Research Article

Consumer Awareness of MyPlate and its Usage

Martina Samm[1,2] and Krisha Thiagarajah1*

[1]*Indiana University, School of Public Health, Department of Applied Health Science, Bloomington, USA*
[2]*IU Health Bloomington, Bloomington, USA*

*Corresponding Author: KrishaThiagarajah, Indiana University,School of Public Health, Department of Applied Health Science, Bloomington, USA.

Abstract

Objective: In 2011, MyPlate was introduced as a simple visual example of a healthy meal, based on the 2010 Dietary Guidelines for Americans (DGA). The purpose of this study is to determine current consumer awareness and usage of the MyPlate message.

Design: A cross-sectional interview format survey using descriptive statistics was used to summarize participant awareness, translation and recognition, along with possible and actual use of either the MyPlate or the picture example.

Setting: Ninety (90) adult participants with diverse education and income levels completed an 11- question interview.

Results: Fifty-two percent (52%) of participants recognized the MyPlate symbol with 91% translating the symbol to a sample picture of real food and 92% agreeing the sample picture represented a healthy, balanced meal. Further, 90% and 99%, respectively agreed the sample picture could be used as a guide for purchasing food and preparing meals. Of those familiar with the MyPlate, 36% and 38%, respectively, actually use the MyPlate as a guide when purchasing and preparing meals.

Conclusion: Although MyPlate recognition appears to have increased since 2011, nearly half of participants did not recognize the MyPlate symbol. The survey indicates that consumers agree with the intended use of MyPlate, but many are still not using it to purchase and prepare healthier foods. There is a need to bridge the gap between awareness and action.

Keywords: MyPlate; Cross-Sectional Study; Interview Format; Consumer Awareness

Introduction

Since 1980, the Dietary Guidelines for Americans (DGA) has been published by the United States Department of Agriculture (USDA) and the Department of Health and Human Services (DHHS). The DGA offers consumers nutritional advice based on extensive review and analysis of the latest scientific findings [1].

In 1992, the DGA introduced the Food Guide Pyramid, an easy to understand graphic model, in order to increase awareness of the importance of choosing wholesome foods. In 2005, MyPyramid was introduced based on consumer input and newly reported findings in food science research. Although the pyramid remained the symbol, sections representing 'healthy fats', physical activity and balancing dietary intake with energy output were added.

The 2010 DGA recommendations remained the same, with an important addition that encouraged consuming nutrient dense foods [2-3]. The 2010 Dietary Guideline Advisory Committee concluded that eating a variety of foods on a consistent basis has a much greater positive effect on health and well-being than eating any one food or food group. It takes a variety of foods to supply the body with the essential nutrients needed for health [4]. In an effort to encourage incorporating more nutrient dense food, the DGA designed a new graphic model, MyPlate [3].

In June of 2011, MyPlate was introduced as the main feature of a new strategy to give consumers uncomplicated examples and advice based on the 2010 DGA [5]. The sectioned plate denotes the proportion of the fruit, vegetables, protein, grain and dairy food group. The MyPlate icon was designed to reinforce the message of the health benefits of nutrient dense foods. Its purpose is to assist consumers when making food decisions by representing a simplified model for healthy meal planning and preparation. MyPlate is a colourful easy to understand visual example of a healthy balanced meal, intentionally designed to be used by the 'nutritional gatekeepers': those responsible (mostly mothers) for preparing and purchasing food for a household. It is noted that these individuals determine nearly 72% of what household members eat [6].

Along with diet, the DGA recommends regular exercise as an important preventative measure of so-called lifestyle diseases

and conditions: diabetes, heart disease, cancer and osteoporosis. Studies have reported that these diseases have become more prevalent, along with the number of Americans who are obese and overweight [2].

However, few individuals have paid attention to these guidelines. One study noted that 80% to 90% of Americans consumed less than the recommended minimum daily servings of fruits, vegetables, whole grains and low-fat dairy [7]. Another study indicated that, although consumers consider themselves fairly aware of the previous graphic models, this awareness has not been converted into any meaningful change in food intake patterns [4].

Despite 30 years of valid evidence and sound nutritional advice concerning dietary guidance, it appears that consumers are not responding to the messages being presented. The purpose of this research study is to determine: 1) current consumer awareness of the MyPlate, and 2) consumers' actual use of the MyPlate symbol as a guide when purchasing groceries and preparing meals.

Methods

Designs and development of the questionnaire was based on the following hypothesis: a visual representation of the MyPlate message can influence consumers to purchase healthier foods and prepare healthier meals. A questionnaire was designed and revised after being tested for comprehension by community members of various ages, genders and educational backgrounds.

A sample of 90 subjects participated in the 11-question interview survey with a response rate of 58.8%.

Participants were recruited from three unrelated locations: a health food store (A), a food co-operative (B), and a multi-state chain grocery store (C).

The first four questions applied to demographic data: age, gender, education level and estimated yearly income. The remaining seven questions investigated familiarity with MyPlate symbol, recognizing similarities between the symbol and the sample picture of real food, likelihood that the sample picture of real food depicts a balanced meal, along with possible and actual usage of both MyPlate symbol and sample picture as a guide for purchasing and preparing foods.

Before initiating data collection, the study design was approved by the Indiana University Institutional Review Board (IRB). Thirty interviews were conducted in each location over a three-day pe-

riod. Recruitment of volunteers was done verbally. Any adult, 18 years and older, willing to participate was included in the study. Subjects were selected at random, approached and greeted as they walked into or out of the grocery store. The researcher presented identification and a brief statement explaining the purpose of the research study. Subjects were then asked if they would agree to be interviewed. A 'yes' answer constituted a verbal informed consent to participate, at which time the questionnaire was administered. Each participant engaged in a one-on-one interview in order to answer the survey questions.

Nine of the survey questions (variables) were binary, participants having two answers from which to choose. A laminated copy of the survey questions with reference pictures was supplied. As part of the survey design, subjects were questioned on their familiarity with a wordless MyPlate symbol and a sample picture representing a balanced meal, along with possible use of the picture as a guide to purchase healthier foods or plan healthier meals. Lastly, those who recognized the MyPlate icon were asked if they used MyPlate as a guide when purchasing food or preparing meals.

Analyses were performed using Statistical Package for the Social Sciences (SPSS) version 20.0 for Windows (PASW Statistics -22, Chicago: SPSS Inc), and an alpha level of 0.05 was used to determine statistical significance.Descriptive statistics, such as percentage of frequency, were performed to describe demographic characteristics of participants and of participants' awareness, transference and usability of MyPlate as a guide. Chi Square Test was used to examine differences between demographic variables and shopping locations, along with awareness and usability of MyPlate.

Results

Fifty-seven females (52.2%) and 38 males (42.2%) were interviewed. Ages were defined in ranges (18 - 30 yrs., 31 - 50 yrs and over 51 yrs.) and were evenly distributed. Forty-one participants (45.6%) reported a yearly income of less than $20,000. There is no significant difference in gender and age range of the participants among the different location. Most participants from the food co-operative store (n = 29) reported having some college education or higher compared to other stores (p = 0.053). Demographic information as it pertains to each location is listed in Table 1.

	A*	B*	C*	Total
Age	Number (Percentage)			
18-30	11 (36.7%)	9 (30.0%)	7 (23.3%)	27 (30.0%)
31-50	11 (36.7%)	11 (36.7%)	11 (36.7%)	33 (36.7%)
51 & above	8 (26.7%)	10 (33.3%)	12 (40.0%)	30 (33.3%)
Gender				
Male	14 (46.7%)	11 (36.7%)	13 (43.3%)	38 (42.2%)
Female	16 (53.3%)	19 (63.3%)	17 (56.7%)	52 (57.8%)
Education Level				
12th grade or less	6 (20.0%)	1 (3.3%)	10 (33.3%)	17 (18.9%)
Some College/ College Grad	16 (53.3%)	19 (63.3%)	15 (50.0%)	50 (55.6%)
Post-Grad	8 (26.7%)	10 (33.3%)	5 (16.7%)	23 (25.6%)
Yearly Income				
Non-reported	2 (6.7%)	1 (3.3%)	0 (0.0%)	3 (3.3%)
< $20,000	12 (40.0%)	10 (33.3%)	19 (63.3%)	41 (45.6%)
$20,001-$40,000	7 (23.3%)	7 (23.3%)	5 (16.7%)	19 (21.1%)
$40,001-$60,000	5 (16.7%)	2 (6.7%)	3 (10.0%)	10 (11.1%)
$60,001-$80,000	3 (10.0%)	7 (23.3%)	1 (3.3%)	11 (12.2%)
> $80,000	1 (3.3%)	3 (10.0%)	2 (6.7%)	6 (6.7%)

A* Health Food Store

B* Food Cooperative Store

C* Multi-state Chain Grocery Store

Table 1: Demographic Characteristics of Participants.

Forty-seven participants (52.2%) recognized the MyPlate symbol. Highest recognition was reported at the health food store,

where 63.3% (= 19) answered 'yes'. No significant difference between locations was note (p = 0.192). Of those familiar with MyPlate, 44.7% (n = 21) used it as a guide when purchasing food and 48.9% (n = 23) while preparing meals. Over 91% (n = 82) agreed the sample picture of real food represented the MyPlate symbol. Overall, 92.2% (n = 83) agreed the sample picture of real food represented a health balanced diet. Survey results indicated that 98.9% (n = 89) of participants agreed the sample picture of real food could be used as a guide for meal planning while 90.0% (n = 81) agreed the sample picture of real food could be used as a guide during grocery shopping. Information as it pertains to each location is listed in Table 2.

Question	Location Number (Percentage)			
Have you seen this symbol before today?	Store A*	Store B*	Store C*	Total
Yes	19 (63.33%)	12 (40.00%)	16 (53.33%)	47 (52.22%)
No	11(36.67%)	18 (60.00%)	14 (46.67%)	43 (47.78%)
Do you recognize the bigger picture as real food example of the MyPlate symbol?				
Yes	26 (86.67%)	28 (93.33%)	28 (93.33%)	82 (91.11%)
No	4 (13.33%)	2 (6.67%)	2 (6.67%)	8 (8.89%)
Is the bigger picture an easy to understand image of a healthy, balanced diet?				
Yes	29 (96.67%)	25 (83.33%)	29 (96.67%)	83 (92.22%)
No	1 (3.33%)	5 (16.67%)	1 (3.33%)	7 (7.78%)

Can the bigger picture be used as a guide for planning healthier, balanced meals?			
Yes	30 (100%)	29 (96.67%)	3 (100.00%)	89 (98.89%)
No	0 (0.0%)	1 (3.33%)	0 (0.0%)	1 (1.11%)
Can the bigger picture be used as a guide when grocery shopping?			
Yes	26 (86.67%)	26 (86.67%)	29 (96.67%)	81 (90.00%)
No	4 (13.33%)	4 (13.33%)	1 (3.33%)	9 (10.0%)
Do you use the MyPlate model as a guide for planning healthier balanced meals?			
Yes	6 (20.0%)	4 (13.33%)	11 (36.67%)	21 (23.33%)
No	20 (66.67%)	24 (80.00%)	17 (56.67%)	61 (67.78%)
Unan-swered	4 (13.33%)	2 (6.67%)	2 (6.67%)	8 (8.89%)
Do you use the MyPlate model as a guide when grocery shopping?			
Yes	5 (16.67%)	5 (16.67%)	13 (43.33%)	23 (25.56%)
No	21 (70.00%)	23 (76.67%)	15 (50.00%)	59 (65.56%)
Unan-swered	4 (13.33%)	2 (6.67%)	2 (6.67%)	8 (8.89%)

A* Health Food Store

B* Food Cooperative Store

C* Multi-state Chain Grocery Store

Table 2: Participant Awareness and Usages of MyPlate by Location.

Discussion

Survey results indicate that slightly more than half of the participants (52.2%) expressed recognition of the MyPlate symbol. Overall, this indicates an increase in consumer awareness of MyPlate when compared to a 2011 study noting symbol recognition of 45.1% (n = 23) [3]. Despite education and awareness initiatives for the past three years, nearly half (47.8%) did not recognize the MyPlate symbol.

Another interesting observation in this study was no significant difference between education level and recognition of the MyPlate symbol. Highest education level was noted at the food cooperative store (Store B) where 96.6% reported some college education or higher. Yet, this store also reported the lowest percentage of icon recognition (40.0%).

Of those familiar with MyPlate, a vast majority of the participants (91.1%) regarded the transfer of the MyPlate icon to the sample picture of real food as easy to understand. It may be implied that the intentionally simplistic design of MyPlate is easily understood and can be transferred by most consumers, regardless of age, gender, education or income.

Of the 47 consumers familiar with the MyPlate symbol, 48.7% (n = 23) reported using it as a guide when purchasing food and 44.6% (n = 21) when planning meals. This indicates no measurable change when compared to a 2011 study in which 43% (n = 22) of participants reported MyPlate influencing their purchasing and planning decisions [3]. No one reason contributes to consumer non-compliance. Behaviour, cognition, environment and socio-economics may all be regarded as contributing factors. The improvements come when consumers recognize the immense value of purchasing and preparing, along with the pleasure of eating healthy, wholesome foods [8].

The limitations of this study include: 1) small sample size, 2) random selection of participants as some potential subjects could not be approached while interviewing others, 3) lack of consistency pertaining to the day along with the time of day interviews were conducted at each store location and 4) lack of information concerning non-participant knowledge and use of MyPlate.

Conclusion

The results of this study support the hypothesis that a visual representation of the MyPlate message can influence consumers to purchase healthier foods and prepare healthier meals. However, based on the survey results, there continues to be a stark contrast between consumer identification and translation of the MyPlate symbol and the use of that knowledge to make improvements

when purchasing and preparing foods. The gap between knowledge and behavioural change has been noted in previous surveys and reports. One study showed promise in resolving this difference with the application of motivational interviewing and effective community based programs, occurring simultaneously, to reduce the risk of cardiovascular disease (CVD) [9].

In addition, results appear to validate the findings of the first 5-year study by the International Food Information Council (IFIC) Foundation conducted between 2006 and 2010. It suggests that, in general, food and health communication efforts have increased consumer awareness. However, barriers still remain between consumer awareness and actual changes in attitude and behaviour related to improving dietary choices [10]. When considering the many factors contributing to non-compliance, improvements may best be accomplished using a multi-dimensional approach designed to address barriers associated with certain age groups, communities and cultures.

MyPlate is a colourful yet simple visual tool based on current DGA recommendations with the versatility to transcend cultural, socioeconomic, education and age-related barriers. Consumers are slowly realizing that the practice of healthy eating improves overall well-being and assists in the prevention of many chronic diseases. The results of this study indicate that efforts to increase awareness of MyPlate be continued, along with methods to enhance the application of this awareness when making daily food choices.

Bibliography

1. Department of Health and Human Services. Office of Disease Prevention and Health Promotion. *Dietary guidelines for Americans* (2017).

2. Niclas T., *et al.* "Barriers and facilitators for consumer adherence to the dietary guidelines for Americans: the HEALTH study". *Journal of the Academy of Nutrition and Dietetics* 113.10 (2013): 1317-1331.

3. Uruakpa F., *et al.* "Awareness and use of MyPlate guidelines in making food choices". *Procedia Food Science* 2 (2013): 180-186.

4. Rowe S., *et al.* "Translating the dietary guidelines for Americans 2010 to bring about real behavior change". *Journal of the American Dietetic Association* 111.1 (2011): 28-39.

5. Post R., *et al.* "Putting MyPlate to work for nutrition educators". *Journal of Nutrition Education and Behavior* 44.2 (2012): 98-99.

6. Wansink B and Kranz S. "Who's using MyPlate?". *Journal of Nutrition Education and Behavior* 45.6 (2013): 728-732.

7. Krebs-Smith SM., *et al.* "Americans do not meet federal dietary recommendations". *The Journal of Nutrition* 140.10 (2010):1832-1838.

8. Wright J. "Awareness of the United States federal dietary guidance and its association with dietary quality". *In: Preedy V, editor. Diet quality: an evidence based approach, Springer Science + Business Media* 2 (2013): 187-197.

9. Folta S and Nelson M. "Reducing cardiovascular disease risk in sedentary, overweight women: strategies for the cardiovascular specialist". *Current opinion in cardiology* 25.5 (2010): 497-501.

10. Hornick B., *et al.* "Is it time to rethink nutrition communications? a 5-year retrospective of Americans' attitudes toward food, nutrition, and health". *Journal of the Academy of Nutrition and Dietetics* 113.1 (2013): 14-23.