Trends and Challenges for Nutrition Education Research

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ABSTRACT This paper presents developments and issues in nutrition education research since the Society for Nutrition Education was founded 25 years ago and, in doing so, sets directions for the future. Advances in the types of variables studied, increased sophistication in data collection, and analysis of issues affecting program delivery are discussed. Progress is illustrated by looking at four challenges for the field: 1) realistic educational goals, 2) thorough research designs, 3) explicit theoretical bases, and 4) valid and reliable measurement. Inadequate recognition of biases and assumptions, such as “individual blame” and “mother/wife blame,” are also discussed. Finally, the importance of a strong link between research and practice is emphasized.

INTRODUCTION

For nutrition education to improve and succeed, two types of research findings must be applied: 1) research on the relationship of diet to health—what to communicate—and 2) research in nutrition education—how to communicate. The first is addressed in a plethora of studies reported in a wide range of journals. The second is the primary focus of the Journal of Nutrition Education. Therefore, it is fitting that this special issue of the Journal of Nutrition Education, celebrating the Twenty-fifth Anniversary of the Society of Nutrition Education, be devoted to the history, current status, and future directions for nutrition education research.

Nutrition education may be defined as:

... a process which assists the public in applying knowledge from nutrition science and the relationship between diet and health to their food practices. It is a deliberate effort to improve the nutritional well-being of people by assessing the multiple factors that affect food choices, tailoring educational methodologies and messages to the publics being reached and evaluating results. It can help individuals develop a knowledge base, make a commitment to good nutrition, promote selection of nutritionally adequate diets and develop decision-making skills (1).

Nutrition education research, then, helps answer the question: “What are likely to be the most successful approaches with whom?” and “What guidelines should be followed for developing and evaluating nutrition education programs?” Research enhances practice; however, practice must also guide research directions.

DEFINING THE FIELD

Nutrition education research has been defined as “...the study of why people eat what they do and ways to help them change and improve (2).” This implies a wide range of research questions, a variety of methods to answer these questions, and the application of multiple paradigms from the social and behavioral sciences. It also suggests using differing philosophical perspectives and differing methods for interpreting and applying research findings (3). For example, there has been a recent explosion of ethnographic studies using qualitative methods in nutrition education research. Nutrition educators must understand the underlying assumptions and perspectives of these and other approaches in order to apply them appropriately.

Compared with the field of nutrition research, nutrition education research has a relatively short history. Its history is also somewhat shorter than the research in the social and behavioral sciences from which it draws a conceptual base. Much of the original impetus for research in nutrition education came from nutrition scientists trained in biochemistry and other laboratory-based sciences, who recognized the need to enhance the understanding of food behavior and to help individuals improve their behavior through education. These pioneers encouraged graduate students to pursue research in nutrition education, and these students became the first generation of professionals to devote their careers to nutrition education research. At the same time, professions trained in both the social sciences, especially education, and nutrition began to appear. Researchers with these broader backgrounds—nutrition, social and behavioral sciences, and/or the applied sciences of communication and education—are bringing new perspectives to the field of nutrition education research.

ADVANCES

In the past two decades, we have moved from the point of
little recognition for nutrition education as a field of research to a clear acknowledgment of the need for nutrition education research and evaluation. We have moved from measuring only knowledge to also measuring attitudes and behavior, and from a reluctance to talk about behavior change to a recognition that behavior change or maintenance is our goal. We have realized that it is important not only to study outcomes but to study the educational process as well, if we are to understand why a particular program has the measured effect. We now recognize that it is important to describe audience predispositions before planning nutrition education programs. There is a growing acceptance of the need for theory-based research (4). Finally, as has occurred in other fields, we see a wider application of humanistic perspectives and qualitative methods.

In a 1979 paper (5), future nutrition education researchers were challenged to:
1) set realistic goals for nutrition education and apply knowledge from research to help meet those goals;
2) broaden the scope of nutrition education research to include process as well as outcomes, and to measure affective and behavioral outcomes, as well as both long- and short-term effects;
3) develop an explicit theoretical base for nutrition education research; and
4) address research design issues of comprehensiveness vs. real-world constraints, problems in measuring changes in food behavior, and external vs. internal validity.

A 1989 review of the status of these goals indicated that we had made outstanding progress in responding to these challenges (6). In relation to the first challenge, a meta-analysis of nutrition education research (7) showed that, although many nutrition education programs may still be a bit ambitious, they are making real impacts on the knowledge, attitudes and behaviors of participants.

Studies are now considering process as well as outcome measures, as illustrated by a study of determinants affecting completion or noncompletion of a weight reduction program (8). There have been steady improvements in methods of measurement, with several authors spelling out the issues involved in measurement (9, 10). Because such research is costly and time-consuming, progress in measuring long-term outcomes of nutrition education has been slow; however, developments in nutrition surveillance and in computer technology are making this process more feasible.

In relation to the third challenge, we are beginning to see more studies utilizing an explicit theoretical base. Sims, in a review of published nutrition education research from 1980 to 1986, found that "... very few articles cited the particular theory or model that was the basis of the research" (11). In a review of Journal of Nutritional Education articles from 1982 through 1987, Gillespie and Gillespie (1988) found that 28% made some references to theory, but only 16% made reference to a explicit theoreti-

cal perspective. Achterberg updates these reviews in her article in this issue and concludes that progress in the use of theory has not been as encouraging as we might have hoped. On the other hand, there is a growing recognition among funding agencies such as the United States Department of Agriculture (USDA) and, more recently, the National Institutes of Health (NIH) of the need for a theoretical base, as reflected in requests for proposals coming from these agencies.

The fourth challenge represents a healthy tension between research rigor and relevance. Such tension is inherent in the research process, and is certainly with us in nutrition education research because of its applied nature. The tensions are being addressed as the field struggles to make findings relevant and timely and also to maintain research integrity.

Although significant progress has been made, some of the issues of research design identified a decade ago (5) are still with us. These include: 1) comprehensiveness vs. real-world constraints (e.g., the need to measure outcomes over time); 2) problems in measuring behavioral change; 3) laboratory vs. field research—external validity at the expense of internal validity; and 4) development of an explicit theoretical base critical for advancement of the field.

THEORY

Theory is central to both research and practice. In order to advance as a field, nutrition education research designs must draw upon existing theories from the social and behavioral sciences as well as the biological sciences, and researchers must use research results in working toward a theory of nutrition education. A theory can be defined as an interrelated set of general statements that describe how some things work (12), and that can lead to an understanding of how the world—in this case, the world of nutrition education—works.

Most nutritionists, educators, and consumers, even if they've never read an article on nutrition education or practiced in the field, have their own theory of how nutrition education could or should influence nutrition practice. This has been labeled "lay" theory (12). Lay theories are implicit and have little empirical support; however, lay theories are important because they often serve as the basis for developing "scientific" theory. When research related to the lay theory increases, the theory becomes more scientific. The theory becomes explicit and able to be described to others. The empirical data base, built through research experience, supports and alters theory, and moves the field toward accepted theories of nutrition education that then can be used to guide further research (12). Examples of recent theoretically-based nutrition education research studies are those of Matheson et al. (13), Contento and Murphy (14), and Saunders and Rahilly (15). Theoretical bases for guiding research designs help to build research
successes. This leads directly to more successful designs for nutrition education programs.

Using theory in research planning and program planning is challenging for both researchers and practitioners. Not only must an adequate and clearly-defined theory be selected, but it must be accurately and adequately applied. This requires the joint efforts of practitioners and researchers.

The recognition of the need for theory is growing among researchers and practitioners. From a practitioner’s standpoint, theory is essential for improved practice. The application of theory allows us to learn from one program or experience so that we can improve the next. One example of the appropriate application of theory developed from research to nutrition education programming is the prenatal weight gain intervention program reported by Brown et al. (16). Strychar et al. (17) used the “Theory of Reasoned Action” (18) to develop a program for pregnant teens, and Beffa-Negrini and Cohen (19) used learning-style theory to develop a nutrition education program to reduce cancer risk. Professionals can improve their practice by expanding and improving their theoretical knowledge, i.e., their conception of how and why things work or don’t work.

BIAS

The issue of bias provides additional challenges to nutrition education researchers and practitioners. Bias can be present in researchers’ decisions about whom to study and how to study them. Bias can also influence practitioners’ decisions about whom to target with education programs. Two kinds of bias that may be at work have been termed the “individual blame” bias and the “mother/wife blame” bias (6).

Most nutrition education research and programming efforts have been targeted to individuals whose food habits appear to need changing. The decisions are based on the assumption that these individuals can solve their own problems if they acquire sufficient knowledge and commitment through education. It is becoming increasingly clear, however, that the environment and context in which people eat and make food choices may impose constraints that can only be overcome when the environment also changes, requiring knowledge, commitment, and involvement of others as well. Research designs and educational programs need to avoid such bias; use of explicit theory will help.

Similar guidance with regard to the second bias mentioned is appropriate. Beginning with Kurt Lewin’s studies during World War II, there has been a focus in nutrition education on studying and targeting the mother/wife, and thus implicitly making her responsible for not only her own food behavior but also that of other family members. There is evidence that mothers, particularly those working outside the home, feel the burden of guilt for what they perceive or have been led to believe by professionals is less-than-desirable family food behavior (20). At the same time, there is also evidence that both children and husbands/fathers significantly influence family food decisions (2, 21, 22). Research and practice are both beginning to move away from reflections of this mother/wife blame bias, but constant awareness is needed.

MULTIPLE PERSPECTIVES

A wider variety of research perspectives from the social sciences is beginning to be applied in nutrition education research. Some of these perspectives are receiving more attention than others. Perspectives are linked to paradigms and are the cognitive frameworks that involve assumptions, concepts and ideas. These perspectives change the way a person defines a particular situation. In research, the questions asked, the way the questions are answered through the study design, and, most importantly, the interpretation of the findings are all influenced by perspective. As suggested by Gillespie and Gillespie (3), if one believes that behavior is caused, one puts more effort into working on the external causes. If one believes in free-will, the emphasis is toward helping people control their environment and their own decision-making process. Gillespie and Gillespie’s review of five years of research published in the Journal of Nutrition Education found that all studies reflected an empirical research approach and that most used research designs that led to quantitative data. However, since that time, more researchers are beginning to use a humanist perspective, and significantly more qualitative research designs and data-collection methods are being reflected in published work.

EVALUATION

In a discussion of trends and challenges for nutrition education research, we need to acknowledge the influence of developments in educational evaluation. The purposes served by evaluation differ significantly from those served by research (24). For example, evaluation is usually focused on determining the worth or value of specific educational programs rather than on generalizability to other settings. Also, evaluation is usually quite political in nature, especially when public funds support the programs being evaluated. However, nutrition education researchers have frequently blurred the distinctions between evaluation and research. This has led to definitional problems that have sometimes had a negative impact on the quality of research designs, data collection, analysis, interpretation, and application to practice. We have tended to say “research” when we were really in an evaluative mode, and then proceeded as if we were “researching.” In the future, we need to be clear about our intent.

Although the distinction between evaluation and re-
search is important, we can credit several developments in educational evaluation as sources of ideas for improving nutrition education research. Evaluation studies are an excellent setting for generating high-quality hypotheses for future attention by researchers. Also, the field of educational evaluation has been responsible for adding sophistication and improved methodologies to qualitative research techniques. This has furthered the more humanistic and interpretive research perspectives relevant to the behavioral nature of nutrition and food-choice education.

Guidance for the improved evaluation of nutrition education programs, when evaluation rather than generalizable research is our purpose, comes from the significant developments in educational evaluation since 1965 and the work and writings of nutrition educators involved in formative and summative evaluation work in nutrition education (10, 25–27). Too often in the past, we evaluated program effectiveness by what has been called the “grin test” of participant satisfaction. New developments have helped focus measurements on specified objectives, have encouraged approaches that probe for explanations of phenomena, and have placed more attention on the reporting process so as to enhance the usefulness of findings.

RESEARCH AND PRACTICE

Practitioners have criticized researchers for inadequate interpretation of their research and for not suggesting practical and easily-applied implications for practice. Sims (28) found few interpretations included in the articles she reviewed. However, the profession must be committed to the concept that research enhances practice and that practice also guides research. Perhaps it is characteristic of any new field of research that a period of time is needed for researchers to develop communication channels with practitioners. In 1986, a conference was held to develop more sensitivity to this component and more effective procedures for the communication process (29). Several themes were presented at this conference and through follow-up state conferences.

First, practitioners need to believe they can and do share responsibility for this interpretation and application process. They know their practice situation best and can most effectively make the applications. The responsibility of researchers and those who educate practitioners is to empower practitioners to be skilled and successful in this area. Practitioners must recognize that they have a significant responsibility for identifying relevant research questions and for suggesting plausible theories emerging from their experiences that need to be studied. To move toward this goal, a requirement for the articles in the special issue was that a section on implications for practice be included. This concept was also embodied in the theme selected for the research presentations at the Silver Anniversary Meeting of the Society for Nutrition Education in July 1992: “The Golden Dream: Research Enhancing Practice and Practice Informing Research.” Because many nutrition education researchers are also practitioners and a number of practitioners are already involved in research, there is a rich base of experience on which to build theory that is contained in this communication process.

A second theme for the successful integration of research and practice that was developed at the 1986 conference is that the use of explicit theory should be an organizing concept for both researchers and practitioners. The field of nutrition education is not lacking in plausible and well-developed theoretical frameworks; however, the theories need to be more explicitly described and systematically tested. Sensitivity to this process in the preparation of professionals, in conference discussions, and in reviewing research for publication are all underway and will be significant in realizing the goal. It is important that we ask the right questions, seek answers from the right people, ask the questions in the right way, assess the intended meaning of the responses, and make accurate applications to practice.

We must meet these challenges for research and practice if we are to continue to improve the education of consumers of all ages about nutrition and food consumption. We must develop an explicit theoretical base, broaden the research questions and designs to consider the external environment as well as the internal motivations of individuals. We must make our research perspectives explicit. Finally, we must recognize that the application of research to practice is a team effort. These challenges can easily be met in time for the 50th anniversary of the Society for Nutrition Education in the year 2017.

NOTES AND REFERENCES

9 Sims, L.S. Toward an understanding of attitude assessment in nutri-

**NOMINATIONS FOR AWARDS**

The American Society for Clinical Nutrition is pleased to invite nominations for awards of the society. Nominees need not be members of the society and nominations may be made by anyone. Nomination forms are available from the ASCN Secretariat, 9650 Rockville Pike, Bethesda, MD 20814. Telephone No. (301) 530-7110.

The McCollum Award is given to a clinical investigator generally perceived as currently a major creative force, actively generating new concepts in nutrition, and personally seeing to the execution of studies testing the validity of these concepts. A cash award and inscribed plaque are provided by the National Dairy Council.

The Robert H. Herman Memorial Award in Clinical Nutrition is given to a clinical investigator whose research work has contributed importantly to the advancement of clinical nutrition in areas particularly involving the biochemical and metabolic aspects of human nutrition. A cash award and inscribed plaque are provided by the Robert H. Herman Memorial Fund established by the society and Mrs. Yaye Tokuyama Herman.

The National Dairy Council Award for Excellence in Medical/Dental Nutrition Education is presented in recognition of an outstanding career in medical and/or dental nutrition education. The results of the nominee’s efforts should be widely recognized and have had a national or international impact. Nomination will depend on acknowledged excellence in nutrition teaching or nutrition education research that extends beyond the local institution and that includes innovations in medical/dental nutrition education. A cash award and inscribed plaque are provided by the National Dairy Council.

Deadline for receipt of nominations to be awarded in 1993 is November 20, 1992.