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Nutritional best-practices among child care providers in Washington State

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Abstract

Nutritional best-practices among child care providers in Washington State

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Objective: Explore knowledge and concerns around the Let's Move! Child Care nutritional best-practices among child care providers in Washington.

Methods: Data was collected from an online professional training module for child care providers. We examined providers' knowledge of and behaviors they are willing to do to meet the best-practices by program type and size, provider experience, and written nutrition policy status. Concerns for implementation were analyzed through qualitative thematic analysis.

Results: The final sample included 668 providers. Providers knew most best-practices (88.2%-98.8%), but had lower levels of knowledge about sugary drinks (47.6%) and milk type (65.7%). Concerns for implementation included practical concerns, dealing with picky eaters, and parents not supporting child care nutrition efforts.

Conclusions and Implications: Sugary drinks and milk type recommendations are target areas for future interventions and research among child care providers. More research is needed about how to best integrate parents with child care nutrition efforts.

INTRODUCTION

Early childhood care and education settings are a focus of many national public health organizations because of their potential to promote the development of healthy behaviors and combat childhood obesity.¹⁻⁵ Child care is a growing area of interest in these areas for several reasons.⁶⁻⁷ The majority of children in the US are in care outside of the home regularly. In Washington alone, approximately 128,000 children are estimated to be in child care with 70% of those enrolled full-time (25+ hours per week) and the largest portion being 2-5 year olds.⁸ National reports estimate that 27% of 2-5 year olds are overweight or obese.⁹ Children that are overweight are five times more likely to be overweight when they are adults and have an increased risk for chronic conditions like type 2 diabetes and heart disease.¹⁰⁻¹¹ Behaviors like unhealthy eating and physical inactivity are associated with obesity and its related health complications; these habits are developed during early childhood, making this a critical time that can effect children throughout their lives.¹²⁻¹⁵ Furthermore, there are standards for evidence-based best-practices for eating and physical activity for children aged 2-5 years in child care.^{2,5}

Reviews have shown that there is room for improvement in promoting healthy behaviors and meeting recommendations for both nutrition and physical activity in child care settings.^{5,7} Studies and interventions to improve nutrition and increase physical activity in child care settings are limited and often have mixed results,¹⁶⁻¹⁷ but there is evidence for the importance of providers' practices, knowledge, attitudes, and beliefs.¹⁸⁻²⁰ These findings coincide with the Social Cognitive Theory²¹ and the Health Belief Model²² that knowledge, self-efficacy and perception of barriers and attitudes can impact behavior. State regulations can have a direct impact on provider education through continuing education requirements and trainings. Life-

style and nutrition training efforts for early-childhood professionals and teachers have been shown to positively impact child care center environments, policies, and practices.^{20,23}

The University of Washington Center for Public Health Nutrition (CPHN) has partnered with the WA State Department of Health and the Centers for Disease Control and Prevention (CDC) to provide trainings for child care providers and increase access to and implementation of recommendations from the Let's Move! Child Care initiative.²⁴ In 2013, CPHN created a healthy eating free online training module that provides continuing education credits for licensed child care providers in Washington.²⁵ The responses to interactive questions from this module are examined in this secondary data analysis to further the understanding about child care providers and nutrition best-practices. The three study questions are: 1) What is the current level of child care providers' knowledge surrounding the seven nutrition best-practices for Let's Move! Child Care and are there differences in provider knowledge by size and type of program, years of experience, and policy status? 2) What behaviors do child care providers say they will do to meet best-practices, and what concerns do they have for implementing them? And 3) What is the status of written nutrition policies at different types of child care programs and are there concerns regarding having a written policy?

METHODS

Data Collection

The CPHN Let's Move! Child Care: Healthy Eating training module²⁵ focuses on seven specific best-practices for children aged 2-5 (see Table 1) and takes about one hour to complete. As child care providers make their way through the interactive module, they provide data on their current knowledge, indicate what behaviors they would be willing to adopt to achieve the

best-practices, and list concerns they have about meeting them. The module also asks providers if they have a written food/beverage policy for their program and what concerns they have about adopting and implementing policies about food.

Table 1: Best-Practices in the Let’s Move! Child Care: Healthy Eating Training Module

Topic	Best-Practice
Water	Drinking water is visible and available for self-serve inside and outside
Sugary Drinks	Sugary drinks are never offered to children
Juice	Children are offered no more than one 4-6 oz serving of 100% fruit juice a day, or less
Milk	Milk served to children ages 2 years and older is always 1% low-fat or non-fat milk
Fruits and Vegetables	Fruits and/or vegetables are offered at every meal and snack
Fried Foods	Fried or pre-fried and then baked vegetables and meats are served no more than once a month
Family Style Dining	Meals and snacks are served by placing the food on the table and having children serve themselves and eat together

Note. “Sugary drinks” include fruit drinks, sport drinks, sweet tea, and soda.

Pre-testing the module with the target audience and requiring responses for most questions before moving to the next section assured data completeness and quality. Completing open-ended questions about concerns was not required. As the module provided continuing education credits for Washington State, Washington child care providers were incentivized to engage with and complete the training. The current study was approved with an expedited review by the Human Subjects Review board at the University of Washington (Jan 2015). Training module response data was analyzed for participants who completed the training between June 27, 2013 and November 4, 2014 and provided a zip code for Washington State.

Measures

Three measures were used to describe provider and child care characteristics. The four categories for program type and size are: Family Home Child Care (Homes, 0-19 children), Small Centers (0-19 children), Mid-sized Centers (20-50 children), and Large Centers (50+ children). Child care providers were grouped into three categories based on years of experience in child care: 2 years or less, 3-10 years, and 10+ years. Providers were also grouped into five categories regarding their programs written nutrition policy status: having a written nutrition policy with all of the best-practices, having a written nutrition policy with some of the best-practices, not having a policy but thinking it is a good idea, not having a policy and not interested in creating one, and “other” which allowed for open response.

The main outcome in this exploratory study is knowledge of best-practices, which was determined by responses to questions about what the exact recommendation was for six of the seven practices. For the family-dining best-practice, providers were asked to select all of the known benefits with “all of the above” being the correct answer. Other outcomes of interest in this study include behavior selections for each best-practice and open response concerns that providers wrote about meeting the best-practice recommendations and having a written policy.

Analysis

We calculated overall percentages of correct answers for each of the best-practice knowledge questions and then calculated percentages with correct answers for each best-practice broken down by program type and size, years of experience and written nutrition policy status. Binary regression analyses were also performed but are not included in this report [1].

To answer the second question, specific behaviors providers reported they would do for each best-practice were totaled and examined by percentage for program type and size.

Qualitative thematic analysis²⁶ was used for open responses on concerns providers had about doing these behaviors or meeting the recommendations to identify recurring themes. The responses to these questions were read and a coding structure was then developed. Responses were then uploaded to a qualitative data management software and coded (Atlas.ti version 7.5.6, Scientific Software Development GmbH, Berlin, Germany, 2015). Thematic analysis, including looking at co-occurring codes, depth and frequency, was used to identify recurring themes and formulate results.

For the third question, written nutrition policy status was examined by program type and size. The same process for developing codes and identifying themes was done for the open response concern questions about having a written nutrition policy.

RESULTS

Provider Characteristics

Between the study dates, 734 respondents provided a zip code from Washington. Responses from school-age programs and those classified as “other” than a center or home-based child care were removed from the sample. Additionally, ten homes that reported serving more children than home-based child cares are allowed were removed. See Table 2 for a summary of the final 668 respondent sample. The sample was not evenly distributed between groups on characteristics measures. About 17% of the sample did not have a written nutrition policy, but with a few different meanings. Most of those in the “other” category for policy status were unsure of if their program had a policy or not.

Table 2: Characteristics of the Study Sample

Predictor Variable	Number	Percentage
Program Type/Size		
Home	85	12.7%
Small Center	76	11.4%
Mid Center	112	16.8%
Large Center	395	59.1%
Provider Years of Experience		
2 years or less	103	15.4%
3 to 10 years	265	39.7%
10 or more years	300	44.9%
Have a written nutrition policy?		
Yes with all BP*	370	55.4%
Yes with some BP	184	27.5%
No but would be helpful	69	10.3%
No and not inclined	28	4.1%
Other	17	2.5%

*BP=Best-practice

Research Questions

1) Current level of knowledge and differences between groups. For five of the seven best-practices covered in the training module, over 88% of respondents chose the correct answer. These include the best-practices for water, 100% juice, fruits and veggies, fried foods, and family-style dining. Two best-practices had much lower correct response rates, sugary drinks (47.6%) and milk (65.7%, see Figure 1).

Figures 2 and 3 present a breakdown of the two lowest-scoring best-practices based on the program and provider characteristics. Based on these calculations and similar ones performed for the other best-practices (not shown), neither program type and size, provider experience, and having a written nutrition policy had a consistent pattern related to knowledge level.

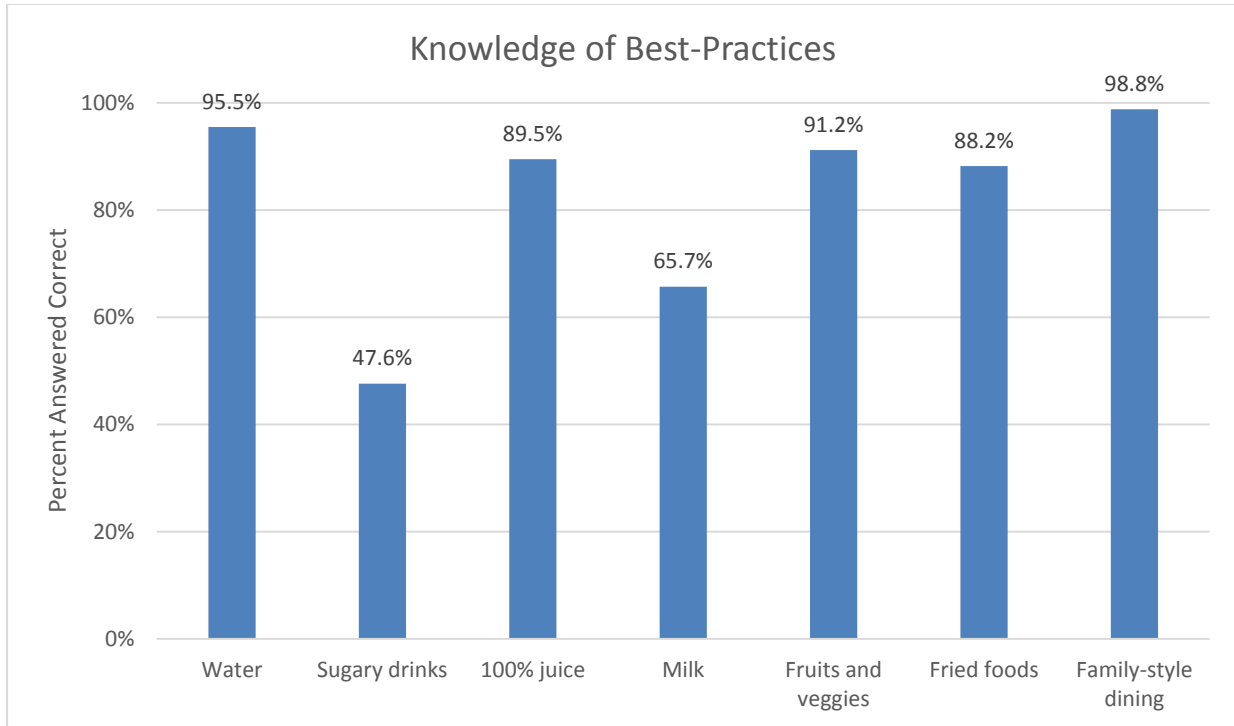


Figure 1: Percentage with correct answers for nutrition best-practices

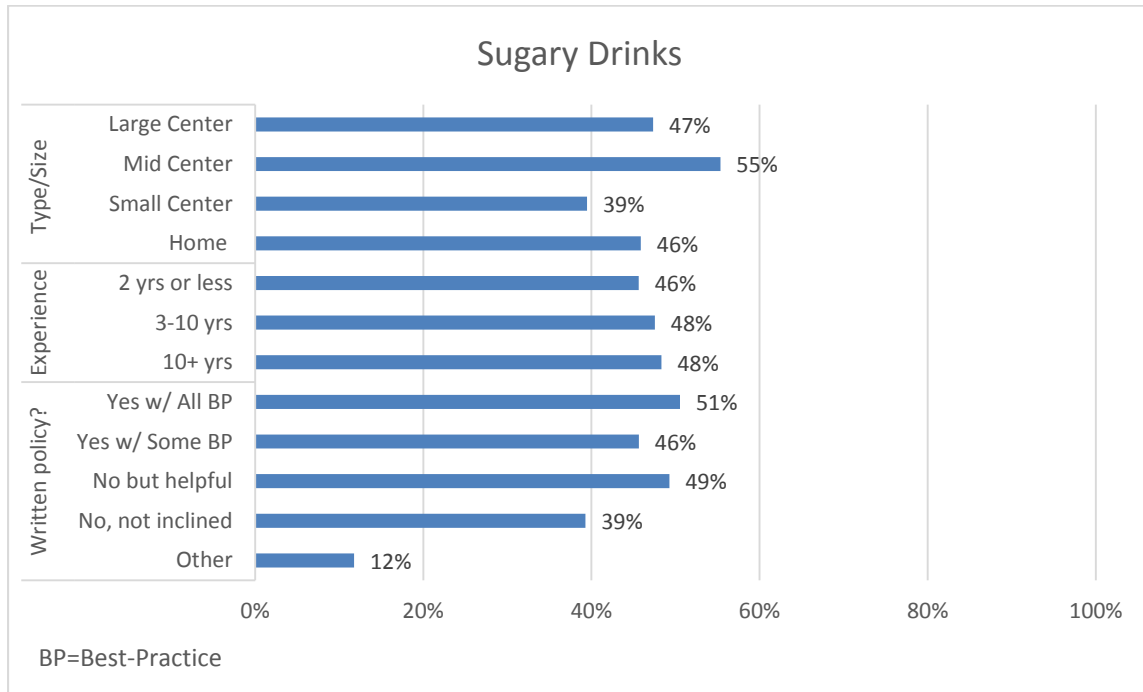


Figure 2: Percentages with Correct Answer for Sugary Drinks

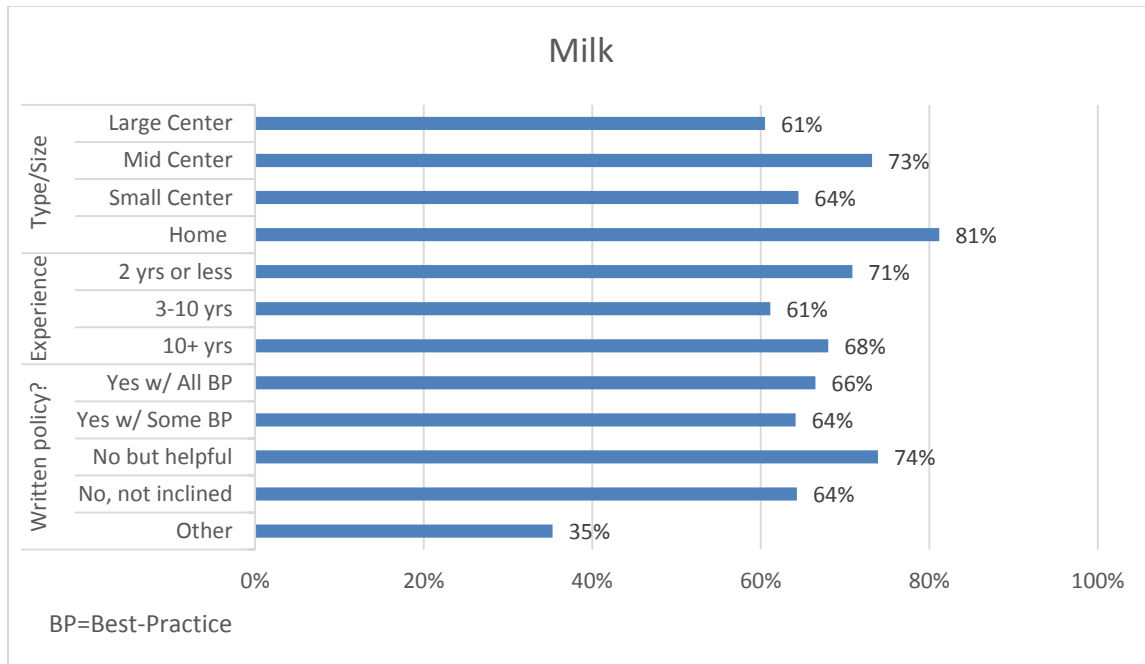


Figure 3: Percentages with Correct Answer for Milk

2) Behaviors and concerns regarding meeting best-practices: See the Appendix for a visual presentation of the behaviors providers indicated they would adopt to meet best-practices by program type and size. Overall, providers indicated they would adopt many behaviors. Table 3 presents the most popular choices for each of the best-practices with percentages by program type. This behavior selection activity was not in the training module for the fried food recommendation and family-style dining so data for these behaviors was not collected.

With a few exceptions, providers working at large centers are generally more willing to do the behaviors provided and those working at small centers were least willing with mid-size centers and homes usually falling somewhere in between. However, these differences between program type and size are generally minimal. With the exception of creating or supporting a policy for never offering sugary drinks, behavior options that included supporting policies or talking with parents about these practices were not as popular as others.

Table 3: Most popular behavior selections for meeting best-practices

Best-Practice	Behavior Option	Homes	Small Centers	Mid-sized Centers	Large Centers
Water Availability	Make a large cooler or pitchers of water with cups available for self-serve throughout the day	89%	84%	83%	66%
	Bring water and cups outside (or have a more permanent water source outside)	80%	64%	79%	84%
Never offer Sugary Drinks	Create/support a policy that specifies sugary drinks are NEVER offered	88%	86%	87%	93%
	Model healthy behavior by not drinking these beverages in front of the children	80%	76%	88%	89%
	Include lessons on healthy beverage choices to help children understand why sugary drinks are not offered	81%	76%	84%	91%
Limit amounts of 100% Juice	Encourage children to drink water throughout the day	87%	84%	95%	94%
	Encourage children to drink water and milk at meals and snacks	89%	83%	93%	91%
	Provide parents with a letter or a newsletter article about limiting 100% juice	69%	70%	79%	81%
1% or non-fat milk for 2-5 year olds	Buy 2 different kinds of milk: whole for those under two years and 1% or non-fat for those over two years	66%	46%	67%	71%
	Only buy 1% or non-fat milk	53%	62%	58%	50%
Serve Fruits and Veggies	Provide fruit or sliced veggies for snacks	88%	88%	88%	92%
	Serve fresh, frozen, and canned fruits and vegetables; they all count	82%	79%	81%	82%
	Mix vegetables into dishes, like adding peas to rice, or cucumbers to a sandwich	79%	75%	83%	84%

Roughly one-third of participants answered the open response questions asking for concerns or comments about meeting recommendations for each best-practice. Some of these providers took this open response opportunity to express agreement with or confirm that the best-practice is helpful or important or simply say they have no concerns. The limited number of concerns that were provided generally fell into four overarching themes.

Theme 1: There are practical or logistical barriers to meeting many of the best-practice recommendations. Some providers expressed concern that meeting the recommendations would lead to more messes and higher cost, and require more time. Some commented on the higher cost of fruits and vegetables, the longer time it takes to prepare them, or spills and messes from allowing children to serve themselves. Providers may not be in control of the menus served at their program and the classroom space can limit their ability to meet the recommendations.

Theme 2: Young children are often picky eaters. The ideas that children may not like the taste of new foods (low-fat milk or vegetables) or that children have a hard time trying new foods were repeated often. A few providers expressed interest in learning ways to get children to try new foods.

Theme 3: Some providers lack trust in the ability for children to regulate their own intake. The approach of self-serve family style dining is based on evidence that children will learn how to self-regulate their food and beverage intake and eat what they need to grow and be healthy.²⁷ Some providers did not exhibit this trust and expressed concern that children would not choose healthy foods, overeat the less healthy options, drink too much and not eat, or not get enough calories.

Theme 4: Providers feel that parents are often not supportive of child care healthy eating efforts. The idea of unsupportive parents was very prevalent among the comments that were provided. Examples of this were seen in comments about parents continuing to send sugary drinks or juice to school in lunches, bringing soda or treats for birthdays or special occasions, and concerns that written policies would not be followed. Providers also expressed concern about communicating to parents about these things and not wanting to offend parents. Other recurring concepts were that providers felt parents were not as concerned with healthy eating as they were,

that efforts were not being reinforced at home, and that parents in general lacked education about these topics.

3) Written nutrition policy status, differences by type/size, and concerns: The majority of respondents said they already have a written nutrition policy or responded positively to the idea. See Figure 4 for a display of written policy status by program type and size. Those that expressed concerns about having one were mostly concerned about parents not following the policy and how to communicate the policy in a way to not offend parents. Very few providers did not see the need for a written policy or felt that it would be too restrictive.

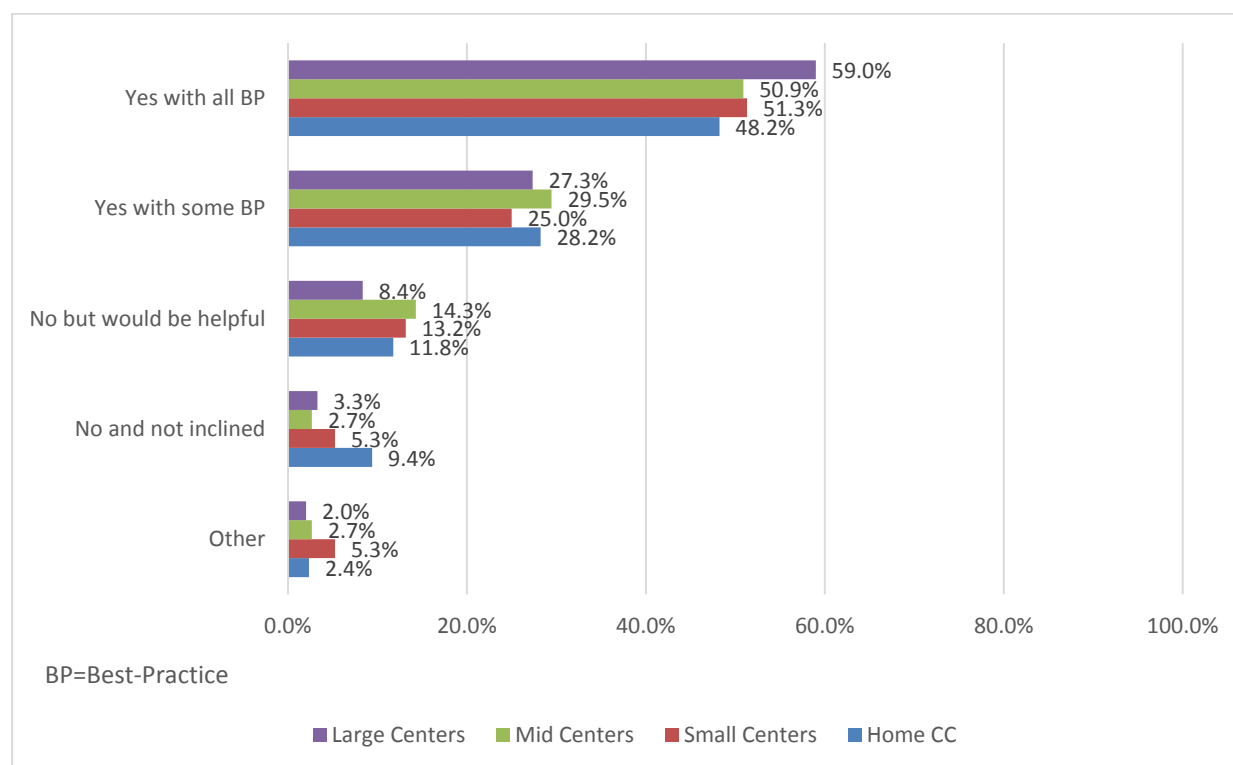


Figure 4: Written Policy Status by Program Type/Size

DISCUSSION

Overall, the high percentages for correct answers show that many of the child care providers that took the training know most of the Let's Move! Child Care nutritional best-

practices. Few studies use knowledge of best-practices as an outcome,²⁸ however, reviews endorse more education of best-practices among child care providers.^{7,16,29} The level of knowledge found in this study may be higher than the general level of knowledge among all child care providers for several reasons. Providers with an interest or background in nutrition may be more likely to select a training about nutrition. There also was not an option for not knowing the best-practice and respondents could have guessed the right answer or just chosen the one they thought was desired. The extremely high level of knowledge for family-style dining is due to a different question format where participants were asked to select all of the known benefits of the practice rather than select what family-style dining is.

The lower levels of knowledge for the sugary drinks and type of milk recommendations are difficult to interpret but may highlight a lack of consistent messaging for these topics from other sources.⁷ A recent survey among child care providers in Washington shows that 83% of centers and homes surveyed never serve any sugary drinks,⁵ which is not what would be expected based on the level of knowledge for those that participated in the training. More research, especially qualitative research, may be needed to better understand this issue. The confusion surrounding the milk fat recommendation has been seen in other studies³⁰⁻³¹ and may be the result of mixed messages and controversy over dairy milk in general.

The lack of a consistent trend and differing levels for best-practice knowledge and characteristics alludes to best-practices being context specific and that high knowledge for one does not necessarily suggest high knowledge for all. The general high level of knowledge about many best-practices indicates that efforts to educate providers have been successful. Not all providers recognized the best-practices though, so many providers would probably benefit from more education about sugary drinks and milk.

A recent survey of child care providers in Washington showed similar results for programs having a written nutrition policy.⁵ It is still unclear how written policies, and their quality, impact practices at child care. Written policies are currently included in some interventions targeting child care providers and nutrition practices,³² which speaks to the impact they are thought to have on behavior and implementation. In this study, having a written policy was not a predictor for a higher level of knowledge [1]. This could simply be because most providers in the sample said they already had a written policy and most answered the knowledge questions correctly. The question remains of whether having knowledge of best-practices would make a provider more likely to create or support a policy, or if having a policy would make a provider more likely to know the best-practice recommendations.

The prevalence of concerns related to communicating with parents about nutrition best-practices and parents not supporting health policies speaks to a real challenge experienced by child care providers. Overlaying these concerns was a concern that the nutrition efforts of child care programs are not being reinforced at home. According to those who provided comments about this, it seems like parents face many barriers to healthy eating with their children and may not know nutrition recommendations. Other studies have looked at parents' concerns for child care and nutrition and confirmed these barriers,³³⁻³⁵ but more research is needed on how to address this.³⁶

Limitations

This study took advantage of existing data from a training module so there are limitations, such as potential selection bias, as a result of not being a representative sample and using a data collection instrument designed for the purpose of interacting with and informing providers. Child care providers that are not licensed and do not need continuing education credits

or those that do not choose an online training about nutrition are not included in the sample. As data was collected by a training module that did not require “correct” responses and not a research questionnaire, the truthfulness and accuracy of the data may also be biased. Those that provided open responses and concerns may differ in some systematic ways than those that skipped those questions, and not all of the concerns that child care providers face may be represented in the sample. While these limitations are noteworthy, the study did have a large sample and was exploratory in nature. This analysis took advantage of existing data to gain insight on how programing and education efforts for child care providers could be improved.

IMPLICATIONS FOR RESEARCH AND PRACTICE

This secondary data analysis shows that licensed child care providers in Washington may already have a high level of knowledge regarding nutritional best-practices. Messaging about sugary drinks never being served and serving either 1% or non-fat milk to children over two could be the target of future education efforts. These education efforts are needed across child care groups, for different sized centers and homes and providers with all levels of experience.⁷

Child care providers seem genuinely willing to engage in behaviors that promote health and good nutrition.²⁸ The behavior selections for each best-practice were relatively high, and intervention programs could focus on these behaviors to encourage best-practice implementation. From these behavior selections, we do not know if any of these are things that child care providers currently do, which could be the focus of future research. Others have gathered implementation data among child care settings either through survey,⁵ observation,³⁷ or both,^{30,38} but they have generally not focused on specific behaviors that can be done to help meet the best-practices. Implementation related areas that need more emphasis in future research regarding

nutrition best-practices at child care include dissemination methods, strategies that are generalizable across different types of child care settings, environmental and policy factors affecting implementation, and ecological approaches that incorporate context.³⁹⁻⁴² These areas would provide a further understanding of the contextual factors and practical hurdles that influence the implementation of best-practices among child care providers.

Child care providers expressed several concerns about working with parents and the division between nutrition efforts at child care and at home. Parents should be engaged in both research and intervention planning to help improve implementation and outcomes of child care nutrition efforts.³⁵⁻³⁶ Child care providers may need technical assistance or training on how to communicate with unsupportive parents. Providers may also benefit from recommendations addressing the issue of best-practices, like family-style dining and learning to self-regulate, not being offered consistently for young children who attend child care and have homes environments that do not use the same approaches. Child care has the opportunity to interact with and promote healthy approaches to food and nutrition for families with young children. The relationship between parents and child care providers and how both can work together to support healthy growth and development of children should continue to be explored.^{34,43}

Child care settings provide a unique opportunity to promote healthy behaviors and eating with the potential for life long impact. Improving the implementation of best-practices among child care providers is an important focus for research and interventions. Overall, child care providers in Washington are knowledgeable of nutrition best-practices, but there may still be specific gaps that should be addressed and future interventions and education efforts need to address the context specific implementation barriers that child care providers face, including parents not supporting their efforts to promote healthy eating.

Footnote

[1] Binary logistic regression models were performed to determine if provider knowledge differs significantly by the characteristics of program type and size, years of experience, and written nutrition policy status. Three subsequently building regression models of these predictor variables were performed for each best-practice knowledge binary outcome. A Bonferroni correction for the alpha level of 0.05 resulted in a p-value <0.0024 needed to determine a statistically significant difference. Models were run using Stata statistical analysis software (Stata MP version 13.1, StataCorp LP, College Station, TX, 2013). None of the predictor variables groups were consistently associated with higher levels of knowledge across the best-practices from these binary regression models. This is probably due to the general lack of variability in the outcome for most of the best-practices and biased results from what people really know and what they think the answer should be for the training module. As such, the results from these analyses are not included in this report.

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APPENDIX

Displays of all the behaviors selections for each best-practice by program type/size.

As part of the module, providers were asked “What would you do?” after learning the best-practice recommendation and could indicate any of several specific behavior options that were offered from a list. This question was not asked for the best-practices for fried food or family-style dining, so data was not collected for these recommendations. Figures 5-9 present the percentages by program type/size for the all of behaviors offered in the module.

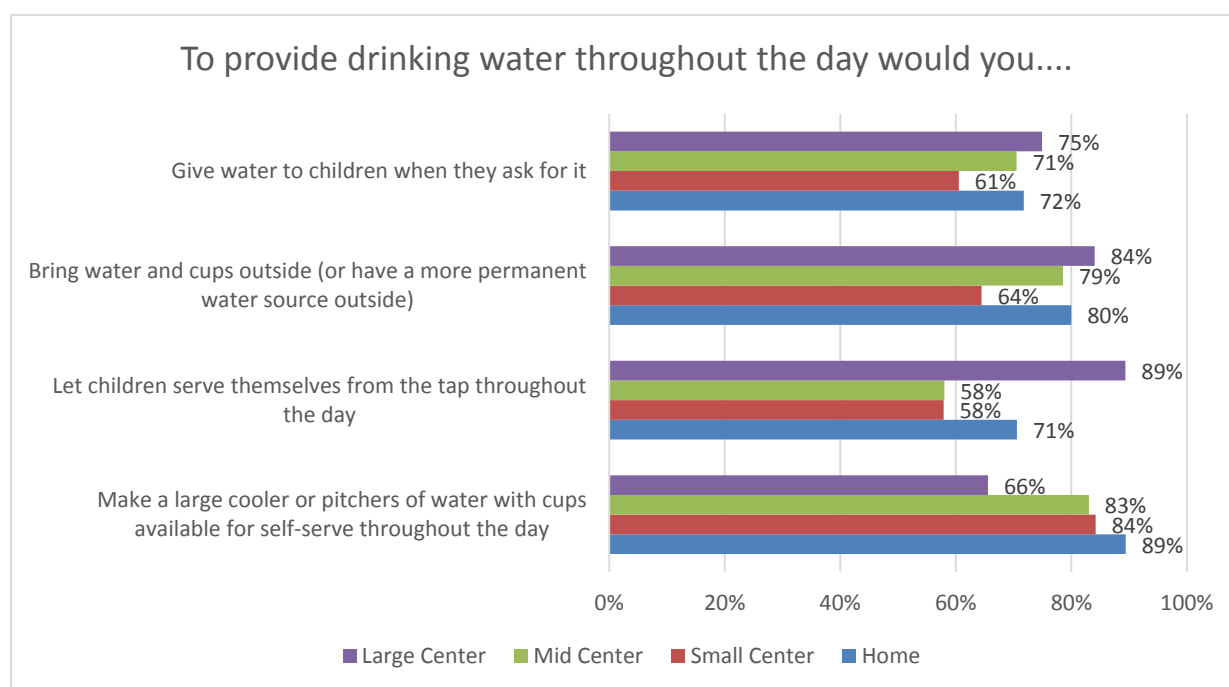


Figure 5: Behavior selections to meet the water best-practice

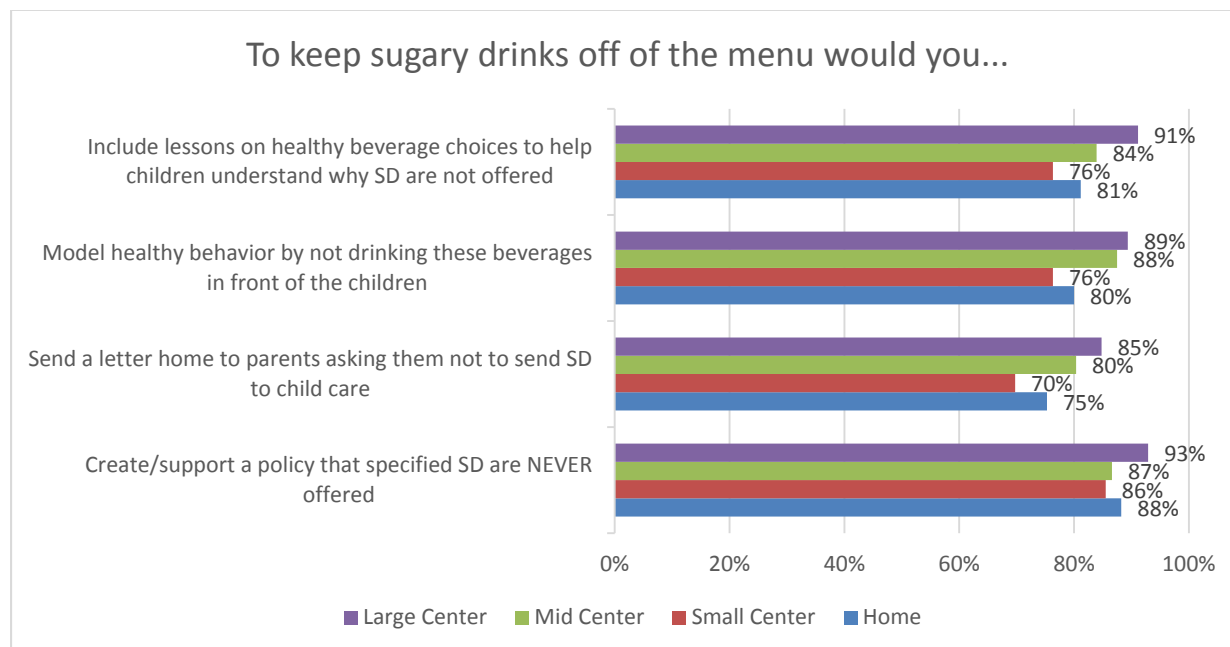


Figure 6: Behavior selections to meet the sugary drinks best-practice

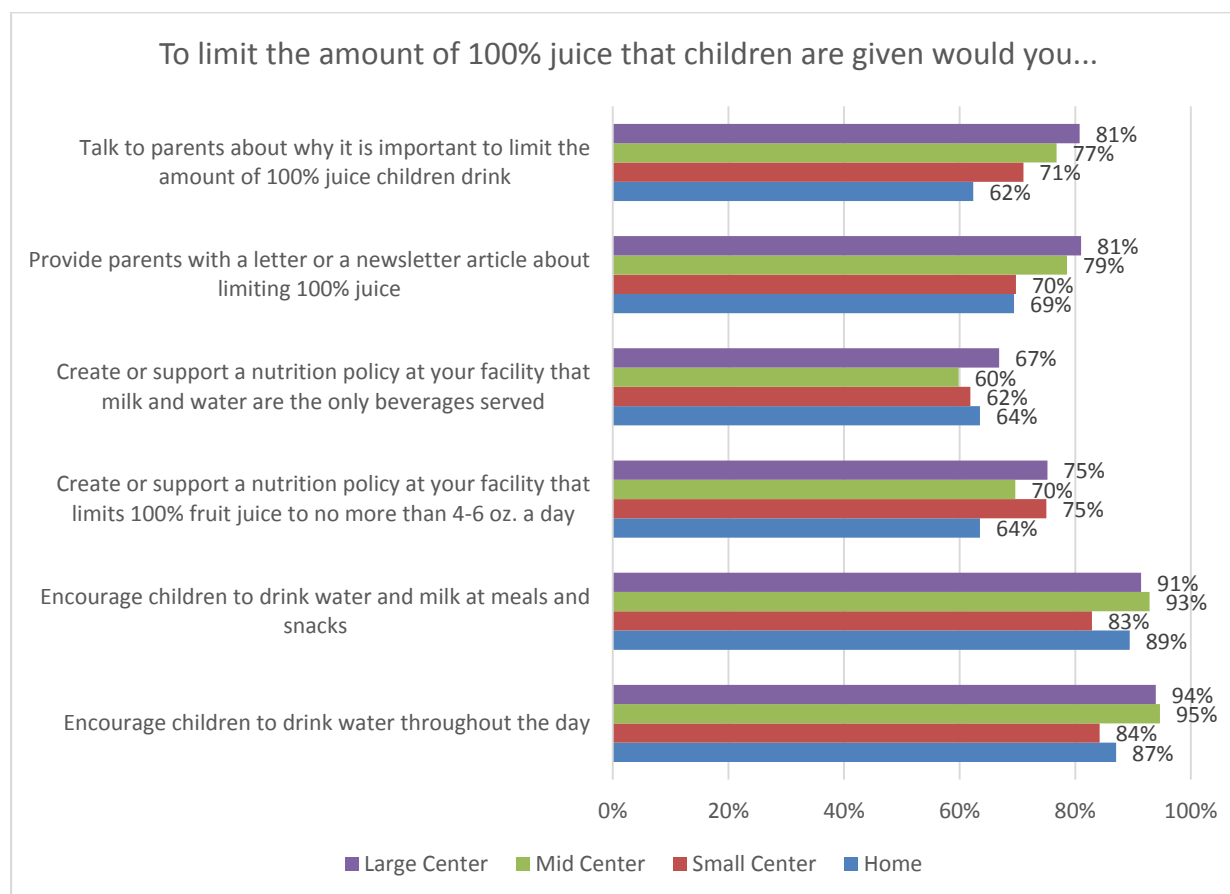


Figure 7: Behavior selections to meet the 100% juice best-practice

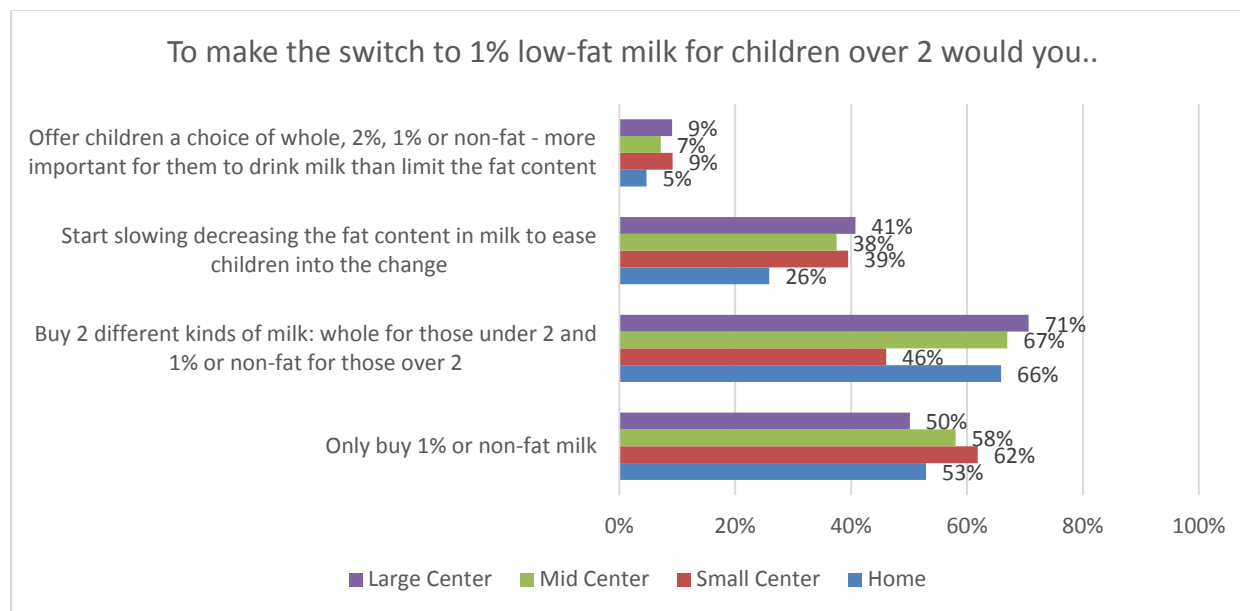


Figure 8: Behavior selections to meet the milk best-practice

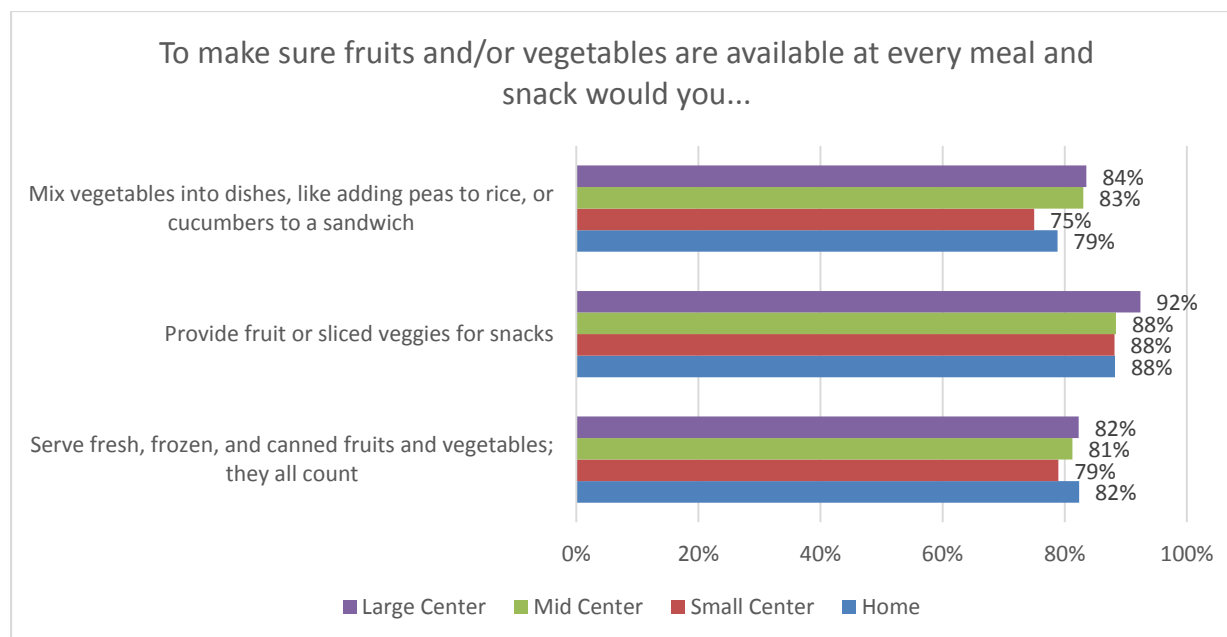


Figure 9: Behavior selections to meet the fruits and veggies best-practice