

Using Social Science Theories in Community Nutrition

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ABSTRACT

Community nutritionists draw upon theories from the social sciences to improve their work in health promotion and disease prevention. Social science theories are sets of concepts that provide systematic explanations that can predict events or situations, and are classified into several paradigms and worldviews. These theories interact with research and practice around the subject matter of community nutrition. Use of these theories provides benefits in community nutrition by helping to organize thinking about nutrition topics in ways that are useful for assessing, understanding, intervening, and evaluating community nutrition issues. Community nutrition researchers and practitioners can choose from many available social science theories by evaluating assumptions, scope, applicability, complexity, effectiveness, and other aspects of the theories. Awareness and use of social science theories should enhance the development of community nutrition. (*Korean J Community Nutrition* 2(5) : 671~679, 1997)

KEY WORDS : community nutrition · social science · theory · model · paradigm.

Community Nutrition and the Social Sciences

Community nutrition is an important part of the larger field of nutrition. A variety of perspectives are used in community nutrition(Boyle & Morris 1994 : Frankel & Owen 1978 : Frank-Spohrer 1996 : McLaren 1983 : Obert 1986 : Terry 1993 : Wright & Sims 1986), all focusing on the identification of food and nutrition problems in the community and the use of disease prevention and health promotion interventions among individuals, groups, and populations. Nutrition education and nutrition policy are important components of community nutrition. The complex problems faced by community nutritionists

require input from many areas, including the physical, biological, and social sciences.

The social sciences include the disciplines of psychology, sociology, cultural anthropology, economics, political science, human geography, and history, as well as fields such as communications, education, marketing, demography, and others(Sobal & LaChaussee 1993). One of the most important contributions of the social sciences to community nutrition is the application of social science theories. Early work in nutrition education and community nutrition called for increased application of theories (Brun 1979 : Olson & Gillespie 1981 : Sims & Light 1980), and that call is being answered by community nutritionists(Achterberg & Clark 1992 : Contento 1996 : Lewis 1987 : Sims 1987). This article will examine several questions that are important in using social science theories in community nutrition: What is theory? How is theory relevant and beneficial to community nutrition? How can community

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nutritionists choose and use theories?

Theories, Models, Paradigms and Worldviews

Theories can be described in many ways, with a common definition being “a set of interrelated concepts, definitions, and propositions that presents a *systematic* view of events or situations by specifying relations among variables in order to *explain* and *predict* the events or situations”(Glanz et al. 1997). Social science theories provide plans for broader understanding of a topic. Theories are applicable in many circumstances, and are not limited to any one subject matter or topic. For example, the Theory of Reasoned Action(Azjen & Fishbein 1980) proposes that personal attitudes and perceptions about social norms influence intent to engage in a behavior, and Social Cognitive Theory(Bandura 1986) states that dynamic, reciprocal interactions occur between a personal characteristics, behaviors, and environments. Both of these theories may be applied to diet, smoking, exercise, consumer purchases, and many other topics.

Theories are made up of concepts. A concept is “a complex mental formulation of an object, property, or event that is derived from perception or experience”(Chinn & Jacobs 1987). An example of a social science concept is social support, which is the encouragement and facilitation provided by other individuals(Stewart 1993). Relationships between concepts can be presented as hypotheses. Deductive research tests hypotheses by collecting empirical data. In research, variables are concepts that have been operationalized to be measurable.

Models are often seen as being similar to theories. However, models differ from theories, in that a model “orders events and concepts, often in diagrammatic form”(Achterberg & Clark 1992) to provide a collection of interrelated concepts that operate together, but without the underlying explanatory cohesion and consistency of a theory. Often the term conceptual model is used to mean the same thing as the term model. An example of a model is the PRECEDE-

PROCEED model(Green & Kreuter 1991) that provides a set of factors used for assessing and planning community interventions. The model diagnoses factors that shape health status, including social, epidemiological, behavioral and environmental, educational and organizational, and administration and policy diagnoses. Using that information it implements and evaluates an intervention, including process, impact, and outcome evaluations that examine the efficiency and effectiveness of the intervention.

Theories are situated within larger paradigms, which “include theory, application, and instrumentation..... that represent coherent traditions of scientific research.”(Kuhn 1962). Ritzer(1983) suggests that three major paradigms operate within the social sciences. A social behavior paradigm includes theories such as Exchange Theory(Homans 1974) that focus on behavioral conditioning and rational choices. A social facts paradigm includes theories such as Functionalism(Collins 1994) that focus on the influences of social organizations and institutions. A social definition paradigm includes theories such as Symbolic Interactionism(Charon 1992) that focus on the definition, interpretation, negotiation, and construction of meaning by individuals.

Paradigms operate within more comprehensive world views(Achterberg et al. 1985) of positivism/empiricism(for social behavior and social facts paradigms) and naturalism/interpretivism(for the social definition paradigm). Positivism views individuals as separate entities independent from their environments and deals with reality as unidimensional, tangible and fragmentable, with causes separable from effects (Travers 1997). Positivists see researchers as independent of what they study, and therefore see research as value-free. By contrast, naturalism suggests that reality is multi-dimensional, constructed, and wholistic, with one person’s reality different from another’s reality. It proposes that individuals are embedded within environments, causes and effects are not clearly distinguishable, and research is not value-free.

Many theories are applied in community nutrition (Achterberg & Clark 1992 ; Park 1997), primarily those from psychology, communications, and education(Travers 1997). Most community nutrition work

uses a positivist worldview, which is congruent with the biological paradigms used by most other segments of the nutritional sciences. Positivists tend to use quantitative research methods, deductively testing hypotheses and models generated by researchers using positivistic theory. The use of a naturalistic worldview is growing within community nutrition. A naturalistic worldview typically uses qualitative research methods (Acterberg 1988 ; Denzin & Lincoln 1994), inductively seeking to understand the ways that members of the community perceive, define, and manage nutrition issues. It is important to note that quantitative and qualitative methods are not necessarily mutually exclusive, and can be combined to offer special insights that are greater than what would be available from using either method alone (Denzin 1978 ; Greene et al. 1989).

The Relevance of Theory to Community Nutrition

Theories and concepts are resources that offer ideas that community nutritionists can use in research and practice (Lewis 1987). Theories operate as one component of a dynamic system (Gillespie & Gillespie 1988) that involves reciprocal interchanges between theory, research, practice, and subject matter (Fig. 1). For each subject, topic, and issue faced by community nutritionists, theories can be developed, applied, and evaluated. Theories may be used to select, design, implement, and evaluate interventions in prac-

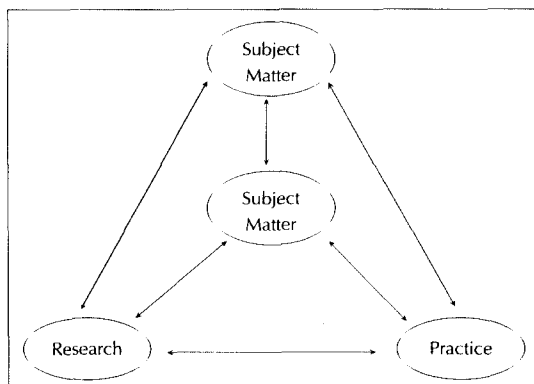


Fig. 1. Interrelationships of Theory, Research, Practice and Subject Matter.

tice. Insights from practice may be used to modify and generate theories. Theories are tested using research. Feedback from research is used to develop and modify theories. Research can verify guidelines for practice. Observations in practice generate ideas that can be tested in research and developed into theories. Overall, theories are constantly interacting with research and practice around subject matter.

Many topics form the basic subject matter of community nutrition, including those examining specific nutritional topics, such as obesity, food safety, food policy, various nutritional audiences, such as child feeding or geriatric nutrition, and nutrition settings, such as school nutrition, nutrition in the workplace, and others (Frank-Spohrer 1996 ; Obert 1986 ; Terry 1993 ; Wright & Sims 1986). Theories can help to *describe, explain, and predict* the subject matter of community nutrition. Equally important, theories can improve research and practice by promoting systematic thinking about the subject matter of community nutrition. Incorporating theories can make community nutrition interventions more effective (Contento 1995 ; Olson & Gillespie 1981).

Theories can be used as explanatory tools, where they are employed to describe and understand how and why specific community nutrition problems exist and operate. For example, the Health Belief Model may be used to understand why some people make healthy dietary changes (Contento & Murphy 1990). They found that the perceived benefits of eating a healthy diet and the perceived susceptibility from unhealthy eating were strong predictors of dietary change. The same theories can also be used as tools for making changes, where they are used to identify and develop solutions and bring about action to improve nutrition. For example, the Health Belief Model may be used to guide interventions to prevent eating disorders (Grodner 1991). She discusses how prevention programs can benefit from demonstrating perceived susceptibility and perceived seriousness of bulimia, and providing cues that can increase the likelihood of taking preventive actions.

Theories help to provide order and to see patterns in the huge amount of complex information in the

world that is continually growing and changing. Theories operate as devices to sensitize and guide perceptions of the world as well as organize the complexity of life by providing specific concepts that make it possible to see things not obvious without the use of theory. For example, ecological theory specifies the importance of the environment in behavior, and the change processes that occur as environments are modified (Sallis & Owen 1997; Sims et al. 1972; Sims & Smiciklas-Wright 1978).

Theories can be used to predict what will occur under particular circumstances. By identifying relationships between concepts, they show not only how one thing is related to another, but also predict changes that would be expected to occur. For example, microeconomic theories about household time use can be used to predict relationships between food consumption and employment opportunities for women (Senauer et al. 1991).

Theories also serve as conceptual tools to guide assessments of individuals and communities used in planning interventions. Theories ground interventions by suggesting starting points for making changes, and form the basis for evaluations by pointing to processes and goals that are crucial for a program (Greene 1993). In other words, the "change" side of theories can be used to develop interventions for improving dietary intake, while at the same time the "explanatory" side of theories can help evaluate how and why changes occurred. For example, Social Learning Theory provides the concept of locus of control that can be used as a tool for assessing clients (AbuSabha & Achterberg 1997).

Therefore, theories organize thinking and provide a framework or guide for ways to proceed in research and practice, describing how and explaining why different pieces fit together and predicting what will occur given circumstances or what may be necessary for changes to occur. Theories serve as maps to provide guidance about directions to proceed, landmarks and barriers to deal with along the way, and information about the destination. For example, the Transtheoretical model identifies how people move through stages of change and how to promote healthy changes

(Prochaska et al. 1997). This model states that people move from precontemplation to contemplation, preparation, action and maintenance of behavior changes, and that motivational intervention are more effective in early stages while skill building interventions are more appropriate for people in later stages of change.

Since theories are not specific to subjects or topics, theories provide generalizable ways of approaching new problems. For example, community nutritionists who are experienced in applying Adoption-Diffusion theory (Green et al. 1991; Rogers 1995) can assess and intervene in the spread of many food practices in a community, ranging from purchase of new snack foods to use of food preparation methods such as microwave ovens. That is, knowledge about many concepts and theories provides a toolbox of ideas that community nutritionists can use in their various intervention work.

The development and use of theories is important for organizing and accumulating knowledge in community nutrition, just as theories have served other fields (Chinn & Jacobs 1987). Amassing theoretical knowledge about what works (and what does not work) fosters efficiency by collecting and compiling wisdom in a systematic way that can be passed on within community nutrition. Cumulative theoretical development should help research and practice in community nutrition move forward in the future.

Choosing and Using Theories

Community nutritionists often quote Kurt Lewin's (1943) statement "There is nothing as practical as a good theory." While the guidance provided by a theory can be eminently useful in research and practice, the proliferation of many theories in the social sciences makes the choosing of theories problematic (Hochbaum 1992). There are too many theories to know all of them, and they are being developed, tested, and modified so rapidly that it is not possible to keep up with all theories. Therefore, choosing theories requires conscious reflection about the available options and their applicability; self-awareness about personal preferences and experiences; and consid-

ration of theory compatibility.

There is no one compilation of social science theories that can be used to choose theories. However, several sources present some of the major theories used in nutrition education (Acterberg & Clark 1992; Contento 1995; Glanz et al. 1997; Johnson & Johnson 1985; Olson & Gillespie 1981; Park 1997). The development of more complete theory inventories would be useful, and many theories have been accumulated in reference sources (Kuper & Kuper 1985; Seligman 1959) and theory textbooks (Abler et al. 1992; Almond 1989; Barrett 1984; Blaug 1985; Burke 1992; Caporaso 1992; Stagner 1988; Turner 1991).

The theories personally available to any one community nutritionist depends on that person's individual knowledge. The range of experience with any particular theory can range from comprehension (basic understanding) to familiarity (some experience) to competence (capable application). Community nutritionists are more likely to choose and be effective in applying theories with which they have greater expertise and experience.

Several criteria have been proposed for evaluating theories (Chinn & Jacobs 1987; Hochbaum et al. 1996; Sorenson & Lorig 1992; and others). However, using structured criteria is often more useful for evaluating one theory than it is for choosing a theory among many theories. For example, Glanz, Lewis, and Rimer (1997) suggest that theories can be evaluated on their internal consistency, parsimoniousness, plausibility, and ecological validity. Ideal theories should be logical without internal contradictions, and should be capable of covering a wide subject area with a limited number of variables. They should be plausible, and harmonious with existing observations. These are useful considerations, but are limited in their applicability by the inability to evaluate and sort the many available theories, and lack of clarity about the coverage of any particular theory.

In choosing theories, it is important to know about the limitations of each particular theory. Information about the limits of coverage of a specific theory can be established in the form of scope state-

ments (Walker & Cohen 1985) that specify the conditions under which a theory applies such as the unit of analysis (individual, family, organization, etc.) and the topic or subject it best applies to (behavior change, policy, etc.). Often the boundary conditions (Bagozzi 1992) of a theory are not clearly stated, and must be inferred before the theory is used. As an example of consideration of the scope of theories, careful matching of theories with topics would probably not include the use of behavior modification (Greene & Simons-Morton 1984) to explain food policies, or the use of world systems theory (Shannon 1989) to develop a program for encouraging safe food practices in restaurants. Sometimes a particular theory does not work well for a specific audience and must be abandoned (Olson & Kelly 1989). Also, because some theories were developed to apply to specific cultures or subcultures, they may not be as applicable in other cultures, nations, or ethnic groups (Pepitone & Triandis 1988; Weitzel & Waller 1990).

However, it should be also recognized that a particular topic, audience, or setting can be approached using a variety of different theories. Different theories or a collection of theories can be successfully applied to a specific substantive issue, such as diabetes education, or place, such as school nutrition. Each community nutritionist must make their own decisions about which theories to apply to specific topics in particular situations.

Some potential questions that may be asked about a specific theory are listed in Table 1. A broad range of considerations may be used in choosing between one and another theory, and these questions can serve as a starting point for thinking about which theories to choose and how to use the ones that are chosen.

For making theory choices, some guidance can be found in literature that compares competing theories. For example, Weinstein (1993) evaluated four of the major theories used to explain health behaviors. The applicability of several theories to a specific topic may be compared (Contento & Murphy 1990; Stafleu et al. 1991). Other comparative theory analysis assumes that one theory is superior and attempts to translate other

Table 1. Questions for comparing theories

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|-------------------|--|
| History : | What are the theory's origins, development, and examples? |
| Description : | What concepts are involved and what are their relationships? |
| Assumptions : | What assumptions are made? Are they robust or strict? |
| Scope : | Under what conditions does the theory apply (audience, topic, unit) |
| Unity : | Should the whole theory be used, or can parts be applied separately? |
| Differentiation : | How does the theory relate to or overlap with other theories? |
| Compatibility : | What other theories combine well with the theory? |
| Complexity : | How practical and straightforward is the theory? |
| Implementation : | Do special methods or procedures need to be used? |
| Applicability : | What expertise, experience, and resources are required? |
| Effectiveness : | How well does the theory predict and explain? |
| Culture-Bound : | How applicable is the theory in different cultures? |

theories into that perspective(Schwarzer 1992) or attempts to merge or integrate elements from several theories into a more comprehensive model(Wallston & Wallston 1984). Giving consideration to these comparative approaches can help to make more informed theory choices.

Once a theory is chosen, implementation of the theory may operate in several ways. Theory-guided research and practice is flexible and uses theories to sensitize and inspire, rather than as a rigid blueprint that must be followed. Theory-guided work lets theory shape but not determine what is done. At the other end of the implementation spectrum is theory-driven research that applies theories specifically and exactly. Theory-driven work seeks high theoretical fidelity, completely following a particular theory.

Reviews of nutrition studies(Achterberg & Clark 1992 ; Contento 1995 ; Smith & Lopez 1991) showed that theory-guided works were more prevalent than theory-driven works in nutrition education research. Full implementation of some theories may be necessary to get full benefits, that is, theory-driven work

may have advantages over theory-guided work. However, theory-guided work is useful for other situations. When part of a theory will be implemented, it is critical to consider whether partial implementation of a theory will be effective. For example, the concept of self-efficacy from Social Cognitive Theory has been used separately in some studies(Matheson et al. 1991). However, some concepts in other theories may not work well independently or at least not work as well as they do within the entire theory.

Because many problems in community nutrition are complex, multifaceted, and dynamic, several theories may be combined in a specific undertaking rather than one theory used by itself. This often involves multidisciplinary work that simultaneously combines theories from many social sciences, or sequential work that uses some theories for early parts of a project and others in later portions(Baranowski 1990 ; Stanton et al. 1992). Theory triangulation(Denzin 1978) involves the application of several theories to view the same subject matter from different vantage points to increase the ability to understand a particular topic. Using a combination of theories requires that the theories be compatible and that the people applying the theories be capable in using all of the theories.

Conclusion

Social science theories can offer insights useful for community nutrition research and practice across a range of subject matter. Theories provide guidance for assessing, understanding, and intervening in the many topics in community nutrition. Choosing and using theories involves a number of considerations, but there are no established procedures for selecting and applying theories in community nutrition work. Future theoretical development and application should assist in advancing the area of community nutrition. Community nutritionists can benefit from developing a diverse theoretical toolbox and bringing the theories they know to bear on the problems they face in research and practice.

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