

5-9-2022

Fad Diets: Professional Development Needs Among Nutrition Agents in Select Southern States

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Recommended Citation

McAlister, A. P., Green, V. L., Camel, S., Fontenot, M. C., & Pope, J. F. (2022). Fad Diets: Professional Development Needs Among Nutrition Agents in Select Southern States. *The Journal of Extension*, 60(2), Article 4. <https://doi.org/10.34068/joe.60.02.04>

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Cover Page Footnote

Conflict of interests: The authors declare there is no conflict of interest Acknowledgement: A portion of this research project was presented as a poster at the Society for Nutrition Education and Behavior (SNEB) virtual conference in July 2020. McAlister, A., Green, V., Camel, S., Fontenot, C. (2020): A multi-state evaluation of the knowledge of the background and dangers of popular fad diets among cooperative extension agents in family and consumer sciences. *Journal of Nutrition Education and Behavior*, 52 (7S), S60

Fad Diets: Professional Development Needs Among Nutrition Agents in Select Southern States

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Abstract. Because FCS agents teach communities about dietary guidelines, it is important that they are aware of the latest nutrition research. This study assessed FCS agents' knowledge of popular fad diets (low-carbohydrate, intermittent fasting, detoxes and cleanses) and their potential adverse effects, and its relationship among location, certifications, years of experience, professional association memberships, and education. Agents in Louisiana, Texas, Arkansas, and Mississippi were emailed a survey. RDN, DTR, and CHES certifications had significant associations ($p = 0.03$) with knowledge of adverse effects of fad diets. Agents who hold these credentials may have more knowledge about adverse effects of fad diets.

INTRODUCTION

Teaching the public about proper nutrition is an essential component of a Family and Consumer (FCS) agent's role; therefore, agents' awareness of current nutrition and health related trends and what research says about these trends is of great value (Bailey et al, 2014). Fad diets are increasingly popular, and trends frequently change, leaving the public to seek reliable information on the safety and efficacy of these diets (Bailey et al., 2014; Carbone & Zoellner, 2012; Hornick et al., 2013). There is a need to assess the current knowledge of FCS agents pertaining to fad diets in order to develop effective training to support their role (Carbone & Zoellner, 2012).

PURPOSE

The purpose of this cross-sectional study was to assess the general knowledge of FCS cooperative Extension agents concerning fad diets (low carbohydrate, intermittent fasting, detoxes and cleanses) and their potential adverse effects and to determine factors that influence their level of knowledge such as professional certifications held, years of Extension work experience, membership in professional associations, and education level.

METHODS

FCS Extension agents in Louisiana, Texas, Arkansas, and Mississippi were asked to participate in an online survey

to identify knowledge gaps and to assess their knowledge, factors influencing their knowledge, and resources used to enhance knowledge. Before data collection began, approval from the Louisiana Tech Institutional Review Board was obtained. A designated person from participating state offices was asked to send the link to the online survey link to agents who were working in FCS, health, nutrition, and related fields. The designated person sending the survey was not requested to report a total number of agents recruited. To ensure confidentiality, the survey was completed in private, on a computer in a location chosen by the participant, and no identifier was assigned to respondents. The survey collected demographic information including geographical state of employment, professional certifications held, years of experience in Extension, membership in professional associations, and education level. The survey's knowledge questions were multiple choice and included the knowledge categories of nutrients provided by foods and adverse effects of fad diets. Content of the knowledge questions was derived from a review of the literature. The survey was reviewed for face validity with three nutrition and dietetics professors and piloted by four adults not employed in CES to check for potential errors in the online format. After this, the survey was revised and finalized.

Agents were given four weeks to complete the survey. State office designees were asked to send a reminder email to these agents in the third week following the initial email. Agents who completed the survey were given the opportunity to enter a drawing for a small gift card; participation in

the drawing was voluntary. Identifying information for the drawing was not linked to the survey responses.

Frequency testing was used for descriptive statistical analysis of demographic data. Respondents' knowledge about the premises and potential adverse effects of low-carbohydrate diets (for example, ketogenic and ideal protein diets), intermittent fasting, detoxes, and cleanses was assessed with a numerical test score from survey responses. Knowledge was scored for six categories: knowledge of low-carbohydrate diets, knowledge of intermittent fasting, knowledge of detoxes/cleanses, knowledge of potential adverse effects of low-carbohydrate diets, knowledge of potential adverse effects of intermittent fasting, and knowledge of potential adverse effects of detoxes/cleanses. Scores for knowledge and for potential adverse effects of low-carbohydrate diets, intermittent fasting, detoxes and cleanses were averaged. ANOVA was employed to compare score categories with education level, years of experience, membership in professional associations, certifications held, and the state in which respondents were employed. A $p \leq 0.05$ was considered statistically significant. Statistical analysis was conducted using The Statistical Package for the Social Sciences (SPSS) Version 25 for Students and Stata.

FINDINGS

One hundred eighty-three FCS agents from Louisiana, Texas, Arkansas, and Mississippi responded to the online survey. Response rate was not calculated due to recruitment method. Those who stated they did not practice nutrition education and those who did not complete 90% or more of the survey were excluded from statistical analysis ($n=39$), resulting in a sample size of 183 respondents for statistical analysis.

Most agents reported general nutrition (93%) and food safety (62%) as their areas of practice. The most frequently reported length of employment was 1–10 years (42%). Education levels varied, but most respondents reported having earned a master's degree (63%) (See Table 1). Over half of the respondents reported Texas as their state of employment (51%) and most were females (96%). A majority of respondents (80%) were members of National Extension Association of Family and Consumer Sciences (NEAFCS). Thirty-one percent indicated they did not hold a nutrition certification. The most frequently reported nutrition certification was Extension Specialist (15%). Of the nutrition certifications, 13 (9%) were Registered Dietitian Nutritionists (RDN) or Nutrition and Dietetics Technician, Registered (NDTR). Information sources most utilized by respondents to obtain information about fad diets included .edu websites (74%), .gov websites (65%), and conference sessions (57%).

Overall, the respondents' mean total score for knowledge (knowledge and adverse effects) was 70%. The average score

for knowledge of fad diets was 75%, indicating respondents scored higher on questions regarding knowledge compared to questions regarding adverse effects. The average knowledge score specifically for low-carbohydrate diet questions was 73%, which was the lowest knowledge score among the three fad diets examined. The average knowledge score for intermittent fasting questions was 78%, which was the highest average knowledge score from the three fad diets examined. The average knowledge score for detoxes and cleanses was 74% (Table 2). Potential factors influencing knowledge, including years of work experience in CES, membership in professional associations, education level, and certifications held, served as the independent variables for ANOVA testing. There were no p -values for knowledge scores that indicated significance.

The average knowledge score for adverse effects of fad diets alone was 65%. The average knowledge score specifically for adverse effects of low-carbohydrate diets was 62%, which was the lowest score found for both knowledge and adverse effects. The average knowledge score for adverse effects of intermittent fasting was 64%. The average score for adverse effects of detoxes and cleanses was 69%, which was the highest adverse effects score among the three fad diets examined (Table 2). Potential factors influencing knowledge of adverse effects, including years of work experience in cooperative extension service (CES), membership in professional associations, education level, and certifications held, served as the independent variables. There was a significant main effect for the Certified Health Education Specialist (CHES) certification, $F = 5.16$, $p = 0.03$. There was also a significant main effect for the RDN and NDTR certifications, $F = 4.83$, $p = 0.03$ (Table 3).

CONCLUSIONS, RECOMMENDATIONS, AND IMPLICATIONS

The study results suggest a positive association between CHES certification, RDNs, and NDTRs in the field of cooperative Extension and agents' knowledge of adverse effects of popular fad diets. However, only three respondents had the CHES certification; therefore this association would require further testing. Those who are CHES certified are skilled in all aspects of health education programming, from assessment of community needs to evaluation and serving as a resource for other professionals (Barnes et al., 2002). Thirteen respondents were RDNs and NDTRs., who are trained in dietetics practice and food and nutrition sciences (The Academy Quality Management Committee, 2018). Of the respondents who were RDNs and NDTRs, their years of experience in cooperative extension varied. This may suggest that RDNs or NDTRs, regardless of their years of experience in cooperative extension, have greater knowledge regarding the adverse

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Table 1. Respondent Demographics (*n* = 138)

Variable	Respondents <i>n</i> (%)
<i>Area of practice</i>	
General Nutrition	128 (93%)
Food Safety	86 (62%)
Weight Control	54 (39%)
Diabetes Management	60 (44%)
EFNEP ^a	20 (15%)
<i>Years of experience</i>	
0–1 year	27 (20%)
>1 year – ≤ 10 years	58 (42%)
> 10 years – ≤ 20 years	31 (22%)
> 20 years	22 (16%)
<i>Education level</i>	
Bachelor’s	26 (19%)
Some graduate studies	15 (11%)
Master’s	87 (63%)
Doctorate	10 (7%)
<i>State of employment</i>	
Louisiana	15 (11%)
Texas	70 (51%)
Arkansas	36 (26%)
Mississippi	17 (12%)
<i>Gender</i>	
Male	4 (3%)
Female	133 (96%)
Other/I prefer not to disclose	1 (1%)

Note. Respondents may have chosen more than one area of practice. ^aExpanded Food and Nutrition Education Program.

effects of fad diets. Of the thirteen RDNs and NDTRs surveyed, a majority (85%) were members of the Academy of Nutrition and Dietetics.

Agents reported obtaining information from internet-based sources, including .edu websites and .gov websites. While this trend of seeking health information online resembles preferences of the general public, agents in this study often chose more reliable online sources, while the general public tends to choose less reliable sources, like commercial websites (LaValley et al., 2016).

Respondents had a variety of education levels, certifications, years of experience in CES, areas of practice, and professional association memberships, which provided a diverse sample. The convenience of the online survey format allowed participants to respond from work computers. The number of responses varied between states. The time burden (15–20 minutes) may have contributed to some respondents not completing the survey. This sample of agents’ responses may not reflect the entire nation’s FCS agents; this study could have benefited from a larger sample size. The knowledge questions have not been tested for validity. Finally, while there was a significant association between higher knowledge scores and certain certifications, only thirteen survey respondents were RDNs or NDTRs and only three had the CHES certification, necessitating further research to substantiate this association. Additionally, future research may consider which certifications and professional memberships provide regular continuing education credits and publication subscriptions.

Overall, the survey showed a knowledge deficit among agents regarding fad diets and the adverse effects associated

Table 2. Knowledge Scores Among Professional Certifications Held

Knowledge Subcategory	Extension Specialist	RDN ^a and NDTR ^b	CHES ^c	CHC ^d	CFCS ^e
Low-Carbohydrate Knowledge	72%	83%	67%	86%	67%
Intermittent Fasting Knowledge	77%	80%	83%	71%	78%
Detox and Cleanse Knowledge	75%	76%	84%	78%	77%
Low-Carbohydrate Adverse Effects Knowledge	56%	73%	64%	73%	62%
Intermittent Fasting Adverse Effects Knowledge	63%	65%	71%	61%	64%
Detox and Cleanse Adverse Effects Knowledge	69%	71%	75%	80%	69%
Total Knowledge Score	69%	74%	74%	74%	70%

Note. Percentages represent the average scores among respondents who hold the professional certifications. ^aRegistered Dietitian Nutritionist; ^bNutrition and Dietetics Technician, Registered; ^cCertified Health Education Specialist; ^dCertified Health Coach; ^eCertified in Family and Consumer Sciences.

Table 3. ANOVA Results for Adverse Effects Knowledge Scores

Variable	F value	p-value
<i>Area of practice</i>		
General Nutrition	0.05	0.83
Food Safety	2.52	0.12
Weight Control	0.16	0.69
Diabetes Management	0.93	0.34
EFNEP ^a	0.22	0.64
<i>Years of experience</i>	0.61	0.61
<i>Membership in professional organizations</i>		
NEAFCS ^b	0.2	0.66
SNEB ^c	0.61	0.44
AND ^d	0.42	0.52
<i>Education level</i>	0.32	0.81
<i>Certifications Held</i>		
Extension Specialist	0.09	0.77
RDNe and NDTR ^f	4.83*	0.03
CHES ^g	5.16*	0.03
CHCh	0.05	0.82
CFCS ⁱ	0.31	0.58

^aExpanded Food and Nutrition Education Program; ^bNational Extension Association of Family and Consumer Sciences;

^cSociety for Nutrition Education and Behavior; ^dAcademy of Nutrition and Dietetics; ^eRegistered Dietitian Nutritionist;

^fNutrition and Dietetics Technician, Registered ^gCertified Health Education Specialist; ^h Certified Health Coach;

ⁱCertified in Family and Consumer Sciences.

* $p \leq 0.05$.

with them, as the average score among all respondents was 70%. This indicates a need for professional development among FCS agents regarding fad diets. Participating state offices can use the information from this study to develop statewide trainings and resources for their agents.

Over the last decade, there has been a rise in demand for nutrition and health-related programs due to an increased need for improved population health among communities across the nation (Kaufman et al., 2017). CES has evolved to meet the needs of communities by placing a greater focus on nutrition and health programming (Kaufman et al., 2017). As the progression from home economics to nutrition and health in CES continues to develop, there will be a greater demand for nutrition and dietetics professionals, such as RDNs and NDTRs, in CES. In conclusion, a significant association was observed with fad diet adverse effect knowledge scores and RDN, NDTR, and CHES certifications. Results of this study indicate the benefits of hiring CES professionals with these nutrition and health-related certifications and

supporting a variety of continuing education options needed to maintain those credentials or certifications.

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