Behavioral science theory and principles for practice in health education

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Abstract

The value of health education practice lies in its effectiveness. Behavioral science theories have greater potential to enhance the effectiveness of practice than is currently realized. Many have called for development of strategies to overcome current barriers to the use of theory in the field. Such strategies should explicate the potential of commonly taught behavioral science theories to facilitate practice and assist practitioners in using such theories. This paper presents one such strategy: a set of principles for practice, derived from multiple behavioral science theories and having many direct implications for practice. Health educators who are knowledgeable of these principles may be better prepared to consolidate their knowledge of multiple theories and better prepared to derive implications for practice from their theoretical knowledge. To the extent that health educators are proficient at synthesizing theoretical information and distilling from this information implications for practice, the utility of theory in practice should be enhanced.

Introduction

Whether and how to conduct theory-informed practice is an issue of central importance to public health education. The value of health education practice lies in its effectiveness, and at issue is the potential of theory to increase program effectiveness and the capacity of practitioners to take advantage of this potential. Discourse on this issue has been extensive and has identified several potential advantages of conducting theory-informed practice. The literature also identifies several barriers to theory-informed practice and emphasizes the need for strategies to overcome these barriers (McQueen, 1991; Hochbaum and Lorig, 1992). This paper presents one such strategy: a framework intended to assist efforts to integrate and apply behavioral science theories relevant to health education practice. The paper begins by briefly summarizing the benefits of and barriers to using theory in practice. The paper then presents a set of principles for practice, derived from multiple behavioral science theories relevant to health education. Knowledge of these principles would not supplant the study of individual theories. Rather, it may facilitate the study of multiple theories by making clear the fundamental assumptions about human behavior which underlie many theories and, thus, by making clear that many of the apparent differences between theories are in fact variations of these basic assumptions. Making the underlying assumptions salient should facilitate comparison and synthesis of theories and the application of theories in practice.

Theory-informed practice: benefits and barriers

The basic argument for theory-informed practice is that behavioral science theories constitute the
best available information on why people behave the way they do and practitioners aiming to change health-related behavior would do well to take advantage of this information (Burdine and McLeary, 1992; Hochbaum et al., 1992; van Ryn and Heaney, 1992). More specifically, behavioral science theories identify several attributes of individuals and their surroundings that are causally related to behavior, and, thus, theories can guide practitioners' selection of psychological, behavioral, social and environmental targets for intervention. Use of theory can facilitate development of a coherent and comprehensive health education program, and by doing so increase the likelihood that the program will affect behavior change (Glanz et al., 1990; van Ryn and Heaney, 1992). Theory does this by assisting practitioners in answering the question ‘What am I trying to change by implementing this program?’. When theory is used to respond to this question, practitioners are more likely to identify program objectives that are causally related to one another and to the health behaviors of interest, and they are more likely to develop effective programs. Theories are equally applicable to designing a comprehensive and informative program evaluation, since the factors identified as program objectives can also be measured to evaluate the process and effects of program implementation (Glanz et al., 1990; van Ryn and Heaney, 1992). Additionally, theory can help practitioners predict the consequences of various interventions in populations or situations not experienced before (Hochbaum et al., 1992).

In sum, barriers to theory-informed practice include the quantity of relevant theories, the nature of theoretical information, the way theory courses are taught, and the perspective on theory held by health education students and practitioners. The infrequency of theory-informed practice indicates that these barriers are sufficient to offset the potential benefits of such practice.

Strategies for enhancing theory-informed practice

Several strategies have been proposed to enable health educators to more frequently use theory in the field. Van Ryn and Heaney (1992) propose guidelines for choosing a theory, including selecting theories that are specific to the unit of practice (e.g. individuals, organizations), and selecting theories that have been tested in populations and settings similar to those the practitioner is working with. Similarly, Hochbaum et al. (1992) encourage practitioners to select theories that match the unit of practice and are consistent with the attributes of the target behavior. These authors also encourage mutual respect and recognition of common goals between academicians and practitioners. To address the barrier imposed by the generality of theories, McLeary et al. (1993) propose that health educators develop ‘theories of the problem’ that summarize the field’s current knowledge of intervention for specific public
health problems. Such 'mini-intervention theories' would provide a comprehensive assessment of the antecedents and causal processes for a given problem, and would identify the social science theories most appropriate for designing interventions targeting that problem.

A complementary approach, presented here, is to identify theoretically informed principles for practice—derived not from any single theory, but from multiple behavioral science theories relevant to health education. Contemporary behavioral science theories, implicitly or explicitly, share basic assumptions about variables that influence human behaviors. Health educators who are knowledgeable of these shared assumptions may be better prepared to consolidate their knowledge of multiple theories and they may be better prepared to derive implications for practice from their theoretical knowledge. To the extent that health educators have been trained to synthesize theoretical information and distill from this information implications for practice, the utility of theory in practice should be enhanced. Specifically, practitioners who are developing or evaluating behavior change programs may benefit from utilizing theory-based principles for practice.

Principle 1: acquiring new behaviors is a process, not an event, and often entails learning by performing successive approximations of the behavior

The first principle underscores the utility of conceptualizing interventions as a series of highly specific behavior change objectives and of delivering interventions so that individuals have the opportunity to begin 'where they are' in the process, and proceed incrementally from there. Behavioral science theories provide much guidance in identifying steps in the behavior change process, in understanding inter- and intra-individual variation in the change process, and in developing support activities, such as guided practice, that facilitate progression from one step to the next. Some of the many implications for practice of this principle follow:

- Expect individual differences in readiness to change.
- Emphasize gradual change.
- Develop program elements specific to each step in the behavior change process.
- Teach the psychological and behavioral skills necessary for successful performance.
- Use direct experience (e.g. guided practice; role playing) to activate performance and strengthen attitude–behavior consistency.
- Teach goal setting to enable participants to set their own pace for change.
- Teach self-monitoring skills so participants can chart their own progress.

**Principle 2: psychological factors, notably beliefs and values, influence how people behave**

A key contribution of behavioral science theories to practice is the specification of beliefs and values relevant to understanding or trying to change health behaviors. An important corollary to the second principle is to know the conceptual and practical differences between beliefs and values. Beliefs involve consequential or probabilistic thinking about the relationships between objects or events. For example, individuals make attributions about the causes of specific events; they have expectations about the likelihood of certain outcomes. Values are evaluative judgments about outcomes or events. Individuals may perceive events as good or bad, as desirable or undesirable. These constructs, which constitute the cognitive and affective components of attitudes, are the principal explanatory variables of many behavioral science theories. In the Theory of Planned Behavior (Ajzen and Fishbein, 1980; Ajzen, 1985), for example, the attitudinal component is determined by beliefs that a behavior leads to certain outcomes, and evaluative judgments regarding the outcomes. Understanding the relationships between beliefs and values, as well as their relationships with behavioral variables, is key to understanding some of the important differences between behavioral science theories. Moreover, it is easier to develop programs to change relevant beliefs and values when one is clear on the distinctions between them. Implications for practice of this principle include:

- Develop program components that target beliefs such as perceived personal risk, self-efficacy, response efficacy and perceived social norms.
- Develop program components that target values, such as perceived personal benefits, perceived costs and perceived social relevance.
- Instilling new beliefs or values is but one of several strategies; programs may aim to modify existing beliefs or values, or they may aim to enhance the salience and perceived relevance of existing beliefs or values.
- Recognize that multiple beliefs and values generally underlie each belief and value of primary interest; develop program elements to modify these underlying beliefs and values. For example, the belief ‘I am not likely to get AIDS’ could have several underlying beliefs including ‘AIDS is a gay disease’ and ‘my partner is not likely to be infected.’

**Principle 3: the more beneficial or rewarding an experience, the more likely it is to be repeated; the more punishing or unpleasant an experience, the less likely it is to be repeated**

The positive or negative aspect of any experience, whether psychological or behavioral, is subjectively defined. Thus, application of the third principle requires practitioners to determine whether seemingly rewarding experiences are perceived as such by their constituents. In addition, there are many health recommendations for which health educators are hard pressed to identify reinforcing factors. One approach to this problem is to develop program components specifically to engender positive perceptions of compliance (or negative perceptions of non-compliance) and to implement such components prior to making behavioral recommendations. Campaigns to modify the perceived benefits of condom use could, for example, precede recommendations to purchase and use condoms. Implications for practice of this principle include:

- Program components that cause participants to experience personal control, success, social recognition or other positive states are reinforcing.
- Direct incentives or rewards are also generally perceived as positive and so reinforce behaviors.
- Developing individuals’ capacity to be self-reinforcing, as when individuals learn goal-setting, self-monitoring or self-statement skills, is a more internalized and potentially more durable change strategy.
Principle 4: behavioral experience can influence individuals’ expectancies and values

The fourth principle makes the point that individuals can modify their beliefs and values as a result of behavioral experience. This principle challenges health educators to develop strategies for increasing opportunities for constituents to try new behaviors and strategies for involving constituents in activities that are consistent with, but do not entail adopting, new health practices. The former objective calls for developing intervention elements that enhance the convenience, feasibility and affordability of trying recommended actions. The latter objective calls for developing intervention components that engage participants as agents of change rather than as targets for change. Media advocacy and policy change interventions exemplify this approach. Implications for practice of this principle include:

- Program planners should not feel compelled to conform to the knowledge–attitudes–intention–behavior change framework for intervention.
- An alternative strategy for change begins with direct involvement in a health protective behavior; such involvement may then affect attitudes and motivation about the behavior.
- A related strategy is one that begins by getting participants actively and publicly involved in a health issue without challenging them to change their health behaviors. Often this will entail working with participants to change elements of their environment to increase resources or support for practicing a health behavior.

Principle 5: individuals are not passive responders, but have a proactive role in the behavior change process.

The proactive role of constituents described by the fifth principle affects the health education process in multiple ways. Most fundamentally, it is constituents, not health educators, who control the process of change. Constituents selectively attend to educational resources, they assign meaning to educational recommendations, they choose to accept new information or adopt recommended actions and they evaluate the consequences of their experiences. The primary implication of the proactive role of constituents is that health educators should both analyze their intended audience and involve audience members in the process of developing health education messages or programs. The objective of such analysis and involvement is to accurately anticipate audience responses to program components. Behavioral science theories can facilitate meeting this objective by identifying variables that predict how audience members will perceive program components and recommendations. Implications for practice of this principle include:

- Increase individual motivation to change by ensuring that all facets of program participation and response are perceived as volitional.
- Avoid using health education messages or interventions that are perceived as coercive or self-serving; they are likely to be ignored.
- Involve members of the target audience in developing health education messages, programs and intervention strategies.
- Individuals evaluate health education programs using existing beliefs and values to determine whether programs are relevant to them. Effective health behavior change begins with an assessment to identify the relevant beliefs and values held by members of the target group.

Principle 6: social relationships and social norms have a substantial and persistent influence on how people behave

Several behavioral science theories, including Social Learning Theory (Bandura, 1977; Bandura,
1986) and the Theory of Planned Behavior (Ajzen and Fishbein, 1980; Ajzen, 1985), explain how social norms and social influence processes affect individual behavior. Social norms are naturally occurring standards of behavior that exert a powerful influence of members of a social group (e.g. a family, peer group or work group). The stronger one’s affiliation with (or desire for affiliation with) a specific social group, the more responsive one is to the normative expectations of that group. Consistent with the theoretical models of normative influence, health education programs that have social groups as the unit of intervention and aim to change group norms may achieve substantial and sustainable change in health practices. Implications for practice of this principle include:

- Modeling of behaviors by significant others is effective in initiating and maintaining behavior change.
- People have different social motives for making a recommended behavior change; to be effective, program recommendations must be consistent with participants’ underlying social motives for change.
- Activate normative influence processes by making shared social norms salient, and by using methods which create social pressure, such as social contracts or public commitments.
- Changing health practices within social groups increases the potential for sustained behavior change.

**Principle 7: behavior is not independent of the context in which it occurs; people influence, and are influenced by, their physical and social environments**

This principle underscores the fact that health behaviors are influenced by an array of biologic, psychological, social, physical, economic and regulatory factors. The multi-disciplinary nature of effective public health practice requires that knowledge of behavioral science theories be integrated with knowledge from other disciplines widely used to inform public health practice—sociology, political science, economics, medicine and epidemiology, among others. Implications for practice of this principle include:

- It is not enough to promote individual behavior change; environmental changes are needed which promote and facilitate individual change efforts.
- Comprehensive, ecological interventions are needed which occur at multiple levels and settings in the community, employ multiple change strategies and maximize synergy between intervention components.
- Comprehensive interventions can have added impact when they engage community members in changing their physical and social environments, as well as changing their own behaviors and circumstance.

**Principle 8: the process of applying behavioral science theories in practice situations should be guided by research and evaluation methods**

As illustrated by several of the preceding principles, behavioral science theories identify many specific intra- and interpersonal factors thought to explain variation in health behaviors. Conducting theory-informed practice often requires measuring such factors, and designing evaluations that will determine whether programs are effective in changing them. Practitioners therefore need to utilize research and evaluation methods to correctly apply behavioral science theory in practice situations. If, for example, a practitioner wants to assess the existing levels of self-efficacy and response-efficacy in a target population, research methods are needed to obtain reliable, valid assessments of these concepts. Similarly, if a program is intended to change social norms regarding condom use, a research design is needed that will determine whether any change in norms has occurred and whether such change can be attributed to the program. In brief, research and evaluation methods are critical tools for linking theory and practice. The general implications of this principle include:
Principles for practice

- Knowledge of the empirical literature underlying a theory is a useful foundation for determining whether and how theoretical concepts are relevant to specific practice situations.
- To apply theory in needs assessments, formative evaluations for program planning and other practice activities, research methods should be used to define, operationalize and measure the theoretical concepts of interest.
- To determine whether programs affect change in the psychological, social and other theory-based determinants of behavior, research designs are needed that eliminate rival explanations and provide evidence of a cause–effect relationship.

Conclusion and implications

Hochbaum et al. (1992) state that practitioners who doubt the usefulness of theories basically question the existence of a link between the abstract formulations that are theories and the realities of practice. Explicating principles for practice is a means of demonstrating such a link, of demonstrating the implications of theory for health education. Most importantly, the principles may facilitate synthesis of theoretical knowledge, and, thus, application of an integrated body of knowledge rather than selection and application of single theories. It is widely acknowledged that no single theory is adequate for developing effective behavior change strategies. Practitioners need a framework for applying multiple theories. To the extent that these principles for practice are valid summaries of the behavioral tenets of the theories from which they are derived, they may constitute such a framework.

Applying the principles in the framework does present certain challenges. First, as previously noted, the principles do not supplant the need to study behavioral science theories. Because the principles generalize across theories they do not specify in sufficient detail the theoretical constructs which practitioners could apply. For example, the second principle describes the link between beliefs and behavior. One would need knowledge of the Health Belief Model (Janz and Becker, 1984), the Theory of Planned Behavior (Ajzen, 1985) and other theories to determine what specific beliefs to address in a program or to determine how to measure beliefs in a program evaluation.

Second, practitioners must determine which principles to apply in a given practice situation. Application of the first principle assumes, for example, that practitioners know where members of their target group are as regards the phases of behavior change and what behavioral skills might facilitate progress to the next phase. Similarly, practice situations vary with regard to the viability of using direct involvement as a change strategy (per the fourth principle) or using normative influence factors to achieve behavior change (per the sixth principle).

A third challenge is that resources are needed to collect information pertinent to the application of the principles. For example, application of the second principle requires information about participants’ current beliefs and values; application of the third principle requires information on participants’ perceptions of rewards and incentives, and application of the sixth principle requires information on social group members whom participants hold in high regard. Practitioners may use focus groups, small group surveys or other brief measures to obtain such information. In sum, the challenges of applying the principles are to link the principles with the set of theories one finds relevant to practice, determine which principles one can apply in a given practice situation and obtain the information necessary to take advantage of the relevant principles.

The notion that behavioral science and other disciplines can inform health education practice does not exclude or discount the equally important role of experience in informing practice decisions. Experience engenders knowledge of the people, knowledge of the problem, and knowledge of the social system in which the problem occurs. Experience engenders trust, familiarity, cultural sensitivity and political awareness—all essential to successful intervention. Optimally, practitioners
can draw upon their theoretical and experiential knowledge as they plan, implement and evaluate health education programs.

Controversy about the role of theory in health education practice continues (McLeroy et al., 1993; Green et al., 1994; Buchanan, 1994). The debate is multi-faceted, raising questions about the role of existing theories and models (McLeroy et al., 1993; Green et al., 1994), and even broader questions about the nature of social science theory and its capacity to explain human behavior (Buchanan, 1994). The present paper is one response to this debate. It assumes that health educators who recognize the utility of theoretical constructs would choose to conduct theory-informed practice. It assumes that the burden of proof regarding the utility and methods of applying theory rests with theoreticians. It also assumes that while behavioral science theories do not approach the explanatory power of natural science theories, they constitute the best available explanatory knowledge about variables influencing behavior. Guided by these assumptions, the present paper is not aligned with one position in the debate, but specifically aims to get beyond the debate by proposing a method for narrowing the gap between theory and practice.

References


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