

The Use of Precision Nutrition Among African Americans With Chronic Disease

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Objectives: To characterize the effects of precision nutrition on dietary behavior change, weight, and waist circumference. To examine perceptions of receiving a personalized nutrition plan.

Methods: Food as Medicine Phase II is a pilot study that measured the effectiveness of incorporating precision nutrition to improve chronic disease management in a cohort of 24 low income African Americans with either pre-diabetes, type 2 diabetes mellitus, hypertension, elevated blood cholesterol levels, obesity or a combination of these disorders. Anthropometric measures and a food questionnaire were collected pre/post study. DNA samples were obtained from each participant and analyzed at Howard University on SNPs related to nutrient metabolism. Results from the DNA tests were incorporated in a detailed personal nutrition plan developed for each participant. Plans were presented and discussed during an initial individual face-to-face

counseling session. Due to COVID 19, a second counseling session was conducted via Zoom. For three months after the 2nd counseling session, participants received weekly text messages reinforcing the information received.

Results: Participants reported significant improvements in their intake of most recommended foods. Reductions in weight, waist circumference, and in the reported intake of non-recommended foods and beverages were not significant. Most participants either strongly agreed (14) or agreed (4) that the personalized nutrition plan provided useful information. The coronavirus pandemic was mentioned by 20% of participants as a barrier to following their personalized nutrition plan recommendations.

Conclusions: The results suggest that a personalized approach in providing dietary recommendations utilizing precision nutrition has the potential to increase self-efficacy and improve dietary intake among low income African Americans with chronic disease. It also demonstrated that it is feasible to recruit and retain individuals of African ancestry to participate in an investigation that assesses and discloses gene-associated disease risk.

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