FOOD AND NUTRITION IN COLLECTIVE HEALTH

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- Raphaella Leão Marra1
- Milena Serenini Bernardes²
- Camila Maciente Souza³
- Maysa Helena de Aguiar Toloni¹
- ¹ Universidade Federal de Lavras, Faculdade de Ciências da Saúde, Departamento de Nutrição. Lavras, MG, Brasil.
- ² Universidade Federal de São Paulo, Escola Paulista de Medicina, Programa de Pós-Graduação em Pediatria e Ciências Aplicadas em Pediatria. São Paulo, SP, Brasil.
- ³ Universidade Federal de Lavras, Faculdade de Ciências da Saúde, Programa de Pós-Graduação em Nutrição e Saúde. Lavras, MG, Brasil..

Correspondence

Raphaella Leão Marra raphaellalmarra@gmail.com

Mapping of health, food and nutrition education actions during the period of social distancing from the Covid-19 pandemic

Mapeamento das ações de educação em saúde, alimentação e nutrição no período de distanciamento social pela pandemia de Covid-19

Abstract

Introduction: In December 2019, a new infectious virus called Sars-Cov-2 and related to Severe Acute Respiratory Syndrome was identified in China. The World Health Organization (WHO) designated as Covid-19 the infection caused by this virus. Faced with the rapid spread, on March 11, 2020, the WHO declared a pandemic state and demanded that measures of social isolation were taken to prevent its spread. In this scenario, several changes occurred in people's daily lives, including in relation to food. Objective: This study aimed to characterize online education actions related to health, food and nutrition during the social isolation due to the Covid-19 pandemic, to describe them according to the target audience, objectives and media. Methods: Exploratory study, which includes researches on health, food and nutrition actions carried out during the new coronavirus pandemic on official digital platforms. Results: Fifty-three identified actions met the study's inclusion criteria and were divided into four major themes: Hygiene and food handling; Specific pathologies of interest in the area of Food and Nutrition; food (in)security, breastfeeding and pregnancy; and Food and nutrition education and guidance for nutrition professionals in the area of nutrition. *Conclusion*: It is necessary to develop communication and health education instruments, aiming to support professionals and other individuals during health practices. In this context, the materials exposed in this study are important to soften the consequences of the pandemic.

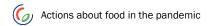
Keywords: Pandemic. Covid-19. Social isolation. Food. Social media.

Resumo

Introdução: Em dezembro de 2019, um novo vírus infeccioso denominado Sars-Cov-2 e relacionado à Síndrome Respiratória Aguda Grave foi identificado na China. A Organização Mundial da Saúde (OMS) designou como Covid-19 a infecção causada por esse vírus. Diante da rápida propagação, no dia 11 de março de 2020, a OMS declarou estado de pandemia e exigiu que medidas de isolamento social fossem tomadas com o intuito de evitar sua disseminação. Nesse cenário, várias mudanças ocorreram no cotidiano das pessoas, inclusive em relação à alimentação. Objetivo: O objetivo deste estudo foi caracterizar as ações de educação online relacionadas a saúde, alimentação e nutrição durante o isolamento social devido à pandemia da Covid-19, com o intuito de descrevê-las conforme público-alvo, objetivos e meios de comunicação. Métodos: Estudo exploratório, que dispõe de pesquisas sobre ações em saúde, alimentação e nutrição realizados durante a pandemia do novo coronavírus em plataformas digitais oficiais. Resultados: Cinquenta e três ações identificadas atenderam aos critérios de inclusão do estudo e foram divididas em quatro grandes

temas: Higiene e manipulação de alimentos; Patologias específicas de interesse da área de Alimentação e Nutrição; (In)segurança alimentar, aleitamento materno e gestação; e Educação alimentar e nutricional e orientação para profissionais da área de nutrição. *Conclusão*: É necessário elaborar instrumentos de comunicação e educação em saúde, com o objetivo de apoiar profissionais e demais indivíduos durante as práticas de saúde. Nesse contexto, os materiais expostos no presente estudo são importantes para amenizar as consequências da pandemia.

Palavras-chave: Pandemia. Covid-19. Isolamento social. Alimentação. Meios de comunicação sociais.



INTRODUCTION

Covid-19 is an infectious disease caused by a virus belonging to the coronavirus family called SARS-CoV-2.1 The new coronavirus, identified in December 2019 in Wuhan, China, had its first confirmed case in Brazil on February 26th, 2020.2 Due to its easy dissemination, the Covid-19 outbreak has progressed to a pandemic stage, announced by the World Health Organization (WHO) after reaching 114 more countries.³

In the scenario of the rapid spread of the virus, preventive measures were taken under the guidance of the Ministério da Saúde (Ministry of Health), such as frequent hand hygiene with soap and water or gel alcohol, not sharing personal items, covering the nose and mouth when sneezing or coughing and maintain social distance. The social isolation measures established by decrees in the different municipalities of the country, based on the recommendations of the WHO and the Ministry of Health, had as a consequence the increase in the number of unemployed, both in the formal and informal sectors, which led to an unfavorable economic situation for a large part of the population. Several commercial establishments were closed and informal workers had their sales impaired, resulting in increased food and nutritional insecurity, especially for the most vulnerable populations. Thus, access to quality food and in sufficient quantity to meet the needs of individuals was compromised.

The decrease in the access to products from family farming, as a result of the difficulty in distribution, had a direct impact on the price, which favored the increase in demand for ultra-processed foods (UPA), which have a lower cost, low nutritional value and they have easy access.⁶ In addition, many individuals do not have the practice and cooking skills to prepare meals at home, since more and more are eaten outside the home, directly influencing the increase in the consumption of UPA and ready-to-eat.⁷

The act of eating is not only physiological, but also influenced by the external environment and emotions;⁸ in situations of stress and anxiety, common in extraordinary situations such as social isolation, the search for food can occur as a form of comfort, to compensate the emotional state.⁹ Generally, food eaten emotionally is more caloric, of more pleasant palatability and contains high amounts of sugar and fat in its composition. In this way, the UPA gains even more space in food. According to the Household Budget Survey (POF - 2017-2018), ultra-processed foods account for 18.4% of the calories of food purchased at home.¹⁰ In this scenario, online activities and documents are being developed that seek to guide the population concerning the eating habits in the period of social isolation due to Covid-19.

In front of a new disease, adaptations are needed in various daily activities, and access to information is essential. To meet this demand, and considering the logic of health promotion and disease prevention, several online activities and documents have been developed to guide both the population and health professionals about the disease, its risks and the care to be taken.

In this context, this study aimed to characterize the actions related to Food and Nutrition during the period of the Covid-19 pandemic in Brazil.

METHODOLOGY

This is a document review study, of an exploratory nature, which describes the online actions, available on official websites, related to the area of Food and Nutrition, developed during the period of social isolation in the Covid-19 pandemic, and which have as scope guidelines related to the new coronavirus.

The searches were carried out on digital platforms, being social networks of official agencies and websites of federal higher education institutions that have Nutrition courses or departments that research the area of Food and

Nutrition, as well as on the pages of the Federal Council of Nutritionists, Brazilian Association of Nutritionists and the Ministry of Health. Figure 1 shows the locations of the digital search, as well as their platforms.

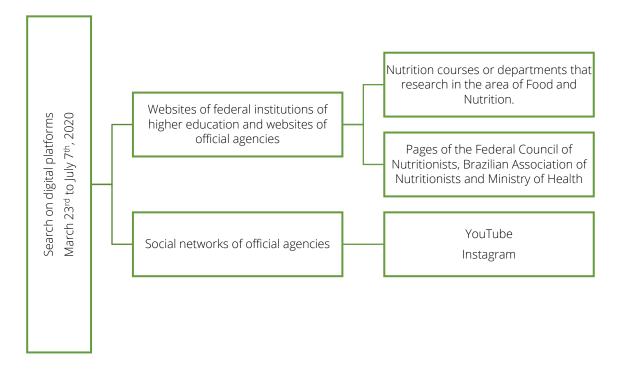


Figure 1. Flowchart of the search on digital platforms. Oliveira-MG, 2020.

The study inclusion criteria were: booklets, courses, documents produced with to guide the general population and health professionals, and webinars on the central theme of the pandemic by Covid-19. Productions from March 23rd, 2020 to July 7th, 2020, held in Brazil, were listed. The exclusion criteria were simple posts on websites and social networks of an orientation character and informative journalistic reports. To classify actions into themes, the document analysis technique was used to analyze the data found.

RESULTS

In the initial search, 72 actions were identified, among which 19 met the search criteria, but not inclusion criteria, and therefore were excluded, leaving 53 actions. The actions were classified into four major themes, which are relevant in the context of the pandemic related to Food and Nutrition. They are: i) Hygiene and food handling (Chart 1); ii) Specific pathologies of interest in the area of Food and Nutrition (Chart 2); iii) Food (in)security, breastfeeding and pregnancy (Chart 3); iv) Food and nutrition education and guidance for nutrition professionals (Chart 4).

Chart 1. Profile of the continuing education and health education actions related to food handling and hygiene. Oliveira-MG, 2020.

Institution	Means of communication	Theme	Description
Students of the Nutrition course at the Federal University of Acre (UFAC) supervised by Professor Alanderson Ramalho	Website of extension project Nutrinfo, Instagram page and Youtube channel	How to correctly use and dispose of the disposable mask? How to use the cloth mask (homemade)? Planning your purchases. I got home, now what? Protective measures when going to the supermarket	At this moment of the Covid-19 pandemic, #NutrinfoUfac joins the #UfacContraCoronavirus to disseminate, on social networks, information about hygiene habits; food and nutrition; and coronavirus prevention (Covid-19). https://www.instagram.com/nutrinfo_ufac/
Department of Nutrition, Federal University of Vale do Jequitinhonha and Mucuri (UFVJM)	Website of the Portal of the Federal University of Vale do Jequitinhonha and Mucuri (UFVJM)	Guidance on the nutritional value of the food and hygiene for fighting against Covid-19	The course Guidance on the Nutritional Value of Food and Hygiene for confrontation Covid-19 aims to provide guidance on the proper handling of the food, healthy diet and prevention measures against contagion. http://portal.ufvjm.edu.br/agendas/eventos/2020/orientacoes-sobre-o-valor-nutritivo-dos-alimentos-e-higiene
Students supervised by the professors of the Nutrition course at the Federal University of Rio Grande do Sul (UFRGS)	Website of the Federal University of Rio Grande do Sul - UFRGS	Go to the supermarket, how to plan? Personal, environmental and food hygiene; quarantine food handling and storage; eating behavior and social isolation Vitamin C and immunity Vitamin D.	Guidance cards present information about: going to the supermarket during this period; personal, environmental and food hygiene; food handling and storage; quarantine eating behavior; vitamins C and D. https://www.ufrgs.br/coronavirus/base/estudantes-de-nutricao-criammateriais-de-orientacao-sobre-alimentacao-no-isolamento-social/
Ministry of Health	Website with Regional Council of Nutritionists 6 th Region	From the shelves to the table: a practical guide on how to handle and use food properly	Material based on the Food Guide for the Brazilian Population, with tips on handling and using food properly, whose objective is to show that it is possible to maintain an adequate and healthy diet, avoiding the exaggerated consumption of ultra-processed foods. https://www.crn6.org.br/ministerio-da-saude-apresenta-dicas-de-manuseio-e-utilizacao-dos-alimentos-de-forma-adequada

Chart 1. Profile of the continuing education and health education actions related to food handling and hygiene. Oliveira-MG, 2020.(Cont.)

Institution	Means of communication	Theme	Description
Carvalho et al., 2020. Federal University of Paraíba (UFPB)	Website of the Federal University of Paraíba (UFPB)	Basic sanitary care during the home isolation in fighting covid-19	The booklet brings information such as what the new coronavirus is, the ways of transmission and, mainly, prevention, from personal hygiene care and safety protocol to avoid contamination when leaving the house. https://www.ufpb.br/ufpb/contents/noticias/professoras-da-ufpb-criam-cartilha-para-combater-informacoes-falsas-sobre-covid-19
Board of the School of Nutrition at the Federal University of Ouro Preto (UFOP)	Website of the School of Nutrition of the Federal University of Ouro Preto (UFOP)	Hygiene booklet for coronavirus elimination	Informative materials containing guidelines on how to prepare effective solutions against the coronavirus for sanitation and cleaning environments and utensils. https://enut.ufop.br/news/cartilha-de-orienta%C3%A7%C3%A3o-sobre-o-coronav%C3%ADrus
Viana et al., 2020. Federal University of Espírito Santo (UFES)	Website of the Department of Nutrition UFES	Food hygiene in Covid-19 times: what do you need to know?	The document deals with the care that ranges from the purchase, through the cleaning of packaging and fruit and vegetables, to the care of surfaces and utensils, to hand care and food preparation. http://coronavirus.ufes.br/sites/coronavirus.ufes.br/files/field/anexo/cartilha_higiene_de_alimentos2020.pdf
Paula et al., 2020. Federal University of Espírito Santo (UFES)	Website of the Department of Nutrition UFES	Care for food handlers in commercial establishments in times of Covid-19 pandemic	The document spreads good practices in food handling in commercial establishments. The aim is for the guidelines to help reduce or prevent the transmission of the new coronavirus and protect workers in the exercise of their profession. http://www.ufes.br/sites/default/files/anexo/covid_cartilha_cuidados_para_manipulacao_de_alimentos_em_estabelecimentos_comerciais.pdf
Larissa Paz - Student of the Nutrition course at the Federal University of Rio de Janeiro (UFRJ)	Website of the Nutritional Assessment Laboratory of the Federal University of Rio de Janeiro	The importance of hygiene of food and surfaces	Proper hygiene of both food and surfaces is essential to ensure our safety, and in this period of the Covid-19 pandemic, these precautions need to be redoubled in order to avoid contamination by the virus. https://lanutri.injc.ufrj.br/2020/04/29/covid-19-importancia-da-higienizacao-de-alimentos-e-superficies/

Chart 1. Profile of the continuing education and health education actions related to food handling and hygiene. Oliveira-MG, 2020.(Cont.)

Institution	Means of communication	Theme	Description
Students at the Federal University of Espírito Santo (UFES)	Website of the Department of Nutrition UFES	Nutrition research group advises on care with receiving and sanitizing food	The aim is to work on good practices in food handling, food safety and hygiene. http://coronavirus.ufes.br/conteudo/grupo-de-pesquisa-em-nutricao-orienta-sobre- cuidados-com-o-recebimento-e-higienizacao-de
Department of Nutrition, Federal University of Rio Grande do Norte (UFRN)	Website of the Federal University of Rio Grande do Norte (UFRN) Guidelines for food delivery service in the Covid-19 times		To help the consumers avoid contamination when ordering delivery, the 12-page booklet provides basic guidelines for the consumer, delivery person and commercial establishments, considering the situation of Covid-19, as well as the situation of production and distribution of food. https://www.ufrn.br/imprensa/noticias/34508/dnut-lanca-cartilha-com-orientacoes-sobre-delivery
Board of Food and Nutrition (DAN) of the Federal University of Pernambuco (UFPE)	Website of the Federal University of Pernambuco (UFPE)	Guidelines for the kitchen, shopping and eating	The document provides information on how to sanitize the kitchen and cooking utensils, how to go shopping and how to store perishable and non-perishable food. Also includes feeding tips. https://www.ufpe.br/documents/2732120/0/cartilha_alimentacao.pdf
Maria del Carmen Bisi Molina. Federal University of Espírito Santo (UFES)	Website of the Department of Nutrition UFES Healthy diet in the daily life of a quarantine (and beyond)		Article in which highlights the importance of proper nutrition for the maintenance and recovery of health. It also provides a list of important foods and nutrients, teaches how to sanitize food, and shares some recipes. http://coronavirus.ufes.br/sites/coronvirus.ufes.br/files/field/anexo/alimentacao_na_quarentena_300320.padf
A partnership between students and teachers from the UFBA School of Nutrition, the Tutorial Nutrition Education Program (PETNUT) and the Small Farmers Movement (MPA)	UFBA's PET Nutrition website	Nothing is lost, everything is cooked! - Utilization of food in times of coronavirus	In the booklet you will find, in addition to information on Good Food Manufacturing Practices, information on labeling, accessible and low-cost recipes, which were previously tested or consolidated with popular knowledge. http://www.petnut.nut.ufba.br/nada-se-perde-tudo-se-cozinha

Chart 2. Profile of the continuing education and health education actions aimed at pathologies. Oliveira-MG, 2020.

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Institution	Means of communication	Theme	Description
Viviane Sahade –Federal University of Bahia (UFBA)	Telessaúde Bahia Youtube Channel	Advocacy of cardioprotective nutrition	Nutrition, Covid-19 and cardioprotective diet, would you like to know more? Partnership between ENUFBA and the Health Department of the State of Bahia. https://www.youtube.com/watch?v=Q0tIN0Fd63g
Magalhães et al., 2020. School of Nutrition, Federal University of Bahia (UFBA	ENUFBA's Instagram page	Chronic kidney disease, nutrition and Covid-19	With the coronavirus pandemic, patients with chronic kidney disease must increase personal care to prevent the contagion, in addition to seeking medical and nutritional guidelines specific to CKD, as they are considered in the risk group for developing complications resulting from Covid-19. https://www.instagram.com/p/CBqdjisln_9/
Schroeder et al., 2020. Department of Nutrition, Federal University of Santa Catarina (UFSC)	Website of the Federal University of Santa Catarina (UFSC)	Personal care booklet against the new coronavirus (Covid-19) for people with a history of cancer	The purpose of the booklet is to inform, in a clear and objective way, the main personal care that must be practiced as means of reducing as much as possible the exposure to the source of infection (coronavirus) and improving the immune system. https://comportamentoalimentar.paginas.ufsc.br/cartilha-sobre-cuidados-pessoais-contra-a-covid-19/
Department of Nutrition, Federal University of Rio Grande do Norte (Denut/UFRN)	Website of the Federal University of Rio Grande do Norte (UFRN)	Covid-19 fight: health care and nutritional guidelines for people with heart failure	The booklet aims to inform people who suffer from heart failure about health care and nutrition. The text seeks to provide guidance on ways to reduce sources of contamination and on the consumption of foods whose nutrients help defend the body against infections. https://ufrn.br/imprensa/noticias/35558/denut-divulga-cartilha-voltada-para-pessoas-com-insuficiencia-cardiaca
Junqueira et al., 2020. School of Nutrition, Federal University of the State of Rio de Janeiro (UNIRIO)	Website of the Federal University of the State of Rio de Janeiro (UNIRIO)	Chronic kidney disease in times of Covid 19: nutritional recommendations	Educational material designed and developed for you, people with chronic kidney disease, with the aim of helping with nutritional treatment in the days of Covid-19, as well as increasing your knowledge about food and nutrition in chronic kidney disease. http://www.unirio.br/covid/material-educativo/doenca-renal-cronica-em-tempos-de-covid-19-recomendacoes-nutricionais
Peres et al., 2020. Federal University of Rio de Janeiro (UFRJ)	Website of the Josué de Castro Nutrition Institute (INJC)	Nutritional guidelines for patients with liver disease in the Covid 19 pandemic	Quality material to address nutritional guidelines for patients with liver disease in the Covid 19 pandemic. http://injc.ufrj.br/e-book-figado-covid19/
Josué de Castro Nutrition Institute (INJC)	Website of the Federal University of Rio de Janeiro (UFRJ)	How to take care of your heart in the Covid-19 pandemic	Free <i>e-book</i> with general medical and nutritional guidelines, with an emphasis on protecting heart patients with tips on how to follow a proper diet, handle food, maintain regular sleep, among other measures for a better quality of life. https://ufrj.br/noticia/2020/04/01/coronavirus-como-cuidar-do-seu-coracao-durante-pandemia

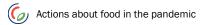


Chart 2. Profile of the continuing education and health education actions aimed at pathologies. Oliveira-MG, 2020 (Cont.)

Institution	Means of communication	Theme	Description
Graduatings of the Nutrition course at the Federal University of Espírito Santo (UFES)	Website of the Department of Nutrition UFES	Nutrition in times of coronavirus: guidelines for individuals with diabetes, hypertension and asthma	The Research Group on Nutrition, worker's health and Chronic Diseases (GEMNUT) has developed nutritional guidelines for individuals with diabetes, hypertension and asthma, in order to maintain a good nutritional status in times of coronavirus. http://www.nutricao.ufes.br/conteudo/nutricao-em-epoca-de-coronavirus-orientacoes-para-individuos-com-diabetes-hipertensao-e
Graduandos do curso de Nutrição da Universidade Federal do Espírito Santo (UFES)	Sítio eletrônico do Departamento de Nutrição da UFES	Nutrição em época de coronavírus: orientações para indivíduos com diabetes, hipertensão e asma	O Grupo de Pesquisa em Nutrição, Saúde do Trabalhador e Doenças Crônicas (GEMNUT) elaborou orientações nutricionais para indivíduos portadores de diabetes, hipertensão e asma, a fim de manterem um bom estado nutricional em época de coronavírus. http://www.nutricao.ufes.br/conteudo/nutricao-em-epoca-de-coronavirus-orientacoes-para-individuos-com-diabetes-hipertensao-e
Monteiro et al., 2020. Department of Nutrition, School of Nursing, UFMG	Website of the School of Nursing at the Federal University of Minas Gerais (UFMG)	Nutrition extension project prepares educational materials about Covid-19 for people with mental suffering	In times of the new coronavirus pandemic, changes are taking place in all spheres of knowledge. This is the case of the extension project "Nutritional Education for People with Mental Suffering", which is currently focused on developing educational materials for the target audience about prevention and care for Covid-19. http://www.enf.ufmg.br/index.php/noticias/1801-projeto-de-extensao-da-nutricao-elabora-materiais-educativos-sobre-a-covid-19-para-os-portadores-de-sofrimento-mental

Chart 3. Profile of the continuing education and health education actions with the theme of food (in)security, pregnancy and breastfeeding. Oliveira-MG, 2020.

Institution	Means of communication	Theme	Description
Nogueira et al., 2020. Federal University of Rio Grande do Norte -	Website of the Regional Council of Nutritionists 6 th	Guidelines for guaranteeing school feeding in Covid-19	Guide with the aim of offering information that can help the subjects involved in the execution of the PNAE, especially in the Northeast, during the coronavirus pandemic (Covid-19).
UFRN	Region	times	https://www.crn6.org.br/ufrn-publica-cartilha-sobre-o-pnae-em-tempos-de-pandemia
Louzada et al., 2020. College of Public Health, University of São Paulo (USP)	Youtube channel of the College of Public Health of the University of São Paulo – USP	Food and nutritional insecurity in times of Covid-19	Inequality in the population's access to adequate and healthy food by the population has intensified during the pandemic, in addition to the challenges for the production and distribution of food from family farming. What strategies have been taken and what are the challenges for carrying out actions to fight hunger? https://www.youtube.com/watch?v=PhZejewNlz4

Chart 3. Profile of the continuing education and health education actions with the theme of food (in)security, pregnancy and breastfeeding. Oliveira-MG, 2020.

Institution	Means of communication	Theme	Description
Freitas et al., 2020. School of Nutrition, Federal University of Bahia (UFBA).	Youtube channel of the School of Nutrition, UFBA	Webinar: PNAE and family farming in the context of the Covid-19 pandemic	The theme of the National School Feeding Program - PNAE and the acquisition of Family Farming at this time of the Covid-19 pandemic will be addressed by two professionals in the area, agronomist and nutritionist, with the aim of helping technicians involved in this action from the municipal level. https://www.youtube.com/watch?v=6AAAEIJpBnw
Academic Directory of Nutrition at the Federal University of Uberlândia (DANUT - UFU)	Website of the College of Medicine of the Federal University of Uberlândia (UFU)	Nutrition in times of SARS COV-2 pandemic	The aim of the event will be to discuss the effects of the pandemic by the new coronavirus on the routine of nutritionists and on the population's eating habits, as well as its effects on the economy and public policies. http://www.famed.ufu.br/acontece/2020-05-danut-promove-v-jornada-de-nutricaoi-jornada-de-nutricao-online
Organizing Committee of the I National, Popular, Autonomous Conference: for Rights, Democracy and Sovereignty and Food and Nutritional Security	Website of the Federal Council of Nutritionists	Ensuring the right to food and fighting hunger in times of coronavirus: life and human dignity first!	Facing the extremely serious context of the global pandemic caused by the new coronavirus, which affects life in a concrete and extremely drastic way, we appeal for the Brazilian population's rights to health and food to be respected, protected and guaranteed. https://www.cfn.org.br/wp-content/uploads/2020/03/Recomenda%C3%A7%C3%B5es-SAN-e-Combate-a-fome-em-tempos-de-Coronav%C3%ADrus-correto.pdf-2.pdf
Penha et al, 2020. Fluminense Federal University (UFF)	Website of the Fluminense Federal University (UFF)	Food safety and the new coronavirus	Do you know what the new coronavirus is? The Research and Extension Group on Food Practices - PRAS prepared informative material about the new virus and its possible implications in food security. http://www.uff.br/?q=seguranca-alimentar-e-o-novo-coronavirus
Valéria Cristina Soares Furtado Botelho. Federal University of the State of Rio de Janeiro	Website of the Federal University of the State of Rio de Janeiro (UNIRIO)	Guide with nutritional guidelines for pregnant and postpartum women on Covid-19: food safety in times of pandemic by coronavirus	The Guide contains nutritional guidelines for pregnant and postpartum women about Covid-19 and also guidelines on food security in times of porc pandemic, with updated information based on scientific evidence. http://www.unirio.br/ccbs/nutricao/noticias/niden-divulga-guia-orientacao-nutriconal-gestante-e-puerpera-sobre-covid-19-prof-valeria-c-s-furtado-botelho
Gonzalez et al, 2020. Federal University of the State of Rio de Janeiro (UNIRIO)	Website of the Federal University of the State of Rio de Janeiro (UNIRIO)	Nutrition in pregnancy and lactation in the prevention of the covid-19	Educational material designed and developed for pregnant women, aims to help with nutrition in times of Covid-19, as well as increase knowledge about food and nutrition during pregnancy and lactation. http://www.unirio.br/ppgsan/arquivos/e-book-nutricao-gestacao-e-covid-19/view
Viola et al., 2020. Federal University of Piauí (UFPI)	Website of the Federal University of Piauí (UFPI)	Guidelines for breastfeeding in times of Covid-19	The aim of the booklet is to provide guidance on breastfeeding in times of a Covid-19 pandemic. The booklet is aimed at the population of postpartum women and health professionals. https://ufpi.br/noticias-coronavirus/36189-ufpi-lanca-cartilha-sobre-amamentacao-em-tempos-da-pandemia-de-covid-19

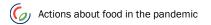


Chart 4. Profile of the continuing education and health education actions, food and nutrition education and guidance for professionals. Oliveira-MG, 2020

Institution	Means of communication	Theme	Description
Federal Council of Nutritionists	Website of the Federal Council of Nutritionists	Good practices for the performance of nutritionists and technicians in nutrition and dietetics during the new coronavirus pandemic (Covid-19)	The recommendations presented aim to protect the health of the professionals in the area and the population in general, establish working conditions for those involved in essential activities aimed at fighting the pandemic, contribute to safety measures and ensure the excellence of nutritional assistance and diet therapy. https://www.cfn.org.br/wp-content/uploads/2020/03/nota_coronavirus_3-1.pdf
Department of Nutrition, Federal University of Rio Grande do Norte (UFRN)	Website of the Brazilian Association of Nutrition – ASBRAN	Nutritional guidelines for fighting the Covid- 19	The booklet aims to provide guidance on the importance of nutrition during the new coronavirus pandemic period. It provides information on the use of probiotics and antioxidants, the importance of vitamins and minerals, and guidance on food hygiene and conservation. https://www.asbran.org.br/storage/arquivos/CARTILHAUFRN.pdf
Soares et al., 2020. Federal University of Espírito Santo (UFES)	Website of the Department of Nutrition UFES	Emotional eating: how to deal with the relationship between food and emotions in times of social distance?	Booklet with guidelines to help in the search for a balance between food and emotion. http://www.nutricao.ufes.br/conteudo/comer-emocional-como-lidar-com-relacao-entre-comida-e-emocoes-em-tempos-de-distanciamento
Viana et al., 2020. Federal University of Espírito Santo (UFES)	Website of the Department of Nutrition UFES	Coronavirus, myths and truths: what do you need to know about food?	The booklet is intended to expose the myths and truths about Covid-19 and food. http://nutricao.ufes.br/conteudo/coronavirus-mitos-e-verdades-o-que-e-preciso-saber-sobre-alimentacao
Lima et al., 2020. Federal University of Piauí (UFPI)	Website of the Federal University of Piauí (UFPI)	Food in times of pandemic	Thinking about the care that must be intensified during the pandemic, a team of nutritionists from the UFPI University Restaurant developed a nutritional instruction material for the practice of healthy diet. https://ufpi.br/ultimas-noticias-ufpi/36017-nutricionistas-do-restaurante-universitario-da-ufpi-desenvolvem-material-de-orientacao-nutricional-para-alimentacao-durante-a-pandemia-do-covid-19

Chart 4. Profile of the continuing education and health education actions, food and nutrition education and guidance for professionals. Oliveira-MG, 2020 (Cont.)

Institution	Means of communication	Theme	Description
Residents of the Residency Program in Nutrition, Hospital das Clínicas, UFPE.	Website of the Federal University of Pernambuco (UFPE)	Nutrition and Covid-19	Guidance and tips on food during the new coronavirus pandemic. Healthy diet practices; how to strengthen the immune system through food; tips for food purchases, among other information, are in the material. https://www.ufpe.br/covid-19/ascom/-/asset_publisher/hdBGtsdgB5Ee/content/residentes-produzem-folder-com-dicas-de-alimentos-para-aumentar-a-imunidade/40615
Department of Nutrition, Federal University of Juiz de Fora (UFJF)	Website of the Federal University of Juiz de Fora	Food care in times of pandemic by Covid-19	The document provides guidelines that help in choosing natural or minimally processed foods, and instructions for food management and the main sources of nutrients such as vitamins C, D, E, magnesium and iron. https://www2.ufjf.br/noticias/2020/04/27/departamento-de-nutricao-esclarece-cuidados-com-a-alimentacao-em-tempos-de-pandemia/
Professors of the Nutrition course at the Federal University of Amazonas (UFAM)	Website of the Institute of Health and Biotechnology UFAM	Digital guidebook on nutrition and health in the Covid-19 pandemic	Aiming to guide the Amazonian population about eating behavior and health aspects in the pandemic, the manual highlights the food care, from the purchase to the consumption, with a focus on preventing the spread of pathogens, such as the virus that transmits the Covid-19. https://isb.ufam.edu.br/ultimas-noticias/346-manual-de-orientacoes-sobre-nutricao-e-saude-napandemia-de-covid-19.html
Vítolo et al., 2020. Federal University of Health Sciences of Porto Alegre (UFCSPA)	Marcia Vitolo's Instagram page	Impact of ultra- processed products on children's health	Food choices may reflect in adult life on the formation of eating habits, in addition to health outcomes. Several joint actions are needed, such as having food environments that do not promote the consumption of ultra-processed products, regulation of canteens so that there is no marketing of these foods and avoid exposing children to advertisements. https://www.instagram.com/p/CA_Y4OqgOXh/
College of Nutrition at the Federal University of Alagoas (UFAL)'s students	FANUT UFAL Youtube Channel	Prose with affection and science: Evidence and actions in health	In order to maintain a social and affective bond with the university community, the purpose of this outreach event goes beyond the discussion of topics that are absolutely relevant to the moment and the science of nutrition and health, to bring students, teachers and technicians closer to academic activities and scientific update in health. https://www.youtube.com/channel/UC_87ZnVaR2eiUXnvp5xakNg/videos

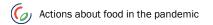
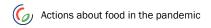


Chart 4. Profile of the continuing education and health education actions, food and nutrition education and guidance for professionals. Oliveira-MG, 2020 (Cont.)

Institution	Means of communication	Theme	Description
Brazilian Institute of Consumer Protection - IDEC	Website of the Brazilian Institute of Consumer Protection – IDEC	Where to find real food during the coronavirus pandemic?	Idec created the Real Food platform. The action's aim is also to support local economies, in all the regions of Brazil, and encourage the purchase of food directly from those who produce. In the tool, you will find products from family farming, small producers and organic and/or agroecological production systems. https://feirasorganicas.org.br/comidadeverdade/
Maternal and Child Nutritional Assistance (AMInutri) - Federal University of Rio Grande do Norte (UFRN)	Website of the Federal University of Rio Grande do Norte (UFRN)	Let's play cooking	The booklet has nutritional information and several recipes to be made with children. The idea is to help children face isolation, making cooking a fun practice. Among savory and sweet dishes, there are ten simple recipes to make. https://www.ufrn.br/imprensa/noticias/34734/aminutri-lanca-cartilha-de-receitas-para-fazer-com-as-criancas
Ligia Amparo (UFBA), Amábela Avelar (UFRJ), Regina Lang (UFPR) and Anelise Rizollo (UnB)	Ean Pandemic Youtube Channel	The challenges for food and nutritional education in fighting the Covid-19 pandemic	In the context of the Covid-19 pandemic, the Collective of Food and Nutritional Education Teachers in Brazil proposes to carry out a Cycle of Lectures and Debates on the theme "The challenges for food and nutrition education in facing the Covid-19 pandemic 19". https://www.youtube.com/watch?v=Oxg6h1l3lkY
Prof. Dr. Regilda SR Moreira-Araújo. Federal University of Piauí (UFPI)	Website of the Federal University of Piauí (UFPI)	Social isolation and covid-19: practical aspects	The book highlights the aspects such as general considerations about the new coronavirus and the pandemic, the importance of hygiene, healthy diet to strengthen the body's defenses in fighting the virus, and care for the body and mind during isolation. https://www.ufpi.br/noticias-coronavirus/36414-nao-publicar-lancado-livro-digital-isolamento-social-e-a-covid-19-aspectos-praticos
Carvalho et al., 2020. Federal University of Paraíba (UFPB)	Website of the Federal University of Paraíba (UFPB)	Covid-19's Food vs. Pandemic Immunity	Teaching material with the scientific context of healthy foods and their functional properties, in fact, has the activity of reducing the risk of diseases, when eating habits become frequent. http://www.cavn.ufpb.br/cavn/contents/noticias/alimentos-x-imunidade-em-tempos-depandemia-da-covid-19
Araújo et al., 2020. Federal University of Pernambuco (UFPE)	Website of the Federal University of Pernambuco (UFPE)	How can food improve immunity?	The material seeks to make it clear that miracle diets and super powerful foods have no place in a healthy diet. It is necessary to have healthy habits not only during the Covid-19 pandemic, but always, to improve the quality of life. https://www.ufpe.br/covid-19/ascom/-/asset_publisher/hdBGtsdgB5Ee/content/departamento-de-nutricao-elabora-cartilha-comdicas-para-melhorar-a-imunidade/40615

Chart 4. Profile of the continuing education and health education actions, food and nutrition education and guidance for professionals. Oliveira-MG, 2020 (Cont.)

Institution	Means of communication	Theme	Description
Department of Nutrition, Federal University of the Triangulo Mineiro (UFTM)	Website of the Federal University of the Triangulo Mineiro (UFTM)	What fruit did you eat today?	The campaign encourages the consumption of fruits and vegetables and rewards participants with the e-book, which brings the "10 Benefits and tips for including fruits and vegetables in the diet". http://www.uftm.edu.br/ultimas-noticias/2439-projeto-de-extensao-faz-campanha-de-estimulo-ao-consumo-de-frutas-e-verduras
Ros et al., 2020. Brazilian Association of Nutrition (ASBRAN)	Website of the Brazilian Association of Nutrition – ASBRAN	Guide to healthy diet in times of Covid-19	The publication aims to inform the population about the need for changes in eating habits and the adoption of measures that contribute to the strengthening of the body, in addition to the adequate storage and use of food in this period of fighting the disease in the country. https://www.asbran.org.br/storage/downloads/files/2020/03/guia-alimentar-covid-19.pdf
Professors at the School of Nutrition at the Federal University of Bahia (UFBA)	TVUFBA Youtube channel and Instagram page of the UFBA School of Nutrition	UFBA Virtual Congress – University in Motion	Between May,18 th and May,29 th , the UFBA Virtual Congress was held. ENUFBA is present in several of these activities and you can learn about the work being developed by the School, in addition to all the work being developed by the entire Federal University of Bahia. https://www.instagram.com/p/CAVqEKDpbOE/
Abranches et al., 2020. Federal University of Viçosa (UFV)	Website of the Federal University of Viçosa (UFV)	Covid-19 e-book: strategies for adapting the production, marketing and management of establishments in the food sector	The e-book brings strategies for adapting establishments in the collective food sector in the context of the dissemination of the new coronavirus. They are simple and punctual measures that can bring resoluteness in this moment of uncertainty. http://www.ntr.crp.ufv.br/wp-content/uploads/2020/04/Ebook_Covid-19_Estrat%C3%A9gias-para-adapta%C3%A7%C3%A3o-da-produ%C3%A7%C3%A3o-comercializa%C3%A7%C3%A3o-e-gest%C3%A3o-de-estabelecimentos-do-setor-de-alimentos1.pdf
Graduation course in Nutrition at the Federal University of Rio Grande do Norte (UFRN)	Website of the Federal University of Rio Grande do Norte (UFRN)	Benefits of eating to reduce anxiety in Covid-19 times	The pandemic caused by Covid-19 has provided a significant increase in our anxiety. They launched the booklet aimed at society, which presents some of the nutrients involved in alleviating anxiety, as well as foods that offer these nutrientes https://facisa.ufrn.br/noticia/1274/cartilha-com-orientacoes-nutricionais-na-ansiedade-emtempos-de-covid-19
Department of Nutrition, Federal University of the Triangulo Mineiro (UFTM)	Website of the Federal University of the Triangulo Mineiro (UFTM)	What fruit did you eat today?	The campaign encourages the consumption of fruits and vegetables and rewards participants with the e-book, which brings the "10 Benefits and tips for including fruits and vegetables in the diet". http://www.uftm.edu.br/ultimas-noticias/2439-projeto-de-extensao-faz-campanha-de-estimulo-ao-consumo-de-frutas-e-verduras



DISCUSSION

The main findings of this work allowed us to conclude that access to information is related to improving people's quality of life, well-being and health. Health education is a process that deals with the construction of knowledge about diseases, their risks and prevention, to induce critical thinking, promoting autonomy to the individual.¹¹ Health education deals with educational actions, taking as a reference to the needs of health of people and populations, forming a permanent process of training.¹²

Both are practices adopted by the Unified Health System (SUS), inserted in the National Policy on Popular Education in Health. ¹⁴ In addition, health strategies and actions are also reinforced by the National Policy on Food and Nutrition (PNAN). ¹⁵

In this context, educational practices must be consistent with the particularities of the individuals, so the development of materials that meet different audiences becomes essential, especially during the pandemic period. Given that community behavior is one of the main factors for the increase in the number of cases and deaths from viral infections, and facing a new disease such as Covid-19, access to information becomes essential not only for the general population, as well as for health professionals.

In 2009, the world experienced another pandemic, caused by the Influenza A (H1N1) virus, in which the disease became known as swine flu. At the time, access to the internet was not that wide. According to the data from the National Household Sample Survey (PNAD), carried out in 2009, only 41.6% of the interviewed had access to the internet. The last survey carried out, in 2018, indicated that 74.7% of Brazilians had internet access. The internet access to the internet access.

The greater restriction of access to the internet during the H1N1 pandemic did not provide such favorable conditions for the mass dissemination of information and content aimed at promoting health and preventing the disease, through social networks and websites, in the way as has been happening during the current pandemic. However, it is noteworthy that despite the advances and expansion of the internet observed in recent years, 46 million Brazilians still do not have an internet connection, which makes access to quality information difficult.¹⁸

The results presented by this study show that the materials and events developed to promote health education for the population and professionals addressed content from almost all major areas in the area of Food and Nutrition, making an interface with the health-disease process of the new coronavirus. The documents aim to clarify doubts about how to act in different situations. For example, guidelines on how to properly sanitize food and care for the individual who already has an established pathology. In addition, precaution at various stages of life, such as during pregnancy, breastfeeding, and also the guarantee of the Brazilian population's right to health and food, in addition to general nutritional instructions for the population and health professionals.

According to Technical Note No. 18, released by the National Health Surveillance Agency (ANVISA), in April 2020,¹⁹ with regard to hygiene and food handling (Chart 1), studies carried out to date show that the new coronavirus is not transmitted through food consumption, although transmission can occur through contaminated surfaces such as table, plates, cutlery, among others, according to the standard.²⁰ The relevance of this form of transmission motivated the development of materials to promote good food handling practices for both professionals as for the general population. Considering that, especially in the context of social isolation, the number of people cooking is greater, access to correct information about the hygiene procedures for packaging, utensils, handling surfaces and the hygiene of the handler is extremely important.

Also according to ANVISA, in the Technical Standard No. 47, published in June 2020, in addition to the personal hygiene care,²¹ the materials produced seek to inform about recommendations regarding the use of masks, as a complementary way to prevent infection by the new coronavirus. Fabric masks are recommended for the general

population when leaving the house and, for greater efficiency, it is important to wash them correctly always after the use.²²

Another important form of precaution addressed in the contents presented in this study is related to the correct cleaning of packaging and food purchased in the supermarkets. Due to the variable stability of the virus on different surfaces,²³ it is recommended to sanitize products indoors, washing the surface of packages or sanitizing those that cannot be washed, with 70% alcohol, before storing them in pantries, cabinets and refrigerator.²⁴

Chronic non-transmissible diseases (NCDs) are shown in Chart 2, as conditions that increase the risk of developing severe forms of Covid-19 and increase the risk of death. Individuals with obesity, kidney disease or other preexisting health problems, in addition to the elderly, are also included in the risk group for the new coronavirus.²⁵ That said, the guidelines and materials developed addressed care with the quality of the diet, aiming not only at the control of the base pathology, but also to increase the responsiveness and strengthening of the individual's immune system, in addition to improving the quality of sleep.

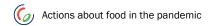
The quarantine period provided changes in the eating habits and levels of physical activity in populations with different incomes and ages in different countries, which raises concerns for professionals in the area of Nutrition about the quality of food products consumed, since the consumption of UPA has been increasing, and this expansion, added to the physical inactivity, are some of the risk factors for the development of NCDs, being useful to pay attention to the subject. Children are increasingly taking space in the family food decisions, and with more time at home, they are more exposed to marketing and advertising specific to this audience, which induces the consumption of UPA, which raises concerns about the development of future complications because of the bad eating habits and sedentary lifestyle.²⁶

When analyzing the number of deaths by Covid-19 associated with other pathologies, it is observed that three pathologies prevail: heart disease, diabetes and kidney disease.²⁷ Knowing that the body elaborates responses against the virus through the immune system, it must be strengthened so that the fight against the virus through cell defense is as efficient as possible.²⁸ Individuals with cancer, for example, have a weakened immune system, and therefore they need extra care in relation to infection by Covid-19.

Therefore, nutrients that are naturally available in food are essential for strengthening the immune system, so clarification on the subject is relevant.²⁹The heart is an indispensable organ for life and also for fighting the virus, and food is once again directly linked to its proper functioning and strengthening the organism to react against the problems caused by the virus.³⁰

As for food and nutrition (in)security (FNI), presented in Chart 3, it is known that the health crisis caused by the new coronavirus has contributed to the increase in unemployment in various sectors of Brazil and the world, with negative impacts on the economy. One of the effects is the increase in poverty and hunger, due to the difficulty of production, availability and access to food. Although adequate food, with quality and in sufficient quantity is a constitutional right of Brazilians, even before the Covid-19 pandemic, the FNI affected millions of individuals in the country. The pandemic aggravated this situation, especially for the population in social vulnerability, exposing the existing inequalities in the country.³¹

One of the Brazilian public policies that strongly contributed to the promotion of food and nutrition security (FNS) in the country, and for Brazil to leave the Hunger Map, was the National School Feeding Program (PNAE), as well as the Food Acquisition Program (PAA).^{32,33} The need for social isolation measures had a direct impact on the PNAE, such as the closing of schools, which compromised students' access to food. However, according to Law No. 13.987/2020, of April, 7th, 2020,³⁴ it is possible that school feeding kits, during an emergency situation, be distributed to the parents or guardians of the students, thus guaranteeing their access to food. And concerning the PAA, the



program had already suffered from very significant budget cuts in recent decades, putting the continuity of the actions at risk.³⁵

In this context, the materials produced within the theme of FNI aimed to alert the population about the imminent risk of increasing food insecurity, in addition to offering subsidies for the development of actions that can minimize the impact of the pandemic on FNS. The current moment highlights the importance not only of continuity, but of investment and strengthening of public policies and programs that aim to guarantee the Human Right to Adequate Food (HRAF).

Regarding breastfeeding and pregnancy (Chart 3), studies performed about the theme are still scarce, and there is still no evidence pointing to the transmission of SARS-CoV-2 through breast milk. However, the provision of quality information for pregnant women and nursing mothers is important, considering that the physiological and immunological changes that occur during pregnancy can increase the risk of contracting the virus and developing more severe forms of the disease.³⁶

Access to information about hygienic care during pregnancy and the breastfeeding period contributes to reducing the risk of contamination, especially for infants.³⁷ Thus, pregnant women and nursing mothers affected by Covid-19 need to redouble their attention, since the virus spreads through respiratory droplets during contact, and it is essential to adopt the recommended hygienic care, such as cleaning your hands well, not passing your hands over your mouth, nose and eyes, wearing a mask and avoiding coughing or sneezing, in order not to transmit the disease for the child. For those who do not feel safe, it is recommended to withdraw the milk to offer it to the baby, and if necessary, ask for help from the health professional.³⁸

The guidelines for professionals in the area of Nutrition and for the population in general aim to ensure safety and better quality of work, support individuals involved in fundamental activities related to fighting the new coronavirus and ensure the health of the population in general. In this context, guidelines were made to seek alternatives capable of maintaining the continuity of the clinical care in the area of Nutrition without physical contact, protecting professionals and patients.

Some of the guidelines contained in the materials collected in this study provide subsidies so that the nutritionist can provide quality remote care.³⁹ In situations where home care is necessary, that professionals and patients strictly follow the essential care to avoid contamination.

In a period in which good health is a determining factor, maintaining an adequate and healthy diet is the basis for the body to fight a possible infection by SARS-CoV-2.⁴⁰ Furthermore, in times when the internet has been gaining more and more space, the number of false news assuring "miracle" foods to improve immunity and fight the new coronavirus has been growing. It is up to health professionals, and especially to educational and research institutions, the mission of deconstructing this false information, which can put the lives of individuals at risk, and contribute to the health education process, based on scientific evidence.⁴¹

Food and nutrition play a significant role in both the prevention and treatment of the disease. Food can also contribute to the improvement of anxiety conditions, and with individuals who have difficulty sleeping. The pandemic has affected the lives and daily of millions of people, with physical and psychosocial impacts.⁴²

Living among doubts and uncertainties can cause different emotions and feelings, which compromise the quality of life of individuals.⁴³ Some of the materials developed by teaching institutions in the area of Food and Nutrition were intended to guide those individuals who are going through situations of stress and anxiety, and that they can find ways to better deal with the act of eating and maintain good health.⁴⁴

The need for social and home isolation presented millions of Brazilians with the challenge of preparing their own meals. ¹⁰ In this way, many materials were developed to stimulate and guide the development of cooking skills. ⁴⁵

Family cooking can also be an activity playful, contributing to the improvement of the family relationships, being also an option to fill the time of children who are at home at that time. Cooking at home and with the family is an important recommendation in the Food Guide for the Brazilian Population.⁶ Finally, the act of preparing food is also a strategy for promoting adequate and healthy food.

Covid-19 is a new disease, and evidence on the subject is still being built. However, it is important that the information and guidelines already established are disseminated to the population, to prevent the transmission and development of severe forms of the disease. Considering the need for social distancing, the internet plays a fundamental role in disseminating knowledge quickly, and to as many people as possible.

Finally, considering the importance of adequate and healthy food, and the importance of protecting food and nutrition security in the context of the Covid-19 pandemic, the relevance of booklets, e-books, webinars and other forms of production and dissemination of information presented by this study. The content produced, with free access, is an important subsidy for health professionals and the population, and may also be useful for managers of Brazilian states and municipalities.

Since this study deals with a recent topic, one of its limitations is the absence of other scientific articles with similar aims to discuss the results.

This study presents to society the contributions of federal public educational institutes and official bodies related to the area of Food and Nutrition for the fight against the new coronavirus, in the context of health education.

CONCLUSION

The National Food and Nutrition Policy guides the development of communication tools in health education capable of supporting both health professionals and individuals, based on the characterization of actions that aim to guide, educate and support professionals and other individuals in the decision-making process for health-promoting practices. Especially in the context of a new disease, with worldwide proportion and high transmissibility, such as Covid-19, the development of the materials addressed in this study is an important strategy to mitigate the consequences of the pandemic and contribute to the quality of life of the individuals.

It is noteworthy that the internet is a very important communication tool to disseminate information to these people, especially during the period of social isolation promoted by Covid-19.

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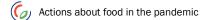
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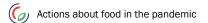
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Contributors

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