Communication

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Nourishing Conversations: Using Motivational Interviewing in a Community Teaching Kitchen to Promote Healthy Eating via a Food Is Medicine Intervention

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Abstract: It is well known that dietary choices impact both individual and global health. However, there are numerous challenges at the personal and systemic level to fostering sustainable healthy eating patterns. These barriers have emphasized the need for innovative approaches within minority communities, particularly those facing food insecurity, to help translate dietary recommendations into practice. Food as Medicine is an approach that recognizes the potential to alleviate the burden of chronic diseases through a healthy diet that is customized to meet the needs of the individual. Key to implementing this approach are teaching kitchens, which offer an interactive environment for learning nutrition and cooking skills. Their curriculums are often rooted in Food as Medicine as well as Culinary Medicine, a similar approach. We have found that motivational interviewing (MI) techniques, which are primarily used to facilitate behavior change, are well-suited for implementing and maintaining dietary modification. In this commentary, we show how this has been done in a community-based teaching kitchen to empower individuals to make informed and sustainable dietary choices. In demonstrating the application of MI principles in this setting, we hope to offer an inclusive and sustainable way to help address the urgent need for healthier eating and its role in building healthier communities.

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1. Introduction

Healthy dietary choices play a pivotal role in disease prevention and are essential to both physical and mental well-being. Despite their significance, good nutrition and healthy eating patterns are difficult to adopt and even harder to consistently maintain. This challenge translates into global health consequences. A suboptimal diet has been found to be responsible for more deaths than any other global risk factor for non-communicable disease, with leading risk factors for developing diet-related disease identified as high sodium intake, low intake of whole grains, and low intake of fruits [1]. Improvement in diet, estimated to prevent one in every five deaths globally, represents an opportunity to address this substantial and preventable risk factor for chronic disease and premature death [1]. In response to this urgent need, there have been additional funds allocated through the federal government as well as foundations, such as the Rockefeller Foundation and American Heart Association [2].

Yet, getting to a healthy diet does not come without many challenges and complexities. Food insecurity, the inconsistent or insufficient access to enough food for a household, often arises from food apartheid, where communities have a low density or absence of grocery stores, supermarkets, and other sources of affordable and nutritious food as a result of longstanding structural inequities [3,4]. These lack of options can leave residents with overwhelmingly poor dietary choices [5]. The food environment has been associated with chronic diseases including diabetes, hypertension, and

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cardiovascular disease, and it has been shown that people who live near grocery stores are more likely to buy produce. [6–8] However, addressing healthy dietary intake may require a more comprehensive solution than supplying fresh food, as evidenced by studies that have found opening new grocery stores does not necessarily change the quality of diet for people who live there [9–12]. Additionally, an analysis of purchasing habits from 60,000 households found that improving access would only reduce nutritional inequality by 9%, with the remaining 91% driven by differences in demand [13]. One reason may be financial barriers such as the upfront cost of high quality fresh produce. To address this, "Food as Medicine" approaches, such as produce prescriptions covered by insurance, have been created [2]. However, there are currently limited opportunities for insurance coverage for food prescription programs [14]. Systemic resources, such as broader insurance coverage of produce, are needed to create more equitable distribution of food resources [14]. Another reason for limited improvement in the quality of diet is the difficulty in inspiring long-term behavioral change.

To encourage lasting lifestyle change, health and wellness promotion strategies must employ a variety of approaches. Food as Medicine is an approach that has gained a lot of attention in the last few years, especially with the release of the White House National Strategy On Hunger, Nutrition, And Health in October 2022 [15]. It has the potential to steer the national trend of chronic related diseases, particularly cardiovascular disease, which disproportionately impacts minority communities. In this commentary, we draw upon our experiences to present a perspective on how Motivational Interviewing (MI) can be used in conjunction with a community-based Food as Medicine approach to improve programming in food-insecure communities so residents can learn and implement healthier eating patterns.

2. Food as Medicine

Broadly, 'Food as Medicine' is the idea that food has potential as a therapeutic tool [16]. The approach is primarily concerned with helping the individual person, who presents with a unique set of health metrics and concerns, in implementing the right diet and determining the right nutritional intake for them. Food as Medicine can leverage individualized dietary approaches that are tailored to their specific health conditions or their risk for specific health conditions [16]. For example, Food as Medicine can be used to supply foods consistent with the Dietary Approaches to Stop Hypertension (DASH) diet for patients with hypertension or who have identified cardiovascular risk factors [14]. Food as Medicine has proven to be a valuable tool in the broader effort to enhance public health, particularly playing a significant role in managing conditions such as obesity, gastrointestinal disease, and liver disease [17–19]. There are several different Food as Medicine approaches for improving diet: medically tailored meals, medically tailored groceries, and produce prescriptions [2]. Ultimately, the goal of Food as Medicine approaches is to help one incorporate nutrition into their personal preferences and way of life [18].

3. Culinary Medicine

Culinary Medicine integrates the principles of Food as Medicine with the practical application of hands-on cooking skills and techniques to help treat and manage a particular health condition or goal [20]. Culinary Medicine programming tailors cooking techniques, ingredient selection, and meal planning to the individual. This approach empowers the individual to make informed decisions about their lifestyle and diet by equipping them with the actionable knowledge of evidence-based dietary recommendations as well as the culinary skills to do so, in a way that is right for them [21]. Preparing home-cooked meals often goes together with healthier dietary intake because it gives one greater control over how much salt, sugar, and fat is in their diet, particularly compared to intake of processed foods that can contain large amounts of sodium, refined grain, and processed sugar [22].

Teaching kitchens have been an excellent setting for the implementation of culinary medicine and MI. By addressing both nutritional and social aspects of health, they offer participants an opportunity to practice cooking skills, learn nutrition knowledge, and from these shared experiences, build relationships in a supportive community [21,23]. Crucially, while culinary education provides

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valuable resources to help one make healthy dietary choices, it alone cannot fully address the complex factors that influence eating, such as environment, barriers in cost, culture, and adherence [24]. An essential component of food-based interventions must be to incorporate MI techniques to strengthen efforts in encouraging behavior change.

4. Motivational Interviewing

MI can serve to further the mission of Food as Medicine programming. In our work, MI was the nexus for connecting Food as Medicine and culinary medicine together. MI is defined as a person-centered method of guiding to elicit and strengthen personal motivation for change. It is a type of patient-centered counseling originally developed by Bill Miller to help people with substance abuse disorders. Further developed by Miller and psychologist Stephen Rollnick, MI centers around facilitating health behavior change using negotiation [25]. There are four central principles utilized in MI and these include reflective listening, identifying differences in the patient's held values and their current behaviors, overcoming resistance by responding with understanding and empathy, and building the patient's confidence through self-efficacy [25]. MI has been adapted for use in multiple different settings, including over the telephone, in primary care, and in group formats [26]. Although MI in group settings may not target each individual's specific needs, we were able to implement these techniques in community cooking and nutrition classes without compromising the effectiveness of MI.

Nutrition education has been utilized with MI with promising results in facilitating diet modification beyond that achieved by standard education. In one nutrition intervention involving 1011 participants in Black churches, those who received three MI phone calls alongside nutritional education reported a significant increase in fruit and vegetable intake by an average of 1.1 servings per day [27]. Another randomized controlled nutritional intervention with 175 adult women, guided by trained dietitians and MI principles, saw a 1.2% reduction in dietary fat intake compared to a 1.4% increase in the control group, demonstrating MI's success in promoting high adherence to dietary change [28].

5. Application of Motivational Interviewing in Community Programming

Good Food is Good Medicine (GFGM) is a program under the organization Good Food Catalyst that provides cooking and nutrition classes in several under-resourced Chicago neighborhoods including Englewood, North Lawndale, Garfield Park, and Little Village. Participants are predominantly Black and Latinx. For example, many of our participants come from Garfield Park, where 91.9% of the population is Black and 52.3% has low food access, compared to 21.9% in greater Chicago [29,30]. In general, many live in areas affected by food apartheid [30,31]. Our programming focuses on improving dietary behaviors and navigating social determinants of health such as food insecurity.

The GFGM curriculum is grounded in the Health Belief Model [31, 32]. In the context of nutrition education, the model influences behavior by addressing the risks associated with poor nutrition, the benefits of a healthy diet, and the perceived barriers to adopting a healthier eating pattern [32,33]. The teaching approach incorporates the principles of MI, making it particularly effective in facilitating behavior change.

Students who walk into the teaching kitchen of GFGM often already have some interest in healthy cooking and a desire to cook more healthy meals. However, they vary in their degree of readiness to implement the various, often daunting behaviors necessary to do so, such as selecting the right ingredients, shopping for healthy groceries, planning and preparing healthy meals with healthy cooking techniques, and implementing healthy foods into their overall diet. In its development, MI was linked to the transtheoretical model of change, which is a framework that understands the process of changing behavior as centered on an individual's state of readiness [33]. The model considers motivation as the extent of an individual's perception of the need for change and their contemplation of the pros and cons. Similarly, GFGM's approach supports the idea that

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motivation is not a fixed quality and that behavior change can be encouraged through a variety of techniques.

The initial class opens with a discussion of what brought each student here. We ask this for the sake of establishing trust, as well as to place the trajectory of the evening in the hands of the students. This technique, agenda setting, is continuously utilized in subsequent classes where students are provided an overview of the recipes as well as conversation topics we hope to discuss once the meal is served. Giving students the leeway to decide which health topics to discuss and how the evening should be structured allows them to better tailor the education they receive, as well as stoke the interest that first led them to join the class.

At the heart of MI and GFGM's approach is expressing empathy. In order to help someone explore and resolve their ambivalence about a particular behavior change, one must be able to demonstrate an understanding of their situation and respect for their decision-making. Feeling like one's concerns are being heard is crucial to fostering and maintaining trust. One way that GFGM builds on trust and empathy while integrating reflective listening is by creating space for individuals to share their thoughts and feelings with the group before and after the cooking portion of the class. For example, we survey participants prior to the start of class to better understand their cuisines, dishes they like to prepare, and eating patterns so that we can align our teaching with the information that they have provided us. GFGM's emphasis on practicing cultural competence lends itself well to establishing an environment where people feel safe to share their concerns without judgments and criticisms. GFGM recognizes that access to food is a significant obstacle for many of its students and offers ingredient substitutions and cooking guidelines to accommodate limited resources. Students' concerns are expressly affirmed and discussions are opened to the broader group for other students to share their experiences. GFGM carefully balances this validating approach with reminders of students' autonomy, freedom of choice - which vary between individuals, and within the limitations they may be experiencing - and self-determination to make a change.

GFGM's curriculum is flexible and leaves room for students to guide the topics covered based on their interest and goals. As mentioned above, we use intake surveys to adapt to the needs of participants but also these forms are utilized to gain insight towards an understanding of what incoming students would like to learn and what modifications they hope to make in their diet and cooking practices. Commonly expressed goals include eating less meat and more plant-based protein, reducing salt intake, and lowering processed sugar in their diet. The intake surveys also ask students how open they are to trying flavors and foods that are new to them, and to select which obstacles that make it difficult to cook. By prompting this reflection before the class begins, GFGM helps students identify gaps between their current behavior and broader goals. The MI principle of developing discrepancy considers dissonance that arises from this self-appraisal as key to resolving one's ambivalence about behavior change. MI techniques can be utilized to control the direction for this dissonance resolution towards the goal-oriented behaviors the individual had identified. This approach is also utilized during "Ask a Doctor" sessions, led by a chef-trained physician. These Q&As are primarily guided by health-related questions from the students and offer an opportunity for further identification of discrepancy.

Once trust is established early on, perspectives are shared, and goals are identified by the group, GFGM directs the conversation towards proactive next steps. Students are encouraged to add their ideas for subsequent behaviors that will lead them closer to the goals they had set. During this stage, resistance that arises from students is acknowledged and met with acceptance. In line with the MI technique of "roll with resistance," focus is placed on avoiding argumentation and, instead, highlighting each student's self-efficacy. Whereas traditional interventions place primary responsibility on the expert to advise the recipient on their behavior, MI refocuses on establishing a partnership where the recipient is the main driver of change. Correspondingly, GFGM students are seen as valuable resources in finding solutions to the problems they have highlighted, and emphasis is placed on affirming their ability to change their behavior. To help motivate this confidence, students can be asked to reflect on and share prior successes with implementing positive changes in their lives. These examples are sometimes modeled by GFGM staff members who initiate the

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conversation by offering their own personal experiences with overcoming ambivalence towards behavior change. Inviting students to consider additional perspectives can help prevent ideas from being imposed on them and prompt further dialogue.

6. Conclusions

Food and dietary practices are an important part of one's quality of life; like healthcare, they should be individualized and comprehensive with respect to their needs, goals, and overall lifestyle. As demonstrated by GFGM, motivational interviewing techniques can, and should, be utilized with Food as Medicine interventions to assist with tailoring nutritional strategies to address the needs of individuals. Strategies for further improving programming include further tailoring approaches for different health conditions and concerns, conducting follow-up outreach with participants to determine adherence after the intervention, and conducting focus groups to validate the community's needs are being met. Additional studies implementing MI in conjunction with Food as Medicine are needed in order to assess long-term effects on community health outcomes, scale implementation, and determine and improve efficacy.

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References

1. Afshin, A.; Sur, P.J.; Fay, K.A.; Cornaby, L.; Ferrara, G.; Salama, J.S.; Mullany, E.C.; Abate, K.H.; Abbafati, C.; Abebe, Z.; et al. Health Effects of Dietary Risks in 195 Countries, 1990–2017: A Systematic Analysis for the Global Burden of Disease Study 2017. The Lancet 2019, 393, 1958–1972, doi:10.1016/S0140-6736(19)30041-8.
2. Nature Medicine Food as Medicine: Translating the Evidence. Nat. Med. 2023, 29, 753–754, doi:10.1038/s41591-023-02330-7.
3. Bradley, K.; Galt, R.E. Practicing Food Justice at Dig Deep Farms & Produce, East Bay Area, California: Self-Determination as a Guiding Value and Intersections with Foodie Logics. Local Environ. 2014, 19, 172–186, doi:10.1080/13549839.2013.790350.
4. Lofton, S.; Kersten, M.; Lubimbi, N.; Odoms-Young, A. How Community Capacity Building in Urban Agriculture Can Improve Food Access in Predominantly Black Communities. 2022.
5. Rose, N.; Serrano, E.; Hosig, K.; Haas, C.; Reaves, D.; Nickols-Richardson, S.M. The 100-Mile Diet: A Community Approach to Promote Sustainable Food Systems Impacts Dietary Quality. J. Hunger Environ. Nutr. 2008, 3, 270–285, doi:10.1080/19320240802244082.
6. Seligman, H.K.; Bindman, A.B.; Vittinghoff, E.; Kanaya, A.M.; Kushel, M.B. Food Insecurity Is Associated with Diabetes Mellitus: Results from the National Health Examination and Nutrition Examination Survey (NHANES) 1999-2002. J. Gen. Intern. Med. 2007, 22, 1018–1023, doi:10.1007/s11606-007-0192-6.
7. Seligman, H.K.; Laraia, B.A.; Kushel, M.B. Food Insecurity Is Associated with Chronic Disease among Low-Income Nhanes Participants. J. Nutr. 2010, 140, 304–310, doi:10.3945/jn.109.112573.
8. Vozoris, N.T.; Tarasuk, V.S. Household Food Insufficiency Is Associated with Poorer Health. J. Nutr. 2003, 133, 120–126, doi:10.1093/jn/133.1.120.

9. Cummins, S.; Flint, E.; Matthews, S.A. New Neighborhood Grocery Store Increased Awareness of Food Access but Did Not Alter Dietary Habits or Obesity. Health Aff. Proj. Hope 2014, 33, 283–291, doi:10.1377/hlthaff.2013.0512.
10. Dubowitz, T.; Ghosh-Dastidar, M.; Cohen, D.A.; Beckman, R.; Steiner, E.D.; Hunter, G.P.; Flórez, K.R.; Huang, C.; Vaughan, C.A.; Sloan, J.C.; et al. Diet And Perceptions Change With Supermarket Introduction In A Food Desert, But Not Because Of Supermarket Use. Health Aff. Proj. Hope 2015, 34, 1858–1868, doi:10.1377/hlthaff.2015.0667.
11. Ghosh-Dastidar, B.; Cohen, D.; Hunter, G.; Zenk, S.N.; Huang, C.; Beckman, R.; Dubowitz, T. Distance to Store, Food Prices, and Obesity in Urban Food Deserts. Am. J. Prev. Med. 2014, 47, 587–595, doi:10.1016/j.amepre.2014.07.005.
12. Morland, K.; Diez Roux, A.V.; Wing, S. Supermarkets, Other Food Stores, and Obesity: The Atherosclerosis Risk in Communities Study. Am. J. Prev. Med. 2006, 30, 333–339, doi:10.1016/j.amepre.2005.11.003.
13. Allcott, H.; Diamond, R.; Dubé, J.-P. THE GEOGRAPHY OF POVERTY AND NUTRITION: FOOD DESERTS AND FOOD CHOICES ACROSS THE UNITED STATES; 2017;
14. Lofton, S.; Martyn-Nemeth, P.; Hayman, L.L. Strengthening Support for Black Women With Hypertension Through Food Is Medicine Initiatives. J. Cardiovasc. Nurs. 2022, 37, 199, doi:10.1097/JCN.0000000000000902.
15. House, W. Biden-Harris Administration National Strategy on Hunger, Nutrition, and Health 2022.
16. Ring, M.; Jhaveri, R. Conversations With the Editors: Learning and Teaching the Concepts of Food as Medicine and Culinary Medicine. Clin. Ther. 2022, 44, 644–649, doi:10.1016/j.clinthera.2022.01.002.
17. Johnson, V.R.; Washington, T.B.; Chhabria, S.; Wang, E.H.C.; Czepiel, K.; Reyes, K.J.C.; Stanford, F.C. Food as Medicine for Obesity Treatment and Management. Clin. Ther. 2022, 44, 671–681, doi:10.1016/j.clinthera.2022.05.001.
18. Shah, N.D.; Barritt, A.S. Nutrition as Therapy in Liver Disease. Clin. Ther. 2022, 44, 682–696, doi:10.1016/j.clinthera.2022.04.012.
19. Swier, R.M.; Siebrasse, A.; Coscia, E.; Peery, A.F. Diet in Benign Colonic Disorders: A Narrative Review. Clin. Ther. 2022, 44, 657–670, doi:10.1016/j.clinthera.2022.03.010.
20. LeBlanc-Morales, N. Culinary Medicine: Patient Education for Therapeutic Lifestyle Changes. Crit. Care Nurs. Clin. North Am. 2019, 31, 109–123, doi:10.1016/j.cnc.2018.11.009.
21. Tanumihardjo, J.P.; Davis, H.; Zhu, M.; On, H.; Guillory, K.K.; Christensen, J. Enhancing Chronic-Disease Education through Integrated Medical and Social Care: Exploring the Beneficial Role of a Community Teaching Kitchen in Oregon. Nutrients 2023, 15, doi:10.3390/nu15204368.
22. Saksena, M.J.; Okrent, A.M.; Anekwe, T.D.; Cho, C.; Dicken, C.; Effland, A.; Elitzak, H.; Guthrie, J.; Hamrick, K.S.; Hyman, J.; et al. America's Eating Habits:Food Away From Home. Econ. Inf. Bull. 2018.
23. Eisenberg, D.M.; Pacheco, L.S.; McClure, A.C.; McWhorter, J.W.; Janisch, K.; Massa, J. Perspective: Teaching Kitchens: Conceptual Origins, Applications and Potential for Impact within Food Is Medicine Research. Nutrients 2023, 15, doi:10.3390/nu15132859.
24. VanWormer, J.J.; Boucher, J.L. Motivational Interviewing and Diet Modification: A Review of the Evidence.
25. Treasure, J. Motivational Interviewing. Adv. Psychiatr. Treat. 2004, 10, 331–337.
26. Britt, E.; Hudson, S.M.; Blampied, N.M. Motivational Interviewing in Health Settings: A Review. Patient Educ. Couns. 2004, 53, 147–155, doi:10.1016/S0738-3991(03)00141-1.
27. Resnicow, K.; Jackson, A.; Wang, T.; De, A.K.; Mccarty, F.; Dudley, W.N.; Baranowski, T. A Motivational Interviewing Intervention to Increase Fruit and Vegetable Intake Through Black Churches: Results of the Eat for Life Trial; 2001; Vol. 91, pp. 1686–1693;.
28. Deborah Bowen; Carolyn Ehret; Margaret Pedersen; Linda Snetselaar; Marian Johnson; Lesley Tinker; Donna Hollinger; Ilona Lichty; Kerri Bland; Donna Sivertsen; et al. Results of an Adjunct Dietary Intervention Program in the Women's Health Initiative. J. Am. Diet. Assoc. 2002.
29. US Census. (2020). Population by Race/Ethnicity, 2018-2022 [Bar Chart]. Chicago Health Atlas. https://chicagohealthatlas.org.
30. USDA, Economic Research Service, Food Access Research Atlas. (2019). Low food access [Rank]. Chicago Health Atlas. https://chicagohealthatlas.org
31. Kolak, M.; Bradley, M.; Block, D.R.; Pool, L.; Garg, G.; Toman, C.K.; Boatright, K.; Lipiszko, D.; Koschinsky, J.; Kershaw, K.; et al. Urban Foodscape Trends: Disparities in Healthy Food Access in Chicago, 2007–2014. Health Place 2018, 52, 231–239, doi:10.1016/j.healthplace.2018.06.003.

32. Champion, V.L.; Skinner, C.S. The Health Belief Model. Health Behav. Health Educ. Theory Res. Pract. 2008, 4, 45–65.
33. Deshpande, S.; Basil, M.D.; Basil, D.Z. Factors Influencing Healthy Eating Habits among College Students: An Application of the Health Belief Model. Health Mark. Q. 2009, 26, 145–164, doi:10.1080/07359680802619834.
34. Prochaska, J.O.; DiClemente, C.C. Transtheoretical Therapy: Toward a More Integrative Model of Change. Psychother. Theory Res. Pract. 1982, 19, 276–288, doi:10.1037/h0088437.