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Food democracy, health disparities and the New York City *trans* fat policy

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Abstract

Objective: To investigate food democracy and health disparities in the New York City (NYC) *trans* fat policy process.
Design: Texts from semi-structured interviews, public testimony and comments on the policy were analysed using categorization and thematic coding. *A priori* content analysis for themes of food democracy was followed by open, axial and selective coding for sub-themes on health disparities. Data and method triangulation and respondent validation were used to establish data dependability, trustworthiness and representativeness.
Setting: NYC.
Participants: Interviews from a purposive, snowballed sample of thirty-three participants included restaurateurs, scientists, health and consumer advocates, consumers and policy makers. Additionally, 261 pages of transcript from public testimony of fifty-three participants and a purposive sample of public comments on the policy from a pool of 2157 were analysed.
Results: Principles of food democracy involving inclusive citizenship, access to information, collaborative participation and focus on collective good were well represented in the data. Additionally, sub-themes linked to health disparities included: government responsibility for fairer access to healthier foods; recognition that people made choices based on circumstances; concern for vulnerable groups; and outrage with a food industry viewed as unconcerned for public health.
Conclusions: Principles of food democracy present in the successful process of adoption of the 2006 NYC *trans* fat policy addressed nutrition-related health. Food democracy is a contemporary food system and policy approach with potential for public health benefits in reducing nutrition-related health disparities.

Keywords
Health disparities
Food democracy
***Trans* fat**
Health policy
Public engagement

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Nutrition-related non-communicable diseases are leading causes of preventable death, nationally and globally, and a key area for intervention[1,2]. Current public health efforts increasingly target health disparities that contribute to nutrition-related non-communicable diseases and originate in social contexts[3–5]. Researchers need to better understand successful policy interventions that address contexts of nutrition-related health disparities[6–8]. Food democracy is one contemporary frame for interventions with potential to change food systems and contexts of health disparities that increases opportunities in the policy process[9,10]. Yet there is little research on how food democracy functions in the policy process, decreases health disparities and improves public health. The current case study analyses food democracy and health disparities in the processes of adopting the New York City (NYC) artificial *trans* fat policy of 2006. The innovative local ordinance restricted artificial *trans* fat (hereafter referred to as '*trans* fat') served in food-service establishments based on evidence of its danger to heart health. The NYC Department of Health and Mental Hygiene (hereafter referred to as 'the Department') proposed the ordinance in response to growing concern over nutrition-related non-communicable diseases. The ordinance passed with heavy public support and likely played a role in influencing national policy to remove *trans* fats from the Generally Recognized as Safe list in 2018. The NYC *trans* fat policy also addressed health disparities through regulating disparate access to *trans* fat as a food ingredient associated with greater health risk.

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Health disparities and food democracy

Nutrition-related health disparities impact overall population health[6,8,11–15]. According to the Centers for Disease Control and Prevention, health disparities are preventable differences in how groups experience health, disease and opportunities, linked to social disadvantage[11]. Age, ethnicity and race, income and class, sexuality, disability, location, education, gender, and other social and economic factors contribute to health disparities, shaping access to resources and behaviour[3,4]. Many disadvantaged populations have disparately higher risk for non-communicable, nutrition-related diseases, poorer survival rates and low food security[8,14,16].

Research shows associations of neighbourhood factors, like racial segregation and economic disadvantage, with higher access to unhealthy foods, 'obesogenic' environments, nutrition-related non-communicable diseases and lack of beneficial policies addressing healthy food environments[17–23]. Interventions that change food environments and address household and neighbourhood resources can influence healthy eating and improve nutrition-related health disparities[6,12,24–26]. For example, research demonstrates how decreasing access to less healthy choices and fast foods for communities with low income can promote healthier diets; however, success varies with initiatives that increase access to healthier foods[6,25,27].

Successful change to food environments and population health also occurs by engaging the community and democratic processes[16,28,29]. Research finds that adoption of democratic governance improves health and food security through public engagement within representative democracies, although the relationship can be complicated by political organization and social inequality[30–38]. Proponents of food democracy define it as a system of shared, public decision making regarding the food system and policy with a focus on collective benefits, collaboration and human rights[9,10]. Principles of food democracy highlighted by past research include: inclusive citizenship; accessible and shared knowledge to inform choices and decisions; collaborative participation in food systems decision making and policy; and orientation towards a collective good[9,10,36]. However, debate continues about how food democracy works to advance public health[39,40]. Some research shows long-term solutions that include communities in democratic participation has potential to change health disparities by linking local efforts to public health and food systems[26,41]. Food democracy is a promising approach to health interventions and policy, although public health nutritionists need to conduct more research to evaluate how it reduces health disparities and promotes public health.

New York City trans fat policy and health disparities

Health disparities in NYC were well documented before adoption of the *trans* fat policy in 2006[42]. The new Division of Health Promotion and Disease Prevention focused on non-communicable diseases in NYC and an emerging data collection system on community health informed policy initiatives[43]. A 2004 report by the Department found minorities more likely to live in poverty and die of nutrition-related non-communicable diseases such as heart disease, cancer, diabetes, stroke and high blood pressure[42]. These health disparities demanded an approach that addressed food environments and drivers of nutrition-related non-communicable disease beyond individual behaviours[42].

Additionally, some NYC citizens had disparately higher exposure to *trans* fat and emerging evidence implicated the fat in heart disease[44,45]. Industry created artificial *trans* fats through partial hydrogenation, a process that increased shelf stability and changed the texture of liquid fats to solid in products such as shortening. Found in processed foods such as snacks, baked, fried and fast foods, *trans* fat had been in the food supply for decades. Simultaneously, increased fast-food consumption and social trends to eat out more influenced population health[46]. Researchers found that populations with low income, minorities and children were more vulnerable to this trend and fast foods were particularly high in *trans* fats[46,47]. Increased reliance on a commercialized food supply brought more scrutiny as researchers documented associations between food environments and obesity[48].

Evidence of the dangers of *trans* fat to heart health, growing reliance on convenience foods and disparity in exposure to *trans* fat supported the NYC proposal restricting *trans* fat served in food establishments to less than 0·5 g per serving, an amount considered safer at the time[46]. Research also established that replacing *trans* fats with heart-healthy substitutes would not impact taste or quality[49]. Additionally, an educational campaign by the Department encouraged voluntary removal of *trans* fats from food-service establishments in 2005 but failed to produce change[49]. The Department presented the *trans* fat proposal to the Board of Health in September 2006, followed by a period for public comment, a public hearing, summary of the results and the December vote in favour of the proposal (see Table 1). A conservative estimate predicted the policy would avoid 1200 deaths from heart attack per year in NYC[46,49]. The municipal policy passed with heavy public support and played a role in influencing international policy and later national policy to remove artificial *trans* fats from the Generally Recognized as Safe list in 2018.

The objective of the current case study was to investigate food democracy and health disparities in the NYC *trans* fat policy. Researchers who study food democracy often assess agricultural production and retail distribution, but few evaluate processes of food democracy in health policy. Health disparities include differences in health outcomes, but also opportunities that drive those disparities, such as participation in collective decision making and

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Table 1 Timeline of the New York City (NYC) *trans* fat policy process

Year	Event
2004	Michael Jacobson of CSPI files petition to the FDA for removal of *trans* fats from GRAS list
2005	NYC Department of Health and Mental Hygiene collects data on use of *trans* fats in food-service establishments and offers educational campaign for restaurateurs to voluntarily remove *trans* fat; results fail to show change
2006	January: FDA *trans* fat labelling policy implemented
	September: NYC Department of Health and Mental Hygiene proposal to amend Article 81 'Food Preparation and Food Establishments' of the NYC Health Code by adding Section 81.08 'Foods containing artificial *trans* fat' presented to the NYC Board of Health
	October: invitation for public comments and testimony at public hearing
	December: NYC Board of Health receives summary of public comments and testimony and votes to adopt a two-phase implementation to restrict *trans* fats in foods served in food-service establishments
2007	Phase 1 implementation by 1 July: oils, shortenings and margarines served in food-service establishments contain less than 0·5 g *trans* fat
	Grace period extended to end of September due to concern expressed by industry
2008	Phase 2 implementation by 1 July: all foods (except packaged with manufacturer's label) sold in restaurants must contain less than 0·5 g *trans* fat
2015	FDA announces its intention to remove artificial *trans* fat from GRAS list
2018	FDA removal of artificial *trans* fats from GRAS list

CSPI, Center for Science in the Public Interest; FDA, Food and Drug Administration; GRAS, Generally Recognized as Safe.

policy. Food democracy frames a means of measuring opportunity to participate in policy processes. Understanding how communities and policy makers engage principles of food democracy for successful health policy can inform future policy making. The present study uses data from interviews, public comments and public hearing transcripts to examine perceptions regarding the NYC *trans* fat policy, food democracy (inclusive citizenship, access to information, collaborative participation and focus on collective good) and health disparities.

Methods

Data for the case study were collected from interviews, texts of public comments and transcripts from public testimony that included local and national opponents and supporters, the food industry, members of the broad public, health and consumer advocates, and scientists. Interviews of people involved with the policy offered reflective discussion of its meaning. Institutional Review Board permission (Syracuse University, IRB#10-090) was obtained and a purposive sample of interview participants selected through public testimony, comments for the policy, media sources and snowball sampling. Forty-five participants were contacted through email and telephone and thirty-nine interviews were conducted from 2010 to 2013, with six people declining to be interviewed. Participants were informed of the purpose of the study and signed consent obtained. Six interviews were eliminated from participants not specifically involved in the NYC *trans* fat policy, leaving a remaining thirty-three interviews. Interview participants included restaurateurs, scientists, public health and consumer advocates, consumers and members of the Department and NYC Board of Health involved with the policy. Semi-structured interviews included open-ended questions about personal experience of the policy, views of the process and public engagement, and meaning. Probing techniques clarified responses and elicited details. Eighteen face-to-face and fifteen telephone interviews lasted 15–80 min each, most an average of 40–50 min. Each audio-digitally recorded interview was transcribed into written format and participants had an opportunity to edit the final version used for analysis.

Public comments to the Department and public hearing testimony about the policy were analysed to review what people were thinking preceding policy adoption. Electronic copies of public comments were obtained on compact disks from the Department through a Freedom of Information Act request in 2010. A total of 2157 emailed, written and faxed public comments about the proposal were received. An electronic file of the public hearing transcript, available on the Internet, was also collected[46]. Length of the public hearing transcript was 261 pages and fifty-three people testified. Because the public hearing concurrently covered the menu labelling proposal, only comments pertaining to the *trans* fat policy were analysed.

Public comments, transcripts of testimony and interview transcripts were analysed separately. To reduce public comments data, only individual comments that specifically addressed meaning of the policy were selected. Transcripts of the public testimony and interviews and texts of comments were analysed through multiple readings. Using categorization and thematic coding, text analysis of all sources was conducted manually and using Microsoft® Word in two steps. Employing *a priori* content analysis, texts were analysed for principles of food democracy (inclusive citizenship, access to information, collaborative participation, focus on collective good). Inclusive citizenship translated to broad participation in the *trans* fat policy process and access to healthier foods; access to information translated to awareness of how the policy addressed *trans* fat information; and collaborative participation and collective good translated to more participants working together

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to improve the food system and community health through policy.

Utilizing inductive methods of analysis, sub-themes within the four principles of food democracy and its connection to health disparities were then identified, exploring for frequency, extensiveness and intensity, completed when no further sub-themes emerged. First, open coding was used to group data, followed by axial coding to refine groupings relative to food democracy, its link to health disparities and within-policy context. Results were compared across data collection methods and selective coding used to integrate categories and establish sub-themes. Samples of comments representing principles and sub-themes are reported in quotes with full names from public testimony and interviews with consent (three participants asked to be quoted anonymously or with pseudonyms), and first names only for public comments.

Limitations of data, data dependability, credibility and integrity of methods were addressed using multiple methods. Limitations of the data include that interviews may be influenced by time and memory. To offset this, data triangulation through multiple viewpoints from opponents and supporters of the policy, nationally and in NYC, assessed and established trustworthiness and representativeness. Data sources across multiple points in time, before and after policy deliberation, also offered varying viewpoints. Data from three sources (public comments, public testimony and interviews) established methods triangulation for confirmability and applicability[50–52]. Another limitation in public comments included templates created by health and consumer advocates (Center for Science in the Public Interest; Institute for Integrative Nutrition; Conscious Cooking). Template letters commented on the health science of *trans* fat and consumer choice, supporting the proposed ordinance. Although template letters were important to the policy, for the current analysis, only unique and original comments were analysed and 'generic and repetitive' content of form letters eliminated[53]. For interviews, respondent validation of written transcripts allowed participants to edit for accuracy. To further establish trustworthiness and representativeness of the findings, written transcripts and public comments were returned to repeatedly during analysis to remain true to participants' accounts and verbatim extracts were used to exemplify themes and sub-themes.

Results

Inclusive citizenship, accessible knowledge and health disparities

In the case of the NYC *trans* fat policy, inclusive citizenship translated to broad-scale engagement in the policy process and in how it addressed health disparities. The deliberate process of engaging the public in NYC Health Code change and the governance structure allowed for wide-ranging local and national public involvement in comments and testimony. Additionally, many participants viewed the policy as an inclusive regulation that targeted health disparities in exposure to *trans* fats and health outcomes associated with it.

Many participants described the policy as a universally inclusive policy that addressed higher exposure to *trans* fat contributing to health disparities for vulnerable populations. When interviewed, David Jones, President of the Community Service Society of NYC, supported the policy and described how toxic food environments rich in *trans* fats contributed to 'over-the-top' trends in obesity and non-communicable diseases in poor communities. Carol Horowitz, a public health physician at Mount Sinai School of Medicine working in Harlem, also testified to this. In public testimony, Elena Rios, President of the National Hispanic Medical Association, asserted the importance of policy targeting disparate exposure to *trans* fats for the Hispanic community, commenting how this would be 'the first generation where parents will be burying their children with chronic diseases.' Participants characterized food environments rich in *trans* fats as predatory, contributing to accumulated lifetime disadvantage in children, especially in poorer communities. NYC student, Morgan Carmine, testified, 'if you know that *trans* fats are bad for people, why do people still serve it in restaurants? … Please protect us so we don't have to go to the hospital and have other problems when we grow up.' Chicago restaurateur, Ina Pinkney, born in Brooklyn, testified the policy would 'impact the health and well-being of all citizens of New York.' In public comments, Dennis wrote, 'Although I'm not a resident, I'm in NY, NY for business often. I support this movement and the health benefits provided me and your residents.'

Accessible knowledge to inform better food choices and decision making is important to food democracy. Contemporary food environments flooded with processed foods make healthy choices challenging for people with low information. Many participants realized that knowledge about *trans* fat content in restaurant foods was inaccessible and viewed the NYC *trans* fat policy as a leading national policy that addressed the issue of accessible information to make healthier food choices. By regulating that restaurateurs restricted the amount of *trans* fat per serving in food-service establishments, consumers now knew there would be safer levels of *trans* fats in restaurant foods, making consumer choice simpler, particularly for people with higher exposure to commercialized food environments rich in *trans* fats. Participants asserted that people made choices based on circumstances, that the policy allowed for healthier food choices regardless of circumstances, and that it was the government's responsibility to intervene for fairer access to healthier foods in the absence of accessible information.

To participants, lack of accessible information about the health dangers of *trans* fat and circumstances meant

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vulnerable populations had higher exposure to cheaper foods, rich in *trans* fats, and less time to investigate ingredients. This contributed to health disparities. In public testimony, Lori Tansman, Nutritional Coordinator at Mount Sinai Hospital in NYC, described how 'consumers do not essentially have the freedom to make ... choices because many of them are not even aware that ... *trans* fats are used.' Florence Rice, President of the Harlem Consumer Education Counsel, testified, 'People ... have a right to know what's in their food ... [to limit] *trans* fat in restaurant foods' to help reduce risk for heart attack. David Jones asserted that expecting people who live with low incomes, living 'literally at the edge ... to start to do significant investigations into food quality' was unreasonable. In public commentary, Pamela from New Jersey shared, 'Working in the city coupled with commuting ... My family is forced to buy prepared foods for a good portion of our meals and snacks ... who has the extra time, energy or funds to do the research necessary to find the good stuff?' Jesse from NYC discussed heavy reliance on restaurant foods due to 'excessive work hours, small apartments, and lack of other social meeting places,' commenting that 'there is no justification for the use of deadly' *trans* fats.

Moreover, participants commented that lack of information on *trans* fats required government intervention. From NYC, Aaron commented, 'We need to know all we can to help live life to the best of our ability and the highest quality. Don't take that right away from us. BAN *trans* FATS!' Alice wrote that the policy was 'a practical and vital piece of action. The public should be able to make informed food choice.' David asserted, 'The government is well within its rights to protect us from danger especially where we cannot protect ourselves ... the government has an obligation to do so.' Fabiola wrote, ' Food corporation[s] who use *trans* fat do NOT care about the health of citizens, but the Board of Health should care, that is the reason such an institution exists, right?' According to Sarah, '*trans* fats are no less harmful than E.coli, and it is the responsibility of the Board of Health to protect the public from such dangers.' Significant public awareness of how the policy would address poor and disparate access to knowledge about *trans* fat to make healthier food decisions was evident in the policy process.

Collaborative participation, collective good and health disparities

Collaborative participation, shared decision making about food systems and policy, and consideration of collective good are essential to food democracy[9,10,36]. In the current case study, collaborative participation translated to constructive comments about the policy and its meaning in public health. Consideration of collective good translated to community-oriented comments beyond self-interest. Participants expressed support for NYC policy makers and concern for community and vulnerable groups throughout texts. They also expressed outrage with a food industry viewed as not collaborative and unconcerned about public health.

During the comment period for the proposal many people responded in solidarity with NYC, locally and nationally. Polly of Ohio wrote, 'The rest of the country needs the support of a precedent that can be set in NYC!' and Priyanka from California wanted 'to be instrumental in doing the same thing ... where I live.' From Montana, Kathy wrote, 'I would like to see [*trans* fat] banned everywhere. The trend will start with New York. Bravo!' and Gary of Texas urged, 'Let the revolution begin! It all starts with one BOLD city.' Jeanette of NYC pleaded, 'Please ban *trans* fat and make New York a symbol of health for others to follow.' Some even felt ownership in their solidarity. Ingrid of Virginia wrote, 'I feel that as part of this country it is my duty and pleasure to help take *trans* fat out of our lives ... I am really proud to be a part of this cause.' Overflowing attendance to the policy public hearing included testimony from national experts and members of the public. The community-based organization, Citizens for NYC, asserted a 'health democracy' required 'sound public policy'. When interviewed, Mary, owner of an NYC business in healthy cooking, said that the policy represented 'concern for the general welfare of people.'

Many participants discussed implications of the policy to the collective good and health of people in NYC, nationally and globally, especially for vulnerable groups. Writers from Pennsylvania and Oregon thought the policy could 'only be beneficial for everyone' and wanted to 'ban *trans* fats in the entire country!' Shelley from Utah summarized, 'everybody benefits when we are a happy, healthier planet of human beings. There are no losers when we are looking for the highest good for all, right!?' Wendy from Connecticut asserted the policy protected 'those less educated about the harmful effects of certain foods.' Peter Kostmayer, President of Citizens for NYC, thought the policy was 'sound public policy and a simple and powerful way to improve the health of all New Yorkers, regardless of income.' Jahari of NYC wrote policy would 'ensure the future health of our youth. Heart disease and obesity are some of the effects of *trans* fats ... that plague the black community. In many low income neighborhoods "bad" food choice[s] are more readily available than "good" ones.' Jill mirrored this, 'As an African American I am deeply concerned over the numerous health issues that affect my community that do not affect other communities to the same degree ... I want to exercise my choice in whether or not to eat *trans* fat in my food.' Ana Marie, a clinical dietitian from New Jersey, wrote about health disparities and diets rich in *trans* fats for the Latino community. State Assemblyman Felix Ortiz testified that the policy targeted health disparities, and an interviewed participant working in advocacy thought the policy could 'impact millions of people in the city' by addressing disparity in exposure to *trans* fat in food-service establishments.

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Finally, participants expressed outrage over perceived lack of concern for public health and poor collaboration by industry. James commented, 'Help protect the citizens of NYC from so many unscrupulous restaurants . . . These businesses are profiteering at the expense of our good health!' Jaime from NYC thought the situation 'egregious that restaurants are not required to provide consumers with sufficient information to make informed choices concerning their nutrition and health.' Barry from Philadelphia commented, 'Why would we allow our food . . . to be contaminated in such a way? I simply do not believe that companies should profit in this manner!' Diana from Ohio demanded, 'Please STOP killing our children, MY CHILDREN . . . these kids don't have a fighting chance. Except for ME, I stand to FIGHT for what is right and will not sit idle to the deep pockets of some of these food manufacturers.' Jim from Texas, who suffered from heart disease, wrote, 'Thank you for helping to hold corporate fast food America . . . to the fire on this one.' In public testimony, NYC Councilman Peter Vallone accused industry of 'telling big, fat lies. They not only serve Whoppers, they can tell them too.' In interview, David Jones described 'making money off this kind of suffering' created by unnecessary exposure to *trans* fats that contribute to higher rates of non-communicable disease as 'intolerable' exploitation of vulnerable people.

Not everyone agreed that the proposed policy was a good idea. Audrey Silk, founder of NYC Citizens Lobbying Against Smoker Harassment (C.L.A.S.H.), testified that the policy was punitive, 'Food isn't medicine . . . Your approach to public health shows contempt for the public . . . marketplace . . . and free choice.' Sheila Cohn Weiss, a registered dietitian working for the National Restaurant Association, opposed the policy, testifying concerns about the lack of supply and replacements, and thought education would be more effective. When interviewed, Ira Gershenhorn from NYC called the proposed policy invasive and punitive to consumers, but also thought *trans* fat was not 'real food' and should not be in the food supply. However, in comments and testimony, 2266 supported the proposal and only seventy-four opposed it[46]. The Department summarized and addressed main concerns of opposing stakeholders, instituting a helpline for local food businesses to receive assistance for compliance and extending the timeline for the regulation to 1 July 2008 for reformulation of shortening and margarines containing *trans* fats and those used for deep frying yeast dough and cake batter. The Department's response reflected the democratic process through negotiation and dedication to collaborative participation and inclusive citizenship.

Discussion

In the current case study of the NYC *trans* fat policy, participants revealed meaningful engagement in food democracy and attention to health disparities in their comments. Overall, the policy worked towards greater inclusion in policy processes and access to healthier foods to address disparities in outcomes. The policy increased access to healthier food environments for all citizens in NYC, especially vulnerable groups with disparately higher exposure to *trans* fats. However, participants noted the difficulty for people who experienced disparity to engage in the policy process or better food choices because they were less likely to have time, money or knowledge. Even so, some who experienced vulnerability participated in public comments and testimony. In terms of accessible knowledge for informed choices, participants expressed awareness that the policy tackled accessible information by requiring restaurateurs to decrease consumer exposure to *trans* fat. Some participants had enough knowledge of the fat to navigate the issue. Others noted that for many, researching food substances that are technologically complex in the context of poverty was unrealistic. The policy also promoted collaborative participation and orientation towards collective good for people in NYC and across the nation. Most commented in solidarity with the Department that the policy was important, and many thought it addressed disparities in health and *trans* fat exposure. Others commented on the importance of the policy process to their values for community and democracy.

Many disparities in nutrition-related non-communicable diseases are influenced by contemporary food environments and higher exposure, for some populations, to less healthy foods. Priorities for profit often guide industry decisions that shape the food supply, rather than democratic deliberation[54,55]. In the current case study, the sub-themes of government responsibility and public outrage that industry did not collaborate more and did not prioritize collective good were notable. This demonstrates public awareness of how economic values influence disparity and democratic processes. Even more significant was the principle of accessible information. Menu labelling of *trans* fat in food-service establishments was an alternative policy approach. However, menu labelling would have made information about *trans* fats in foods available even though many consumers lacked information about its health implications to inform choice. According to David Jones, expecting vulnerable populations to investigate ingredients is 'unreasonable'. Participants also stated that those most vulnerable may lack access to healthier food choices for financial reasons and have more exposure to food environments with few healthier choices. For consumers, policy to restrict *trans* fats meant that all foods served in food-service establishments had an amount considered safer, making healthier food choices simpler.

The NYC *trans* fat policy promoted food democracy and tackled nutrition-related health disparities in food environments, outcomes and processes. After implementation, a study of food environments and *trans* fat exposure in NYC revealed decreased consumption across income

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levels, especially in fast-food meals, translating to lower heart disease risk and addressing health disparities[56]. Yet definitions of health disparities also include opportunities that drive those disparities, such as engagement in policy processes and collective decision making. The present study of food democracy demonstrates the NYC *trans* fat policy process increased opportunities and involved more people in decision making to offset health disparities. This is consistent with other studies where research shows democratic processes link to better health outcomes[34,35]. Other effective approaches to health disparities that target processes include community-based participatory research[57–59]. Researchers and programme planners who use community-based participatory research seek greater community engagement to offset health disparities. Similarly, when communities engage principles of food democracy, they address health disparities in nutrition outcomes, food environments and drivers of those health disparities, including opportunities to engage in policy making.

Understanding how communities and policy makers utilize principles of food democracy and its impact on health informs intervention strategies. Policy makers still need to do much work to mitigate nutrition-related health disparities and its contingencies. Children, minorities and people who live in poverty are at higher health risk and less able to make healthier food choices[6,8,12,13,15]. Socio-economic status heavily influences democratic capacity to engage in policy processes and the ability to research or buy healthier foods. It is typically not within the scope of power for health departments to focus directly on contingencies of health such as poverty. Instead, policy makers target these contingencies indirectly through piecemeal policy like the *trans* fat policy, or advocates use lawsuits to address gaps[60,61]. Alternatively, adopting holistic approaches to public health nutrition policy, such as deliberate use of food democracy, can embed the process in the context of communities and help offset or decrease disparity. Policy makers can use these principles to frame policy adoption and tackle drivers of health disparities, such as opportunities to participate in decision making. Although there was no deliberate discussion of 'food democracy' in adoption of the NYC *trans* fat policy, narratives from people who commented on the policy show that the four recurring principles of food democracy were well represented in the current case study. Public comments and testimony summarized and tallied by the Department influenced the vote to change NYC Health Code: 2266 comments in favour and seventy-four opposed to the proposal[46,49]. Such democratic participation was essential to the process and informed NYC Board of Health voting to successfully change the Health Code.

Similar to other studies of democracy and health, in the current case study there was inequity in how people experience democracy. While researchers of international policy compare country-level health outcomes related to democracy, researchers who examine communities highlight how access to resources, political organization, and social and economic inequity can interfere with the benefits of democracy[32]. These are drivers of health disparities and create opportunities that influence social advantage or disadvantage. Disparate engagement in decision making is one of the influential opportunities that perpetuate health disparities. Herein lies the potential of food democracy. Understanding context of health policy is key. Access to information and an inclusive concept of citizenship can be particularly challenging in societies with great economic or social disparity, in NYC as well as developing countries[32,42]. However, collaborative participation and focus on collective good can support inclusive citizenship and access to information when policy makers tend to the process of food democracy. By including the principles of food democracy in planning, evaluation and analyses of policy processes and nutrition-related health outcomes, policy makers and communities can move towards more equitable distribution in food environments and food systems. This in turn can lead to health benefits for more citizens, impacting health disparities.

Conclusion

In conclusion, participants' comments, testimony and interviews in the current case study reveal how principles of food democracy engaged in the successful adoption of the NYC *trans* fat policy addressed health disparities. When targeting nutrition-related health disparities, deliberate adoption of food democracy by policy makers could facilitate the process and decrease disparities. Tending to inclusive concepts of citizenship that consider people who experience health disparity, promoting accessible information to inform food choices, and highlighting collective good and collaborative participation can support policies that reduce health disparities. Future studies of nutrition-related health disparities need to document and quantify the impact of food democracy in policy interventions. Further study of food democracy in programmes and policies could yield better understanding of social, political and economic drivers that influence opportunities and undergird health disparities.

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was conducted according to the guidelines laid down in the Declaration of Helsinki and all procedures involving research study participants were approved by the Institutional Review Board at Syracuse University. Written informed consent was obtained from all subjects.

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