

Grocery Store Podcast About Omega-3 Fatty Acids Influences Shopping Behaviors: A Pilot Study

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ABSTRACT

Objectives: To determine whether listening to a podcast about omega-3 fatty acids (n-3s) while grocery shopping increased shoppers' awareness about and purchases of seafood and other foods rich in n-3s.

Methods: Repeated-measures design with a convenience sample (n = 56) of grocery shoppers who listened to the podcast while shopping. Pre- and postintervention semistructured interviews were conducted. The Theory of Reasoned Action was the study's framework.

Results: Shoppers were primarily females (mean age, 41 ± 15.3 years). Their perceived ability to buy [$t(55) = 6.27, P < .0001$] and perceived importance regarding buying [$t(55) = 3.38, P < .01$] n-3-rich foods improved significantly. At least 1 n-3 rich food (mean, 1.5 ± 0.8) was purchased by 30%, and 79% planned future purchases.

Conclusion and Implications: Podcasts may effectively communicate nutrition information. More research with a larger sample size is needed to evaluate the effects of the podcast on long-term changes in shopping behavior.

Key Words: omega-3, n-3s, point of purchase intervention, nutrition education, podcasts (*J Nutr Educ Behav.* 2014;46:616-620.)

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INTRODUCTION

Smartphones are changing how people access health information. Approximately 52% of consumers use mobile technologies to get the best deals, find coupons, or research products while grocery shopping.¹ Podcasts that can be downloaded to smartphones offer the potential to provide nutrition education to consumers on demand.² The use of podcasts to assist consumers in making informed food choices at the grocery store has untapped potential.

Point-of-purchase (POP) advertising includes the use of displays to encourage consumer impulse purchases.³ Point-of-purchase nutrition interventions have used this same technique to prompt healthier purchases.⁴⁻⁶

Omega-3 fatty acids (n-3s) are important components of a healthy diet. However, advice on increasing their consumption is inherently complex. The 3 most researched types of n-3s—alpha linolenic acid (ALA), docosahexaenoic acid (DHA), and eicosapentaenoic acid (EPA)—come from different food sources and offer distinctly different health benefits. Found primarily in plant-based foods, ALA contributes to the tertiary treatment of some types of heart disease.^{7,8} Found primarily in seafood,⁷ DHA and EPA are associated with heart disease prevention^{8,9} and improved pregnancy outcomes and normal fetal development,^{10,11} and are used in the treatment of macular degeneration¹² and depression.¹³ Docosahexaenoic acid and EPA also hold promise in the treatment of many inflammatory

health conditions^{14,15} and in reducing symptoms associated with attention-deficit hyperactivity disorder^{16,17} and Alzheimer's disease.^{18,19} Despite the numerous health benefits associated with DHA and EPA consumption, Americans consume approximately 109 mg daily, less than 45% of the recommended 250 mg.²⁰ They also consume less fish and seafood than is currently recommended (ie, intake of about 8 oz seafood/wk).²⁰

To further confound the complexities associated with n-3s, food labels do not list the type or amount of n-3s that foods contain. The authors believe that popular media communications are often inaccurate because they fail to make these differentiations, overstate preliminary research findings, and erroneously recommend increased consumption of ALA-rich foods to glean benefits that have been associated with foods rich in DHA and EPA. For example:

- One popular health-related television show's Web site describes ALA, DHA, and EPA individually but incorrectly associates all health benefits with eating foods rich in any of the n-3s.²¹

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- A popular press article for vegans erroneously stated that "... Experts say as long as you get adequate ALA, you don't need to worry about 2 other types of omega-3s, EPA and DHA, which are found in non-vegan sources."²²
- A popular health magazine has repeatedly overstated research findings in articles, such as: "Omega-3 fatty acids, the vanishing youth nutrient—why the disappearance of omega-3s from our diet may be responsible for the epidemics of obesity, heart disease, cancer, Oh, and wrinkles, too"²³ and "Foods that Boost your Brain Power—Omega-3 fatty acids."²⁴

A podcast was created to (1) help clarify these misconceptions, (2) stress the importance of increased n-3 intake, and (3) teach which foods are good n-3 food sources. Fatty fish and seafood were most heavily encouraged in this podcast because they are the richest sources of DHA and EPA. They are also foods for which recommendations are made in the Dietary Guidelines for Americans²⁰ and by the American Heart Association.⁸

The objective of this pilot study was to assess the effects of this podcast's use at the POP. The Theory of Reasoned Action (TRA) suggests that the intention to perform a behavior predicts behavior change and that perceived behavioral control (including self-efficacy and controllability items),²⁵ subjective norms, and perceived importance predict intentions.²⁶ Theory of Reasoned Action constructs guided this study (ie, examining changes in participants' [1] ability to identify n-3-rich foods [self-efficacy]; [2] beliefs that buying n-3-rich foods is important [perceived importance]; [3] intention to make n-3-rich food purchases; and [4] purchases of n-3-rich foods made on the day of the intervention). Controllability was not assessed because its components in relation to the purchase of n-3-rich foods were unknown and could not be addressed by the intervention. Furthermore, subjective norms (ie, participants' beliefs regarding the importance that members of their social circles place on n-3 consumption) were examined only pre-intervention

because they could not be changed by the intervention.

METHODS

The researchers performed intercept interviews with grocery shoppers in a supermarket located in Woodbridge, NJ between January and May, 2011 (Rutgers Institutional Review Board Protocol No 10-548). Before participant recruitment, the research team (3 researchers with graduate-level education in nutrition) was trained by the faculty advisor to conduct the interviews described below. The research team members downloaded the podcast onto mp3 players and impersonated shoppers, listening to the podcast while grocery shopping on an afternoon when store traffic was off-peak. The 5-minute podcast directed listeners to foods rich in n-3s that could be found among the following: pastas, cereals, dairy foods, nuts, peanut butters, oils, canned meats, and fish (canned, fresh, and frozen). The content was organized to align with the pilot store's layout. The podcast mentioned the differences between ALA- vs DHA- and/or EPA-rich foods and stressed the importance and identification of DHA- and EPA- rich foods, especially seafood.

All shoppers who entered the store were asked if they (1) intended to purchase > 10 items and (2) would be interested in learning more about n-3 foods. Of those who entered the store approximately 10% volunteered to participate, in part because the inclusion criteria limited participation. Other reasons stated for not participating included being "in a hurry" and being preoccupied with children.

Before and after listening to the podcast, shoppers participated in semistructured interviews. Single questions were used to assess the previously described TRA constructs for each shopper. Purchases of foods rich in n-3s made on the day of the interview were visually verified post-intervention. Pre-intervention, shoppers were asked their age and gender and their previous use of podcasts. Postintervention, participants were asked what they liked and disliked about the podcast and how it might

be improved. The researchers gave \$10 for study completion.

All quantitative data collected were analyzed using SAS (version 9.1, SAS Institute, Inc, Cary, NC, 2013). Descriptive statistics were calculated for gender, age, mp3 player ownership, podcast familiarity, purchases of foods rich in n-3s made on the day of the interview, and intention to purchase n-3-rich foods during future shopping trips. Paired-sample *t* tests ($P < .05$) were conducted to examine differences in shoppers' self-efficacy and perceived importance before and after podcast use. Pearson correlation ($P < .05$) was used to assess relationships among the TRA variables examined. The researchers counted responses regarding purchases and cataloged changes participants wanted to see made to the podcast.

RESULTS

The study sample was composed of 56 shoppers with a mean age of 41 ± 15 years, most of whom were women ($n = 44$; 79%). The majority owned an mp3 player ($n = 32$; 57%) and more than half had listened to a podcast previously ($n = 30$; 54%). Both participants' self-efficacy to shop for n-3 rich foods and perceived importance of the foods improved significantly (Table 1). These variables demonstrated significant predictive associations with participants' intent to purchase these foods (Figure). A total of 44 shoppers (79%) reported that they intended to increase their purchase of the n-3-rich foods listed in Table 2 but only 17 of these shoppers (39%) did so on their intervention day. The number of n-3 food items purchased ranged from 1 to 4 (mean, 1.6 ± 0.8 items).

Of all who participated, 89% liked the podcast ($n = 50$), particularly its brevity and the clarity of information provided. Some reported that enhanced sound clarity and volume, the addition of background music, and the use of a female narrator would improve the podcast. Also, although the podcast had been recorded so shoppers could pause and restart the podcast as needed, some participants found it "tedious" and "confusing" to use because they did not shop the

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