

Patterns of and Variation in Food and Beverage Offerings at Dinner by Parents During COVID-19

Host Sal Nudo: You are listening to a Family Resiliency Center podcast. I'm your host, Sal Nudo. The Family Resiliency Center is a transdisciplinary research and policy center at the University of Illinois Urbana-Champaign.

In this podcast, I'll be talking with Dr. Jenny Barton, a postdoctoral researcher at the Family Resiliency Center. Dr. Barton's research focuses on the antecedents and consequences of childhood obesity, with a particular interest in the home food environment. Currently, her work is centered on parents' experiences and behaviors as determinants of child dietary intake and child weight, as well as the implications of early risk factors and child weight trajectories on later development and health.

Dr. Barton recently conducted a 10-day study that documented patterns of and variation in food and beverage offerings at dinner by parents of preschoolers during the COVID-19 pandemic.

Dr. Barton, thank you for joining us today to talk about your recent study.

Dr. Jenny Barton: Thank you for having me.

Host Sal Nudo: So, based on this study, why do you think the COVID-19 pandemic may have affected how parents feed their children, in some cases for the worse?

Dr. Jenny Barton: As I was planning this study (which was the Spring and Summer of 2020), we didn't know much about how the pandemic had affected feeding/eating behaviors, but negative disruptions in parents' feeding behaviors could have long-term consequences for child weight, specifically the risk for overweight and obesity.

During the pandemic, there has been some work suggesting that children had both reduced and increased appetites, and that snacking and overeating was on the rise. Parents have also reported using permissive feeding practices such as using fewer rules, using food to soothe their children, and granting children more autonomy. Parents also reported that their own eating



behaviors had changed during the pandemic – such as increased snacking as a potential means for coping.

This work is important for documenting the feeding style and general appetite, but we didn't know much about exactly what parents were offering their children to eat or drink.

I wanted to quickly mention that the pandemic affected daily life for nearly everyone and abrupt changes like this can be really stressful. In 2020, we experienced stay-at-home orders and social distancing, some had transitioned to remote work, had to go back to work with the potential for exposure, and some had been let go from their jobs.

While this is undoubtedly stressful, one could argue that this has been even harder for parents of young children who are trying to juggle demands at work and home while their children couldn't go to childcare or school and trying to protect themselves and their families from COVID-19 (as we were in the **pre-vaccine time**). It's a lot to manage and parenting tasks, such as feeding, can become even more difficult when you're trying to juggle all of these things. I'm not sure if you've ever fed a toddler but it can be hard work!

Host Sal Nudo: Tell us what else you discovered in your study and why it was important.

Dr. Jenny Barton: To preface, this study is part one of my dissertation research with a larger goal of understanding the association between parents' daily stress and their feeding behaviors at dinner during the pandemic.

To do this, I used a daily diary design, which is where you survey parents for multiple days in a row, in this case I used 10 days. However, daily diary data is abstract and hard to conceptualize so the goal of this first paper was to describe the patterns of and variation in parents' food and beverage offerings at dinner across 10 days.

To quickly summarize the design, a survey was sent via text to parents for 10 days where they answered questions about their food and beverage offerings, as well as stress, child behavior, and other measures.

Parents reported their offerings using a checklist of 33 possible items and were also given the option to write-in their offerings. From this measure, ten food and beverage offering groups were generated to summarize the basic groups from the Dietary Guidelines for Americans and were then broken down into recommended and non-recommended groups as per the DGA.

The results from our sample suggest that parents may not be offering recommended foods and beverages at dinner on a daily basis, and when offered, most parents may not serve the recommended serving sizes.

Vegetables and protein foods were offered most often, while whole grains and sugary beverages were offered least often.

These findings are largely in line with population-level data. However, this study was novel in exploring patterns of and daily variation in parents' food and beverage offerings at dinner during the pandemic and was conducted in a more ecologically valid framework than past research.

Host Sal Nudo: In your recent article, you mentioned within-parent variations when it came to food and beverage offerings to their children. Tell us more about that.

Dr. Jenny Barton: One of the key things we try to understand with daily diary studies is variation. Without variability, you really can't test associations and some analyses are no longer appropriate. So before analyzing daily diary data, we should check the intraclass correlations, which tell us how much of the variability is due to within-subject factors or between-subject factors. Values closer to 1 indicate more between-person variability, while values closer to 0 indicate more within-person variability.

The ICCs in my study ranged from .07 to .60 which skews more towards within-person variability. The best way to understand this is by looking at the data for each parent to see if they are remaining stable across the 10 days or if they tend to fluctuate. When I looked at a random sample of parents, I saw that they often fluctuate across their 10 days and that they weren't offering that food or beverage group every single day. For the two most offered groups, vegetables and protein, there was still a lot of variation across the days for each parents. However, for water, parents were split between never offering water, only offering water, and a combination of the two.

So, this tells us that parents do vary on a day-to-day basis and that we can try to look at within-person associations to see if something is predicting their offerings. Sorry for the quick statistics detour!

Host Sal Nudo: What were some of the positive aspects of dinnertime among families during the pandemic that you discovered?

Dr. Jenny Barton: What I found is that families appear to be eating dinner together at least 8 out of 10 days and over 60% of the time, parents have been using meal planning and cooking homemade meals for dinner.

By engaging in these routines and behaviors, children are offered more vegetables and protein, while cooking homemade meals was linked to offering more dairy, whole grains, water, and offering less processed foods and sugary drinks. Overall, these routines and behaviors are all

important because they have been linked to healthier diets in both children and adults.

Other have reported some positive consequences of the pandemic such as parents feeling thankful for having more time with their children despite the additional stressors. I think findings like this and mine are important for highlighting that the pandemic has allowed some families to pause and spend more time together, whether that's inside, outside, or around the dinner table.

Host Sal Nudo: And what about the limitations of the study that may have affected the outcomes.

Dr. Jenny Barton: There are several limitations to this work. One is that the sample is fairly homogenous in terms of parent sex, race, ethnicity, education, and income. The parents in this sample are probably less likely to experience financial strain or food insecurity and may not have been negatively affected by the pandemic to a large degree.

This also brings up the issue of a selection effect, meaning that parents who had more difficulty during the pandemic may not have been reached or did not want to participate in the study.

Second is that the measure of food and beverage offerings is an approximation of child dietary intake and I only measured what parents offered for dinner – so I don't know about the other feeding opportunities. Standard methods of measuring dietary intake, such as the 24hr recall and FFQ, are quite long and are not reasonable to parents to do across 10 days. Thus, we created a shorter checklist based on existing measures to determine if foods and beverages were offered for dinner.

Third, the inclusion criteria may have excluded parents who were divorced or separated because they had to live with their child full-time. This population of families may have had an even harder time trying to juggle pandemic stressors while sharing custody and/or co-parenting between houses.

Host Sal Nudo: Dr. Barton, what advice do you have for parents to improve their children's intake of recommended food and beverages during an irregular period such as in a pandemic?

Dr. Jenny Barton: One thing parents can do is leverage children's preferences for fruit, most children really like fruit so I would recommend try offering appropriate amounts throughout the day including dinner and for dessert. I remember babysitting some children who told me that fruit smoothies were not treats because they were healthy... well, let's use fruit as desserts and treats because they are!

Another thing, and I know that people probably get tired of hearing this but try to get those vegetables into every meal. Repeatedly try to offer vegetables or incorporate vegetables into dishes your child already likes. Modeling healthy eating during shared family mealtimes and increasing exposure to recommended foods during early childhood is important for combatting these unhealthy habits before schooling, where it becomes harder for children to accept new foods.

When children request non-recommended items, as hard as it may be, use this as an opportunity to teach them about which foods and beverages can be consumed “anytime” and which can be consumed “sometimes.”

I would also recommend trying to plan meals in advance and specifically to prepare homemade meals. Planning may look like planning what you’ll eat for the entire week or just a few days and it may turn into meal prep so you don’t have to cook every night. Another thing parents can do is stock up on frozen vegetables, fruits, and dry whole grains so that they are in the house and ready for use. Things that are easy to throw together and are relatively cost effective.

For those interested, I would recommend checking out the Healthy Eating Research Group website. They have feeding recommendations for children 0-2 and 2-8 as well as beverage recommendations.

Host Sal Nudo: What’s next for your research in this area?

Dr. Jenny Barton: I’ve been continuing this work in several ways. First, I’m working on the second manuscript from my dissertation examining predictors of these food and beverage offerings. Here at the U of I, I’ve been working on exploring aspects of the home food environment using the STRONG Kids 2 cohort data. Third, I’m preparing a grant application to examine maternal stress and feeding behaviors within the context of food insecurity using an EMA approach, which will help capture what mothers are feeding their children throughout the day, rather than limiting to dinner.

Host Sal Nudo: Dr. Barton, thank you again for your time today. We look forward to keeping track of your future research.

Dr. Jenny Barton: Thank you for having me.

Host Sal Nudo: Dr. Barton’s work was supported by the Amy Johnson McLaughlin Endowment at the University of Texas at Austin. She was mentored and supported in the research process and her manuscript preparation by Dr. Elizabeth Gershoff.

For more information on the work that the Family Resiliency Center is involved with, visit our website at familyresiliency.illinois.edu. I’m your host, Sal Nudo. Thank you for listening.