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Wholesome Wave

Impact Evaluation Report for Depth2020 Fruit and Vegetable Incentive Program

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Executive Summary

The purpose of the current evaluation is to assess the role of the Wholesome Wave Depth2020 Fruit and Vegetable Incentive program and its components on participants' outcomes related to health, knowledge, attitudes, and behavior. It was found that after the 6-month fruit and vegetable incentive program, participants' general health significantly increased, and participants' number of chronic diseases being managed significantly decreased. Consumption of both fruits and vegetables increased during the program; there was not a significant change in participants' knowledge about the benefits of fruits and vegetables or in participants' children's attitudes about fruit or vegetables. Participants' pre- and post-program responses indicated that increased knowledge of the health benefits of fruits and vegetables resulted in increased fruit and vegetable consumption. Increases in knowledge also predicted higher rates of voucher spending. Participants' qualitative responses indicated that many participants felt healthier and had more energy as a result of the program, and felt they were able to afford higher quality foods that they otherwise would not be able to purchase due to cost. Participants also reported practicing more healthy behaviors, such as meal planning, healthier cooking methods, and increasing regular physical activity. The most helpful aspect of the incentive program, as reported by participants, was the monthly fruit and vegetable voucher. The program proved to be significantly influential in increasing consumption of fresh produce and consequently improving health for those participants who were able to sustain involvement throughout the program.

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Introduction

Chronic diseases, specifically those related to nutrition, make up the leading causes of death in the United States. In addition to morbidity and mortality associated with cardiovascular diseases, diabetes, obesity, and cancers, nutrition has also been linked to COVID-19 symptom severity during the 2020 pandemic [1, 2]. People who are low income experience disproportionately higher rates of nutrition-related chronic disease, as well as less access to nutritional foods [3]. Improving diet by increasing fruit and vegetable intake is associated with improved disease outcomes, and thus increasing access to fruits and vegetables for low-income communities is essential to lessen the burden of nutrition-related chronic diseases [4].

Fruit and vegetable incentive programs seek to increase access to healthy fruits and vegetables for families to whom the cost of such foods may be a barrier [5]. These programs have proven useful to families and individuals in other interventions [5, 6]. Wholesome Wave was founded in 2007, and has since built relationships with communities across the country for the purpose of increasing accessibility and affordability to healthy fruits and vegetables for low-income and underserved consumers [7].

The Wholesome Wave Depth2020 intervention was launched in 2018. Nine cities were offered the Depth2020 program, which provided The Depth2020 intervention focused on the feasibility of a fruit and vegetable incentive program, and its potential for impact when offered in conjunction with intensive support. The current evaluation seeks to interpret the impact on health, knowledge, attitudes, and behaviors that the fruit and vegetable incentive program had on participants.

Program Design

The Depth2020 program sought to investigate the impact of a fruit and vegetable incentive program on participants' health. The program lasted 6 months at each site. Each month, participants received a monthly \$50 incentive (in the form of either a voucher or an amount reloaded to a reusable card) for fruit and vegetable purchases at a specific grocery store or for use in farmers markets. Participants also received free access to the Weight Watchers app for access to recipes, diet tracking, exercise tracking, and new information about nutrition and exercise. Participants also received either a Nike gift card or Nike gift bag, and twice monthly reminders to use the fruit and vegetable incentive.

Nine cities were selected for the Depth 2020 program, all of which participated in Oprah Winfrey's 2018 Weight Watchers tour. These cities were Minneapolis (MN), Los Angeles (CA), Ft. Lauderdale/Broward County (FL), Charlotte (NC), Atlanta (GA), Brooklyn (NY), Dallas (TX), Denver (CO), and San Francisco (CA). However, the San Francisco site was excluded from this analysis due to data limitations. All sites offered similar program incentives for participation. Community partners at each site were selected based on having high interaction with low-income clients whom may experience food insecurity. Community partners were non-profit agencies, hospitals, and family health centers. Participants were selected by an internal referral from the community site partner. A summary of site locations and incentives by site can be found in Table A2.1.

Behavior change theories identify the process by which individuals make short- and long-term changes in behaviors that affect their personal health: The Wholesome Wave

Depth2020 program applies aspects of the Transtheoretical Model (TTM), the Health Belief Model (HBM), the Theory of Planned Behavior (TPB), and the Social Cognitive Theory (SCT).

Intervention’s Theoretical Framework

Through these program activities, the program expects to see an increase in access to fresh fruits and vegetables, increased knowledge about the benefits of nutrition, and improvement in overall diet quality: leading to improved health metrics (as illustrated in the *Program Logic Model*, Figure 1 below).

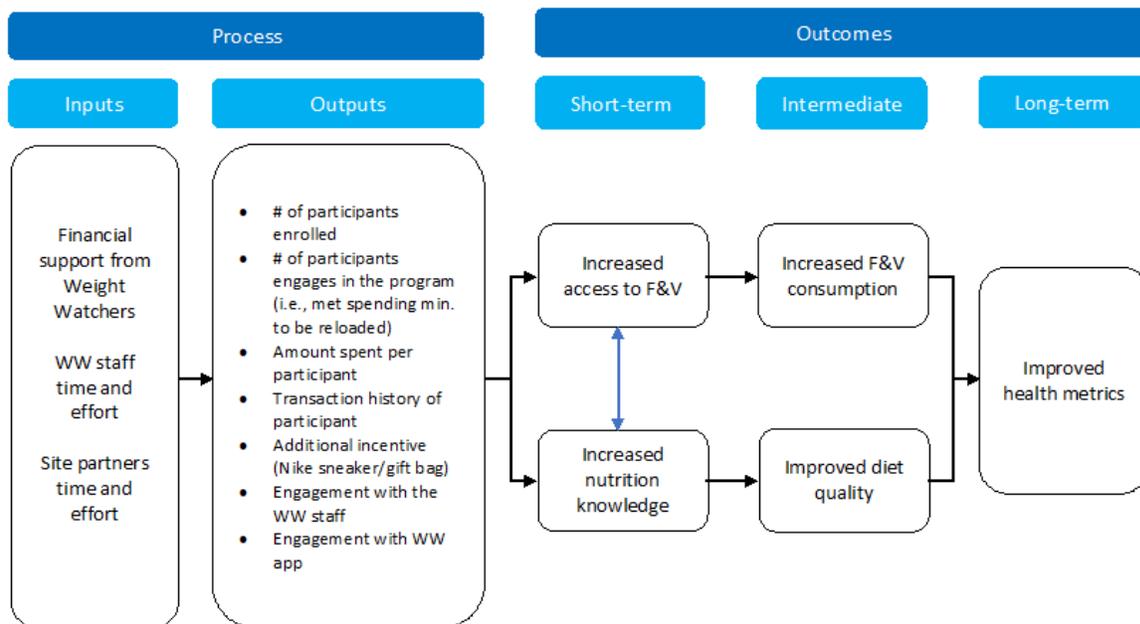


Figure 1. Depth 2020 Program – Logic Model.

Purpose of Evaluation

The aim of this evaluation is to assess the role of the fruit and vegetable incentive program on participants’ health, knowledge, attitudes, and behavior-related outcomes. Participants’ engagement, perceptions, and the influence of COVID-19 on participation were also assessed. The specific evaluation questions addressed can be found in Table 1. Questions from the

original evaluation plan that could not be answered – as a result of limitations in data collection – were excluded from the evaluation.

Table 1. Depth2020 Evaluation Questions

1. To what extent did participants engage in the WW fruit and vegetable incentive program? Does participation vary by socioeconomic or demographic characteristics?
<ul style="list-style-type: none"> • What are the socioeconomic and demographic characteristics of participants? • How does participation vary by socioeconomic and demographic characteristics? • How are basic demographics and participant characteristics associated with use of incentives?
2. Is participation in the WW fruit and vegetable incentive program associated with changes in outcome indicators at the end of the program?
<ul style="list-style-type: none"> • Is this enhanced F&V incentive program associated with statistically significant changes in knowledge, attitudes, behaviors, or other health indicators? • Are changes in knowledge and attitudes associated with changes in behavior? • Is incentive use related to changes in knowledge, attitudes, behaviors, or health outcomes?
3. How has COVID-19 impacted participants and programming?
<ul style="list-style-type: none"> • How has the COVID-19 pandemic impacted participants? • How is individual impact of COVID-19 associated with engagement in the program?

Evaluation Design and Data Collection Tools

Pre- and Post-Program Surveys

Participants were asked to complete pre- and post-program surveys, which were designed by Wholesome Wave and modified in collaboration with site partners to tailor the evaluation to be most relevant to the audience. These surveys were distributed by the community partners through Google Forms. Surveys included items related to demographic information, food security, health conditions, exercise, and diet quality. The amounts of fruits and vegetables that participants’ families consumed daily was also reported by participants. This consumption measure was measured by an estimation of cups of fruit and cups of vegetables consumed by the participants’ family each day. Participants reported to what extent

they felt they knew the benefits of fruits and vegetables. Change in this knowledge item was calculated by subtracting the response recorded in the final survey from the response recorded in the initial survey (1-5 on a Likert scale, where 1=*A great deal* and 5=*Nothing at all*).

Information on the participants' perceptions of their own general health and whether they were currently managing any chronic diseases (specifically high blood pressure, obesity, high cholesterol, or diabetes) was also collected at the beginning and end of the program. In the post-program survey, participants were also asked about items related to the impact of COVID-19 on program participation and implementation. COVID-19 pandemic-related stress was assessed using a 24-point survey tool. Additionally, the perceived helpfulness of program incentives was assessed in the post-program survey. Most quantitative results utilized Likert scales for ordinal and nominal data.

Biometric Measurements

Three of the eight cities collected some biometric data on participants at the start of the program: Atlanta, Brooklyn, and Los Angeles. This included blood pressure, height, and weight (BMI calculated). One site (Brooklyn) collected biometric data both at the baseline and end of program. One site (Denver) collected biometric data at the end of program only.

Fruit and Vegetable Voucher Transaction Data

Transactions using the \$50 fruit and vegetable voucher were tracked. This included the frequency of voucher reloads (which could be done once monthly), the amount spent per transaction, and what products were purchased. Seven of the eight cities had data that allowed for the total percentage of vouchers spent to be calculated.

Analysis Methods

Quantitative Assessment

Descriptive and frequency statistics were used to assess what sociodemographic and intervention attributes were associated with participants' achievements in the Depth2020 program. Process measures assessed the dose-response relationships of variables (i.e., transaction trends in relation to fruit and vegetable consumption trends). Regression analyses were used to assess the interaction of voucher redemption with changes in behavior, knowledge, and health metrics. Additionally, Wilcoxon Sign-Rank and Chi-Square tests were used to assess whether demographic factors influenced program participation or incentive usefulness. Various non-parametric tests were used to determine the significance of changes in knowledge, attitudes, behavior, or other self-reported metrics from the beginning of the program to the end. The total number of diseases that a single participant reported was calculated by their responses to whether they were managing specific chronic diseases (high blood pressure, obesity, high cholesterol, or diabetes). The impact of the COVID-19 pandemic on program implementation and participation was assessed by testing whether participation, incentive usefulness, and motivation changed from before to after the onset of the pandemic (March 2020). Additionally, pandemic-related stress was measured using the Coronavirus Impact Scale [8]. Ordinal and binary logistic regression models were created to determine relationships between voucher spending, behavioral and knowledge-related changes during the program, while controlling for site.

Qualitative Assessment

Open-ended responses on the surveys asked participants to explain their experiences. These items referred to expectations, and perceived benefits and changes. Qualitative items were thematically coded by one coder, and analyzed within and across locations. Two open-ended questions were asked in the baseline survey, and two in the end-of-program survey. These themes and commonalities were quantified to find the most common themes across the program's eight sites.

Quantitative Findings

For the following results, frequencies may not sum to equal the full sample (N=822 for full data analyses, N=422 for linked analyses) and the percent reported for a group may not sum to 100%. Some responses were missing for many of the frequencies and tests. However, missing responses were omitted from statistical tests. Frequencies of missing responses are reported alongside variable response frequencies in the Appendix.

Participation and Demographic Information

There were 822 participants in the Depth2020 program overall, with 53.8% (N=442) of these participants completing the final program survey. There were no significant impacts of demographic factors on program impact metrics (i.e., changes in knowledge, attitudes, consumption, or health). Age differed significantly between participants who filled out the final survey and those who did not ($p < .001$), with 50% ages 45-66 in the final survey group (36% in lost-to-follow-up group) and 23% being above age 65 (35% in lost-to-follow-up group) (Table A3.1.b).

Health-Related Findings

There were no significant changes in the number of patients reporting to be managing obesity or cholesterol. The number of participants reporting high blood pressure significantly decreased ($p=.013$). Additionally, the number of participants reporting to be managing diabetes also significantly decreased ($p=.008$). The total number of diseases that participants reported to be managing significantly decreased during the program ($p=.030$) (Table A4.1.b).

Self-reported general health improved significantly overall during the program ($p<.001$). Many participants reported that their health improved during the program (41.4%, $N=181$), and 41.9% ($N=183$) reported no change in health; 16.7% ($N=73$) of participants reported that their health was worse at the end of the program than the beginning. (Table A4.3.)

High pandemic-related stress was negatively correlated with participants' change in self-reported general health during the program ($p < .001$), meaning individuals who experienced high pandemic-related stress were more likely to report worse general health at the end of the program than at the beginning. There was no evidence for a correlation between pandemic-related stress and changes in blood pressure or BMI during the program (Table A4.4.).

COVID-related stress (COVID Impact Scale) was significantly correlated with changes in general health. For every one-point increase in COVID-related stress, general health decreased by approximately 0.203 ($p=0.04$). In other words, a five-point increase in COVID-related stress would cause a decrease in general health by one ordinal response (movement from *Fair* to *Poor* for example).

Knowledge-, Attitudes-, and Behavior-Related Findings

About 16.7% ($N=74$) of participants reported knowing less at the end of the program than the beginning, 54.5% ($N=241$) reported no change, and 27.4% ($N=121$) reported an

increase in knowledge. Self-reported knowledge assessment did not change significantly during the program ($p=.85$) (Table A6.6.a).

Neither children's attitudes about fruit ($p=0.56$) nor vegetables ($p=0.17$) changed significantly during the program. Of participants who reported having children under the age of 18 in the home, 24.9% (N=46) of participants more strongly agreed that their children liked fruit at the end of the program than the beginning, with 52.4% (N=97) reporting no change and 22.7% (N=42) reporting a decrease. For the same scaled item for children's attitudes about vegetables, 31% (N=57) reported more positive attitudes at the end of program than the beginning, 43.8% (N=80) reported no change, and 25.5% (N=47) reported more positive attitudes at the beginning of the program. (Table A6.6.a).

Consumption of both fruit ($p<.001$) and vegetables ($p<.001$) improved from baseline to the end of the program (Table A6.6.b). For the assessment of changes in fruit and vegetable consumption, 40.3% (N=178) participants reported an increase in families' daily consumption of fruit, 35.1% (N=155) reported no change, and 19.5% (N=86) reported a decrease in fruit consumption. For vegetables, 47.1% (N=208) of participants reported their families were eating more vegetables, 23.5% (N=104) reported no change, and 24.2% (N=107) reported a decrease in vegetable consumption. Weekly frequency of exercise did not change significantly during the program ($p = 0.16$).

The change in knowledge about the benefits of fruits and vegetable was strongly associated with changes in both fruit ($p < 0.001$) and vegetable ($p=0.001$) consumption. A positive change in self-reported knowledge about the health benefits of fruits and vegetables was associated with a reported increase in daily consumption of both fruits and vegetables.

Change in knowledge of health benefits of fruits and vegetables was not significantly related to changes in exercise habits, or children's attitudes about fruits and vegetables. There was also no relationship found between knowledge of the health benefits of fruits and vegetables at baseline and program participation (i.e., final survey completion (yes/no), and 75% of incentive vouchers spent (yes/no)).

Spending and Program Involvement

Voucher spending information was used to determine whether program involvement corresponded to changes in fruit or vegetable consumption, knowledge, or attitudes using logistic regression models (Appendix Table 6.9., 6.10., and 6.11.). This information was not available for the Brooklyn program site, so only information from the participants from Atlanta, Broward County, Charlotte, Denver, Dallas, Los Angeles, and Minneapolis were used for the following analyses. Regression analyses were conducted controlling for site. (Future analyses will assess race and ethnicity.)

Binary logistic regressions were used to determine the effect that participants' changes in knowledge or attitudes during the program had on voucher spending rate, controlling for site (Tables A6.9.a-c). For every one-unit increase in participants' knowledge during the program, the odds of spending 75% or more of their vouchers increased by 42% ($p < .001$, Table A6.9.a.). For every one-unit improvement in children's attitudes about fruit or vegetables, the odds of spending 75% or more vouchers decreased by 5% ($p < .001$) and by 9% ($p < .001$), respectively.

Ordinal logistic regressions modeling the effect of participants' change in knowledge had on fruit and vegetable consumption change (Table A6.10. a-b). For every one-unit increase in knowledge during the program, the consumption of fruits increased by 46% ($p = .003$) and

consumption of vegetables increased by 41% ($p=.016$). Additionally, spending 75% or more of vouchers was related to an 80% increase in fruit consumption ($p=.009$, Table A6.11.a.).

In response to the usefulness of incentives, the usefulness of the \$50 fruit and vegetable voucher ($p=0.002$) and the reminders from the Wholesome Wave team ($p=0.031$) changed significantly due to the pandemic. Both the voucher incentive and the reminders were rated less helpful after the onset of COVID-19 than beforehand. COVID-19 did not impact the helpfulness of the other program incentives. The most popularly selected benefits of the \$50 fruit and vegetable voucher were *motivation to try healthier products* (67% responding yes), *motivation to try products that usually could not be afforded* (63% responding yes), and *motivation to try new products* (63% responding yes).

Qualitative Findings

Summary of Qualitative Findings

Though many topics and details were discussed by participants in the numerous qualitative responses, major themes that were the most prominent theme between all program sites increased purchasing power for fruits and vegetables, changes in health-related behaviors, lifestyle and health improvements, and knowledge and attitudes. These themes are outlined below along with compelling participant quotations that articulate more personal experiences.

Increased Budget and Purchasing Power for Fruits and Vegetables

One major theme at every site was participants' increased ability to purchase fresh fruits and vegetables. Participants credited the larger produce budget with being able to incorporate fruits and vegetables into their diets regularly, and enabled them to prepare healthier, more unique meals for themselves and/or family. Many participants identified the

cost of produce as a barrier to regular purchasing. Another common topic was the financial relief the incentive provided, which allowed some patients to divert funds to pay for other necessities. Within this topic, many participants noted the alleviation of the cost of produce during the duration of the program led to the development healthy habits related to regular fruit and vegetable consumption.

Changes in Health-Related Behaviors

Health related behavioral changes included increased physical activity frequencies, with many participants indicating they were exercising regularly and walking more. Not only did participants report they were consuming more fruits and vegetables, but many also mentioned healthier cooking methods

“Keep cooking with vegetables. Eating fruits and vegetables these last 6 months has become an easy and tasty habit.”

such as steaming or sautéing vegetables (rather than frying). Meal preparation was another common response, with some participants indicating they felt less stressed when they were able to plan meals ahead of time. Many also noted they were preparing food at home more, rather than eating out at restaurants.

“Since being on the program I lost weight and my blood pressure went down. I am feeling much better and my mind has been clearer. My digestive system is working perfectly.”

Lifestyle and Health Improvements

Another common theme was participants’ personal improvements in various aspects of health. Many said they were exercising more than usual as a result of the program, as well as drinking more water. Common responses in many sites included improved sleep quality, decreased stress, and being more concerned with monitoring their own

personal health. Some participants reported improvements in blood pressure, diabetes, weight loss, and motivation to monitor one's own health.

"I am sleeping better at night because I am eating healthy. I am walking more and losing more and more weight."

Knowledge and attitudes

Many participants reported increases in knowledge about health related to fruits and vegetables at every site location. Common topics were an increase in personal confidence in ability to identify healthy foods at the store, including knowledge about reading food labels and electing foods with lower sugar and sodium

"Preparing more vegetable and at least 2 servings a day of fruit. This month I can really tell a difference ... I really miss having that gift card."

content. Some participants also commented on a new willingness to try new or unfamiliar foods. Importantly, a majority of respondents at every site reported feeling motivated to continue healthy keeping up with physical activity, and continuing to improve diet quality.

Compelling Dissenting Information from Qualitative Statements

There were surprisingly few mentions of the effect of the pandemic on participants' experiences. Some who mentioned the pandemic in their responses indicated that the incentive was helpful especially during COVID-19, due to limitations in employment or the effects of other costs. Others mentioned difficulties participating in the program due to pandemic-related limitations as well as inconvenience of store choice.

Limitations and Challenges to Analysis

There were several challenges to data analysis as proposed in the evaluation plan. Due to unprecedented circumstances, many sites were unable to collect the biometric data that had originally been planned. In addition, the baseline and end-of-program surveys were not entirely

consistent, meaning there were some variables that were unavailable for certain cities. If a conclusion was made from the analysis based on a variable that was missing by City X, for example, the conclusion could not be assumed to be true for that city. Discrepancies in survey questions are noted in Appendices VII and IX.

Additionally, the phrasing of some survey questions should be carefully considered in future programs, as unclear questions may cause confusion for participants while responding. In the current evaluation, for example, fruit and vegetable consumption was measured by response to the question, *“How many cups of fruit [vegetables] does your family eat each day?”* where responses were ½ - 1 cup to 4+ cups. This leaves room for participants to interpret the question as either asking for this quantity per person or per household. This optional responses to this question also overlap, (1-2 versus 2-3 cups) making quantities that border two answers to be unclear. Generalizability of results is also challenged by the limited assessment of primary outcomes. Only one survey item assessed each of the following outcomes, leaving room for reporting bias: knowledge, attitudes, diet quality, and exercise. These self-reported data points give insight to participants’ perceptions of these items, but do not assess them objectively.

Biometric paired data, which was originally intended to be collected at baseline and at the end of program, is only available for one site (Brooklyn - TCAH) due to COVID-19-related complications in programming. To accurately determine whether incentive utilization impacted health directly, biometric health measures and spending data would have been needed. As Brooklyn is the only site with both baseline and end-of-program biometric data and transactional spending data was not available for that site, this relationship could not be evaluated.

Discussion

Participation in the program led to a significant change in both fruit and vegetable consumption in participants' families. Attitudes and knowledge about fruits and vegetables did not change significantly. It may be inferred that the availability of the \$50 fruit and vegetable incentive was the main contributor to increases in produce consumption. Furthermore, participation in the program positively impacted the health of many participants. Not only did self-reported general health improve significantly during the program, but self-reported disease frequencies for diabetes and blood pressure decreased. Changes in diabetic status and blood pressure were not significantly related to pandemic-related stress or food security, items available to assess potential sources of ongoing external stress.

Increases in knowledge of the benefits of fruits and vegetables also led to significant increases in the amount that participants spent on fruit and vegetables, as well as significant increases in consumption of fruit and vegetables. Interestingly, increasing voucher spending was associated with increasing fruit consumption, but not of vegetable consumption change. At baseline, participants' amount of fruit consumed was significantly higher than amount of vegetables consumed. Results may indicate that the significant increases in fruit and vegetable consumption during the program are not due to increased spending on produce, and more so related to how much a participant is able to learn about the health benefits of fruit and vegetables. This could further be informed by participants' baseline preferences for fruits; where increases in vegetable consumption were less based on preference and more on knowledge of the related benefits.

Qualitative data supported these findings. At every program site, one of the most common themes was improvement in feelings of health, having more energy, and improved quality of mood due to increased intake of fruits and vegetables in the diet. Many participants discussed decreases in blood pressure and increased motivation to monitor blood pressure. Some participants who experience diabetes noted an improvement in symptoms. There were participants at nearly every site who reported experiencing weight loss.

Engagement was inferred either by participants' completion of the final survey or by their total fruit and vegetable incentive voucher spending. Only age was significantly related to final survey completion, with slightly younger age groups being more likely to complete it than the oldest age group. This may be attributed to the general level of comfort with completing an online survey being slightly higher for the youngest age group. Additionally, age had a significant relationship with program engagement assessed by high-versus-low voucher redemption ($p < .001$). The older two age groups were more likely than the youngest group to sustain engagement in the program through voucher redemption. This trend may be due to the likelihood of participants aged 18 – 44 to have children living at home, or difficulties in planning grocery shopping trips.

COVID-19 pandemic-related challenges were evident by participants' reported experiences. The helpfulness of both the fruit and vegetable incentive voucher and reminders from the Wholesome Wave team significantly decreased due to the pandemic ($p=.002$ and $p=.031$, respectively). Pandemic-related stress also correlated negatively with participants' general health, meaning as pandemic-related stress increased, the likelihood that general health would worsen increased. Pandemic-related stress was measured by several factors that

can impact health (See Table A6.5.), including access to health care, to social support, general stress, access to food and income. The COVID-19 pandemic did have an impact on participation in the incentive program. This is especially true for Dallas, Broward County, Charlotte, Brooklyn, and Los Angeles, where COVID-19 severity reached the highest quartile for one or more months during the program. The results of the current evaluation should be interpreted considering the especially high stress and low motivation that resulted from the pandemic. High- or low-participation rates at various sites should also be interpreted considering the local severity of the pandemic and the impact on participants' daily lives.

Further analysis should identify the qualitative responses of participants whose health conditions either improved or worsened during the program to identify program resources that lead to such health benefits, and any barriers identified by participants whose health worsened. Additionally, qualitative analyses should be used to inform the differences by race and ethnicity in outcomes related to changes in knowledge, attitudes, health, and fruit and vegetable consumption. During these quantitative analyses, race and ethnicity contributed a significant amount of confounding to results that could not be explained by participation or spending alone.

Recommendations

Future fruit and vegetable incentive programs would benefit from prioritizing collection of health-related biometrics, incentivizing or otherwise ensuring completion of the end-of-program data collection, and following up with participants who are unable to continue involvement to identify additional relevant barriers to fruit and vegetable access. The age-related findings suggest that participants older than 65 were less likely to complete the final

Google survey, even though they were still involved in the program (as indicated by voucher redemption). It is therefore recommended that incentive programs serving communities of mixed age ranges offer phone or in-person program surveys, as well as online options.

Though the voucher for fruits and vegetables was decidedly the most helpful incentive in the program, the Nike and Gift Bag incentives were also highly helpful to participants. Reminders were identified as highly helpful as well, and should be included in future programs. The Weight Watchers app should be included for participants in future programs if it is cost effective, about half of participants found it helpful for learning and tracking health behaviors. Walking through the app with participants at the beginning of the program should be considered to increase comfort navigating the app. Follow-up interviews with participants should be conducted to determine whether the app is considered user-friendly.

Findings suggest that the Depth2020 program was successful in increasing consumption of fresh fruit and vegetables, improving knowledge of the health benefits of fresh produce, and improving general health and quality of life for many of the participants. Many participants expressed that the sustained access to fruit and vegetables provided by the program led to their healthy behaviors becoming habits. Offering the incentive program for an extended period of time and expanding the number of participants reached is recommended, when possible. Expanding the options that participants have for voucher redemption may also prove useful, as some participants credited low involvement with the inconvenience of the store location. Close attention to the Brooklyn site's qualitative responses relating to redemption challenges may inform next steps in this direction, as participants in Brooklyn had multiple options for redemption locations. Developing a method to collect feedback from participants who are less

involved to determine additional barriers to fruit and vegetable access beyond affordability is also recommended.

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