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Abstract: *We report results of a Web-based nationwide survey of nutrition and health Extension specialists representing 42 states. Survey items (n = 36) assessed five areas: curriculum review, nutrition and physical activity, professional training, communication, and evaluation. An internal curriculum review was common, but few states shared their criteria or process on-line. The majority of respondents reported discussing physical activity, and over half lead physical activities. Most favored on-line professional development training and a one-stop website for sharing information and resources. Evaluation data were most commonly collected for food safety, healthy eating and physical activity, and food resource management.*

Introduction

The two-fold purpose of this article is to 1) discuss findings of the 2011 National Institute of Food and Agriculture (NIFA) Health and Nutrition Survey and 2) describe implications for future direction specific to Extension health and nutrition programming.

In 2008, NIFA national program leaders in nutrition and health created the NIFA Nutrition and Health Committee for Planning and Guidance (the Committee). Comprised of Extension specialists working in nutrition and health-related areas, the Committee was formed to advise NIFA national program leaders about issues and concerns related to health and nutrition policies and programs, discuss implications for the Cooperative Extension System, and offer recommendations to strategically position NIFA for the future. Committee members represent all regions of the country, including 1862 and 1890 institutions. The Committee is responsive to the following goal outlined in the Association of Public Land Grant University's (APLU's) Strategic Programmatic Opportunities for Cooperative Extension objective: "Ensure an abundant and safe food supply for all" (APLU, 2010). In addition, the Committee's work addresses NIFA's nutrition and health priority area to: "Help families, youth, and individuals to become physically, mentally, and emotionally healthy" (NIFA, 2010). Committee actions focus on enhancing Extension participation in NIFA's strategic planning to prepare Extension to meet future challenges and opportunities.

During its first year, the Committee established membership structure and operating procedures. Subcommittees were formed to address five focal areas: curriculum oversight, nutrition and physical activity policies and programs, professional development and training, communication and connection to appropriate resources, and evaluation indicators. To provide future direction for subcommittee activities, a needs assessment was conducted to examine nutrition and health Extension specialists' current state-level interest and involvement in each of these five areas.

The Committee's overarching goal is to support the efforts of health and nutrition Extension specialists. Extension specialists are an important entity in helping to strengthen the partnership between Extension at the land-grant universities and NIFA. These individuals provide the expertise, technical information, and leadership that drive county-level Extension programming while maintaining an active research program within their department at the land-grant university (Radhakrishna & Relado, 2009; Woeste & Stephens, 1996). Their responsibilities are varied but essential to the implementation and sustainability of state and local Extension programs. Required are a set of unique skills that include expertise in developing, implementing, and assessing educational programming and materials; the ability to synthesize and integrate research information; and competence in communication. Understanding that health and nutrition Extension specialists serve a valuable role in Extension, the Committee envisions that strengthening their capacity will position NIFA to better respond to national health issues and reduce health disparities.

Methods

A 36 item, Web-based survey was developed by the Committee specifically for Extension professionals to assess national needs and gaps relevant to nutrition and health programming. The survey categories corresponded to the Committee's five critical areas: 1) curricula review and dissemination systems; 2) physical activity; 3) professional training; 4) communication; and 5) evaluation indicators. Questions included dichotomous (yes/no), a 5-point Likert scale, and open-ended items. The survey was assessed using face validity. Nutrition and health Extension specialists serving on the Committee evaluated the clarity and content of each item. Outside specialists were consulted for the physical activity questions. Throughout the survey development process the Committee as a whole provided oversight and approved the finalized version of the instrument.

Texas A & M University Institutional Review Board (IRB) approval was obtained. The survey was administered nationwide to over 500 individuals utilizing list serves maintained by NIFA. Family and Consumer Sciences (FCS) program leaders, nutrition and health Extension specialists, and Expanded Food and Nutrition Education Program (EFNEP) coordinators were targeted. An email

cover letter explained the survey's purpose and provided the URL link and instructions. The survey was open for 2 weeks.

Data were analyzed using The STATA (Release 11, 2010; Stata Corp., College Station, TX). Demographics and survey items were analyzed using descriptive statistics, e.g., frequencies, percentages, and means.

Results and Discussion

One hundred and twenty-two Extension professionals completed the survey. Response rate (defined as the percentage of invitations that resulted in a response) was 24%. Given this low response rate, findings are generalizable to the 125 professionals responding to this survey. Respondents represented 42 states and self-reported working primarily in the areas of nutrition (48%), EFNEP (30%), Supplemental Nutritional Assistance Program-Education (SNAP-Ed) (25%), health (24%), food safety (21%), physical activity (21%), and general family and consumer sciences (17%). Overall, 40% of participants had 10 or more years of experience in their position (mean = 12.5 y).

Curricula Review and Dissemination

Overall, 48% of respondents (n=57) had a state system for reviewing nutrition and health curricula, with 52% (n= 32) using both internal and external reviewers and 28% (n=17) using only internal reviewers (e.g., Extension educators, Extension faculty, non-Extension faculty). The majority of states do not provide the curriculum review criteria (44%; n=27) or process for reviewing curriculum on-line (46%; n= 32). Many respondents did not know if their state provided the criteria (47%; n=29) or process (33%; n=23) for reviewing curriculum on-line. Respondents indicated using the following national curriculum systems: SNAP-Ed Resource Connection (62%; n=61), National 4-H Curriculum (60%; n=57), Society of Nutrition Education MyPyramid eCatalog (54%; n=50), and Women Infants and Children (WIC) Works (30%; n=28).

Most respondents reported it was important or very important to improve the awareness of (85%; n=87) and access to (81%; n=83) peer-reviewed curricula available from other states. The majority also indicated it was important or very important (59%; n=60) that consistent curricula review criteria be used across states. Finally, 47% (n=47) indicated it was important or very important to develop a national review system for Extension nutrition and health curricula.

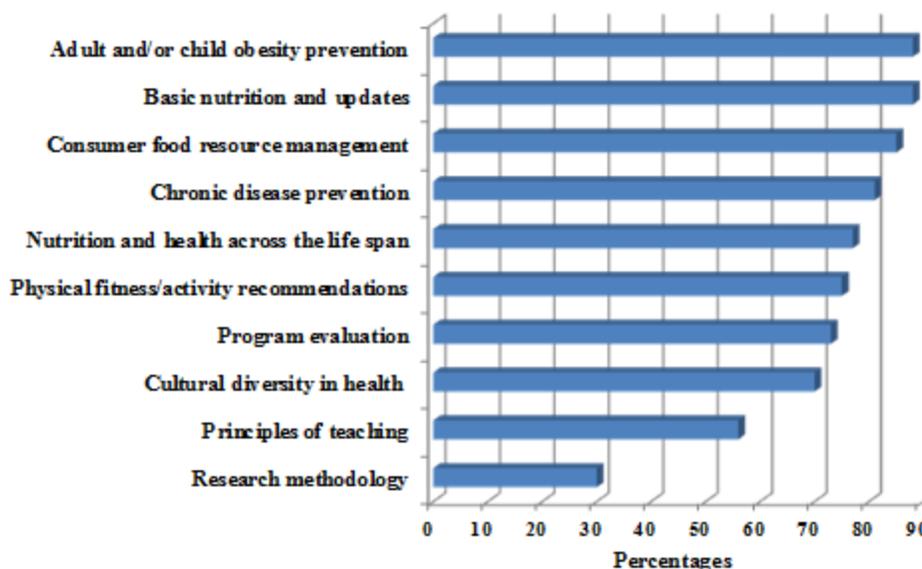
Physical Activity

Nearly all respondents (96%; n=101) said they discussed physical activity, and half (51%; n=54) led physical activities as part of their current programming. Eighty percent (n=83) of respondents felt confident in their ability to lead physical activities. However, it is unclear if Extension faculty doing physical activity programming are being trained appropriately, what guidelines they are following, and what criteria they use to evaluate physical education materials. Respondents reported several concerns with providing physical activity: liability (67%; n=67), availability of appropriate lessons (53%; n=54), and staff training (79%; n=79). A majority of respondents (63%; n=64) indicated they would access on-line trainings focused on physical activity content, activities, and methods for incorporating into their lessons.

Professional Training

Overall, the majority responding said they provided professional training in nutrition (81%; n=83) and health (56%; n=57). Figure 1 illustrates other professional development trainings offered by respondents' states in these two content areas. Group facilitation was the training method most frequently used to deliver both nutrition (79%; n=63) and health (65%; n=36) education instruction. A mixed-methods approach incorporating both lecture and application activities (67%; n=68) was reported as the most successful teaching method used by respondents. The majority of respondents agreed or strongly agreed (79%; n=102) that Cooperative Extension on-line health and/or nutrition professional development courses were needed. Most (98%; n=100) said they would enroll in these courses and would encourage staff to enroll.

Figure 1.
Key Topics in Professional Development



Communication and Information Sharing

Table 1 provides the various methods used to access professional materials. On-line Extension materials, such as state Extension Web sites, Extension newsletters, and the *Journal of Extension* were used most frequently. Respondents preferred a one-stop Web site with automatic electronic feeds, such as Twitter, Facebook, and Really Simple Syndication (RSS).

Table 1.
Communication and Information Sharing

Question	Yes		No	
	%	N	%	N
Current methods used for accessing nutrition, health, and physical activity information/professional development materials?				
<i>State Extension Web sites</i>	78%	77	22%	22
<i>Journal of Extension</i>	69%	68	31%	30
<i>eXtension</i>	58%	57	42%	42
<i>Extension-sponsored conferences (e.g., Priester)</i>	49%	49	51%	51
<i>On-line Extension newsletters</i>	45%	45	55%	55
<i>Children, Youth, and Families at Risk (CYFAR)</i>	40%	38	60%	58
How do you like to receive information about colleagues nationwide?				
<i>One-stop Web site for nationwide sharing</i>	94%	95	6%	6
<i>Web-based directory/listing of state-specific materials and/or professional development opportunities</i>	71%	67	29%	28

Evaluation Indicators

Overall, 51% (n=47) reported providing single event lessons, while 45% (n=41) reported providing a lesson series. The majority (55%) of those who reported providing a lesson series indicated that 25-50% of their programs were done as a series, while one quarter reported less than 25% of their programming was a series. A few reported that more than 75% of their classes were done as a series.

Respondents reported on health and nutrition curriculum topics covered and if class participants reported an increase in knowledge or an engagement in targeted behavior.

Topics in which most class participant improvement was reported are given in Table 2 with % improvement shown for each response.

Table 2.
Evaluation Indicators

Question	Yes		No	
	%	N	%	N
Did participants report an increased knowledge in these <i>safe food handling</i> practices?				
<i>Increasing proper hand washing</i>	95%	76	5%	4
<i>Storing food properly</i>	95%	72	5%	4
<i>Avoiding cross contamination</i>	90%	69	10%	8
<i>Cooking food adequately</i>	84%	65	16%	12
For <i>healthy eating and physical activity</i> (obesity prevention), did participants report engaging in these behaviors?				
<i>Increased fruit and vegetable intake</i>	97%	82	3%	3
<i>Increasing the amount of time spent daily in physical activity</i>	87%	73	13%	11
<i>Increased whole grain intake</i>	82%	67	18%	15
<i>Choosing healthier beverages</i>	75%	61	25%	20
<i>Consuming appropriate portion sizes</i>	73%	59	27%	22
<i>Decreased fat intake</i>	71%	59	29%	24
<i>Decreased added sugar intake</i>	66%	52	34%	27
For <i>food management</i> , did participants report an increased knowledge and management of food for these behaviors?				
<i>Shopping with a grocery list</i>	89%	65	11%	8
<i>Comparing prices before buying food</i>	86%	59	14%	10
<i>Planning meals ahead of time</i>	83%	60	17%	12
<i>Not running out of food before the month ends</i>	78%	54	22%	15

Implications

Most respondents indicated the need to increase awareness of and access to curriculum review criteria from their own and other states. Criteria sharing could offer a value-added approach to curriculum review, especially for those issues that are national in scope and interest (e.g., obesity prevention, walking programs) but perhaps less so where programs are targeted to certain population groups or local issues. Another advantage to sharing and using a similar

curriculum review process across states is that it would make the review process more transparent, especially to those from other states who would elect to adopt the curriculum.

Because physical activity programming is relatively new in Extension, it is rather surprising that over half of the Extension specialists surveyed reported a high level of confidence and involvement in this type of education. In the past few years, NIFA has made a concerted effort to promote physical activity through Extension's programming; grant opportunities for research; education and outreach; and national partnerships. While this sets the stage for physical activity promotion and program implementation, additional information beyond that collected in the survey may be needed to determine the breadth and depth of current programs as well as training needs of those conducting them. Training specific to energy balance and obesity prevention is needed for Extension nutrition and physical activity programs. Looking ahead, Extension specialists could play a major role in the implementation of the *National Physical Activity Plan* at local and community levels if adequately trained.

The low number of Extension specialists who reported using learner-centered instruction (LCI) merits attention. A large body of evidence has shown LCI to be a best practice in teaching and is favored over a traditional, authoritative style (Cornelius-White & Harbaugh, 2010). Adoption of this teaching style requires exposure to the method, assessment of audience needs, advanced preparation to implement successfully, and passage of time to see positive results from its incorporation into the classroom (Kaiser, McMurdo, & Joy, 2007). The high degree of personal interest in on-line health and/or nutrition professional development courses suggests possible opportunities for collaborations between state Extension agencies to share resources in the delivery of well-designed distance education courses.

Respondents' interest in communication and information sharing was not unexpected, especially in this technology-driven age. Because there are multiple ways to stay informed, how best to channel the information, using the most effective technology for a particular situation, still needs further consideration. A one-stop website that is user friendly and timely was of interest to respondents. This tool could be used to share a variety of materials and resources, such as social media messaging for the timely release of important messages or meeting updates. Also, eXtension, an Extension Internet-based collaborative environment, could provide an enhanced communication portal for professionals to share information and program materials and ask questions in real time. The Committee could determine those technologies best suited to the situation and those most effectively supporting Extension's needs.

Survey results show that Extension specialists and their institutions are collecting and reporting outcome data to demonstrate program impact, especially in the areas of safe food handling, food management, healthy eating, and physical activity. Although the current study represents a small sample of Extension specialists, findings reveal that some progress has been made in efforts to evaluate food safety and management, healthy eating, and physical activity. However, the Committee realizes the need to examine the rigor and relevance of such evaluation in terms of program accountability within the Extension system and the national strategic objectives identified by APLU and NIFA.

In conclusion, these findings provide a snapshot of Extension's nutrition and health programming efforts and needs that can be used to target specific areas for change and improvement. These results also provide future direction for NIFA's Nutrition and Health Committee for Planning and Guidance.

Acknowledgments

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Dedication

This paper is dedicated to Dr. Robin Orr, who passed away on May 13, 2010. Dr. Orr, a founding member of the original Committee, was a driving force behind the survey and an

inspiration to Extension's Health and Nutrition programs nationwide.

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