

Job Demands Resources Model Applied to School Nutrition Employee Experiences with COVID-19 Pandemic: A Qualitative Study

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KEYWORDS: child nutrition, Child Nutrition Programs, school meals, COVID-19, Jobs Demands-Resources (JD-R) Model, employee well-being

INTRODUCTION:

Child Nutrition Programs and the COVID-19 Pandemic

Child Nutrition Programs (CNP) have played an important role in mitigating food insecurity since their inception, including during the COVID-19 pandemic. However, in this unique context, CNP employees needed to adjust how they approached meal production and service in response to virus mitigation practices. The United States Department of Agriculture (USDA) offered a series of waivers increasing meal pattern flexibility; therefore, allowing CNP employees to offer meals in innovative ways and use nontraditional service methods (Braun et al., 2022; Centers for Disease Control, 2021; Jowell et al., 2021; Kenney et al., 2021; Patten et al., 2021a; School Nutrition Association [SNA], 2022a; USDA, 2023). As the pandemic evolved, many children returned to in-person learning, requiring still more innovation in balancing virus mitigation practices with feeding children (Jowell et al., 2021).

In CNPs, the two most significant reported costs are food and labor—about 45% each (USDA, 2019). Therefore, exploring the labor side of the child nutrition industry is imperative, especially amid a long-term disaster response. Several studies explored the experiences of CNP employees during the early pandemic. In a national survey conducted in March/April 2020, over half of respondents (55.6%) reported some burnout, while a majority (63.1%) still reported some job satisfaction (Patten et al., 2021a). These employees reported concerns such as risk of virus exposure, lack of organizational support, challenges with work processes changing, and personal frustration and exhaustion. At the time, most indicated “always” (40.5%) or “most of the time” (40.8%) having adequate staffing (Patten et al., 2021a). Staffing and supply chain issues began emerging as more significant challenges later in 2020 (Braun et al., 2022; Katz et al., 2022) and continue today (SNA, 2025). In a national, qualitative interview study conducted in April/May 2020, CNP employees highlighted their commitment to feeding children as their motivation for responding to the crisis (Patten et al., 2021b). This finding is consistent with another qualitative study conducted with nutrition directors in North Carolina during the summer of 2020 (Katz et al., 2022), which found that directors reported their motivation was connecting with students and the directors’ sense of purpose in feeding children.

Frontline essential workers assumed significant risk during the pandemic. From September 2020 to March 2021, frontline workers not working in healthcare environments (e.g., cooks, janitors, childcare providers, etc.) had a higher risk of testing positive for COVID-19 than non-frontline workers (Do & Frank, 2021). Beyond the risk of contracting COVID-19, food retail, foodservice, and hospitality service workers faced substantial mental health consequences working through the pandemic (Rosemberg et al., 2021). Well-being during such a crisis is significantly impacted by demands imposed on employees and their resources for navigating such (Demerouti and Bakker, 2022). Furthermore, while existing studies demonstrate the experiences of child nutrition professionals during the initial pandemic response, it is equally vital to understand their experiences as the pandemic changed and persisted over time. To navigate the lingering effects of the current COVID-19 pandemic and prepare for future crises, child nutrition leaders must understand their employees' unique demands and ensure availability of the proper resources to address them.

Theoretical Framework

The Jobs Demands-Resources (JD-R) Model has been used to explore the experience of workers during the COVID-19 pandemic (Mojtahedzadeh et al., 2021; Sokal et al., 2020; Baarello et al., 2021; Zhou et al., 2022) and can likewise be applied to child nutrition professionals. The model proposes that each occupation has factors which fall into two categories: *job demands* and *job resources* (Bakker & Demerouti, 2007). *Job demands* are related to "physiological and/or psychological costs" to the employee. *Job resources* help employees meet their work goals and manage *job demands*. Essentially, *job demands* take up employee energy because they have to be addressed and *job resources* generate motivation and help mitigate the impact of *job demands* on employee well-being (Demerouti & Bakker, 2022; Bakker & Demerouti, 2017). The JD-R model proposes the *health impairment process* is that when employees face chronic *job demands* or a lack of *job resources*, this can lead to *negative strain reactions*. Secondly, the *motivational process* reflects how *job resources* contribute to employee *motivation* (Bakker & Demerouti, 2007). Ultimately, it is important that jobs are designed so that the demands are manageable for employees and that they have enough job resources to handle the demands (Demerouti & Bakker, 2022).

The purpose of this study was to first explore the pandemic-related work experiences of CNP employees during the School Year (SY) 2020–2021 and then apply the JD-R Model to their experiences to provide insight into opportunities for increasing *job resources*, managing *job demands*, understanding *motivation*, and reducing *negative strain reactions*.

METHODOLOGY:

A qualitative study including semi-structured interviews was designed with the goal of understanding how CNP employees experienced working during SY 2020–2021.

Sample

Brigham Young University's Institutional Review Board deemed this study protocol as exempt level, Category 2 (E2020-140) in accordance with 45 CFR 61.111 in the USA. All participants reviewed an informed consent statement and indicated consent by proceeding with the interview. Following a national, 32-item survey (n=169; data unpublished) which was distributed via email to previous participants of an early pandemic study (Patten et al., 2021) and posted to recruit participants on a large child nutrition professional-focused Facebook group, a list of child nutrition professionals/directors (n=71) who indicated they would participate in an interview about their pandemic-related work experiences was created. Eligibility criteria included: > 18 years old, living in the United States, and worked in a CNP role during SY 2020–2021. Employees with various roles within CNPs were invited for researchers to gain a broad understanding of the pandemic experience. Participants self-reported their demographic information (age, racial identity, ethnicity, gender, state, and urbanicity) and work characteristics (position title, hours worked per week, meals/snacks served, and pre-pandemic free and reduced rate of school or district).

Data Collection

Researchers emailed all 71 people who indicated interest to set up an interview time with the subject line, "Schedule Interview – School Nutrition COVID-19 Study," with the consent document attached. Three trained researchers conducted interviews over Zoom from May 17 to June 3, 2021. A semi-structured 13-item moderator's guide was developed based on previous research (Patten et al., 2021) and current CNP events. It was reviewed and revised by two community partners with experience in CNPs (Figure 1). Interviews lasted approximately 30-minutes. Topics included their role, challenges experienced, innovations developed, technology utilized, support felt, sentiment regarding no-cost meals, employee safety experience, morale, staffing, and mental health/well-being. The interviews were recorded and transcribed verbatim. Researchers interviewed everyone (n=30) who responded to their emails and only stopped recruitment efforts once there was representation from each USDA region and data saturation was reached (Krueger & Casey, 2020).

Figure 1. Moderator's Guide Used for Interviewing Participants About Their Experiences Responding to the COVID-19 Pandemic

1. Please share what your job title is and what role you have played in navigating the pandemic during the 2020–2021 school year.
2. What have been your greatest challenges during this 2020–21 school year?
 - a. What challenges are you facing as you look to the summer? Next fall?
3. What are some of the innovations you and your program have made over the past school year to respond to the pandemic?
 - a. Which if any of these innovations would you like to see become typical practice after the pandemic?
 - b. Which barriers, if any, do you see to instituting these changes?
4. What new technology, if any, have you adopted over the past year to navigate the changes brought on by the pandemic?
 - a. How did you learn to use the new technology?
 - b. Did you have support? Need more support?
 - c. What additional technologies would have been helpful?
5. Over the past year, have you felt supported by your school district? State Agency? USDA? Community members? Please share your experiences.
6. How do you feel about USDA extending no cost meals for students through the next school year?
 - a. How will this affect your program? Team?
7. With meals being offered to all children at no cost over the past year, what have you noticed about the stigma of no-cost meals? Same? Different? Please explain.
8. How safe have you felt while working during the pandemic?
 - a. Did you feel like you had the policies and personal protective equipment you needed?
 - b. What were and are your concerns about the safety of employees in your department?
 - c. From your perspective, how safe did your school nutrition colleagues feel operating during a pandemic?
9. How would you describe your work team's morale right now?
 - a. What are the primary drivers/motivators for this?
10. How has the pandemic affected school meal staffing?
11. What impact has the pandemic had on your mental health and well-being?
 - a. Have you used any resources?
 - b. What resources would have been helpful?
12. What support or resources do you most need as you look to operating school nutrition services next fall?
13. What are you most proud of as you look back over the past 2020–2021 school year?

Reflexivity

Prior to data analysis, researchers discussed their positionalities. Two of the authors had direct experience with CNPs in their professional roles and five study child nutrition in their academic positions. One researcher is a family scholar and mental health professional who has been active in researching the COVID-19 pandemic. The formation of a research team with varied experiences was intentional to ensure the data collection processes were appropriate and the results derived from various perspectives. During the analysis and results writing, researchers openly discussed and sought to mitigate potential biases.

Data Analysis

Codebook Thematic Analysis. An inductive codebook thematic analysis was conducted (Braun et al., 2019). Three researchers reviewed each interview transcript and agreed on key headings to organize interview content (Nadin & Cassell, 2004). One researcher then developed summaries for each interview transcript (n=30, one for each participant). A second researcher checked each summary against the raw interview data for accuracy.

Next, codes were inductively identified by the three researchers through independent immersion. In total, 18 codes were agreed upon. A matrix was created (including 30 participants and 18 codes) by one researcher and checked for accuracy by a second. Finally, all three researchers reviewed the codes and organized them into three themes. To increase trustworthiness, member checking was implemented (Creswell, 2013). Participants were sent the completed results narrative and qualitative results table via email and confirmed the results were representative of their experiences.

Theory Triangulation. The second step in the analysis was to triangulate the inductive findings with the JD-R Model. Thematic analysis is a theoretically flexible method that does not require attachment to a pre-existing framework (Braun & Clarke, 2006). In a hybrid approach, inductive identification of themes can be complemented by subsequent deductive application of a priori theory to develop latent themes (Bradbury-Jones et al., 2022; Braun & Clarke, 2006; Fereday & Muir-Cochrane, 2006; Fife & Gossner, 2024). This situates the data within existing theory—leveraging the researcher’s central, active role; enhancing methodological rigor; and allowing for a richer understanding of participants’ experiences (Bradbury-Jones et al., 2022; Braun & Clarke, 2019; Gioia et al., 2012). In the present study, one researcher connected the results from inductive qualitative analysis with the core elements of the JD-R Model by reviewing the codes/themes and categorizing each finding as either a *job demand*, *job resource*, *strain reactions*, or *motivation*; the rest of the research team reviewed and revised the connections made.

RESULTS AND DISCUSSION:

Thirty interviews were conducted with CNP employees across various position types, though most were in director-level positions (Table 1). There was representation from 21 states and each USDA region.

Table 1. *Demographics of Participants (n=30)*

Demographics of Participants

Position Title

Director or Assistant Director	22 (73%)
Dietitian	2 (7%)
Manager (“Cafeteria” and “Quality Control”)	2 (7%)
Front-line Staff (“Head cook” and “school nutrition specialist”)	2 (7%)
Nutrition Coordinator	1 (3%)
State Agency Director	1 (3%)

USDA^b Region^c

Northeast (CT, ME, MA, NH, NY, RI, VT)	3 (10%)
Midwest (IL, IN, IA, MI, MN, OH, WI)	4 (13%)
Southwest (AZ, AR, LA, NM, OK, TX, UT)	8 (27%)
Southeast (AL, FL, GA, KY, MS, NC, SC, TN)	3 (10%)
Mid-Atlantic (DE, DC, MD, NJ, PA, PR, VA, WV)	1 (3%)
Mountain Plains (CO, KS, MO, MT, NE, ND, SD, WY)	5 (17%)
West (AK, CA, HI, ID, NV, OR, WA)	6 (20%)

Urbanicity^d

A large city	1 (3%)
A suburb near a large city	11 (37%)
A small city or town	10 (33%)
A rural area	6 (20%)
Did not report	2 (7%)

^aCOVID-19 = coronavirus disease 2019

^bUSDA = United States Department of Agriculture

^cPostal abbreviations of states are included for each region

^dUrbanicity was determined using the participants’ zip codes (USDA, Economic Research Service, 2022)

^eParticipants marked all that applied

(Table 1 continues)



Table 1 (continued). *Demographics of Participants (n=30)*

Demographics of Participants

Meals/Snacks Served^e

Breakfast	28 (93%)
Lunch	28 (93%)
Supper	9 (30%)
Fresh Fruit and Vegetable Program (FFVP) Snack	7 (23%)
Super Snack	6 (20%)

Pre-Pandemic Free and Reduced Rate

<25%	3 (10%)
25–50%	5 (17%)
51–65%	5 (17%)
>65%	4 (13%)
Not applicable or did not report	13 (43%)

Gender

Female	25 (83%)
Male	3 (10%)
Did not report	2 (7%)

Race/Ethnicity

White (non-Hispanic)	19 (63%)
White (Hispanic)	1 (3%)
Did not report	10 (33%)

Age

Less than 30 years	1 (3%)
30–39 years	4 (13%)
40–49 years	8 (27%)
50–59 years	10 (33%)
60 years or older	4 (13%)
Did not report	2 (7%)

^aCOVID-19 = coronavirus disease 2019

^bUSDA = United States Department of Agriculture

^cPostal abbreviations of states are included for each region

^dUrbanicity was determined using the participants' zip codes (USDA, Economic Research Service, 2022)

^eParticipants marked all that applied

(Table 1 continues)



Table 1 (continued). *Demographics of Participants (n=30)*

Demographics of Participants

Hours worked per week

10–19 hours/week	1 (3%)
20–29 hours/week	0 (–)
30–39 hours/week	2 (7%)
40–49 hours/week	18 (60%)
Over 50 hours/week	7 (23%)
Did not report	2 (7%)

^aCOVID-19 = coronavirus disease 2019

^bUSDA = United States Department of Agriculture

^cPostal abbreviations of states are included for each region

^dUrbanicity was determined using the participants' zip codes (USDA, Economic Research Service, 2022)

^eParticipants marked all that applied

Three themes were identified through inductive qualitative analysis (Table 2): (1) innovation and uncertainty, (2) personal and staff well-being, and (3) supplies and sustainability. Themes are presented in order of prevalence based on the number of participants who contributed to the findings, then thematic content is applied within the framework of the JD-R Model to identify *job demands*, *strain reactions*, *job resources*, and *motivations*.

Table 2. Participant Experiences (n=30) in Child Nutrition Programs During School Year 2020–2021: Thematic Results from Qualitative Analysis

Brief Theme Description	Representative Quotes ^a
<p>Theme 1: Innovation During Uncertainty Participants indicated that the continued pandemic required additional innovation in adapting methods for feeding children. There was a general sense of uncertainty that occurred during School Year (SY) 2020–2021 and about the upcoming SY 2021–2022.</p>	<p>“There were many changes, different ways of doing things, changes of recipes, added rules and regulations for health and safety [...], added safety for receiving, rolling quarantines causing us to move product from one school to another on a constant basis.” (Dietitian, Mountain Plains)</p> <p>“Not completely knowing what CDC and our health department, state health department will be allowing for meal distribution, or best practices. We're imagining most of our students will be back in the classroom like they are now [in the 2021–2022 school year], but with that you know, like how much back to normal menus can we go?” (Nutrition Coordinator, Midwest)</p> <p>“The state level is kind of a stopping point for us to where you'll have the USDA announcement that school meals are going to be free for next year. And then it takes about two months before you're going to hear back from the state saying, 'Okay, Iowa has accepted this waiver, here's what we're going to do and so forth.' So, there's quite a bit of time. And parents are hearing about the USDA waiver two months prior to it before we can even make an announcement because the state is still in communication with trying to get this deciphered. So that brings on, you know, all new challenges.” (Director, Midwest)</p>

^aParticipant position titles and USDA geographic regions are listed parenthetically after quotations to provide context.

(Table 2 continues)

Table 2 (continued). *Participant Experiences (n=30) in Child Nutrition Programs During School Year 2020–2021: Thematic Results from Qualitative Analysis*

Brief Theme Description	Representative Quotes ^a
<p>Theme 2: Personal and Staff Well-being Participants explained that CNP employee well-being was positively influenced through support and recognition, and by being motivated to ensure that all children were fed through universal no cost meals during the 2020–2021 SY. However, participants explained that burnout, low wages, staff shortages, and lack of recognition were harming employee well-being.</p>	<p>“[It has been challenging] finding the stamina, the energy, the mental capacity to keep operating at the intensity that we've been having to operate under. I am a very optimistic, positive person. I love doing things for my staff. I fully embrace the part of my job that is the cheerleader and the motivator and those things. And the early days, you know, the first, oh, I would say six months, doing okay. Then it just started not being very fun for everybody [for her and staff]. Just the burnout level was high.” (Director, Mountain Plains)</p> <p>“My team is still standing. We fed kids; we have broken records [in the number of meals served]. We've done it in the face of times where we could have just given up. ...my team is just so good at what they do. They know what's expected and they just go get it done.” (Director, West)</p> <p>“[The CNP employees are] not paid well, they work hard, they're not recognized [on School Lunch Hero day] ... Why would they continue to work for \$10 an hour? ... They can't even get a diet Coke from the school with a little sticker on it that says, thank you, but you best believe the teachers got it. And we're, and great, they should... but all of my [employees], why couldn't they have it too. ...We dove in and we've given us so much this school year and we've just gotten absolutely nothing in return, so it's just not worth it.” (Director, Southwest)</p>

^aParticipant position titles and USDA geographic regions are listed parenthetically after quotations to provide context.

(Table 2 continues)

Table 2 (continued). *Participant Experiences (n=30) in Child Nutrition Programs During School Year 2020–2021: Thematic Results from Qualitative Analysis*

Brief Theme Description	Representative Quotes ^a
<p>Theme 3: Supplies and Sustainability CNP employees explained that procurement of food and supplies was challenging throughout the 2020–2021 SY and they were worried that these issues would continue into the next SY. The adapted feeding approaches (e.g., packaging, food waste) were described as financially and environmentally unsustainable.</p>	<p>“The greatest challenge is probably the amount of waste that we've created. [Pre-pandemic] the school was ‘zero waste’ and during the pandemic we went to 100% waste.” (Director, West)</p> <p>“It's expensive to buy food. The price of beef has gone up. The price of chicken has gone up. Individually wrapped products, those prices are skyrocketing, but if you buy the bulk and then individually wrap it, you've got to weigh the cost of that.” (Director, Southwest)</p>

^aParticipant position titles and USDA geographic regions are listed parenthetically after quotations to provide context.

Theme 1: Innovation During Uncertainty

All participants ($n=30$) shared their experiences initially navigating providing meals for children during COVID-19 and described how additional innovation was needed during SY 2020–2021—a period of constant change.

As students began returning to school in-person, many CNP employees packed and delivered food to students in physically distanced classrooms. Others had to navigate a return to congregate feeding, including extended service that would allow for “*staggered meal start times*.” Employees also had to find ways to feed quarantined students or students who opted to learn virtually. To manage the technical challenges of having multiple feeding sites running at once, some school districts used a tally-marking system to note how many students were eating. Additionally, participants innovated by utilizing various interactive platforms like social media pages to disseminate information and online software programs (e.g., Google forms) for meal sign-ups. While many participants felt supported by the flexibility that USDA waivers created, some noted that the paperwork was burdensome. Most participants ($n=24$) expressed uncertainty about the upcoming SY 2021–2022. Participants worried about what service model would be expected and had to patiently wait for guidance from their school district, USDA, or Centers for Disease Control and Prevention which created uncertainty about staffing and procurement needs. Participants expressed the need for backup plans and a hope for greater consistency.

Theme 2: Personal and Staff Well-being

Participants ($n=30$) detailed how they and their staff's well-being was positively or deleteriously impacted during the pandemic. Participants' experiences were represented in three subthemes: (a) Exhaustion and burnout, (b) Motivated to feed children, and (c) Local support and recognition.

Exhaustion and Burnout. Collectively, participants explained that they felt safer during this school year compared to earlier in 2020, because they had adequate personal protective equipment (PPE) and there was consistency in mitigation strategies (e.g., physical distancing, temperature checks). However, participants ($n=28$) still used words like "tired," "frustrated," "stressed," "overworked," and "burnout" as they described their experience. Recruiting and retaining staff was a significant challenge, which contributed to increased workload for remaining employees, even requiring those in leadership positions to fill in at times. Participants attributed this difficulty to noncompetitive wages, and it was suggested that the USDA should increase reimbursement rates to elevate wages. Furthermore, amidst increased workloads, participants were also navigating their own family caregiving responsibilities, personal health, and grief/loss. Most were not relying on professional services, like therapy and counseling, to manage their stressors.

Motivated to Feed Children. Participants ($n=30$) explained that staff "adaptability," "flexibility," and "resiliency" during SY 2020–2021 ensured children were fed. Participants personally believed that all students should be fed, and this desire motivated their work. The implementation of universal, no cost meals during the pandemic was viewed positively. Moreover, participants were supportive of universal, no cost meals continuing post-pandemic. In general, participants reported that meeting school children's and community members' nutritional needs during the pandemic positively contributed to employee well-being.

Local support and recognition. Participants ($n=30$) shared their experiences receiving (or not receiving) support from their schools and communities. Participants explained that employees "need and deserve recognition" for their work and that this did/could enhance employee well-being. Some felt strong support, as community members donated time, money, PPE, and demonstrated gratitude.

Local school and district staff also volunteered to help. Some school districts even provided added pay or bonuses for CNP employees. Participants indicated that meaningful support could be small, but that missing opportunities to recognize CNP employees hurt morale and made employees feel "dispensable." Some participants explained that there were areas in which school districts and stakeholders could improve in terms of support and recognition. For example, participants shared that their stakeholders within their districts did not understand the lead times needed for meal forecasting, how budget changes influenced the ability to feed students, and how under-prioritizing needed equipment repairs disrupted feeding.

Theme 3: Supplies and Sustainability

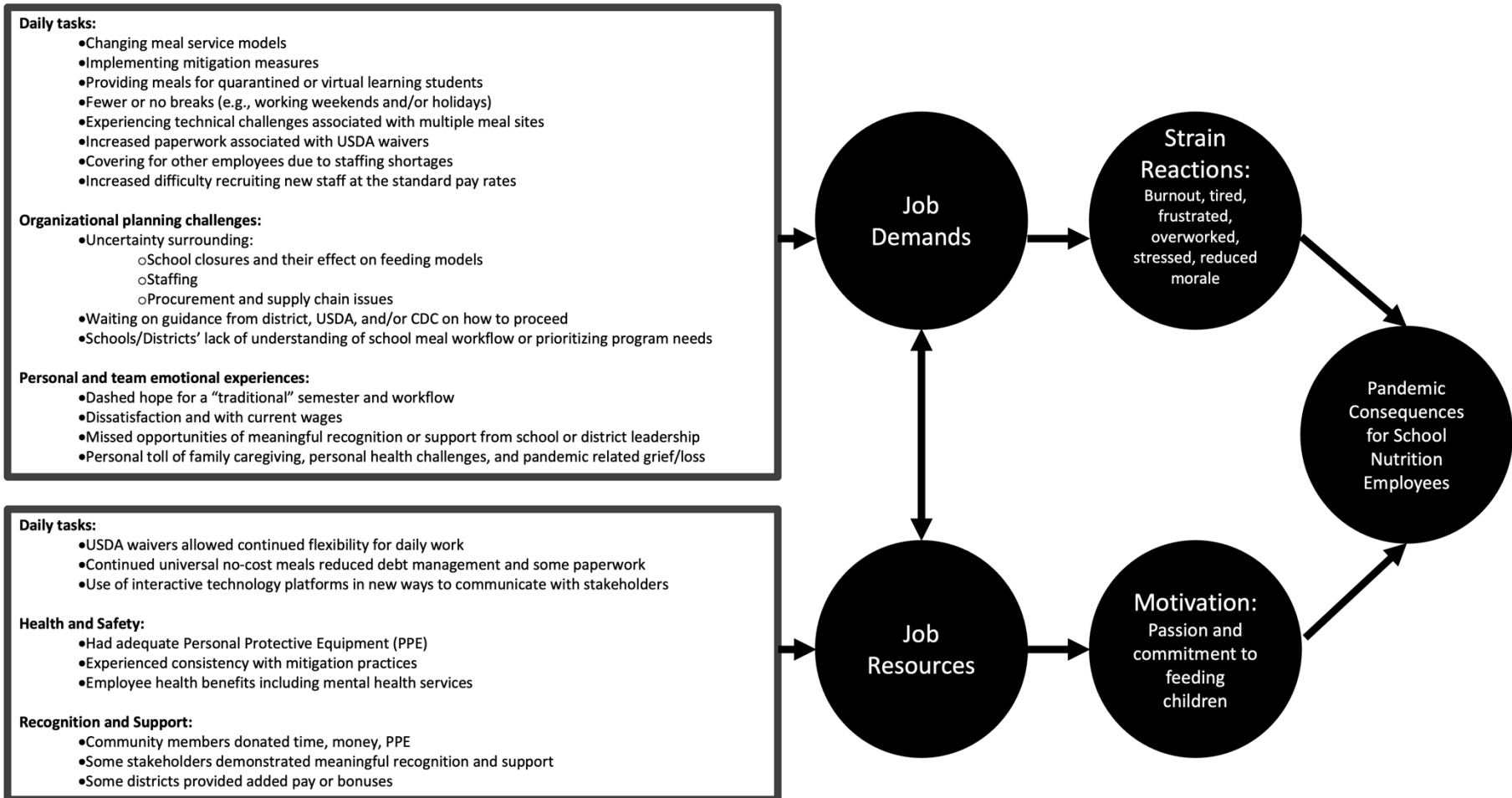
Participants ($n=27$) shared the challenges of food/supply procurement and sustainable practices during SY 2020–2021. Procuring needed supplies was difficult due to vendor challenges and items were more expensive due to scarcity, limiting variety in meals served.



Participants ($n=18$) also expressed concerns over the environmental impact of their production. More unrecyclable paper products were used, accompanied by unsustainable trash fees. Food waste was also a major concern. Forecasting for procurement and meal planning became increasingly difficult with frequent, sometimes “*overnight*” USDA changes. To adapt, many participants simplified their menus. Participants anticipated and worried about intensified supply chain shortages in SY 2021–2022.

Figure 2. The Job-Demand Resource Model applied to Child Nutrition Program Employees' School Year 2020-2021 Experiences

This figure was adapted from Mojtahedzadeh et al. (2021) following permission requirements from MDPI Publishers.



Application of JD-R Model

Researchers assessed how the content of these themes aligned with the JD-R Model, identifying *job demands*, *job resources*, *motivations*, and *negative strain reactions* experienced by participants (Figure 2).

Job Demands

Participants reported a variety of job demands, grouped into these categories: daily tasks, organizational planning challenges, and personal and team emotional experiences. The most significant job demands included supply chain issues, staffing and wages, and support and personal well-being.

Supply Chain. The SNA conducted a survey in October/November 2021 to explore how supply chain issues were affecting school meals; participants reported their top three challenges were unavailability of menu items, supplies/packaging materials, and discontinued food items (SNA, 2022b). The USDA responded in December 2021 by providing \$1.5 billion in assistance, and later offered a nationwide waiver allowing flexibility with meal pattern violations for the SY 2022–2023 (Reisenger & Dhillon, 2022; USDA, 2022a; USDA, 2022b). Future research could explore the effectiveness of this approach, specifically if it has ameliorated supply chain challenges for management and frontline employees. In 2022, SNA and No Kid Hungry held listening sessions and reported possible solutions related to menu, procurement, and storage challenges shared by CNP operators. Ultimately, as child nutrition leaders prepare for future disaster responses, it is important to work with vendors and manufacturers to develop contingency plans for both short- and long-term supply chain issues.

Staffing and Wages. Participants described staffing concerns, including difficulty retaining and hiring employees, in part due to the low pay rates of the positions. According to SNA data from October/November 2021, staffing has remained a significant challenge; some school districts have responded by increasing pay (42%) and offering bonuses (18.7%) (SNA, 2022b). Gupta et al. (2025) also found these workforce challenges in their mixed-methods study with child nutrition directors in 2021.

Since the present study was conducted in April/May 2021, there have been record numbers of people quitting across all job types in the USA (Society for Human Resource Management, 2022). Further, the US Bureau of Labor Statistics (n.d.) reported that the average hourly pay rate for nonsupervisory foodservice employees increased from \$13.74 in March 2020 to \$15.17 in April/May 2021, and finally \$17.24 in September of 2022. If pay for CNP jobs does not follow this growth trend, current and potential workers may opt out of them and into other higher wage foodservice jobs. For attraction and retention of CNP employees, increased attention and resources should be directed towards their total compensation including benefits.

Support and Personal Well-Being. Some participants described feeling unappreciated and unsupported by leaders in their schools, districts, and/or community members. Early in the pandemic, CNP employees reported feeling like their program's response "*helped alleviate the 'bad rep' and prior under-appreciation of the program.*" Unfortunately, as the pandemic continued, this outside enthusiasm for school meals appeared to dampen. Participants highlighted reasonable actions that would make them feel supported, such as school

leaders coming in-person to visit the team or serve meals to students, being provided with a meal, or receiving a small gift. These small gestures may be part of a state, district, or school leadership team plan for employee retention.

Many participants expressed difficulties navigating work with personal demands and life responsibilities during the pandemic. Some were juggling family caregiving responsibilities, personal health challenges, and grief/loss associated with COVID-19. Although now dated, research on CNP employees in large school districts in the USA indicated that 88% of respondents (n=95) had access to Employee Assistance Programs (EAP) and 76.2% (n=80) had access to professional counseling, but very few actually took advantage of these benefits (16.8% used EAP, 11.3% used counseling) (Harrison, 2010). Ensuring CNP employees are aware of and know how to access EAP and/or health care benefits (including mental health services) could help them navigate difficulties presented by challenging or overwhelming situations.

Job Resources

Beyond job demands, participants described several pandemic-specific job resources, categorized into those related to daily tasks, health and safety, and recognition and support. Specifically, those most important to participants were flexibility and efficiency, safety, and support.

Flexibility and Efficiency. Innovation has been a significant element of the school meal program in response to the pandemic, since the beginning (Kinsey et al., 2020; Patten et al., 2021b). Participants reported appreciation for the continued flexibility of USDA waivers. The USDA offering, renewing, and adjusting these waivers will be a useful job resource for future emergency responses. Additionally, participants spoke positively about universal, no-cost meals for children and reported that implementation decreased the amount of paperwork and debt management they did which provided further evidence supporting advocacy efforts for *Healthy School Meals for All* (Academy of Nutrition and Dietetics, 2022). Participants also described using technology to support their innovative pandemic response and increase their efficiency. Most of these technologies were free and included QR codes and Google applications. Ensuring these employees have needed devices and access to practical training on how to use these technologies could continue to serve as job resources for these employees.

Safety. Earlier in the pandemic, PPE was less and/or inconsistently available for CNP employees (Patten et al., 2021a; Patten et al., 2021b). Participants in the present study were relieved to have consistent access to PPE and were more aware of virus mitigation practices. Feeling safe at work is an important job resource, particularly during a pandemic.

Support. Participants had mixed experiences with feeling supported by key stakeholders as discussed earlier. Four participants were using mental health counselors to help them manage pandemic-related stressors. Some even worked to connect their employees to these resources. Again, introducing CNP employees to mental health resources available through employee insurance benefits or EAPs could be helpful.

Motivation and Negative Strain Reactions

Child Nutrition Program employees historically demonstrate high commitment to their work and even during the early onset of the pandemic they reported job satisfaction (Harrison, 2010; Patten et al., 2021a). In the present study, participants again described being motivated by their passion for and commitment to feeding children, which aligns with findings from earlier studies in the pandemic (Katz et al., 2022; Patten et al., 2021b). This altruistic effort is important as it appears to be a durable motivating force and can contribute to increased work engagement and performance (Bakker & Demerouti, 2007). Finding ways to recruit and select future employees who share this commitment may boost employee retention and satisfaction.

Importantly, participants emphasized the *negative strain reactions* they were experiencing such as burnout, exhaustion, decreased morale, stress, and being overworked which suggests that the health impairment process, as described in the JD-R Model, was occurring (Bakker & Demerouti, 2007). These employees were experiencing chronic, pandemic-related *job demands* that were negatively impacting their health and well-being. Reducing pandemic-specific *job demands* and increasing *job resources* may help reduce these *negative strain reactions* for CNP employees.

There are limitations to this study. As the pandemic continued, there were unique challenges at different times based on geography. We attempted to address this by including representation from 21 states, but disproportionate representation across USDA regions is a study limitation. Nonresponse to the recruitment survey from all CNP staff is also a limitation. Additionally, this study focused specifically on the experiences of CNP employees and did not have representation from vendors, USDA staff, non-meal school leaders/employees, or families. Finally, this sample consisted predominantly of white women; future research should explore the experiences of underrepresented demographic groups within the industry.

CONCLUSIONS AND APPLICATION:

Child nutrition employees play an important role in the provision of school meals –continuing to assess their experience throughout the pandemic is beneficial for understanding how to both support the current workforce and be prepared for future emergency responses. In this study, participants described their experiences during SY 2020–2021 and researchers then applied the JD-R model to the qualitative analysis results to identify *job demands*, *job resources*, *motivations*, and *negative strain reactions* experienced.

Overall, study findings suggest there may be opportunities to leverage *job resources* and manage *job demands* for the CNP workforce during ongoing emergency responses, to ensure employee retention and well-being. Reducing *job demands* may involve advocacy for higher reimbursement rates to increase wages consistent with national growth trends, connecting employees to mental health support, recognizing employee contributions with meaningful gestures, and supporting flexibility in developing contingency plans to navigate supply chain issues. As significant job demands are relieved, the health impairment process is interrupted upstream, reducing the likelihood of *negative strain reactions* like burnout and stress.

Magnifying *job resources* may involve making helpful technology accessible, prioritizing employee safety, and supporting policy initiatives such as USDA waivers and universal no-cost meals. This allows child nutrition employees to have the flexibility to innovate in the face of uncertainty. Employees were primarily motivated by a passion for children’s nutrition; hiring staff who share this commitment may maximize retention and performance. The COVID-19 pandemic has subsided in many ways, while unique challenges for the CNP workforce are being revealed. Because these employees are vital to the functioning of CNPs, future research should continue exploring employees’ experiences as the industry responds to other emergencies and adapts to unique conditions.

ACKNOWLEDGEMENTS:

The authors are thankful for the undergraduate student researchers for their assistance in data collection, as well as the school nutrition professionals who reviewed the tools used in this study.

ABSTRACT

PURPOSE/OBJECTIVES

The purpose of this study was to explore the work experiences of Child Nutrition Program (CNP) employees during School Year (SY) 2020–2021 through the lens of the Jobs Demands-Resources (JD-R) Model to provide insight into opportunities for increasing *job resources*, managing *job demands*, understanding *motivation*, and reducing *negative strain reactions*.

METHODS

As part of a national survey of child nutrition employees, participants were able to indicate interest in completing an interview about their experience during COVID-19. Thirty participants, holding various titles and job responsibilities in CNPs, were interviewed between May and June, 2021 across the United States. An inductive qualitative codebook thematic analysis was completed, with results triangulated to the JD-R Model.

RESULTS

Participants discussed their experiences working during SY 2020–2021 and three themes were detected: (1) innovation and uncertainty, (2) personal and staff well-being, and (3) supplies and sustainability. In applying the JD-R Model to the results, multiple *job demands* surfaced related to changes in daily tasks, organizational planning challenges, and the personal/team emotional experiences. Further, *job resources* across themes also existed, including those associated with how daily tasks, health/safety, and recognition/support were managed. Participants were *motivated* by their passion for feeding children and experienced *negative strain reactions* like burnout, frustration, and decreased morale.

APPLICATIONS TO CHILD NUTRITION PROFESSIONALS

Findings from this study identified CNP employees experienced significant *job demands* during SY 2020–2021 including perceived staffing problems, low compensation, need for mental health support, desire for recognition, and support in navigating the supply chain issues. Leaders of CNPs may prioritize addressing these *job demands* to retain and attract qualified and motivated child nutrition employees.

REFERENCES

- Academy of Nutrition and Dietetics. (2022, July 15). *The Academy of Nutrition and Dietetics' Priorities for the White House Conference on Hunger, Nutrition and Health*. <https://www.eatrightpro.org/news-center/public-policy-news/key-policy-priorities-in-recommendations-for-white-house-conference>
- Bakker, A. B., & Demerouti, E. (2007). The job demands-resources model: State of the art. *Journal of Managerial Psychology*, 22(3), 309–328. doi: 10.1108/02683940710733115
- Bakker, A. B., & Demerouti, E. (2017). Job demands–resources theory: taking stock and looking forward. *Journal of Occupational Health Psychology*, 22(3), 273. doi: 10.1037/ocp0000056
- Barello, S., Caruso, R., Palamenghi, L., Nania, T., Dellafiore, F., Bonetti, L., Silenzi, A., Marotta, C., & Graffigna, G. (2021). Factors associated with emotional exhaustion in healthcare professionals involved in the COVID-19 pandemic: An application of the job demands-resources model. *International Archives of Occupational and Environmental Health*, 94(8), 1751–1761. doi: 10.1007/s00420-021-01669-z
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101. doi: 10.1191/1478088706qp063oa
- Braun, V., & Clarke, V. (2019). Reflecting on reflexive thematic analysis. *Qualitative Research in Sport, Exercise and Health*, 11(4), 589–597. doi: 10.1080/2159676X.2019.1628806
- Braun, V., Clarke, V., Hayfield, N., & Terry, G. (2019). Thematic analysis. In P. Liamputtong (Ed.), *Handbook of research methods in health social sciences*. Springer Nature Singapore Pte Ltd. doi: 10.1007/978-981-10-5251-4_103.
- Braun, A., Hawley, J. D., & Garner, J. A. (2022). Maintaining school foodservice operations in Ohio during COVID-19: “This [was] not the time to sit back and watch.” *International Journal of Environmental Research and Public Health*, 19(10), 5991. doi: 10.3390/ijerph19105991
- Bradbury-Jones, C., Herber, O. R., Miller, R., & Taylor, J. (2022). Improving the visibility and description of theory in qualitative research: The QUANTUM typology. *SSM – Qualitative Research in Health*, 2. doi: 10.1016/j.ssmqr.2021.100030
- Centers for Disease Control and Prevention. (2021, November 15). *Modifying school spaces during mealtimes to reduce spread of COVID-19*. CDC Archive. <https://www.cdc.gov/healthyschools/covid/safely-distributing-meals.html>
- Creswell, J. W. (2013). *Qualitative inquiry and research design*. Sage Publications.
- Demerouti, E., & Bakker, A. B. (2023). Job demands-resources theory in times of crises: New propositions. *Organizational Psychology Review*, 13(3), 209–236.
- Do, D. P., & Frank, R. (2021). US frontline workers and COVID-19 inequities. *Preventative Medicine*, 153, 106833. doi: 10.1016/j.ypmed.2021.106833
- Fereday, J., & Muir-Cochrane, E. (2006). Demonstrating rigor using thematic analysis: A hybrid approach of inductive and deductive coding and theme development. *International Journal of Qualitative Methods*, 5(1), 80–92. doi: 10.1177/160940690600500107
- Fife, S. T., & Gossner, J. D. (2024). Deductive qualitative analysis: Evaluating, expanding, and refining theory. *International Journal of Qualitative Methods*, 23. doi: 10.1177/160940692412244856
- Gioia, D. A., Corley, K. G., & Hamilton, A. L. (2012). Seeking qualitative rigor in inductive research: Notes on the Gioia methodology. *Organizational Research Methods*, 16(1), 15–31. doi: 10.1177/1094428112452151
- Gupta, K., PMP, L. L., & Mann, G. (2025). Challenges and Successes for School Child Nutrition Directors during the COVID-19 Pandemic: A Mixed-Methods Study. *Journal of Child Nutrition & Management*, 49(1), n1.
- Harrison, M. K. (2010). *Work/life practices and the recruitment and retention of large school districts' foodservice professionals*. [Doctoral dissertation, Iowa State University]. <https://dr.lib.iastate.edu/server/api/core/bitstreams/1d78d4f4-7ec5-491f-8756-b4015c631ee7/content>
- Jowell, A. H., Bruce, J. S., Escobar, G. V., Ordonez, V. M., Hecht, C. A., & Patel, A. I. (2021). Mitigating childhood food insecurity during COVID-19: A qualitative study of how schooldistricts in California's San Joaquin Valley responded to growing needs. *Public Health Nutrition*, 26(5), 1063–1073. doi: 10.1017/S1368980021003141
- Katz, B. N., Soldavini, J., Grover, K., Jilcott Pitts, S., Martin, S. L., Thayer, L., Ammerman, A. S., & Lane, H. G. (2022). “Let’s use this

- mess to our advantage”: Calls to action to optimize school nutrition program beyond the pandemic. *International Journal of Environmental Research and Public Health*, 19(13), 7650. doi: 10.3390/ijerph19137650
- Kenney, E. L., Dunn, C. G., Mozaffarian, R. S., Dai, J., Wilson, K., West, J., Shen, Y., Fleischhacker, S., & Bleich, S. N. (2021). Feeding children and maintaining food service operations during COVID-19: A mixed methods investigation of implementation and financial challenges. *Nutrients*, 13(8), 2,691. <https://doi.org/10.3390/nu13082691>
- Kinsey, E. W., Hecht, A. A., Dunn, C. G., Levi, R., Read, M. A., Smith, C., Niesen, P., Seligman, H. K., & Hager, E. R. (2020). School closures during COVID-19: Opportunities for innovation in meal service. *American Journal of Public Health*, 10(11), 1635–1643. doi: 10.2105/AJPH.2020.305875
- Krueger, R. A., & Casey, A. (2020). *Focus groups: A practical guide for applied research (3rd ed.)*. Sage Publications.
- Mojtahedzadeh, N., Wirth, T., Nienhaus, A., Harth, V., & Mache, S. (2021). Job demands, resources and strains of outpatient caregivers during the COVID-19 pandemic in Germany: A qualitative study. *International Journal of Environmental Research and Public Health*, 18(7), 3684. doi: 10.3390/ijerph18073684
- Nadin, S., & Cassell, C. (2004). Using data matrices. In C. Cassell & G. Symon (Eds.), *Essential guide to qualitative methods in organizational research* (271–274). Sage Publications.
- Patten, E. V., Beckstead, E., Jones, M., Spruance, L. A., & Hayes, D. (2021a). School nutrition professionals’ employee safety experiences during the onset of the COVID-19 pandemic. *Journal of Nutrition Education and Behavior*, 53(1), 2–9. doi: 10.1016/j.jneb.2020.10.021
- Patten, E. V., Spruance, L., Vaterlaus, J. M., Jones, M., & Beckstead, E. (2021b). Disaster management and school nutrition: A qualitative study of emergency feeding during the COVID-19 pandemic. *Journal of the Academy of Nutrition and Dietetics*, 121(8), 1441-1453. doi: 10.1016/j.jand.2021.04.012
- Reisinger, L., & Dhillon, S. (2022). Disrupted Food Supply Chain’s Effect on School Nutrition Programs’ Ability to Meet USDA Nutritional Guidelines During the COVID-19 Pandemic. *Journal of Child Nutrition and Management*, 46.
- Rosemberg, M. A. S., Adams, M., Polick, C., Li, W. V., Dang, J., & Tsai, J. H. (2021). COVID-19 and mental health of food retail, food service, and hospitality workers. *Journal of Occupational and Environmental Hygiene*, 18(4–5), 169–179. doi: 10.1080/15459624.2021.1901905
- School Nutrition Association. (2022a, April). *Impact of COVID-19 on school nutrition programs: Part 2*. <https://schoolnutrition.org/wp-content/uploads/2022/04/COVID-19-Impact-on-School-Nutrition-Programs-Part2.pdf>
- School Nutrition Association. (2022b, May). *2021 supply chain survey report: A summary of survey results*. https://schoolnutrition.org/uploadedFiles/News_and_Publications/Press_Releases/Press_Releases/2021-Supply-Chain-Survey-Report.pdf
- School Nutrition Association, School Nutrition Foundation, No Kid Hungry. (2022, July). *Staying afloat in a perfect storm: The K-12 school nutrition segment contends with historic supply challenges*. <https://schoolnutrition.org/wp-content/uploads/2022/07/Jul22-SupplyChainReport.pdf>
- School Nutrition Association. (2025). *SY 2024/25 School Nutrition Trends Report* [PDF]. <https://schoolnutrition.org/wp-content/uploads/2025/01/2024-25-School-Nutrition-Trends-Report.pdf>
- Society for Human Resource Management. (2022, March 9). *Interactive chart: How historic has the Great Resignation been?* <https://www.shrm.org/resourcesandtools/hr-topics/talent-acquisition/pages/interactive-quits-level-by-year.aspx>
- Sokal, L. J., Eblie Trudel, L. G., & Babb, J. C. (2020). Supporting teachers in times of change: The job demands-resources model and teacher burnout during the COVID-19 pandemic.
- US Bureau of Labor Statistics. (Sept 15, 2025) *Average hourly earnings of production and nonsupervisory employees, food services and drinking places, not seasonally adjusted*. https://data.bls.gov/timeseries/CEU7072200008?amp%253bdata_tool=XGtable&output_view=data&include_graphs=true
- US Department of Agriculture. (2022a, March 3). *USDA No. 0273.21*. <https://www.fns.usda.gov/news-item/usda-0273.21>
- US Department of Agriculture, Economic Research Service. (2022). *Rural-Urban Commuting Area Codes*. <https://www.ers.usda.gov/data-products/rural-urban-commuting-area-codes>
- US Department of Agriculture, Food and Nutrition Service. (2019, April). *School nutrition and meal cost study summary of findings*. https://fns-prod.azureedge.us/sites/default/files/resource-files/SNMCS_Summary-Findings.pdf
- US Department of Agriculture, Food and Nutrition Service. (2022b, June 22). *Child Nutrition Response #110*.

<https://www.fns.usda.gov/cn/covid-19-child-nutrition-response-110>

US Department of Agriculture, Food and Nutrition Service. (2023, November 8). *Child nutrition COVID-19 waivers*.

<https://www.fns.usda.gov/fns-disaster-assistance/fns-responds-covid-19/child-nutrition-covid-19-waivers>

Zhou, T., Xu, C., Wang, C., Sha, S., Wang, Z., Zhou, Y., Zhang, X., Hu, D., Liu, Y., Tian, T., Liang, S., Zhou, L., & Wang, Q. (2022). Burnout and well-being of healthcare workers in the post-pandemic period of COVID-19: a perspective from the job demands-resources model. *BMC health services research*, 22(1), 284.