

Food and COVID-19 Lit Review: Week ending 03/25/2022

DNPAO

- Validating Food Security Measurement in a Pediatric Nutrition Screening Tool (Nutristep (R)) <https://doi.org/10.1080/19320248.2022.2047863>
- US state variations in food bank donation policy and implications for nutrition <https://doi.org/10.1016/j.pmedr.2022.101737>

DFWED

- Food as a transmitter of viruses: A review <https://doi.org/10.17268/SCI.AGROPECU.2022.003>

NIOSH

- The use of a surgical helmet system with a high-efficiency particulate air filter as possible protection equipment during the coronavirus disease 2019 pandemic: a double-blinded randomized control study. <https://dx.doi.org/10.1007/s00264-022-05371-8>
- Does fear of COVID-19 undermine career optimism? A time-lagged quantitative inquiry of non-managerial employees <https://doi.org/10.1108/K-10-2021-1036>
- Exposure to avian coronavirus vaccines is associated with increased levels of SARS-CoV-2-cross-reactive antibodies (preprint) <https://doi.org/10.22541/au.164751461.12776339/v1>
- Lessons Learned From a Qualitative COVID-19 Investigation Among Essential Workers With Limited English Proficiency in Southwest Kansas. <https://dx.doi.org/10.1177/10901981221080091>

NCEH

- The impact of organisational characteristics of staff and facility on infectious disease outbreaks in care homes: a systematic review. <https://dx.doi.org/10.1186/s12913-022-07481-w>
- SARS-CoV-2 Survival in Common Non-Alcoholic and Alcoholic Beverages <https://doi.org/10.3390/foods11060802>
- Evaluation of ventilation, indoor air quality, and probability of viral infection in an outdoor dining enclosure. <https://dx.doi.org/10.1080/15459624.2022.2053692>

NCFW

- Agricultural extension in the context of the Covid-19 pandemic: Issues and challenges in the field <https://doi.org/10.22124/CJES.2022.5408>

OTHER: CROSS-CUTTING FOOD SYSTEMS

- Designing the building space of a shopping street to use as a disaster evacuation shelter during the COVID-19 pandemic: A case study in Kobe, Japan. <https://dx.doi.org/10.1016/j.ijdrr.2021.102680>
- Effectiveness and utilization of hospital-directed wellness initiatives during the covid-19 pandemic <https://escholarship.org/uc/item/39x7b005>
- Investigating the Epidemiological and Economic Effects of a Third-Party Certification Policy for Restaurants with COVID-19 Prevention Measures (preprint) <https://doi.org/10.21203/rs.3.rs-1417222/v1>

OTHER: GENERAL

- The Effect of Vaccine Hesitancy on Racial and Ethnic Minority Children During the COVID-19 Pandemic. <https://dx.doi.org/10.3928/19382359-20220216-01>
- Public Health Impacts of Exposure to Disinfectants, Therapeutics, and Illicit Substances During the COVID-19 Pandemic <https://doi.org/10.52794/hujpharm.978727>
- Equity of 2020-2021 school re-opening models and implementation of multi-tiered system of supports following initial COVID-19 building closure

DNPAO

Validating Food Security Measurement in a Pediatric Nutrition Screening Tool (Nutristep (R))

<https://doi.org/10.1080/19320248.2022.2047863>

The Nutrition Screening Tool for Every Preschooler (NutriSTEP (R)) is a 17-item nutrition-screening tool administered to parents. This study validated the food security question in the NutriSTEP (R) against the Household Food Security Survey (HESS) and the Hunger Vital Sign. Parents (n = 55) of Head Start preschoolers answered an online survey that included the NutriSTEP (R), the Hunger Vital Sign, and the HFSS. All of the tools identified over 40% of the participants experienced food insecurity. The food security question in the NutriSTEP (R) had 82.1% sensitivity and 94.1% specificity when compared against the HFSS reference standard. The NutriSTEP (R) adequately identified children with food insecurity.

US state variations in food bank donation policy and implications for nutrition

<https://doi.org/10.1016/j.pmedr.2022.101737>

Food insecurity has increased dramatically in 2020 as a result of the COVID-19 public health and economic crisis. Many more families in the United States are turning to the charitable food system to help meet their needs. However, little is known about the policies that influence food bank donations and whether they promote healthy food donations. The purpose of this study was to explore state variation in food donation policies and secondarily to assess whether policies promoted the donation of healthy foods and beverages. We reviewed donation policies for all states in the United States and Washington, DC (hereafter “states”) in fall 2020. Two reviewers independently assessed donation policies using two legal databases;we reconciled discrepancies via team discussion. We then grouped them into 10 distinct categories based on common purpose and theme. We identified 252 state policies from 51 states. Policies fell into all 10 categories. The largest category was “liability protection,” with all states having a policy in this category. The second largest category was date labeling;32 states had requirements or policies restricting the donation of past-dated foods. However, across all categories, we found that only 2 policies explicitly promoted the donation of healthy foods and beverages. Although all states had some policies governing food donations, few promoted healthier foods and beverages. States could encourage healthy donations through policy to help ensure that all families have access to nutritious foods and beverages.

DFWED

Food as a transmitter of viruses: A review <https://doi.org/10.17268/SCI.AGROPECU.2022.003>

Viruses have been present throughout human history, causing diseases due to infections and food poisoning;they have caused frequent public health problems worldwide. These illnesses are usually mild, moderate, or severe in nature. The personal hygiene of food handlers and processing processes should

be checked periodically. Virus detection protocols and safety measures should be continually reviewed as viruses change their mode of infection. The objective of this review was to discuss the possible routes of virus transmission to humans through food. Important topics have been reviewed such as: definition of food viruses, presence, and types of viruses in food, enteric viruses, zoonotic viruses, water as a means of transmission, risks of infection, other non-conventional foods as potential transmitters of viruses and food safety, in addition to current and future challenges, research work on viruses more resistant to heat treatments in food should be sought. Also, future work on survival time of active viruses on food surfaces. In addition, studies that determine the mechanisms of virus mutation in relation to the conditions of food handling and processing. © 2022 Universidad Nacional de Trujillo. All right reserved.

NIOSH

The use of a surgical helmet system with a high-efficiency particulate air filter as possible protection equipment during the coronavirus disease 2019 pandemic: a double-blinded randomized control study. <https://dx.doi.org/10.1007/s00264-022-05371-8>

PURPOSE: The rapid spread of coronavirus disease 2019 (COVID-19) has increased the use of personal protective equipment. The purpose of this study was to investigate whether a commercially available sterile surgical helmet system (SSHS) can be considered protective against COVID-19 and therefore safe for use. **METHODS:** A double-blinded randomized controlled study was performed to investigate the efficacy of the ViVi® SSHS with a high-efficiency particulate air filter called HFD Hood (THI, Total Healthcare Innovation GmbH, Feistritz im Rosental, Austria) to protect against respiratory droplets. Forty recruited participants were divided into two different groups. The SSHS was tested using a validated qualitative test for respirator masks through saccharin or placebo solutions based on random allocation into two cohorts. Saccharin droplets are a validated surrogate marker for any elements of viral size, such as coronaviruses. A positive report of sweet taste after saccharin exposure was suggestive of ViVi® SSHS inefficacy in protection against droplets. **RESULTS:** One participant out of 21 (4.8%) reported positive for taste within the placebo cohort, while five out of 19 (26.3%) reported positive for taste within the saccharin cohort upon testing. Two out of 21 (9.5%) participants reported positive for taste within the placebo cohort, and two out of 19 (10.5%) reported positive for taste within the saccharin cohort upon retesting. There were no statistically significant differences between the saccharin and placebo groups in either the test or retest measurements ($p = 0.085$ and $p = 1.000$, respectively). **CONCLUSIONS:** This study demonstrates that the ViVi® SSHS equipped with HFD Hood protects against respiratory droplets, increasing protection against several microorganisms, including the virus that causes COVID-19, allowing surgeons to carry out procedures on COVID-positive patients in a more comfortable and safer way.

Does fear of COVID-19 undermine career optimism? A time-lagged quantitative inquiry of non-managerial employees <https://doi.org/10.1108/K-10-2021-1036>

Purpose: This study intends to examine the impact of a fear of coronavirus disease 2019 (COVID-19) on workers' career optimism via perceived job insecurity among non-managerial working restaurant employees. **Design/methodology/approach:** Time-lagged quantitative data were collected in two waves from 316 non-managerial on-job restaurant employees. Structural equation modeling technique was applied to examine the measurement and structural model. **Findings:** The study showed that workers' fear of COVID-19 positively impacts their job insecurity. Further, the study found that increasing level of job insecurity depletes workers' career optimism—an outlook of their future career prospects. **Research limitations/implications:** The study suggests organizations should work to make employees feel secure in terms of their job continuity and career progression. Eventually, this would support employees in shielding themselves against possible resource loss (e.g. career optimism) due to pandemic crises.

Originality/value: Extant literature has tested the impact of the COVID-19 pandemic on employees' workplace attitudes and behaviors such as job satisfaction (e.g. Bajrami et al., 2021) and safety performance (e.g. Kim et al., 2021). However, little has been researched on the impact of the COVID-19 pandemic on employees' future career outlook, particularly of non-essential workers in the hospitality industry. To the best of the author's knowledge, an explicit examination of the impact of COVID-19 fear on career optimism has not been conducted previously. Hence, this study will not only be a valuable contribution in the literature of career management, but will also yield important practical implications. © 2022, Emerald Publishing Limited.

Exposure to avian coronavirus vaccines is associated with increased levels of SARS-CoV-2-cross-reactive antibodies (preprint) <https://doi.org/10.22541/au.164751461.12776339/v1>

Background: Although avian coronavirus infectious bronchitis virus (IBV) and SARS-CoV-2 belong to different genera of the Coronaviridae family, exposure to IBV may result in the development of cross-reactive antibodies to SARS-CoV-2 due to homologous epitopes. We aimed to investigate whether antibody responses to IBV cross-react with SARS-CoV-2 in poultry farm personnel who are occupationally exposed to aerosolized IBV vaccines. Methods: : We analyzed sera from poultry farm personnel, COVID-19 patients, and pre-pandemic controls. IgG levels against the SARS-CoV-2 antigens S1, RBD, S2, and N and peptides corresponding to the SARS-CoV-2 ORF3a, N, and S proteins as well as whole virus antigens of the four major S1-genotypes 4/91, IS/1494/06, M41, and D274 of IBV were investigated by in-house ELISAs. Moreover, live-virus neutralization test (VNT) was performed. Results: : A subgroup of poultry farm personnel showed elevated levels of specific IgG for all tested SARS-CoV-2 antigens compared to pre-pandemic controls. Moreover, poultry farm personnel, COVID-19 patients, and pre-pandemic controls showed specific IgG antibodies against IBV strains. These antibody titers were higher in long-term vaccine implementers. We observed a strong correlation between IBV-specific IgG and SARS-CoV-2 S1-, RBD-, S2-, and N-specific IgG in poultry farm personnel compared to pre-pandemic controls and COVID-19 patients. However, no neutralization was observed for these cross-reactive antibodies from poultry farm personnel using the VNT. Conclusion: We report here for the first time the detection of cross-reactive IgG antibodies against SARS-CoV-2 antigens in humans exposed to IBV vaccines. These findings have implications for future vaccination strategies and possibly cross-reactive T cell immunity.

Lessons Learned From a Qualitative COVID-19 Investigation Among Essential Workers With Limited English Proficiency in Southwest Kansas. <https://dx.doi.org/10.1177/10901981221080091>

In this commentary, we briefly describe our methodology in conducting a remote qualitative investigation with essential workers from southwest Kansas, and then describe some key considerations, challenges, and lessons learned in recruiting and conducting interviews remotely. From August 4, 2020 through August 26, 2020, Centers for Disease Control and Prevention (CDC) staff conducted five phone interviews with culturally and linguistically diverse employees in southwest Kansas to understand COVID-19 knowledge, attitudes, and practices and communication preferences. Our experience details the potential challenges of the federal government in recruiting individuals from these communities and highlights the possibilities for more effectively engaging health department and community partners to support investigation efforts. Optimizing recruitment strategies with additional participation from community partners, developing culturally and linguistically appropriate data collection tools, and providing supportive resources and services may augment participation from refugee, immigrant, and migrant (RIM) communities in similar remote investigations.

The impact of organisational characteristics of staff and facility on infectious disease outbreaks in care homes: a systematic review. <https://dx.doi.org/10.1186/s12913-022-07481-w>

BACKGROUND: Infectious disease outbreaks are common in care homes, often with substantial impact on the rates of infection and mortality of the residents, who primarily are older people vulnerable to infections. There is growing evidence that organisational characteristics of staff and facility might play a role in infectious disease outbreaks however such evidence have not previously been systematically reviewed. Therefore, this systematic review aims to examine the impact of facility and staff characteristics on the risk of infectious disease outbreaks in care homes. **METHODS:** Five databases (MEDLINE, EMBASE, ProQuest, Web of Science, CINAHL) were searched. Studies considered for inclusion were of any design reporting on an outbreak of any infectious disease in one or more care homes providing care for primarily older people with original data on: facility size, facility location (urban/rural), facility design, use of temporary hired staff, staff compartmentalizing, residence of staff, and/or nursing aides hours per resident. Retrieved studies were screened, assessed for quality using CASP, and analysed employing a narrative synthesis. **RESULTS:** Sixteen studies (8 cohort studies, 6 cross-sectional studies, 2 case-control) were included from the search which generated 10,424 unique records. COVID-19 was the most commonly reported cause of outbreak (n = 11). The other studies focused on influenza, respiratory and gastrointestinal outbreaks. Most studies reported on the impact of facility size (n = 11) followed by facility design (n = 4), use of temporary hired staff (n = 3), facility location (n = 2), staff compartmentalizing (n = 2), nurse aides hours (n = 2) and residence of staff (n = 1). Findings suggest that urban location and larger facility size may be associated with greater risks of an infectious disease outbreak. Additionally, the risk of a larger outbreak seems lower in larger facilities. Whilst staff compartmentalizing may be associated with lower risk of an outbreak, staff residing in highly infected areas may be associated with greater risk of outbreak. The influence of facility design, use of temporary staff, and nurse aides hours remains unclear. **CONCLUSIONS:** This systematic review suggests that larger facilities have greater risks of infectious disease outbreaks, yet the risk of a larger outbreak seems lower in larger facilities. Due to lack of robust findings the impact of facility and staff characteristics on infectious disease outbreaks remain largely unknown. **PROSPERO:** CRD42020213585 .

SARS-CoV-2 Survival in Common Non-Alcoholic and Alcoholic Beverages

<https://doi.org/10.3390/foods11060802>

SARS-CoV-2, the causative agent of COVID-19, is known to be transmitted by respiratory droplets and aerosols. Since the virus is shed at high concentrations in respiratory secretions and saliva, SARS-CoV-2 would also be expected to be transmitted through activities that involve the transfer of saliva from one individual to another, such as kissing or sharing beverages. To assess the survival of infectious SARS-CoV-2 in common beverages, we quantified infectious virus by plaque assays one hour after inoculation into 18 non-alcoholic and 16 alcoholic beverages, plus saliva, and also 7 days later for 5 of these beverages. SARS-CoV-2 remains infectious with minimal reductions in several common beverages, including milk and beer. However, cocoa, coffee, tea, fruit juices, and wine contain antiviral compounds that inactivate SARS-CoV-2. Although hard liquors containing 40% alcohol immediately inactivate SARS-CoV-2, mixing with non-alcoholic beverages reduces the antiviral effects. In summary, SARS-CoV-2 can be recovered from commonly consumed beverages in a beverage type and time-dependent manner. Although aerosol or droplet transmission remains the most likely mode of transmission, our findings combined with others suggest that beverages contaminated with SARS-CoV-2 during handling, serving, or through sharing of drinks should be considered as a potential vehicle for virus transmission.

Evaluation of ventilation, indoor air quality, and probability of viral infection in an outdoor dining enclosure. <https://dx.doi.org/10.1080/15459624.2022.2053692>

In 2020, many cities closed indoor dining to curb rising COVID-19 cases. While restaurants in warmer climates were able to serve outdoors year-round, restaurants in colder climates adopted various solutions to continually operate throughout the colder months, such as the use of single-party outdoor dining enclosures to allow for the continuation of outdoor dining. This study evaluates indoor air quality and the air exchange rate using carbon dioxide as a tracer gas in a dining enclosure (12.03 m³) and models the probability of COVID-19 infection within such an enclosure. The air exchange rates were determined during two trials for the following scenarios: 1) door closed, 2) door opened, and 3) door opened intermittently every 15 min for one min per opening. The probability of COVID-19 infection was evaluated for each of these scenarios for one hour, with occupancy levels of two, four, and six patrons. The Wells-Riley equation was used to predict the probability of infection inside the dining enclosure. The air exchange rates were lowest in the closed-door scenarios (0.29 to 0.59 ACH), higher in the intermittent scenarios (2.36 to 2.49 ACH), and highest in the open-door scenarios (3.61 to 33.35 ACH). As the number of subjects inside the enclosure increased, the carbon dioxide accumulation increased in the closed-door and intermittent scenarios. There was no identifiable accumulation of carbon dioxide in the open-door scenario. The probability of infection (assuming one infected person without a mask) was inversely proportional to the airflow rate, and ranged from 0.0002 to 0.84 in the open-door scenario, 0.0034 to 0.94 for the intermittent scenarios, and 0.015 to 1.0 for the closed-door scenarios. The results from this study indicate that under typical use, the indoor air quality inside dining enclosures degrades during occupancy. The probability of patrons and workers inside dining enclosures being infected with COVID-19 is high when dining or serving a party with an infected person.

NCFW

Agricultural extension in the context of the Covid-19 pandemic: Issues and challenges in the field

<https://doi.org/10.22124/CJES.2022.5408>

The extension is an active procedure requiring contact between the extension worker and the individual to establish a behavior change process. This study examines the revival of the notion of extension, the difficulty of extension in the period of the COVID-19 epidemic, and the problems of extension in the future. The revitalization of the meaning of extension includes: (1) extension is not just conveying information messages to the target (farmers) but is an activity of delivering messages until there is a behavior change (knowledge, attitudes, and skills) of message recipients/target communities;(2) extension is not just a transfer of technology, but it is a process of activities carried out between extension workers and target communities to solve problems faced by farmers;(3) extension is not just an activity that is partial and sporadic in the short term but is carried out as a whole with very long and continuous stages;(4) extension is not based on the mere interest of the extension worker but is based on the needs of the target community. Furthermore, the challenges of extension in the age of the COVID-19 epidemic are: (1) the low level of cosmopolitan farmers makes the information collected delayed;(2) farmers with all their constraints find it challenging to adjust to changes;and (3) the radius of confidence of farmers is minimal. Thus, the challenges of extension in the future are: (1) how to generate an entrepreneurial spirit for farmers;(2) the introduction of social media and web applications is mandatory as new media that extension workers should use;and (3) future extension services should be able to synergize conflicts of interest between stakeholders. © The Author(s).

OTHER: CROSS-CUTTING FOOD SYSTEMS

Designing the building space of a shopping street to use as a disaster evacuation shelter during the COVID-19 pandemic: A case study in Kobe, Japan. <https://dx.doi.org/10.1016/j.ijdr.2021.102680>

This study considers the risk of a natural hazard-induced disaster occurring during a pandemic, such as the novel coronavirus (COVID-19) pandemic, and develops the idea of utilizing a shopping street with disaster-proof buildings as a temporary evacuation shelter by incorporating countermeasures against the spread of infectious diseases. Using a case study of a shopping street in Kobe, Japan, we estimate shelter capacity by considering the requirement of 6 m² of space allotted for each person. The shelter can accommodate 1194 evacuees and provide them with food and drinks for one day, even in the worst case of lifeline disruption. This study proposes a method of designing shelter space, and demonstrates how non-homogeneous and noncontinuous spaces within shopping street buildings can be applied to prevent the spread of infection, through the classification of evacuee types and use of space and facilities designated for each type. The study further examines the liability issue of secondary infection at the shelter with reference to civic law and the roles of government in developing a distributed evacuation framework.

Effectiveness and utilization of hospital-directed wellness initiatives during the covid-19 pandemic <https://escholarship.org/uc/item/39x7b005>

Learning Objectives: Given the ongoing pandemic, the authors hope to determine which of the commonly implemented COVID-19 hospital-directed wellness initiatives were most effective for physicians, enabling tailored recommendations for future wellness plans. **Background:** The COVID-19 pandemic has placed an unprecedented burden on healthcare workers. Many hospitals have instituted wellness initiatives. The optimal hospital-directed wellness initiatives during a pandemic are currently unknown. **Objectives:** The authors hope to determine which of the commonly implemented COVID-19 hospital-directed wellness initiatives were most effective for physicians, enabling tailored recommendations for future wellness plans. The hypothesis is that some hospital-directed wellness initiatives are significantly more effective than others. **Methods:** This cross-sectional survey was distributed via EM specific online email listservs and message boards, including ACEP, CORD, and SAEM/RAMS. Emergency Medicine physicians practicing in the USA were recruited; sample size was determined via convenience sample. Survey questions included practice setting, geographic location within the US, and pandemic-specific wellness initiatives implemented at institutions. Likert scale (1-5) responses were assessed for self reported effectiveness of each of the specified hospital wellness initiatives. Results were analyzed using descriptive statistics. **Results:** There were 527 responses eligible for inclusion. Morale at the time of the survey was significantly worse than morale at peak (4.36 v 4.57, $p = 0.02$). The most effective interventions were direct payment, informal debriefing sessions among staff, free food and community Thank You cards. The least effective was the use of a victory song. The most common intervention was free food. The least common was direct payment. Among effective interventions, only free food was offered a majority of the time. **Conclusions:** Hospital-directed wellness plans should focus resources on more effective interventions such as direct payments, free food, informal debriefing sessions, and community Thank You cards. Wellness plans should continue even after COVID-19 cases lessen.

Investigating the Epidemiological and Economic Effects of a Third-Party Certification Policy for Restaurants with COVID-19 Prevention Measures (preprint) <https://doi.org/10.21203/rs.3.rs-1417222/v1>

This study investigates the effects of a third-party certification policy for restaurants (including bars) that comply with indoor infection prevention measures on COVID-19 cases and economic activities. We focus on the case of Yamanashi Prefecture in Japan, which introduced a third-party certification policy that accredits facilities, predominantly restaurants, that comply with the designated guidelines. We employ a difference-in-differences design for each of our epidemiological and economic analyses. The estimation results show that, from July 2020 to April 2021, the certification policy reduced the total number of new

infection cases by approximately 45.3% (848 cases) while increasing total sales and the number of customers per restaurant by approximately 12.8% (3.21 million Japanese yen or \$30,000) and 30.3% (2,909 customers), respectively, compared to the non-intervention scenarios. The results suggest that a third-party certification policy can be an effective policy to mitigate the trade-off between economic activities and infection prevention during a pandemic, especially when effective vaccines are not widely available.

OTHER: GENERAL

The Effect of Vaccine Hesitancy on Racial and Ethnic Minority Children During the COVID-19 Pandemic.

<https://dx.doi.org/10.3928/19382359-20220216-01>

The coronavirus disease 2019 (COVID-19) outbreak has ravaged the world, with numerous cases disproportionately attributed to the United States due to vaccine hesitancy. One vulnerable group that has been affected by vaccine hesitancy is the pediatric population, particularly those in racial and ethnic minority groups. To improve health outcomes and vaccination rates, we must first understand the factors contributing to vaccine hesitancy and its subsequent influence on the pediatric population. The medical community can better tailor public health strategies by analyzing historical and current events contributing to COVID-19 vaccine hesitancy. A comprehensive approach will improve the health of children and society as a whole. [Pediatr Ann. 2022;51(3):e107-e111.].

Public Health Impacts of Exposure to Disinfectants, Therapeutics, and Illicit Substances During the COVID-19 Pandemic <https://doi.org/10.52794/hujpharm.978727>

The SARS-CoV-2 virus spread rapidly, infecting over a hundred million people worldwide; thus, it has been called the COVID-19 pandemic, in which it is very important to wear a protective mask, wash hands properly, obey social distance rules, and use disinfectants to protect ourselves against infection. Therefore, the consumption of cleaning agents such as disinfectants, surface cleaners, and bleach has increased during the pandemic. Misuse of these substances such as drinking or gargling of cleaners and excessive use has led to many poisoning cases and even deaths. In addition, quarantine and stay-at-home orders during the pandemic caused people to could not socialize and feel dissociated. Moreover, due to the economic problems, many people became unemployed, which affected substance abuse and alcohol consumption frequency, thus poisoning cases as well. This article aimed to review how the COVID-19 was affected the disinfectant or cleaner-induced poisoning cases and the public health impacts between the drug or substance abuse due to pandemic.

Equity of 2020-2021 school re-opening models and implementation of multi-tiered system of supports following initial COVID-19 building closure

The COVID-19 pandemic shed a light on the differences in educational outcomes within American public schools. Although race and socio-economic status is independently associated with scholastic outcomes, it is necessary to take an intersectional approach to examining the persistent and widening opportunity gap stemming from inequity in public education. Certain groups that have been historically marginalized continue to be disproportionately disadvantaged when it comes to educational outcomes. Researchers anticipated that students would return to school in September 2020 with far fewer academic gains compared to a typical school year. This academic loss could lead to a reduction in lifetime earnings, with disadvantaged students facing a greater loss (Kuhfeld & Tarasawa, 2020; Hanshek, 2020). The purpose of the proposed study was to provide insight into the relationship between public school re-opening models post COVID-19 building closure and the characteristics of the students served in each re-opening model. In addition, this study sought to determine the relationship between the quality and continuity of a multi-tiered system of supports (MTSS) within each of the main three school re-opening models. To

address the relationship between schools re-opening model and characteristics of students served, publicly available data from a sample of 73 public school districts within one county of the northeast United States was examined. In order to investigate the relationship between a school district's re-opening plan following COVID-19 building closure and the demographic and socio-economic make-up of students served in the school district, multinomial logistic regression analyses were conducted. Results indicated that a school district's percentage of Black students, a school district's percentage of students receiving ELL, a school district's percentage of students who received free and/or reduced lunch, and the total number of students enrolled in a district were statistically significant predictors for a school's re-opening model post COVID-19 building shutdown. To address MTSS implementation level, three case studies were completed, which revealed differences in overall level of MTSS implementation between in-person re-opening when compared to virtual or hybrid reopening. However overall level of MTSS implementation was similar across virtual and hybrid re-opening models. (PsycInfo Database Record (c) 2022 APA, all rights reserved)

Food and COVID-19 Lit Review: Weeks ending 03/11/2022, 03/18/2022

DNPAO

- Patterns of Food Assistance Program Participation, Food Insecurity, and Pantry Use among U.S. Households with Children during the COVID-19 Pandemic <https://doi.org/10.3390/nu14050988>
- Development of a Validated Tool to Screen for Food Allergy-associated Parental Anxiety (IMPAACT) <https://doi.org/10.1016/j.anai.2022.02.020>
- Hungry and hesitant: An exploration of the experience of stigma among on-campus food pantry users [dissertation] <https://scholarworks.calstate.edu/concern/theses/qb98mm49q?locale=en>
- Population-scale dietary interests during the COVID-19 pandemic <https://doi.org/10.1038/s41467-022-28498-z>
- CLASSIFICATION OF FOOD MENU AND GROUPING OF FOOD POTENTIAL TO SUPPORT THE FOOD SECURITY AND NUTRITION QUALITY <https://doi.org/10.28919/cmbn/6801>
- Hunger relief: A natural experiment from additional SNAP benefits during the COVID-19 pandemic <https://doi.org/10.1016/j.lana.2022.100224>

DFWED

- Facing Food Risk Perception: Influences of Confinement by SARS-CoV-2 Pandemic in Young Population <https://doi.org/10.3390/foods11050662>
- Food Safety Assessment: Overview of Metrological Issues and Regulatory Aspects in the European Union <https://doi.org/10.3390/separations9020053>
- The impact of health awareness, food safety attention, and attitude factors towards consumer purchase interest of food products post-rise of COVID-19 <https://doi.org/10.18551/rjoas.2022-02.01>

NIOSH

- Early Care and Education Workers' Experience and Stress during the COVID-19 Pandemic <https://doi.org/10.3390/ijerph19052670>

NCEH

- Design of a Smart Footwear Disinfecting Station for Crowded Premises https://doi.org/10.1007/978-981-16-7011-4_31
- Surveillance of SARS-CoV-2 in the environment and animal samples of the Huanan Seafood Market (preprint) <https://doi.org/10.21203/rs.3.rs-1370392/v1>
- SARS-CoV-2 Remained Airborne for a Prolonged Time in a Lockdown Confined Space <https://doi.org/10.4209/AAQR.210131>
- Water, Sanitation and Hygiene in Schools in Low- and Middle-Income Countries: A Systematic Review and Implications for the COVID-19 Pandemic <https://doi.org/10.3390/ijerph19053124>

NCFW

- Understanding the challenges faced by Michigan's family farmers: race/ethnicity and the impacts of a pandemic <https://doi.org/10.1007/S10460-022-10305-6>

OTHER: CROSS-CUTTING FOOD SYSTEMS

- A Multilingual App for Providing Information to SARS-CoV-2 Vaccination Candidates with Limited Language Proficiency: Development and Pilot <https://doi.org/10.3390/vaccines10030360>
- Resilience-by-Design and Resilience-by-Intervention in supply chains for remote and indigenous communities <https://doi.org/10.1038/s41467-022-28734-6>
- Rapid review of government issued documents relevant to mitigation of COVID-19 in the US food manufacturing and processing industry (preprint) <https://doi.org/10.1101/2022.02.25.22271516>
- Food Crisis as a Tool for Social Change: Lessons from New York City's COVID-19 Response <https://doi.org/10.1016/j.ugj.2022.03.001>
- Distributing Summer Meals during a Pandemic: Challenges and Innovations <https://doi.org/10.3390/ijerph19063167>

OTHER: GENERAL

- The changing epidemiology of SARS-CoV-2 <https://doi.org/10.1126/science.abm4915>
- Multi-disciplinary Leadership to Mitigate COVID-19 in an Austere West African Military Environment <https://doi.org/10.1093/milmed/usac045>
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DNPAO

Patterns of Food Assistance Program Participation, Food Insecurity, and Pantry Use among U.S. Households with Children during the COVID-19 Pandemic <https://doi.org/10.3390/nu14050988>

This study aims to describe differences in participation in the Supplemental Nutrition Assistance Program (SNAP), Special Supplemental Nutrition Program for Women and Children (WIC), and school meal programs by household characteristics prior to and during the pandemic, and to examine the association of program participation with food security status and food pantry use. We analyze secondary data (n = 470) from an online survey collected in July/August 2020 using weighted multiple logistic regression models. Participation in SNAP declined among households with children in the first four months of the pandemic, while participation in WIC increased slightly, and participation in school meals remained unchanged. There were significant differences in SNAP, WIC, and school meal programs use by race/ethnicity, income, and urbanicity before and during the pandemic. Food insecurity prevalence was higher among SNAP participants at both periods but the gap between participants and non-participants was smaller during the pandemic. Pantry use and food insecurity rates were

consistently higher among federal nutrition assistance program participants, possibly suggesting unmet food needs. These results highlight the need for increased program benefits and improved access to food, particularly during periods of hardship.

Development of a Validated Tool to Screen for Food Allergy-associated Parental Anxiety (IMPAACT)

<https://doi.org/10.1016/j.j.anai.2022.02.020>

Background : Parents commonly experience anxiety due to their children's food allergies (FA). Although FA-specific anxiety screening tools for adult and pediatric patients exist, a tool for parents with food-allergic children is lacking. **Objective :** This study aimed to develop and validate a tool that measures parental anxiety related to their child's FA. **Methods :** To construct the instrument, items were developed based on consultations with stakeholders and review of existing literature. The instrument was then pilot tested and items were modified based on relevance, importance, item-total correlations, and fit with the instrument's overall factor structure. The modified instrument was validated through assessing internal validity (reliability), convergent & discriminant validity, concurrent validity, and practical usefulness at two time points (pre-COVID and current). **Results :** The scale showed excellent reliability (Cronbach's $\alpha=.95$). It had a four-factor structure which was replicated at the two time-points. The four subscales were moderately correlated (between $r = .438$ and $.744$). The scale showed excellent convergent and discriminatory validity, correlating moderately with STAI and GAD, and highly with FAQL-PB. It also showed excellent concurrent validity, differentiating amongst many external variables. Most importantly, it successfully differentiated parents in need of psychological support for problems related to their child's FA. **Conclusion :** IMPAACT fills a gap in the existing literature by being the first screening tool to address parental anxiety associated with a child's FA. It has excellent internal and external validity, and is well-suited for use in both research and clinical settings to quickly determine which parents of children with FA are in need of further psychological support.

Hungry and hesitant: An exploration of the experience of stigma among on-campus food pantry users

[dissertation] <https://scholarworks.calstate.edu/concern/theses/qb98mm49q?locale=en>

Food insecurity on college campuses has been a mainstay with the research community over the past decade. Studies indicate that between 20-59% of college students struggle to access affordable, quality, and nutritious food, leading to numerous negative academic and mental health outcomes. Students who are hungry report lower academic performance and campus engagement, while also reporting higher levels of anxiety and depression. To address this issue, campuses across the country have established on-campus food pantries meant to serve students, staff, and faculty. Unfortunately, a number of barriers have been identified, with stigma being the leading reason that individuals do not visit the pantry. The current phenomenological study seeks to understand the lived experience of stigma as a result of using an on-campus food pantry at public institutions using semi-structured interviews with ten students. These findings help to fill in critical gaps in the research while also helping policymakers and administrators as they develop strategies and practices that promote service utilization and inclusion, while providing food pantry staff and volunteers with critical data useful for enhancing customer service and informing best practices. (PsycInfo Database Record (c) 2022 APA, all rights reserved)

Population-scale dietary interests during the COVID-19 pandemic <https://doi.org/10.1038/s41467-022-28498-z>

The SARS-CoV-2 virus has altered people's lives around the world. Here we document population-wide shifts in dietary interests in 18 countries in 2020, as revealed through time series of Google search volumes. We find that during the first wave of the COVID-19 pandemic there was an overall surge in food interest, larger and longer-lasting than the surge during typical end-of-year holidays in Western countries. The shock of decreased mobility manifested as a drastic increase in interest in consuming

food at home and a corresponding decrease in consuming food outside of home. The largest (up to threefold) increases occurred for calorie-dense carbohydrate-based foods such as pastries, bakery products, bread, and pies. The observed shifts in dietary interests have the potential to globally affect food consumption and health outcomes. These findings can inform governmental and organizational decisions regarding measures to mitigate the effects of the COVID-19 pandemic on diet and nutrition.

CLASSIFICATION OF FOOD MENU AND GROUPING OF FOOD POTENTIAL TO SUPPORT THE FOOD SECURITY AND NUTRITION QUALITY <https://doi.org/10.28919/cmbn/6801>

The Movement for Diverse, Nutritious, Balanced, and Safe Diet, in this article called by B2SA is a program from the Indonesian government to improve resilience and nutritional quality in line with one of the Sustainable Development Goals, especially during the Coronavirus Disease (COVID-19) pandemic. In this article, classification and grouping methods are carried out to determine the development of supporting the B2SA program in Indonesia, such as the classified menu arrangement and the potential for grouped foodstuffs, especially in East Java, which is one of the provinces with a high COVID-19 spread rate and contributes greatly to food security in Indonesia. The application of the classification method in this study is to compare the performance of logistic regression and random forest. In addition, the clustering method is applied by comparing the performance of Single Linkage and K-Means. The results of this study are the category of food menu recommended by the population of East Java, which turned out to be 49.3% not meeting the B2SA standard. As for the results of the grouping, there are four groups for potential food categories of staple foods and side dishes, two groups for the category of fruits and vegetables. These results are expected to be a recommendation for the government in supporting the stability of food security to strengthen the resilience of the food industry in Indonesia because it is a region that has food potential in Indonesia. © 2022 the author(s).

Hunger relief: A natural experiment from additional SNAP benefits during the COVID-19 pandemic <https://doi.org/10.1016/j.jana.2022.100224>

Summary Background COVID-19 has directly affected millions of people. Others have been indirectly affected; for example, there has been a startling increase in hunger brought about by the pandemic. Many countries have sought to relieve this problem through public policy. This research examines the effectiveness of enhanced Supplemental Nutrition Assistance Program (SNAP) benefits in the U.S. to alleviate hunger. Methods Using a biweekly cross-sectional survey and corresponding population weights from the U.S. Census Bureau, we estimate the effects of enhanced SNAP benefits on hunger in the U.S. as measured by food insufficiency. We use a Bayesian structural time series analysis to predict counterfactual values of food insufficiency. We supplement these findings by examining the effect of enhanced SNAP benefits on observed visits to a food pantry network in a midsized U.S. city. Findings Our primary finding estimates that nationwide a total 850,000 (95% credible interval 0.24–1.46 million) instances of food insufficiency were prevented per week by the 15 percent increase in SNAP benefits enacted in January 2021. Secondly, we find similar effects associated with SNAP benefit increases and local food pantry visits. Specifically, enhanced SNAP benefits resulted in fewer visits to the food pantry network than were predicted in the counterfactual model. Interpretation These results not only indicate that the policies enacted to mitigate hunger caused by the COVID-19 pandemic helped, but also quantifies how much these benefits helped on a national scale. As a result, policymakers can use this data to benchmark future policy actions at scale. Funding None.

DFWED

Facing Food Risk Perception: Influences of Confinement by SARS-CoV-2 Pandemic in Young Population <https://doi.org/10.3390/foods11050662>

A new food safety level of trust in food risk perception has been noticed, as a consequence of the SARS-CoV-2 pandemic. The pandemic made-up to review nutritional recommendations for the population, mainly for the young population. Here, the results of a designed survey for the young population, from the University of Valencia, Spain, belonging to grades in the health branch of knowledge, and in charge of carrying out the shopping task for their household, are reported. The study reports three different scenarios and years, as defined by the SARS-CoV-2 pandemic: before the pandemic (period January–December 2019), during the pandemic lockdown (period March 2020–August 2020), and after the pandemic lockdown (September 2020–June 2021). The survey was designed with questions, profiling responses using the best–worst elicitation (BWE) format. Results reported that trust and evaluation of information differed in all three scenarios. In the SARS-CoV-2 pandemic, there was (i) a high increase in trust in the information provided inside (by) the shopping place, while there were no changes for the outside (kept in medium score);(ii) trust in cooperative stakeholders went from a medium-low to medium-high score, while, for individual stakeholders, it was maintained as a medium score, and (iii) trust in information on food products was kept in high score. Regarding the evaluation of the information provided by stakeholders, a tendency in medium score was maintained, while that from the channels of distribution went from medium-low to medium-high for buying on-site. A uniform tendency was observed for online/other distribution channels for all three years and descriptors studied: “Internet”, “Farmer on-demand”, and “Cooperative consumers” (<50%). This research provides findings of implications that contribute to changing the perception of food risk, due to the COVID-19 pandemic, i.e., the adaptation of the young population, trust in safety and quality, and importance of coordination from all communication points to avoid negative or strongest consequences, in case of future lockdowns or health crisis. © 2022 by the authors. Licensee MDPI, Basel, Switzerland.

Food Safety Assessment: Overview of Metrological Issues and Regulatory Aspects in the European Union <https://doi.org/10.3390/separations9020053>

The safety of the food we consume has a direct impact on individual and population health and affects the economic growth of the region where food safety is practised and enhanced. The central goal of the European Commission’s Food Safety policy is to ensure a high level of protection of human health covering the whole supply chain. In recent years, great attention has been paid to food testing and the application of metrological tools to support food safety. The global food market and national and international food safety regulations have created a huge demand for the measurement traceability and comparability of analytical results that are independent of time or space boundaries. This review provides an overview of the European food safety policy and regulation, with a focus on the measurement-related elements of the European Union (EU) food law. It also highlights how the application of analytical techniques, with particular reference to separation approaches, and metrological tools can ensure the control of certain contaminants that nowadays represent the main challenges for food safety (e.g., mycotoxins, nanoparticles, emerging and process contaminants). METROFOOD-RI-Infrastructure for promoting metrology in food and nutrition is therefore described in this context. This European research infrastructure has been developed and is being implemented in the frame of the European Strategy Forum on Research Infrastructures (ESFRI) to support metrology in food and nutrition and establish a strategy allowing reliable and comparable analytical measurements in food across the entire process line, from primary producers to consumers, and making data findable, accessible, interoperable, and reusable (FAIR).

The impact of health awareness, food safety attention, and attitude factors towards consumer purchase interest of food products post-rise of COVID-19 <https://doi.org/10.18551/rjoas.2022-02.01>

This study purposes to analyze the relationship between the factors that shape consumer decisions in purchasing food products after the Covid 19 incident in June 2021. Consumers currently have high

attention to the food products they consume. The Attention to Food Safety variable has a positive and highly significant effect on the Attitude and Purchase Intention variables, which are also consumer concerns about food safety which increase during the Covid-19 event. Attitude variable has a positive and highly significant effect on the Purchase Intention variable, interest can reflect a person's willingness to take a certain action. Consumers pay more for good quality products and services for the food products they consume.

NIOSH

Early Care and Education Workers' Experience and Stress during the COVID-19 Pandemic

<https://doi.org/10.3390/ijerph19052670>

Early care and education (ECE) workers experience many job-related stressors. During the COVID-19 pandemic, ECE programs either closed or remained open while workers faced additional demands. We deployed a survey of the center-based ECE workforce in Washington State (United States) one year into the COVID-19 pandemic to assess impacts and workers' perceived stress levels. We describe the prevalence of reported impacts, including workplace closures; job changes; COVID-19 transmission; risk factors for severe COVID-19; the use of social distancing practices; satisfaction with workplace responses; perceptions of worker roles, respect, and influence; and food and financial insecurity. Themes from open-ended responses illustrate how workers' jobs changed and the stressors that workers experienced as a result. Fifty-seven percent of ECE workers reported moderate or high levels of stress. In a regression model assessing unique contributions to stress, work changes that negatively impacted home life contributed most to stress. Feeling respected for one's work and feeling positive about one's role as an "essential worker" contributed to lower levels of stress. Experiencing financial insecurity, caring for school-aged children or children of multiple ages, being younger, and being born in the United States also contributed to higher stress. Findings can inform policies designed to support the workforce. © 2022 by the authors. Licensee MDPI, Basel, Switzerland.

NCEH

Design of a Smart Footwear Disinfecting Station for Crowded Premises https://doi.org/10.1007/978-981-16-7011-4_31

Since the first virus was identified in the early last century, many kinds of different viruses have been discovered until now that can harm a human being. One of these is severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) or well known as coronavirus, which has pushed the entire world into a deadly pandemic. The pandemic has been affecting public health, employment, lifestyle, and the entire food system. To protect our house, workplace, and heavily populated areas such as markets and hospitals from being infected by the virus, it needs to be stopped in every possible way to be spread. Footwear is one of the potential sources of contamination and possible carrier of the virus, especially if it touches an infected place or someone who has already infected sneezes or coughs nearby. Since most footwear is made of leather, rubber, and plastic, the virus can live on these for many days at room temperature. Even footwear can be a breeding ground for bacteria and viruses as it comes in contact with dirt and germs more than anything else. In this paper, a smart device for disinfecting footwear has been proposed for crowded premises. The sensing device will automatically sense the visitor's presence at the entrance and will disinfect his footwear by spraying disinfecting agent underneath the footwear or foot. This disinfecting station will allow visitors to disinfect their footwear without stopping and will ensure effecting sanitization of the entire sole even if the sole has deep flex grooves or high heels. © 2022, The Author(s), under exclusive license to Springer Nature Singapore Pte Ltd.

Surveillance of SARS-CoV-2 in the environment and animal samples of the Huanan Seafood Market (preprint) <https://doi.org/10.21203/rs.3.rs-1370392/v1>

Emerging in December 2019, coronavirus disease 2019 (COVID-19) eventually became a pandemic and has posed a tremendous threat to global public health. However, the origins of SARS-CoV-2, the causative agent of COVID-19, remain to be determined. It has reported that a certain number of the early case clusters had a contact history with Huanan Seafood Market. Therefore, surveillance of SARS-CoV-2 within the market is of vital importance. Herein, we presented the SARS-CoV-2 detection results of 1380 samples collected from the environment and the animals within the market in early 2020. By SARS-CoV-2-specific RT-qPCR, 73 environmental samples tested positive for SARS-CoV-2 and three live viruses were successfully isolated. The viruses from the market shared nucleotide identity of 99.980% to 99.993% with the human isolate HCoV/Wuhan/IVDC-HB-01. In contrast, no virus was detected in the animal swabs covering 18 species of animals in the market. The SARS-CoV-2 nucleic acids in the positive environmental samples showed significant correlation of abundance of *Homo sapiens* with SARS-CoV-2. In summary, this study provided convincing evidence of the prevalence of SARS-CoV-2 in the Huanan Seafood Market during the early stage of COVID-19 outbreak.

SARS-CoV-2 Remained Airborne for a Prolonged Time in a Lockdown Confined Space

<https://doi.org/10.4209/AAQR.210131>

Airborne transmission of COVID-19 plays an important role for the pandemic. However, nucleic acid based evidence of direct association of COVID-19 with environmental contamination is lacking. Here, we investigated a COVID-19 outbreak with two fast food employees infected, in which a traveler despite of a 14-day quarantine turned positive after check in with a hotel, using environmental SARS-CoV-2 sampling, epidemiological tracing, viral RNA sequence as well as surveillance method. Out of 25 positive environmental air and surface swab samples (N = 237) collected, SARS-CoV-2 was found to have remained airborne (5640–7840 RNA copies m⁻³) for more than 4 days in a female washroom. After aging for 5 days in the air, no viable virus was detected. The traveler did not have any contacts with the two employees; however, genome sequencing showed that SARS-CoV-2 variants from three patients and two environmental surface samples belonged to 20B viral clade, sharing a nucleic acid identity of more than 99.9%. We concluded that the outbreak was triggered by SARS-CoV-2 contaminated environments, where the employees inhaled the virus from the air or touching facility surfaces where the traveler did not have any physical contacts with. © The Author(s).

Water, Sanitation and Hygiene in Schools in Low- and Middle-Income Countries: A Systematic Review and Implications for the COVID-19 Pandemic <https://doi.org/10.3390/ijerph19053124>

The global COVID-19 pandemic has revealed the extent to which schools are struggling with the provision of safe drinking water, sanitation and hygiene (WASH). To describe the WASH conditions in schools and discuss the implications for the safe reopening of schools during the ongoing COVID-19 pandemic, a systematic review of peer-reviewed literature on WASH in schools in low- and middle-income countries was performed. In April 2021, five databases, including MEDLINE (via PubMed), Web of Science, Scopus, AJOL, and LILACS, were used to identify studies. Sixty-five papers met the inclusion criteria. We extracted and analyzed data considering the Joint Monitoring Programme (JMP) definitions and the normative contents of Human Rights to safe drinking water and sanitation. Publications included in this systematic review considered 18,465 schools, across 30 different countries. Results indicate a lack of adequate WASH conditions and menstrual hygiene management requirements in all countries. The largely insufficient and inadequate school infrastructure hampers students to practice healthy hygiene habits and handwashing in particular. In the context of the COVID-19 pandemic, being

hindered to implement such a key strategy to contain the spread of SARS-CoV-2 in the school environment is of major concern.

NCFW

Understanding the challenges faced by Michigan's family farmers: race/ethnicity and the impacts of a pandemic <https://doi.org/10.1007/S10460-022-10305-6>

Michigan is a critical agricultural state, and small family farms are a crucial component of the state's food sector. This paper examines how the race/ethnicity of the family farm owners/operators is related to farm characteristics, financing, and impacts of the pandemic. It compares 75 farms owned/operated solely by Whites and 15 with People of Color owners/operators. The essay examines how farmers finance their farm operations and the challenges they face doing so. The article also explores how the Coronavirus-19 (COVID-19) pandemic affected farming operations, the financial viability of farms, and how farmers responded to the challenges posed by the pandemic. The study found that People of Color farm owners/operators were younger than White farm owners/operators. The People of Color farm owners/operators tended to manage smaller farms for shorter periods than White farm owners/operators. Though two-thirds of the Farmers of Color owned their farms, they were more financially vulnerable than White farm owners/operators. The farmers studied had difficulty obtaining loans to finance their farms. Farmers reported increasing requests from people for food assistance during the pandemic. Farmers responded to the pandemic by participating in government programs such as the Farm to Families Food Box Program that purchased their produce. It allowed farmers to supply emergency food assistance programs with products from their farms. The products went to families receiving food assistance from soup kitchens, food banks, and other community-based nonprofits.

OTHER: CROSS-CUTTING FOOD SYSTEMS

A Multilingual App for Providing Information to SARS-CoV-2 Vaccination Candidates with Limited Language Proficiency: Development and Pilot <https://doi.org/10.3390/vaccines10030360>

Language barriers are obstacles in receiving vaccinations against COVID-19. They jeopardize informed consent, vaccination safety, and a positive immunization experience. We have developed a multilingual app to overcome language barriers when dealing with vaccination candidates with a limited proficiency in the locally spoken language. We applied the Spiral Technology Action Research (STAR) model to create the app within a discursive process involving healthcare professionals (HCPs) from vaccination sites, literature searches and guidelines, and field trials at vaccination centers. In a real-world pilot test, we assessed the usability and feedback for further improvement. Our efforts resulted in an app that facilitates communication with vaccination candidates in 40 languages, each with over 500 phrases that can be played back or displayed as text. In the pilot test, the app demonstrated its usability, and was well accepted by the vaccination candidates (n = 20). The app was mainly used to inform about the risks and benefits of the SARS-CoV-2 vaccination. Some HCPs struggled to navigate the comprehensive content and the pilot test exposed the need for additional phrases. The STAR model proved to be flexible in adapting to dynamic pandemic conditions and changing recommendations. This multilingual app overcomes language barriers in healthcare settings, promoting vaccines to migrants with limited language proficiency.

Resilience-by-Design and Resilience-by-Intervention in supply chains for remote and indigenous communities <https://doi.org/10.1038/s41467-022-28734-6>

The COVID-19 pandemic has illustrated the fragility of food security and associated supply chains for remote and Indigenous communities. Here we highlight challenges faced by the Tribal Population of Noepe (Martha's Vineyard) and argue for the inclusion of Resilience-by-Design and Resilience-by-Intervention in supply chain management. Indigenous and remote communities face difficulties in times of supply chain disruption. Here the authors comment on challenges faced by the Tribal Population of Noepe (Martha's Vineyard) and argue for the inclusion of Resilience-by-Design and Resilience-by-Intervention in supply chain management.

Rapid review of government issued documents relevant to mitigation of COVID-19 in the US food manufacturing and processing industry (preprint) <https://doi.org/10.1101/2022.02.25.22271516>

We surveyed publicly available records published by the United States (US) government between the start of the Coronavirus Disease 2019 (COVID-19) pandemic and September 30 th , 2021, to identify documents containing resources or guidelines about COVID-19 mitigation relevant to the US food manufacturing and processing industry (hereafter referred to as "the food processing industry"). Among 36 documents identified and reviewed (including 35 from government agencies and one from a relevant professional association), we extracted 19 categories of mitigation strategies covering the themes of employee biosafety, surveillance, vaccination, social distancing, and worker education. We concluded that the priority of COVID-19 mitigation in the food processing industry was to protect the health and safety of industry workers while maintaining food supply chain resilience to minimize disturbance in the food market and avoid food crisis. A collated list of the identified documents and their comprehensive review will (i) aid researchers and public health workers in interpreting the potential impacts of the recommended mitigations on the epidemiology of the disease among workers in the food processing industry and (ii) help the food processing industry sort out the most essential strategies to take in face of a pandemic.

Food Crisis as a Tool for Social Change: Lessons from New York City's COVID-19 Response <https://doi.org/10.1016/j.ugj.2022.03.001>

The COVID-19 pandemic disrupted food availability and affordability and changed the daily food practices of New Yorkers in three critical ways: (1) closing restaurants and public institutions, including schools, reduced food access and changed shopping patterns, food expenditures, and diets;(2) economic disruption exacerbated food insecurity and increased the need for food assistance;and (3) altered food practices affected diets. Vulnerable populations were disproportionately affected by these disruptions to the food system. The city's response included emergency measures to stave off food insecurity and hunger, yet the crisis also prompted a refocusing of food governance to address other social equity issues in the food system: fears of engaging with food programs by immigrant communities;disparities in access to online grocers;worker rights and worker ownership;and new priorities for the use of public space. The paper presents policy responses to the pandemic that illustrate how the crisis has opened opportunities for initiating changes that can lead to a more just food system.

Distributing Summer Meals during a Pandemic: Challenges and Innovations <https://doi.org/10.3390/ijerph19063167>

The USDA summer food programs provide meals for children when school is not in session. Although the COVID-19 pandemic has created challenges for food distribution programs, many regulations have been waived, providing opportunities for new approaches to meal distribution. The aim of this study was to identify practices designed to increase program participation during the summer of 2021. Semi-structured interviews were conducted with food service directors (N = 16) in a northeastern state. Questions addressed meal distribution methods;perceptions about facilitators and barriers to family participation;communication strategies used to reach families;and engagement with community

partners. The responses were analyzed using an immersion-crystallization approach and four themes emerged: new opportunities for innovation due to the waivers; the importance of collaboration with community partners to increase reach; ongoing logistical challenges due to the pandemic; and the challenge and importance of reducing the stigma of participation. These findings underscore how the USDA waivers increased food service directors' ability to flexibly and creatively solve problems related to summer meal delivery. The FSDs believed that several of the waivers helped them increase participation in the summer meal program, suggesting that permanent changes to the summer meal regulations may be appropriate.

OTHER: GENERAL

The changing epidemiology of SARS-CoV-2 <https://doi.org/10.1126/science.abm4915>

We have come a long way since the start of the COVID-19 pandemic—from hoarding toilet paper and wiping down groceries to sending our children back to school and vaccinating billions. Over this period, the global community of epidemiologists and evolutionary biologists has also come a long way in understanding the complex and changing dynamics of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), the virus that causes COVID-19. In this Review, we retrace our steps through the questions that this community faced as the pandemic unfolded. We focus on the key roles that mathematical modeling and quantitative analyses of empirical data have played in allowing us to address these questions and ultimately to better understand and control the pandemic.

Multi-disciplinary Leadership to Mitigate COVID-19 in an Austere West African Military Environment

<https://doi.org/10.1093/milmed/usac045>

INTRODUCTION: The COVID-19 pandemic created challenges for forward-deployed military units to Western Africa. Austere military environments afford multiple avenues to transmit COVID-19 amongst service members. **MATERIALS AND METHODS:** A COVID-19 outbreak on a military base in Western Africa spanning over 100 days is statistically analyzed using a Pearson's correlation coefficient. Furthermore, a COVID-19 reproductive number (R_0) is evaluated to examine the relationship between specific command-directed policies to mitigate COVID-19 transmission. **RESULTS:** The multidisciplinary partnership of military command, medical, and public health leadership implemented evidence-based and epidemiologically informed COVID-19 preventive base-wide policies, including appropriate isolation/quarantine policies. The R_0 for the outbreak was 0.03 and remained < 1 for the outbreak duration. This base remained COVID-19 free for multiple weeks after policy implementation. **CONCLUSIONS:** The implementation of practical mitigating base-wide policies through seamless communication between military command/medical/public health leadership resolved the COVID-19 outbreak while maintaining mission readiness. Weekly COVID-19 testing epidemiological data may be utilized by commanders to direct further decision-making on tightening/loosening base-wide policy restrictions for continued mission-essential operations, e.g., security, food service, or airfield operations.

Food and COVID-19 Lit Review: Weeks ending 02/25/2022, 03/04/2022

DNPAO

- Telehealth and food insecurity screenings: challenges and lessons learned <https://doi.org/10.21037/mhealth-21-31>
- The Influence of Nutritional Supplementation for Iron Deficiency Anemia on Pregnancies Associated with SARS-CoV-2 Infection <https://doi.org/10.3390/nu14040836>

DFWED

- An Evaluation of a Virtual Food Safety Program for Low-Income Families: Applying the Theory of Planned Behavior <https://doi.org/10.3390/foods11030355>
- Occurrence of viruses in sewage sludge: A systematic review <https://doi.org/10.1016/j.scitotenv.2022.153886>

NIOSH

- Risk factors, immune response and whole-genome sequencing of SARS-CoV-2 in a cruise ship outbreak in Norway <https://doi.org/10.1016/j.ijid.2022.02.025>
- Outbreak investigation of airborne transmission of Omicron (B.1.1.529) - SARS-CoV-2 Variant of Concern in a restaurant: implication for enhancement of indoor air dilution <https://doi.org/10.1016/j.jhazmat.2022.128504>

NCEH

- Environmental factors influencing the transmission of the coronavirus 2019: a review <https://doi.org/10.1007/s10311-022-01418-9>

NCFW

- Mexican Migrant Farmworkers in Canada: Death, Disposability, and Disruptions during COVID-19 <https://doi.org/10.1525/msem.2022.38.1.140>
- COVID-19 and Essential Workers: Healthcare Delays among Organic Farmers
DOI: [10.1016/j.jhq.2022.02.001](https://doi.org/10.1016/j.jhq.2022.02.001)

OTHER: CROSS-CUTTING FOOD SYSTEMS

- The COVID-19 Pandemic, the Crisis of Care, and Mexican Immigrants in the United States: A Preliminary Analysis <https://doi.org/10.1525/msem.2022.38.1.170>
- The Impact of the COVID-19 Pandemic on Restaurant Resilience: Lessons, Generalizations, and Ideas for Future Research <https://doi.org/10.1287/serv.2021.0293>
- Impact of the COVID-19 pandemic on food production and animal health <https://doi.org/10.1016/j.tifs.2021.12.003>

OTHER: GENERAL

- Ethnic/racial minorities' and migrants' access to COVID-19 vaccines: A systematic review of barriers and facilitators <https://doi.org/10.1016/j.jmh.2022.100086>
- Communicating with Stakeholders via Twitter: From CSR to COVID-19 https://doi.org/10.1007/978-3-030-91532-2_10
- Latinx Community College Students and the (In)Opportunities Brought by COVID-19 Pandemic <https://doi.org/10.1080/15348431.2022.2039152>
- Food for thought: Eating before saliva collection and interference with SARS-CoV-2 detection <https://doi.org/10.1002/jmv.27660>
- A vicious cycle of health (IN)equity: Migrant inclusion in light of COVID-19 <https://doi.org/10.1016/j.hlpt.2022.100606>

Telehealth and food insecurity screenings: challenges and lessons learned

<https://doi.org/10.21037/mhealth-21-31>

Food insecurity remains a persistent problem in the United States and affected 35.2 million Americans in 2019. In the wake of COVID-19, food insecurity has increased in many communities. Given that food insecurity exacerbates poor health or health conditions, screening of food insecurity within medical settings is frequently identified within the literature as an important first step in effectively addressing this social concern and improving the health outcomes of patients. However, health care providers often do not screen for food insecurity for a variety of reasons. In this article review, we discuss the challenges associated with incorporating food insecurity screenings within the medical model and how the COVID-19 pandemic has exacerbated these challenges. Specifically, the COVID-19 pandemic has substantially increased the delivery of health care services via telehealth, making screening for food insecurity even more difficult via remote videoconferencing. We examine the strengths and weaknesses of telehealth and their implications for food insecurity screenings. We discuss how these implications might inform future research regarding the use of telehealth as a means of screening patients for social determinants of health in the COVID-19 era. Given that the use of telehealth is not expected to back to pre-pandemic levels, it is important to understand how to best screen for social determinants of health via videoconferencing.

The Influence of Nutritional Supplementation for Iron Deficiency Anemia on Pregnancies Associated with SARS-CoV-2 Infection

<https://doi.org/10.3390/nu14040836>

Anemia is a very common occurrence during pregnancy, with important variations during each trimester. Anemia was also considered as a risk factor for severity and negative outcomes in patients with SARS-CoV-2 infection. As the COVID-19 pandemic poses a significant threat for pregnant women in terms of infection risk and access to care, we developed a study to determine the impact of nutritional supplementation for iron deficiency anemia in correlation with the status of SARS-CoV-2 infection. In a case-control design, we identified 446 pregnancies that matched our inclusion criteria from the hospital database. The cases and controls were stratified by SARS-CoV-2 infection history to observe the association between exposure and outcomes in both the mother and the newborn. A total of 95 pregnant women were diagnosed with COVID-19, having a significantly higher proportion of iron deficiency anemia. Low birth weight, prematurity, and lower APGAR scores were statistically more often occurring in the COVID-19 group. Birth weight showed a wide variation by nutritional supplementation during pregnancy. A daily combination of iron and folate was the optimal choice to normalize the weight at birth. The complete blood count and laboratory studies for iron deficiency showed significantly decreased levels in association with SARS-CoV-2 exposure. Puerperal infection, emergency c-section, and small for gestational age were strongly associated with anemia in patients with COVID-19. It is imperative to screen for iron and folate deficiency in pregnancies at risk for complications, and it is recommended to supplement the nutritional intake of these two to promote the normal development and growth of the newborn and avoid multiple complications during pregnancy in the COVID-19 pandemic setting.

DFWED

An Evaluation of a Virtual Food Safety Program for Low-Income Families: Applying the Theory of Planned Behavior

<https://doi.org/10.3390/foods11030355>

Low-income families are reported to have a limited knowledge of food safety and resources to follow food safety practices compared with the rest of the population. This paper evaluated a virtual food safety educational program targeting food handlers in low-income families. Trained native speakers of English and Spanish delivered course materials in both languages. A total of 60 individuals participated in the program, with 30 participants in each language group. Most were female, and most had fewer

than three children. After the program, participants' food safety knowledge and self-reported safe food practice behavior scores increased significantly from 5.32 to 7.43 (out of 8.00) and from 24.78 to 29.30 (out of 35.00), respectively. The theory of planned behavior (TPB) was used to understand individuals' behavior change intention of food safety practices. All the TPB constructs' scores, including attitudes toward the behavior, perceived behavioral control, subjective norms, and behavior change intentions, were improved significantly; however, only the subjective norms and perceived behavioral control were significantly correlated with the behavior change intentions. This virtual educational program improved low-income individuals' food safety knowledge and changed their food safety attitudes and behaviors, giving a path to develop and evaluate more virtual food safety educational programs in the future.

Occurrence of viruses in sewage sludge: A systematic review

<https://doi.org/10.1016/j.scitotenv.2022.153886>

Enteric viruses are of great importance in wastewater due to their high excretion from infected individuals, low removal in wastewater treatment processes, long-time survival in the environment, and low infectious dose. Among the other viruses, severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) surveillance in wastewater systems has received particular attention as a result of the current COVID-19 epidemic. Viruses adhering to solid particles in wastewater treatment processes will end up as sewage sludge, and therefore insufficient sludge treatment may result in viral particles dissemination into the environment. Here, we review data on viruses' presence in sewage sludge, their detection and concentration methods, and information on human health issues associated with sewage sludge land application. We used combinations of the following keywords in the Scopus, Web of Science (WOS), and PubMed databases, which were published between 2010 and January 21th, 2022: sludge (sewage sludge, biosolids, sewage solids, wastewater solids) and virus (enteric virus, viral particles, viral contamination, SARS-CoV-2, coronavirus). The sources were searched twice, once with and then without the common enteric virus names (adenovirus, rotavirus, norovirus, enterovirus, hepatitis A virus). Studies suggest adenovirus and norovirus as the most prevalent enteric viruses in sewage sludge. Indeed, other viruses include rotavirus, hepatitis A virus, and enterovirus were frequently found in sewage sludge samples. Untreated biological sludge and thickened sludge showed more viral contamination level than digested sludge and the lowest prevalence of viruses was reported in lime stabilized sludge. The review reveals that land application of sewage sludge may pose viral infection risks to people due to accidentally ingestion of sludge or intake of crops grown in biosolids amended soil. Moreover, contamination of groundwater and/or surface water may occur due to land application of sewage sludge.

NIOSH

Risk factors, immune response and whole-genome sequencing of SARS-CoV-2 in a cruise ship outbreak in Norway <https://doi.org/10.1016/j.ijid.2022.02.025>

Objective : To improve understanding of SARS-CoV-2-transmission and prevention measures on cruise ships, we investigated a Norwegian cruise ship outbreak in July-August 2020 using a multidisciplinary approach, following a rapid outbreak-response launched by local and national health-authorities.

Methods : We conducted a cross-sectional study among crew members using epidemiological data and results from SARS-CoV-2-PCR of nasopharynx-oropharynx samples, antibody analyses of blood-samples, and whole-genome sequencing.

Results : We included 114 multinational crew members (71% participation), median age 36 years and 69% men. Attack rate was 33%; 32 of 37 outbreak-cases were seropositive 5-10 days post-PCR. One PCR-negative participant was seropositive, suggesting prior infection. Network-analysis showed clusters based on common exposures, including embarkation date, nationality, sharing cabin with an infected cabin-mate (AOR 3.27 (95%CI 0.97-11.07, p=0.057), and specific workplaces (mechanical operations: 9.17 (1.82-45.78), catering: 6.11 (1.83-20.38)). Breaches in

testing, quarantine and isolation practices before/during expeditions were reported. Whole-genome sequencing revealed lineage B.1.36, previously identified in Asia. Despite extensive sequencing, continued transmission of B.1.36 in Norway was not detected. Conclusions : Our findings confirm high risk of SARS-CoV-2-transmission on cruise ships related to workplace and cabin-type and show that continued community-transmission after the outbreak could be stopped by implementing immediate infection control measures at the final destination.

Outbreak investigation of airborne transmission of Omicron (B.1.1.529) - SARS-CoV-2 Variant of Concern in a restaurant: implication for enhancement of indoor air dilution

<https://doi.org/10.1016/j.jhazmat.2022.128504>

Airborne transmission of SARS-CoV-2 has been increasingly recognized in the outbreak of COVID-19, especially during the emergence of Omicron variant. We investigated an outbreak due to Omicron variant in a restaurant. Besides the epidemiological and phylogenetic analysis, the secondary attack rates of customers of restaurant-related COVID-19 before (outbreak R1) and after enhancement of indoor air dilution (outbreak R2) were compared. On 27th December 2021, an index case attended restaurant R2 for 98 minutes. Except for 1 sitting in the same table, six other secondary cases sat in 3 corners at 3 different zones, where designated staff served customers at different zones. The median exposure time was 34 minutes (range: 19-98 minutes). All 7 secondary cases were phylogenetically related to the index. Smoke test demonstrated the airflow direction which explained the distribution of secondary cases. Compared with an earlier COVID-19 outbreak in another restaurant R1 (19th February 2021), just preceding the mandatory requirement of enhancement of indoor air dilution, the secondary attack rates among customers in R2 was significantly lower than that in R1 (3.4%, 7/207 vs 28.9%, 22/76, $p < 0.001$). Enhancement of indoor air dilution including ventilation and installation of air purifier and upper-room ultraviolet-C germicidal irradiation could minimize the risk of SARS-CoV-2 transmission in the restaurant.

NCEH

Environmental factors influencing the transmission of the coronavirus 2019: a review

<https://doi.org/10.1007/s10311-022-01418-9>

The coronavirus 2019 pandemic, induced by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), has strongly altered healthcare systems and the economy worldwide. The lack of knowledge on this virus has led to the implementation of uncertain strategies and measures to fight the pandemic. Here, we review environmental factors that control viral transmission, such as air, temperature, humidity, food, water and sewage, insects, inanimate surfaces, hand hygiene, and social distancing. The main route of viral transmission is the respiratory tract through aerosols. Masks and social distancing are effective in ceasing air transmission. Proper cleaning of surfaces and hand disinfection are required, especially in healthcare units. Food should be handled properly, and food handlers should work based on hygienic protocols. Water and sewage transmission, and transmission through insects appear less important than other environmental factors.

NCFW

Mexican Migrant Farmworkers in Canada: Death, Disposability, and Disruptions during COVID-19

<https://doi.org/10.1525/msem.2022.38.1.140>

This essay focuses on Mexican migrant farmworkers employed in the Seasonal Agricultural Workers Program (SAWP) during the COVID-19 pandemic in Canada. During this time, Mexican workers became essential yet expendable while their agricultural employers reaped the material rewards as an essential industry. Through the lens of racialization and structural vulnerability, I explicate how the Mexican and

Canadian states facilitated the continuation of capital accumulation in agriculture through the subjugation of Mexican workers. I seek to contribute to the nascent literature on the pandemic in relation to temporary-labor migration programs, Mexican migrant workers, and the racialization of workers to produce a tractable and cheap labor force.

COVID-19 and Essential Workers: Healthcare Delays among Organic Farmers

DOI: [10.1016/j.jhq.2022.02.001](https://doi.org/10.1016/j.jhq.2022.02.001)

Introduction and Objective: While the overall impact of COVID-19 is still being assessed, there is strong evidence that the pandemic has greatly aggravated traditional flaws of healthcare systems around the globe. Understanding the healthcare impact of the COVID-19 pandemic is essential for emergency preparedness and the prevention of collateral damage. The food and agriculture sector is an essential service and critical to food availability and access. However, literature on the healthcare impact of COVID-19 in farmers is scarce. This study aimed to explore healthcare delays caused by the COVID-19 pandemic in certified organic producers. **Methods:** An observational Cross-sectional study based on answers of an electronic self-reported survey. Participants included were United States certified organic producers listed in the Organic Integrity Database. **Results:** Respondents represented 40 states; response rate was estimated at 11%. Analyses were conducted on 344 records. A high majority were non-Hispanic Whites with a four-year college education or more. More than 90% had health insurance. More than one-third (36.5%) of respondents reported healthcare delays. Female producers were nearly twice as likely to report non-COVID-19 related healthcare delays as their male counterparts (OR 1.95, 95% CI: 1.10-3.44). **Conclusion:** This study provides national data on healthcare delays among organic producers and their households and identifies sex differences in non-COVID-19 related healthcare delays. This study is the first to collect data on organic producers and can serve as a baseline for future studies; it may inform practice, research and policy on emergency preparedness, protection of essential workers, and healthcare services and quality.

OTHER: CROSS-CUTTING FOOD SYSTEMS

The COVID-19 Pandemic, the Crisis of Care, and Mexican Immigrants in the United States: A Preliminary Analysis <https://doi.org/10.1525/msem.2022.38.1.170>

In the transition from Fordist to flexible accumulation in the last decades of the twentieth century, social reproduction was externalized onto families and communities. In the United States, this “crisis of care” was mitigated by the incorporation of illegalized Mexican immigrants’ low-cost reproductive labor in private and public services. From a feminist perspective on social reproduction and migration, we argue that the impacts of the COVID-19 economic crisis on Mexican immigrant communities were related to the specific ways that immigrants’ labor was incorporated into the circuits of social reproduction. Drawing on interviews with migrants from rural central Mexico in the United States, we analyze how immigrants absorbed the worst effects of the crisis by cheapening their labor, transferring unpaid reproductive labor to other household members, and engaging in informalized activities. Anti-immigrant policies exacerbated the precarious situations of undocumented immigrants and mixed-status Mexican families during the pandemic.

The Impact of the COVID-19 Pandemic on Restaurant Resilience: Lessons, Generalizations, and Ideas for Future Research <https://doi.org/10.1287/serv.2021.0293>

Pandemics cause business disruptions that have serious implications for the design and delivery of services, leading to adverse performance consequences for services industries. Focusing on the restaurant industry, the authors present a conceptual framework of restaurants' resilience during a pandemic that is grounded in existing services and strategy research, secondary and qualitative sources, and insights obtained from social media data. This framework is tested via an empirical analysis of the

Yelp COVID-19 data set. Several interesting trends in consumer preferences are identified including a rapid shift toward third-party app delivery models. Surprisingly, the analysis shows that partnering with third-party app delivery services before COVID improved firms' resilience, whereas during the pandemic, these partnerships have a negative impact on restaurant survival. Furthermore, the study documents some important differences between the drivers of restaurant survival before versus during the pandemic, highlighting critical changes in consumer preferences that may shape the industry in the future.

Impact of the COVID-19 pandemic on food production and animal health

<https://doi.org/10.1016/j.tifs.2021.12.003>

Background: Severe acute respiratory coronavirus syndrome 2 (SARS-CoV-2) is the etiological agent of coronavirus disease 2019 (COVID-19). SARS-CoV-2 was first detected in Wuhan, China and spread to other countries and continents causing a variety of respiratory and non-respiratory symptoms which led to death in severe cases. **Scope and approach:** In this review, we discuss and analyze the impact of the COVID-19 pandemic on animal production systems and food production of meat, dairy, eggs, and processed food, in addition to assessing the impact of the pandemic on animal healthcare systems, animal healthcare quality, animal welfare, food chain sustainability, and the global economy. We also provide effective recommendations to animal producers, veterinary healthcare professionals, workers in animal products industries, and governments to alleviate the effects of the pandemic on livestock farming and production systems. **Key findings and conclusions:** Port restrictions, border restrictions, curfews, and social distancing limitations led to reduced quality, productivity, and competitiveness of key productive sectors. The restrictions have hit the livestock sector hard by disrupting the animal feed supply chain, reducing animal farming services, limiting animal health services including delays in diagnosis and treatment of diseases, limiting access to markets and consumers, and reducing labor-force participation. The inhumane culling of animals jeopardized animal welfare. Egg smashing, milk dumping, and other animal product disruptions negatively impacted food production, consumption, and access to food originating from animals. In summary, COVID-19 triggered lockdowns and limitations on local and international trade have taken their toll on food production, animal production, and animal health and welfare. COVID-19 reverberations could exacerbate food insecurity, hunger, and global poverty. The effects could be massive on the most vulnerable populations and the poorest nations.

OTHER: GENERAL

Ethnic/racial minorities' and migrants' access to COVID-19 vaccines: A systematic review of barriers and facilitators <https://doi.org/10.1016/j.jmh.2022.100086>

Background There are widespread concerns that ethnic minorities and migrants may have inadequate access to COVID-19 vaccines. Improving vaccine uptake among these vulnerable groups is important towards controlling the spread of COVID-19 and reducing unnecessary mortality. Here we perform a systematic review of ethnic minorities' and migrants' access to and acceptance of COVID-19 vaccines. **Methods** We searched PubMed and Web of Science databases for papers published between 1 January 2020 and 7 October 2021. Studies were included if they were peer-reviewed articles; written in English, included data or estimates of ethnic minorities' or migrants' access to vaccines; and employed either qualitative or quantitative methods. Of a total of 248 studies screened, 33 met these criteria and included in the final sample. Risk of bias in the included studies was assessed using Newcastle Ottawa Scale and Critical Appraisal Skills Program tools. We conducted a Synthesis Without Meta-analysis for quantitative studies and a Framework synthesis for qualitative studies. **Results** 31 of the included studies were conducted in high-income countries, including in the US (n = 17 studies), UK (n = 10), Qatar (n = 2), Israel (n = 1) and France (n = 1). One study was in an upper middle-income country -China (n=1) and another covered multiple countries (n = 1). 26 studies reported outcomes for ethnic minorities while 9

studies reported on migrants. Most of the studies were quantitative -cross sectional studies (n=24) and ecological (n=4). The remaining were qualitative (n=4) and mixed methods (n=1). There was consistent evidence of elevated levels of COVID-19 vaccine hesitancy among Black/Afro-Caribbean groups in the US and UK, while studies of Hispanic/Latino populations in the US and Asian populations in the UK provided mixed pictures, with levels higher, lower, or the same as their White counterparts. Asians in the US had the highest COVID-19 vaccine acceptance compared to other ethnic groups. There was higher vaccine acceptance among migrant groups in Qatar and China than in the general population. However, migrants to the UK experienced barriers to vaccine access, mainly attributed to language and communication issues. Lack of confidence, mainly due to mistrust of government and health systems coupled with poor communication were the main barriers to uptake among Black ethnic minorities and migrants. Conclusions Our study found that low confidence in COVID-19 vaccines among Black ethnic minorities driven by mistrust and safety concerns led to high vaccine hesitancy in this group. Such vaccine hesitancy rates constitute a major barrier to COVID-19 vaccine uptake among this ethnic minority. For migrants, convenience factors such as language barriers, fear of deportation and reduced physical access reduced access to COVID-19 vaccines. Building trust, reducing physical barriers and improving communication and transparency about vaccine development through healthcare workers, religious and community leaders can improve access and facilitate uptake of COVID-19 vaccines among ethnic minority and migrant communities.

Communicating with Stakeholders via Twitter: From CSR to COVID-19 https://doi.org/10.1007/978-3-030-91532-2_10

Communication efforts made in terms of Corporate Social Responsibility (CSR) are a task companies must carry out if they want stakeholders to recognize the work they are doing on the topic. This communication has become relevant, particularly during the last year, considering that stakeholders, especially customers, have increased their interest in sustainability, and communication impacts their perception. The most used communication tools for these topics are annual reports and web pages, but numerous companies tend to use social networks as an extra tool to communicate actions, considering the construction of dialog with stakeholders who can respond and interact. In an exploratory and descriptive way, through a sample of company tweets recognized as socially responsible from the last two years, this study shows that companies communicated more through Twitter during the pandemic and indicates the main words used for their communication during 2020. © 2022, The Author(s), under exclusive license to Springer Nature Switzerland AG.

Latinx Community College Students and the (In)Opportunities Brought by COVID-19 Pandemic <https://doi.org/10.1080/15348431.2022.2039152>

The disruption to higher education institutions across the United States created by COVID-19 affected more than 20 million college students. States cancelled in-person classes and campus activities quickly shifted to remote and virtual learning. The pandemic, along with its economic impact, altered education for community college students, creating a traumatic event that exasperated mental health conditions. In addition, job loss increased food insecurities drastically during COVID-19 and students across the country turned to their colleges for wraparound services. In this proposal, the authors review the impact of COVID-19 on marginalized college students, specifically Latinx students in a South Texas college. The findings revealed that Latinx students navigated virtual learning differently and were impacted by their access to technology, as well as their access to mental health services and food pantries. [FROM AUTHOR] Copyright of Journal of Latinos & Education is the property of Taylor & Francis Ltd and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual

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Food for thought: Eating before saliva collection and interference with SARS-CoV-2 detection

<https://doi.org/10.1002/jmv.27660>

Saliva is a promising specimen for detection of viruses that cause upper respiratory infections including severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) due to its cost-effectiveness and non-invasive collection. However, together with intrinsic enzymes and oral microbiota, children's unique dietary habits may introduce substances that interfere with diagnostic testing. To determine whether children's dietary choices impact SARS-CoV-2 molecular detection in saliva, we performed a diagnostic study that simulates testing of real-life specimens provided from healthy children (n=5) who self-collected saliva at home before and at 0, 20, and 60 minutes after eating 20 foods they selected. Each of seventy-two specimens was split into two volumes and spiked with SARS-CoV-2-negative or -positive clinical standards prior to side-by-side testing by reverse-transcription polymerase chain reaction matrix-assisted laser desorption ionization time-of-flight (RT-PCR/MALDI-TOF) assay. Detection of internal extraction control and SARS-CoV-2 nucleic acids was reduced in replicates of saliva collected at 0 minutes after eating 11 of 20 foods. Interference resolved at 20 and 60 minutes after eating all foods except hot dog in one participant. This represented a significant improvement in detection of nucleic acids compared to saliva collected at 0 minutes after eating ($P=0.0005$). We demonstrate successful detection of viral nucleic acids in saliva self-collected by children before and after eating a variety of foods. Fasting is not required before saliva collection for SARS-CoV-2 testing by RT-PCR/MALDI-TOF, but waiting 20 minutes after eating is sufficient for accurate testing. These findings should be considered for SARS-CoV-2 testing and broader viral diagnostics in saliva specimens. This article is protected by copyright. All rights reserved.

A vicious cycle of health (IN)equity: Migrant inclusion in light of COVID-19

<https://doi.org/10.1016/j.hlpt.2022.100606>

Objectives : Whilst mass vaccination is suggested as an important means to contain COVID-19 pandemic, vaccination policies across many countries have systematically excluded some groups of population, especially migrants. This study aims to document the impact of diversified vaccination strategies as a preventative and control measure for the health and safety of the wider population within a country. **Methods :** We selected five countries that have experienced the changes in migrant inflows to the most extreme among OECD countries in 2020: The United States, Australia, Canada, Japan, and South Korea. We conducted an extensive qualitative documentary analysis focused on policies and interventions implemented in these countries since January 2020 till the end of September 2021. We also analyzed publicly available epidemiological data (released by the governments and other international organizations). **Results :** We find that achieving migrants' health and vaccination equity is not without challenges, and the failure to address those multiplicity of concerns may result in a vicious cycle for the vulnerable population at the fringes of our economy. Migrants continue to face extenuating circumstances with higher risks to their health and safety, when they are excluded or disadvantaged in vaccination policies. The more inclusive and proactive the governments are in consideration of diversity of migrant populations, the better they can manage the pandemic, which leads to overall societal benefit of ensuring public health. **Conclusions :** Equity-based policies can mitigate disparities in access to vaccination and healthcare, thereby reducing the spread of COVID-19 in the community.

Food and COVID-19 Lit Review: Weeks ending 02/11/2022, 02/18/2022

DNPAO

- Causal systems mapping to promote healthy living for pandemic preparedness: a call to action for global public health. <https://dx.doi.org/10.1186/s12966-022-01255-7>
- The Impact of the COVID-19 Pandemic on Food Allergy Families <https://doi.org/10.1016/j.jaci.2021.12.481>
- Mealtime Best Practices and Infection Control in Early Care and Education Centers during COVID-19. <https://dx.doi.org/10.1111/cch.12979>
- Chronic Disease Burden - Nutrition and Lifestyle affecting Lives and Livelihoods in the Covid-19 Pandemic <https://doi.org/10.1016/j.shaw.2021.12.908>
- COVID-19 and obesity: the confrontation of two pandemics. https://dx.doi.org/10.26355/eurev_202201_27896
- The Online Ordering Behaviors among Participants in the Oklahoma Women, Infants, and Children Program: A Cross-Sectional Analysis. <https://dx.doi.org/10.3390/ijerph19031805>
- Achieving equitable food security: How can food bank mobile pantries fill this humanitarian need <https://doi.org/10.1111/poms.13663>
- A Mixed-Methods Examination of the Impact of the Partnerships to Improve Community Health Produce Prescription Initiative in Northeastern North Carolina. <https://dx.doi.org/10.1097/PHH.0000000000001490>

DFWED

- Economic Impact of Temperature Control during Food Transportation-A COVID-19 Perspective. <https://dx.doi.org/10.3390/foods11030467>
- Assessing the Food Safety and Quality Assurance System during the COVID-19 Pandemic <https://doi.org/10.3390/su14031507>

NIOSH

- Occupations and Sickness-Related Absences during the COVID-19 Pandemic. <https://dx.doi.org/10.1177/00221465211053615>
- Psychological Well-Being and Mental Health in Migrant Job-Seekers with Disabilities <https://doi.org/10.1016/j.shaw.2021.12.1611>
- Low Wage, Public-Facing Workers and the Decision to Take Sick Leave During COVID-19 <https://doi.org/10.1016/j.shaw.2021.12.1609>
- The second Italian cross-sectional survey on Occupational Health and Safety: the secondary analysis to support the COVID-19 pandemic management <https://doi.org/10.1016/j.shaw.2021.12.1341>
- Occupational skin dermatoses as a result of Covid-19 prevention practices <https://doi.org/10.1016/j.shaw.2021.12.1286>
- Migrant Workers and Covid-19 <https://doi.org/10.1016/j.shaw.2021.12.892>
- Worker health and safety in a changing climate <https://doi.org/10.1016/j.shaw.2021.12.715>

NCEH

- Increased Use of Disinfectants During the COVID-19 Pandemic and Its Potential Impacts on Health and Safety <https://doi.org/10.1021/acs.chas.1c00026>

- Water and wastewater digital surveillance for monitoring and early detection of the COVID-19 hotspot: industry 4.0. <https://dx.doi.org/10.1007/s13762-022-03982-7>
- Infection risk of SARS-CoV-2 in a dining setting: Deposited droplets and aerosols. <https://dx.doi.org/10.1016/j.buildenv.2022.108888>

NCFW

- Co-designing the translation of research into practice to support mentally healthy workplaces in agricultural industries <https://doi.org/10.1016/j.shaw.2021.12.1557>
- Role of Extension Agents in Addressing Farm Stress in Colorado <https://doi.org/10.1016/j.shaw.2021.12.1550>

OTHER: CROSS-CUTTING FOOD SYSTEMS

- From resilience to satisfaction: Defining supply chain solutions for agri-food SMEs through quality approach. <https://dx.doi.org/10.1371/journal.pone.0263393>
- Will Participatory Guarantee Systems Happen Here? The Case for Innovative Food Systems Governance in the Developed World <https://doi.org/10.3390/su14031720>
- Consumer Perception and Understanding of European Union Quality Schemes: A Systematic Literature Review <https://doi.org/10.3390/su14031667>
- Demand for Social Interactions: Evidence from the Restaurant Industry during the COVID-19 Pandemic <https://doi.org/10.1111/jors.12585>
- COVID-19 and socio-materially bounded experimentation in food practices: insights from seven countries <https://doi.org/10.1080/15487733.2021.2013050>
- Opportunities for single-use plastic reduction in the food service sector during COVID-19. <https://dx.doi.org/10.1016/j.spc.2022.01.023>
- Heading for Tomorrow: Resilience Strategies for Post-COVID-19 Grocery Supply Chains <https://doi.org/10.3390/su14041942>

OTHER: GENERAL

- In Defense of Public Health. <https://dx.doi.org/10.2105/AJPH.2021.306644>
- Rising through the pandemic: a scoping review of quality improvement in public health during the COVID-19 pandemic. <https://dx.doi.org/10.1186/s12889-022-12631-0>
- Convenience Food Options and Adequacy of Nutrient Intake among School Children during the COVID-19 Pandemic <https://doi.org/10.3390/nu14030630>
- Publishing of COVID-19 preprints in peer-reviewed journals, preprinting trends, public discussion and quality issues DOI: [10.1007/s11192-021-04249-7](https://doi.org/10.1007/s11192-021-04249-7)
- Social determinants of health and health inequalities in context of COVID-19 pandemic <https://doi.org/10.1016/j.shaw.2021.12.1277>
- AACR Virtual Conference: 14th AACR Conference on the Science of Cancer Health Disparities in Racial/Ethnic Minorities and the Medically Underserved [abstracts here](#)
- National policy responses to maintain essential health services during the COVID-19 pandemic. doi: <https://dx.doi.org/10.2471/BLT.21.286852>

Causal systems mapping to promote healthy living for pandemic preparedness: a call to action for global public health. <https://dx.doi.org/10.1186/s12966-022-01255-7>

COVID-19 has severely impacted population health and well-being globally. Acknowledging that COVID-19 will not be the world's last pandemic, improving healthy living factors (i.e., physical activity, healthful nutrition, healthy weight), which are important in mitigating negative outcomes of future infectious disease pandemics, should be prioritized. Although well-documented, promoting healthy living factors remains challenged by a lack of scalability and sustainability due, in part, to a mismatch between intervention focus on individual behavior change as opposed to recognizing complex and multifactorial causes that prevent people from living healthy lifestyles and maintaining them long-term (such as political will, economic benefits, urban planning, etc.). To recognize this complexity in promoting healthy living, we propose the application of systems science methods for the creation of a comprehensive causal systems map of healthy living factors in the context of COVID-19 to inform future pandemic preparedness. Generating such a map would benefit researchers, practitioners, and policy makers in multi-sector collaborative efforts to improve public health preparedness in the context of future pandemics in a scalable, sustainable, and equitable manner. This effort should be facilitated by a trusted and widely respected governing body with global reach.

The Impact of the COVID-19 Pandemic on Food Allergy Families

<https://doi.org/10.1016/j.jaci.2021.12.481>

RATIONALE: Food allergy families face unique challenges associated with modified activities of daily living and access to appropriate foods. It is important to understand how food allergy families were impacted by the COVID-19 pandemic. **METHODS:** Food allergy caregivers completed an online survey regarding the impact of COVID-19 from 9/25/2020-1/15/2021. This survey was adapted from validated surveys The Chicago Food Allergy Research Surveys for Parents of Children with Food Allergy and The Johns Hopkins University Community Response Survey. The Wilcoxon rank-sum test, Kruskal-Wallis test, Fisher exact test, pairwise Fisher exact test, and pairwise Wilcoxon rank-sum test were used for analysis. **RESULTS:** Food allergy caregivers (n=5312, 96% female, 75% non-Hispanic white) reported the COVID-19 pandemic had an impact on their families. This impact manifested as problems with access to all food (45%) and allergen-free food (48%), increased stress (98%), increased discord within the home (72%), decreased household income (40%), increased reliance on processed foods (57%), changes in access to medical care (66%), and limited access to friends and family (94%). More caregivers with income < \$200,000 had financial stress (p<0.001) and lack of access to food (p=0.02) than caregivers with income > \$200,000. **CONCLUSIONS:** Food allergy families have experienced significant changes in their daily lives due to the COVID-19 pandemic. Changes in access to food, household income, and access to medical care were observed in addition to increases in stress and discord with a reduction in traditional support networks.

Mealtime Best Practices and Infection Control in Early Care and Education Centers during COVID-19.

<https://dx.doi.org/10.1111/cch.12979>

BACKGROUND: Most young children in the United States (U.S.) attend early care and education (ECE) programs, where they consume the majority of daily calories. Best practices to support children's healthy eating include teachers sitting together with children, eating the same food, and appropriately supporting children in serving and feeding themselves. To understand how the COVID-19 pandemic changed mealtime practices in ECE, this study (1) describes what adaptations ECE directors and teachers made to mealtimes to include best practices, and (2) identifies common adaptations made to comply

with COVID-19 infection control guidelines. **METHODS:** This cross-sectional, mixed-methods study utilized survey and interview questions based on the Trust Model and Social Cognitive Theory. More than 7000 surveys were distributed to ECE directors and teachers in Florida. Surveys were completed by 759 directors and 431 teachers. Also, 29 follow-up interviews with teachers were completed. Participants were asked to describe their mealtimes before and during COVID-19. Descriptive statistics and frequencies were used to analyze survey data and thematic analysis was applied to interview data. **RESULTS:** Less than 5% of survey respondents reported children serving themselves, a pre-COVID best practice. Interviews identified three common adaptations: (1) modification-best practices were incorporated into new routines, such as eating together but sitting farther away (2) elimination-routines changed so that best practices were no longer possible, such as teachers wearing masks and standing during meals, and (3) minimal change-minimal changes due to COVID-19 occurred and consequently mealtime practices did not change. **CONCLUSIONS:** Current recommendations do not allow children to self-serve, which previously was a key best practice. ECE centers that have successfully integrated COVID-19 modifications and maintained mealtime best practices-perhaps in a new form-can serve as examples for others. These findings are generalizable to ECE centers in Florida and could be compared with other states.

Chronic Disease Burden - Nutrition and Lifestyle affecting Lives and Livelihoods in the Covid-19 Pandemic <https://doi.org/10.1016/j.shaw.2021.12.908>

Introduction: The covid-19 pandemic had widened the health gap, further exposing the challenges that workers face. These individuals are often marginalised by job role, geographical location changes due to migration or societal stigma in terms of ethnic origin, gender and disability. This paper further explores the challenges that vulnerable workers face in terms of nutrition and lifestyle factors (as defined by the United Nations Sustainable Development Goals) that play an important role in dis-ease. **Materials and Methods:** A case series of workers globally affected by the above factors were researched and nutritionally relevant health factors analysed. This series covers all continents and was able to cover the burden of poor nutritional status as a contributing factor to covid 19 related mortality and morbidity. In particular, the effects nutrition being of relevance in the management of Long Covid was also flagged. **Results:** Poor nutritional status, in particular micronutrient deficiency and the double edged effects of both under and over nutrition have had direct and indirect effects on the susceptibility and recovery from covid-19. The findings further support that prevention and disease management is noted to be a key variable in the vulnerable worker population. **Conclusions:** The implementation of key nutritional parameters as part of the health and economic ecosystem is a significant factor in the saving of Lives and Livelihoods

COVID-19 and obesity: the confrontation of two pandemics.

https://dx.doi.org/10.26355/eurrev_202201_27896

In 2009, obesity was identified for the first time as a risk factor for increased disease severity and mortality in patients infected with the H1N1 influenza A virus. During the current COVID-19 pandemic, overweight and obesity have been described as independent risk factors of disease severity and mortality due to COVID-19. Excess visceral fat is associated with systemic chronic microinflammation, changes in adipokine release, and oxidative stress. These disturbances result in an impaired immune response, including dysfunction in lymphocyte action and antibody production. Moreover, obesity is a cause of endothelial dysfunction, pro-coagulation state, and enhanced expression of angiotensin-converting enzyme 2 (ACE-2), which contributes to the infection itself and the severity of the disease. We analyzed both the impact of obesity on the severity of COVID-19 and the potential mechanism that influences this severity. Moreover, we discuss the effect of obesity complications on the severity of disease and mortality of patients with COVID-19. Furthermore, we summarize the effectiveness of

COVID-19 vaccination in patients with obesity. Finally, we analyzed the effect of the COVID-19 pandemic on mood disturbances and emotional eating and, as a consequence, the development of obesity or an increase in its severity. In summary, the studies conducted during the COVID-19 pandemic indicate that effective obesity treatment should be initiated at once. In addition, the data confirm the need to organize efficient obesity treatment systems for the sake of not only the individual but also society.

The Online Ordering Behaviors among Participants in the Oklahoma Women, Infants, and Children Program: A Cross-Sectional Analysis. <https://dx.doi.org/10.3390/ijerph19031805>

The Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) is a nutrition assistance program in the United States (U.S.). Participants in the program redeem their prescribed food benefits in WIC-authorized grocery stores. Online ordering is an innovative method being pilot-tested in some stores to facilitate WIC participants' food benefit redemption, which has become especially important in the COVID-19 pandemic. The present research aimed to examine the online ordering (OO) behaviors among 726 WIC households who adopted WIC OO in a grocery chain, XYZ (anonymous) store, in Oklahoma (OK). These households represented approximately 5% of WIC households who redeemed WIC benefits in XYZ stores during the study period, which was 1 July to 31 December 2020. This period was during the COVID-19 pandemic but after the temporary lockdown in Oklahoma had been lifted. Descriptive statistics were estimated for WIC OO households' adoption behaviors and their orders. The Cox proportional hazard model and zero-truncated negative binomial regression were applied to examine the relationship between participants' socio-demographics and the length of time between 1 July 2020, and their first OO, as well as the number of WIC online orders. About 80% of these online orders were picked up without any changes. Minority households had a significantly longer time before adopting their first OO (hazard ratio (HR) < 1, $p < 0.001$), while households with a child or a woman participant, or more participants, had a shorter time before adopting OO (HR > 1, $p < 0.05$). Non-Hispanic black households had a fewer number of OOs than non-Hispanic white households ($B = -0.374$, $p = 0.007$). OO adoption varied across socio-demographics. More efforts are needed to ensure equal access and adoption of WIC OO.

Achieving equitable food security: How can food bank mobile pantries fill this humanitarian need <https://doi.org/10.1111/poms.13663>

Hunger occurs in all locations around the globe, from developing to developed countries. In fact, there were over 37 million food insecure individuals (those without access to consistent nutritious food) in the United States in 2018, and this number increased in recent years due to the COVID pandemic. In many countries, food banks are used to consolidate food donations from individuals or government agencies and then provide that food to local partner agencies (such as food pantries and soup kitchens), who distribute it to food insecure individuals. As nonprofit humanitarian organizations, food banks strive to achieve geographic equity in their food distribution, so one area (or county) is not favored over others. However, food banks also want to maximize food distribution with their limited budgets. This equitable distribution versus cost balancing act is made even more challenging since food banks experience extreme variability in both the supply (donations) of food and partner agencies' capacity to deliver food to the food insecure. Our paper focuses on how mobile pantry programs, additional food bank storage capacity, and improved partner agency capacity can be utilized to address this supply and distribution capacity variability while considering food expiration times. Mobile pantry programs allow food banks to distribute food directly to the food insecure by sending their own trucks and employees to locations where food is most needed. Although all three of these approaches can be helpful, our results show that mobile pantries are a more effective approach to achieve high equity levels. This is especially true in the case of produce with relatively short expiration times. We also find that utilizing mobile pantry programs can increase equitable partner agency distribution considerably, because even small amounts of mobile

pantry distribution in under-served areas allow for more equitable partner agency distribution in areas with available partner agency distribution capacity. Our research is based on data from our partner food bank, but our modeling and extensive sensitivity analysis should be applicable to many food banks with a similar collection and distribution structure.

A Mixed-Methods Examination of the Impact of the Partnerships to Improve Community Health Produce Prescription Initiative in Northeastern North Carolina.

<https://dx.doi.org/10.1097/PHH.0000000000001490>

OBJECTIVE: To conduct a mixed-methods examination of the impact of the Partnerships to Improve Community Health produce prescription initiative in northeastern North Carolina. **DESIGN:** Quantitative surveys were conducted among participants before and after the distribution of produce prescription vouchers. Univariate statistics were used to describe the participant population, and paired t tests were used to examine change in fruit and vegetable intake. Qualitative, in-depth telephone interviews were conducted among participants, health educators, and food retailers and coded for themes. **SETTING:** Eight health promotion programs, 2 food pantries, and 11 food retailers. **PARTICIPANTS:** In each health promotion program or food pantry, between 6 and 97 participants were enrolled. **INTERVENTION:** Produce prescription vouchers were distributed to participants and redeemed at local food retailers. **MAIN OUTCOME MEASURES:** An increase in local fruit and vegetable purchasing and consumption. **RESULTS:** Of the produce prescription participants who completed the baseline survey (n = 93), 86% were female, 64% were African American, and 68% were food insecure. The voucher redemption rate was 18%. The majority of participants indicated that they visit farmers' markets more now than before the produce prescription initiative, that shopping at the farmers' market made it easy to include more fresh produce in their family's diet, and that they tried a new farmers' market because of the produce prescription initiative. All health educators and food retailers who participated felt that the initiative benefited their program or operation and were willing to partner with the program again. **CONCLUSIONS:** While redemption rates were lower than anticipated, the produce prescription initiative had positive impacts on participants' local fruit and vegetable purchasing and consumption. Because of COVID-19, the initiative was not implemented until late in the North Carolina produce season. Moving forward, the program will start earlier and work with local food retailers to connect with their communities to increase redemption rates.

DFWED

Economic Impact of Temperature Control during Food Transportation-A COVID-19 Perspective.

<https://dx.doi.org/10.3390/foods11030467>

Temperature fluctuation and abuse in the food cold chain (FCC) is becoming an increasingly crucial factor in the process of food production and for the logistic business, especially in COVID-19 pandemic. The quality of perishable food products depends largely on accurate transport and maintenance temperature. The evidence for temperature-related food waste and loss is extensive. The research problem is thus: how to decrease and control food losses caused by temperature abuse in the FCC and restrictions due to the COVID-19 pandemic. The primary objective is to propose a framework for real-time temperature measurement protocols supported by passive RFID, IoT and Statistical Process Control (SPC) charts. This method allows not only the signaling of temperature abuse alerts but, in addition to hitherto methods, investigation and mitigation of the causes of process instability of individual FCC links in the future. The secondary objective is to delineate the necessary data sources and ways of their collection and utilization in order to decrease food losses and waste via process stabilization of temperature in transport and storage. As contribution to current literature and practice, we offer an in-depth analysis of threats in the FCC in food transport and storage infrastructure and a solution

supplemented by SPC charts and tested in controlled experiments that is practicable from economic and technical standpoints.

Assessing the Food Safety and Quality Assurance System during the COVID-19 Pandemic

<https://doi.org/10.3390/su14031507>

This study aims to develop and test a methodological approach to assess the system of food quality and safety in the COVID-19 pandemic. To achieve the study objectives, a multi-country research project was implemented with 425 enterprises from Russia, Azerbaijan, Ukraine, and Belarus. The application of the developed methodological approach resulted in comparable assessments of the various criteria of the food safety and quality assurance system in supply chains. This makes it possible to implement continuous monitoring of the state of the food safety and quality assurance system in the enterprises. In addition, the study identified critical weaknesses in the safety system, including a very low level of assessment by enterprises of the impact of WHO advisory protocols. This greatly increases the risks associated with food safety in the COVID-19 pandemic. Urgent action is required to increase the confidence of food supply chain actors in WHO recommendations and national food safety and quality protocols. The conducted assessments showed that a significant proportion of enterprises did not implement a food safety system. One out of five of the respondents claimed to have implemented safety systems at an enterprise in accordance with the standards recognized by the Global Food Safety Initiative. Only 2% declared the introduction of HACCP at an enterprise, which is logical given the high mistrust of WHO recommendations. The proposed approach can be used in the real sector of the economy to monitor the food safety and quality assurance system in the supply chain at the regional, sectoral and national levels. © 2022 by the author. Licensee MDPI, Basel, Switzerland.

NIOSH

Occupations and Sickness-Related Absences during the COVID-19 Pandemic.

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Pandemic frontline occupations consist of disproportionately low socioeconomic status and racial minority workers. Documenting occupational health disparities is therefore crucial for understanding COVID-19-related health inequalities in the United States. This study uses Current Population Survey microdata to estimate occupational differences in sickness-related absences (SAs) from work in March through June 2020 and their contribution to educational, racial-ethnic, and nativity health disparities. We find that there has been an unprecedented rise in SAs concentrated in transportation, food-related, and personal care and service occupations. SA rates were 6 times higher in these occupations than in non-health-care professions. The greatest increases were in occupations that are unsuitable for remote work, require workers to work close to others, pay low wages, and rarely provide health insurance. Workers in these occupations are disproportionately Black, Hispanic, indigenous, and immigrants. Occupation contributes 41% of the total of Black/white differences and 54% of educational differences in SAs.

Psychological Well-Being and Mental Health in Migrant Job-Seekers with Disabilities

<https://doi.org/10.1016/j.shaw.2021.12.1611>

Introduction: Migrant workers seeking employment in a host country often face a variety of stressors that affect their mental health. Studies have shown that depression, insomnia and fear are more likely reported in migrant workers during Sars-Cov-19 pandemic and lockdown process. Therefore, this study aims to evaluate the effectiveness of a 10-week job-coaching programme for migrant job-seekers with disabilities related to their psychological well-being or mental health. Materials and Methods: A single-

group pre-test and-post-test research design type was used. The preliminary baseline results included 21 migrant job seekers with disabilities. The following reliable, validated and internationally accepted scales were used: Short Form Survey Instrument, WHO Well-Being Index (WHO-5), and Patient Health Questionnaire for Depression and Anxiety (PHQ-9). Results: The mean age of the participants was 49 ± 9 . The participants were unemployed for an average of 2.5 ± 0.8 years and lived in Belgium for a total of 17.9 ± 6.5 years. The majority of the participants experienced language barrier problems (85.7%); 57.1% of the participants had worked as cleaners in the past. A statistically significant negative and high correlation was found between WHO-5 quality of life scores and PHQ-9 depression scores ($p < 0.01; r = 0.715$). Conclusion: In the baseline measurements, migrant job seekers had moderate depression levels and negative quality of life and well-being. We now will investigate whether psychological health problems of migrant job seekers will increase during the Sars-Cov-19 pandemic period.

Low Wage, Public-Facing Workers and the Decision to Take Sick Leave During COVID-19

<https://doi.org/10.1016/j.shaw.2021.12.1609>

Introduction: During the COVID-19 pandemic, low-wage workers faced high exposure risk as they continued to work in essential public-facing jobs such as grocery store clerks and gas station attendants. In a context where these types of jobs were usually precarious and had no paid sick leave, we explored how low-wage workers navigated decision-making around when to take sick leave. Material: From September 2021 to April 2022, in-depth, semi-structured interviews were conducted in Ontario and Quebec (Canada) with 72 low-wage and public-facing workers, managers of these kinds of workers, and key informants with insight into legal and policy issues related to low-wage workers. Methods: Interviews were transcribed verbatim and coded in NVivo. Analysis followed constant comparative methods as well as situational analysis. Results: Public-facing, low-wage workers and managers described psychosocial pressures of COVID-19-related customer aggression. In a context of economic insecurity, participants described a focus on “pleasing the customer”, “not rocking the boat” and a reluctance to take sick leave when experiencing COVID-19 symptoms for fear of loss of income and loss of future work shifts. Conclusions: Workers who worked while ill weighed risks of COVID-19 against risks of loss of income (need for food, paying the rent) and decided that working while ill was least problematic. This is a problem for society as poor worker protections put the public at risk.

The second Italian cross-sectional survey on Occupational Health and Safety: the secondary analysis to support the COVID-19 pandemic management

<https://doi.org/10.1016/j.shaw.2021.12.1341>

Introduction: The COVID-19 pandemic has spread worldwide, with considerable impacts on both health and safety of workers. COVID-19 emergency highlighted the importance of risk perception surveys and the availability of data on OSH issues. Since 2014, INAIL (Italian Workers' Compensation Authority) conducted two editions of the periodic survey on Occupational Safety and Health (OSH), involving the main OSH actors. Materials and Methods: The 2nd wave of the survey, conducted in 2019 and addressed to representative workers and employers' samples, provided an important contribution to support the decision-making process of the Italian Government for action-oriented policy in order to determine priority and interventions on the COVID-19 emergency. A secondary analysis of data collected through the survey was useful for the drafting of the technical documents developed to support the release phase of the containment measures after the first lockdown (March-April 2020) for progressive reopening of work activities that had been suspended by regulatory restrictions. Results: Data referred to workers perception on biological risk, commuting, eating habits during working time and health surveillance by occupational physicians were considered. These data were analyzed according to economic sector and geographical areas based on the level of COVID-19 contagion. Conclusions: The epidemiological trend highlighted the importance of work as a substantial factor to consider both when

implementing strategies aimed at containing the pandemic and shaping the lockdown mitigation strategy required for sustained economic recovery.

Occupational skin dermatoses as a result of Covid-19 prevention practices

<https://doi.org/10.1016/j.shaw.2021.12.1286>

Introduction: Occupational skin diseases (OSD) account for a significant proportion of occupational disease. High risk occupations for OSD include workers in the healthcare, food service, metal-working, hairdressing and construction industries. The prevention of the COVID-19 virus has increased the use of personal protective equipment (PPE), handwashing and cleaning practices globally. Methods: We will cover the first hand experiences gained during the pandemic, by reviewing the presentations of OSD at a dermatology clinic as result of COVID-19 practices. Results: During the pandemic, the use of PPE created occlusive and humid environments particularly exacerbating underlying skin conditions. This phenomenon was not exclusive to high risk OSD occupations. Atopic individuals at risk of OSD had an increased susceptibility to irritant contact dermatitis (ICD) as a consequence of using hand sanitizers and additional hand washing. Furthermore more exacting cleaning practices provided exposures to additional irritants and allergens, such as laundry rinses containing benzalkonium chloride (BAK) and fragrances in personal care products. Patch testing proved useful in diagnosing and treating patients, which allowed workers to return to work. Conclusions: Personal protective practices adopted during the pandemic adversely affected workers, especially those with underlying skin conditions. This included the use of PPE, increased hand washing and sanitizing practices as well as increased cleaning practices. Treatment of underlying skin disorders as well as education on skin protection has been pertinent during this time.

Migrant Workers and Covid-19 <https://doi.org/10.1016/j.shaw.2021.12.892>

Migrant workers, including internal migrants who move from rural to urban areas searching for employment, face multiple barriers in accessing health and other services, in particular occupational health. The Covid-19 pandemic highlighted the need for coordinated responses by countries and regions that include pandemic preparedness, public health interventions, lockdowns, economic support (food relief, etc) and vaccinations. Disease transmission controls and restrictions due to stringent border management, vaccination certificates and testing have hit migrant workers hard. The health, economic needs and mobility of migrants due to the pandemic may be overlooked in the overall Covid-19 response. The social and working conditions of migrants make them vulnerable to Covid-19. The decline in remittances and lack of employment has negative consequences for their families and communities. Interventions, with Covid-19 messaging appropriately to migrant worker needs, access to health services including vaccinations, and accommodation and food security assistance are important. Mental health needs are crucial due to their precarious work, living conditions and lack of family support. Trade unions and large employers may support workers through workplace Covid-19 interventions. Migrant workers in SMEs and domestic workers are at risk of unemployment due to their employers becoming unemployed or transmission risk fears. Multilateral instruments to protect migrant worker rights should be incorporated into country responses to Covid-19 and future epidemics and disasters to save lives and livelihoods including those of migrant workers.

Worker health and safety in a changing climate <https://doi.org/10.1016/j.shaw.2021.12.715>

Scientific reports on the advance of climate change signal 'code red for humanity' according to the Secretary-General of the United Nations. The threats to the health and well-being of workers mirror those faced by the population at large, but with important differences. In some sectors, such as maintenance of utilities and emergency services, exposures to climate hazards are not discretionary. Those paid by piece work may be forced, under extreme conditions, to risk personal well-being in order

to protect incomes. Given their long-term connections with land and place, farmers are especially susceptible to mental health issues caused by environmental degradation. Workers will also be affected in particular ways by steps taken to prevent climate change: closure of industries that rely on fossil fuels will expose millions of workers to transitions and disruptions that may have significant effects on health, if poorly managed. The future is challenging. It is projected the intensity and frequency of heat waves and floods and storms will increase. The structure of human mortality is changing as heat-related causes of mortality and morbidity prevail over conditions that are cold-related. Compounding exposures, such as the conjunction of climate instability and the COVID-19 pandemic, will multiply. In these circumstances it will be necessary to radically strengthen measures to protect health and safety at work.

NCEH

Increased Use of Disinfectants During the COVID-19 Pandemic and Its Potential Impacts on Health and Safety <https://doi.org/10.1021/acs.chas.1c00026>

The COVID-19 pandemic has called for the increased use of disinfectants worldwide in public facilities, transportation, hospitals, nursing homes, wastewater treatment facilities, and even common households to mitigate virus burden. Active ingredients in common disinfectants recommended for use against COVID-19 viruses include chemicals such as quaternary ammonium compounds (QACs), hydrogen peroxide, bleach (sodium hypochlorite), and alcohols. These disinfecting chemicals differ in their structures, properties, modes of action, environmental behaviors, and effects on human health upon exposure. Humans can be exposed to disinfecting chemicals mainly through dermal absorption, inhalation, and ingestion. The total exposure and relative contribution of each exposure route vary considerably among the disinfectants. QACs have been linked to occupational illnesses such as asthma and an increased risk of chronic obstructive pulmonary disease (COPD), whereas excess use of bleach, hydrogen peroxide, or alcohol-based disinfectants can cause respiratory damage and has been linked to an increased risk of developing and controlling asthma. Recent studies showed that the presence of QACs in human blood has been associated with changes in health biomarkers such as an increase in inflammatory cytokines, decreased mitochondrial function, and disruption of cholesterol homeostasis in a dose-dependent manner. Therefore, repeated human exposure to disinfectants during the pandemic has raised questions on exposure-related long-term health risks and occupational safety. Furthermore, in lieu of a lack of adequate knowledge and public awareness, these chemicals have been frequently used on porous surfaces, including fabrics/textiles and consumer plastics and even for disinfecting cloth facemasks, on which disinfectant chemical residues may persist for longer duration, causing potential degradation of plastic materials, releasing additives, and shedding microplastics. In addition, the increased use of these disinfectant chemicals and the subsequent discharge into wastewater may cause adverse impacts on aquatic ecosystems, accumulation on vegetables, and contamination of the food chain via wastewater irrigation and sludge application. This article provides a well-rounded understanding of the most common disinfectants and reviews modes of action of those disinfectants, their interactions with aquatic and terrestrial environments, the exposure to humans, and potential impacts to human health and safety.

Water and wastewater digital surveillance for monitoring and early detection of the COVID-19 hotspot: industry 4.0. <https://dx.doi.org/10.1007/s13762-022-03982-7>

There are a high number of COVID-19 cases per capita in the world that goes undetected including clinical diseases compatible with COVID-19. While the presence of the COVID-19 in untreated drinking water is possible, it is yet to be detected in the drinking-water supplies. COVID-19 viral fragments have been found in excrete, this call for wastewater monitoring and analysis (wastewater surveillance) of the potential health risk. This raises concern about the potential of the SARS-CoV-2 transmission via the water systems. The economic limits on the medical screening for the SARS-CoV-2 or COVID-19

worldwide are turning to wastewater-based epidemiology as great potential tools for assessing and management of the COVID-19 pandemic. Surveillance and tracking of the pathogens in the wastewater are key to the early warning system and public health strategy monitoring of the COVID-19. Currently, RT-qPCR assays is been developed for SARS-CoV-2 RNA specimen clinical testing and detection in the water system. Convectional wastewater treatment methods and disinfection are expected to eradicate the SAR-CoV-2. Chlorine, UV radiation, ozone, chloramine is been used to inactivate and disinfect the water treatment system against the SARS-CoV-2. Water management and design of the water infrastructure require major changes to accommodate climate change, water cycle, reimaging of digitalization, infrastructure and privacy protection. The water digital revolution, biosensors and nanoscale, contact tracing, knowledge management can accelerate with disruption of the COVID-19 outbreak (water-health-digital nexus).

Infection risk of SARS-CoV-2 in a dining setting: Deposited droplets and aerosols.

<https://dx.doi.org/10.1016/j.buildenv.2022.108888>

Considering that safe-distancing and mask-wearing measures are not strictly enforced in dining settings in the context of SARS-CoV-2, the infection risks of patrons in a dining outlet (e.g., a cafe) is assessed in this study. The size-resolved aerosol emission rate (AER) and droplets deposition rate (DDR) on dining plates from speaking were obtained through chamber measurements and droplet deposition visualization via fluorescent imaging technique (FIT), respectively. The AER from speaking was 24698 #/min in the size range of 0.3-5.5 μm , while the DDR was 365 #/min in the size range of 43-2847 μm . Furthermore, an infection risk model was adopted and revised to evaluate the infection risk of 120 diners for a "3-h event" in the cafe. In a four-person dining setting around a rectangular table, a diner seated diagonally across an infected person posed the least infection risk due to the deposited droplets on dining plates. The deposited droplets on a dining plate were dominant in possible viral transmission as compared to the long-range airborne route when a diner shared a table with the infected person. Yet, long-range airborne transmission had the potential to infect other diners in the cafe, even resulting in super-spreading events. A fresh air supply of 12.1-17.0 L/s per person is recommended for the cafe to serve 4-20 diners concurrently to minimize infection risks due to aerosols. Current ventilation standards (e.g., 8-10 L/s per person) for a cafe are not enough to avoid the airborne transmission of SARS-CoV-2.

NCFW

Co-designing the translation of research into practice to support mentally healthy workplaces in agricultural industries <https://doi.org/10.1016/j.shaw.2021.12.1557>

Introduction: Australian agriculture is vulnerable to an ageing and decreasing workforce, increasing technological demands, global markets, climate change and uncertainty. This poses challenges for work demand/control, workplace support, change management, role clarity/conflict, workplace relationships and environmental conditions—ultimately increasing psychological distress and suicide risk. The Primary Producer Knowledge Network (PPKN) aims to develop practical strategies to prevent work-related mental health risks in agriculture. Method: PPKN engaged in a detailed co-design process with farmers and industry stakeholders—including stakeholder interviews, online development and feedback workshops, and pilot testing, and delivered online due to COVID19 restrictions. Co-design was informed by mental health research, evidence-based co-design strategies for working with vulnerable consumers, and identified work-related risks to health, wellbeing and safety. Results: 9 recommendations were derived via co-design—guiding development of an interactive web platform, roadshow, and complementary resources to meet varying digital access/expertise. Ongoing solution-focused topic development—an iterative process with experts and primary producers—reflects varied needs of industry groups and age cohorts, and drives change in the design/management of work systems. Conclusions: PPKN addresses work-related risk factors via an approach that is relevant, meaningful and

empowering for the agriculture workforce. Co-design outcomes, challenges and recommendations are applicable across occupational groups where mental health and safety are of con

Role of Extension Agents in Addressing Farm Stress in Colorado

<https://doi.org/10.1016/j.shaw.2021.12.1550>

Introduction: Farmers and ranchers are known to experience high levels of stress related to weather, labor costs and shortages, financial concerns, international trade issues, and government regulations. These stressors can lead to higher risk of suicide and have been exacerbated by the COVID-19 pandemic which has influenced supply chains. Extension Agents have been viewed as trusted members of the community and as essential in supporting farmers and ranchers and connecting them with resources. The purpose of this study was to interview Extension Agents in rural counties in Colorado focusing on their perceptions about farm stress and suicide risk, the perspectives and needs of Extension agents to address these concerns, and the communities' readiness to engage in prevention efforts. Materials and Methods: Qualitative interviews were conducted among 5 Extension Agents in 5 counties in rural Colorado. Interviews were conducted using Zoom between March, 2020-September, 2020. Analysis was done using content analysis on the interview response data followed by a general inductive approach to identify themes. Results: Extension Agents believe prevention efforts are headed in the right direction, but stigma around seeking treatment prevents community members, and especially farmers and ranchers, from engaging with mental health resources. Conclusion: Implications for Extension Agents and rural community prevention efforts include increasing mental health literacy within the community to reduce stigma and tailoring resources that address rural communities' unreliable cell service.

OTHER: CROSS-CUTTING FOOD SYSTEMS

From resilience to satisfaction: Defining supply chain solutions for agri-food SMEs through quality approach. <https://dx.doi.org/10.1371/journal.pone.0263393>

Since it is an important human need and many organizations are involved in the value chain, the agricultural food supply chain is exposed to various risks that arise naturally or through human actions. This study aims to develop the application of a quality function deployment approach to increase the resilience of the food supply chain by understanding customer needs and logistical risks in the food supply chain. In-depth studies with empirical analysis were conducted to determine the importance of customer needs, food supply chain risks, and actions to improve supply chain resilience of SMEs in the agri-food industry. The result shows that the top three customer needs are "attractive, bright color", "firm texture" and "fresh smell". The top three risks in the agri-food supply chain are "improper storage," "Harvest Failure" and "Human Resource Risks" and the top three resilience actions are "continuous training," "preventive maintenance," and "supply chain forecasting." The implications of this study are to propose an idea that broadens the perspective of supply chain resilience in the agri-food industry by incorporating the needs of customers in considering how to mitigate the existing risks to the satisfaction of customers, and it also highlights the relatively low skill and coordination of the workforce in agri-food supply chains.

Will Participatory Guarantee Systems Happen Here? The Case for Innovative Food Systems Governance in the Developed World <https://doi.org/10.3390/su14031720>

Participatory guarantee systems (PGS) are locally-rooted agroecological governance mechanisms primarily designed to meet the needs of local producers for product certification and cooperative sales. They have experienced periodic waves of interest in different places throughout the globe. There is a small but rich and growing scholarship devoted to understanding how they are managed, how they are sustained, and what factors predict their success. Interestingly, there is little evidence that they have developed in the United States, which has instead, witnessed the growth of community supported

agriculture (CSA), farmer's markets, food hubs and food policy councils (FPC), although many of these mechanisms have failed to sustain interest and support. Here, we explore the factors that drive the creation of systems in the global South, Europe and other regions, and identify the factors that shape a different trajectory for local agriculture in the United States. We discuss the possibilities for more radical food system transformation in the United States, considering a changing climate, an industrial food system that has prioritized profit over health, and the COVID-19 pandemic. Finally, we conclude by identifying some future pathways for policy reform and research opportunities.

Consumer Perception and Understanding of European Union Quality Schemes: A Systematic Literature Review <https://doi.org/10.3390/su14031667>

Food, agriculture, and labeling, affecting the environment are well connected concepts, the balance between them being determined not only by pedological and climatic factors or the development level of agricultural techniques, but also by national governments and international organizations; food processing, trade policies and regulations. In this context, the European Union (EU) encourages the use of different food quality schemes: Protected Designation of Origin (PDO), Protected Geographical Indication (PGI), and Traditional Specialty Guaranteed (TSG) to protect producers of special-quality foods and assist consumers in their purchasing decisions. This review examines existing studies on the impact of these labels on customers behavior. A total of 32 studies were found and systematized. The papers were selected if they featured unique empirical research on consumer perceptions of any of PDO, PGI and TSG labels. Using the search strategy, a literature analysis was performed based on papers extracted from Web of Science, Springer Link, Emerald Insights, and Science Direct. Although these papers highlight quite diversified findings, the internationally used labels play an increasing role in contemporary society and pandemic conditions caused by COVID-19, thus making the quality schemes relevant in consumer decision-making processes.

Demand for Social Interactions: Evidence from the Restaurant Industry during the COVID-19 Pandemic <https://doi.org/10.1111/jors.12585>

We study the heterogeneous impacts of COVID-19 on restaurants in the post-lockdown United States, from lens of social interactions. We use the data structure of chain restaurants to disentangle restaurant attributes such as food and service types (which vary across chains) and local market conditions such as infection risks (which vary with each establishment's geographical location). We find that visits to chains with higher social indices experienced larger drops as local new cases increased in 2020, but also faster recovery later when vaccination programs expanded. Moreover, demand for restaurants in city centers recovered faster than demand for those in suburbs. This article is protected by copyright. All rights reserved.

COVID-19 and socio-materially bounded experimentation in food practices: insights from seven countries <https://doi.org/10.1080/15487733.2021.2013050>

COVID-19 has caused unprecedented disruption to previously settled everyday routines, prompting a period of forced experimentation as people have adjusted to rapid changes in their private and working lives. For discussions regarding consumption, this period of experimentation has been interesting, as the apparent instability has disturbed the ongoing trajectory of consumption practices, and with it has created possibilities for a transition toward sustainability. In this article, we examine food practices (e.g., food shopping, preparation, and eating) in seven countries (France, Germany, Italy, Netherlands, Norway, UK, and Vietnam) to assess what we can learn to accelerate transitions toward sustainable consumption. Grounded in a practice theoretical approach, our empirical analysis shows how disruption of everyday routines has generated socio-materially bounded experimentation. We demonstrate commonalities across contexts in how lockdown measures have restricted the performance of

previously taken-for-granted practices. We also show diversity in experimentation as food consumption is entangled in other everyday practices. Our study, on one hand, portrays how the adaptation of food practices allows disruption to be managed, demonstrating creativity in working within and around restrictions to continue to provide services for everyday life. On the other hand, we reveal that the capacity of experimentation is not evenly distributed among people and this variation helps in identifying the wider socio-material conditions that constrain and enable opportunities for readjustment. Understanding disparities that affect experimentation (e.g., integration of food practices with work and caring practices) is informative when thinking about how to stimulate sustainability transformations in food practices and provides critical reflections on strategies to enable sustainable consumption.

Opportunities for single-use plastic reduction in the food service sector during COVID-19.

<https://dx.doi.org/10.1016/j.spc.2022.01.023>

The COVID-19 pandemic caused a surge in consumption of single-use plastics (SUPs), particularly in the food service sector, due to concerns for public health and safety. To follow public health guidelines, food services have been limited to takeout service and have restricted use of personal reusable items. This study investigated opportunities to reduce increased use of SUPs in Nova Scotia food services sparked by the COVID-19 pandemic using semi-structured interviews and focus groups with stakeholders from the food service sector. Many participants had already implemented SUP reduction strategies prior to COVID-19. However, the COVID-19 pandemic forced businesses to rely on SUPs and to pause SUP reduction strategies. Obstacles to SUP reduction included operational challenges from COVID-19 restrictions, misunderstanding of local waste management systems, costs of transitioning to zero plastic waste, poorly manufactured alternatives, greenwashing, and ingrained societal convenience culture. Whilst not all SUP consumption patterns were attributed to COVID-19, these barriers prevented food retailers, waste managers and consumers from achieving zero-plastic waste goals. Food services should adopt SUP reduction strategies, including re-introducing reusables, implementing exchange programs for bulk items and takeout, providing education and awareness to staff and consumers, and sourcing sustainable SUP alternatives. SUP reduction strategies can be implemented immediately as public health officials and researchers agree reusable items can be used safely when using basic hygiene measures. Food services across Nova Scotia should adapt their operational procedures and create behaviour change to reduce SUPs.

Heading for Tomorrow: Resilience Strategies for Post-COVID-19 Grocery Supply Chains

<https://doi.org/10.3390/su14041942>

Supply chain resilience is a critical capability needed to compete in the current turbulent and unpredictable business environment, but many companies still tend to underestimate its relevance. In the wake of the COVID-19 pandemic, understanding which supply chain impacts influence the policies and actions undertaken when resilience is concerned is important. This study investigated the relationships between the impacts experienced at the different supply chain tiers during the pandemic, and explored which impacts could drive perceptions towards developing resilience strategies in the future. A survey instrument was developed adopting a mid-range approach, targeting manufacturers active in the Italian grocery supply chain. Data were analysed using partial least square structural equation modelling (PLS-SEM). Results showed that source-related impacts deeply affect make- and delivery-related impacts, and make-related impacts mainly influence the perceptions about future resilience strategies. In fact, manufacturers appear to be primarily interested in those strategies ensuring the continuity of their intrinsic operations. The study could inform theory and practice about companies' decisions towards the adoption of certain approaches. Also, it highlights promising

research avenues related to deepening understanding of how perceptions could predict future intentions to engage in protective actions to adequately cope with potential future disruptions.

OTHER: GENERAL

In Defense of Public Health. <https://dx.doi.org/10.2105/AJPH.2021.306644>

Rising through the pandemic: a scoping review of quality improvement in public health during the COVID-19 pandemic. <https://dx.doi.org/10.1186/s12889-022-12631-0>

BACKGROUND: The COVID-19 pandemic generated a growing interest in and need for evidence-based tools to facilitate the implementation of emergency management strategies within public health practice. Quality improvement (QI) is a key framework and philosophy to guide organizational emergency response efforts; however, the nature and extent to which it has been used in public health settings during the COVID-19 pandemic remains unclear. **METHODS:** We conducted a scoping review of literature published January 2020 - February 2021 and focused on the topic of QI at public health agencies during the COVID-19 pandemic. The search was conducted using four bibliographic databases, in addition to a supplementary grey literature search through custom Google search engines and targeted website search methods. Of the 1,878 peer-reviewed articles assessed, 15 records met the inclusion criteria. An additional 11 relevant records were identified during the grey literature search, for a total of 26 records included in the scoping review. **RESULTS:** Records were organized into five topics: 1) collaborative problem solving and analysis with stakeholders; 2) supporting learning and capacity building in QI; 3) learning from past emergencies; 4) implementing QI methods during COVID-19; and 5) evaluating performance using frameworks/indicators. **CONCLUSIONS:** The literature indicates that QI-oriented activities are occurring at the organizational and program levels to enhance COVID-19 response. To optimize the benefits that QI approaches and methodologies may offer, it is important for public health agencies to focus on both widespread integration of QI as part of an organization's management philosophy and culture, as well as project level activities at all stages of the emergency management cycle.

Convenience Food Options and Adequacy of Nutrient Intake among School Children during the COVID-19 Pandemic <https://doi.org/10.3390/nu14030630>

The COVID-19 pandemic has caused changes in the family food environment, resulting in more families relying on convenience food options. This study aimed to investigate diet quality by convenience food options (namely instant, frozen, and take-out foods) among Japanese school children during the COVID-19 pandemic. We examined the relationship between the frequency of consumption of convenience food options and nutritional status of the school children. The participants (671 children, 10–14 years old) were chosen to form a nationally representative sample of the Japanese population. Using questionnaires completed by the participants' guardians, information was collected on the frequency of instant, frozen, and take-out food consumption. Habitual food and nutrient intake were collected using a validated food frequency questionnaire, completed by the children with help from their guardian(s). "Frequent" consumption was defined as consumption of instant, frozen, and/or take-out foods on more than 5 days per week. Using 19 nutrients and their respective dietary reference intake (DRI) values, an index was created to label each child's nutrient intake as "Adequate", "Inadequate", "Excess", or "Deficient". Compared to children with non-frequent consumption, school children with

frequent instant food consumption had significantly higher rates of inadequate nutrient intake (risk ratio (RR) = 3.0 [95% CI: 1.6–5.6]) and excess nutrient intake (RR = 2.3 [95% CI: 1.3–4.2]), while school children with frequent take-out food consumption had significantly higher rates of inadequate nutrient intake (RR = 2.1 [95% CI: 1.3–3.3]). There were no significant differences for children with frequent frozen-food intake. These associations did not change when adjusting for sociodemographic factors. Our results suggest that the frequent consumption of instant or take-out foods among school children results in non-adequate nutritional intake.

Publishing of COVID-19 preprints in peer-reviewed journals, preprinting trends, public discussion and quality issues DOI: [10.1007/s11192-021-04249-7](https://doi.org/10.1007/s11192-021-04249-7)

COVID-19-related (vs. non-related) articles appear to be more expeditiously processed and published in peer-reviewed journals. We aimed to evaluate: (i) whether COVID-19-related preprints were favored for publication, (ii) preprinting trends and public discussion of the preprints, and (iii) the relationship between the publication topic (COVID-19-related or not) and quality issues. Manuscripts deposited at bioRxiv and medRxiv between January 1 and September 27 2020 were assessed for the probability of publishing in peer-reviewed journals, and those published were evaluated for submission-to-acceptance time. The extent of public discussion was assessed based on Altmetric and Disqus data. The Retraction Watch Database and PubMed were used to explore the retraction of COVID-19 and non-COVID-19 articles and preprints. With adjustment for the preprinting server and number of deposited versions, COVID-19-related preprints were more likely to be published within 120 days since the deposition of the first version (OR = 1.96, 95% CI: 1.80–2.14) as well as over the entire observed period (OR = 1.39, 95% CI: 1.31–1.48). Submission-to-acceptance was by 35.85 days (95% CI: 32.25–39.45) shorter for COVID-19 articles. Public discussion of preprints was modest and COVID-19 articles were overrepresented in the pool of retracted articles in 2020. Current data suggest a preference for publication of COVID-19-related preprints over the observed period. Supplementary Information The online version contains supplementary material available at [10.1007/s11192-021-04249-7](https://doi.org/10.1007/s11192-021-04249-7).

Social determinants of health and health inequalities in context of COVID-19 pandemic

<https://doi.org/10.1016/j.shaw.2021.12.1277>

Introduction: The COVID-19 pandemic has disproportionately affected disadvantaged populations, exposing existing inequalities in the society and widening health inequalities. Health inequalities are those preventable differences in health status between groups that arise from the unequal opportunities and unequal distribution of resources related to health, which determine the risk of people getting ill, ability to prevent illness or opportunities to access medical care. **Material and Methods:** Literature search was done through relevant science databases. Available studies regarding health inequalities in context of COVID-19 pandemic were examined and presented in this review. **Results and Conclusions:** The higher risks of COVID-19 infection and mortality has been noticed for specific groups that are disproportionately affected by pandemic due to inequalities in the social determinants of health, such as living and working conditions, access to healthy food, opportunities for maintaining hygiene and access to healthcare. To understand why lower socioeconomic groups and minorities are more susceptible to infection, broader context of the pandemic has to be observed. Although the existence of virus is a key factor, differences in infection, prevalence, severity and mortality rates seem to be a result of a synergistic effect of the virus itself, social determinants of health and inequalities in pre-existing chronic diseases. The important task for the future is to create more equal and healthier living and working conditions, improving the health of the most vulnerable groups and reducing inequalities in the population.

AACR Virtual Conference: 14th AACR Conference on the Science of Cancer Health Disparities in Racial/Ethnic Minorities and the Medically Underserved [abstracts here](#)

The proceedings contain 286 papers. The topics discussed include: online cancer misinformation interventions for young adult cancer patients and caregivers; an examination of the implementation of a navigation patient navigation program to improve breast and cervical cancer screening rates of Chinese immigrant women; a latent class analysis of communication patterns between Hispanic and non-Hispanic childhood cancer survivors, parents, and medical providers; the association of COVID-19 and cancer screening inquiries among Spanish speakers; an examination of NCI cancer information service data; general social media use amongst young adult cancer patients and caregivers; and an examination of online experiences among young adult cancer patients and caregivers reveals the pervasiveness and influence of diet and supplement-related misinformation.

National policy responses to maintain essential health services during the COVID-19 pandemic.

doi: <https://dx.doi.org/10.2471/BLT.21.286852>

Essential health services – including services for human immunodeficiency virus (HIV) infection and/or acquired immunodeficiency syndrome (AIDS), tuberculosis, malaria, routine immunization, noncommunicable diseases, nutrition and reproductive, maternal, newborn, child and adolescent health – are foundational to primary health care and vital for protecting population health. The coronavirus disease 2019 (COVID-19) pandemic disrupted the delivery of essential health services in most countries, with ongoing and differing disruptions as the COVID-19 pandemic continues. To track policy development at a national level, we launched the COVID-19 Essential Health Services Policy Tracker⁶ in collaboration with WHO's Maternal, Adolescent, Child Health and Ageing department with funding from the Bill & Melinda Gates Foundation. Our analysis of policies found that most national policies recommended the continuation or adaptation of essential health services.

Food and COVID-19 Lit Review: Week ending 02/04/2022

DNPAO

- COVID-19 Vaccination, Breastfeeding, and Milk Supply...Bertrand K, Honerkamp-Smith G, Chambers CD. Maternal and child outcomes reported by breastfeeding women following messenger RNA COVID-19 vaccination. *Breastfeeding Medicine*, 2021;16:697–701
<https://doi.org/10.1089/bfm.2021.0273>
- COVID-19 Mortality in Europe, by Latitude and Obesity Status: A Geo-Spatial Analysis in 40 Countries <https://doi.org/10.3390/nu14030471>
- COVID-19 and Vitamin D (Co-VIVID Study): a systematic review and meta-analysis of randomized controlled trials. <https://dx.doi.org/10.1080/14787210.2022.2035217>
- What should a family physician know about nutrition and physical exercise rehabilitation' advices to communicate to long-term COVID-19" patients?"
<https://dx.doi.org/10.1080/00325481.2022.2035589>

DFWED

- SARS-CoV-2 Remains Infectious on Refrigerated Deli Food, Meats, and Fresh Produce for up to 21 Days <https://doi.org/10.3390/foods11030286>

- Understanding Agri-Food Traceability System User Intention in Respond to COVID-19 Pandemic: The Comparisons of Three Models <https://doi.org/10.3390/ijerph19031371>

NIOSH

- Worker and employer experiences with COVID-19 and the California Workers' Compensation System: A review of the literature. <https://dx.doi.org/10.1002/ajim.23326>
- Health Management Occupations During COVID-19: Experiences of Older African Americans With Multimorbidity. <https://dx.doi.org/10.1177/15394492211068214>

NCEH

- Assessment of COVID-19 aerosol transmission in a university campus food environment using a numerical method <https://doi.org/10.1016/j.gsf.2022.101353>

Other

- Do not transform food systems on the backs of the rural poor <https://doi.org/10.1007/s12571-021-01214-3>
- Multiple spillovers from humans and onward transmission of SARS-CoV-2 in white-tailed deer. <https://dx.doi.org/10.1073/pnas.2121644119>
- The impact of COVID-19 on U.S. adolescents: loss of basic needs and engagement in health risk behaviors DOI: [10.1007/s12144-021-02411-1](https://doi.org/10.1007/s12144-021-02411-1)

DNPAO

COVID-19 Vaccination, Breastfeeding, and Milk Supply...Bertrand K, Honerkamp-Smith G, Chambers CD. Maternal and child outcomes reported by breastfeeding women following messenger RNA COVID-19 vaccination. Breastfeeding Medicine, 2021;16:697–701 <https://doi.org/10.1089/bfm.2021.0273>

COVID-19 Mortality in Europe, by Latitude and Obesity Status: A Geo-Spatial Analysis in 40 Countries <https://doi.org/10.3390/nu14030471>

On 30 January 2020, the World Health Organization (WHO) declared the current novel coronavirus disease 2019 (COVID-19) as a public health emergency of international concern and later characterized it as a pandemic. New data show that excess body mass and vitamin D deficiency might be related to the disease severity and mortality. The aim of this study was to evaluate whether latitude, as a proxy of sunlight exposure and Vitamin D synthesis, and prevalent obesity among European populations, is related to COVID-19 spread and severity. European COVID-19 data (incidence and fatality), including information on the prevalence of obesity, social distancing, and others were obtained by the “Our World in Data” website on 17 April 2021. Adjusted analysis showed that higher COVID-19 incidence and fatality were pictured in countries being in higher latitude, both during the whole period, as well as, during the time period 1 November 2020–31 March 2021. Higher incidence and fatality of COVID-19 were observed where the prevalence of overweight/obesity was higher during the whole time period, whereas during the time period 1 November 2020–31 March 2021, only COVID-19 incidence was higher but not a fatality. The present results provide insights for targeted interventions and preventive strategies against COVID-19.

COVID-19 and Vitamin D (Co-VIVID Study): a systematic review and meta-analysis of randomized controlled trials. <https://dx.doi.org/10.1080/14787210.2022.2035217>

INTRODUCTION: Vitamin D levels have been reported to be associated with COVID-19 susceptibility, severity and mortality events. We performed a meta-analysis of randomized controlled trials (RCTs) to evaluate the use of vitamin D intervention on COVID-19 outcomes. **AREAS COVERED:** Literature search was conducted using PubMed, Cochrane library, and ClinicalTrials.gov databases. We included RCTs reporting the use of vitamin D intervention to control/placebo group in COVID-19. The study was registered at PROSPERO: CRD42021271461. **EXPERT OPINION:** A total of 6 RCTs with 551 COVID-19 patients were included. The overall collective evidence pooling all the outcomes across all RCTs indicated the beneficial use of vitamin D intervention in COVID-19 (relative risk, RR = 0.60, 95% CI 0.40 to 0.92, Z=2.33, p=0.02, I2 = 48%). The rates of RT-PCR positivity was significantly decreased in the intervention group as compared to the non-vitamin D groups (RR = 0.46, 95% CI 0.24 to 0.89, Z=2.31, p=0.02, I2 = 0%). Conclusively, COVID-19 patients supplemented with vitamin D are more likely to demonstrate fewer rates of ICU admission, mortality events and RT-PCR positivity.

What should a family physician know about nutrition and physical exercise rehabilitation' advices to communicate to long-term COVID-19" patients?" <https://dx.doi.org/10.1080/00325481.2022.2035589>

In real practice, there is a paradox in the management of patients with "long-term Covid-19". Indeed, Family physicians (FPs) are on the front line in the management process of these patients. For "long-term Covid-19" patients, and according to the World Health Organization guideline, the cardiopulmonary rehabilitation (CPR) should be provided not only at tertiary- or secondary- care, but mainly at primary-care with a real implication of FPs. However, specific guidelines/recommendations were addressed for FPs. Therefore, an alternative including the CPR minimal advice that a FP should provide to "long-term Covid-19" patients, seems to be necessary to respond to the needs of FPs to face their involvement with "long-term Covid-19" patients. Thus, this paper aimed to report the CPR "minimal advice" that should be provided by FPs managing "long-term Covid-19" patients with incapacity (i.e.; alteration of the cardiorespiratory and muscular chain). According to the authors, FPs should be more cautious in the prescription of exercise and nutrition program and informed about the minimal advices related to nutritional and physical exercise rehabilitation guidelines when taking care of "long-term Covid-19" patients, and how these guidelines can relieve the mental and physical problems, improve immunity, and accelerate the recovery process of the patients. With the occurrence of new variants of the severe acute respiratory syndrome coronavirus 2, the nutritional and exercise rehabilitation guidelines implemented by FPs become indispensable to promote the recovery of Covid-19 patients and support a return to normal life.

DFWED

SARS-CoV-2 Remains Infectious on Refrigerated Deli Food, Meats, and Fresh Produce for up to 21 Days <https://doi.org/10.3390/foods11030286>

SARS-CoV-2, the virus that causes COVID-19, has been detected on foods and food packaging and the virus can infect oral cavity and intestinal cells, suggesting that infection could potentially occur following ingestion of virus-contaminated foods. To determine the relative risk of infection from different types of foods, we assessed survival of SARS-CoV-2 on refrigerated ready-to-eat deli items, fresh produce, and meats (including seafood). Deli items and meats with high protein, fat, and moisture maintained infectivity of SARS-CoV-2 for up to 21 days. However, processed meat, such as salami, and some fresh produce exhibited antiviral effects. SARS-CoV-2 also remained infectious in ground beef cooked rare or medium, but not well-done. Although infectious SARS-CoV-2 was inactivated on the foods over time, viral RNA was not degraded in similar trends, regardless of food type; thus, PCR-based assays for detection of pathogens on foods only indicate the presence of viral RNA, but do not correlate with presence or quantity of infectious virus. The survival and high recovery of SARS-CoV-2 on certain foods

support the possibility that food contaminated with SARS-CoV-2 could potentially be a source of infection, highlighting the importance of proper food handling and cooking to inactivate any contaminating virus prior to consumption.

Understanding Agri-Food Traceability System User Intention in Respond to COVID-19 Pandemic: The Comparisons of Three Models <https://doi.org/10.3390/ijerph19031371>

Scientists believed the outbreak of COVID-19 could be linked to the consumption of wild animals, so food safety and hygiene have become the top concerns of the public. An agri-food traceability system becomes very important in this context because it can help the government to trace back the entire production and delivery process in case of food safety concerns. The traceability system is a complicated digitalized system because it integrates information and logistics systems. Previous studies used the technology acceptance model (TAM), information systems (IS) success model, expectation confirmation model (ECM), or extended model to explain the continuance intention of traceability system users. Very little literature can be found integrating two different models to explain user intention, not to mention comparing three models in one research context. This study proposed the technology acceptance model (TAM), technology acceptance model-information systems (TAM-IS) success, and technology acceptance model-expectation confirmation model (TAM-ECM) integrated models to evaluate the most appropriate model to explain agri-food traceability system during the COVID-19 pandemic. A questionnaire was designed based on a literature review, and 197 agri-food traceability system users were sampled. The collected data were analyzed by partial least square (PLS) to understand the explanatory power and the differences between the three models. The results showed that: (1) the TAM model has a fair explanatory power of continuance intention (62.2%), but was recommended for its simplicity; (2) the TAM-IS success integrated model had the best predictive power of 78.3%; and (3) the system providers should raise users' confirmation level, so their continuance intention could be reinforced through mediators, perceived value, and satisfaction. The above findings help to understand agri-food traceability system user intention, and provide theoretical and practical implications for system providers to refine their system design.

NIOSH

Worker and employer experiences with COVID-19 and the California Workers' Compensation System: A review of the literature. <https://dx.doi.org/10.1002/ajim.23326>

BACKGROUND: Given workplace risks from COVID-19, California policymakers passed Senate Bill (SB) 1159 to facilitate access to workers' compensation (WC) benefits for frontline workers. However there has been no review of the available evidence needed to inform policy decisions about COVID-19 and WC. **METHODS:** We conducted a literature review on worker and employer experiences surrounding COVID-19 and WC, adhering to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. **RESULTS:** Forty articles were included (16 about worker experiences and 24 about employer practices). Most were not about experiences and practices related to COVID-19 and WC. Worker studies indicated that paid sick leave reduced new COVID-19 cases and COVID-19 activity. Studies also found that rural agricultural and food processing workers lacked sick leave protection and faced severe housing and food insecurity. Studies on workplace health and safety indicated that healthcare workers with access to personal protective equipment had lower stress levels. Studies about employer practices found that unrestricted work in high-contact industries was associated with increased risks to at-risk workers, and with health disparities. No studies examined worker COVID-19 experiences and WC claims or benefits, job loss, retaliation, workers' medical care experiences, and return-to-work or leave practices. **CONCLUSIONS:** Our review identified experiences and practice related to COVID-19 and the WC system, but not specifically about WC and COVID-19 WC claims or benefits.

Further research is needed to document and understand evidence underpinning the need for WC coverage for COVID-19 and to evaluate the impact of the current SB 1159 bill on WC in California.

Health Management Occupations During COVID-19: Experiences of Older African Americans With Multimorbidity. <https://dx.doi.org/10.1177/15394492211068214>

Older African Americans with multimorbidity are at an especially high risk of adverse outcomes due to synergistic risks conferred by age, chronic disease burden and social determinants of health. Chronic condition self-management is one way older African Americans can use health management occupations and exercise agency to reduce their risk of becoming severely ill, and during the ongoing pandemic, of COVID-19 infection. The objective of this study was to understand how the COVID-19 pandemic shaped health management occupations of older African Americans. In-depth qualitative interviews were conducted with 30 African Americans aged 65 and older who reported having two or more chronic conditions. Data were analyzed using thematic analysis. Data suggest how key health management occupations (accessing care; managing medications, nutrition, and physical activity; and social and emotional health promotion and maintenance) were utilized and also shaped by the pandemic. Another key finding was perceived benefits of the pandemic on health and well-being.

NCEH

Assessment of COVID-19 aerosol transmission in a university campus food environment using a numerical method <https://doi.org/10.1016/j.gsf.2022.101353>

With the prevalence of COVID-19, the phenomenon of viruses spreading through aerosols has become a focus of attention. Diners in university dining halls have a high risk of exposure to respiratory droplets from others without the protection of face masks, which greatly increases the risk of COVID-19 transmission. Therefore, the transmission mechanism of respiratory droplets in extremely crowded dining environments should be investigated. In this study, a numerical simulation of coughing at dining tables under two conditions was performed, namely the presence and absence of protective partitions, and the evaporation and condensation of aerosol droplets in the air were examined. By using the numerical method, we analyzed and verified the isolation effect of dining table partitions in the propagation of aerosol droplets. The effect of changes in room temperature on the diffusion of coughed aerosols when partitions were present was analyzed. We demonstrated how respiratory droplets spread through coughing and how these droplets affect others. Finally, we proposed a design for a dining table partition that minimizes the transmission of COVID-19.

Other

Do not transform food systems on the backs of the rural poor <https://doi.org/10.1007/s12571-021-01214-3>

Even prior to COVID, there was a considerable push for food system transformation to achieve better nutrition and health as well as environmental and climate change outcomes. Recent years have seen a large number of high visibility and influential publications on food system transformation. Literature is emerging questioning the utility and scope of these analyses, particularly in terms of trade-offs among multiple objectives. We build on these critiques of emerging food system transformation approaches in our review of four recent and influential publications from the EAT-Lancet Commission, the IPCC, the World Resources Institute and the Food and Land Use Coalition. We argue that a major problem is the lack of explicit inclusion of the livelihoods of poor rural people in their modeling approaches and insufficient measures to ensure that the nature and scale of the envisioned changes will improve these livelihoods. Unless livelihoods and socioeconomic inclusion more broadly are brought to the center of

such approaches, we very much risk transforming food systems to reach environmental and nutritional objectives on the backs of the rural poor.

Multiple spillovers from humans and onward transmission of SARS-CoV-2 in white-tailed deer.

<https://dx.doi.org/10.1073/pnas.2121644119>

Many animal species are susceptible to severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection and could act as reservoirs; however, transmission in free-living animals has not been documented. White-tailed deer, the predominant cervid in North America, are susceptible to SARS-CoV-2 infection, and experimentally infected fawns can transmit the virus. To test the hypothesis that SARS-CoV-2 is circulating in deer, 283 retropharyngeal lymph node (RPLN) samples collected from 151 free-living and 132 captive deer in Iowa from April 2020 through January of 2021 were assayed for the presence of SARS-CoV-2 RNA. Ninety-four of the 283 (33.2%) deer samples were positive for SARS-CoV-2 RNA as assessed by RT-PCR. Notably, following the November 2020 peak of human cases in Iowa, and coinciding with the onset of winter and the peak deer hunting season, SARS-CoV-2 RNA was detected in 80 of 97 (82.5%) RPLN samples collected over a 7-wk period. Whole genome sequencing of all 94 positive RPLN samples identified 12 SARS-CoV-2 lineages, with B.1.2 (n = 51; 54.5%) and B.1.311 (n = 19; 20%) accounting for approximately 75% of all samples. The geographic distribution and nesting of clusters of deer and human lineages strongly suggest multiple human-to-deer transmission events followed by subsequent deer-to-deer spread. These discoveries have important implications for the long-term persistence of the SARS-CoV-2 pandemic. Our findings highlight an urgent need for a robust and proactive "One Health" approach to obtain enhanced understanding of the ecology, molecular evolution, and dissemination of SARS-CoV-2.

The impact of COVID-19 on U.S. adolescents: loss of basic needs and engagement in health risk behaviors DOI: [10.1007/s12144-021-02411-1](https://doi.org/10.1007/s12144-021-02411-1)

Across the United States, the COVID-19 pandemic created myriad challenges for youth and families, including losses of basic needs which may be associated with increased use of maladaptive coping behaviors. In a sample of 2491 U.S. youth (ages 13–16), demographic differences in loss of basic needs and maladaptive coping were assessed using regression models. More than 21% of adolescents endorsed losing one or more basic needs (e.g., loss of access to food or shelter) and 83% endorsed use of maladaptive coping strategies (e.g., using drugs or alcohol; self-harming behaviors) during the COVID-19 pandemic. Although adolescents with both majority and minority identities reported losing basic needs and engaging in maladaptive coping behaviors, minoritized youth reported more basic needs losses ($p < 0.05$) and greater reliance on maladaptive coping strategies ($p < .05$) than their non-minoritized peers. Furthermore, adolescents who endorsed losing basic needs were more likely to also endorse engaging in maladaptive coping behaviors ($p < .05$). Healthcare providers and teachers must consider basic need losses while structuring emotional and behavioral supports for youth during and beyond the COVID-19 pandemic.

Food and COVID-19 Lit Review: Weeks ending 01/21/2022 and 1/28/2022

DNPAO

- Implementing healthy food environment policies in New Zealand: nine years of inaction. <https://dx.doi.org/10.1186/s12961-021-00809-8>

- Micronutrient Deficiency as a Confounder in Ascertaining the Role of Obesity in Severe COVID-19 Infection <https://doi.org/10.3390/ijerph19031125>
- Changes in Total Energy, Nutrients and Food Group Intake among Children and Adolescents during the COVID-19 Pandemic—Results of the DONALD Study <https://doi.org/10.3390/nu14020297>
- EatLOCAL: a platform that connects local farmers, consumers, municipalities and non-governmental organisations
- A trade war and a pandemic: Disruption and resilience in the food bank supply chain <https://doi.org/10.1016/j.indmarman.2022.01.002>

DFWED

- Review on irradiation effects on quality of frozen meat food <https://doi.org/10.11889/j.0253-3219.2022.hjs.45.010002>
- Water safety management during the initial phase of the Covid-19 pandemic: challenges, responses and guidance <https://doi.org/10.1080/07900627.2021.2016378>
- Factors influencing SARS-CoV-2 RNA concentrations in wastewater up to the sampling stage: A systematic review. <https://dx.doi.org/10.1016/j.scitotenv.2022.153290>
- Respiratory Syncytial Virus (RSV) RNA in Wastewater Settled Solids Reflects RSV Clinical Positivity Rates <https://doi.org/10.1021/acs.estlett.1c00963>

NIOSH

- Historical Rice Farming Explains Faster Mask Use During Early Days of China's COVID-19 Outbreak <https://doi.org/10.1016/j.cresp.2022.100034>

NCEH

- COVID-19 prevention and control measures and infection risks in a boarding school <https://doi.org/10.11918/202103108>
- Key factors driving customers' restaurant dining behavior during the COVID-19 pandemic <https://doi.org/10.1108/IJCHM-07-2021-0831>
- Environmental Surveillance for SARS-CoV-2 in Two Restaurants from a Mid-scale City that Followed U.S. CDC Reopening Guidance. <https://dx.doi.org/10.4209/aaqr.210304>

Essential Workers/Food/Farm/Ag/Migrant

- Health Inequalities amongst Refugees and Migrant Workers in the Midst of the COVID-19 Pandemic: a Report of Two Cases. <https://dx.doi.org/10.1007/s41649-021-00198-8>
- Testing strategies to contain COVID-19 in migrant worker dormitories <https://doi.org/10.1016/j.jmh.2022.100079>
- Risk of SARS-CoV-2 infection in migrants and ethnic minorities compared with the general population in the European WHO region during the first year of the pandemic: a systematic review. <https://dx.doi.org/10.1186/s12889-021-12466-1>

Other

- Sustainability and authenticity: are they food risk relievers during the COVID-19 pandemic? <https://doi.org/10.1108/BFJ-05-2021-0495>
- Recover the food-energy-water nexus from COVID-19 under Sustainable Development Goals acceleration actions. <https://dx.doi.org/10.1016/j.scitotenv.2022.153013>
- Summer crowds: An analysis of USFS campground reservations during the COVID-19 pandemic. <https://dx.doi.org/10.1371/journal.pone.0261833>
- Is restaurant crowdfunding immune to the COVID-19 pandemic? <https://doi.org/10.1108/IJCHM-06-2021-0817>

- Prevalence of risk behaviors and correlates of SARS-CoV-2 positivity among in-school contacts of confirmed cases in a Georgia school district in the pre-vaccine era, December 2020-January 2021. <https://dx.doi.org/10.1186/s12889-021-12347-7>
- Agricultural commodity supply chain during the covid-19 pandemic <https://doi.org/10.1088/1755-1315/951/1/012109>
- Sustainability Recommendations and Practices in School Feeding: A Systematic Review. <https://dx.doi.org/10.3390/foods11020176>

DNPAO

Implementing healthy food environment policies in New Zealand: nine years of inaction.

<https://dx.doi.org/10.1186/s12961-021-00809-8>

BACKGROUND: The INFORMAS [International Network for Food and Obesity/Non-communicable Diseases (NCDs) Research, Monitoring and Action Support] Healthy Food Environment Policy Index (Food-EPI) was developed to evaluate the degree of implementation of widely recommended food environment policies by national governments against international best practice, and has been applied in New Zealand in 2014, 2017 and 2020. This paper outlines the 2020 Food-EPI process and compares policy implementation and recommendations with the 2014 and 2017 Food-EPI. **METHODS:** In March-April 2020, a national panel of over 50 public health experts participated in Food-EPI. Experts rated the extent of implementation of 47 "good practice" policy and infrastructure support indicators compared to international best practice, using an extensive evidence document verified by government officials. Experts then proposed and prioritized concrete actions needed to address the critical implementation gaps identified. Progress on policy implementation and recommendations made over the three Food-EPIs was compared. **RESULTS:** In 2020, 60% of the indicators were rated as having "low" or "very little, if any" implementation compared to international benchmarks: less progress than 2017 (47%) and similar to 2014 (61%). Of the nine priority actions proposed in 2014, there was only noticeable action on one (Health Star Ratings). The majority of actions were therefore proposed again in 2017 and 2020. In 2020 the proposed actions were broader, reflecting the need for multisectoral action to improve the food environment, and the need for a mandatory approach in all policy areas. **CONCLUSIONS:** There has been little to no progress in the past three terms of government (9 years) on the implementation of policies and infrastructure support for healthy food environments, with implementation overall regressing between 2017 and 2020. The proposed actions in 2020 have reflected a growing movement to locate nutrition within the wider context of planetary health and with recognition of the social determinants of health and nutrition, resulting in recommendations that will require the involvement of many government entities to overcome the existing policy inertia. The increase in food insecurity due to COVID-19 lockdowns may provide the impetus to stimulate action on food policies.

Micronutrient Deficiency as a Confounder in Ascertaining the Role of Obesity in Severe COVID-19 Infection <https://doi.org/10.3390/ijerph19031125>

Food insecurity in the United States has been exacerbated due to the socioeconomic strain of the coronavirus disease 2019 (COVID-19) pandemic. Populations experiencing poverty and, as a consequence, food insecurity in the United States are disproportionately affected by obesity, which was identified early in the pandemic as a major risk factor for increased susceptibility to COVID-19 infection and mortality. Given the focus on obesity and its role in immune dysregulation, it is also important to note the role of micronutrient deficiency, another sequelae of food insecurity. Micronutrients play an important role in the ability of the immune system to mount an appropriate response. Moreover, OBESE individuals are more likely to be micronutrient deficient. This review will explore the role of micronutrients, vitamin A, vitamin D, vitamin C, and zinc in respiratory immunity and COVID-19 and how

micronutrient deficiency may be a possible confounder in obesity's association with severe outcomes. By illuminating the role of micronutrients in COVID-19, this paper expands the discussion from food insecurity and obesity to include micronutrient deficiency and how all of these interact in respiratory illnesses such as COVID-19. © 2022 by the authors. Licensee MDPI, Basel, Switzerland.

Changes in Total Energy, Nutrients and Food Group Intake among Children and Adolescents during the COVID-19 Pandemic—Results of the DONALD Study <https://doi.org/10.3390/nu14020297>

The COVID-19 pandemic may have changed the habitual lifestyles of children and adolescents, in particular, due to the closure of kindergartens and schools. To investigate the impact of the pandemic on nutrients and food intake of children and adolescents in Germany, we analyzed repeated 3-day weighed dietary records from 108 participants (3–18 years; females: n = 45, males: n = 63) of the Dortmund Nutritional and Anthropometric Longitudinally Designed (DONALD) study. Polynomial mixed-effects regression models were used to identify prospective changes in dietary intake (total energy (TEI), carbohydrates, fat, protein, free sugar, ultra-processed foods, fruits and vegetables, sugar sweetened beverages and juices) before and during the first months of the COVID-19 pandemic. For the current analysis, we have chosen the first months of the pandemic (March 2020–August 2020), as this was the period with the most restrictions in Germany so far (kindergarten, school and restaurant closures; contact and outdoor activity restrictions). No significant changes in either the selected nutrients or food groups were observed. However, children and adolescents recorded a significantly lower TEI during the pandemic ($\beta = -109.65$, $p = 0.0062$). Results remained significant after the exclusion of participants with under-reported records ($\beta = -95.77$, $p = 0.0063$). While macronutrient intake did not change, descriptive data indicate a non-significant decrease in sugar sweetened beverages and ultra-processed foods intake. We suggest that children and adolescents from high socioeconomic families may have adapted lifestyle changes during the pandemic.

EatLOCAL: a platform that connects local farmers, consumers, municipalities and non-governmental organisations

The COVID-19 pandemic has brought unprecedented challenges to public health and supply chain systems around the globe. Local farmers businesses were impacted by the lockdowns and they still face difficulties in commercializing their production while requests for social, economic and food support pile up at municipalities and non-governmental organisations (NGOs). Meanwhile, working from home, constraints to workout, business and social life, are impacting citizens' work-life balance, eating habits and impacting populations' physical and mental health globally. EatLOCAL proposes to address this issue by providing a service that is supported in an innovative digital platform that strengthens connections between suppliers, consumers, municipalities and NGOs working on food privation issues. Besides maximizing the opportunities for business to local farmers, this platform also creates a facilitated channel that promotes de access to fresh food by citizens and minimizes the social impact of the pandemic in most vulnerable groups.

A trade war and a pandemic: Disruption and resilience in the food bank supply chain <https://doi.org/10.1016/j.indmarman.2022.01.002>

Supply chain turbulence has become the new normal – and understanding supply chain resilience is essential for business-to-business firms. Dynamic capabilities theory provides the foundation for examining three literature gaps on supply chain resilience: resource reconfiguration during high impact disruptions; resilience across multiple supply chain levels; and resilience when government is involved. The food bank supply chain is examined during the turbulence of 2018–2020 from the U.S.-China trade war and the COVID-19 pandemic. Due to the trade war, the U.S. Department of Agriculture (USDA) shifted agricultural commodities intended for export to food banks, creating scale and scope supply

shocks, and this was followed by food demand and supply shocks from the pandemic. In-depth interviews were conducted with supply chain members, from farmers to processing firms to food banks. Qualitative analysis provides detailed perspectives on three stages of supply chain resilience: anticipating, adapting and responding, and recovery and learning. The trade war responses built resilience during the pandemic by leveraging dynamic capabilities and frugal innovation, and by building social capital and public/private partnerships. From the specific insights for food banks emerged broader insights for business-to-business firms, in the form of twelve propositions for building supply chain resilience to high impact disruptions.

DFWED

Review on irradiation effects on quality of frozen meat food <https://doi.org/10.11889/j.0253-3219.2022.hjs.45.010002>

Irradiation technology has been widely used in the field of food processing. It is urgent to figure out whether the quality of frozen meat food would change after irradiation, when the SARS-CoV-2 was detected in the imported cold-chain meat. The effects of irradiation on the quality of frozen meat are summarized from the aspects of food sensory, protein decomposition, fat oxidation, vitamin content and so on, providing reference for the formulation of irradiation for the elimination of SARS-CoV-2 and other viruses on frozen food, as well as the study of irradiated frozen meat and the industrial development of irradiated frozen food.

Water safety management during the initial phase of the Covid-19 pandemic: challenges, responses and guidance <https://doi.org/10.1080/07900627.2021.2016378>

Water safety plans address both routine operations and incident responses to support risk management in drinking water utilities. Their use and relevance in facing the challenges of the Covid-19 crisis were investigated via a survey distributed to water utilities and health or environmental agencies across the globe. Responses from 86 respondents from 38 countries were analysed to identify the water safety challenges faced and responses. Water safety plans appear to provide some preparedness and organizational advantages to utilities in facing the Covid-19 crisis, including stronger communication links between utilities and governing agencies. Guidance for future water safety planning is provided. [FROM AUTHOR] Copyright of International Journal of Water Resources Development is the property of Routledge and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use. This may be abridged. No warranty is given about the accuracy of the copy. Users should refer to the original published version of the material for the full . (Copyright applies to all s.)

Factors influencing SARS-CoV-2 RNA concentrations in wastewater up to the sampling stage: A systematic review. <https://dx.doi.org/10.1016/j.scitotenv.2022.153290>

Wastewater-based surveillance (WBS) for SARS-CoV-2 RNA is a promising complementary approach to monitor community viral circulation. A myriad of factors, however, can influence RNA concentrations in wastewater, impeding its epidemiological value. This article aims to provide an overview and discussion of factors up to the sampling stage that impact SARS-CoV-2 RNA concentration estimates in wastewater. To this end, a systematic review was performed in three databases (MEDLINE, Web of Science and Embase) and two preprint servers (MedRxiv and BioRxiv). Two authors independently screened and selected articles published between January 1, 2019 and May 4, 2021. A total of 22 eligible articles were included in this systematic review. The following factors up to sampling were identified to have an influence on SARS-CoV-2 RNA concentrations in wastewater and its interpretation: (i) shedding-related factors, including faecal shedding parameters (i.e. shedding pattern, recovery, rate, and load distribution), (ii) population size, (iii) in-sewer factors, including solid particles, organic load, travel time,

flow rate, wastewater pH and temperature, and (iv) sampling strategy. In conclusion, factors influencing SARS-CoV-2 RNA concentration estimates in wastewater were identified and research gaps were discussed. The identification of these factors supports the need for further research on WBS for COVID-19.

Respiratory Syncytial Virus (RSV) RNA in Wastewater Settled Solids Reflects RSV Clinical Positivity

Rates <https://doi.org/10.1021/acs.estlett.1c00963>

Wastewater-based epidemiology (WBE) uses concentrations of infectious agent targets in wastewater to infer infection trends in the contributing community. To date, WBE has been used to gain insight into infection trends of gastrointestinal diseases, but its application to respiratory diseases has been limited. Here, we report that respiratory syncytial virus (RSV) genomic ribonucleic acid can be detected in wastewater settled solids at two publicly owned treatment works. We further show that its concentration in settled solids is strongly associated (Kendalls tau = 0.65-0.77, $p < 10^{-7}$) with clinical positivity rates for RSV at sentinel laboratories across the state in 2021, a year with anomalous seasonal trends of RSV disease. Given that RSV infections have similar clinical presentations to COVID-19, can be life threatening for some, and immunoprophylaxis distribution for vulnerable people is based on outbreak identification, WBE represents an important tool to augment current RSV surveillance and public health response efforts.

NIOSH

Historical Rice Farming Explains Faster Mask Use During Early Days of China's COVID-19 Outbreak

<https://doi.org/10.1016/j.cresp.2022.100034>

In the early days of the coronavirus outbreak, we observed mask use in public among 1,330 people across China. People in regions with a history of farming rice wore masks more often than people in wheat regions. Cultural differences persisted after taking into account objective risk factors such as local COVID cases. The differences fit with the emerging theory that rice farming's labor and irrigation demands made societies more interdependent, with tighter social norms. Cultural differences were strongest in the ambiguous, early days of the pandemic, then shrank as masks became nearly universal (94%). Separate survey and internet search data replicated this pattern. Although strong cultural differences lasted only a few days, research suggests that acting just a few days earlier can reduce deaths substantially.

NCEH

COVID-19 prevention and control measures and infection risks in a boarding school

<https://doi.org/10.11918/202103108>

Boarding school is one of the places where people usually live in densely crowded conditions. In order to control the risk of COVID-19 epidemic in boarding schools, five levels of practicable pandemic prevention measures and their effects on infection risks in five typical campus living scenes, including going to washroom, going out, going to class, having meal, and returning to dormitory were proposed, and the susceptible-infective (SI) model based on statistics and probability hypotheses was developed. Then the SARS-CoV-2 infection rates among students in 14 days were simulated in two typical apartment types: four-person dormitory with two public washrooms on each floor (apartment A) and six-person dormitory with a private washroom (apartment B). Results show that for apartment A, once there was an infected person, the epidemic spread rapidly in the whole building even under the most stringent prevention and control measures (level V). While for apartment B, when the most stringent prevention and control measures (level V) were taken, the epidemic could be controlled within the range of less than 10 people in two weeks. In addition, full vaccination would significantly inhibit the

infection rate, and the number of washrooms would no longer be a significant factor. Even if no prevention and control measures were taken, the number of infected people would decrease significantly, and the number of persons in one dormitory became the main factor affecting the spread of the virus. The research results can provide information support for campus epidemic prevention and control. Copyright ©2022 Journal of Harbin Institute of Technology. All rights reserved.

Key factors driving customers' restaurant dining behavior during the COVID-19 pandemic

<https://doi.org/10.1108/IJCHM-07-2021-0831>

PurposeThis study aims to identify key factors that affected US respondents' dining behavior at restaurants during the midst of the COVID-19 pandemic.**Design/methodology/approach**Due to the lack of a prior framework or model to test customers' perceptions of dining-out behavior during this unprecedented time, this study used a mixed-methods approach, conducting two focus group discussions to generate potential restaurant attributes, followed by a US-based survey using an online panel. Using structural equation modeling, this study tested eight developed propositions.**Findings**The findings of this study indicated that the three key factors (i.e. restaurant dining environment, communication and hygiene and contactless features) made customers feel comfortable dining in the restaurant during the pandemic. Out of these three factors, only the restaurant dining environment and communication and hygiene were essential predictors for customers' perceived trust toward the restaurant, leading to their willingness to pay more. This study used two moderators, customers' perceived risk and support for restaurants to examine how they affected customers' perceived trust and willingness to pay, respectively.**Practical implications**This study provides both theoretical and practical implications to the current body of knowledge in customers' dining-out behavior and the development of operational strategies for restaurants to accommodate customers' changing dining-out behavior due to the COVID-19 pandemic. To develop a holistic conceptual framework, this study incorporates two COVID-19-focused measurement items, perceived risk and support of the restaurant, to identify their moderating roles in the relationships among the five proposed measurement items. This study provides restaurant operators with insights into the altered dining-out behavior of their customers due to the COVID-19 pandemic and prepares them for the post pandemic environment.**Originality/value**During the unprecedented pandemic situation, few customers are willing to dine in restaurants. As local and national governments lifted the mandated COVID-19 protocols, restaurants opened their business slowly to cater to customers in compliance with the centers for disease control's health and safety regulations. It is of utmost importance for restaurant operators to accommodate their customers' needs when they dine in the middle of the COVID-19 pandemic. There is a paucity of research that has examined customers' comfort level when dining in restaurants and customers' preferred dining environment during the pandemic.

Environmental Surveillance for SARS-CoV-2 in Two Restaurants from a Mid-scale City that Followed U.S. CDC Reopening Guidance. <https://dx.doi.org/10.4209/aaqr.210304>

Since mask use and physical distancing are difficult to maintain when people dine indoors, restaurants are perceived as high risk for acquiring COVID-19. The air and environmental surfaces in two restaurants in a mid-scale city located in north central Florida that followed the Centers for Disease Control and Prevention (CDC) reopening guidance were sampled three times from July 2020 to February 2021. Sixteen air samples were collected for 2 hours using air samplers, and 20 surface samples by using moistened swabs. The samples were analyzed by real-time reverse transcriptase-polymerase chain reaction (RT-PCR) for the presence of SARS-CoV-2 genomic RNA. A total of ~550 patrons dined in the restaurants during our samplings. SARS-CoV-2 genomic RNA was not detected in any of the air samples. One of the 20 surface samples (5%) was positive. That sample had been collected from a plastic tablecloth immediately after guests left the restaurant. Virus was not isolated in cell cultures inoculated

with aliquots of the RT-PCR-positive sample. The likelihood that patrons and staff acquire SARS-CoV-2 infections may be low in restaurants in a mid-scale city that adopt CDC restaurant reopening guidelines, such as operation at 50% capacity so that tables can be spaced at least 6 feet apart, establishment of adequate mechanical ventilation, use of a face covering except while eating or drinking, and implementation of disinfection measures.

Essential Workers/Food/Farm/Ag/Migrant

Health Inequalities amongst Refugees and Migrant Workers in the Midst of the COVID-19 Pandemic: a Report of Two Cases. <https://dx.doi.org/10.1007/s41649-021-00198-8>

Malaysia hosts a significant number of refugees, asylum-seekers and migrant workers. Healthcare access for these individuals has always proved a challenge: language barriers, financial constraints and mobility restrictions are some of the frequently cited hurdles. The COVID-19 pandemic has exacerbated these existing inequalities, with migrants and refugees bearing the brunt of chronic systemic injustices. Providing equitable healthcare access for all, regardless of their citizenship and social status remains an ethical challenge for healthcare providers, particularly within the framework of a resource-limited healthcare system. Inclusive healthcare and socio-economic policies are necessary to ensure every individual's equal opportunity to attain good health. The collective experiences of refugees and migrants in the pursuit of healthcare, as highlighted by the two cases described, showcases the importance of equity in healthcare access and the detrimental implications of non-inclusive healthcare and socio-economic policies.

Testing strategies to contain COVID-19 in migrant worker dormitories

<https://doi.org/10.1016/j.jmh.2022.100079>

Introduction COVID-19 transmission within overcrowded migrant worker dormitories is an ongoing global issue. Many countries have implemented extensive control measures to prevent the entire migrant worker population from becoming infected. Here, we explore case count outcomes when utilising lockdown and testing under different testing measures and transmissibility settings. Methods We built a mathematical model which estimates transmission across 10 different blocks with 1000 individuals per block under different parameter combinations and testing conditions over the period of 1 month. We vary parameters including differences in block connectivity, underlying recovered proportion at the time of intervention, case importation rates and testing protocols using either PCR or rapid antigen testing. Results We estimate that in a relatively transmissible environment, fortnightly PCR testing at a relatively low initial recovered proportion at 40%, low connectivity where 10% of contacts occurred outside of the infected individuals' block and high importation rate of 1100000 per day, results in an average of 39 (95%Interval: 9–121) new COVID-19 cases after one month of observation. Similar results were observed for weekly rapid antigen testing at 33 (9–95) cases. Interpretation Our findings support the need for either fortnightly PCR testing or weekly rapid antigen testing in high population density environments such as migrant worker dormitories. Repeated mass testing is highly effective, preventing localized site outbreaks and reducing the need for site wide lockdowns or other extensive social distancing measures within and outside of dormitories. Funding This research is supported by DEMOS funding from Saw Swee Hock School of Public Health, National University of Singapore, the COVID-19 grant under Singapore's National Medical Research Council Centre Grant Programme – the Singapore Population Health Improvement Centre (NMRC/CG/C026/2017_NUHS) and COVID-19 Research Fund (COVID19RF-004).

Risk of SARS-CoV-2 infection in migrants and ethnic minorities compared with the general population in the European WHO region during the first year of the pandemic: a systematic review.

<https://dx.doi.org/10.1186/s12889-021-12466-1>

BACKGROUND: Migrants and ethnic minorities have suffered a disproportionate impact of the COVID-19 pandemic compared to the general population from different perspectives. Our aim was to assess specifically their risk of infection in the 53 countries belonging to the World Health Organization European Region, during the first year of the pandemic. **METHODS:** We conducted a systematic review following Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines (PROSPERO CRD42021247326). We searched multiple databases for peer-reviewed literature, published on Medline, Embase, Scisearch, Biosis and Esbiobase in 2020 and preprints from PubMed up to 29/03/2021. We included cross-sectional, case-control, cohort, intervention, case-series, prevalence or ecological studies, reporting the risk of SARS-CoV-2 infection among migrants, refugees, and ethnic minorities. **RESULTS:** Among the 1905 records screened, 25 met our inclusion criteria and were included in the final analysis. We found that migrants and ethnic minorities during the first wave of the pandemic were at increased exposure and risk of infection and were disproportionately represented among COVID-19 cases. However, the impact of COVID-19 on minorities does not seem homogeneous, since some ethnic groups seem to be more at risk than others. Risk factors include high-risk occupations, overcrowded accommodations, geographic distribution, social deprivation, barriers to access to information concerning preventive measures (due to the language barrier or to their marginality), together with biological and genetic susceptibilities. **CONCLUSIONS:** Although mixed methods studies will be required to fully understand the complex interplay between the various biological, social, and cultural factors underlying these findings, the impact of structural determinants of health is evident. Our findings corroborate the need to collect migration and ethnicity-disaggregated data and contribute to advocacy for inclusive policies and programmatic actions tailored to reach migrants and ethnic minorities.

Other

Sustainability and authenticity: are they food risk relievers during the COVID-19 pandemic?

<https://doi.org/10.1108/BFJ-05-2021-0495>

Purpose: The study jointly investigates sustainability and authenticity concepts in the food context during the COVID-19 outbreak with a fourfold objective: (1) understanding whether sustainability and authenticity are equivalent concepts in consumers' perceptions;(2) advancing knowledge on the role played by them about food frauds' perception;(3) investigating whether these concepts are considered as “risk relievers” by consumers, (4) comparing the concepts to understand which one has a greater weight on the consumer's perception. **Design/methodology/approach:** The study adopts a Combination of a Uniform and a shifted Binomial distribution (CUB models) on data gathered in Spain between June and August 2020 through an online questionnaire. **Findings:** The findings reveal that: (1) consumers perceive sustainability and authenticity as different concepts in the food context and (2) as two important indicators of fraud protection of a product for consumers;(3) besides, authenticity is seen as a “risk reliever” in buying a food product, as well as sustainability, (4) although results underline high uncertainty in the latter case. **Originality/value:** By considering that the COVID-19 outbreak seriously threatens food safety, security and nutrition, this research elucidates the relevant role of food sustainability and authenticity concepts as “risk relievers” in terms of food frauds and negative issues related to COVID-19. © 2021, Emerald Publishing Limited.

Recover the food-energy-water nexus from COVID-19 under Sustainable Development Goals acceleration actions. <https://dx.doi.org/10.1016/j.scitotenv.2022.153013>

The interwoven relationship between food, energy, and water (FEW) is described as the FEW nexus. The COVID-19 pandemic has interrupted the FEW nexus and impeded the progress of FEW-related Sustainable Development Goals (SDGs) (SDG 2: Zero Hunger; 6: Clean Water and Sanitation; 7: Affordable and Clean Energy). We aim to find solutions to recover the FEW nexus from COVID-19. First, we discussed the challenges faced by FEW amid COVID-19. Second, we observed responses of the FEW nexus under COVID-19's interference. Finally, we proposed the solutions that guide the FEW nexus in recovery from the pandemic by mining 164 FEW-related SDG Acceleration Actions. The key solutions include 1) building or upgrading FEW facilities and infrastructure, 2) improving nature's contribution to the FEW nexus, 3) developing digital technologies, 4) innovating the source and production of FEW, and 5) promoting community production and transforming the lifestyle. Our work highlights the importance of feasible and accelerated actions that recover the FEW nexus in the post-pandemic era.

Summer crowds: An analysis of USFS campground reservations during the COVID-19 pandemic.

<https://dx.doi.org/10.1371/journal.pone.0261833>

During the COVID-19 pandemic, US public land managers faced the challenge of catering to large increases in camping demand, while maintaining social distancing guidelines. In this paper, we use multivariate linear regression to analyze weekly changes in reservations to US Forest Service (USFS) campgrounds between 2019 and 2020. The regression models estimate the impact of local COVID infection rates, public health restrictions, and spatial spillovers from proximity to National Parks (NPs), metropolitan areas and wildfire on camping demand. Our sample includes 1,688 individual USFS campgrounds from across the contiguous US. The results illustrate the dramatic increases in camping on USFS land that occurred in the summer of 2020 and demonstrate that increases in local infection rates led to significant increases in camping nights reserved in the summer. The results also illustrate that the increase in camping nights reserved at USFS campgrounds was particularly dramatic for campgrounds located near large metropolitan areas and near NPs that saw increases in overall recreational visits. These results point to the important role that public lands played during the pandemic and can help guide public land resource allocations for campground maintenance and operation.

Is restaurant crowdfunding immune to the COVID-19 pandemic? <https://doi.org/10.1108/IJCHM-06-2021-0817>

Purpose: In 2020, the COVID-19 pandemic had a devastating impact on global health care and the economy. The restaurant industry has been especially hit hard by the statewide “stay-at-home” orders. To get back on track, many of these businesses need capital. A new and effective form of fundraising for business startups is crowdfunding (CF). However, there has been little research on the pandemic impact on CF. This study aims to fill this gap by investigating the pandemic-related impact on restaurant CF. **Design/methodology/approach:** This study extracted all 2,686 restaurant CF projects in the USA from the Kickstarter platform from April 2010 to January 2021. By conducting descriptive analyses and multiple logistic regression models, this study examined the pandemic impact on CF success. **Findings:** This study finds that, while controlling the effects of other determinants, businesses in the midst of the pandemic are more likely to be successfully funded than businesses unaffected by the pandemic. Findings also reveal that restaurant startups lowered their funding goals and posted more updates/comments/pledge levels during the pandemic, which made projects more likely to be selected as a “Project We Love” and increased the odds of funding success. However, mentioning COVID-19-related information or locating projects in “red zones” are not found to have any significant direct or moderating impact on the funding success. **Research limitations/implications:** This study pioneers the research topic restaurant CF and attempts to raise the research attention of small- and medium-sized enterprises and entrepreneurial financing. Using quantitative methods, it provides a new perspective on pandemic-impact research. Social exchange theory is extended to the context of reward-based CF under

crisis. Finally, to the best of the authors' knowledge, this is the first investigation of the possible moderating effect of project location on the relationship between restaurant CF characteristics and success. Practical implications: The findings of this study suggest restaurateurs to be confident about the fundraising of their startup business through reward-based CF, even when located within so-called pandemic red zones, and perform appropriate communication strategies while using the reward-based CF. Originality/value: This study is one of the earliest to examine the main and moderating effects of the pandemic-related factors on business CF in the hospitality realm. The findings are reference for researchers and restaurateurs on fundraising in a crisis context. © 2021, Emerald Publishing Limited.

Prevalence of risk behaviors and correlates of SARS-CoV-2 positivity among in-school contacts of confirmed cases in a Georgia school district in the pre-vaccine era, December 2020-January 2021.

<https://dx.doi.org/10.1186/s12889-021-12347-7>

BACKGROUND: There is a continuing risk for COVID-19 transmission in school settings while transmission is ongoing in the community, particularly among unvaccinated populations. To ensure that schools continue to operate safely and to inform implementation of prevention strategies, it is imperative to gain better understanding of the risk behaviors of staff and students. This secondary analysis describes the prevalence of COVID-19 risk behaviors in an exposed population of students and school staff in the pre-vaccine era and identifies associations between these behaviors and testing positive for SARS-CoV-2. **METHODS:** From December 2020-January 2021, school staff and students exposed to confirmed COVID-19 cases in a Georgia school district were tested for SARS-CoV-2 and surveyed regarding risk behaviors in and out of school. Prevalence of risk behaviors was described by age group and school level, and associations with SARS-CoV-2 positivity were identified using chi squared tests. **RESULTS:** Overall, 717 students and 79 school staff participated in the investigation; SARS-CoV-2 positivity was 9.2%. In the 2 weeks prior to COVID-19 exposure, 24% of participants reported unmasked indoor time at school, 40% attended social gatherings with non-household members, and 71% visited out-of-school indoor locations, including 19% who ate indoors in restaurants. Frequencies of risk behaviors increased by age. Among students, 17% participated in school sports, of whom 86% participated without a mask. SARS-CoV-2 positivity was significantly associated with school sports and unmasked time in sports. Among K-5 students, positivity was associated with exposure to a teacher index case. **CONCLUSIONS:** This analysis highlights the high prevalence of risk behaviors in an unvaccinated population exposed to COVID-19 in school and identifies an association between student sports participation and SARS-CoV-2 positivity. These findings illustrate the importance of school-level prevention measures to reduce SARS-CoV-2 transmission, including limiting close-contact indoor sports and promoting consistent mask use in unvaccinated individuals. Future research could explore the role of community vaccination programs as a strategy to reduce COVID-19 transmission and introductions into school settings.

Agricultural commodity supply chain during the covid-19 pandemic <https://doi.org/10.1088/1755-1315/951/1/012109>

This study aims to analyze the agricultural commodity supply chain during the Covid-19 pandemic. The data used in this paper is secondary data and analyzed descriptively. The effects of Covid-19 pandemic on agricultural supply chains are discussed, including transportation barriers during the pandemic and government programs to find a way out. Finally, this study showed the policy formula from government to maintain the national food security chain especially agricultural commodity such as guarantee transportation and distribution of food from surplus provinces to deficit provinces to achieve adequate food availability in each province, innovation strategies in the distribution of agricultural products, and create an intelligent and accurate information system.

Sustainability Recommendations and Practices in School Feeding: A Systematic Review.

<https://dx.doi.org/10.3390/foods11020176>

Considering the importance of schools for sustainable food offers and the formation of conscientious citizens on sustainability, this systematic review aimed to verify the recommendations on sustainability in school feeding policies and the sustainability practices adopted in schools. The research question that guided this study is "what are the recommendations on sustainability in school feeding policies and the sustainability practices adopted in schools?". This systematic review was prepared according to PRISMA, and its checklist was registered in PROSPERO. Specific search strategies for Scopus, Web of Science, Pubmed, Lilacs, Google Scholar, and ProQuest Dissertations & Theses Global were developed. The included studies' methodological quality was evaluated using the Meta-Analysis Statistical Assessment and Review Instrument (MASTARI). A total of 134 studies were selected for a full reading. Of these, 50 met the eligibility criteria and were included in the systematic review. Several sustainability practices were described. The most cited are school gardens and education activities for sustainability. However, actions carried out in food services were also mentioned, from the planning of menus and the purchase of raw materials (mainly local and organic foods, vegetarian/vegan menus) to the distribution of meals (reduction of organic and inorganic waste: composting, recycling, donating food, and portion sizes). Recommendations for purchasing sustainable food (organic, local, and seasonal), nutrition education focused on sustainability, and reducing food waste were frequent; this reinforces the need to stimulate managers' view, in their most varied spheres, for the priority that should be given to this theme, so that education for sustainability is universally part of the curricula. The importance of education in enabling individuals to promote sustainable development is reaffirmed in Sustainable Development Goal 4 (SDG 4). The development of assessment instruments can help monitor the evolution of sustainable strategies at schools and the main barriers and potentialities related to their implementation.

Food and COVID-19 Lit Review: Week ending 01/07/2022

DNPAO

- Why should obese youth be prioritized in COVID-19 vaccination programs? A nationwide retrospective study <https://doi.org/10.1016/j.lana.2021.100167>
- Impact of Consumer Health Awareness on Dairy Product Purchase Behavior during the COVID-19 Pandemic <https://doi.org/10.3390/su14010314>

DFWED/food safety

- SARS-CoV-2 circulation in Croatian wastewaters and the absence of SARS-CoV-2 in bivalve molluscan shellfish <https://doi.org/10.1016/j.envres.2021.112638>
- Assessing the Impact of COVID-19 on Sustainable Food Supply Chains <https://doi.org/10.3390/su14010143>

NIOSH/worker-Safety

- Mental Health Impacts of Wildfire, Flooding and COVID-19 on Fort McMurray School Board Staff and Other Employees: A Comparative Study <https://doi.org/10.3390/ijerph19010435>
- A descriptive analysis of 2020 California Occupational Safety and Health Administration covid-19-related complaints. <https://dx.doi.org/10.1016/j.ssmph.2021.101016>

NCEH

- Social distancing and store choice in times of a pandemic <https://doi.org/10.1016/j.jretconser.2021.102860>
- Covid-19, urban economic resilience and the pandemic pivot: Toronto's restaurant scene <https://doi.org/10.1080/21681376.2021.2013732>
- The Sustainable Innovation Design in Catering Service <https://doi.org/10.3390/su14010278>

Essential Workers/Food/Farm/Ag/Migrant

- Covid is Background for Strike <https://doi.org/10.1002/mare.30795>
- Essential Farmworkers and the Pandemic Crisis: Migrant Labour Conditions, and Legal and Political Responses in Italy and Spain https://doi.org/10.1007/978-3-030-81210-2_8

Other

- Effect of the COVID-19 pandemic on Social Determinants of Health in Non-Hispanic Black pregnant women <https://doi.org/10.1016/j.ajog.2021.11.814>
- Elementary schools' response to student wellness needs during the COVID-19 shutdown: A qualitative exploration using the R = MC2 readiness heuristic <https://doi.org/10.3390/ijerph19010279>
- Plant Health in a One Health context Special Issue <https://doi.org/10.1111/ppa.13487>

DNPAO

- **Why should obese youth be prioritized in COVID-19 vaccination programs? A nationwide retrospective study** <https://doi.org/10.1016/j.lana.2021.100167>
Summary Background The dominant effect of age on COVID-19 mortality obscures the impact of other risk factors. Although the elderly is at a greater risk of severe disease and death due to COVID-19, the interaction of obesity and age was not carefully assessed. This analysis is especially critical for prioritizing groups to receive COVID-19 vaccination. Methods Starting with 1,120,767 unvaccinated individuals registered in a Brazilian surveillance system, we selected 313,898 hospitalized COVID-19 patients aged 20 to 89 who had a BMI \geq 25 kg/m² and cardiovascular diseases (CVD) or diabetes, as well as individuals with no risk factors associated with severe COVID-19. Patient data were stratified by age, obesity, BMI, and comorbidities, and subsequently, subjected to crude and adjusted odds ratio, hazard ratio, and Kaplan–Meier curves. Disease outcomes were invasive and non-invasive ventilatory support, intensive care unit (ICU) admission, and death. Findings Obesity alone is a risk factor for in-hospital mortality and is more significant than cardiovascular disease and diabetes. Furthermore, obesity, cardiovascular disease, and diabetes increase the risk of severity and death by COVID-19 more significantly in young adults than in the elderly. When categorizing patients by obesity classes, the severity of obesity was found to be associated with a higher risk of admission to the ICU and death from COVID-19 than the non-obese young adults or elderly population. Interpretation Our findings highlight the increased risk of severe COVID-19 on the Brazilian obese youth. As SARS-CoV-2 may become a recurrent seasonal infection, future vaccination campaigns against COVID-19 should prioritize obese young individuals.
- **Impact of Consumer Health Awareness on Dairy Product Purchase Behavior during the COVID-19 Pandemic** <https://doi.org/10.3390/su14010314>
Corona Virus Disease 2019 (COVID-19) has led to a reduction in the overall consumption of dairy products in China. How to restore the consumption potential of dairy products and alleviate the

serious impact on the dairy market in the post-epidemic period is an urgent problem that needs to be resolved. Based on the survey data of 1780 consumers in 31 provinces (municipalities and autonomous regions) of China, the Heckman two-stage model was used to empirically test the impact of consumer health awareness on dairy product purchase behavior during the COVID-19 pandemic and to further analyze the differences in factors affecting dairy product purchase behavior with the restriction of consumer health awareness. The results showed that the overall level of consumer health awareness after the outbreak of COVID-19 was relatively high. A total of 79% of consumers preferred to buy dairy products after the COVID-19 outbreak, and the proportion of purchased dairy products increased by an average of 17.49%, compared with that before the COVID-19 outbreak. Health change perception, health concern degree, and health habit development in consumer health awareness all have important impacts on the purchase behavior of dairy products. Among them, health change perception and health habit development both positively and significantly affected the purchase intention. Moreover, all three aspects of consumer health awareness positively increased the proportion of dairy product purchases. Difference analysis showed that there were obvious differences among consumer groups with different health awareness in dairy product purchase decisions. Component factor analysis found that, overall, consumer health awareness directly affected the purchase intention and increased the purchase proportion of dairy products. Therefore, policy recommendations are proposed to increase the consumption momentum of dairy products by raising consumer health awareness in the post-epidemic period.

DFWED/food safety

- **SARS-CoV-2 circulation in Croatian wastewaters and the absence of SARS-CoV-2 in bivalve molluscan shellfish** <https://doi.org/10.1016/j.envres.2021.112638>

The circulation of SARS-CoV-2 in the environment has been confirmed numerous times, whilst research on the bioaccumulation in bivalve molluscan shellfish (BMS) has been rather scarce. The present study aimed to fulfil the knowledge gap on SARS-CoV-2 circulation in wastewaters and surface waters in this region and to extend the current knowledge on potential presence of SARS-CoV-2 contamination in BMS. The study included 13 archive wastewater and surface water samples from the start of epidemic and 17 influents and effluents from nine wastewater treatment plants (WWTP) of different capacity and treatment stage, sampled during the second epidemic wave. From that period are the most of 77 collected BMS samples, represented by mussels, oysters and warty venus clams harvested along the Dalmatian coast. All samples were processed according to EN ISO 15216-1 2017 using Mengovirus as a whole process control. SARS-CoV-2 detection was performed by real-time and conventional RT-PCR assays targeting E, N and nsp14 protein genes complemented with nsp14 partial sequencing. Rotavirus A (RVA) real-time RT-PCR assay was implemented as an additional evaluation criterion of virus concentration techniques. The results revealed the circulation of SARS-CoV-2 in nine influents and two secondary treatment effluents from eight WWTPs, while all samples from the start of epidemic (wastewaters, surface waters) were negative which was influenced by sampling strategy. All tertiary effluents and BMS were SARS-CoV-2 negative. The results of RVA amplification were beneficial in evaluating virus concentration techniques and provided insights into RVA dynamics within the environment and community. In conclusion, the results of the present study confirm SARS-CoV-2 circulation in Croatian wastewaters during the second epidemic wave while extending the knowledge on wastewater treatment potential in SARS-CoV-2 removal. Our findings represent a significant contribution to the current state of knowledge that considers BMS of a very low food safety risk regarding SARS-CoV-2.

- **Assessing the Impact of COVID-19 on Sustainable Food Supply Chains**

<https://doi.org/10.3390/su14010143>

Recently, it has become an important issue to ensure sustainability, especially in food supply chains, against the rapidly growing population, increasing demand, and sudden disruptions caused by uncertain times such as that caused by COVID-19. Since food supply chains has vulnerable products and processes, it is critical to understand the sustainability factors of food supply chains especially in uncertain times such during the COVID-19 pandemic. This study aims to determine sustainability factors of food supply chains. An Interpretive Structural Modelling method is used to state the relations between sustainability factors of food supply chains. As a result of the study, Information Sharing and Managerial Approaches are classified as driving factors; Food Safety and Security, Know-How Transfer, Logistics Networking, Risk Mitigation, Employee Commitment, Innovation, Traceability and Responsiveness are categorized as linkage factors. This article will be beneficial for managers in helping them develop sustainable food supply chains during uncertain times by focusing on traceability, information sharing, know-how transfer, food safety and security.

NIOSH/worker-Safety

- **Mental Health Impacts of Wildfire, Flooding and COVID-19 on Fort McMurray School Board Staff and Other Employees: A Comparative Study** <https://doi.org/10.3390/ijerph19010435>

Background: Fort McMurray, a city in northern Alberta, Canada, has experienced multiple traumas in the last five years, including the 2016 wildfire, the 2020 floods, and the COVID-19 pandemic. Eighteen months after the wildfire, major depressive disorder (MDD), generalized anxiety disorder (GAD), and Post Traumatic Stress Disorder (PTSD) symptoms were elevated among school board employees in the city. Objective: This study aimed to compare employees of the school board and other employees of Fort McMurray in respect to the impact the 2016 wildfires, the 2019 COVID pandemic, and the 2020 floods had on their mental health.

Methodology: A quantitative cross-sectional survey was conducted in Fort McMurray from 24 April to 2 June 2021. Online questionnaires were administered through REDCap and were designed to capture socio-demographic characteristics, clinical as well as wildfire, COVID-19, and flooding-related variables. Mental health outcome variables were captured using self-reported standardized assessment scales. Data were analysed with descriptive statistics, Chi-square/Fisher's Exact tests, and binary regression analysis. Results: Of the 249 residents who accessed the online survey, 186 completed the survey, giving a response rate of 74.7%. Of these respondents, 93.5% (174) indicated their employment status and were included in the Chi-square analysis. Most of the respondents were female (86.2%, (150)), above 40 years (53.4%, (93)), and were in a relationship (71.3%, (124)). The prevalence values for MDD, GAD and PTSD among respondents were 42.4%, 41.0, and 36.8%, respectively. There was a statistically significant difference between employees of the school board and other employees with respect to likely PTSD prevalence (28% vs. 45%, respectively, $p < 0.05$), although with other factors controlled for, in a binary logistic regression model, employer type did not significantly predict likely PTSD. Conclusions: The study has established that likely PTSD symptoms were significantly higher in other employees compared to those of school board employees. Greater exposure to the traumatic events and a greater perceived lack of support from other employers might have contributed to the significantly higher prevalence of PTSD in other employees.

- **A descriptive analysis of 2020 California Occupational Safety and Health Administration covid-19-related complaints.** <https://dx.doi.org/10.1016/j.ssmph.2021.101016>

COVID-19 mortality has disproportionately affected specific occupations and industries. The Occupational Safety and Health Administration (OSHA) protects the health and safety of workers

by setting and enforcing standards for working conditions. Workers may file OSHA complaints about unsafe conditions. Complaints may indicate poor workplace safety during the pandemic. We evaluated COVID-19-related complaints filed with California (Cal)/OSHA between January 1, 2020 and December 14, 2020 across seven industries. To assess whether workers in occupations with high COVID-19-related mortality were also most likely to file Cal/OSHA complaints, we compared industry-specific per-capita COVID-19 confirmed deaths from the California Department of Public Health with COVID-19-related complaints. Although 7820 COVID-19-related complaints were deemed valid by Cal/OSHA, only 627 onsite inspections occurred, and 32 citations were issued. Agricultural workers had the highest per-capita COVID-19 death rates (402 per 100,000 workers) but were least represented among workplace complaints (44 per 100,000 workers). Health Care workers had the highest complaint rates (81 per 100,000 workers) but the second lowest COVID-19 death rate (81 per 100,000 workers). Industries with the highest inspection rates also had high COVID-19 mortality. Our findings suggest complaints are not proportional to COVID-19 risk. Instead, higher complaint rates may reflect worker groups with greater empowerment, resources, or capacity to advocate for better protections. This capacity to advocate for safe workplaces may account for relatively low mortality rates in potentially high-risk occupations. Future research should examine factors determining worker complaints and complaint systems to promote participation of those with the greatest need of protection.

NCEH

- **Social distancing and store choice in times of a pandemic**

<https://doi.org/10.1016/j.jretconser.2021.102860>

Public health officials enforced several measures to contain the COVID-19 pandemic that affected grocery stores, such as limits on store capacities and enforcement of masks and physical distancing among customers. Nevertheless, these measures can provoke queues, which could drive customers away from stores. In this study, we investigate how customers trade off between social distancing measures and increased waiting times during the peak of the COVID-19 pandemic. Our data comes from an online survey applied in New York City in May 2020. This survey included a set of discrete choice experiments framed in virtual stores, as well as a set of psychometric indicators regarding the pandemic. With this data, we estimated a latent class conditional logit model where assignment to classes is correlated with COVID-19 latent variables. We identified three latent classes with preference structures that valued social distancing to varying degrees. In spite of this heterogeneity in preferences, we found that customers were willing to wait longer to access stores with better social distancing measures. This result suggests that stores could increase, rather than decrease, their sales if they enforce public health measures at the expense of longer waiting times.

- **Covid-19, urban economic resilience and the pandemic pivot: Toronto's restaurant scene**

<https://doi.org/10.1080/21681376.2021.2013732>

Restaurants, fundamental to Toronto's urban and cultural economy, experienced significant disruption because of extended closures during the Covid-19 pandemic. We examine data harvested from Yelp Business Search Endpoint on restaurant openings and closures in Toronto between May 2020 and May 2021. Our analysis shows that, despite expectations to the contrary, more restaurants opened than closed during this time. Geographically, similar numbers of restaurants both opened and closed in the city's downtown core, demonstrating that early pandemic predictions suggesting the end of concentration are exaggerated. Overall, restaurants and restaurateurs exhibited resilience during the pandemic. We attribute this

resilience, in part, to an ability to pivot to takeout-friendly foods, digital ordering and delivery and because of government funding supports.

- **The Sustainable Innovation Design in Catering Service** <https://doi.org/10.3390/su14010278>
COVID-19 has impacted the whole world since 2019, especially the dietary patterns of customers. Before the pandemic, some companies had been monitoring the operation data for health and food safety situations. It has become a vital mission to improve the food production and service process if the companies wish to pursue the sustainability of their businesses due to the general environment being changed by the epidemic. The sustainability of food systems inherently implies not only customer satisfaction but also the saving of costs. The catering service must find new ways to increase customer loyalty and satisfaction while implementing improved practices for building their brand image and modern decoration. The objective of this article is to discuss the service innovation process in order to investigate the interrelationships of catering environmental policy and psychological effects in the service function. The data were collected from a DINESERV questionnaire, comprised service quality standards, to increase the customer satisfaction for a mobile dining car. Finally, the TRIZ or Kano is a standardized measure designed to improve the idealization of strategy for selecting the most appropriate service quality model. This study presents the results from the survey and discusses future perspectives of increasing the sustainability of service within a catering information system.

Essential Workers/Food/Farm/Ag/Migrant

- **Covid is Background for Strike** <https://doi.org/10.1002/mare.30795>
Members of UFC Local 555 staged a one week strike through December 24 at Fred Meyer and Quality Food Centers stores across Oregon. They allege that the grocery chains are unlawfully withholding information at the bargaining table. The strike was intended to squeeze the grocery chains through the end of the year's busiest shopping season. Fred Meyer and QFC are owned by Kroger, the nation's largest supermarket chain. Stores will remain open, the company said.
- **Essential Farmworkers and the Pandemic Crisis: Migrant Labour Conditions, and Legal and Political Responses in Italy and Spain** https://doi.org/10.1007/978-3-030-81210-2_8
The agri-food system across Europe relies heavily on migrant labour. Border lockdowns during the Covid-19 pandemic immobilised thousands of foreign farmworkers, giving rise to fears of labour shortages and food production losses in EU countries. Farmers' organisations sought institutional interventions to address this labour demand. Although migrant workers have become a fundamental component of core sectors in recent decades, it is only in the current health emergency that they were recognised as 'essential' workers. The chapter analyses the working conditions of migrant farmworkers alongside national debates and institutional interventions in Italy and Spain during the pandemic. It provides a critical comparative analysis of legal and policy interventions to address migrants' situations of vulnerability. Both countries depend on important contingents of EU and non-EU migrant farmworkers, especially in fruit and vegetable production; moreover, they present common aspects in supply chain dynamics and labour market policies, but also specific differences in labour, migration and social policies. Both adopted measures to face the condition of irregularity of migrant workers in order to respond to labour demand in the agri-food sector and to provide these workers with safe working and living conditions during the pandemic. However, these interventions reveal shortcomings that significantly limit their impact and outcomes, calling into question to what extent migrant workers are really considered as 'essential' in a long-term perspective and, therefore, to what extent the current pandemic constitutes an opportunity for a new push to enforce labour and migrant rights.

- **Effect of the COVID-19 pandemic on Social Determinants of Health in Non-Hispanic Black pregnant women** <https://doi.org/10.1016/j.ajog.2021.11.814>
Objective: To examine the difference in social determinants of health (SDH) for non-Hispanic Black pregnant women during the COVID-19 pandemic compared to pre-pandemic. Study Design: Retrospective cohort analyzing SDH in postpartum Black women in Hamilton County, OH. Women were considered to experience pregnancy during the COVID-19 pandemic if delivery occurred after March 30, 2020. The referent group were postpartum Black women who delivered from 2011-March 29, 2020. Sociodemographic, pregnancy, and infant data were collected from participants' medical records. Structured interviews measured participants' social determinants of health. Generalized linear regression estimated the association between birth during the pandemic and SDH. Results: 285 Non-Hispanic Black mothers were enrolled in the study. Of these, 239 (84%) delivered prior to the pandemic and 46 (16%) delivered during the pandemic. Baseline characteristics were similar between groups with few differences noted in Table 1. Black mothers who delivered during the pandemic were more likely to have access to transportation and had more frequent and earlier onset prenatal visits. They were also less likely to use food stamps during the pandemic. Women with pregnancies during the pandemic had more job opportunities and worked more hours during the week. However, Black women who delivered during the pandemic felt less safe in their neighborhood and faced more discrimination based upon their race (Table 2). No mothers in this cohort received the COVID-19 vaccine during pregnancy. Conclusion: Non-Hispanic Black women who experienced pregnancies during the pandemic had more job opportunities and more prenatal care than prior to the pandemic, yet they experienced more race-based discrimination and felt less safe in their neighborhoods. 2020 saw the lowest Black infant mortality on record in Hamilton County. Initiatives during the pandemic may have helped mothers achieve more optimal prenatal care and it is critical we examine the initiatives which mitigated SDH for this population. However, more needs to be done to improve vaccination and neighborhood safety.
- **Elementary schools' response to student wellness needs during the COVID-19 shutdown: A qualitative exploration using the R = MC2 readiness heuristic** <https://doi.org/10.3390/ijerph19010279>
During spring of 2020, the COVID-19 pandemic and accompanying public health advisories forced K-12 schools throughout the United States to suspend in-person instruction. School personnel rapidly transitioned to remote provision of academic instruction and wellness services such as school meals and counseling services. The aim of this study was to investigate how schools responded to the transition to remote supports, including assessment of what readiness characteristics schools leveraged or developed to facilitate those transitions. Semi-structured interviews informed by school wellness implementation literature were conducted in the spring of 2020. Personnel (n = 50) from 39 urban and rural elementary schools nationwide participated. The readiness = motivation capacity² (R = MC²) heuristic, developed by Scaccia and colleagues, guided coding to determine themes related to schools' readiness to support student wellness in innovative ways during the pandemic closure. Two distinct code sets emerged, defined according to the R = MC² heuristic (1) Innovations: roles that schools took on during the pandemic response, and (2) Readiness: factors influencing schools' motivation and capacity to carry out those roles. Schools demonstrated unprecedented capacity and motivation to provide crucial wellness support to students and families early in the COVID-19 pandemic. These efforts can inform future resource allocation and new strategies to implement school wellness practices when schools resume normal operations.
- **Plant Health in a One Health context Special Issue** <https://doi.org/10.1111/ppa.13487>

This issue encompasses how the health of plants influences wider elements of ecosystems, including our own food and health, while at the same time being affected by broad factors such as climate, pollution, and agricultural practices.

Food and COVID-19 Lit Review: Weeks ending 12/10/21 and 12/17/21

DNPAO

- Brief Research Commentary: The US Indigenous Food Sovereignty Movement's Impact on Understandings of COVID-19 in Indian Country <https://doi.org/10.1111/cuag.12280>
- The Social Practices of Food Bank Volunteer Work <https://doi.org/10.1017/S1474746421000555>
- Digital Interventions to Promote Healthy Eating in Children: Umbrella Review. <https://dx.doi.org/10.2196/30160>
- Approaches of Landscape Architects to Applications for the Use of Open and Green Spaces in Conditions of Covid-19 Pandemic <https://doi.org/10.14744/megaron.2021.90699>
- Community-oriented actions by food retailers to support community well-being: a systematic scoping review <https://doi.org/10.1016/j.puhe.2021.09.029>
- Older Adults With Chronic Disease and Food Insecurity in the United States. <https://dx.doi.org/10.3928/00989134-20211109-02>
- Older Adults With Chronic Disease and Food Insecurity in the United States. <https://dx.doi.org/10.3928/00989134-20211109-02>
- COVID-19 Pandemic as Risk Factors for Excessive Weight Gain in Pediatrics: The Role of Changes in Nutrition Behavior. A Narrative Review <https://doi.org/10.3390/nu13124255>
- Shifts in Sources of Food but Stable Nutritional Outcomes among Children in the Early Months of the COVID-19 Pandemic <https://doi.org/10.3390/ijerph182312626>
- Physical activity and COVID-19. The basis for an efficient intervention in times of COVID-19 pandemic <https://doi.org/10.1016/j.physbeh.2021.113667>
- Lessons learned from implementing SNAP-Ed in a nursing/K-8 partnership school during the pandemic <https://doi.org/10.1111/phn.13031>
- The National Health and Nutrition Examination Survey (NHANES), 2021–2022: Adapting Data Collection in a COVID-19 Environment <https://doi.org/10.2105/AJPH.2021.306517>
- The Impact of COVID-19 on Breastfeeding Rates in a Low-Income Population <https://doi.org/10.1089/bfm.2021.0238>
- Experiences of increased food insecurity, economic, and psychological distress during the COVID-19 pandemic among SNAP-enrolled food pantry clients <https://doi.org/10.1017/S1368980021004717>
- Food Insecurity in the Households of Children with Autism Spectrum Disorders and Intellectual Disabilities in the U.S.: Analysis of the National Survey of Children's Health Data 2016 – 2018 <https://doi.org/10.1101/2021.03.29.21254546>

DFWED

- COVID-19 abatement measures and declines in food-borne illnesses: what is the evidence?
- 2020 Annual Report of the American Association of Poison Control Centers' National Poison Data System (NPDS): 38th Annual Report <https://doi.org/10.1080/15563650.2021.1989785>
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NIOSH/Worker-safety health

- COVID-19 policies and recommendations for foodservice reopening: An integrative review <https://doi.org/10.1080/15378020.2021.2006035>
- Impact of natural ventilation on exposure to SARS-CoV 2 in indoor/semi-indoor terraces using CO2 concentrations as a proxy <https://doi.org/10.1016/j.jobe.2021.103725>

- Burnout and workplace dehumanization at the supermarket: A field study during the COVID-19 outbreak in Italy <https://doi.org/10.1002/casp.2588>
- Surviving the hectic early phase of the COVID-19 pandemic: a qualitative study to the supply chain strategies of food service firms in times of a crisis <https://doi.org/10.1108/ijlm-01-2021-0013>
- The Achilles Heel of the U.S. Food Industries: Exposure to Labor and Upstream Industries in the Supply Chain <https://doi.org/10.2139/ssrn.3957604>

NCEH

- Food allergen ladders: A need for standardization? <https://doi.org/10.1111/pai.13714>
- Restaurant patronage during the COVID-19 pandemic and the protection motivation theory: influence of consumers' socio-demographic, situational, and psychographic factors <https://doi.org/10.1080/15378020.2021.2006036>

Other

- The Association of Social Factors and Health Insurance Coverage with COVID-19 Vaccinations and Hesitancy, July 2021. <https://dx.doi.org/10.1007/s11606-021-07213-6>
- The Role of the California Tier System in Controlling Population Mobility During the COVID-19 Pandemic (preprint) <https://doi.org/10.21203/rs.3.rs-1072338/v1>
- Are we approaching peak meat consumption? Analysis of meat consumption from 2000 to 2019 in 35 countries and its relationship to gross domestic product <https://doi.org/10.3390/ani11123466>
- School Districts Have Expanded Their Nonacademic Services for 2021-2022, While Academic Offerings Remain Much the Same: Selected Findings from the Third American School District Panel Survey. Data Note: Insights from the American Educator Panels. Research Report. RR-A956-4 <https://doi.org/10.7249/RRA956-4>
- Impact of the COVID-19 pandemic on food production and animal health <https://doi.org/10.1016/j.tifs.2021.12.003>
- Overstocked Agricultural Produce and Emergency Supply System in the COVID-19 Pandemic: Responses from China <https://doi.org/10.3390/foods10123027>

DNPAO

- **Brief Research Commentary: The US Indigenous Food Sovereignty Movement's Impact on Understandings of COVID-19 in Indian Country** <https://doi.org/10.1111/cuag.12280>
This research commentary provides an overview of contemporary anthropological research regarding the US Indigenous food sovereignty movement and demonstrates how it informs the impacts of COVID-19 on Indian Country. Past anthropological research on US Indigenous foodways, while useful, has lacked US Indigenous voices and in-depth political context. Alternatively, many current Indigenous scholars prioritize integration of this crucial political landscape, thus increasing the relevancy and application of this work. For this review, I begin by coalescing a selection of these recent research developments, primarily focusing on research undertaken by Indigenous scholars currently in, and affiliated with, anthropology. I then connect the ways in which their ethnographic and community-based findings shed insight into challenges that arose during the Covid-19 pandemic in 2020. Finally, I critique anthropology's lack of support for these research projects and offer suggestions regarding future US Indigenous food sovereignty research directions.

- **The Social Practices of Food Bank Volunteer Work**

<https://doi.org/10.1017/S1474746421000555>

The on-going rise in demand experienced by voluntary and community organisations (VCOs) providing emergency food aid has been described as a sign of a social and public health crisis in the UK (Loopstra, 2018; Lambie-Mumford, 2019), compounded since 2020 by the impact of (and responses to) Covid 19 (Power et al.2020). In this article we adopted a social practice approach to understanding the work of food bank volunteering. We identify how 'helping others', 'deploying coping strategies' and 'creating atmospheres' are key specific (and connected) forms of shared social practice. Further, these practices are sometimes suffused by faith-based practice. The analysis offers insights into how such spaces of care and encounter (Williams et al.2016; Cloke et al.2017) function, considers the implications for these distinctive organisational forms (the growth of which has been subject to justified critique) and suggests avenues for future research.

- **Digital Interventions to Promote Healthy Eating in Children: Umbrella Review.**

<https://dx.doi.org/10.2196/30160>

BACKGROUND: eHealth and web-based service delivery have become increasingly common during the COVID-19 pandemic. Digital interventions may be highly appealing to young people; however, their effectiveness compared with that of the usual face-to-face interventions is unknown. As nutrition interventions merge with the digital world, there is a need to determine the best practices for digital interventions for children. OBJECTIVE: The aim of this study is to examine the effectiveness of digital nutrition interventions for children on dietary outcomes compared with status quo interventions (eg, conventional face-to-face programming or nondigital support). METHODS: We conducted an umbrella review of systematic reviews of studies assessing primary research on digital interventions aimed at improving food and nutrition outcomes for children aged <18 years compared with conventional nutrition education were eligible for inclusion. RESULTS: In total, 11 systematic reviews published since 2015 were included (7/11, 64%, were of moderate quality). Digital interventions ranged from internet, computer, or mobile interventions to websites, programs, apps, email, videos, CD-ROMs, games, telehealth, SMS text messages, and social media, or a combination thereof. The dose and duration of the interventions varied widely (single to multiple exposures; 1-60 minutes). Many studies have been informed by theory or used behavior change techniques (eg, feedback, goal-setting, and tailoring). The effect of digital nutrition interventions for children on dietary outcomes is small and inconsistent. Digital interventions seemed to be the most promising for improving fruit and vegetable intake compared with other nutrition outcomes; however, reviews have found mixed results. CONCLUSIONS: Owing to the heterogeneity and duration of digital interventions, follow-up evaluations, comparison groups, and outcomes measured, the effectiveness of these interventions remains unclear. High-quality evidence with common definitions for digital intervention types evaluated with validated measures is needed to improve the state of evidence, to inform policy and program decisions for health promotion in children. Now is the time for critical, robust evaluation of the adopted digital interventions during and after the COVID-19 pandemic to establish best practices for nutrition interventions for children.

- **Approaches of Landscape Architects to Applications for the Use of Open and Green Spaces in Conditions of Covid-19 Pandemic** <https://doi.org/10.14744/megaron.2021.90699>

Open and green areas, including areas such as parks, urban forests, daily recreation areas, residential gardens, can take on the task of changing the spatial system. Especially during epidemic/pandemic periods, people's longing for nature gradually increases and this situation can lead to the emergence of various social problems. This study tried to put forward the views

of Landscape Architects, who undertake important duties in the planning, design, implementation and sustainability of open and green spaces offered to the public, on the use of open and green spaces during the pandemic process and applications made in this regard through a survey. As a result of the survey conducted with 400 Landscape Architects, it was emphasized that the use of open and green areas is necessary in order to support public health during the pandemic period, but the necessity of various measures such as disinfection, physical distance, and re-handling of the use of urban furniture has been acknowledged. Understanding the socio-spatial consequences of the measures taken to prevent the spread of the epidemic and determining new concepts related to lifestyles that combine working and life patterns and arising from new spatial environments are among the benefits to be gained from the study. Based on the findings obtained through this study, it can be stated that Landscape Architects need to gain experience in nature, natural factors and health relations in order to be able to design urban green spaces in harmony with nature and with consideration to public health.

- **Community-oriented actions by food retailers to support community well-being: a systematic scoping review** <https://doi.org/10.1016/j.puhe.2021.09.029>

Objectives Growing inequalities, austerity public funding, and the COVID-19 pandemic have contributed to heightened interest in mobilising the assets and resources within communities to support health and well-being. We aimed to identify the type of actions or initiatives by food retail stores intended to support local communities and contribute to well-being. Study design A Scoping Review. Method A scoping review was conducted in Scopus, Web of Science, and of grey literature to identify the extent of study of food retail stores in supporting community well-being, types and outcomes recorded from community-oriented actions. Data extraction included: population targeted, the content of initiative/action, outcomes recorded and key insights. Studies were grouped into broad categories relating to their actions and objectives. Results Actions were associated with either strengthening communities or public health prevention or promotion. Few studies reported clearly on impact, and most accounts of impact on well-being and broader community outcomes were narrative accounts rather than objectively measured. Although rigorous capture of outcomes was absent, there were consistent themes around partnership and community insights that are relevant to the development and implementation of future actions in communities. Conclusions This is an under-researched area that may nevertheless hold potential to support the broader public health effort in communities. To provide clear recommendations for specific investments, there is merit in identifying a subset of health and well-being outcomes most likely to be associated with food retailer community actions in order to assess and capture impact in future. We propose that the theoretical underpinning associated with asset-based approaches, which take account of context and community conditions, would be a useful framework for future study.

- **Older Adults With Chronic Disease and Food Insecurity in the United States.**

<https://dx.doi.org/10.3928/00989134-20211109-02>

Food insecurity has emerged as a significant problem for older adults in the United States. Older adults with chronic conditions are particularly vulnerable, as they face a number of physical, psychological, social, and economic barriers related to food purchasing options. The purpose of the current article is to examine the significance of food insecurity in older adults with chronic disease, highlight the barriers and determinates that contribute to the problem, and offer interventions to impact the disparity of food insecurity in this population.

- **The Impact of the COVID-19 Pandemic on Food Distribution at Emergency Food Assistance Organizations in the Southwestern United States: A Qualitative Investigation**

<https://doi.org/10.3390/nu13124267>

This study aimed to identify changes in food distribution operations at emergency food assistance organizations (EFAOs) during the COVID-19 pandemic. EFAOs across the Houston metro area, TX (human service centers and food pantries) as well as the Houston Food Bank (HFB) participated in the qualitative study. Data were collected via individual semi-structured interviews and focus group (December 2020–February 2021), and coded using semi-structured thematic analysis. Categories were pre-identified based on the interview questions. Direct quotes supported subcategories. Directors from 18 EFAOs were interviewed; 8 HFB leadership staff participated in a focus group. Four major categories of change due to COVID-19 included new safety measures, changes in food distribution process, changes in volunteerism and staffing, and changes in amounts of food distributed. This study helps identify susceptibilities in EFAOs; food distribution chain should be addressed to manage future emergency food insecurity crises more effectively. An understanding of the changes/challenges incurred by EFAOs during the COVID-19 pandemic can inform policymakers to ensure local food distribution organizations are prepared to fill the needs during future a crisis of food insecurity.

- **COVID-19 Pandemic as Risk Factors for Excessive Weight Gain in Pediatrics: The Role of Changes in Nutrition Behavior. A Narrative Review** <https://doi.org/10.3390/nu13124255>
During the coronavirus disease 2019 (COVID-19) pandemic, social isolation, semi-lockdown, and stay at home orders were imposed upon the population in the interest of infection control. This dramatically changes the daily routine of children and adolescents, with a large impact on lifestyle and wellbeing. Children with obesity have been shown to be at a higher risk of negative lifestyle changes and weight gain during lockdown. Obesity and COVID-19 negatively affect children and adolescents; wellbeing, with adverse effects on psychophysical health, due in large part to food choices, snacking between meals, and comfort eating. Moreover, a markable decrease in physical activity levels and an increase in sedentary behavior is associated with weight gain, especially in children with excessive weight. In addition, obesity is the most common comorbidity in severe cases of COVID-19, suggesting that immune dysregulation, metabolic unbalance, inadequate nutritional status, and dysbiosis are key factors in the complex mechanistic and clinical interplay between obesity and COVID-19. This narrative review aims to describe the most up-to-date evidence on the clinical characteristics of COVID-19 in children and adolescents, focusing on the role of excessive weight and weight gain in pediatrics. The COVID-19 pandemic has taught us that nutrition education interventions, access to healthy food, as well as family nutrition counselling should be covered by pediatric services to prevent obesity, which worsens disease outcomes related to COVID-19 infection.
- **Shifts in Sources of Food but Stable Nutritional Outcomes among Children in the Early Months of the COVID-19 Pandemic** <https://doi.org/10.3390/ijerph182312626>
Early in the COVID-19 pandemic, the U.S. Department of Agriculture (USDA), State governments, and school districts took unprecedented steps to mitigate the pandemic impact on students; nutrition. To examine the effect of emergency responses on 6-year-old children nutritional outcomes, this study analyzed longitudinal data from a national study of childrens feeding practices, the Special Supplemental Nutrition Program for Women, Infants, and Children; Infant and Toddler Feeding Practices Study-2 (WIC ITFPS-2). Findings include no differences in food insecurity prevalence; however, there were shifts in sources of food, with children in the post-COVID-emergency-declaration (post-ED) group consuming more dietary energy from stores and community food programs and less from restaurants and schools than children in the pre-COVID-emergency-declaration (pre-ED) group ($p < 0.01$ for all comparisons). Examination of within-person mean differences in 2015 Healthy Eating Index scores and nutrient intakes between ages 5 and 6 years revealed few statistically significant differences between the two groups: children in the post-ED group consumed slightly fewer vegetables ($p = 0.02$) and less

sodium ($p = 0.01$) than their pre-ED peers. Findings suggest emergency efforts to maintain children's nutrition were largely successful in the early months of the pandemic. Research is needed to understand the mechanisms by which emergency efforts contributed to these findings.

- **Physical activity and COVID-19. The basis for an efficient intervention in times of COVID-19 pandemic** <https://doi.org/10.1016/j.physbeh.2021.113667>

The Coronavirus Disease 2019 (COVID-19) pandemic has shocked world health authorities generating a global health crisis. The present study aimed to analyze the different factors associated with physical activity that could have an impact in the COVID-19, providing a practical recommendation based on actual scientific knowledge. We conducted a consensus critical review using primary sources, scientific articles, and secondary bibliographic indexes, databases, and web pages. The method was a narrative literature review of the available literature regarding physical activity and physical activity related factors during the COVID-19 pandemic. The main online database used in the present research were PubMed, SciELO, and Google Scholar. COVID-19 has negatively influenced motor behavior, levels of regular exercise practice, eating and nutritional patterns, and the psychological status of citizens. These factors feed into each other, worsening COVID-19 symptoms, the risk of death from SARS-CoV-2, and the symptoms and effectiveness of the vaccine. The characteristics and symptoms related with the actual COVID-19 pandemic made the physical activity interventions a valuable prevention and treatment factor. Physical activity improves body composition, the cardiorespiratory, metabolic, and mental health of patients and enhancing antibody responses in vaccination.

- **Lessons learned from implementing SNAP-Ed in a nursing/K-8 partnership school during the pandemic** <https://doi.org/10.1111/phn.13031>

The COVID-19 pandemic had forced schools and school-based partnerships in the US to re-imagine extracurricular activities while schools were closed for in-person learning. We highlight lessons learned from implementing the Supplemental Nutrition Assistance Education Program (SNAP-Ed) virtually, a nutrition education program to improve nutrition literacy and skills among children, in a Maryland School of Nursing/K-8 Partnership school amid in-person school closures.

- **The National Health and Nutrition Examination Survey (NHANES), 2021–2022: Adapting Data Collection in a COVID-19 Environment** <https://doi.org/10.2105/AJPH.2021.306517>

The National Health and Nutrition Examination Survey (NHANES) is a unique source of national data on the health and nutritional status of the US population, collecting data through interviews, standard exams, and biospecimen collection. Because of the COVID-19 pandemic, NHANES data collection was suspended, with more than a year gap in data collection. NHANES resumed operations in 2021 with the NHANES 2021–2022 survey, which will monitor the health and nutritional status of the nation while adding to the knowledge of COVID-19 in the US population. This article describes the reshaping of the NHANES program and, specifically, the planning of NHANES 2021–2022 for data collection during the COVID-19 pandemic. Details are provided on how NHANES transformed its participant recruitment and data collection plans at home and at the mobile examination center to safely collect data in a COVID-19 environment. The potential implications for data users are also discussed. (Am J Public Health. 2021;111(12):2149–2156. <https://doi.org/10.2105/AJPH.2021.306517>) [FROM AUTHOR] Copyright of American Journal of Public Health is the property of American Public Health Association and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use. This may be abridged. No warranty is given about the accuracy of the copy. Users should refer to the original published version of the material for the full . (Copyright applies to all s.)

- **The Impact of COVID-19 on Breastfeeding Rates in a Low-Income Population**

<https://doi.org/10.1089/bfm.2021.0238>

Objective: To examine the impact of the coronavirus disease 2019 (COVID-19) pandemic on breastfeeding outcomes among participants of the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) in Southern California. Materials and Methods: Data from the 2020 Los Angeles County triennial WIC Survey were used to examine the impact of COVID-19 on breastfeeding outcomes among WIC participants. Chi-square tests were used to explore the association between the COVID-19 pandemic and breastfeeding outcomes along with hospital-friendly practices. Results: Compared with infants born before March 2020, the percentage of infants who received any breastfeeding at 1 month decreased from 79.66% to 76.96% ($p = 0.139$). The percentage of infants who received any breastfeeding at 3 and 6 months significantly decreased from 64.57% to 56.79% ($p = 0.001$) and from 48.69% to 38.62% ($p = 0.0035$), respectively. The percentage of infants fully breastfed at 1, 3, and 6 months significantly decreased at all time points. Examining hospital practices, there were no differences between the before and during COVID-19 groups. Conclusions: The prevalence of any breastfeeding at 3 and 6 months and fully breastfeeding at 1, 3, and 6 months was significantly lower among mothers who gave birth during the pandemic compared with mothers who gave birth before the pandemic. The shift to remote services delivery and the corresponding reduction in live support of WIC services owing to the pandemic may explain the decline in the breastfeeding rate. As the nation and the WIC program prepare for the postpandemic life, it is critical to ensure that breastfeeding support is met in a hybrid of remote and face-to-face settings.

- **Experiences of increased food insecurity, economic, and psychological distress during the COVID-19 pandemic among SNAP-enrolled food pantry clients**

<https://doi.org/10.1017/S1368980021004717>

OBJECTIVE: The COVID-19 pandemic initially doubled the rates of food insecurity across the United States, and tripled rates among households with children. Despite the association among food insecurity, chronic disease and psychological distress, narratives depicting the experiences of already-food insecure populations are notably underrepresented in the literature. This study assessed the impact of COVID-19 on clients of a food pantry who were also enrolled in the Supplemental Nutrition Assistance Program (SNAP). DESIGN: A qualitative study probing the effects of the pandemic on daily living, food needs, food buying, and food insecurity. Interview transcripts were analyzed using a combined deductive and inductive approach. SETTING: Interviews were conducted via telephone between May-June of 2020. PARTICIPANTS: Equal numbers of English- and Spanish-speaking clients ($n=40$ total). RESULTS: Three main findings emerged: (1) The pandemic increased economic distress, such as from job loss or increased utility bills due to sustained home occupancy;(2) The pandemic increased food needs, food prices and food shortages. In combination with economic stressors, this led to greater food insecurity;(3) Increased economic stress and food insecurity contributed to increased psychological stress, such as from fear of infection, isolation, and children being confined at home. CONCLUSIONS: Despite federal legislation and state and local programs to alleviate food insecurity, COVID-19 exacerbated economic hardship, food insecurity, and psychological distress among urban SNAP and food pantry clients. Additional research is needed to identify the most effective policies and programs to ameliorate the short- and long-term health and economic inequities exacerbated by the pandemic.

- **Food Insecurity in the Households of Children with Autism Spectrum Disorders and Intellectual Disabilities in the U.S.: Analysis of the National Survey of Children's Health Data 2016 – 2018**

<https://doi.org/10.1101/2021.03.29.21254546>

Individuals with Autism Spectrum Disorder and co-occurring Intellectual Disabilities (ASD + ID) experience substantial challenges in accessing needed supports. This research aimed to understand the prevalence and factors associated with food insecurity among families of children with ASD + ID. Utilizing the National Survey of Children's Health (2016-18) data, this paper illustrated that the households of children with ASD + ID were about two times more likely to be food insecure than the households of children without disabilities. Further, the households of children with ASD were 1.5 times more likely, and those with other disabilities were 1.3 times more likely to be food insecure than the households of children without disabilities. Implications of these findings in the context of the COVID19 pandemic are discussed. Lay Abstract Families of children with ASD are more likely to experience financial strain and resulting food insecurity due to additional cost of care, disparate access to needed services, and loss of income resulting from job loss. Utilizing nationally representative data, this analysis indicates that the families of children with ASD + ID are twice as likely to experience food insecurity than families of children without disabilities after adjusting for various factors. Several factors, ranging from state-level policies such as Medicaid expansion to individual-level factors such as higher utilization of emergency room services, were associated with the higher prevalence of food insecurity in families of children with ASD + ID. Implications of these findings on programs and policies supporting families in the COVID19 pandemic are discussed.

DFWED

- **COVID-19 abatement measures and declines in food-borne illnesses: what is the evidence?** Coronavirus Disease 2019 (COVID-19) is a current pandemic infection caused by a positive-sense RNA virus named the Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) which is quickly spread through the air that has fueled the current pandemic. Public health government agencies in various countries have made dramatic measures, such as a full lockout. Nevertheless, limited consideration has been devoted to food safety and security, and its possible association with the coronavirus (COVID-19) pandemic. The COVID-19 outbreak has given birth to a new age throughout the world, though we already see the implications of various facets of our everyday lives. The agricultural manufacturing process and the food processing industry do not form the exception. For the time being, the risk of transmission via the food industry is considered marginal and the detection of SARS-CoV-2 in the working setting is not perceived to be a problem for government authorities. Nevertheless, the adverse impacts on the climate, food processes and individuals in the food industry are also clear. Reducing contamination during food production, processing, and preparation will require more widespread implementation of known prevention measures and of new strategies that target particular pathogens and serotypes. The health agency suggests that the safety and health programs that have already been placed in motion since the pandemic may play an important role in the prevention of foodborne disease outbreaks. The aim of this review article is to discuss an indirect evidence about the decline in food-borne outbreaks during the COVID-19 pandemic.
- **2020 Annual Report of the American Association of Poison Control Centers' National Poison Data System (NPDS): 38th Annual Report** <https://doi.org/10.1080/15563650.2021.1989785> INTRODUCTION: This is the 38(th) Annual Report of the American Association of Poison Control Centers' (AAPCC) National Poison Data System (NPDS). As of 1 January, 2020, all 55 of the nation's poison centers (PCs) uploaded case data automatically to NPDS. The upload interval was 6.15 [4.60, 8.62] (median [25%, 75%]) minutes, effectuating a near real-time national exposure and information database and surveillance system. METHODS: We analyzed the case data tabulating specific indices from NPDS. The methodology was similar to that of previous years. Where changes were introduced, the differences are identified. Cases with medical

outcomes of death were evaluated by a team of medical and clinical toxicologist reviewers using an ordinal scale of 1-6 to assess the Relative Contribution to Fatality (RCF) of the exposure. RESULTS: In 2020, 3,316,738 closed encounters were logged by NPDS: 2,128,198 human exposures, 66,745 animal exposures, 1,116,568 information requests, and 5,160 human confirmed nonexposures. Total encounters showed a 28.9% increase from 2019, while health care facility (HCF) human exposure cases decreased by 10.6%. While all information requests increased by 218.0%, medication identification (Drug ID) requests decreased by 31.5%, and human exposure cases decreased by 0.928%. Medical Information requests showed a 32.6-fold increase, reflecting COVID-19 pandemic calls to PCs. Human exposures with less serious outcomes have decreased 1.90% per year since 2008, while those with more serious outcomes (moderate, major or death) have increased 4.59% per year since 2000. Consistent with the previous year, the top 5 substance classes most frequently involved in all human exposures were analgesics (10.3%), household cleaning substances (8.37%), cosmetics/personal care products (6.53%), antidepressants (5.30%), and sedatives/hypnotics/antipsychotics (4.92%). As a class, antidepressant exposures increased most rapidly, by 1,793 cases/year (5.84%/year) over the past 10 years for cases with more serious outcomes. The top 5 most common exposures in children age 5 years or less were cosmetics/personal care products (11.8%), household cleaning substances (11.3%), analgesics (7.57%), foreign bodies/toys/miscellaneous (6.71%), and dietary supplements/herbals/homeopathic (6.44%). Drug identification requests comprised 2.89% of all information contacts. NPDS documented 4,488 human exposures resulting in death; 3,869 (86.2%) of these were judged as related (RCF of 1-Undoubtedly responsible, 2-Probably responsible, or 3-Contributory). CONCLUSIONS: These data support the continued value of PC expertise and need for specialized medical toxicology information to manage more serious exposures. Unintentional and intentional exposures continue to be a significant cause of morbidity and mortality in the US. The near real-time status of NPDS represents a national public health resource to collect and monitor US exposure cases and information contacts. The continuing mission of NPDS is to provide a nationwide infrastructure for surveillance for all types of exposures (e.g., foreign body, infectious, venomous, chemical agent, or commercial product), and the identification and tracking of significant public health events. NPDS is a model system for the near real-time surveillance of national and global public health.

NIOSH/Worker-safety health

- **COVID-19 policies and recommendations for foodservice reopening: An integrative review**
<https://doi.org/10.1080/15378020.2021.2006035>

This study aims to present and discuss the different COVID-19 policies and recommendations for food service reopening. We aimed to understand each plan's profile, showing the most prominent concerns and summarizing the strategies. This study was carried out using an integrative review strategy of documents written in English, Spanish, Portuguese, Italian, French, and German. We found 17 guides, 15 from the countries' health departments and institutions. The findings suggested four main categories reflecting the main concerns about safety regarding the resumption of food services during the pandemic: 1. Physical distancing; 2. environmental aspects and safety; 3. personal hygiene and occupational health; and 4. educational and legal measures. Because COVID-19 is a new disease, the measures were designed and adapted to a scenario full of uncertainties and improved information for each discovery. All the categories are grounded on recent or late biomedical literature. Some minor recommendations are based on the precautionary principle. The practical and policy implications are discussed. Health agencies

in countries that do not yet have their regulations or guidelines for operating food services can use the categories described here as a basis for suggestions

- **Impact of natural ventilation on exposure to SARS-CoV 2 in indoor/semi-indoor terraces using CO2 concentrations as a proxy** <https://doi.org/10.1016/j.jobe.2021.103725>

Nowadays, it is necessary a better airborne transmission understanding of respiratory diseases in shared indoor and semi-indoor environments with natural ventilation in order to adopt effective people's health protection measures. The aim of this work is to evaluate the relative exposure to SARS-CoV 2 in a set of virtual scenarios representing enclosed and semi-enclosed terraces under different outdoor meteorological conditions. For this purpose, indoor CO2 concentration is used as a proxy for the risk assessment. Airflow and people exhaled CO2 in different scenarios are simulated through Computational Fluid Dynamics (CFD) modelling with Unsteady Reynolds-Averaged Navier-Stokes (URANS) approach. Both spatial average concentrations and local concentrations are analyzed. In general, spatial average concentrations decrease as ventilation increases, however, depending on the people arrangement inside the terrace, spatial average concentrations and local concentrations can be very different. Therefore, for assessing the relative exposure to SARS-CoV 2 it is necessary to consider the indoor flow patterns between infectors and susceptibles. This research provides detailed information about CO2 dispersion in enclosed/semi-enclosed scenarios, which can be very useful for reducing the transmission risk through better natural ventilation designs and improving the classic risk models since it allows to check their hypotheses in real-world scenarios. Although CFD ventilation studies in indoor/semi-indoor environments have been already addressed in the literature, this research is focused on restaurant terraces, scenarios scarcely investigated. Likewise, one of the novelties of this study is to take into account the outdoor meteorological conditions to appropriately simulate natural ventilation.

- **Burnout and workplace dehumanization at the supermarket: A field study during the COVID-19 outbreak in Italy** <https://doi.org/10.1002/casp.2588>

This study explores the psychological effects of the COVID-19 emergency on workers employed in the supermarket sector by analysing their levels of burnout and the relationship between the burnout syndrome and employees' workplace experiences. A sample of 422 Italian workers answered a survey addressing the burnout dimensions (i.e., exhaustion, cynicism, and professional inefficacy) along with perceived organizational factors and dehumanizing representations. Results showed that 32% of the respondents had symptoms of severe burnout, and 41% had symptoms of exhaustion and cynicism. More specifically, through cluster analysis, four burnout profiles were identified: "burnout" (high on all three dimensions), "engagement" (low on all three dimensions), "overextended" (high on exhaustion), and "disengaged" (moderate on exhaustion and cynicism). Each cluster showed a different pattern of correlates with the organizational and dehumanizing perceptions. Our findings contribute to the knowledge gaps of burnout and workplace experiences by providing insights into the ongoing health emergency among supermarket clerks. Please refer to the Supplementary Material section to find this article's Community and Social Impact Statement

- **Surviving the hectic early phase of the COVID-19 pandemic: a qualitative study to the supply chain strategies of food service firms in times of a crisis** <https://doi.org/10.1108/ijlm-01-2021-0013>

Purpose The COVID-19 pandemic and the subsequent lockdown have hit the food service industry very hard. The COVID-19 outbreak has created a sharp downturn for firms in the food service industry, compelling actors across the whole food service supply chain to rethink their strategies. The purpose of this paper is to document the impact of COVID-19 on the food service supply chain, as well as to identify crisis management strategies food service firms use during

the hectic early phase of the COVID-19 pandemic to survive the current and prepare for future pandemics. Design/methodology/approach We performed a qualitative descriptive study using 21 semi-structured interviews with actors across the food service supply chain (i.e. farmers, wholesalers and food service providers). Data were collected to shed light on food service firms' decision making during the hectic early phase of the COVID-19 pandemic to uncover various crisis management strategies used. Findings By integrating the disaster and crisis pyramid and resilience theory, four core crisis management strategies to respond to the COVID-19 pandemic are conceptualized, i.e. (1) managing resources, (2) diversifying strategically, (3) prioritizing long-term outcomes and (4) bonding socially. Originality/value The theoretical contributions include documenting the performance impact of the COVID-19 pandemic on the food service supply chain and exploring crisis management strategies food service firms employed during the hectic early phase of the COVID-19 pandemic. Thus, functioning and survival during a pandemic, an emerging field in literature, are central to this study. Additionally, while recent research suggests that integrating crisis management and resilience literature may provide a more complete understanding of the organization-crisis relationship, these literature streams mainly developed in isolation. By integrating the literature streams of crisis management and resilience and applying these theories to the COVID-19 crisis, our study provides specific managerial guidelines.

- **The Achilles Heel of the U.S. Food Industries: Exposure to Labor and Upstream Industries in the Supply Chain** <https://doi.org/10.2139/ssrn.3957604>

The modern day food industries are part of a complex agri-food supply chain, where food production has become efficient, yet potentially vulnerable to supply chain risks. The COVID-19 pandemic is a testament to that end. This article measures and identifies the U.S. food manufacturing industries' vulnerability to upstream industries and labor occupations by (i) calculating a food industry's diversification of intermediate input purchases across upstream industries, (ii) quantifying the relative exposure of food manufacturing in a given industry and location to upstream input suppliers and labor occupations, and (iii) estimating each food industry's gross output elasticity of inputs. Among our results, we find the evidence that the animal processing industry's output is relatively vulnerable to production labor which is consistent with the observed disruptions to the meat packing sector during COVID19, which were largely caused by labor issues. Our results may help academics and practitioners to understand food industries' vulnerabilities to upstream industries and labor occupations.

NCEH

- **Food allergen ladders: A need for standardization?** <https://doi.org/10.1111/pai.13714>

INTRODUCTION: The process of gradually reintroducing food allergens into an individual's diet is referred to as food allergen "ladders". There remain many questions regarding the foods chosen, structure and composition of the ladder, and medical and safety considerations. The COVID-19 pandemic has propelled us into an era where medicine is increasingly practiced via online platforms, highlighting the need for standardized food allergen ladder approaches for successful and safe introduction of food allergens. METHODS: We performed a search of currently published food allergen ladders and obtained published information and clinical expertise to summarize current knowledge and suggest future standardized approaches for using food allergen ladders. RESULTS: There are currently a limited number of published milk, egg, wheat and soy ladders. We suggest the following points should be considered when developing food ladders: 1) Food allergen: dose, time and temperature of heating of the food allergen, simplicity of the ladder and recipes, the possible role of the wheat matrix and testing for allergenic protein levels to standardize doses; 2) Nutritional factors: health and nutritional

value of the foods in the ladder, taste, texture and cultural appropriateness of foods should be considered;3) Medical aspects: consideration of which patients are safe to undergo ladders outside of the clinical setting, other safety aspects and risk factors for severe reactions, number of days suggested per steps and availability and provision of rescue medication. Written instructions and recipes should be provided to families who wish to use food allergen ladders. DISCUSSION: Food allergen ladders used for gradual reintroduction of food allergens into a food allergic individual's diet are increasingly being used internationally. Standardization regarding the foods included in the ladder and medical considerations are required to practice patient-centered care, best assist patients and families, and ensure safety.

- **Restaurant patronage during the COVID-19 pandemic and the protection motivation theory: influence of consumers' socio-demographic, situational, and psychographic factors**

<https://doi.org/10.1080/15378020.2021.2006036>

To systematically investigate factors affecting consumers' restaurant patronage decisions during the COVID-19 pandemic, this study drew on the Protection Motivation Theory (PMT) to (1) evaluate how threat and coping appraisal (i.e., PMT factors) may vary based on socio-demographics and COVID-19 situational characteristics, and (2) determine if PMT factors influence actual restaurant patronage behaviors. Furthermore, the current study examined consumers' perceptions of health-protective actions that restaurateurs could take to minimize consumer risk of contracting COVID-19. Data were collected from U.S. adults (N = 627) using an online crowdsourcing platform in early May 2020. Findings showed significant relationships between socio-demographic factors and perceived severity and/or vulnerability to COVID-19, along with concerns of coping with the virus for in-restaurant dining. For take-out/delivery patronage, coping concerns were greater for those with lower education levels and those with more health concerns than their counterparts. Furthermore, consumers' higher levels of coping appraisal predicted their higher take-out/delivery frequency. Results also suggested actions that restaurateurs could take that would influence consumers' restaurant patronage decisions. This study provides new insights related to PMT in the context of restaurants in a pandemic situation and practical information for restaurateurs to recover and prepare for future pandemics or similar crises.

Other

- **The Association of Social Factors and Health Insurance Coverage with COVID-19 Vaccinations and Hesitancy, July 2021.** <https://dx.doi.org/10.1007/s11606-021-07213-6>

BACKGROUND: There are racial differences in COVID-19 vaccination rates, but social factors, such as lack of health insurance or food insecurity, may explain some of the racial disparities. OBJECTIVE: To assess social factors, including insurance coverage, that may affect COVID-19 vaccination as of June-July 2021 and vaccine hesitancy among those not yet vaccinated, and how these may affect racial equity in vaccinations. DESIGN: Cross-sectional analysis of nationally representative survey data. PARTICIPANTS: Adults 18 to 64 participating in the Census Bureau's Household Pulse Survey for June 23 to July 5, 2021. MAIN MEASURES: Vaccination: receipt of at least one dose of a COVID-19 vaccine. Vaccine hesitancy: among those not yet vaccinated, intent to definitely or probably not get vaccinated. KEY RESULTS: In unadjusted analyses, black adults were less likely to be vaccinated than other respondents, but, after social factors were included, including health insurance status, food sufficiency, income and education, and state-level political preferences, differences between black and white adults were no longer significant and Hispanics were more likely to be vaccinated (OR = 1.87, $p < .001$). Among those not yet vaccinated, black and Hispanic adults were vaccine hesitant than white adults (ORs = .37 and .45, respectively, both $p < .001$) and insurance status and food insufficiency were not

significantly associated with vaccine hesitancy. The percent of state voters for former President Trump in 2020 was significantly associated with lower vaccination rates and with increased vaccine hesitancy. DISCUSSION: The results indicate that much of the gap in COVID vaccination rates for minority adults are due to social barriers, rather than differences in racial attitudes. Unvaccinated minority adults expressed less vaccine hesitancy than white adults. Social barriers like food insecurity and insurance coverage could have deterred prompt COVID-19 vaccinations. Reducing these problems might help increase vaccination rates.

- **The Role of the California Tier System in Controlling Population Mobility During the COVID-19 Pandemic (preprint)** <https://doi.org/10.21203/rs.3.rs-1072338/v1>

Policies to restrict population mobility are a commonly used strategy to limit the transmission of contagious diseases. Among measures implemented during the COVID-19 pandemic were dynamic stay-at-home orders informed by real-time, regional-level data. California was the only state in the U.S. to implement this novel approach; however, the effectiveness of California's four-tier system on population mobility has not been quantified. Utilizing data from mobile devices and county-level demographic data, we evaluated the impact of policy changes on population mobility and explored whether demographic characteristics explained variability in responsiveness to policy changes. For each Californian county, we calculated the proportion of people staying home and the average number of daily trips taken per 100 persons, across different trip distances and compared this to pre-COVID-19 levels. We found that overall mobility decreased when counties moved to a more restrictive tier and increased when moving to a less restrictive tier, as the policy intended. When placed in a more restrictive tier, the greatest decrease in mobility was observed for shorter and medium-range trips, while there was an unexpected increase in the longer trips. The mobility response varied by geographic region, as well as county-level median income, gross domestic product, the prevalence of farms, and recent election results. This analysis provides evidence of the effectiveness of the tier-based system in decreasing overall population mobility to ultimately reduce COVID-19 transmission. Results demonstrate that economic and political indicators drive important variability in such patterns across counties.

- **Are we approaching peak meat consumption? Analysis of meat consumption from 2000 to 2019 in 35 countries and its relationship to gross domestic product** <https://doi.org/10.3390/ani11123466>

Growing prosperity, but also disease outbreaks, natural disasters, and consumer preferences are changing global meat consumption. We investigated the 2000–2019 trends in 35 countries monitored by the Food and Agriculture Organization and the Organisation for Economic Cooperation and Development. We also tested relationships with Gross Domestic Product (GDP). Several countries appeared to be reaching peak consumption of some meats, and three (New Zealand, Canada, and Switzerland) have reached this. Poultry consumption increased over time in most countries, and beef and mutton/lamb consumption decreased in many. Using cluster analysis, we divided countries into two clusters: one in which increases in GDP per capita matched increases in meat consumption; and a second one of nine countries, for which there was no association between per capita change in GDP and meat consumption. There was evidence of a tipping point around USD 40,000 of GDP per capita, after which increases in economic well-being do not lead to increased meat consumption. © 2021 by the authors. Licensee MDPI, Basel, Switzerland.

- **School Districts Have Expanded Their Nonacademic Services for 2021-2022, While Academic Offerings Remain Much the Same: Selected Findings from the Third American School District Panel Survey. Data Note: Insights from the American Educator Panels. Research Report. RR-A956-4** <https://doi.org/10.7249/RR956-4>

School districts in the United States are responding to the coronavirus disease 2019 (COVID-19) pandemic in significantly different ways. The authors of this report fielded the third American School District Panel (ASDP) survey in June 2021 to discover what changes districts are making to their academic and nonacademic offerings for the upcoming 2021-2022 school year, and whether parental demand has played any role in prompting districts to make these changes. In this report, the authors summarize key ASDP findings based on the responses of 292 district leaders, after weighting their responses to make them nationally representative. Survey results suggest that while public schools are expanding their nonacademic offerings, much of their academic offerings for 2021-2022 remain the same. The authors examine differences between pre-pandemic and 2021-2022 offerings among district subgroups in the areas of summer programming, tutoring, grade retention practices, technology-related services, student health and weekend meals, academic recovery measures, and scheduling. The authors also found that most district leaders did not perceive a strong parental demand for changes to their children's schooling; however, there were some notable exceptions among leaders of urban, suburban, and majority-students of color districts, even though the correlation between perceived demand and district provision is currently weak. Parents' demands may still change public education in the long run, but the authors did not find evidence for this thus far. [This report was prepared by the RAND American Educator Panels.]

- **Impact of the COVID-19 pandemic on food production and animal health**

<https://doi.org/10.1016/j.tifs.2021.12.003>

Background The new coronavirus, named the severe acute respiratory coronavirus syndrome 2 (SARS-CoV-2) is the etiological agent of coronavirus disease 2019 (COVID-19). COVID-19 originated in China and spread to other countries and continents causing a variety of respiratory and non-respiratory symptoms that led to death in severe cases. **Scope and approach** In this review, we discuss and analyze the impact of the COVID-19 pandemic on animal production systems and food products including meat, dairy, eggs, and processed food, in addition to assessing the pandemic's impact on animal health care systems, animal health care quality, animal welfare, food chain sustainability, and the global economy. We also provide effective recommendations to animal producers, veterinary healthcare professionals, workers in animal products industries, and governments to alleviate the effects of the pandemic on livestock farming and production systems. **Key findings and conclusions** Port restrictions, border restrictions, curfews, and social distancing limitations led to reduced quality, productivity, and competitiveness of key productive sectors. The restrictions have hit the livestock sector hard by disrupting the animal feed supply chain, reducing animal farming services, limiting animal health services including delays in diagnosis and treatment of diseases, limiting access to markets and consumers, and reducing labor-force participation. The inhumane culling of animals jeopardized animal welfare. Egg smashing, milk dumping, and other animal product disruptions negatively impacted food production, consumption, and access to food originating from animals. In summary, COVID-triggered lockdowns and limitations on local and international trade have taken their toll on food production, animal production, and animal health and welfare. COVID-19 reverberations could exacerbate food insecurity, hunger, and global poverty. The effects could be massive on the most vulnerable populations and the poorest nations.

- **Overstocked Agricultural Produce and Emergency Supply System in the COVID-19 Pandemic: Responses from China** <https://doi.org/10.3390/foods10123027>

The spread of COVID-19 has affected not only public health but also agriculture, raising global concerns regarding the food system. As an immediate impact of COVID-19, farmers around the globe have had difficulties with sales, resulting in large amounts of overstocked agricultural products and food loss. This further threatens the livelihood of rural, poor farmers and impacts

sustainable production. To provide a better understanding of the overstocking situation after the outbreak of the pandemic, this study depicts the distribution characteristics of overstocked agricultural products in China. After analyzing a nationwide data set collected from 3482 individuals/organizations by the Chinese Agri-products Marketing Association after the outbreak of the pandemic, we found that some of the initial prevention and control measures disrupted sales channels, and in turn, caused the farmers to suffer losses. The impact was more severe in perishable products and their production areas, as well as in poverty-stricken regions. Then, we identified China quick and effective actions to match the supply and demand. These findings suggest that emergency responses should coordinate the relationship between emergency actions and the necessary logistics of agricultural production. To prepare for the possibility of such shock in the future, the government should take actions to clear logistics obstacles for necessary transportation, keep enhancing the fundamental infrastructure and effective mechanism of the food supply chain, and actively include innovative techniques to build a more resilient food system.

Food and COVID-19 Lit Review: Week ending December 3 2021

DNPAO

- Effect of physical activity on COVID-19 symptoms: A narrative review <https://doi.org/10.14198/jhse.2021.16.Proc4.51>
- The exercise dependence at the time of COVID-19 pandemic: The role of psychological stress among adolescents <https://doi.org/10.14198/jhse.2021.16.Proc4.40>
- Perceived stress and emotional overeating during COVID-19 pandemic https://doi.org/10.4103/aip.aip_18_21
- The Nutritional Content of Rescued Food Conveyed by a Food Aid Organization <https://doi.org/10.3390/ijerph182212212>
- Accelerating Evaluation of Financial Incentives for Fruits and Vegetables: A Case for Shared Measures <https://doi.org/10.3390/ijerph182212140>
- Citizen Science in Vegetable Garden Cultivar Evaluation in Tennessee <https://doi.org/10.3390/horticulturae7110422>
- Urban Networks, Micro-agriculture, and Community Food Security <https://doi.org/10.1007/S43615-021-00117-X>
- Providing Food Assistance During the COVID-19 Pandemic: A Case Study of a Free Produce Market at a Health Care Center. <https://dx.doi.org/10.1353/hpu.2021.0198>
- Changes in body mass index (BMI) in an inner city at risk pediatric population during the COVID 19 pandemic

Worker-Safety/NIOSH

- Occupational stress among farm and ranch operators in the midwestern United States. <https://dx.doi.org/10.1186/s12889-021-12053-4>
- COVID-19 working paper: meatpacking working conditions and the spread of COVID-19. (COVID-19 Working Paper No. AP-092.)
- The vaccination threshold for SARS-CoV-2 depends on the indoor setting and room ventilation <https://doi.org/10.1186/s12879-021-06884-0>

Essential Workers/Food/Farm/Ag/Migrant

- COVID-19 and systemic racism pandemics impact daily life for immigrant/refugees, Minneapolis, USA <https://doi.org/10.5334/aogh.3411>
- The Direct and Indirect Effects of a Global Pandemic on US Fishers and Seafood Workers (preprint) <https://doi.org/10.1101/2021.11.16.21266427>

Other

- Worldwide COVID-19 Vaccines Sentiment Analysis Through Twitter Content <https://doi.org/10.29333/ejgm/11316>
- Trust and responsibility in food systems transformation. Engaging with Big Food: marriage or mirage? <https://dx.doi.org/10.1136/bmjgh-2021-007350>
- Homeless people and health: vulnerability and risks during the COVID-19 pandemic. Pilot study <https://doi.org/10.3306/ajhs.2021.36.04.136>

Effect of physical activity on COVID-19 symptoms: A narrative review

<https://doi.org/10.14198/jhse.2021.16.Proc4.51>

In 2019, a new condition caused by the COVID-19, became a global pandemic, presenting a disparate symptomatological picture. The immune response to the virus depends on multiple factors, making the practice of physical exercise an important enhancer of the immune system, but it is unknown what effects it could have on the very different symptoms. In order to achieve and summarize the most outstanding information on the influence of the different types and parameters of physical exercise on the immune system and symptoms presented by COVID-19, it was decided to carry out a review of the literature in the databases PubMed and Medline until August 2020. The results showed that while high intensity and prolonged volume exercise produces counterproductive alterations in the immune system, increasing the possibility of contracting infections; low and moderate intensity exercise reverses these effects, increasing the benefits, providing the body with better protection against viruses. For the symptoms of COVID-19 related to cough, dyspnea, pulmonary obstruction, hypoxia, muscle pain and neuromuscular conditions, exercise at low and moderate intensity is recommended, while those people who present gastrointestinal symptoms and fatigue are recommended to exercise at low intensity. Exercise is completely contraindicated in case of fever and myocarditis.

The exercise dependence at the time of COVID-19 pandemic: The role of psychological stress among adolescents

<https://doi.org/10.14198/jhse.2021.16.Proc4.40>

The outbreak of COVID-19 disease caused not only unprecedented concerns about public health but also critic stress-related disorders, especially in the younger population. Several studies have found a close connection between psychological stress and exercise dependence, resulting from coping strategies such as excessive perfectionism in controlling external factors, performance, controlling food intake, weight, and body image. Moderate amounts of exercise have been demonstrated to reduce psychological distress. Thus, the aim of the present study has been to analyse the relationship between psychological stress and exercise dependence symptoms in adolescent, concerning the COVID-19 period. Participants were 50 adolescents (aged 15-17) who trained twice a week for 90 minutes per session. They were randomly assigned to participate in either a highly controlled and supervised recreational physical activity program associated with theoretical lessons that were intended to provide information regarding nutritional education (EG;n = 25) or a waitlist control group (CG;n = 25). The physical activity program involved: joint mobility exercises, low-to-moderate intensity aerobic exercise, team-building activities, exercise stations, cardio workout. At baseline and after intervention programs we administered the Exercise Dependence Scale-21, a 21-items scale designed to assess exercise dependence symptoms, and the Perceived Stress Scale that measures the level at which situations in life are perceived as stressful ($p < .01$). The findings have suggested that after a 12-week recreational physical activity and food re-education, adolescents felt a greater sensation of psycho-physical well-being and that this phenomenon was closely linked to an improvement of the symptoms of exercise dependence.

Perceived stress and emotional overeating during COVID-19 pandemic

https://doi.org/10.4103/aip.aip_18_21

Background: Obesity due to inappropriate eating habits, including overeating, has recently been discussed during this COVID pandemic crisis in the context of stress. Emotional overeating (EOE) is sometimes considered as a strategy for emotion regulation. Considering this fact, this study used a snowball technique to analyze the prevalence of EOE caused due to stress during this pandemic situation. Methodology: The present cross-sectional online study of 607 respondents across all regions of India attempts to assess the perceived stress levels during COVID-19, evaluate their tendency to engage in emotional eating, and examine the relationship between perceived stress and emotional

eating during COVID-19 situation. Results: Stress perception is significantly associated with EOE and such phenomenon is marginally more prominent in females more than males. A negative association of age, though weak ($r = -0.34$, $p < 0.05$), has been found with both perceived stress levels and EOE, signifying that the youngsters are more prone to stress and overeating than older persons, during these COVID times. The study also evidenced that people with psychiatric conditions are significantly more affected than others. Similarly, the average EOE scores for such persons were also higher, and they may be more vulnerable to emotional eating. Conclusion: EOE is significantly associated with perceived stress; the association is more prominent in females. Younger people and people with mental illness display significantly more emotional eating behavior during stress.

The Nutritional Content of Rescued Food Conveyed by a Food Aid Organization

<https://doi.org/10.3390/ijerph182212212>

Background: The number of food-insecure families in the European Union has increased, resulting in an increasing number of households depending on food assistance programs. The aim in this study was to evaluate the nutrient content of food rescued by a food aid organization that rescues and redistributes fresh or freshly cooked food to low-income households. Methods: To determine the nutritional content of food hampers provided by our case study organization, we weighed all items of food hampers in three weighing rounds over a period of four months. The Food Insecurity Experience Scale (FIES) was applied to measure households' food insecurity. Results: Our results show that, at our case study food aid organization, food donations substantially contribute to energy, macro, and micronutrient dietary recommendation intake (DRI). Conclusions: When evaluating how these nutrients contribute to alleviating food insecurity of the beneficiary households, we found that the perception of food insecurity is independent of the amount of nutrients served. To the best of our knowledge, this is the first study measuring the nutritional content of fresh or freshly cooked rescued food conveyed by a food aid organization.

Accelerating Evaluation of Financial Incentives for Fruits and Vegetables: A Case for Shared Measures

<https://doi.org/10.3390/ijerph182212140>

Food insecurity, or lack of consistent access to enough food, is associated with low intakes of fruits and vegetables (FVs) and higher risk of chronic diseases and disproportionately affects populations with low income. Financial incentives for FVs are supported by the 2018 Farm Bill and United States (U.S.) Department of Agriculture's Gus Schumacher Nutrition Incentive Program (GusNIP) and aim to increase dietary quality and food security among households participating in the Supplemental Nutrition Assistance Program (SNAP) and with low income. Currently, there is no shared evaluation model for the hundreds of financial incentive projects across the U.S. Despite the fact that a majority of these projects are federally funded and united as a cohort of grantees through GusNIP, it is unclear which models and attributes have the greatest public health impact. We explore the evaluation of financial incentives in the U.S. to demonstrate the need for shared measurement in the future. We describe the process of the GusNIP NTAE, a federally supported initiative, to identify and develop shared measurement to be able to determine the potential impact of financial incentives in the U.S. This commentary discusses the rationale, considerations, and next steps for establishing shared evaluation measures for financial incentives for FVs, to accelerate our understanding of impact, and support evidence-based policymaking.

Citizen Science in Vegetable Garden Cultivar Evaluation in Tennessee

<https://doi.org/10.3390/horticulturae7110422>

Edible food production is a growing area of horticultural interest that can engage multiple generations of rural to urban residents with varying levels of experience. Residential or community garden food

production can provide many benefits, including the production of healthy produce, establishment of community or social connections, and increased physical activity. Regardless of experience, food gardeners are interested in growing crops and cultivars well-suited to their region and which provide both productivity and crop quality. This means that cultivar selection is a common question for gardeners. However, formal cultivar evaluation is relatively rare in the non-commercial food production sector due to the number of cultivars, the challenges of replicated trial management, and the scarcity of public researchers focused on consumer horticulture. This limits the information available to support new gardeners, which lowers the chances of overall success including high-quality harvests. Such crop and variety selection questions are common for Extension personnel in the United States as well as many others who work with gardeners. Even with this high level of interest, funding for consumer garden trials is limited and the cost of replicated trials across various geographical sites is high. To fill this gap in research and address the need for high-quality data to support education, University of Tennessee Extension and research faculty have developed a citizen science approach called the Home Garden Variety Trial (HGVT) program. The HGVT is a collaborative effort between Extension and research faculty and educators, who select trials, provide seeds, and compile data, and citizen scientists around the state, who conduct the trials using their usual gardening practices in their own home or community gardens. Beginning in 2017, the collaborators have conducted five years of research involving over 450 individual gardeners in more than half of the counties in Tennessee. The HGVT is a novel and effective tool to introduce gardeners to new crops and cultivars while providing previously unavailable data to researchers. Together, researchers and home gardeners collect and compile data that supports residential and community food production success while engaging new and experienced gardeners in participatory science research.

Urban Networks, Micro-agriculture, and Community Food Security <https://doi.org/10.1007/S43615-021-00117-X>

The white paper first outlines the state of inequity in food security/sovereignty in our area of focus, taking into account historical context as well as emerging and ongoing effects of the COVID-19 pandemic and community and policy responses to it. We then discuss a food acquisition intervention, structured as a longitudinal, collaborative research, and service-learning effort known as Everybody Eats. The white paper provides detailed discussion of competing understandings of agriculture, horticulture, and the social problem of food insecurity; the preliminary data that has led to a current collaborative effort to enhance the skillset of people previously not understood as food producers and provisioners, but only as end-user consumers; and the new iteration of the project wherein specific sets of expertise from diverse disciplines are deployed both to offer a more robust intervention, and bring new methodologies to bear in assessing the ecology of a local foodshed. We propose mobilizing existing resources and expertise of the Land Grant/Cooperative Extension system to act as a regional hub for facilitating full community food security (caloric and nutritional adequacy) and food sovereignty (participatory decision-making regarding living spaces and culturally appropriate foodways). Finally, we illustrate how a nexus of faculty, working from a service-learning advocacy perspective and embedded in a participatory action framework, provides a mechanism for bringing together and sustaining a community of intellectually diverse researchers and stakeholders.

Providing Food Assistance During the COVID-19 Pandemic: A Case Study of a Free Produce Market at a Health Care Center. <https://dx.doi.org/10.1353/hpu.2021.0198>

The COVID-19 pandemic has worsened economic precarity and nearly doubled food insecurity in the United States. We describe how a free produce market at a Massachusetts health center adapted to exponentially increase its reach and offerings while continuing to safely distribute food to a low-income community during the pandemic.

Changes in body mass index (BMI) in an inner city at risk pediatric population during the COVID 19 pandemic

Background: The prolonged course of the COVID 19 pandemic has numerous social, economic and health consequences. Few studies so far have evaluated the metabolic changes in pediatric populations throughout the pandemic. School provides structure and routine for children and regulates mealtimes, physical activity and sleep schedule, all of which are lifestyle factors that can contribute to obesity if poorly regulated. As per the New Jersey Childhood Obesity Study, 44.2% of children in the city of Newark, are overweight and obese, 25.2% of whom are obese and 18.3% are very obese. The Newark population in 2018 saw 2,069 violent crimes per 100,000 people, approximately twice the national average. As a result of unsafe neighborhoods, most of the physical activity for children in Newark is limited to sports or physical activity organized by institutions, primarily its school system. The switch from in-person to online school during the COVID pandemic along with, increases in screen time due to online classes and homework, as well as increased social activity through video games and virtual outlets can lead to disrupted sleep cycles and increased BMI. The lack of structure and routine in combination with increased screen time, increased snacking and consumption of processed food, as well as limited access to fresh food may have had detrimental metabolic effects particularly on an already high risk urban pediatric population. Objective: To quantify the changes in BMI among overweight and obese children and adolescents before and after the pandemic-associated lockdown. Study Design/Methods: A retrospective chart review for ages 2 to 19 years with BMI \geq 85th %tile seen in outpatient pediatric clinic of University Hospital located in Newark from March 2019 to April 2021 (n=84) was performed. The executive order to close schools issued on March 16th, 2020 was considered as start date of the pandemic. Visits within 9 months prior to 03/16/20 were counted as pre-pandemic. On January 2, 2021, organized sports were allowed to resume in public schools and this date was used to set the post-pandemic mark. Visits from 1/2/2021 until 4/2021 were counted as post-pandemic. Comparison of pre and post BMI was performed via paired sample t-tests with significance as $p < 0.05$. Average pre and post pandemic BMI was compared between ethnic groups and gender using ANOVA. Results: There was a statistically significant increase in BMI from pre-pandemic visits to post-pandemic ($p < 0.05$) across ages 5-19: ages 5-8 (n=17; average increase = 1.88; $p = 0.003$); ages 9-13 (n=47; average BMI increase = 2.1; $p < 0.0001$); ages 14-19 (n=14; average BMI increase = 1.54; $p = 0.01$). For ages 2-4 there was an increase in BMI, however it did not reach statistical significance (n=4; BMI increase = 1.69; $p = 0.051$). There was an equal distribution of females (n=40) and males (n=44). There was no significant difference in BMI among male and female subjects pre and post pandemic. The average pre-pandemic BMI in females was 28.29 and in males was 26.74 ($p = 0.258$). Similarly, the average post-pandemic BMI in females was 30.01 and in males was 28.86 ($p = 0.422$). Majority of the subjects were primarily Hispanic (n=45) and African American (n=29). There were 10 subjects classified as other or unknown. There was no statistically significant difference in pre-pandemic BMI between Hispanic (mean = 27.01) and African-American (mean = 28.32) children ($p = 0.377$) but there was a statistically significant difference in post pandemic BMI between Hispanic (mean = 28.34), and African American (mean = 31.47) children ($p = 0.041$). Conclusions: We found a statistically significant increase in BMI across all age cohorts in our pediatric population except the 2-4-year age group. The BMI increase was significantly higher among the African American as compared to the Hispanic children. These results may be attributed to the negative effects of school shut-downs and shelter-in-place orders, increased screen times, lack of physical activity and increased consumption of processed foods. The adverse effects of the COVID-19 pandemic on childhood obesity, not only demand maximum efforts to support families and children by appropriate policy changes but also increase awareness among physicians to counsel families and screen for metabolic dysfunction.

Occupational stress among farm and ranch operators in the midwestern United States.

<https://dx.doi.org/10.1186/s12889-021-12053-4>

BACKGROUND: This study used surveillance data from 2018 and 2020 to test the stability of work-related strain symptoms (high stress, sleep deprivation, exhaustion) with demographic factors, work characteristics, and musculoskeletal symptoms among farm and ranch operators in seven midwestern states of the United States. **METHODS:** Cross-sectional surveys were conducted among farm and ranch operators in 2018 (n = 4423) and 2020 (n = 3492). Operators were asked whether, in the past 12 months, they experienced extended work periods that resulted in high stress levels, sleep deprivation, exhaustion/fatigue, or other work-related strain symptoms. Covariates included personal and demographic factors, work characteristics, number of injuries, work-related health conditions, and exposures on the operation. Summary statistics were tabulated for explanatory and outcome variables. The classification (decision) tree approach was used to assess what variables would best separate operators with and without reported strain symptoms, based on a set of explanatory variables. Regularized regression was used to generate effect estimates between the work strain variables and explanatory variables. **RESULTS:** High stress level, sleep deprivation, and exhaustion were reported more frequently in 2018 than 2020. The classification tree reproduced the 2018 model using 2020 data with approximately 80% accuracy. The mean number of reported MSD symptoms increased slightly from 1.23 in 2018 to 1.41 in 2020. Older age, more time spent in farm work, higher gross farm income (GFI), and MSD symptoms in six body regions (ankles/feet, knees, lower back, neck, shoulders, wrists/hands) were associated with all three work strain symptoms. **CONCLUSIONS:** Musculoskeletal pain and discomfort was a strong predictor for stress, sleep deprivation, and exhaustion among farmers and ranchers. This finding indicates that reducing MSD pain and discomfort is beneficial for both physical and mental health.

COVID-19 working paper: meatpacking working conditions and the spread of COVID-19. (COVID-19 Working Paper No. AP-092.)

This preliminary analysis explores how working conditions in meatpacking plants might have contributed to the spread of the Coronavirus (COVID-19). Data from the Occupational Information Network (O*NET) was used to construct a set of industry-level working condition variables and compare meatpacking to the sample of other manufacturing industries in our comparison group. This novel approach showed that proximity to others in the meatpacking industry is likely the main factor that influenced the spread of COVID-19, nearly three standard deviations higher in meatpacking than our comparison sample of other manufacturing industries. Overall exposure to disease was also found to be 2.5 standard deviations higher in the meatpacking industry compared to other manufacturing industries. Subsequently, we performed a county-level analysis on COVID-19 spread, comparing rural counties that have a large number of meatpacking plants to other nonmetropolitan counties that were dependent on a single manufacturing industry, using the time frame of mid-March to mid-September of 2020. Data analysis begins in mid-March since confirmed cases became national in scope at this point. In mid-April 2020, COVID-19 cases in meatpacking-dependent rural counties rose to nearly 10 times the number in comparison to rural counties dependent on other single manufacturing industries. This difference disappears completely by mid-July, driven by a reduction in COVID-19 cases in the meatpacking industry rather than an increase in other industries, and holds steady through mid-September. The paper concludes by collating evidence from other studies to infer that the meatpacking industry's increased precautions to protect workers help explain why no difference was observed between meatpacking-dependent counties and our comparison group for the final 2 months of the study period. However, this

inference should be viewed as suggestive since it cannot formally test using the data referenced in the working paper.

The vaccination threshold for SARS-CoV-2 depends on the indoor setting and room ventilation

<https://doi.org/10.1186/s12879-021-06884-0>

BACKGROUND: Effective vaccines are now available for SARS-CoV-2 in the 2nd year of the COVID-19 pandemic, but there remains significant uncertainty surrounding the necessary vaccination rate to safely lift occupancy controls in public buildings and return to pre-pandemic norms. The aim of this paper is to estimate setting-specific vaccination thresholds for SARS-CoV-2 to prevent sustained community transmission using classical principles of airborne contagion modeling. We calculated the airborne infection risk in three settings, a classroom, prison cell block, and restaurant, at typical ventilation rates, and then the expected number of infections resulting from this risk at varying percentages of occupant immunity. **RESULTS:** We estimate the setting-specific immunity threshold for control of wild-type SARS-CoV-2 to range from a low of 40% for a mechanically ventilation classroom to a high of 85% for a naturally ventilated restaurant. **CONCLUSIONS:** If vaccination rates are limited to a theoretical minimum of approximately two-thirds of the population, enhanced ventilation above minimum standards for acceptable air quality is needed to reduce the frequency and severity of SARS-CoV-2 superspreading events in high-risk indoor environments.

Essential Workers/Food/Farm/Ag/Migrant

COVID-19 and systemic racism pandemics impact daily life for immigrant/refugees, Minneapolis, USA

<https://doi.org/10.5334/aogh.3411>

Background: The pandemics of COVID-19 and systemic racism have a deleterious impact on the daily life experiences and health for populations of color. The experiences are compounded for immigrant/refugee communities that may have other barriers such as English language literacy or trauma. Cumulative stress due to everyday racism is harmful for health. **Objectives:** This study describes the impact of day-to-day lived experiences of Karen, Somali, and Latinx communities during the COVID-19 pandemic and aftermath of the police murder of George Floyd in the Minneapolis/St. Paul metro area. **Methods:** In-depth interviews were conducted over three weeks in September and October 2020 to understand the daily life experiences of Karen, Somali and Latinx adults drawn from community contacts during the COVID-19 pandemic and the aftermath of the police murder of George Floyd. Interviewers were bilingual and from the communities they interviewed. Nine questions were asked, ranging from their knowledge of COVID-19, prevention practices, experiences during shelter-in-place, and the perceptions of the police murder of George Floyd. Qualitative analysis included transcript review, coding facilitated by Atlas.ti Cloud software, summaries, and validation by interviewers. **Findings:** Thirty-two adults were interviewed (Latinx = 10, Karen = 10, Somali = 12). One-third were in person per participant request and complying with COVID-19 precautions, and the remainder were remote. The average age recorded was 37 years (range 20–66 years), 43.8% males and 56.3% females. Respondents reported experiences of discrimination and systemic racism while engaging in daily life activities, including accessing foods and common goods, school, work, transportation, and healthcare, all of which were exacerbated by COVID-19 and the police murder of George Floyd. **Conclusions:** Immigrant/refugee communities of color in Minneapolis/St. Paul face daily experiences of racism that were compounded by the events of 2020. Discrimination and systemic racism contribute to the persistent health inequities among populations of color.

The Direct and Indirect Effects of a Global Pandemic on US Fishers and Seafood Workers (preprint)

<https://doi.org/10.1101/2021.11.16.21266427>

The United States' seafood industry experienced major shifts in consumer demand and COVID-19 social-distancing restrictions starting in March 2020, when the early stages of the pandemic were unfolding. However, the specific effects on workers across seafood value chains are less well known. According to the US Centers for Disease Control and Protection (CDC), fishers and seafood workers face an increased risk of workplace exposure to COVID-19 given the close proximity to others in processing facilities and on fishing vessels, long work hours, and communal housing, living, and transportation arrangements associated with seasonal employment. To explore this hypothesis, and given a lack of data on the sector, we reviewed news articles, scientific articles, and white papers to identify the various effects of COVID-19 on US seafood workers and to track COVID-19 cases and outbreaks. Here, we show that most COVID-19 cases among seafood workers were reported during the summer of 2020 and during the beginning of 2021 with outbreaks primarily occurring in seafood processing. COVID-19 cases were documented throughout coastal areas, with Alaska experiencing the largest number of cases and outbreaks. Based on news reports, seafood workers were about twice as likely to contract COVID-19 as workers in other parts of the overall US food system. By examining news articles and scientific literature, we also documented a number of indirect effects of the pandemic. Social-distancing restrictions limited crew size and number of workers on processing lines, resulting in longer work hours and more physical and mental taxation. Economic consequences of the pandemic were reportedly a primary concern for fishers and aquaculture businesses, including changes in markets, supply and demand, in addition to revenue loss, price fluctuations, supply chain issues, and labor shortages. Fewer outlets interviewed workers in seafood processing; however, concerns about workplace safety, contracting COVID-19, access to medical services, vaccination, and paid sick leave were all noted. We also highlight a number of inequities in COVID-19 responses within the seafood sector, both along racial and gender lines. Peer-reviewed studies and news coverage all point to diverse direct and indirect effects of the COVID-19 pandemic on workers across seafood value chains. The summary of these effects can serve as a foundation for future work on infection control and occupational outreach to workers in the seafood sector.

Other

Worldwide COVID-19 Vaccines Sentiment Analysis Through Twitter Content

<https://doi.org/10.29333/ejgm/11316>

One year during the pandemic of COVID 19, numerous viable possibilities have been created in worldwide efforts to create and disseminate a viable vaccine. The rapid development of numerous vaccinations is remarkable; generally, the procedure takes 8 to 15 years. The vaccination of a critical proportion of the global population, which is vital for containing the pandemic, is now facing a new set of hurdles, including hazardous new strains of the virus, worldwide competition over a shortage of doses, as well as public suspicion about the vaccinations. A safe and efficacious vaccine COVID-19 is borne fruit globally. There are presently more than a dozen vaccinations worldwide authorized; many more continue to be developed. This paper used COVID-19 vaccine related tweets to present an overview of the public's reactions on current vaccination drives by using thematic sentiment and emotional analysis, and demographics interpretation to people. Further, experiments were carried out for sentiment analysis in order to uncover fresh information about the effect of location and gender. Overall Tweets were generally negative in tone and a huge vaccination trend can be seen in global health perspectives, as evidenced by the analysis of the role of comprehensive science and research in vaccination.

Trust and responsibility in food systems transformation. Engaging with Big Food: marriage or mirage?

<https://dx.doi.org/10.1136/bmjgh-2021-007350>

Concentration of power among transnational 'Big Food' companies has contributed to food systems that are unsustainable, unhealthy and inequitable for people and planet. Given these commercial determinants of health, if 'food systems transformation' is to be authentic-more than a passing narrative-then leveraging Big Food is paramount. To this end, researchers, practitioners and policy-makers are increasingly encouraged to engage with these powerful entities. However, given the conflicts of interest at stake, engagement relies on trust and transparency, that all stakeholders take responsibility for their actions and demonstrate commitment to do no harm. Given Big Food's track record in influencing policy, shifting costs and responsibility for their harms-and while profit primarily drives business decision making-we question whether it is logical to expect trust. This analysis explores concepts of responsibility and trust in relation to food systems transformation involving public-private partnerships. Through short cautionary case studies-looking at the United Nations Food Systems Summit, and Big Food's plastic burden-it argues that unless such companies take responsibility for their cross-cutting effects and earn authentic trust through demonstrably doing no harm, their participation in evidence generation and policy processes should be limited to responding to information requests and adhering to regulation. Any involvement in research agenda-setting or formulating policy solutions introduces conflicts of interest, legitimises corporate irresponsibility and jeopardises scientific integrity. Big Food has dynamism and power to address food system problems, but while it contributes to so many of these problems it should follow-not formulate-transformational evidence, policies and regulations.

Homeless people and health: vulnerability and risks during the COVID-19 pandemic. Pilot study

<https://doi.org/10.3306/ajhs.2021.36.04.136>

Background: Homelessness is a complex phenomenon characterized by extreme vulnerability. The objective of the present study was to know the health status and use of the health system by homeless people (HP) in Palma de Mallorca, as well as to describe how the actual pandemic modified the needs of this population. Subjects and method: Descriptive cross-sectional study with 31 HP from Palma de Mallorca. A questionnaire that included sociodemographic profile, social support (SSQ-6), health problems, infectious diseases, mental health (PHQ-9), drug abuse (DAST-10) and basic needs (hygiene, food, safety, etc.) was administered. In addition, serology test for SARS-CoV-2, syphilis, hepatitis and HIV was performed, also their computerized medical records were reviewed. Results: The mean age was 52 +/- 8 years and 87% (27/31) were men. 48.4% had some chronic disease, 51.6% had some infectious disease and 42% had mood disorders. 96.8% of the HP used Primary Care services in 2020 versus 71% in 2019. The needs most affected by the pandemic were: hygiene (41.9%), access to public toilets (29%) and access to food (25.8%). Conclusions: HP have high rates of comorbidity. Our results suggest that the health status of HP may have worsened during the pandemic. In addition, vital needs have been affected and their vulnerability could increase.

Food and COVID-19 Lit Review: November 26th 2021

- DNPAO
 - SNAP participation and the health and health care utilisation of low-income adults and children. <https://dx.doi.org/10.1017/S1368980021003815>
 - The Influence of the COVID-19 Pandemic on the Food Supply in the Emergency Food System: A Case Study at 2 Food Pantries. <https://dx.doi.org/10.1093/cdn/nzab115>
 - "It Was Actually Pretty Easy": COVID-19 Compliance Cost Reductions in the WIC Program. <https://dx.doi.org/10.1111/puar.13423>

- Race and Hispanic-origin disparities in underlying medical conditions associated with severe COVID-19 illness: U.S. adults, 2015-2018 <https://doi.org/10.15620/cdc:104188>
- Racial and Ethnic Disparities in Health-Related Socioeconomic Risks During the Early COVID-19 Pandemic: A National Survey of U.S. Women. <https://dx.doi.org/10.1089/jwh.2021.0230>
- 6-10-14 for Health - as an example of an interdisciplinary model of care for a patient with obesity <https://doi.org/10.1093/eurpub/ckab165.186>
- Do social isolation and neighborhood walkability influence relationships between COVID-19 experiences and wellbeing in predominantly Black urban areas? <https://doi.org/10.1016/j.lurbplan.2021.104264>
- European food banks and COVID-19: Resilience and innovation in times of crisis <https://doi.org/10.1016/j.seps.2021.101187>
- Identifying Critical Thresholds for Resilient Regional Food Flows: A Case Study From the U.S. Upper Midwest <https://doi.org/10.3389/fsufs.2021.684159>
- The underlying mechanisms for severe COVID-19 progression in people with diabetes mellitus: a critical review. <https://dx.doi.org/10.3934/publichealth.2021057>
- Worker-Safety/NIOSH
 - Exposure to a SARS-CoV-2 infection at work: development of an international job exposure matrix (COVID-19-JEM). <https://dx.doi.org/10.5271/sjweh.3998>
 - Assessment of Environmental and Occupational Risk Factors for the Mitigation and Containment of a COVID-19 Outbreak in a Meat Processing Plant. <https://dx.doi.org/10.3389/fpubh.2021.769238>
- DFWED/Food Safety
 - Multistate Salmonella infection outbreaks in United States, 2006 to 2020 <https://doi.org/10.3784/jbjc.202103260160>
- Essential Workers/Food/Farm/Ag/Migrant
 - Vaccinations for migrants during and beyond the COVID-19 pandemic <https://doi.org/10.1093/eurpub/ckab165.150>
 - 'Stressed, uncomfortable, vulnerable, neglected': a qualitative study of the psychological and social impact of the COVID-19 pandemic on UK frontline keyworkers. <https://dx.doi.org/10.1136/bmjopen-2021-050945>
 - Impact of COVID-19 on migrant populations in high-income countries: a systematic review <https://doi.org/10.1093/eurpub/ckab164.882>
 - COVID-19 and systemic racism pandemics impact daily life for immigrant/refugees, Minneapolis, USA <https://doi.org/10.5334/aogh.3411>
- Other
 - How COVID-19 Exposed Water Supply Fragility in Florida, USA <https://doi.org/10.3390/urbansci5040090>
 - SARS-CoV-2 Cumulative Incidence and Period Seroprevalence: Results From a Statewide Population-Based Serosurvey in California. <https://dx.doi.org/10.1093/ofid/ofab379>
 - The impact of behavioural risk factors on communicable diseases: a systematic review of reviews. <https://dx.doi.org/10.1186/s12889-021-12148-y>
 - The effect of allergy and asthma as a comorbidity on the susceptibility and outcomes of COVID-19. <https://dx.doi.org/10.1093/intimm/dxab107>
 - Socio-economic disparities in self-reported, tested, and diagnosed COVID-19 status <https://doi.org/10.1093/eurpub/ckab164.883>

SNAP participation and the health and health care utilisation of low-income adults and children.

<https://dx.doi.org/10.1017/S1368980021003815>

OBJECTIVE: This article examined whether participation in the Supplemental Nutrition Assistance Program (SNAP) produced changes to adult and child health and health care utilisation during a period of economic recession. **DESIGN:** Instrumental variables analysis relying on variation in state SNAP policies to isolate exogenous variation in household SNAP participation. **SETTING:** Nationally representative data on child and adult health from the 2008 to 2013 National Health Interview Survey. **PARTICIPANTS:** Participants were 92 237 adults and 45 469 children who were either eligible for SNAP based on household income and state eligibility rules or were low income but not eligible for SNAP benefits. **RESULTS:** For adults, SNAP participation increased the probability of reporting very good or excellent health, and for both adults and children, reduced needing but having to go without dental care or eyeglasses. The size of these benefits was especially pronounced for children. However, SNAP participation increased the probability of needing but not being able to afford prescription medicine, and increased psychological distress for adults and behavioural problems for children under age 10. **CONCLUSIONS:** SNAP's benefits for adult health and improved access to dental and vision care for adults and children suggest benefits from the program's expansions during the current COVID-induced crisis. Predicted negative effects of SNAP participation suggest the need for attention to program and benefit structure to avoid harm and the need for continued research to explore the causal effects of program participation.

The Influence of the COVID-19 Pandemic on the Food Supply in the Emergency Food System: A Case Study at 2 Food Pantries. <https://dx.doi.org/10.1093/cdn/nzab115>

Background: The onset of the coronavirus disease 2019 (COVID-19) pandemic increased demand for emergency food assistance and has caused operational shifts in the emergency food system. **Objective:** This research explored how the initial phase of the COVID-19 pandemic influenced the food supply of 2 food pantries. **Methods:** A case study approach was applied to collect data during the initial phase of the COVID-19 pandemic. Food supply data were collected weekly at 2 food pantries in southwest Montana for 17 wk in 2020. Surveys and interviews were conducted with food pantry clients and staff, respectively. Descriptive statistics and inferential statistics were applied to analyze quantitative data. Food supply data were analyzed using the Healthy Eating Index (HEI)-2015, NOVA system, and Unprocessed Pantry Project (UP3) Framework. Thematic analysis was applied to qualitative data. **Results:** The food boxes collected between the 2 food pantries (n = 43) had a mean (\pm SD) total HEI-2015 score of 76.41 ± 7.37 out of a possible score of 100. According to both the NOVA and the UP3 Framework, 23.4% of the total food distributed was ultra-processed food. Of the food distributed, 50.0% and 48.3% was fresh, unprocessed food according to NOVA and UP3 Frameworks, respectively. From staff interviews, 3 themes arose that describe the food pantry operations that experienced change during the COVID-19 pandemic, including food procurement, distribution preparation, and food distribution. Nine supporting subthemes describing the causes and consequences of the operational themes were identified. Staff perceived that the nutrient quality of the food boxes increased from food distributed previously to the COVID-19 pandemic, whereas over one-third (39.4%) of food pantry clients who responded to surveys preferred the food box model. **Conclusions:** The COVID-19 pandemic has caused enormous operational challenges within food pantries. Food pantries overcame these challenges by swiftly and effectively altering operations so as to continue to distribute nutritious food boxes to pantry clients.

"It Was Actually Pretty Easy": COVID-19 Compliance Cost Reductions in the WIC Program.

<https://dx.doi.org/10.1111/puar.13423>

In recent years, scholars have examined the barriers to accessing public assistance benefits. Research identifies learning, compliance, and psychological costs as deterring program use. Compliance costs reflect the burdens of following program rules, which may entail providing documentation, responding to discretionary demands of bureaucrats, or attending appointments to maintain benefits. Studies identify one element of compliance costs—quarterly appointments—as a barrier to continued WIC participation. This article draws on 44 in-depth qualitative interviews with participants in the Special Supplemental Nutrition Assistance Program for Women, Infants, and Children (WIC). We examine how WIC participants perceive the reduction of compliance costs following the implementation of remote appointments in response to the COVID-19 pandemic. WIC participants report satisfaction with remote appointments and a reduction in the compliance costs of accessing and maintaining benefits. We conclude by recommending longer term changes to policy and practices to increase access and continuity in WIC receipt.

Race and Hispanic-origin disparities in underlying medical conditions associated with severe COVID-19 illness: U.S. adults, 2015-2018 <https://doi.org/10.15620/cdc:104188>

Objective - This report calculates the prevalence of selected conditions by race and Hispanic origin among U.S. adults (aged 20 and over) during 2015-2018. **Methods** - Interview, physical examination, and laboratory data were used from the National Health and Nutrition Examination Survey. Conditions included asthma, chronic obstructive pulmonary disease, and heart disease based on self-report; and obesity, severe obesity, diabetes, chronic kidney disease, smoking, and hypertension based on physical measurements. Estimates accounted for survey design. **Results** - Seventy-six percent of adults and 86.4% (95% CI: 83.5-89.0) of non-Hispanic black adults had at least one condition. Obesity and diabetes were highest among non-Hispanic black (47.9% CI: 45.0-50.8; 19.2% CI: 16.7-21.8, respectively) and Hispanic adults (45.7% CI: 42.9-48.6; 21.3% CI: 19.0-23.7, respectively). **Conclusions** - Non-Hispanic black and Hispanic adults had a disproportionate burden of some conditions, including obesity and diabetes. Understanding populations at highest risk for severe coronavirus disease 2019-related illness could help inform prevention strategies.

Racial and Ethnic Disparities in Health-Related Socioeconomic Risks During the Early COVID-19 Pandemic: A National Survey of U.S. Women. <https://dx.doi.org/10.1089/jwh.2021.0230>

Background: Nearly half of U.S. women experienced new or worsening health-related socioeconomic risks (HRSRs) (food, housing, utilities and transportation difficulties, and interpersonal violence) early in the COVID-19 pandemic. We sought to examine racial/ethnic disparities in pandemic-related changes in HRSRs among women. **Materials and Methods:** We conducted a cross-sectional survey (04/2020) of 3200 women. Pre- and early pandemic HRSRs were described by race/ethnicity. Weighted, multivariable logistic regression models generated odds of incident and worsening HRSRs by race/ethnicity. **Results:** The majority of Black, East or Southeast (E/SE) Asian, and Hispanic women reported ≥1 pre-pandemic HRSR (51%-56% vs. 38% of White women, $p < 0.001$). By April 2020, 68% of Black, E/SE Asian, and Hispanic women and 55% of White women had ≥1 HRSR ($p < 0.001$). For most HRSRs, the odds of an incident or worsening condition were similar across racial/ethnic groups, except Black, E/SE Asian and Hispanic women had 2-3.6 times the odds of incident transportation difficulties compared with White women. E/SE Asian women also had higher odds of worsening transportation difficulties compared with White women (adjusted odds ratios = 2.5, 95% confidence interval 1.1-5.6). In the early pandemic, 1/19 Hispanic, 1/28 E/SE Asian, 1/36 Black and 1/100 White women had all 5 HRSRs (extreme health-related socioeconomic vulnerability). **Conclusions:** Pre-pandemic racial/ethnic disparities in HRSRs persisted and prevalence rates increased for all groups early in the pandemic. Disparities in transportation difficulties widened. White women were much less likely than others to experience

extreme health-related socioeconomic vulnerability. An equitable COVID-19 response requires attention to persistent and widening racial/ethnic disparities in HRSRs among women.

6-10-14 for Health - as an example of an interdisciplinary model of care for a patient with obesity

<https://doi.org/10.1093/eurpub/ckab165.186>

Issue Overweight and obesity are public health challenges of growing importance in Poland. The fastest increase has been observed in children and adolescents. Some studies show that 22% of elementary school children are currently (2013) overweight or have obesity (IZZ), compared with no more than 15% in 1990 (WHO Europe, 2012). Description of the problem The “6-10-14 for Health” is the first comprehensive health programme implemented in Poland, focused on long-term health behaviour change both among children with obesity and their families. Screening tests are carried out at Gdańsk schools. Children who are diagnosed with excess body weight are invited to the second level of programme. Target groups are children in Gdansk, aged 6, 9-11 and 14 years, their parents and the school environment. Timeline: 2011-2021 Results effects: Approximately 400-450 new patients join the programme every year. Programme participants receive annual care from an interdisciplinary team of specialists including a paediatrician, dietitian, specialist in physical activity and a psychologist. The effect of one year's participation in the programme is the reduction of excess body weight in 75% of participants. More than 2000 patients have completed the Programme. The programme is accredited by the European Association for the Study of Obesity and is funded by the City of Gdańsk. changes: Further implementation of the Programme depends on providing funds from the City of Gdańsk. However, it seems that the 6-10-14 for Health is one of the city's health priorities. The challenge in the field of weight reduction programs is to provide care that will not lead to stigmatization of patients Lessons The work on designing the model has already resulted in creation of network of specialists from different backgrounds and allowed sharing different scopes, how to use limited resources for the benefit of children and adolescents. Key messages The proposed care model is fully possible to implement in the care system. So far, sharing knowledge and experience, the program has been implemented in several other local governments. In the era of the COVID19 pandemic, all activities aimed at the prevention and early treatment of obesity become even more important.

Do social isolation and neighborhood walkability influence relationships between COVID-19 experiences and wellbeing in predominantly Black urban areas?

<https://doi.org/10.1016/j.lurbplan.2021.104264>

Black Americans have been disproportionately affected by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2 or COVID-19) pandemic. Since the pandemic's start, we have observed compounded health, social, and economic impacts for communities of color, fueled in part by profound residential segregation in the United States that, for centuries prior to the pandemic, created differences in access to opportunity and resources. Based on a longitudinal cohort of Black residents living in two racially isolated Pittsburgh neighborhoods, we sought to: 1) describe the experiences of behavioral responses to COVID-19 conditions (e.g., closures of businesses, schools, government offices) and illness experiences reported by residents within these disinvested, urban areas and 2) determine if these experiences were associated with perceptions of risk, negative mental health outcomes, and food insecurity; and 3) examine whether any of the associations were explained by social isolation or modified by neighborhood walkability. We found direct associations between residents' experience with COVID-19-related closures and with the illness, with perceived risk, and change in psychological distress, sleep quality, and food insecurity from pre-COVID-19 levels. Social isolation was a statistically significant mediator of all of these associations, most strongly mediating the pathway to psychological distress. We found neighborhood walkability to be a significant moderator of the association between closure experiences and sleep quality. The results suggest that experiences of COVID-19 closures and illness

were associated with serious threats to public health in Black, disinvested, urban neighborhoods, beyond those caused directly by the virus. Outcomes of the pandemic appear very much dependent on the extent to which social and physical resources are available to meet the demands of stress.

European food banks and COVID-19: Resilience and innovation in times of crisis

<https://doi.org/10.1016/j.seps.2021.101187>

This paper examines the impact of the COVID-19 crisis on the functioning of European food banks and how resilient European food banks were in coping with the pandemic in 2020. We apply a multiple case study to assess how the first year of the pandemic affected European food banks' operations and the amount of redistributed food. We further investigate innovation practices that have been developed to cope with the new situation, hoping to draw lessons for imminent future waves of the pandemic and other social crises. Our study finds that, compared to 2019, in 2020 food banks were able to redistribute a significantly higher amount of food despite numerous social restrictions and other challenges associated with the pandemic. To explain this, we delve into the organizational innovations implemented by the studied food banks and find that the introduction of new strategies and new internal structures, as well as the establishment of new types of external network relations with other firms and/or public organizations, proved to be particularly important, enabling food banks to respond quickly and effectively to the new emergency. The study thus highlights the role of food banks in food redistribution and food waste reduction in times of crisis.

Identifying Critical Thresholds for Resilient Regional Food Flows: A Case Study From the U.S. Upper Midwest

<https://doi.org/10.3389/fsufs.2021.684159>

Improving the regional organization of food flow requires an understanding of system constraints. System transformation is necessary if the system is to include regional, independent wholesale food suppliers and to distribute food in an equitable and sustainable manner. Regional suppliers play a pivotal role in overall food system resilience, an emerging issue in wake of the numerous failures in conventional food supply chains exacerbated by COVID-19-related disruptions. Yet alternative supply chains that link local producers with towns and urban centers regionally, represent a small fraction of our nation's food suppliers. They struggle to compete with larger distribution networks that can supply products in-and out-of-season by global procurement. The upper Midwest harbors numerous local and regional food supply chains consisting of farms, processors, trucking companies, wholesalers and other firms that share a commitment to sustainability and local economic development. A constellation of challenges hamper their emergence, however, even as larger scale food supply chains flounder or fail to effectively serve communities. Informed by Donella Meadows's work on leverage points for systemic change, a collaborative, transdisciplinary and systems research effort examined conventional food supply networks and identified key opportunities for shifting food supply chain relationships. System concepts such as stock and flow, leverage points, and critical thresholds helped us to frame and identify challenges and opportunities in the current system. The second and third phase of our collaborative research effort occurred over 4 years (2013–2016) and involved twenty-six people in co-generation of knowledge as a loose-knit team. The team included farmers, supply chain practitioners, students, academic staff and faculty from multiple departments and colleges. Our primary method was to host public workshops with practitioner speakers and participants to identify dominant narratives and key concepts within discourses of different participants in distribution networks. The literature review was iterative, based on challenges, ideas and specific questions discussed at workshops. Our research exposed two meta-narratives shaping the supply chain: diversity and efficiency. In addition to these high-leverage narratives, we identified and examined five key operational thresholds in the Upper Midwest regional food system that could be leveraged to improve food flow in the region. Attention to

these areas makes it possible for businesses to operate within environmental limits and develop social structures that can meet scale efficiencies necessary for economic success. We iteratively shared this co-produced knowledge with decision-makers via local food policy councils, local government, and national policy circles with the goal of supplying actionable information. This phased action research project created the environment necessary for a group of food system entrepreneurs to emerge and collaborate, poised to improve system resilience in anticipation of food system disruptions. It forms the basis for on-going research on food flow, regional resilience, and supply chain policy.

The underlying mechanisms for severe COVID-19 progression in people with diabetes mellitus: a critical review. <https://dx.doi.org/10.3934/publichealth.2021057>

Diabetes mellitus (DM) has a high incidence of comorbidities among patients with severe coronavirus disease 2019 (COVID-19). The elevated prevalence of DM in the world population makes it a significant risk factor because diabetic individuals appear to be prone to clinical complications and have increased mortality rates. Here, we review the possible underlying mechanisms involved in DM that led to worse outcomes in COVID-19. The impacts of hyperglycemia side effects, secondary comorbidities, weakened innate and adaptive immunity, chronic inflammation, and poor nutritional status, commonly present in DM, are discussed. The role of the SARS-CoV-2 receptor and its polymorphic variations on higher binding affinity to facilitate viral uptake in people with DM were also considered. Clinical differences between individuals with type 1 DM and type 2 DM affected by COVID-19 and the potential diabetogenic effect of SARS-CoV-2 infection were addressed.

Worker-Safety/NIOSH

Exposure to a SARS-CoV-2 infection at work: development of an international job exposure matrix (COVID-19-JEM). <https://dx.doi.org/10.5271/sjweh.3998>

Objective This study aimed to construct a job exposure matrix (JEM) for risk of becoming infected with the SARS-CoV-2 virus in an occupational setting. **Methods** Experts in occupational epidemiology from three European countries (Denmark, The Netherlands and the United Kingdom) defined the relevant exposure and workplace characteristics with regard to possible exposure to the SARS-CoV-2 virus. In an iterative process, experts rated the different dimensions of the COVID-19-JEM for each job title within the International Standard Classification of Occupations system 2008 (ISCO-08). Agreement scores, weighted kappas, and variances were estimated. **Results** The COVID-19-JEM contains four determinants of transmission risk [number of people, nature of contacts, contaminated workspaces and location (indoors or outdoors)], two mitigation measures (social distancing and face covering), and two factors for precarious work (income insecurity and proportion of migrants). Agreement scores ranged from 0.27 [95% confidence interval (CI) 0.25-0.29] for 'migrants' to 0.76 (95% CI 0.74-0.78) for 'nature of contacts'. Weighted kappas indicated moderate-to-good agreement for all dimensions [ranging from 0.60 (95% CI 0.60-0.60) for 'face covering' to 0.80 (95% CI 0.80-0.80) for 'contaminated workspaces'], except for 'migrants' (0.14 (95% CI -0.07-0.36)). As country differences remained after several consensus exercises, the COVID-19-JEM also has a country-axis. **Conclusions** The COVID-19-JEM assesses the risk at population level using eight dimensions related to SARS-COV-2 infections at work and will improve our ability to investigate work-related risk factors in epidemiological studies. The dimensions of the COVID-19-JEM could also be valuable for other future communicable diseases in the workplace.

Assessment of Environmental and Occupational Risk Factors for the Mitigation and Containment of a COVID-19 Outbreak in a Meat Processing Plant. <https://dx.doi.org/10.3389/fpubh.2021.769238>

Throughout the COVID-19 pandemic, meat processing plants have been vulnerable to outbreaks of SARS-CoV-2 infection. Transmission of the virus is difficult to control in these settings because of a combination of factors including environmental conditions and the specific nature of the work. This paper describes a retrospective outbreak investigation in a meat processing plant, a description of the measures taken to prevent or contain further outbreaks, and insights on how those with specific knowledge of the working environment of these plants can collaborate with public health authorities to ensure optimal outbreak control. The plant experienced 111 confirmed positive asymptomatic cases in total with an estimated attack rate of 38% during a five-week period. 4 weeks after the first case, mass screening of all workers was conducted by the public health authorities. Thirty-two workers tested positive, of which 16 (50%) worked in one particular area of the plant, the boning hall (n = 60). The research team prepared and carried out semi-structured interviews with the plant personnel who were charged with COVID control within the plant. They carried out assessments of operational risk factors and also undertook air quality monitoring in the boning hall and abattoir. The air quality measurements in the boning hall showed a gradual build-up of carbon dioxide and aerosol particles over the course of a work shift, confirming that this poorly ventilated area of the plant had an environment that was highly favorable for aerosol transmission of SARS-CoV-2. Assessment of operational conditions incorporated visual surveys of the plant during the working day. Prior to and during the first 2 weeks of the outbreak, multiple measures were introduced into the plant by management, including physical distancing, provision of educational material to workers, visitor restrictions, and environmental monitoring. After the implementation of these measures and their progressive refinement by plant management, the factory had no further linked cases (clusters) or outbreaks for the following 198 days. The tailored approach to risk mitigation adopted in this meat processing plant shows that generic risk mitigation measures, as recommended by public health authorities, can be successfully adapted and optimized by designated plant emergency response teams.

DFWED/Food Safety

Multistate Salmonella infection outbreaks in United States, 2006 to 2020

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Foodborne and pet-borne Salmonella infectious diseases have become a major public health problem in the United States. By collecting the data and information of the epidemiological investigations of 153 Salmonella multistate foodborne disease (SMSFBD) outbreaks and 34 Salmonella multistate pet-borne disease (SMSPBD) outbreaks in the United States from 2006 to 2020, we analyzed the distribution of Salmonella serotypes, characteristics of disease burden, food attribution and the corresponding response outcomes, and described the trend of changes in food consumption of processed food among different groups in the United States at different social-economic development stages. We also observed that a series of lifestyle changes, such as passive reduction of food exposure risk caused by decreasing social activities and food procurement frequency and increased home stay time due to coronavirus disease 2019 (COVID-19) pandemic. New backyard poultry raising which was popular from 2018 might be potential cause of an outbreak of SMSPBD with the most extensive coverage, the largest number of cases and the most complex Salmonella serotype in the United States in 2020. The results showed that it is necessary to learn from the active surveillance strategies and experiences in the prevention and control of SMSFBD and SMSPBD outbreaks in developed countries to establish the tailored food and cultivation early warning system based on local epidemiological characteristics of the diseases, capacity of the diseases control and prevention, economic and social development level to response the rising challenges of new type salmonellosis.

Essential Workers/Food/Farm/Ag/Migrant

Vaccinations for migrants during and beyond the COVID-19 pandemic

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Issue Migrants have suboptimal vaccination coverage compared to the general population in destination countries due to several factors -administrative barriers or lack of legal entitlements to health -health system barriers (language, lack of cultural sensitivity and community engagement capacity, vaccination costs) -lack of trust in the health system and misconceptions about vaccines due to misinformation or beliefs Problem Countries should develop national policies and ensure an inclusive, free of charge and proactive vaccination offer to migrants, irrespective of their legal status;and to extend this approach beyond the current pandemic and the sole COVID-19 vaccine Results To achieve COVID-19 global herd immunity all population groups, including migrants, needs to access vaccination. Tailored vaccination strategies, once devised, shall be applied to routine national vaccination plan to tackle health inequalities Lessons The following actions shall be implemented at national level Action 1. Develop tailored and equitable approaches for PH vaccination services targeting migrants through: -free of charge access -decentralization and outreach capacity of the health system -innovative service delivery models (mobile clinics, combined health services, mass vaccination) -health personnel and migrants participatory approach and engagement strategies Action 2. Increase staff engagement through: - increasing health personnel's difference sensitivity -strengthening health personnel's communication capacities Action 3. Increase migrants' health and vaccine literacy through: -establishing vaccine literacy education programmes and strategies -offering health promotion educational interventions Action 4. Monitor progress of inclusive vaccination offer by: -setting strategic goals, targets and indicators for national vaccination plans -expanding immunization information systems to monitor vaccination coverage, with appropriate disaggregation by migration status core variables Key messages Explicitly and proactively include migrants and displaced communities in vaccination plans and set up, test and implement new approaches in primary prevention and vaccination services. Extend this approach beyond the current pandemic and the sole COVID-19 vaccine in order to enhance preparedness to present and future health threats.

'Stressed, uncomfortable, vulnerable, neglected': a qualitative study of the psychological and social impact of the COVID-19 pandemic on UK frontline keyworkers. <https://dx.doi.org/10.1136/bmjopen-2021-050945>

OBJECTIVES: Non-healthcare keyworkers face distinct occupational vulnerabilities that have received little consideration within broader debates about 'essential' work and psychological distress during the COVID-19 pandemic. The aim of this study was therefore to explore the impact of the pandemic on the working lives and mental health and well-being of non-healthcare keyworkers in the UK. DESIGN: In-depth, qualitative interviews, analysed using a reflexive thematic analysis. SETTING: Telephone or video call interviews, conducted in the UK between September 2020 and January 2021. PARTICIPANTS: 23 participants aged 26-61 (mean age=47.2) years employed in a range of non-healthcare keyworker occupations, including transport, retail, education, postal services, the police and fire services, waste collection, finance and religious services. RESULTS: Keyworkers experienced adverse psychological effects during the COVID-19 pandemic, including fears of COVID-19 exposure, contagion and subsequent transmission to others, especially their families. These concerns were often experienced in the context of multiple exposure risks, including insufficient personal protective equipment and a lack of workplace mitigation practices. Keyworkers also described multiple work-related challenges, including increased workload, a lack of public and organisational recognition and feelings of disempowerment. CONCLUSIONS: In efforts to reduce psychosocial concerns among non-healthcare keyworkers, there is a

need for appropriate support during the COVID-19 pandemic and in preparation for other infections (eg, seasonal influenza) in the future. This includes the provision of psychological and workplace measures attending to the intersections of personal vulnerability and work conditions that cause unique risks and challenges among those in frontline keyworker occupations.

Impact of COVID-19 on migrant populations in high-income countries: a systematic review

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Background Migrants in high-income countries (HICs) may have been disproportionately affected by the COVID-19 pandemic, yet the extent to which they are impacted, and their predisposing risk factors, are not clearly understood. We did a systematic review to assess clinical outcomes, indirect health and social impacts, and key risk factors in migrants. **Methods** Our systematic review following PRISMA guidelines (PROSPERO CRD42020222135) identified peer-reviewed and grey literature relating to migrants (foreign-born) and COVID-19 in 82 HICs. Primary outcomes were cases, hospitalisations and deaths from COVID-19 involving migrants; secondary outcomes were indirect health and social impacts and risk factors. **Results** 3016 data sources were screened with 158 from 15 countries included in the analysis. We found migrants are at increased risk of SARS-CoV-2 infection and are over-represented among cases (e.g. constituting 42% of cases in Norway [to 27/4/2020], 26% in Denmark [to 7/9/2020], and 32% in Sweden [to 7/5/2020]); some datasets from Europe show migrants may be over-represented in deaths with increased all-cause mortality in migrants in some countries in 2020. Undocumented migrants, migrant health and care workers, and migrants housed in camps have been especially affected, with certain nationality groups disproportionately impacted. Migrants experience a range of risk factors for COVID-19, including high-risk occupations, overcrowded accommodation, and barriers to healthcare including inadequate information, language barriers, and reduced entitlement. **Conclusions** Migrants in HICs are at high risk of COVID-19, with a range of specific risk factors that have not been well-considered in the public health response to date. These data are of immediate relevance to the policy response to the pandemic, with strategies urgently needed to reduce transmission. Migrant populations must also be better considered in national plans for COVID-19 vaccination roll-out. **On behalf of ESGITM Key messages** Migrants in high-income countries may be disproportionately represented in COVID-19 infections and deaths, with higher levels of many vulnerabilities and risk factors. Migrants must be better included in all aspects of the pandemic response, including vaccination roll-out.

COVID-19 and systemic racism pandemics impact daily life for immigrant/refugees, Minneapolis, USA

<https://doi.org/10.5334/aogh.3411>

Background: The pandemics of COVID-19 and systemic racism have a deleterious impact on the daily life experiences and health for populations of color. The experiences are compounded for immigrant/refugee communities that may have other barriers such as English language literacy or trauma. Cumulative stress due to everyday racism is harmful for health. **Objectives:** This study describes the impact of day-to-day lived experiences of Karen, Somali, and Latinx communities during the COVID-19 pandemic and aftermath of the police murder of George Floyd in the Minneapolis/St. Paul metro area. **Methods:** In-depth interviews were conducted over three weeks in September and October 2020 to understand the daily life experiences of Karen, Somali and Latinx adults drawn from community contacts during the COVID-19 pandemic and the aftermath of the police murder of George Floyd. Interviewers were bilingual and from the communities they interviewed. Nine questions were asked, ranging from their knowledge of COVID-19, prevention practices, experiences during shelter-in-place, and the perceptions of the police murder of George Floyd. **Qualitative analysis** included transcript review, coding facilitated by Atlas.ti Cloud software, summaries, and validation by interviewers. **Findings:** Thirty-two adults were interviewed (Latinx = 10, Karen = 10, Somali = 12). One-third were in

person per participant request and complying with COVID-19 precautions, and the remainder were remote. The average age recorded was 37 years (range 20–66 years), 43.8% males and 56.3% females. Respondents reported experiences of discrimination and systemic racism while engaging in daily life activities, including accessing foods and common goods, school, work, transportation, and healthcare, all of which were exacerbated by COVID-19 and the police murder of George Floyd. Conclusions: Immigrant/refugee communities of color in Minneapolis/St. Paul face daily experiences of racism that were compounded by the events of 2020. Discrimination and systemic racism contribute to the persistent health inequities among populations of color. © 2021 The Author(s).

Other

How COVID-19 Exposed Water Supply Fragility in Florida, USA

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Healthcare demand for liquid oxygen during the COVID-19 pandemic limited the availability of oxygen needed for ozone disinfection of drinking water in several urban areas of Florida. While the situation reduced the state's capacity to provide normal drinking water treatment for millions of people, calls for water conservation during the emergency period resulted in virtually no change in water consumption. Here, we point out that 38–40% of the potable water produced by one of the major utilities in Florida is not used for drinking water but instead is used for outdoor landscape irrigation. This suggests that emergency-level calls for reduced water use could have been made if outdoor irrigation was limited, but we present data showing that there was little change in public behavior, and the state was unable to meet necessary water use reductions during the emergency. This inability to meet short-term emergency water conservation needs foretells a long-term lack of resilience against other global change scenarios and suggests that much work is still needed to build resilience into Florida's water future. We conclude this Viewpoint paper by calling for more urgent sociohydrological research to understand the coupled human-natural drivers of how water supplies respond to global change.

SARS-CoV-2 Cumulative Incidence and Period Seroprevalence: Results From a Statewide Population-Based Serosurvey in California.

<https://dx.doi.org/10.1093/ofid/ofab379>

Background: California has reported the largest number of coronavirus disease 2019 (COVID-19) cases of any US state, with more than 3.5 million confirmed as of March 2021. However, the full breadth of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) transmission in California is unknown as reported cases only represent a fraction of all infections. Methods: We conducted a population-based serosurvey, utilizing mailed, home-based SARS-CoV-2 antibody testing along with a demographic and behavioral survey. We weighted data from a random sample to represent the adult California population and estimated period seroprevalence overall and by participant characteristics.

Seroprevalence estimates were adjusted for waning antibodies to produce statewide estimates of cumulative incidence, the infection fatality ratio (IFR), and the reported fraction. Results: California's SARS-CoV-2 weighted seroprevalence during August-December 2020 was 4.6% (95% CI, 2.8%-7.4%). Estimated cumulative incidence as of November 2, 2020, was 8.7% (95% CrI, 6.4%-11.5%), indicating that 2 660 441 adults (95% CrI, 1 959 218-3 532 380) had been infected. The estimated IFR was 0.8% (95% CrI, 0.6%-1.0%), and the estimated percentage of infections reported to the California Department of Public Health was 31%. Disparately high risk for infection was observed among persons of Hispanic/Latinx ethnicity and people with no health insurance and who reported working outside the home. Conclusions: We present the first statewide SARS-CoV-2 cumulative incidence estimate among

adults in California. As of November 2020, ~1 in 3 SARS-CoV-2 infections in California adults had been identified by public health surveillance. When accounting for unreported SARS-CoV-2 infections, disparities by race/ethnicity seen in case-based surveillance persist.

The impact of behavioural risk factors on communicable diseases: a systematic review of reviews.

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BACKGROUND: The coronavirus (COVID-19) pandemic has highlighted that individuals with behavioural risk factors commonly associated with non-communicable diseases (NCDs), such as smoking, harmful alcohol use, obesity, and physical inactivity, are more likely to experience severe symptoms from COVID-19. These risk factors have been shown to increase the risk of NCDs, but less is known about their broader influence on communicable diseases. Taking a wide focus on a range of common communicable diseases, this review aimed to synthesise research examining the impact of behavioural risk factors commonly associated with NCDs on risks of contracting, or having more severe outcomes from, communicable diseases. **METHODS:** Literature searches identified systematic reviews and meta-analyses that examined the association between behavioural risk factors (alcohol, smoking, illicit drug use, physical inactivity, obesity and poor diet) and the contraction/severity of common communicable diseases, including infection or associated pathogens. An a priori, prospectively registered protocol was followed (PROSPERO; registration number CRD42020223890). **RESULTS:** Fifty-three systematic reviews were included, of which 36 were also meta-analyses. Reviews focused on: tuberculosis, human immunodeficiency virus, hepatitis C virus, hepatitis B virus, invasive bacterial diseases, pneumonia, influenza, and COVID-19. Twenty-one reviews examined the association between behavioural risk factors and communicable disease contraction and 35 examined their association with communicable disease outcomes (three examined their association with both contraction and outcomes). Fifty out of 53 reviews (94%) concluded that at least one of the behavioural risk factors studied increased the risk of contracting or experiencing worse health outcomes from a communicable disease. Across all reviews, effect sizes, where calculated, ranged from 0.83 to 8.22. **CONCLUSIONS:** Behavioural risk factors play a significant role in the risk of contracting and experiencing more severe outcomes from communicable diseases. Prevention of communicable diseases is likely to be most successful if it involves the prevention of behavioural risk factors commonly associated with NCDs. These findings are important for understanding risks associated with communicable disease, and timely, given the COVID-19 pandemic and the need for improvements in future pandemic preparedness. Addressing behavioural risk factors should be an important part of work to build resilience against any emerging and future epidemics and pandemics.

The effect of allergy and asthma as a comorbidity on the susceptibility and outcomes of COVID-19.

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The coronavirus disease 2019 (COVID-19) pandemic causes an overwhelming number of hospitalization and deaths with a significant socioeconomic impact. The vast majority of studies indicate that asthma and allergic diseases do not represent a risk factor for COVID-19 susceptibility nor cause a more severe course of disease. This raises the opportunity to investigate the underlying mechanisms of the interaction between an allergic background and SARS-CoV-2 infection. The majority of patients with asthma, atopic dermatitis, allergic rhinitis, chronic rhinosinusitis, food and drug allergies exhibit an overexpression of type 2 immune and inflammatory pathways with the contribution of epithelial cells, innate lymphoid cells (ILC), dendritic cells, T cells, eosinophils, mast cells, basophils and the type 2 cytokines interleukin (IL)-4, IL-5, IL-9, IL-13, and IL-31. The potential impact of type 2 inflammation-related allergic diseases on susceptibility to COVID-19 and severity of its course have been reported. In this review, the prevalence of asthma and other common allergic diseases in COVID-19 patients is addressed. Moreover, the impact of allergic and non-allergic asthma with different severity and control

status, currently available asthma treatments such as inhaled and oral corticosteroids, short- and long-acting β 2 agonists, leukotriene receptor antagonists and biologicals on the outcome of COVID-19 patients is reviewed. In addition, possible protective mechanisms of asthma and type 2 inflammation on COVID-19 infection, such as the expression of SARS-CoV-2 entry receptors, antiviral activity of eosinophils, cross-reactive T cell epitopes are discussed. Potential interactions of other allergic diseases with COVID-19 are postulated, including recommendations for their management.

Socio-economic disparities in self-reported, tested, and diagnosed COVID-19 status

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Backgrounds Studies in clinical settings showed a potential relationship between Socio-Economic Status (SES) and lifestyle factors with COVID-19, but it is still unknown whether this holds in the general population. In this study we investigated the associations of SES with self-reported, tested, and diagnosed COVID-19 status in the general population. **Methods** Participants were 49,474 men and women (46 ± 12 yrs) residing in the Northern Netherlands from the Lifelines cohort study. SES indicators and lifestyle factors (i.e., smoking status, physical activity, alcohol intake, diet quality, sleep time, and TV watching time) were assessed by questionnaire from the Lifelines Biobank. Self-reported, tested, and diagnosed COVID-19 status were obtained from the Lifelines COVID-19 questionnaire. **Results** There were 4,711 participants who self-reported having had a COVID-19 infection, 2,883 participants tested for COVID-19, and 123 positive cases diagnosed in this study population. After adjustment for age, sex, lifestyle factors, BMI, and ethnicity, we found that participants with low education or low income were less likely to self-report a COVID-19 infection (OR [95%CI]: low education 0.78 [0.71-0.86]; low income 0.86 [0.79-0.93]), and be tested for COVID-19 (OR [95%CI]: low education 0.58 [0.52-0.66]; low income 0.86 [0.78-0.95]) compared with high education or high income groups, respectively. **Conclusions** Our findings suggest that the low SES group was the most vulnerable population to COVID-19 infection and self-reported and tested COVID-19 status in the general population was better predicted by SES than by lifestyle factors. **Key messages** This study innovatively included a broader range of COVID-19 status, including self-reported and tested COVID-19 status, to better understand COVID-19 related socio-economic factors. This study added evidence to the socio-economically patterned COVID-19 status in a general population instead of in clinical settings.