

IMPACT OF COVID-19 ON FOODSERVICE OPERATIONS WITHIN URBAN KANSAS CHILDCARE CENTERS

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ABSTRACT

PURPOSE/OBJECTIVES

The purpose of this study was to identify the ways in which the COVID-19 pandemic affected foodservice operations within urban Kansas childcare centers.

METHODS

Three COVID-19-related questions were added to an online survey of Child and Adult Care Food Program (CACFP) participating childcare centers located throughout Kansas. Responses were collected from July through August, 2020. Descriptive statistics and thematic analysis of open-ended responses were used to identify common concerns.

RESULTS

Seventy-nine of the 138 childcare centers invited to complete the COVID-19-related questions responded (57.2% participation rate). The majority (n = 56, 70.1%) reported decreased enrollment, whereas a small number (n = 9, 11.4%) reported an increase. Approximately two-thirds of the centers (n = 49, 62.0%) reported foodservice operation modifications owing to COVID-19-related challenges. Three overarching themes were discovered within the centers' responses: a) procurement challenges including decreased availability and increased cost of foods, b) changes in meal service including shifting to disposable tableware and ceasing family-style meal service, and c) menu and production changes in response to enrollment changes and product availability issues.

APPLICATION TO CHILD NUTRITION PROFESSIONALS

Future consideration for CACFP participants include shifting to more shelf-stable foods when faced with food availability issues and utilizing more cost-effective food purchasing options, which might be attained through group purchasing organizations. Well-developed emergency plans such as emergency menus should include plans for procurement challenges. Resources and training to increase understanding and knowledge of CACFP meal pattern guidelines may make menu changes based on availability easier or less challenging. Best practice guidelines, such as family-style meals, may have to take health and safety measures into consideration. As centers continue to experience COVID-19-related issues and plan for a "return to normal", child nutrition professionals can fulfill an important role in helping centers adapt their foodservice operations to meet the challenge.

KEYWORDS: Early Care and Education, Child Nutrition, COVID-19, Foodservice, Food Procurement

INTRODUCTION

The COVID-19 pandemic presented a time of unprecedented challenges, leaving a profound impact on all aspects of life. In Kansas, childcare centers were deemed an essential service and allowed to remain open during the state's March 2020 stay-home order (Exec. Order No. 20-16, 2020). At the time of the order, many childcare centers faced the conundrum of whether to remain open or close their doors. Remaining open brought forth an array of challenges. In May of 2020, the Kansas Department of Health and Education (KDHE) provided interim COVID-19 guidelines for licensed childcare facilities. These guidelines addressed many operational procedures resulting in increased financial burdens. Examples include a) additional personnel costs related to having staff create or update facility policies and procedures, having to review child and staff health screenings, and having to utilize employees to take children to their classrooms to reduce foot traffic through the facility, b) additional supply costs related to having to increase environmental cleanings and hand sanitizing station availability, and c) potential income losses from closures due to COVID-19 exposures (KDHE, 2020). Operational hours may have also been impacted by the recommendation to maintain small stable groups which meant classrooms could not be consolidated and floating staff could not be utilized.

Childcare centers also faced supply challenges ranging from cleaning materials to food. Centers participating in the Child and Adult Care Food Program (CACFP) had to continue to meet meal pattern guidelines in order to receive reimbursement. April 2020 guidance from KDHE no longer encouraged family-style meals but did recommend continuing the practice of staff sitting with children during meals (KDHE, 2022).

Given the widespread challenges brought about by the COVID-19 pandemic, the purpose of this study was to identify the ways in which the pandemic affected the foodservice operations within urban Kansas childcare centers.

METHODS

The following questions were added to a pre-existing online survey of urban Kansas childcare centers participating in CACFP:

- Is your center temporarily closed due to COVID-19? (yes or no)
- Has the number of children enrolled in your center changed due to COVID-19 (e.g., reduced class sizes from precautions, parents dis-enrolled children, etc.)? (yes, our enrollment has decreased; yes, our enrollment has increased; no, our enrollment is about the same as pre-COVID-19)
- Have your center's foodservice operations and/or menu options been altered as a result of COVID-19 precautions? (yes or no; if yes, please explain)

The original pre-existing survey was designed to explore vegetarian menu substitution practices occurring within childcare centers and to describe roles of the health and nutrition professionals involved in foodservice operations (Jindrich, et al., 2022). The original survey, sans the COVID-19-related questions, was first distributed March 7, 2020. Data collection was temporarily stopped on March 26, 2020 when all non-essential research activity was suspended. As it became clear the COVID-19 pandemic was impacting childcare centers and the food supply, the COVID-19-related foodservice questions were added to the original survey prior to its re-distribution on July 7, 2020.

The initial survey and its revision were approved by Kansas State University Committee on Research Involving Human Subjects prior to implementation. The re-distributed survey containing the COVID-19-related questions was emailed to 138 childcare centers via each center's point of contact listed on the Kansas State Department of Education (KSDE) 2019 CACFP roster (KSDE, 2019). Centers were offered a food thermometer as incentive. Non-responding centers were sent a follow-up email and at least two attempts were made to contact all non-responding centers by phone. Survey response collection ended August 25, 2020. The following two weeks, researchers attempted to contact centers when clarification of survey responses was needed.

Descriptive statistics were used to quantify closures, enrollment changes, and alterations to foodservice operations and/or menus. Thematic analysis of open-ended responses was used to identify common concerns. Three researchers performed the qualitative thematic analysis. The senior researcher had experience in child nutrition operations and completed formal training on qualitative data analysis. The two junior researchers were trained by the senior researcher. Using constant comparison (Leech & Onwuegbuzie 2007), responses were read separately by the researchers to gain familiarity with the data. Each researcher then used a deductive approach to label each meaningful piece of data and develop an independent list of themes. The independently developed labels and themes were reviewed by all three researchers and the final list of study themes was developed through researcher consensus.

RESULTS AND DISCUSSION

Of the 138 childcare centers emailed the COVID-19-related questions, 57.2% ($n = 79$) responded. This is higher than the response rates of 40%, 48%, and 54% achieved in prior single-state childcare surveys conducted among Maryland, North Carolina, and Nebraska centers, respectively (Bandy et al. 2019; Bussell et al., 2018, Dev et al., 2019). Childcare centers from all eight urban areas within Kansas were represented among the respondents of which two-thirds ($n = 25$, 67.1%) were not-for-profit centers.

The majority of responding centers (70.1%; $n = 56$) experienced a decrease in enrollment whereas 11.4% ($n = 9$) experienced an increase. Three of the 76 responding centers (3.9%) reported being temporarily closed. These findings are generally consistent with observations from a national survey conducted by the National Association for the Education of Young Children (NAEYC) during the summer of 2020. In this NAEYC survey of center and home-based childcare programs, 86% of respondents from programs that were open reported their enrollment numbers were down compared to their pre-pandemic numbers. Moreover, nearly 50% of the programs were closed at some point during the first months of the pandemic and 18% of the childcare centers remained closed during the early summer months of 2020 (NAEYC, 2020). Similarly, the Food Research and Action Center (FRAC) reported the total number of CACFP meals served from March to September 2020 decreased 41% compared to the same time period in 2019 (FRAC, 2021). As suggested by both the current study's findings and that of the NAEYC survey, the drop in foodservice operations output noted in the FRAC report was likely due in large part to center closures and decreased enrollment.

In the current study, nearly two-thirds of the centers surveyed (62%; $n = 49$) reported foodservice operation changes due to COVID-19-related challenges. Three overarching themes were

discovered: a) procurement challenges including decreased availability and increased cost of foods, b) changes in meal service including shifting to disposable tableware and ceasing family-style meals, and c) menu and production changes due to enrollment changes and product availability issues. The themes with illustrative quotes are in Table 1.

Table 1. *Open-Ended Responses to COVID-19 Impact on Foodservice Operations and Menu Choices*

COVID-19 Impact	
<p>Procurement challenges including decreased availability and increased cost of foods</p>	<p>“There is shortages of canned items and that did cause a bit of changes but overall still similar” “Limited supplies at the stores” “Higher cost of food has caused menu changes.” “It has become a lot harder to purchase foods.” “Our owner has to go to 4-5 stores to purchase what we need & he has started buying non-perishables about 4 weeks ahead to have time to find the quantities we need.” “Finding foods and milk that meet the requirements. Our food budget has increased due to price increases.”</p>
<p>Changes in meal service including shifting to disposable tableware and ceasing family-style meal service</p>	<p>“No self-serve, paper products, simpler meals” “The teachers have to plate all the meals, [whereas] before COVID-19, we did family style dining.” “We are no longer serving family style.” “We have had to change from family style to having all meals prepackaged.” “We are not serving family style right now and we are using a lot of disposable items. We are seating children and teachers 6 feet apart.”</p>
<p>Menu and production changes due to enrollment changes and product availability issues</p>	<p>“Temporarily, we followed a "rebound" menu after we reopened and have had to make adjustments as our food service distributor is out of things.” “Menus adjusted to accommodate for items we cannot find” “Our menu has changed when there was a shortage on meats and other foods. Milk was also limited to a certain amount that could be purchased and we had to buy the types that was available.” “We are utilizing a limited menu based on the small number of children we have and due to many items not being available at time of order. - US Foods offers a substitute, but it is often more expensive or too large a quantity.” “As a result of COVID-19 our numbers did go down to about 10 with an average daily attendance of 8 We used to have lunch catered as some of the facilities do...[but] we did drop that and have started cooking our own meals.” “Some whole grain/whole wheat items have been unavailable, so we have had to adjust daily grain components.” “Previously used [company’s name] catering, stopped using him, now make onsite meals d/t so many kids unenrolling.”</p>

Similar procurement challenges were expressed when the CACFP Roundtable organization gathered stories from its members. The stories gathered reiterate the sentiments and themes collected in this current study. Rachel, who shared her California-based center's challenges stated, "We went to get the food from local market places, but we were limited even to get only one gallon of milk" (CACFP Roundtable, 2020d). Family childcare providers in California and West Virginia shared stories detailing the significant time and effort it took to secure food for the children in their care (CACFP Roundtable, 2020c; CACFP Roundtable, 2020b). While neither our results nor the CACFP Roundtable stories can substantiate the degree to which procurement challenges affected centers nationwide, they provide a unified voice in highlighting the experiences of childcare providers as they navigated pandemic-related procurement challenges.

The food supply issues that plagued the United States in the height of stay-home orders resulted in challenges for the childcare centers included in this study. The U.S. Bureau of Labor Statistics found at-home food prices jumped 4.3% from March to June 2020 (Mead et al., 2020). While all grocery store food categories saw price increase, the rise was significantly high for meat, fish, dairy, and eggs (Mead et al., 2020). One might speculate centers likely faced financial challenges as food cost increased, enrollment decreased, and increased CACFP reimbursement rates were not available during this time to offset the challenges of COVID-19 (CACFP, 2020a; National CACFP Sponsors Association, 2021). Foodservice changes such as transitioning to all disposable products were attributed as a reason for increased expenditures as well (CACFP Roundtable, 2020a). Other sources of increased operational costs for centers included cleaning supplies, personal protective equipment, and necessary facility changes (NAEYC, 2020). Additional research is needed to establish the prevalence of these challenges and to explore the relationship between these challenges and nutrition-related outputs such as the dietary quality of the meals served.

CONCLUSIONS AND APPLICATIONS

The findings of this study illustrate the ways in which COVID-19 affected foodservice operations within urban Kansas childcare centers. The majority of centers reported altering their foodservice operations. The pandemic decreased availability and increased the cost of foods, prompted changes in meal service, and resulted in menu and production changes. Despite the challenges listed, the full impact of these changes is of yet unknown.

Childcare meals are an important public health matter. The childcare system in the United States has a critical responsibility in promoting the health and development of young children, but the system is fragmented and fragile (Bauer, et al., 2021). Barriers to implementing best food and beverage practices had been well documented prior to the COVID-19 pandemic. In a 2017 survey of Nebraska childcare providers, 31.1% of urban centers reported "limited space for food storage" while 29.9% reported "limited time to shop more than once/week" and 28.8% reported not having "enough money to cover the costs of serving healthier meals and snack" (Dev et al., 2019). Similarly, in a survey of North Carolina Head Start organizations, the most commonly reported barrier to offering healthy meals and snacks was limited funding (Bandy et al. 2019). In all, it would appear COVID-19 brought additional burdens to childcare facilities, many of which were already struggling to provide healthy meals and snacks.

The insight gained on the specific foodservice challenges CACFP childcare centers experienced as a result of COVID-19 can help shape future policies and practices. Many childcare centers reported purchasing food from local retailers, whereas school nutrition programs largely receive their supplies from foodservice vendors. This resulted in centers being at the mercy of the consumer supply chain. Exploring ways to increase purchasing power and decrease expenses is warranted (e.g., purchasing through a local caterer or school district and partnering with other childcare centers for food orders and/or menus).

Future consideration of health and safety practices when establishing CACFP Best Practices may be warranted. Family-style meal service is the gold standard for numerous reasons including developing fine motor skills, fostering independence, and establishing healthy habits (U.S. Department of Agriculture, Food and Nutrition Service & U.S. Department of Health and Human Service, 2016). With the onset of the pandemic, concerns were raised about the possibility of this serving method increasing the spread of COVID-19 (Farrer Mackie, et al., 2022). The CDC has since clarified the risk of transmission from food, food packaging, surfaces, and shared objects, is very low and there is no need to limit foodservice operations to single use items and packaged meals (CDC, 2022). As of March 2022, KDHE has continued its guidance to maximize physical distance between people who are not fully vaccinated while also allowing centers to suspend the practice of children serving themselves (KDHE, 2022, May). While the number of Kansas childcare centers that currently allow children to serve themselves is unknown, a survey conducted between August and October of 2020 revealed less than 5% of early care and education directors and teachers in Florida reported children serving themselves (Farrer Mackie, et al., 2022). Even prior to the pandemic, implementation of family-style meal service was limited with less than one-half of urban Nebraska childcare centers adhering to this practice. As public health authorities roll back COVID-19 measures and childcare centers return to a semblance of pre-COVID-19 operations, additional resources may be needed to assist in overcoming barriers to this best practice.

The identification of foodservice challenges faced during the height of the COVID-19 related shutdowns brings awareness to the ever-present difficulties CACFP centers encounter in meeting reimbursement criteria. Thus, having emergency policies in place would minimize disruption when food prices increase dramatically or when significant supply chain challenges are encountered. Moreover, CACFP providers need to be proficient in meal pattern requirements to ensure substitutions based on product availability or affordability meet CACFP guidelines.

CACFP reimbursement rates are evaluated and adjusted annually, with new rates taking effect on July 1 of each year (U.S. Department of Agriculture, Food and Nutrition Service, 2020). According to FRAC, CACFP provider reimbursements were down \$690 million in March to September of 2020 with April 2020 showing the greatest decrease in the number of meals served and in reimbursement compared to the same period in 2019. Overall, childcare centers experienced a larger decrease in CACFP meal reimbursements compared to in-home providers (FRAC, 2021). Concerns with decreased reimbursement include adding strain to food insecurity in the homes and decreased income for providers to remain open (FRAC, 2021). FRAC also reported a 17% decrease in CACFP childcare providers from 2019 to 2020 (FRAC, 2021). Through COVID-19 relief funding, 55% of lost reimbursements for April, May, and June 2020 was restituted to CACFP childcare providers. However, a reduced number of CACFP meals continued to be served through July, August, and September of 2020 (FRAC, 2021) suggesting that despite the relief funding, childcare centers were struggling to stay open.

Inclusion of a nutrition professional could be of benefit with regard to many of the challenges experienced by centers in this study. Unfortunately, only 37.6 % (n=32) of urban Kansas childcare centers reported a credentialed health and/or nutrition expert was involved in their centers' menu process and/or foodservice operations (Jindrich, et al., 2022). The literature suggests most childcare centers rely on someone other than a nutrition professional for menu planning (Chriqui et al., 2018; Dev et al, 2019; Jindrich et al., 2022). As centers continue to experience COVID-19-related issues and plan for a "return to normal", child nutrition professionals can fulfill an important role in helping centers adapt their foodservice operations to best meet these challenges.

Limitations of this study include limited generalizability as only childcare centers in urban Kansas areas were included. Moreover, the questions regarding the impact of COVID-19 were narrowly focused. Additional open-ended questions and steps such as member checking would have improved the study's rigor.

In all, our findings indicate the COVID-19 pandemic affected the foodservice operations of many urban Kansas childcare centers. As COVID-19 continues to affect centers, additional research is needed to better understand its impact. Given the meals served in these centers play an important role in providing sustenance and combating food insecurity, research-based policies are needed to better support these centers, many of which were already strained to provide healthy meals and snacks.

REFERENCES

- Bandy, K.M., Peterson, A.D., Wilkerson, K., Hegde, A.V., & Stage, V.C. (2019). Exploration of mealtime practices and policies among North Carolina Head Start organizations: Does practice reflect policy? *Journal of Child Nutrition & Management*, 43(1).
https://schoolnutrition.org/uploadedFiles/5_News_and_Publications/4_The_Journal_of_Child_Nutrition_and_Management/Spring_2019/Exploration-of-Meal-Time-Practices-and-Policies-Spring2019.pdf
- Bauer, K. W., Chriqui, J. F., Andreyeva, T., Kenney, E. L., Stage, V. C., Dev, D., Lessard, L., Cotwright, C. J., & Tovar, A. (2021). A Safety Net Unraveling: Feeding Young Children During COVID-19. *American Journal of Public Health*, 111(1), 116–120.
<https://doi.org/10.2105/AJPH.2020.305980>
- Bussell, K., Francis, L., Armstrong, B., Kilby, S., Black, M.M., & Hager, E.R. (2018). Examining nutrition and physical activity policies and practices in Maryland's child care centers. *Childhood Obesity*, 14(6), 403–411. <https://doi.org/10.1089/chi.2018.0085>
- Centers for Disease Control and Prevention. (2022, January 28). *COVID-19 Guidance for Operating Early Care and Education/Child Care Programs*.
<https://www.cdc.gov/coronavirus/2019-ncov/community/schools-childcare/child-care-guidance.html#handwashing>
- CACFP Roundtable. (2020a, April 22). *San Rafael, CA – CACFP sponsor*.
<https://www.ccfproundtable.org/post/san-rafael-cacfp-sponsor>
- CACFP Roundtable. (2020b, May 13). *Family child care provider – Harpers Ferry, West Virginia*. <https://www.ccfproundtable.org/post/family-child-care-provider-harpers-ferry-west-virginia>
- CACFP Roundtable. (2020c, June 9). *Family center care provider – Whittier, CA*. Accessed Nov 2, 2021 from <https://www.ccfproundtable.org/post/family-child-care-provider-whittier-ca>

- CACFP Roundtable. (2020d, Dec 11). *Child care center, Pomona, CA*. Accessed Nov 2, 2021 from <https://www.ccfproundtable.org/post/child-care-center-pomona-ca>
- Chriqui, J. F., Schermbeck, R. M., & Leider, J. (2018). Food purchasing and preparation at child day care centers participating in the Child and Adult Care Food Program in the United States, 2017. *Childhood Obesity*, *14*(6), 375–385. <https://doi.org/10.1089/chi.2018.0099>
- Dev, D.A., Garcia, A.S., Dzewaltowski, D.A., Sisson, S., Franzen-Castle, L., Rida, Z., Williams, N. A., Hillburn, C., Dinkel, D., Srivastava, D., Burger, C., Hulse, E., Behrends, D., & Frost, N. (2019). Provider reported implementation of nutrition-related practices in childcare centers and family childcare homes in rural and urban Nebraska. *Preventive Medicine Reports*, *17*, 101021. <https://doi.org/10.1016/j.pmedr.2019.101021>
- Executive Order No. 20-16, State of Kansas (2020). <https://governor.kansas.gov/wp-content/uploads/2020/03/EO20-16.pdf>
- Food Research and Action Center. (2021, March). *CACFP during COVID-19: a key support for families despite losses due to the pandemic*. <https://frac.org/wp-content/uploads/CACFP-Program-Brief-March-2021.pdf>
- Jindrich, C., Sauer, K., Daniels, E., Procter, S. B., & Hanson, J. (2022). Vegetarian menu substitution practices and nutrition professionals' involvement in the foodservice operations of urban Kansas childcare centers. *Journal of Child Nutrition & Management*, *16*(1). https://schoolnutrition.org/uploadedFiles/5_News_and_Publications/4_The_Journal_of_Child_Nutrition_and_Management/Spring_2022/Vegetarian-Menu-Urban-Kansas-Childcare-Centers-Spring-2022.pdf
- Leech, N. L., & Onwuegbuzie, A. J. (2007). An array of qualitative data analysis tools: A call for data analysis triangulation. *School Psychology Quarterly*, *22*(4), 557–584. <https://doi.org/10.1037/1045-3830.22.4.557>
- Kansas Department of Education. (2019). CACFP Centers 2019 Program Year. https://datacentral.ksde.org/nutrition_reports.aspx
- Kansas Department of Health and Environment. (2020, May 18). *Interim guidance for child care facilities licensed by the Kansas Department of Health and Environment (KDHE)*. National Governors Association. https://education.nga.org/wp-content/uploads/2020/06/Interim-Guidance-for-Child-Care-Facilities-Licensed-by-KDHE-V75-18-2020_202005201056099251.pdf
- Kansas Department of Health and Environment. (2021, May 13). *Frequently asked questions (FAQs) for child care facilities licensed by the Kansas Department of Health and Environment (KDHE)*. Kansas Department of Health and Environment Coronavirus (COVID-19) Response. <https://www.coronavirus.kdheks.gov/DocumentCenter/View/143/FAQs-for-Child-Care-Facilities-Licensed-by-KDHE-PDF---5-13-21>
- Kansas Department of Health and Environment. (2022, March 7). *Frequently asked questions (FAQs) for child care facilities licensed by the Kansas Department of Health and Environment (KDHE)*. Kansas Department of Health and Environment Coronavirus (COVID-19) Response. <https://www.coronavirus.kdheks.gov/DocumentCenter/View/1039/FAQs-for-Child-Care-Facilities-Licensed-by-KDHE-PDF-030822?bidId=>
- Mead, D., Ransom, K., Reed, S.B., & Sager, S. (2020). The impact of the COVID-19 pandemic on food price indexes and data collection. *Monthly Labor Review*. U.S. Bureau of Labor Statistics. <https://doi.org/10.21916/mlr.2020.18>

- National Association for the Education of Young Children. (2020, July 13). *Holding on until help comes: a survey reveals child care's fight to survive*.
https://www.naeyc.org/sites/default/files/globally-shared/downloads/PDFs/our-work/public-policy-advocacy/holding_on_until_help_comes.survey_analysis_july_2020.pdf
- National CACFP Sponsors Association. (2021). *State agency guidance on CACFP emergency funds*. <https://www.cacfp.org/2021/02/01/state-agency-guidance-on-cacfp-emergency-funds/>
- U.S. Department of Agriculture, Food and Nutrition Service & U.S. Department of Health and Human Service. (2016). *Provider handbook for the child and adult care food program: Supplement E: Support family style meals*.
https://www.sendcaa.org/file_download/inline/2d1df066-15ff-41a8-80b7-a52649abcbda
- U.S. Department of Agriculture, Food and Nutrition Service. (2020). Child and Adult Care Food Program: National average payment rates, day care home food service payment rates, and administrative reimbursement rates for sponsoring organizations of day care homes for period July 1, 2020 Through June 30, 2021, *Federal Register*, 85 (141), 44268
<https://www.federalregister.gov/documents/2020/07/22/2020-15765/child-and-adult-care-food-program-national-average-payment-rates-day-care-home-food-service-payment>

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