ± 9.3	
Race		
Hispanic or Latino		44 (100)
Sex		
Female		41 (93.2)
Male		3 (6.8)
Foreign-born		
Yes		42 (95.5)
No		2 (4.5)
Country of origin		
Colombia		12 (27.3)
Dominican Republic		9 (20.5)
Guatemala		5 (11.4)
Puerto Rico		4 (9.2)
Peru		3 (6.8)
United States		2 (4.5)
Mexico		2 (4.5)
El Salvador		2 (4.5)
Honduras		2 (4.5)
Ecuador		2 (4.5)
Cuba		1 (2.3)
Years in the United States	**Mean ± SD**	
	22 ± 3.4	
Predominant language spoken at home		
Spanish		44 (100)
Marin scale acculturation score	**Mean ± SD**	
	2.2 ± 0.9	
Education		
GED*		4 (9.2)
High school graduate		10 (22.7)
Associate		17 (38.5)
Bachelor		12 (27.3)
Missing		1 (2.3)
Annual household income		
Under $25,000		10 (22.7)
$25,000–$50,000		26 (59.1)
More than $50,000		8 (18.2)
Marital status		
Single		2 (4.5)
Married		28 (63.3)
Separated		4 (9.2)
Divorced		8 (18.2)
Widowed		2 (4.5)

* GED: General Educational Diploma

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COREQ (COnsolidated criteria for REporting Qualitative research) Checklist

A checklist of items that should be included in reports of qualitative research. You must report the page number in your manuscript where you consider each of the items listed in this checklist. If you have not included this information, either revise your manuscript accordingly before submitting or note N/A.

Topic	Item No.	Guide Questions/Description	Reported on Page No.
Domain 1: Research team and reflexivity			
Personal characteristics			
Interviewer/facilitator	1	Which author/s conducted the interview or focus group?	2,9
Credentials	2	What were the researcher's credentials? E.g. PhD, MD	1
Occupation	3	What was their occupation at the time of the study?	1
Gender	4	Was the researcher male or female?	2,9
Experience and training	5	What experience or training did the researcher have?	9
Relationship with participants			
Relationship established	6	Was a relationship established prior to study commencement?	8
Participant knowledge of the interviewer	7	What did the participants know about the researcher? e.g. personal goals, reasons for doing the research	8
Interviewer characteristics	8	What characteristics were reported about the inter viewer/facilitator? e.g. Bias, assumptions, reasons and interests in the research topic	9
Domain 2: Study design			
Theoretical framework			
Methodological orientation and Theory	9	What methodological orientation was stated to underpin the study? e.g. grounded theory, discourse analysis, ethnography, phenomenology, content analysis	8
Participant selection			
Sampling	10	How were participants selected? e.g. purposive, convenience, consecutive, snowball	8
Method of approach	11	How were participants approached? e.g. face-to-face, telephone, mail, email	8
Sample size	12	How many participants were in the study?	10
Non-participation	13	How many people refused to participate or dropped out? Reasons?	8,10
Setting			
Setting of data collection	14	Where was the data collected? e.g. home, clinic, workplace	8
Presence of non-participants	15	Was anyone else present besides the participants and researchers?	9
Description of sample	16	What are the important characteristics of the sample? e.g. demographic data, date	Table 1
Data collection			
Interview guide	17	Were questions, prompts, guides provided by the authors? Was it pilot tested?	9
Repeat interviews	18	Were repeat inter views carried out? If yes, how many?	10
Audio/visual recording	19	Did the research use audio or visual recording to collect the data?	9
Field notes	20	Were field notes made during and/or after the inter view or focus group?	9
Duration	21	What was the duration of the inter views or focus group?	9
Data saturation	22	Was data saturation discussed?	10
Transcripts returned	23	Were transcripts returned to participants for comment and/or	N/A

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Topic	Item No.	Guide Questions/Description	Reported on Page No.
		correction?	
Domain 3: analysis and findings			
Data analysis			
Number of data coders	24	How many data coders coded the data?	10
Description of the coding tree	25	Did authors provide a description of the coding tree?	N/A, 10
Derivation of themes	26	Were themes identified in advance or derived from the data?	10
Software	27	What software, if applicable, was used to manage the data?	N/A
Participant checking	28	Did participants provide feedback on the findings?	N/A
Reporting			
Quotations presented	29	Were participant quotations presented to illustrate the themes/findings? Was each quotation identified? e.g. participant number	11-16
Data and findings consistent	30	Was there consistency between the data presented and the findings?	11-18
Clarity of major themes	31	Were major themes clearly presented in the findings?	11-16
Clarity of minor themes	32	Is there a description of diverse cases or discussion of minor themes?	11-16

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Developed from: Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *International Journal for Quality in Health Care*. 2007. Volume 19, Number 6: pp. 349 – 357

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Easier Said Than Done: A Qualitative Study Conducted in the U.S. Exploring Latino Family Child Care Home Providers as Role Models for Healthy Eating and Physical Activity Behaviors

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Keywords:	Latino, role modeling, eating, physical actvity, family child care home, preschoolers

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Running head: Latino Family Child Care Providers as Role Models

Easier Said Than Done: A Qualitative Study Conducted in the U.S. Exploring Latino Family Child Care Home Providers as Role Models for Healthy Eating and Physical Activity Behaviors

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Latino Family Child Care Providers as Role Models

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Authorship: ACL participated in study design, data collection, data analysis, and manuscript preparation and review. MLG participated in study design, manuscript preparation, and manuscript review. SFW developed the theoretical framework for the study, participated in manuscript preparation and review. JAW participated in manuscript preparation and manuscript review.

Ethical Standards Disclosure: This study was approved by the Institutional Review Board for the Protection of Human Subjects at the Harvard T.H. Chan School of Public Health. Written and oral informed consent was obtained from all participants.

Data Sharing: Data and all other materials for this study are kept at the Department of Exercise and Health Sciences, University of Massachusetts Boston. The datasets generated during and/or analyzed during the current study are not publicly available due the terms of consent to which participants agreed to, but are available from the corresponding author on reasonable request.

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Latino Family Child Care Providers as Role Models

68 **ABSTRACT**

69 **Objective:** Latinos are the largest and most rapidly growing minority population group in the
70 United States and are disproportionally affected by obesity and related chronic diseases. Child
71 care providers likely influence the eating and physical activity behaviors of children in their care
72 and, therefore, are important targets for interventions designed to prevent childhood obesity.
73 Nonetheless, there is a paucity of research examining the behaviors of Family Child Care Home
74 (FCCH) providers and whether they model healthy eating and physical activity behaviors.
75 Therefore, this study explored Latino FCCH providers' beliefs and practices related to healthy
76 eating, physical activity and sedentary behaviors, and how they view their ability to serve as role
77 models for these behaviors for young children in their care.
78 **Methods:** Qualitative study consisting of six focus groups conducted in Spanish with a sample
79 of 44 state-licensed Latino FCCH providers in the state of Massachusetts. Translated transcripts
80 were analyzed using thematic analyses to identify meaningful patterns.
81 **Results:** Analyses revealed that Latino FCCH providers have positive beliefs and attitudes about
82 the importance of healthy eating and physical activity for children in their care, but personally
83 struggle with these same behaviors and with maintaining a healthy weight status. The ability of
84 Latino FCCH providers to model healthy eating and physical activity may be limited by their
85 low self-efficacy in their ability to be physically active, eat a healthy diet, and maintain a healthy
86 weight.
87 **Conclusions:** Interventions designed to improve healthy eating and physical activity behaviors
88 of children enrolled in FCCHs should address providers' own health behaviors as well as their
89 modeling of these health behaviors. Future research can build on the findings of this qualitative
90 study by quantifying Latino FCCH providers' eating and physical activity behaviors, and

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determining how these behaviors influence behaviors and health outcomes of children in their care.

Keywords: Latino; role modeling; eating; physical activity; family child care homes; preschoolers.

Strengths and limitations of this study:

- To our knowledge, this is the first study to examine Latino FCCH providers' view of their ability to serve as role models for healthy eating and physical activity behaviors of children in these settings.
- Study findings highlight the need for increased attention to FCCH providers' health behaviors as a means of promoting providers' own health, as well as healthy eating and physical activity among young children in their care.
- Interventions aimed at improving eating and physical activity behaviors of children attending FCCHs should consider health promotion activities to increase FCCH providers' self-efficacy for physical activity and healthy eating, and supports to help providers improve their eating and physical activity behaviors.
- Study limitations include the use of a non-random, purposeful, and relatively small sample of low-income, Latino FCCH providers in four selected communities in MA, U.S., which limits the generalizability of the findings.

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INTRODUCTION

Latinos are the largest and most rapidly growing minority population group in the United States (U.S.)[1] and are disproportionally affected by obesity and related chronic diseases.[2,3] Children in low-income Latino families are at elevated risk of becoming overweight and obese, making childhood obesity among Latinos a pressing public health concern because childhood weight status tracks into adulthood.[3] Substantive efforts are needed to prevent and control obesity among Latino children if future trends in chronic diseases in this population are to be altered.

Early care and education (ECE) settings are important social environments that influence the eating and physical activity behaviors of children attending these institutions.[4,5] Increasing ECE attendance rates and time spent in these settings make ECEs important venues for health promotion and obesity prevention efforts targeting young children.[6] Family Child Care Homes (FCCHs) are a type of ECE setting where providers care for children other than their own in their own home.[6,7] More than 1.9 million preschool children attend FCCHs, and this ECE setting is the second largest provider of non-relative care for children up to 5 years old in the U.S.[8]

Latino families may prefer FCCHs to other ECE settings due to cultural preferences for family-like care, flexible hours, and lower costs, thus making FCCHs an ideal setting for obesity prevention efforts designed for Latino families and children.[9] Latino parents who enroll their children in an FCCH believe that these settings are instrumental in shaping and reinforcing their children's healthy eating and physical activity habits.[10,11] In fact, recent research suggests that FCCH providers may be more influential than, or equally as important as parents in shaping food preferences of young children.[5,12] FCCH providers, like parents, help establish and reinforce early healthy eating and physical activity behaviors among young children by developing an

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environment that fosters healthy behaviors.[12,13] FCCH providers influence the behavior of children in their care in many ways (e.g., knowledge of nutrition and physical activity, selection of daily activities, food selection, meal structure, etc.).[12,13]

Research suggests that children model the behaviors of others and that this modeling helps young children develop lifelong habits that contribute to healthy weight or to overweight and obesity.[14] Social cognitive theory (SCT) posits that behavior acquisition is directly related to observing others within the context of social interactions and experiences.[15,16,17] Many types of behaviors, including eating and physical activity, can be learned through observing influential others such as caregivers and peers. For children attending FCCHs, the FCCH provider may be a particularly influential role model for healthy behaviors.[18]

Much of the obesity prevention research in FCCH settings has focused on improving the eating and physical activity environments of these settings and changing providers' feeding and physical activity practices.[11,19-23] For example, providers' beliefs, attitudes, and practices related to health behaviors have been examined to identify potential targets for intervention.[19,22-26] However, there is a paucity of research examining FCCH providers' personal eating and physical activity behaviors, and how their behaviors may influence the behaviors of children in their care. Therefore, this qualitative study explored: 1) Latino FCCH providers' beliefs and practices related to healthy eating, physical activity and sedentary behaviors, and 2) how Latino FCCH providers view their ability to serve as role models for young children in their care.

METHODS

Study Design, Setting, and Sample

This study was part of a larger multi-component exploratory qualitative research project guided by the socio-ecological model designed to systematically explore multi-level factors

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influencing eating, physical activity, and sedentary behaviors among Latino preschool-age children aged 2-5 attending FCCHs in Massachusetts (MA).[10,11] Recognizing the value of qualitative methodology in formative research, a focus group design with a phenomenological approach was used to collect and analyze data with the purpose of understanding providers' perceptions, perspectives and understandings of their ability to serve as role models for health behaviors (e.g., physical activity and healthy eating) of children in their care (phenomenon). Focus group discussions (FGD) were conducted because they are an important technique for conducting research in diverse cultural settings and provide valuable information.[27] Moreover, the synergistic effects of the group setting elicit ideas and discussions that may not arise in individual interviews.[28]

As noted in our prior research, FCCH regulators were identified and contacted by research staff to help develop a list of licensed FCCH from four areas in MA (North Shore, Greater Boston, Central, and Western).[10,11] This list was used to randomly select 22 licensed from each of the four areas of MA (total 88 FCCH providers). Each selected provider was mailed a flyer in Spanish outlining the study that included a phone number to call for additional information. Interested providers were screened for eligibility (e.g., self-identified as Latino, having at least three children aged 2–5 in the FCCH). A reminder phone call was made one to two days before the scheduled FGD.

Data Collection

A native Spanish speaker trained in qualitative research methods moderated all FGDs in Spanish with assistance from the first author, using a piloted discussion guide with open-ended questions and probes. The pilot-tested guide explored FCCH providers': (1) beliefs and attitudes related to eating and physical activity, (2) barriers to having and/or maintaining healthy eating

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178 and physical activity habits; (3) perceptions of their influence on the eating, physical activity and
179 sedentary behaviors of children in their care; and (4) perceptions of their ability to serve as role
180 models of healthy eating and physical activity behaviors for young children in their care. This
181 guide was used for all FGDs.

182 All FGDs were held in meeting rooms at public libraries between April and September
183 2015, and lasted approximately 90 minutes. Before each FGD, the moderator explained the
184 procedures and answered participants' questions and obtained informed consent. All FGDs were
185 audiotaped after participants provided written informed consent. Following the FGD, participants
186 completed a brief, self-administered questionnaire assessing education, marital status, country of
187 origin, and length of time living in the U.S. A bilingual (Spanish and English) qualitative
188 researcher served as an assistant moderator (ACL) and took notes during each session. The
189 moderator and assistant moderator convened for 15 minutes at the end of each FGD in a private
190 room and discussed new or recurring themes heard during the session, which were entered into a
191 grid of major themes and subthemes. This grid system was used to closely follow the emergence
192 of new themes and subthemes and to determine when data saturation was achieved.

193 Participants received a $25 gift card for their participation. This study was approved by
194 the Institutional Review Board for the Protection of Human Subjects of the Harvard T.H. Chan
195 School of Public Health.

196 ***Data Analysis***

197 Audiotapes were transcribed verbatim in Spanish and translated into English without
198 identifiers by a bilingual and native Spanish speaker using forward-backward techniques to
199 establish semantic equivalence in translation. This process ensured that the integrity and
200 equivalence of the data were not lost in the process of translation.

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Latino Family Child Care Providers as Role Models

201 Transcripts were analyzed using thematic analyses, an iterative process of coding data in
202 phases to identify meaningful patterns.[28] Analytic phases included data familiarization,
203 generation of initial codes, identifying patterns and themes, and defining and naming themes.[29,30]
204 Two authors, experienced qualitative researchers (ACL, MLG), independently coded all
205 transcripts and identified emergent themes. These two authors then checked for consistency
206 between their analyses and discussed any differences until consensus was reached. An inductive
207 approach was employed, where emerging data were used to develop, refine and verify themes
208 and findings. Descriptive statistics were calculated for the socio-demographic data using
209 Microsoft Excel 2008®.

210 **RESULTS**

211 Six FGDs with a total of 44 providers (41 female, 3 male), all of whom self-identified as
212 Hispanic/Latino, were conducted before thematic saturation was reached, with no new themes or
213 subthemes emerging during the sixth FGD. As displayed in Table 1, about one-third of
214 participants had graduated from high school (n = 10; 22.7%) or earned their general education
215 diploma (GED) (n = 4; 9.2%), and close to 40% (n = 17; 38.5%) had attended some college.
216 Approximately 95.5% (n= 42) were born outside of the U.S., and had lived in the U.S. for an
217 average of 22 years. All reported that Spanish was the main language spoken at home. Themes
218 that emerged during the qualitative analyses are discussed in the following section, with quotes
219 used to illustrate the themes.

220 ***Theme 1: Providers Believe Healthy Eating and Physical Activity Are Important***

221 Across all FGDs, providers appeared aware of the benefits of eating healthy (e.g., eating
222 fruits and vegetables, avoiding "junk" food, drinking water, and limiting sugar-sweetened

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beverages, etc.) and being physically active, and believed that these practices are an integral influence on one's overall health. As one provider explained:

"Eating healthy and being physically active is an important part of being healthy. Past generations have known this for ages." (Female Provider (FP) #10, Dominican Republic)

Overwhelmingly, providers believed in the importance of healthy eating and being physically active for children's overall health and socio-emotional wellbeing. As one provider said:

"Eating healthy and being physically active are very important for children's health and well-being…. Children are growing, learning and developing these habits while they are young. These [behaviors] will help them later in life." (FP#23, Mexico)

Providers also recognized that children are exposed to and spend many hours on sedentary activities such as playing video games, watching TV, and using of electronics, and felt it was important to minimize the use of electronics.

"I don't really allow any use of electronics. It's really hard, but nowadays even little kids and babies have so much access to electronics. My policy is that kids cannot bring any electronics to daycare." (FP#11, Colombia)

Furthermore, most providers felt that screen-time should be regulated, and several spoke of not allowing children to have more than one hour of screen-time per day. Watching TV was the most common type of screen-time providers reported allowing children to have, and that they watching TV was most often allowed during transitions such as drop-off, pickup, and meal preparation. Some providers reported that they regulated screen-time in hopes of increasing children's physical activity.

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245 "I feel that we need to regulate how much TV and electronics we allow to make sure that
246 the kids are active. In our daycare, we [couple-run FCCH] only allow it during drop-off
247 and pick-up and sometimes when we both need to prepare lunch" (Male Provider
248 (MP)#3, Colombia)

249 ***Theme 2: Providers Recognize Their Eating and Physical Activity Habits Could Improve***

250 Nearly all providers spoke of needing to improve their own eating and physical activity
251 habits to promote weight loss and improve their overall health. For example, one provider stated:

252 "I know I need to improve my eating habits, start eating more healthy foods, and keep
253 away from the junk food. I know that if I change the way I eat, I will lose some weight,
254 and I really need to do that for my health." (FP#18, Dominican Republic)

255 Several providers discussed struggling with being overweight. Some described how their
256 being overweight affected their energy levels and overall health, while others expressed concerns
257 for their current health status. One provider stated:

258 "Since I had my kids and gained weight, I have tried to lose, but it's not easy. You lose
259 the weight and then gain it again." (FP#6, Colombia)

260 Another provider mentioned:

261 "I would like to lose some weight and be more active. I know I need to do it. I am aware
262 that my weight is a problem and that it affects my health." (FP#17, Puerto Rico)

263 Moreover, most providers reported being told by their healthcare providers that they
264 needed to lose weight to improve their health and various health issues such as arthritis,
265 hypertension, and type 2 diabetes. As one provider stated:

266 "The last time I saw my doctor, he told me I needed to lose weight if I did not want to
267 become diabetic … so, I am trying for my health." (FP#4, Guatemala)

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268 ***Theme 3: Personal Barriers to Healthy Eating and Physical Activity Behaviors***

269 Providers discussed daily life obligations, including work, competing demands, and
270 limited resources as being barriers to being healthy. One provider said:

271 “You know, I always say, we are in the business of taking care of others, we are not good
272 about taking care of ourselves even though we know we need to … There is very little
273 time and when there is any time, you are just tired.” (FP#38, Colombia)

274 Another provider added:

275 “I have a busy schedule with work, and when I am not working, I am trying to take care
276 of the house and my family. It’s a busy life. There’s barely any time for taking care of
277 myself…. Just taking time off to go to a doctor’s appointment is difficult.” (FP#8,
278 Dominican Republic)

279 Another provider explained:

280 “You get caught up with work and daily life, and at the end, there is little time to take
281 care of oneself.” (FP#33, Puerto Rico)

282 Some providers spoke about attempting to change their eating and physical activity habits
283 without success, and a few voiced a lack of confidence in their ability to overcome the
284 obligations and demands of day-to-day life to focus on and succeed in this change. One provider
285 explained:

286 “You know, I have tried many times. It starts well. I plan my food in advance, I start
287 going for walks, but then something happens, and it gets me off track and when I realize,
288 I am back to the same old habits…. It’s hard when you have to take care of so many
289 things, with long and demanding working hours, and you don’t have the time to focus on
290 yourself.” (FP#2, Honduras)

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291 Furthermore, providers reported that although they were aware of the importance of
292 healthy eating and physical activity, this knowledge did not always translate into them being
293 physically active and eating healthy. As one provider said:

294 "It's what they say, it's easier said than done...We know it's important to eat healthy and
295 be physically active and not sit around and just watch TV, etcetera, but putting these to
296 practice is not as easy as just saying it." (FP#12, Dominican Republic)

297 ***Theme 4: Providers Are Confident in Their Abilities to Help Children Develop Healthy Eating***
298 ***and Physical Activity Habits***

299 Across all FGDs, providers spoke of their influential role in educating children about
300 healthy eating and physical activity habits. As one provider said:

301 "We are teaching the children not only how to get along with one another, but we teach
302 them that it's important to eat healthy, to be active and healthy! I have parents thank me
303 for teaching their children how to be healthy. The parents don't have the time. They are
304 not with the kids during the day. They get home and they are tired; after working long
305 hours, they don't have time." (FP#41, Colombia)

306 Providers mentioned using strategies such as telling the children about the importance of
307 being healthy—eating healthy and being active. One provider stated:

308 "I am always telling the children that it's really important to eat healthy foods and be
309 active if they want to grow up and be healthy." (FP#27, Peru)

310 Most providers had high self-efficacy about their abilities to help children develop
311 healthy eating and physical activity habits. Providers were confident in their ability to serve as
312 educators and that they had the knowledge needed to teach children and their families about
313 healthy diets and physical activity. One provider said:

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314 "I feel very confident in my ability to help the children be healthy—eat well, be active....
315 We are always going to trainings, reading the materials; we have to keep well informed.
316 (MP#1, Dominican Republic)

317 ***Theme 5: Providers View Themselves as Role Models***

318 Providers spoke of being role models for children in their care, despite the majority
319 acknowledging that their own eating and physical activity health behaviors need to improve. As
320 one provider stated:

321 "We know that it's important that we set a good example for the children, and I try my
322 best. We want to do the right thing for the children, even if you don't do it for yourself."
323 (FP#36, Ecuador)

324 Another provider added:

325 "It's important for the children to see us [adults] choosing healthy foods. Children want
326 to copy what others do. So, if they see you eating fruits, they will want to eat fruits, but if
327 they see you eating chips, that's what they will want to eat." (FP#13, Colombia)

328 Finally, some providers reported that improving their eating and physical activity
329 behaviors would make them better role models for children. As one provider stated:

330 "Kids observe what we [adults] do, and they learn by seeing and copying what we
331 [adults] do. So, I do all I can to help and teach the children to eat healthy and be
332 physically active, but I know that if I am not doing it, it does not set a good example for
333 them. I know that if they see me eating healthy and being active, they will want to eat
334 healthy and be active … they copy our [adults] habits." (FP#5, Guatemala)

DISCUSSION

Building on our prior research examining providers' beliefs about healthy eating, physical activity and sedentary behaviors,[11] this study explored how Latino FCCH providers view their ability to serve as role models for healthy eating and physical activity behaviors for young children in their care. Mounting evidence suggests that child care providers influence the development of children's health behaviors through modeling of behaviors,[4,10,11,13,31,32] yet, limited research has explored how FCCH providers view their ability to model healthful behaviors for young children in their care. [10, 11,13,31,32] Parents increasing reliance on child care settings for their children, makes child care providers influential in promoting the development and maintenance of healthy behaviors for children in their care. Therefore, it is critical to understand how providers' view their role and ability in promoting healthy behaviors.[4,5,12] To our knowledge, no studies have focused on Latino FCCH providers as role models. The present study addresses this research gap. This information is needed given that FCCH providers care for a large number of racial/ethnic minority children, including Latinos—a group at high risk of childhood obesity.[3-8]

Latino FCCH providers participating in this qualitative study viewed themselves as being knowledgeable about nutrition and physical activity, and being influential in helping children in their care develop and maintain healthy eating and physical activity habits. Moreover, study findings suggest that providers perceive that their own behaviors influence those of the children in their care. Nonetheless, the majority of providers reported that their own eating and physical activity behaviors needed to improve. These findings are consistent with a recent quantitative study conducted with a convenience sample of FCCH providers (n=166) in North Carolina, US

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that found that almost all providers (89.8%) were overweight or obese and approximately half of the sample did not meet health guidelines for physical activity and fruit and vegetable intake.[31]

Findings of the present study suggest that Latino FCCH providers' ability to model healthy eating and physical activity behaviors for children in their care may be limited by their low self-efficacy to participate in these behaviors themselves. This finding suggests that interventions should focus on helping FCCH providers change their eating and physical activity behaviors, including increasing their self-efficacy for performing these behaviors. SCT posits that behaviors are influenced by many factors with one of them being observational learning.[15,16,17] Therefore, improving Latino FCCH providers' health behaviors would be beneficial for the providers' health status, and would also be an important target in the promotion of children's healthy eating and physical activity behaviors.[33-35]

Most providers participating in this study reported lack of time and resources as being barriers to improving their eating and physical activity behaviors. FCCH providers need time, resources, and support to improve their own eating and physical activity habits. Interventions designed to improve the eating and physical activity environments of FCCHs should target providers' personal health behaviors, incorporate training resources, and offer other supports to help FCCH providers change their behaviors and maintain a healthy weight. Furthermore, interventions should consider the busy lives of FCCH providers and the limited resources of FCCHs.

In conclusion, findings from the present study add to the scant literature examining child care providers' personal health behaviors and the potential influence of providers' modeling of health behaviors for children in their care.[31,36,37] Findings highlight the need for increased attention to FCCH providers' health behaviors as a means of increasing providers' health status

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as well as health behaviors of young children in these settings. Future research could build on the findings of this study by quantifying Latino providers' self-efficacy to perform healthy eating and physical activity and by determining how FCCH providers' health behaviors influence the behaviors and health outcomes of children in their care.

Study results should be considered in light of some limitations. Findings are based on a non-random, purposeful, and relatively small sample of low-income, Latino FCCH providers in four selected communities in MA, U.S., which limits the generalizability of the findings. There is a possibility of selection bias as it may be that providers with a heightened interest in promoting health behaviors chose to take part in the study. Furthermore, providers aware of the importance of health behaviors may have been inclined to give socially desirable responses. The lack of data on providers who did not join the study does not allow for assessment of the extent to which the providers in our sample represented the broader group of Latino FCCH providers. Thus, further research is needed to establish greater generalizability of the findings of the present study and to explore if they are applicable to other ethnic groups of FCCH providers in other parts of the country. Another limitation of this study is the FCCH's limited discussion of sedentary behavior. This may have been due to the content of the FGD guide. Finally, despite the use of a rigorous process of backward-forward translation to ensure the integrity and equivalence of the data, it is possible that some loss of meaning might have occurred in the process. Future research can address these limitations by exploring influences on Latino providers' beliefs, attitudes, and practices from other communities across the U.S., selecting a larger sample size, and using multiple methods of data collection including direct observations.

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401 **CONCLUSION**

402 Increasing evidence indicates the important role FCCH providers play in promoting and
403 modeling healthy eating and physical activity for children in their care. Therefore, interventions
404 targeting FCCH settings should consider health promotion activities to increase FCCH
405 providers' self-efficacy for physical activity and healthy eating, and supports to help providers
406 improve their eating and physical activity behaviors. These efforts would likely improve FCCH
407 providers' eating and physical activity behaviors and promote healthy eating and physical
408 activity behaviors and positive health outcomes of children attending FCCHs.

409 **Abbreviations**

410 FCCHs: Family Child Care Homes; ECE: Early Care and Education; SCT: Social Cognitive
411 Theory; MA: Massachusetts; U.S.: United States; GED: General Educational Diploma; FGD:
412 Focus Group Discussion; FP: Female Provider; MP: Male Provider.

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Table 1. Socio-demographic and acculturation characteristics of focus group participants (n = 44).

Age	**Mean ± SD**	**N (%)**
	41 ± 9.3	
Race		
Hispanic or Latino		44 (100)
Sex		
Female		41 (93.2)
Male		3 (6.8)
Foreign-born		
Yes		42 (95.5)
No		2 (4.5)
Country of origin		
Colombia		12 (27.3)
Dominican Republic		9 (20.5)
Guatemala		5 (11.4)
Puerto Rico		4 (9.2)
Peru		3 (6.8)
United States		2 (4.5)
Mexico		2 (4.5)
El Salvador		2 (4.5)
Honduras		2 (4.5)
Ecuador		2 (4.5)
Cuba		1 (2.3)
Years in the United States	**Mean ± SD**	
	22 ± 3.4	
Predominant language spoken at home		
Spanish		44 (100)
Marin scale acculturation score	**Mean ± SD**	
	2.2 ± 0.9	
Education		
GED*		4 (9.2)
High school graduate		10 (22.7)
Associate		17 (38.5)
Bachelor		12 (27.3)
Missing		1 (2.3)
Annual household income		
Under $25,000		10 (22.7)
$25,000–$50,000		26 (59.1)
More than $50,000		8 (18.2)
Marital status		
Single		2 (4.5)
Married		28 (63.3)
Separated		4 (9.2)
Divorced		8 (18.2)
Widowed		2 (4.5)

* GED: General Educational Diploma

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COREQ (COnsolidated criteria for REporting Qualitative research) Checklist

A checklist of items that should be included in reports of qualitative research. You must report the page number in your manuscript where you consider each of the items listed in this checklist. If you have not included this information, either revise your manuscript accordingly before submitting or note N/A.

Topic	Item No.	Guide Questions/Description	Reported on Page No.
Domain 1: Research team and reflexivity			
Personal characteristics			
Interviewer/facilitator	1	Which author/s conducted the interview or focus group?	2,9
Credentials	2	What were the researcher's credentials? E.g. PhD, MD	1
Occupation	3	What was their occupation at the time of the study?	1
Gender	4	Was the researcher male or female?	2,9
Experience and training	5	What experience or training did the researcher have?	9
Relationship with participants			
Relationship established	6	Was a relationship established prior to study commencement?	8
Participant knowledge of the interviewer	7	What did the participants know about the researcher? e.g. personal goals, reasons for doing the research	8
Interviewer characteristics	8	What characteristics were reported about the inter viewer/facilitator? e.g. Bias, assumptions, reasons and interests in the research topic	9
Domain 2: Study design			
Theoretical framework			
Methodological orientation and Theory	9	What methodological orientation was stated to underpin the study? e.g. grounded theory, discourse analysis, ethnography, phenomenology, content analysis	8
Participant selection			
Sampling	10	How were participants selected? e.g. purposive, convenience, consecutive, snowball	8
Method of approach	11	How were participants approached? e.g. face-to-face, telephone, mail, email	8
Sample size	12	How many participants were in the study?	10
Non-participation	13	How many people refused to participate or dropped out? Reasons?	8,10
Setting			
Setting of data collection	14	Where was the data collected? e.g. home, clinic, workplace	8
Presence of non-participants	15	Was anyone else present besides the participants and researchers?	9
Description of sample	16	What are the important characteristics of the sample? e.g. demographic data, date	Table 1
Data collection			
Interview guide	17	Were questions, prompts, guides provided by the authors? Was it pilot tested?	9
Repeat interviews	18	Were repeat inter views carried out? If yes, how many?	10
Audio/visual recording	19	Did the research use audio or visual recording to collect the data?	9
Field notes	20	Were field notes made during and/or after the inter view or focus group?	9
Duration	21	What was the duration of the inter views or focus group?	9
Data saturation	22	Was data saturation discussed?	10
Transcripts returned	23	Were transcripts returned to participants for comment and/or	N/A

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Topic	Item No.	Guide Questions/Description	Reported on Page No.
		correction?	
Domain 3: analysis and findings			
Data analysis			
Number of data coders	24	How many data coders coded the data?	10
Description of the coding tree	25	Did authors provide a description of the coding tree?	N/A, 10
Derivation of themes	26	Were themes identified in advance or derived from the data?	10
Software	27	What software, if applicable, was used to manage the data?	N/A
Participant checking	28	Did participants provide feedback on the findings?	N/A
Reporting			
Quotations presented	29	Were participant quotations presented to illustrate the themes/findings? Was each quotation identified? e.g. participant number	11-16
Data and findings consistent	30	Was there consistency between the data presented and the findings?	11-18
Clarity of major themes	31	Were major themes clearly presented in the findings?	11-16
Clarity of minor themes	32	Is there a description of diverse cases or discussion of minor themes?	11-16

Developed from: Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *International Journal for Quality in Health Care*. 2007. Volume 19, Number 6: pp. 349 – 357

Once you have completed this checklist, please save a copy and upload it as part of your submission. DO NOT include this checklist as part of the main manuscript document. It must be uploaded as a separate file.