



Evaluation of integrated marketing communication strategies used for the Fruits & Veggies Campaign in California and Virginia

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ABSTRACT

In 2015, the Partnership for a Healthier America launched the branded Fruits & Veggies (FNV) Campaign to promote fruit and vegetable sales and intake to moms and teens in two California and Virginia pilot markets. The FNV Campaign used a novel, creative approach to promote fruits and vegetables through integrated marketing communication (IMC) strategies. Findings from a mixed-methods process evaluation conducted between 2016 and 2017 were used to explore congruence between stakeholders' expectations of IMC strategy potential and FNV brand awareness and reach among target audiences. Awareness and recall of IMC strategies were assessed through a cross-sectional survey of target audience respondents ($n = 1604$) from the pilot markets. Qualitative data regarding IMC strategy potential and influential factors were gathered from stakeholder interviews ($n = 22$). Approximately 19.6% ($n = 315$) of respondents were aware of the FNV Campaign. Stakeholders' perspectives regarding IMC potential aligned with findings that the proportion of aware respondents was significantly ($p = 0.008$) higher among teens (22%) than moms (17%). Qualitative results also converged with higher proportions of survey respondents recalling brand exposure through social media (46%) and retail settings (30%) than community activities (18%), word of mouth (17.5%), and traditional media advertisements (9.5%). IMC recall did not differ between mom and teen respondents except for significantly ($p = 0.02$) higher word of mouth recall among teen respondents. Findings support using selected IMC strategies and future involvement of diverse stakeholders. Evaluation results can inform future research and practice to improve IMC strategy reach and influence as the FNV Campaign expands to new markets nationwide.

1. Introduction

The majority of children and adults in the United States (U.S.) do not meet government recommendations for fruit and vegetable consumption to promote health and reduce chronic disease risk (U.S. Department of Health and Human Services, & Office of Disease Prevention and Health Promotion; U.S. Department of Health and Human Services & U.S. Department of Agriculture, 2015). Despite previous national fruit and vegetable promotion campaigns, such as Five a Day and Fruits and Veggies—More Matters, consumption has not increased to meet government recommendations of 4.5 cup-equivalents per day (Rekhy and McConchie, 2014; U.S. Department of Health and Human Services & U.S. Department of Agriculture, 2015) and fruits and vegetables remain a fraction of food and beverage products advertised (Harris et al., 2015).

In 2015, the Partnership for a Healthier America (PHA) launched the multi-million dollar Fruits & Veggies (FNV) Campaign to promote fruit and vegetable sales and consumption in two U.S. states (Partnership for a Healthier America, 2015). The FNV Campaign approach aligned with previous recommendations to apply industry marketing practices to fruit and vegetable promotion (Bublitz and Peracchio, 2015; Rekhy and McConchie, 2014), which used an integrated marketing communications (IMC) strategy. IMC involves the coordination of marketing activities through multiple channels to maximize exposure effects and brand influence on targeted populations (Jackson et al., 2014). In contrast to previous theory-based campaigns, the FNV Campaign strategy was intentionally designed without health-based rational appeals, and instead used emotional or affective appeals. Emotional appeals are commonly used in commercial marketing to promote energy-dense and nutrient-poor branded foods and beverages

Abbreviations: FNV, Fruits & Veggies; PHA, Partnership for a Healthier America; IMC, integrated marketing communication

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and ultimately influence consumers' dietary preferences, demand, and intake (Bublitz and Peracchio, 2015). Creative advertising firm Victor & Spoils designed the FNV Campaign, which was "... inspired by big consumer brands, whose tactics are relentless, compelling, catchy, and drive an emotional connection with their products" (Partnership for a Healthier America, 2015). FNV promotions featured *pro bono* celebrity endorsers and "...typographic design with fruit and vegetable accents to relay self-aware, tongue-in-cheek headlines" (Partnership for a Healthier America, 2015). Examples of marketing promotions and links to FNV social media accounts can be viewed at the FNV Campaign website (<https://fnv.com/>).

One year after launching, the FNV Campaign was reported to have over 650 million impressions from earned media and 350 million impressions through social media (Crawford, 2016). Additional engagement metrics and content examples have been reported for an FNV social media contest entry (Partnership for a Healthier America & Whistle Sports, 2016). Evaluation outcomes have been reported for positive shifts in attitudes, intentions and consumption of fruits and vegetables (Crawford, 2016; Simon et al., 2017), but not from empirical and independent evaluations. Research on previous national fruit and vegetable campaigns, such as Fruits and Veggies—More Matters and Five a Day, has not shown meaningful impacts on Americans' intake (Rekhy and McConchie, 2014), but provides detailed information from formative and process evaluation research. The FNV Campaign has no formative research published to outline brand development or support its potential to impact fruit and vegetable consumption. Improving public health researchers' and practitioners' understanding of the FNV Campaign strategy potential can inform future efforts and support cross-sectoral investment from PHA partners (National Fruit and Vegetable Alliance, 2015).

This process evaluation contributes unique evidence and insights for the novel IMC strategies applied to fruit and vegetable promotion in the FNV Campaign in Fresno, California and Hampton Roads, Virginia between 2016 and 2017. The aim of this study was to understand which target audiences the FNV Campaign raised awareness in, through which IMC strategies, and within what contexts. A mixed-methods evaluation was used to: 1) quantitatively assess target audience awareness and recall; 2) qualitatively evaluate stakeholders' perspectives on the potential of IMC strategies to influence behavioral outcomes; and 3) compare and interpret congruence between qualitative and quantitative results.

2. Methods

The FNV Campaign IMC strategies were used to target, reach and engage audience segments with creative content to build positive associations and emotional connections with the FNV brand and fruits and vegetables. The FNV Campaign implementation of IMC strategies encompassed local and national platforms including social, print, television, radio, and digital media; in-store retail promotions; and community-sponsored events (Partnership for a Healthier America, 2015, 2016). Between 2016 and 2017, more than 80 celebrity entertainers and athletes were involved in the FNV Campaign and featured throughout IMC to promote fruits and vegetables (Partnership for a Healthier America, 2016). The PHA aimed to test this new approach to fruit and vegetable promotion in two markets with large, racially and ethnically diverse populations (Cloud, 2015; Partnership for a Healthier America, 2016). The Fresno County, California pilot market has a population of approximately 980,000 residents, with a much larger representation of the Hispanic ethnic population (52%) than the national population (17%; U.S. Census Bureau, 2018a); the other pilot market was the Hampton Roads, Virginia metropolitan area, which has a population of over 1.6 million with a higher proportion of Black residents (30%) than the total U.S. population (12%; U.S. Census Bureau, 2018b). These demographic segments are of interest as research has shown that Black and Hispanic consumers are disproportionately targeted with

marketing of nutritionally poor products and could benefit from increased marketing of nutritious food and beverage products (Harris et al., 2015). The context of the FNV Campaign implementation in the two markets and intervention approach to the evaluation methods are described below.

2.1. Study design

To understand the outcomes and context of the IMC strategies used in the FNV Campaign, the research team used a convergent evaluation design to combine complementary qualitative and quantitative outcomes that were collected separately from two studies that were part of a larger mixed-methods evaluation of the FNV Campaign funded by the Robert Wood Johnson Foundation. This method was selected to enhance the scope of information included, allow for the interpretation of findings, and provide pragmatic implications for future efforts by comparing qualitative results on stakeholders' perspectives of the FNV IMC strategies to interpret quantitative survey results from target audience members' recall (Carins et al., 2016; Guetterman et al., 2015). The Virginia Tech Institutional Review Board (IRB #15-1110) approved the research protocol in December 2016.

2.2. Quantitative survey

A cross-sectional survey was used to assess whether the FNV Campaign reached and resonated with target audiences to generate awareness and enable recall in the two markets between February and July 2017. The eligibility criteria for this survey were identified in coordination with the PHA and the grant funders to sample participants based on FNV Campaign target audience demographic characteristics. Adolescents and young adults aged 14–20 years (referred to as "teens") and mothers aged 21–36 years who were residents of the pilot markets were eligible to participate in this study. The research team recruited participants through a purposive sampling strategy that involved the distribution of an online survey to eligible target populations. Recruitment was conducted by members of the research team in-person and through flyer and email distribution of the survey link through local organizations (e.g., daycare centers, youth activity centers) that would be relevant or engaged with members of the target audiences. The survey was available in both English and Spanish. Prior to participating, respondents received information about the research and provided implied informed consent or assent by beginning the survey. Participants could take the survey once and received a \$10 gift card for completing the study.

Survey items in this evaluation assessed demographic characteristics and FNV brand awareness and recall. Demographic questions included age, sex, race/ethnicity, educational attainment, and participation in food assistance programs. To assess awareness, respondents were prompted with an image of the FNV logo and asked if they knew what the brand or logo represented, if they had previously seen the brand or logo in their community, or if they had heard of the FNV Campaign. Respondents who selected yes to one or more of the questions were coded as "aware". Participants were also asked to report exposure to FNV IMC strategies by selecting from five options: social media, grocery stores, community activities, friends or family, and a write-in response for "other". Friends or family was recoded to word of mouth, which is the exchange of information about brands, products, or promotions (American Marketing Association, 2017), mainly through friends and family with strong social relationships (Baker et al., 2016). Written responses were recoded into existing variables or "traditional media" that comprised radio, billboard, television, and online media.

Descriptive statistics, chi-squared tests for categorical variables, and independent t-tests for continuous variables were computed to examine awareness and recall of the FNV brand and IMC strategies across demographic groups using SPSS, Version 25.

2.2.1. Qualitative interviews

To assemble diverse stakeholder perspectives, the research team used purposive and snowball sampling strategies to recruit stakeholders who were knowledgeable of, or involved with, the FNV Campaign or U.S. fruit and vegetable promotion efforts. Semi-structured interviews explored stakeholders' views and expectations about the FNV Campaign including design, reach, effectiveness, expansion, scaling up and sustainability. Of 40 stakeholders contacted, 22 agreed to be interviewed between July and October 2016. Participants provided written and oral consent prior to participating. Interviews were recorded, transcribed, thematically analyzed, and organized using NVivo 11 software. Relevant sub-themes on IMC strategy design, reach, effectiveness, and implementation contexts and expected outcomes were categorized according to strategy type and tabulated for comparison with quantitative results.

3. Results

3.1. Target audience surveys

After screening of 2,155 recorded responses and removal of incomplete ($n = 381$) and ineligible responses (e.g., recorded age outside of criteria range), the final sample consisted of 1604 eligible responses. More respondents were from the Hampton Roads ($n = 858$) than Fresno ($n = 746$) market, and from the mom target audience ($n = 860$) than teen ($n = 744$). About one-third of respondents were Non-Hispanic White ($n = 515$), followed by Hispanic ($n = 457$), Non-Hispanic Black ($n = 426$), and other or multiple races or ethnicities ($n = 206$). Within the locations, the majority of respondents from Fresno were Hispanic (53.4%) and Non-Hispanic White (20%), while the Hampton Roads sample was made up of mostly Non-Hispanic White (42.7%) and Black (40.9%) respondents. Representativeness of racial and ethnic groups in the sample did not significantly differ from the total population for the Fresno sample, but did for the Hampton Roads sample, which had a higher proportion of Black respondents (42.7%) than in the Hampton Roads population (U.S. Census Bureau, 2018a,b).

Approximately 19.6% of respondents ($n = 315$) were aware of the FNV Campaign. Chi-square tests revealed that the proportion of aware respondents was significantly higher ($p = 0.008$) among teens (22%) than moms (17%). Differences in the proportion of aware respondents approached significance between respondent location ($p = 0.051$) and race and ethnicity ($p = 0.052$); awareness was higher among Hampton Roads (21%) than Fresno (18%) respondents, and among Non-Hispanic Black (24%) than Non-Hispanic White (20%), Hispanic (17%), or other or multiracial (18%) respondents.

As there was a significant difference in awareness between teen and mom respondents, future analyses were completed separately for each group. Table 1 reports comparisons of the proportion of aware and unaware respondents by demographic characteristics. Results show that the mean age of aware teens was significantly lower (17.3 ± 1.9 years) than unaware teens (17.8 ± 2 years), and that the proportion of aware teen respondents was significantly higher in Hampton Roads, Virginia (55.7%) than Fresno, California (44.3%). Chi-squared tests were also significant for awareness among teens by race and ethnicity ($p = 0.017$); to identify categories that made large contributions to the chi-squared test result, adjusted standardized residuals were computed for each race and ethnicity category (Sharpe, 2015). The largest adjusted standardized residual attributed to higher proportions of awareness within racial and ethnic demographic groups was 2.5 for Black teens, which indicated that more Black teens were aware than would be expected by chance; further analyses showed the majority of this residual (2.0) was attributed to respondents from the Hampton Roads, Virginia market. No significant differences in awareness were found for moms by location, age, or race/ethnicity. Proportions of aware respondents did not significantly differ by highest level of education or reported participation in food assistance for either target

Table 1

Characteristics of Survey Respondents Aware and Unaware of the Fruits and Veggies Campaign, Fresno, California and Hampton Roads, Virginia, February – July 2017.

Characteristic	Total sample (n = 1604)	Unaware (n = 1289) ^a	Aware (n = 315) ^a	P Value ^b
<i>Teens</i>				
Age, y, mean (SD)	17.7 (2.0)	17.8 (2.0)	17.3 (1.9)	0.003*
<i>Sex, n (%)</i>				
Female	440 (59.1)	344 (59.6)	96 (57.5)	0.24
Male	304 (40.9)	233 (40.4)	71 (42.5)	
<i>Location, n (%)</i>				
Fresno	392 (52.7)	318 (55.1)	74 (44.3)	0.014*
Hampton Roads	352 (47.3)	259 (44.9)	93 (55.7)	
<i>Race/Ethnicity, n (%)</i>				
Non-Hispanic White	247 (33.2)	187 (32.4)	60 (35.9)	0.017*
Non-Hispanic Black	174 (23.4)	123 (21.3)	51 (30.5)	
Hispanic	204 (27.4)	167 (28.9)	37 (22.2)	
Other/multiracial	119 (16.0)	100 (17.3)	19 (11.4)	
<i>Highest education completed, n (%)</i>				
Less than high school	308 (41.4)	227 (39.3)	81 (48.5)	0.057
High school	190 (25.5)	145 (25.1)	45 (26.9)	
Some college	240 (32.3)	200 (34.7)	40 (24.0)	
College	6 (0.8)	5 (0.9)	1 (0.6)	
<i>Participation in food assistance, n (%)</i>				
No	573 (78.7)	450 (79.6)	123 (75.5)	0.25
Yes	155 (21.3)	115 (20.4)	40 (24.5)	
<i>Moms</i>				
Age, y, mean (SD)	30.0 (4.1)	30.0 (4.1)	30.1 (4.3)	0.97
<i>Location, n (%)</i>				
Fresno	354 (41.2)	297 (41.7)	57 (38.5)	0.47
Hampton Roads	506 (58.8)	415 (58.3)	91 (61.5)	
<i>Race/Ethnicity, n (%)</i>				
Non-Hispanic White	268 (31.2)	226 (31.7)	42 (28.4)	0.46
Non-Hispanic Black	252 (29.3)	202 (28.4)	50 (33.8)	
Hispanic	253 (29.4)	214 (30.1)	39 (26.4)	
Other/multiracial	87 (10.1)	70 (9.8)	17 (11.5)	
<i>Highest education completed, n (%)</i>				
Less than high school	66 (7.7)	62 (8.7)	4 (2.7)	0.061
High school	133 (15.5)	110 (15.4)	23 (15.5)	
Some college	322 (37.4)	268 (37.6)	54 (36.5)	
College	339 (39.4)	272 (38.2)	67 (45.3)	
<i>Participation in food assistance, n (%)</i>				
No	532 (61.9)	438 (61.5)	94 (63.5)	0.065
Yes	328 (38.1)	274 (38.5)	54 (36.5)	

Abbreviations: SD, standard deviation.

^a Numbers may not equal total n because of unreported data. Percentages may not add to 100 because of rounding.

^b P values based on χ^2 tests for categorical variables and independent samples t-tests for mean age.

* Significant at the < 0.05 level.

audience group. Demographic characteristics of respondents by location are reported in the [Supplementary Table](#).

Among all aware respondents, almost half (46%) recalled exposure to the FNV Campaign through social media, and roughly a third (30%) recalled exposure through retail promotions in grocery stores. Fewer respondents recalled exposure to community-sponsored activities (18%), word of mouth (17.5%) and traditional media advertisements (9.5%). The proportion of aware respondents recalling IMC strategies did not significantly differ between the target audiences, except that more teens (22%) recalled word of mouth exposure to the FNV Campaign than moms (12%; $p = 0.02$).

Table 2
Recall of IMC Exposure Among Aware Mom and Teen Target Audience Respondent Characteristics from Fresno, California and Hampton Roads, Virginia, February – July 2017.

Aware respondent characteristics (n = 315)	Respondent recall of FNV Campaign IMC exposure ^a									
	Social media (n = 146)		In-store retail promotions (n = 95)		Community activities (n = 57)		Word of mouth (n = 55)		Traditional media (n = 30)	
	n (%)	P-value ^b	n (%)	P-value ^b	n (%)	P-value ^b	n (%)	P-value ^b	n (%)	P-value ^b
Teens (n = 167)										
<i>Age range</i>										
14–17 years	37 (46.2)	0.48	27 (50.9)	0.75	16 (55.2)	0.47	17 (45.9)	0.66	8 (61.5)	0.35
18–20 years	43 (53.8)		26 (49.1)		13 (44.8)		20 (54.1)		5 (38.4)	
<i>Sex</i>										
Female	50 (62.5)	0.21	34 (64.2)	0.24	18 (62.1)	0.58	17 (45.9)	0.12	9 (69.2)	0.37
Male	30 (37.5)		19 (35.8)		11 (37.9)		20 (54.1)		4 (30.8)	
<i>Location</i>										
Fresno	37 (46.3)	0.63	19 (35.8)	0.13	9 (31.0)	0.11	15 (40.5)	0.60	10 (76.9)	0.014*
Hampton Roads	43 (53.8)		34 (64.2)		20 (69.0)		22 (59.5)		3 (23.1)	
<i>Race/Ethnicity</i>										
Non-Hispanic White	26 (32.5)	0.55	20 (37.7)	0.21	7 (24.1)	0.13	12 (32.4)	0.19	5 (38.5)	0.35
Non-Hispanic Black	27 (33.8)		18 (34.0)		14 (48.3)		9 (24.3)		4 (30.8)	
Hispanic	16 (20.0)		13 (24.5)		6 (20.7)		13 (35.1)		1 (7.7)	
Other	11 (13.8)		2 (3.8)		2 (6.9)		3 (8.1)		3 (23.1)	
Total, n (%)	80 (54.8)		53 (55.8)		29 (50.9)		37 (67.3)		13 (43.3)	
Moms (n = 148)										
<i>Age range</i>										
21–29 years	33 (50.0)	0.10	22 (52.4)	0.13	10 (35.7)	0.50	9 (50.0)	0.42	9 (52.9)	0.36
30–36 years	33 (50.0)		20 (47.6)		18 (64.3)		9 (50.0)		8 (47.1)	
<i>Location</i>										
Fresno	27 (40.9)	0.59	21 (50.0)	0.07	12 (42.9)	0.60	9 (50.0)	0.29	10 (58.8)	0.07
Hampton Roads	39 (59.1)		21 (50.0)		16 (57.1)		9 (50.0)		7 (41.2)	
<i>Race/Ethnicity</i>										
Non-Hispanic White	18 (27.3)	0.94	16 (38.1)	0.008*	6 (21.4)	0.60	6 (33.3)	.08 ^c	6 (35.3)	.47 ^c
Non-Hispanic Black	24 (36.4)		6 (14.3)		10 (35.7)		3 (16.7)		3 (17.6)	
Hispanic	17 (25.8)		16 (38.1)		7 (25.0)		4 (22.2)		6 (35.3)	
Other	7 (10.6)		4 (9.5)		5 (17.9)		5 (27.8)		2 (11.8)	
Total, n (%)	66 (45.2)		42 (44.2)		28 (49.1)		18 (32.7)		17 (56.7)	

^a Numbers may not equal total n because of unreported data. Percentages may not add to 100 because of rounding.

^b P values based on χ^2 tests within rows and columns in each innermost subtable.

^c P-value reported for Fisher’s Exact Test because greater than 20% of cells in subtable have expected cell counts less than 5.

* The Chi-square statistic is significant at the < 0.05 level.

Additional analyses within the target audiences were conducted using demographic characteristics compared for awareness. Age groups were created and analyzed by a median split for each target audience (Table 2). Traditional media recall was significantly higher among teens in Fresno than Hampton Roads (p = 0.014) but did not differ for moms. Of the open-ended responses of teens who recalled traditional media advertisements, radio was the most frequently reported overall (n = 7), followed by billboards (n = 4), and television (n = 2). Recall of in-store retail promotions significantly differed by race and ethnicity of moms (p = 0.008), so adjusted standardized residuals were calculated to identify groups contributing the most to the difference in recall. Residuals were largest for recall of retail promotions among Black (-3.2), and Hispanic moms (2.0), indicating that the proportion recalling retail promotions was lower among Black moms (12%; n = 6) and higher among Hispanic moms (41%; n = 16) than would be expected by chance.

3.2. Stakeholder interviews

Stakeholders involved with the FNV Campaign supported the effort, including the design, implementation, and evaluation of the Campaign in the two markets, as well as the national strategy for expansion of the Campaign. The average interview length was 46 min. Participant demographic characteristics are outlined in Table 3. Perspectives from stakeholders that discussed various FNV Campaign IMC strategies are

briefly summarized below with selected illustrative quotes provided in Table 4.

Stakeholders largely viewed social media as a promising strategy to reach and engage target populations, particularly younger audiences. Concerns about social media were limited to refreshing the featured content to keep target audiences interested and engaged with the FNV Campaign. In-store retail promotion received strong support from stakeholders as a strategy to influence fruit and vegetable selection at point of choice; several stakeholders emphasized the value of connecting and building upon prior exposure in-retail. Community events in both pilot markets were described as effective at initially generating positive earned media and community interest, particularly with the launch events. However, stakeholders expressed that ongoing events and activities were insufficient to maintain attention and coverage generated from the initial Campaign launches.

Few stakeholders discussed their expectations of word of mouth communication within the context of local execution beyond interest generated from the launches. However, those that mentioned word of mouth indicated that it had potential as a strategy to magnify Campaign reach and engagement, particularly through social media connections and youth engagement. Stakeholders conveyed uncertainty about the reach and effectiveness of traditional media to influence outcomes based on the frequency and sustainability of the advertisements in both markets, and others questioned the appropriateness of using traditional media strategies to reach younger audiences.

Table 3
Professional Affiliations and Demographic Characteristics of Stakeholders Interviewed.

Characteristics	Stakeholders (n = 22)
<i>Professional affiliation</i>	
Government agency	8
Public-interest non-governmental organization	6
Private-sector company	4
Trade organization	2
Academia	2
<i>Sex</i>	
Male	7
Female	15
<i>Age range</i>	
< 30 years	1
30–40 years	5
41–50 years	6
51–60 years	6
61–70 years	4
<i>Race/Ethnicity</i>	
Non-Hispanic White	18
Non-Hispanic Black	1
Hispanic	2
Asian	1
<i>Education</i>	
Some college	2
Bachelor's Degree	7
Master's Degree	6
Doctoral Degree	7

4. Discussion

Quantitative and qualitative results suggest that social media and retail promotions effectively reached target audiences and highlight community activities and traditional media as strategies that may need refinement. Overall, quantitative and qualitative results were congruent for awareness and IMC recall trends.

Table 4
Selected Stakeholder Quotes on Selected Fruit and Veggies Campaign IMC Strategies, July – October 2016.

IMC strategy	Stakeholder quotes and professional affiliations
Social Media	<p>“Videos, memes, witty content, it's supposed to be funny content against that target audience...My opinion is that the social media aspects of this campaign were very prevalent and quite effective and efficient in their communication, and so I would consider that to be a driver of awareness and attitude, attitudinal changes, but I don't have fact on that.” [industry sector, National]</p> <p>“Social media has a lot of potential in terms of keeping a message in your face, but it has to be engaging, it has to be repeated, it has to have some variation, something to make you look again and I'm not seeing a whole ton of that. The Instagram posts are cute but I think they're the kind of thing that eventually you sort of turn off a little bit because they need something else to keep grabbing your attention.” [government organization, National]</p>
In-store retail promotion	<p>“Well definitely point of sale, the retail, especially when we are in the produce aisle [are most likely to be effective strategies]. The more we can create sort of impulsive decision making to nudge people to buy produce.” [industry sector, National]</p> <p>“It is surprising when some of those celebrities endorse a fruit or a vegetable... And then that juxtaposition causes you to remember it, and then you know if and when we have better linkage in store, when a millennial mom and a teen are out there, at a Kroger or even a convenience store, if that availability is around, if fruits and vegetables are available, then the individual will make the connection between [an FNV celebrity endorser] and bananas, and in-store banana consumption.” [industry sector, National]</p>
Community activities	<p>“It was a huge turnout. We don't necessarily have those type of events, kid driven, teen driven, unless it's something that you have to pay for or unless it's a concert.” [government organization, VA]</p> <p>“We had a big event with Michelle Obama in November, and that was huge, we got a ton of PR for that and a lot of exposure. But since November, it's just been kind of quiet.” [industry sector, VA]</p> <p>“I think it's been also to the point whereby this time, there has been a regression. We have seen those billboards and those radio announcements happening, and now there has been definitely a waning of it and... I wish that there would have been more sustainability of those messaging.” [public-interest NGO, CA]</p>
Word of mouth	<p>“Some [digital and social media] will be served and targeted specifically to people in the target area, but some of it is just going to be out there, and if [the FNV Campaign] can utilize the various social media opportunities to get the awareness up, it's going to reach beyond that.” [public-interest NGO, National]</p> <p>“It goes back to if you're going to target engaging youth in the next big campaign, it might be worthwhile to look at them as advocates instead... you're going to open up your brand for a lot more partners that have the ability to spread the message.” [public-interest NGO, CA]</p>
Traditional media	<p>“We have seen those billboards and those radio announcements happening, and now there has been definitely a waning of it and we are back to where we started. And I wish that there would have been more sustainability of those messaging.” [public-interest NGO, CA]</p> <p>“They did a lot of marketing in the newspaper almost every week for a while there was something in the newspaper and I think the athlete of the week was sponsored by FNV in the newspaper, but teenagers really don't read the newspaper.” [public-interest NGO, VA]</p>

Abbreviations: NGO, non-governmental organization; CA, California; VA, Virginia.

In this study, proportions of awareness in the survey sample were similar across demographic characteristics, except for higher awareness among younger teen audiences than moms. Within the teen target audience, awareness was higher among respondents who were younger, Black, and from Hampton Roads, Virginia. Combined with several stakeholders' comments on the relevance of the FNV Campaign for youth, findings indicate that the FNV Campaign was more effective at reaching and engaging younger teen audiences than adult mothers. However, stakeholders' comments did not clearly suggest reasons why awareness was higher among Black teens from the Hampton Roads market or whether differences in target audience characteristics or Campaign implementation contributed to these differences. Findings that roughly a fifth of respondents were aware of the FNV Campaign are comparable to those measured after the Fruits and Veggies–More Matters Campaign was launched in 2007, which was reported at 13% and 19% after running for two and three years, respectively (Produce for Better Health Foundation, 2016). The alternative approach to fruit and vegetable promotion applied in the FNV Campaign may have similar short-term results to other large-scale campaigns, but whether this approach is able to have a meaningful and sustained impact on fruit and vegetable purchases and consumption will require extended outcome and impact evaluations.

Stakeholders' insights suggest that the decreased intensity and frequency of community activities and traditional media after the initial Campaign launches may have influenced exposure recall among survey participants. Qualitative results did not provide any potential reasons for higher recall of traditional media among teens in Fresno than in Hampton Roads. Without detailed documentation about the implementation of traditional media, interpretation of these results is limited. Teens' higher recall of word of mouth exposure supports stakeholders' suggestion to extend reach by increasing youth involvement in the FNV Campaign. However, their suggestion to utilize word of mouth communication through social media could not be explored with the quantitative data, as the specific channel of communication between friends and family was not assessed in the survey. Researchers have found that conversations about top food and beverage brands are

more frequent in offline than online channels (Baker et al., 2016); therefore, future evaluations should explore whether this trend persists for the FNV brand.

4.1. Strengths, limitations and implications for future research

Strengths of this study include the mixed-methods design that incorporated qualitative and quantitative data collected from target audience and stakeholder participants. The congruence of qualitative and quantitative findings underscores the importance of involving diverse stakeholders who can inform planning and execution decisions that advance IMC reach and effectiveness and support FNV Campaign expansion, scaling up and sustainability.

Findings from the survey are strengthened by the representativeness of the racially and ethnically diverse samples drawn from each pilot location. Additionally, stakeholder interview participants worked in a variety of public- and private-sector organizations with important roles in informing, funding and implementing large-scale interventions to increase fruit and vegetable consumption (Rakotoniaina, 2018). While both the survey and interview study participants were diverse, the samples and study findings may not be generalizable to their respective populations or for current FNV Campaign markets and activities. The online survey format did not allow us to examine characteristics of the populations it was distributed to and may have excluded populations with limited internet access.

While the survey design facilitated recruitment and participation of a large sample, it was limited by the cross-sectional design and reliance on self-reported data. Using aided measures of awareness and IMC exposure could have increased recall bias, while unaided recall of traditional media may have led to conservative estimates of recall. It is possible that respondents who purchased and consumed fruits and vegetables more frequently could be more frequently exposed and receptive to FNV media and in-store promotions. As we could not assess change in intake since baseline, future research to examine pre-post differences in brand awareness, fruit and vegetable intake, and overall dietary quality would be useful. Assessing dietary quality using tools such as the 2015 Healthy Eating Index (Krebs-Smith et al., 2018) could provide insight for whether the FNV Campaign was reaching and influencing intake among populations with low dietary quality or those who are already consuming healthy diets and/or recommended amounts of fruits and vegetables.

Since 2016, the PHA has expanded and scaled-up the FNV Campaign to new markets across the U.S. Findings from this study may not be generalizable based on the context and characteristics of communities, partners, and IMC strategies used (Partnership for a Healthier America, 2016; University of Wisconsin Cooperative Extension, 2017; USA Business Radio, 2017). This is particularly important as the FNV Campaign expands through Supplemental Nutrition Assistance Program Education (SNAP-Ed) initiatives and food bank partnerships to reach low-income audiences (Crawford, 2017; Partnership for a Healthier America, 2018). This presents a valuable opportunity to evaluate FNV Campaign IMC influence on low-income consumers, as previous research indicates that in-store retail promotions may be more effective to increase fruit and vegetable purchases among SNAP-enrolled participants (Sutton et al., 2019). In-store retail promotions as part of a multifaceted IMC strategy also offer opportunities to objectively measure purchase behavior, rather than relying on self-reported data.

Campaigns that are implemented as part of a complementary approach to fruit and vegetable promotion alongside other interventions (e.g., pricing incentives, increased availability) are more likely to have a significant impact on consumption (Rekhy and McConchie, 2014). As common with evaluations of multifaceted interventions (Afshin et al., 2015; Chatterji, 2016), the independent contribution of each IMC component is difficult to assess without detailed documentation of the channels, content, prevalence, and duration of the strategies implemented. Evidence generated from controlled field experiments could

elucidate the independent contribution of IMC interventions and identify complimentary promotional approaches that are most effective to increase and sustain fruit and vegetable consumption. Use of controlled experiments would also improve the quality of research on fruit and vegetable campaigns, which do not have the breadth or strength of evidence as campaigns that aim to reduce health-risk behaviors (e.g., tobacco cessation campaigns; Wakefield et al., 2010).

These findings support previous research recommendations to understand the influence of IMC strategies over varied conditions (Afshin et al., 2015), specifically for sustaining community activities and traditional media coverage. To establish best practices for the FNV Campaign and other IMC initiatives, future evaluations should examine both short- and long-term outcomes in different communities and contexts and examine how IMC can be leveraged to reduce disparities in fruit and vegetable intake (Lee-Kwan et al., 2017). Controlled experiments and use of cost-effectiveness and cost-benefit evaluations can aid public health and industry organizations in identifying effective IMC strategies and complementary interventions that impact fruit and vegetable consumption and health outcomes (Afshin et al., 2015).

5. Conclusions

This evaluation of the FNV Campaign contributes new evidence for the novel application of IMC strategies in a branded fruit and vegetable promotion campaign. Insights from this evaluation can inform the strategic design of future branded campaigns that effectively reach and raise awareness among target populations to promote fruit and vegetable sales and intake. Findings support the use of social media and in-store retail promotions to reach target audiences as part of an IMC strategy, and identify important avenues for future research and practice. Insights from this evaluation can inform the development, implementation, and evaluation of effective strategies in the FNV Campaign and other IMC initiatives that leverage cross-sectoral support to establish an evidence base for the large-scale promotion of fruit and vegetable consumption.

CRedit authorship contribution statement

Tessa R. Englund: Writing - original draft, Project administration, Investigation, Formal analysis. **Valisa E. Hedrick:** Writing - review & editing, Formal analysis, Supervision. **Kiyah J. Duffey:** Writing - review & editing, Project administration, Supervision. **Vivica I. Kraak:** Funding acquisition, Project administration, Investigation, Writing - review & editing, Supervision.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Appendix A. Supplementary data

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