



Nutrition Extension Educators' Perceptions of Evidence-based Practice

Excellence in nutrition education demands a strong base in research evidence. This study aimed to evaluate the perceived knowledge, skills, abilities, attitudes, and activities of nutrition extension educators related to evidence-based practice. Family and Consumer Sciences (FCS) extension agents in Florida were surveyed through Qualtrics using an online, modified version of the Evidence-Based Practice Questionnaire (EBPQ). The educators reported positive attitudes and evidence-based practice activities which supported their nutrition knowledge and programming but also noted time constraints. Lower ratings for perceived knowledge, skills and abilities suggest a need for professional development related to evidence-based practice.

RESEARCH

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The purpose of Extension education is to promote the practical application of research knowledge. As discipline-specific science and educational practices advance, it follows that Extension programming will constantly evolve to reflect new information. Thus, an evidenced-based approach, the “conjunction of research and practice,” is an expectation for all Extension Educators (Dunifon et al., 2004).

The Society of Nutrition Education and Behavior (SNEB) nutrition educator competencies include “aptitude in nutrition education research methods” and specifically to “[a]nalyze, evaluate, and interpret nutrition education research and apply it to practice” – a clear expectation that nutrition educators undertake evidence-based practice (Society for Nutrition Education and Behavior, 2021). According to the International Confederation of

Dietetic Associations (2010), evidence-based practice “is about asking questions, systematically finding research evidence, and assessing the validity, applicability and importance of that evidence.” For those nutrition educators who are dietitians, the Code of Ethics of the Academy of Nutrition and Dietetics emphasizes an evidence-based approach and practice decisions (Academy of Nutrition and Dietetics, 2018). As the SNEB competencies highlight, nutrition educators also must apply research evidence (Society for Nutrition Education and Behavior, 2021).

While evidence-based practice is recognized as essential to ensure that nutrition education programming is based on current research, the extent to which nutrition educators exhibit such practice is not known. Byham-Gray et al. (2005)

reported that only a minority of practicing dietitians surveyed in the United States (U.S.) had the knowledge and skills for evidence-based practice. Nonetheless, in recent years, there has been an upsurge of nutrition practice guidelines (Raynor et al., 2020), evidence analysis (Academy of Nutrition and Dietetics, n.d.), and systems that provide evidence-based answers to nutrition questions (Dietitians of Canada, n.d.). Thus, the expectation is that nutrition education based on evidence is now the norm. However, in a recent pilot study, dietetic interns undertaking supervised practice to become registered dietitians/nutritionists, reported significant barriers to evidence-based practice with their preceptors, and only 72% of the respondents in the convenience sample agreed with the statement, “I intend to incorporate evidence-based practice in my future job” (Hinrichs, 2018). No known research has explored evidence-based practice of nutrition Extension Educators. In an era of rampant nutrition misinformation (Wang et al., 2019), it is critical that nutrition educators deliver educational programming based on current research evidence.

OBJECTIVES

This study aimed to evaluate perceived knowledge, skills, abilities, attitudes, and activities related to evidence-based practice of Family and Consumer Sciences (FCS) Extension Agents delivering nutrition education programming. Specifically, the objectives were to evaluate their evidence-based practice effort activities, attitudes towards evidence-based practice, and perceived knowledge, skills and abilities related to evidence-based practice. An additional objective was to query their preferred sources of evidence-based nutrition information.

METHOD

FCS Extension Educators in Florida, who were currently delivering nutrition education, were recruited in September 2020. An invitation to participate with a link to the Qualtrics® survey was sent through the University of Florida's Extension administration listserv to an estimated 62 Extension Educators currently involved in nutrition education activities. Two e-mail reminders were sent to encourage survey response. The anonymous survey included the previously validated Evidence-Based Practice Questionnaire (EBPQ) (Upton et al., 2014). The EBPQ was modified, such as by replacing "clinical practice" with "nutrition Extension education." Likert scales were used to assess: 1) evidenced-based practice activities over the past year (1=never to 7=frequently); 2) attitudes towards evidence-based practice (1=very negative to 7=very positive statements); and 3) knowledge, skills and abilities related to evidence-based practice (1=poor to 5=best). Additionally, educators were asked about their preferred sources of evidence-based nutrition information and use of the University of Florida peer-reviewed Extension publications.

The Institutional Review Board at the University of Florida approved the study as exempt. The informed consent language was displayed on Qualtrics® and interested individuals agreed to participate by clicking "agree" prior to completing the survey. Survey outcomes were analyzed by descriptive statistics (mean and standard deviation) and responses to the open-ended questions were summarized.

RESULTS

Of the nutrition educators surveyed, 20 FCS Agents completed the survey. Of respondents, 17 identified as white, two as African American, and one individual chose not to report race; five respondents identified as Hispanic. Three respondents had worked as an Extension Agent for less than 3 years, six for 3–5 years, three for 6–10 years, five for 11–15 years, two for 16–20 years, and one reported working as an agent for more than 21 years. The ages of respondents varied from 25–34 (n=3), 35–44 (n=5), 45–54 (n=7), 55–64 (n=3), and 65–74 years (n=2).

Respondents reported an overall rating of 5.2 ± 1.5 (mean \pm SD) for undertaking evidence-based practice effort activities to address gaps in knowledge. Attitudes were rated at 5.7 ± 1.5 , and perceived knowledge, skills and abilities averaged 3.6 ± 0.8 . **Table 1** presents the

mean responses to each of the EBPQ items. The item, "shared this information with colleagues," was ranked the lowest among the nutrition Extension education evidence-based practice efforts in response to a gap in knowledge. Regarding attitudes towards evidence-based practice, item 1 = "My workload is too great to keep up to date with all the new nutrition evidence" to 7 = "New nutrition research is so important I make time in my schedule," was ranked the lowest at 4.4 ± 1.7 on the scale of 1–7. The question regarding, "converting your information needs into a research question," was ranked lowest in the knowledge, skills and abilities section (3.0 ± 0.9), whereas "ability to apply information to nutrition extension education efforts" was ranked highest (4.1 ± 0.7).

Sources of evidence-based information included state Extension Specialists, professional organizations (e.g., American Diabetes Association, American Heart Association, Academy of Nutrition and Dietetics, and the Society of Nutrition Education and Behavior), government departments (e.g., U.S. Department of Agriculture), university-approved curriculum and online resources, reputable domain names (e.g., .edu, .org, and .gov), and nutrition journals. Respondents also indicated a frequency of use of the University of Florida's evidence-based peer-reviewed publications (<https://edis.ifas.ufl.edu>); 5% (1 respondent) used these publications "rarely or never," 45% reported "a few times a year", 40% noted "monthly", and 5% (1 respondent) indicated a "weekly" use of the publications.

DISCUSSION

The results of the present study suggest that FCS nutrition Extension educators identify knowledge gaps, frequently seek out the relevant research, and integrate the evidence into their nutrition Extension education efforts, thus strengthening their expertise and programming. Given the emphasis on program outcome evaluation, the respondents reported that they often evaluated the outcomes of their nutrition Extension education efforts. However, lower ratings were reported for sharing their new knowledge with colleagues, which may suggest an opportunity for increased involvement in in-service training or conference presentations, particularly if their interpretation of "colleagues" extends beyond their region or state. The item "critically appraised, against set criteria, any literature you have discovered" also was scored lower than the mean for the evidenced-based practice activities. Byham-Gray et al. (2005)

suggested educational activities related to the steps of the evidence-based practice (i.e., formulating questions, searching for and critically evaluating the literature, and application to practice) are needed to promote evidence-based practice. Nutrition Extension educators may need specific training to enhance their skills in critical appraisal of literature to foster the routine application of research findings.

Reported attitudes towards evidenced-based practice were very positive with the exception of the item, “my workload is too great to keep up to date with all the new nutrition evidence” vs. “new nutrition research is so important I make time in my schedule,” which was rated at only 4.4 ± 1.7 on the Likert scale from 1 – 7. This finding suggests that time constraints were an impediment to evidence-based practice for the FCS nutrition Extension educators surveyed. It is well established that Extension educators require professional development (Cummings et al., 2015). FCS educators need current, evidence-based nutrition information, in a synthesized format for efficient learning and ease of application given their time constraints. Synchronous webinar professional development, with an asynchronous option to view archived presentations delivered by content experts, has been shown to enhance knowledge of current nutrition research and foster implementation into nutrition and health Extension programming (England et al., 2020). Additionally, implementing curriculum developed by content experts and evaluating it for effectiveness in specific target groups and geographical regions supports evidence-based programming (Fetsch et al., 2012). Previous research has shown that when compared to 4-H educators, FCS agents were more knowledgeable and demonstrated more positive attitudes towards evidence-based programs (Perkins et al., 2014), supporting the premise that providing FCS Extension educators with appropriate evidence-based curriculum may help to offset the need for the agents to undertake time-consuming, evidence-based practice activities such as critically appraising source literature. Providing evidence-based nutrition curriculum to Extension educators is, perhaps, analogous to the many clinical practice guidelines developed and disseminated to time-crunched health professionals in practice.

The FCS nutrition Extension educators reported overall moderate perceived knowledge, skills and abilities related to evidence-based practice. They rated their “ability to apply information to nutrition extension education efforts” highest in this category at 4.1 ± 0.7

with a rating of 5 being designated as excellent. In previous research, evidenced-based practice knowledge was associated with more years of education and completion of a research course, among other indicators (Byham-Gray et al., 2005). Although these indicators were not queried in the present study, most FCS educators are Masters-trained, with diverse backgrounds that may have included research training. A future study could examine the relationships between knowledge, skills, and abilities related to evidence-based practice and research training.

As expected, FCS nutrition Extension educators drew on a variety of sources of evidence-based information. Strayer et al. (2020) surveyed the sources of information used by health educators and reported that state Extension specialists were preferred information sources. Similarly, in response to an open-ended question in the present study, state Extension specialists were indicated as a source of evidence-based nutrition, as was university-approved Extension curriculum. However, many other sources of evidence-based nutrition information were reported, such as professional journals and government websites, highlighting the resourcefulness of the respondents to ensure their evidence-based nutrition practice. Surprisingly, many FCS agents did not make frequent use of their university’s peer-reviewed Extension publications, although these e-publications address many relevant nutrition topics (<https://edis.ifas.ufl.edu>) and are generally highly accessed (D. Hagen, personal communication, March 19, 2021).

The goal of all nutrition education is to be evidence-based. The results of this study suggest that continuing education on the knowledge, skills and abilities related to evidence-based practice may be needed to ensure Extension nutrition educators embrace and perhaps champion evidence-based practice. Extension educators’ contributions to the evidence base of nutrition education effectiveness through participation in practice-based research is needed, such as sharing of evaluation findings through conference presentations and publications. As lack of time was noted as the greatest barrier to evidence-based practice, the need for targeted evidence-based nutrition curriculum and the support of nutrition Extension specialists was confirmed. The revised EBPQ used in the present study, possibly combined with a tool that queries the implementation of various evidence-based curriculum and resources, may be useful for the evaluation of nutrition Extension educator practice.

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References

Academy of Nutrition and Dietetics. (2018). Code of Ethics for the Nutrition and Dietetics Profession.

Code of Ethics for the Nutrition and Dietetics Profession. <https://www.eatrightpro.org/-/media/eatrightpro-files/career/code-of-ethics/coeforthenutritionanddieteticsprofession.pdf?la=en&hash=0C9D1622C51782F12A0D6004A28CDAC0CE99A032>

Academy of Nutrition and Dietetics. (n.d.). Evidence Analysis Library.

<https://www.eatrightpro.org/research/applied-practice/evidence-analysis-library>

Byham-Gray, L. D., Gilbride, J. A., Dixon, L. B., & Stage, F. K. (2005). Evidence-based practice: what are dietitians' perceptions, attitudes, and knowledge? *Journal of the American Dietetic Association*, 105(10), 1574-1581.

Cummings, S. R., Andrews, K. B., Weber, K. M., & Postert, B. (2015). Developing extension professionals to develop extension programs: A case study for the changing face of extension. *Journal of Human Sciences and Extension*, 3(2).

Dietitians of Canada. (n.d.). *PEN The Global Resource for Nutrition Practice.*

<https://www.pennutrition.com/index.aspx>

Dunifon, R., Duttweiler, M., Pillemer, K., Tobias, D., & Trochim, W. M. (2004). Evidence-based extension. *Journal of Extension*, 42(2), 1-12.

England, J., Lynch, W., Zamojski, K., Garden-Robinson, J., Rafie, C., & Dahl, W. (2020). Collaborating to meet the professional development needs of nutrition extension educators at a national level. *Journal of the National Extension Association of Family and Consumer Sciences*, 15, 65-69.

Fetsch, R. J., MacPhee, D., & Boyer, L. K. (2012). Evidence-based programming: What is a process an extension agent can use to evaluate a program's effectiveness. *Journal of Extension*, 50(5), 5FEA2.

Hinrichs, R. J. (2018). Dietetic interns' perceptions and use of evidence-based practice: an exploratory study. *Journal of the Medical Library Association, 106*(1), 65-73.

International Confederation of Dietetic Associations. (2010). *Evidence-based Dietetics Practice*.
<https://www.internationaldietetics.org/Downloads/ICDA-Definition-of-Evidence-Based-Practice.aspx>

Perkins, D. F., Chilenski, S. M., Olson, J. R., Mincemoyer, C. C., & Spoth, R. (2014). Knowledge, attitudes, and commitment concerning evidence-based prevention programs: Differences between family and consumer sciences and 4-H youth development educators. *Journal of Extension, 52*(3).

Raynor, H. A., Beto, J. A., & Zoellner, J. (2020). Achieving evidence-based practice in dietetics by using evidence-based practice guidelines. *Journal of the Academy of Nutrition and Dietetics, 120*(5), 751-756.

Society for Nutrition Education and Behavior. (2021). *Nutrition Educator Competencies*.
<https://www.sneb.org/nutrition-educator-competencies/>

Strayer III, T. E., Kennedy, L. E., Balis, L. E., Ramalingam, N. S., Wilson, M. L., & Harden, S. M. (2020). Cooperative extension gets moving, but how? Exploration of extension health educators' sources and channels for information-seeking practices. *American Journal of Health Promotion, 34*(2), 198-205.

Upton, D., Upton, P., & Scurlock-Evans, L. (2014). The reach, transferability, and impact of the evidence-based practice questionnaire: A methodological and narrative literature review. *Worldviews on Evidence-Based Nursing, 11*(1), 46-54.

Wang, Y., McKee, M., Torbica, A., & Stuckler, D. (2019). Systematic literature review on the spread of health-related misinformation on social media. *Social Science & Medicine, 240*, 112552.

Table 1. Family and Consumer Sciences educator responses to questionnaire items of the modified Evidence-based Practice Questionnaire (EBPQ) (Upton et al., 2014).

Activities: Considering your nutrition extension education efforts over the past year, how often have you done the following in response to a gap in your knowledge (1 = never and 7 = frequently)	mean ± SD
<i>“Formulated a clearly answerable question as the beginning of the process towards filling this gap”</i>	5.4 ± 1.1
<i>“Tracked down the relevant evidence related to your question” (gap in knowledge)”</i>	6.0 ± 0.9
<i>“Critically appraised, against set criteria, any literature you have discovered”</i>	4.6 ± 1.7
<i>“Integrated the evidence you have found with your [nutrition extension education efforts]”</i>	5.7 ± 1.3
<i>“Evaluated the outcomes of your [nutrition extension education efforts]”</i>	5.5 ± 1.6
<i>“Shared this information with colleagues”</i>	4.2 ± 1.7
Attitudes (scale 1–7)	
1 = <i>“My workload is too great to keep up to date with all the new [nutrition]” evidence</i> to 7 = <i>[New nutrition research is so important I make time in my schedule]”</i>	4.4 ± 1.7
1 = <i>“I resent having my [nutrition extension education efforts] questioned</i> to 7 = <i>I welcome questions on my [nutrition extension education]”</i>	6.0 ± 0.9
1 = <i>“Evidence-based [nutrition education] is a waste of time</i> to 7 = <i>Evidence-based [nutrition education] is fundamental to extension efforts”</i>	6.8 ± 0.4
1 = <i>“I stick to tried and trusted methods rather than changing to anything new”</i> 7 = <i>“My [nutrition extension education efforts] have changed due to evidence I have found”</i>	5.7 ± 1.5

Knowledge, Skills, and Abilities (1 = Poor and 5 = Excellent)

<i>“Research skills”</i>	3.5 ± 0.8
<i>“IT skills”</i>	3.2 ± 0.9
<i>“Monitoring and reviewing of [nutrition extension education skills]”</i>	3.4 ± 0.6
<i>“Converting your information needs into a research question”</i>	3.0 ± 0.9
<i>“Awareness of major information types and sources”</i>	3.6 ± 0.8
<i>“Ability to identify gaps in your [nutrition knowledge]”</i>	3.9 ± 0.7
<i>“Knowledge of how to retrieve evidence”</i>	3.8 ± 0.6
<i>“Ability to analyse critically evidence against set standards”</i>	3.4 ± 0.9
<i>“Ability to determine how valid (close to the truth) the material is”</i>	3.6 ± 0.8
<i>“Ability to determine how useful (applicable to nutrition extension efforts) the material is”</i>	4.0 ± 0.8
<i>“Ability to apply information to [nutrition extension education efforts]”</i>	4.1 ± 0.7
<i>“Sharing of ideas and information with colleagues”</i>	3.7 ± 0.7
<i>“Dissemination of new ideas [about nutrition extension education] to colleagues”</i>	3.4 ± 0.8
<i>“Ability to review your own [nutrition extension education efforts]”</i>	3.6 ± 0.7
