Social and Behavioral Theories

1. Learning Objectives

After reviewing this chapter, readers should be able to:

- Define what theory is and identify two key types of social and behavioral science theory that are relevant to public health interventions.
- Describe the key constructs of four theories that are often used in public health interventions: the Health Belief Model, The Transtheoretical Model and stages of change, Social Cognitive Theory, and the Social Ecological Model.
- Understand the nature of evidence about the relative effectiveness of theory-based interventions.
- Identify the most important considerations in choosing the right theory to address a health behavior problem in a particular population and context.

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2. Introduction

- The most successful public health programs and initiatives are based on an understanding of health behaviors and the context in which they occur. Therefore, interventions to improve health behavior can be best designed with an understanding of relevant theories of behavior change and the ability to use them skillfully.

- The science and art of using health behavior theories reflect an amalgamation of approaches, methods, and strategies from social and health sciences. This broad range of perspectives from social and behavioral sciences are referred to "social and behavioral science theory" throughout this chapter. Influential work draws on the theoretical perspectives, research, and practice tools of such diverse disciplines as psychology, sociology, social psychology, anthropology, communications, nursing, economics, and marketing.

> **A growing body of evidence suggests that interventions developed with an explicit theoretical foundation or foundations are more effective than those lacking a theoretical base and that some strategies that combine multiple theories and concepts have larger effects.**

2. Introduction

This chapter provides an overview of contemporary social and behavioral science theory use for development, implementation and evaluation of public health and health promotion interventions. The following section defines theory and key types of theory in the context of the multiple determinants and multiple levels of determinants of health and health behavior. The sections after that describe important theories and their key concepts, and summarize the evidence about the use of theory in health behavior intervention research. This is followed by a discussion of future directions and challenges for bridging the divides between theory, practice and research.

3. Theory and Why It is Important

A theory presents a systematic way of understanding events, behaviors and/or situations.

> **A theory is a set of interrelated concepts, definitions, and propositions that explains or predicts events or situations by specifying relations among variables.**

The notion of generality, or broad application, is important. Thus, theories are by their nature abstract and not content- or topic-specific. Even though various theoretical models of health behavior may reflect the same general ideas, each theory employs a unique vocabulary to articulate the specific factors considered to be important. Theories vary in the extent to which they have been conceptually developed and empirically tested; however, "testability" is an important feature of a theory. As Stephen Turner has noted in his chapter on "Theory Development," social science theories are better understood as models that work in a limited range of settings, rather than laws of science which hold and apply universally.

3. Theory and Why It is Important

Theories can guide the search to:

- Understand why people do or do not practice health promoting behaviors;
- Help identify what information is needed to design an effective intervention strategy; and
- Provide insight into how to design a program so it is successful.

> Theories and models help **explain** behavior, as well as suggest how to develop more effective ways to influence and **change** behavior.

These two broad types of theory – explanatory theory and change theory – may have different emphases but are complementary. For example, understanding why an employee smokes is one step toward a successful cessation effort, but even the best explanations won't be enough by themselves to fully guide change to improve health. Some type of change model will also be needed. All of the theories and models described here have some potential as both explanatory and change models, though they might be better for one or the other purpose. For example, the Health Belief Model was originally developed as an explanatory model, whereas in contrast the Stages of Change construct of The Transtheoretical Model was conceived to help guide planned change efforts.

3. Theory and Why It is Important

Both explanatory theories and change theories are rooted in an understanding of the social determinants of health and health behavior. Many social, cultural, and economic factors contribute to the development, maintenance, and change of health behavior patterns. It is now generally recognized that public health and health promotion interventions are most likely to be effective if they embrace an *ecological perspective* and include upstream approaches, as discussed in McKinlay's chapter on Appropriate Research Methods. **That is, interventions should not only be targeted at individuals but should also affect interpersonal, organizational, and environmental factors influencing health behavior.**

🖥 Example 1

This is clearly illustrated when one thinks of the context of groups of employees purchasing food and eating during the work day.

Employees may bring their food with them from home or buy food from workplace cafeterias and vending machines. Their choices are influenced by personal preferences, habits, nutrition information, availability, cost, and placement, among other things. The process is complex and determined not only by multiple factors but by factors at multiple **levels**.

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4. Important Theories and Their Key Constructs

Theories that gain recognition in a discipline shape the field, help define the scope of practice, and influence the training and socialization of its professionals. Today, no single theory or conceptual framework dominates research or practice in health promotion and education. However, reviews of journal articles published in the past two decades have revealed the most often-used theories in health behavior research and trends in theory use. Dozens of theories and models have been used, but only a few of them were used in multiple publications and by several authors. What follows is a description of the central elements of four of the most widely-used theoretical models of health behavior:

Other often-used theories and models (not described here) include the Theory of Reasoned Action/Theory of Planned Behavior (TRA/TPB), social support and social networks, social marketing, diffusion of innovations, and several communication theories.

- The Health Belief Model (HBM)
- The Transtheoretical Model/Stages of Change (TTM)
- Social Cognitive Theory (SCT)
- The Social Ecological Model.

4. Important Theories and Their Key Constructs

Health Belief Model

The Health Belief Model (HBM) was developed to help understand why people did or did not use preventive services offered by public health departments in the 1950's, and has evolved to address newer concerns in prevention and detection (e.g., mammography screening, influenza vaccines) as well as lifestyle behaviors such as sexual risk behaviors and injury prevention. The HBM theorizes that people's beliefs about whether or not they are at risk for a disease or health problem, and their perceptions of the benefits of taking action to avoid it, influence their readiness to take action.
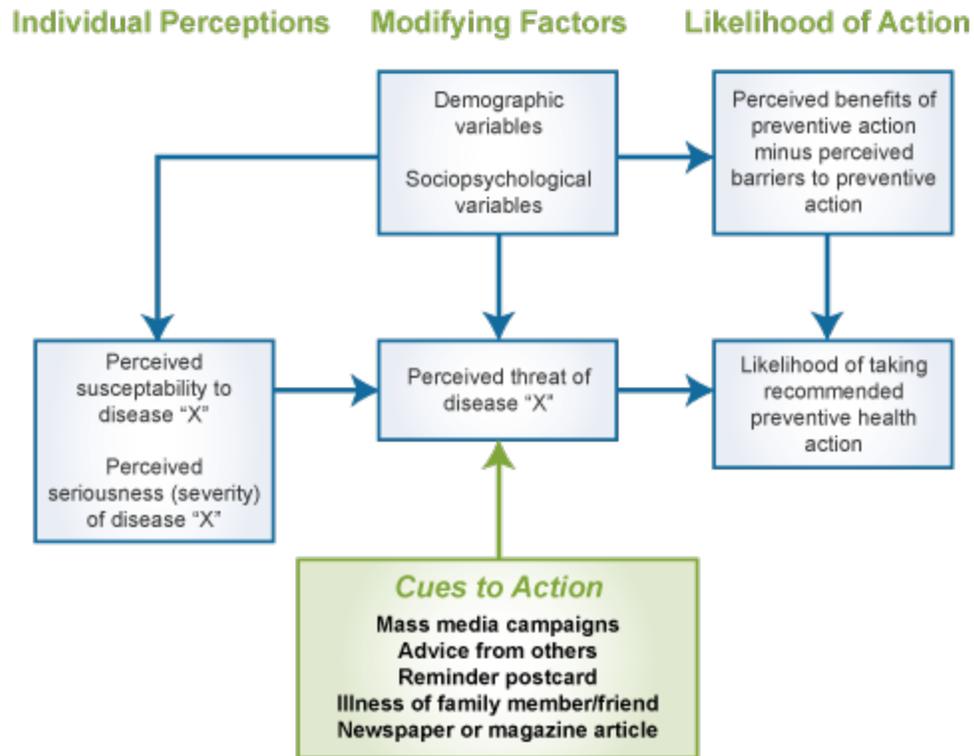
Core constructs of the HBM:

- Perceived susceptibility and perceived severity
- Perceived benefits and perceived barriers
- Cues to action
- Self-efficacy (added more recently)

The HBM has been most-often applied for health concerns that are prevention-related and asymptomatic, such as early cancer detection and hypertension screening – where beliefs are as important or more important than overt symptoms. The HBM is also clearly relevant to interventions to reduce risk factors for cardiovascular disease.

Figure 1: Health Belief Model

Source: Becker, M. H. & Maiman, L. A., (1975). Sociobehavioral determinants of compliance with health and medical care recommendations. Medical Care, 134(1), 10-24. Figure 1, p. 12. **(Permissions pending).**
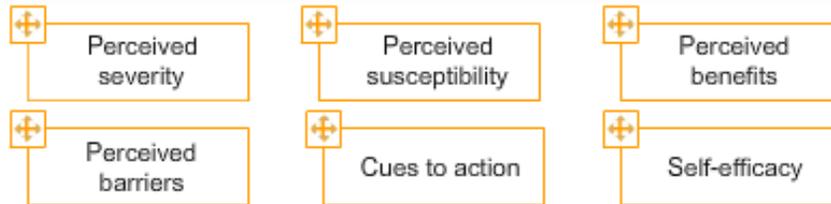
4. Important Theories and Their Key Constructs

Exercise 1

Below are the core constructs of the Health Belief Model. Drag the examples at the bottom to match with the appropriate construct. (Some constructs may have more than one example.)

Core Constructs of the Health Belief Model

- Perceived severity
- Perceived susceptibility
- Perceived benefits
- Perceived barriers
- Cues to action
- Self-efficacy

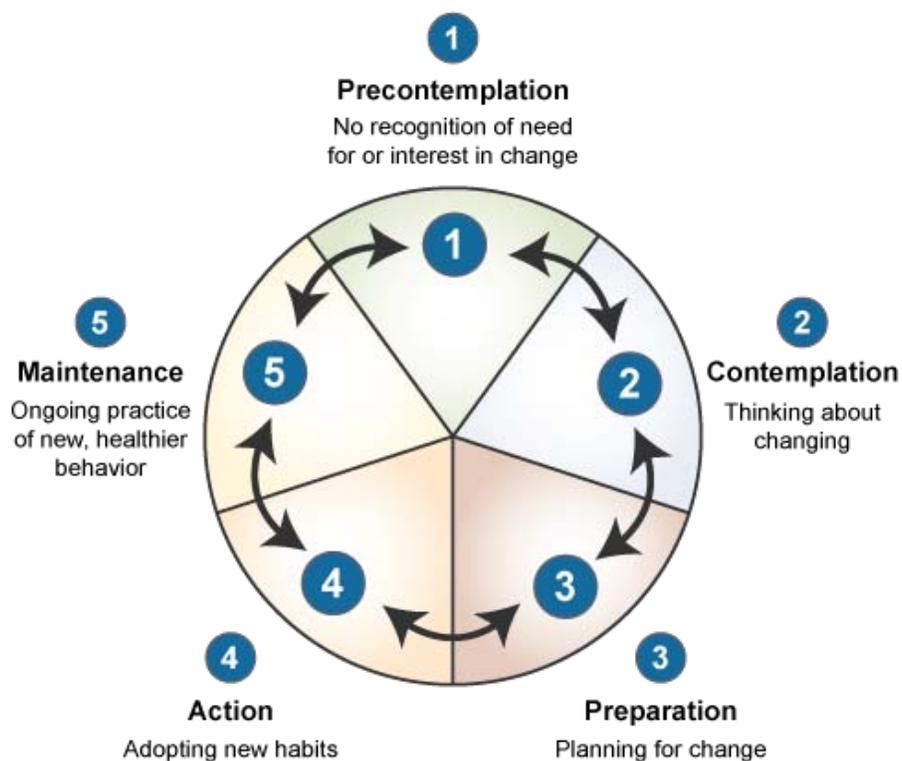| Example	
My brother just had heart surgery.	Cues to action
A stroke can be really serious. You can lose movement on one side of your body and have difficulty keeping balance for months afterwards.	Perceived severity
There's not much I can do to prevent a heart attack. If it's going to happen, then it will happen no matter what I do.	Self-efficacy
If I follow my exercise schedule, I will reduce my risk for a heart attack, and I will also have more energy.	Perceived benefits
I am in great health so I don't have to worry about having a heart attack.	Perceived susceptibility
My doctor asked me to go in for some lab work, but the past couple of months have just been crazy. It can wait.	Perceived barriers
My wife keeps reminding me to go see my doctor.	Cues to action

4. Important Theories and Their Key Constructs

Transtheoretical Model/Stages of Change

Long-term changes in health behavior involve multiple actions and adaptations over time. Some people may not be ready to attempt changes, while others may have already begun implementing changes in their smoking, diet, activity levels, and so on. The construct of "stage of change" is a key element of The Transtheoretical Model (TTM) of behavior change, and proposes that people are at different stages of readiness to adopt healthful behaviors. The notion of readiness to change, or stage of change, has been examined in health behavior research and found useful in explaining and predicting changes for a variety of behaviors including smoking, physical activity, and eating habits. The TTM has also been applied in many settings.

Figure 2: Transtheoretical Model/Stages of Change

Source: Prochaska, J. O. & Di Clemente, C. C., (1982). Transtheoretical therapy: Toward a more integrative model of change. *Psychotherapy: Theory, Research and Practice, 19*(3), 276-288. Figure 2, p. 283.

4. Important Theories and Their Key Constructs

Stages of change is a heuristic model that describes a sequence of steps (see Table 1) in successful behavior change:

1. Precontemplation;
2. Contemplation;
3. Preparation;
4. Action; and
5. Maintenance.

The stages of change model can be used both to help understand why people at high-risk for diabetes might not be ready to attempt behavioral change, and to improve the success of health counseling.

> **Another application of the stages of change model in organizations and communities involves conceptualizing organizations along the stages-of-change continuum according to their leaders' and members' (i.e., employees') readiness for change.**

Table 1

Behavior Change Stages and Their Characteristics	
Precontemplation	No recognition of need for or interest in change (in the next six months)
Contemplation	Thinking about changing (in the next six months)
Preparation	Planning for change (generally within the next month)
Action	Adopting new habits (for at least six months)
Maintenance	Ongoing practice of new, healthier behavior (over six months and chances to return to old behavior are few)

People do not always move through the stages of change in a linear manner – they often recycle and repeat certain stages, for example individuals may relapse and go back to an earlier stage depending on their level of motivation and self-efficacy.

Exercise 2

Decide whether each of the following statements about the Transtheoretical/Stages of Change Model (TTM) is true or false.

1. Anyone is ready to make changes in health behavior.

   [+ True]   [— False]

   CORRECT! This is not true. According to the TTM, people are at varying stages of change; some people may not be ready to make changes, while others have already begun changes.

2. The TTM can be used to explain or predict changes in health behavior?

   [+ True]   [— False]

   CORRECT! This is true. TTM has been examined in health behavior research and found useful in explaining and predicting changes in behavior- for example: smoking, physical activity, and eating.

3. According to the TTM, the progression through stages of changes must be linear.

   [+ True]   [— False]

   CORRECT! It is common for one to recycle through stages or revert back to an earlier stage throughout the process. Although the stages themselves are linear, progression through them is not necessarily so.
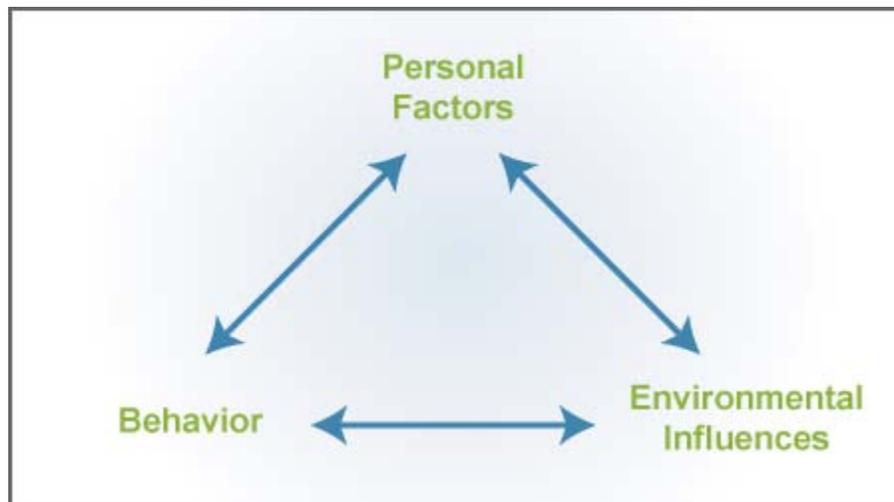
4. Important Theories and Their Key Constructs

Social Cognitive Theory

Social cognitive theory (SCT), the cognitive formulation of social learning theory that has been best articulated by Bandura, explains human behavior in terms of a three-way, dynamic, reciprocal model in which personal factors, environmental influences, and behavior continually interact (See Figure 3). SCT synthesizes concepts and processes from cognitive, behavioristic, and emotional models of behavior change, so it can be readily applied to counseling interventions for disease prevention and management. A basic premise of SCT is that people learn not only through their own experiences, but also by observing the actions of others and the results of those actions.

Figure 3: Social Cognitive Theory

Bandura, A., (1986). *Social Foundations of Thought and Action: A Social Cognitive Theory*. Prentice-Hall. P. 24.

Key constructs of social cognitive theory that are relevant to health behavior change interventions include:

- Observational learning
- Reinforcement
- Self-control
- Self-efficacy

Some elements of behavior modification based on SCT constructs of self-control, reinforcement, and self-efficacy include goal-setting, self-monitoring and behavioral contracting. Goal-setting and self-monitoring seem to be particularly useful components of effective interventions.

4. Important Theories and Their Key Constructs

Social Cognitive Theory

Self-efficacy, or a person's confidence in his or her ability to take action and to persist in that action despite obstacles or challenges, is especially important for influencing health behavior change efforts.

Reciprocal Determinism

The key Social Cognitive Theory construct of reciprocal determinism means that a person can be both an agent for change and a responder to change. Thus, changes in the environment, the examples of role models, and reinforcements can be used to promote healthier behavior.

> **Reciprocal Determinism**
>
> **This core construct is also central to social ecological models and is more important today than ever before.**

Exercise 3

Select the option(s) that best answer the questions below.

1. In the construct of reciprocal determinism, which of the following would be considered an environmental factor that could be used to change health behavior?

A brother or sister who has type 2 diabetes

A popular professional athlete doing public service announcements encouraging kids to exercise

A person's knowledge about his or her own risk for diabetes

A high school's "healthy lunch" policy

Correct!

Show Correct Answers   Restart

2. Which of these examples describes how **self-efficacy** can be used to help improve health-related behavior?

Breaking down a large goal of reducing fat intake into small weekly goals that are more easily attainable

Providing free condoms at nightclubs

Showing diabetic adolescents a video of youths like themselves who are successful at managing their blood glucose levels

Holding a rally to show community members' support for reducing violence in their neighborhoods

Correct!

Show Correct Answers   Restart

3. Which construct or constructs from Social Cognitive Theory could be used as a key part of a program to increase hand-washing among elementary school children?

Observational learning

Reinforcement

Self-efficacy

Behavioral contracting

Correct!

Show Correct Answers   Restart

4. Important Theories and Their Key Constructs

Social Ecological Model

The social ecological model helps to understand factors affecting behavior and also provides guidance for developing successful programs through social environments. Social ecological models emphasize multiple levels of influence (such as individual, interpersonal, organizational, community and public policy) and the idea that behaviors both shape and are shaped by the social environment. The principles of social ecological models are consistent with social cognitive theory concepts which suggest that creating an environment conducive to change is important to making it easier to adopt healthy behaviors.

🖥 Example 2

Given the growing epidemic of obesity in the United States and other developed countries, more attention is being focused toward examining and improving the health-promoting features of communities and neighborhoods and reducing the ubiquity of high-calorie, high-fat food choices.

📊 Figure 4: Social Ecological Model

4. Important Theories and Their Key Constructs

Exercise 4

Place each of the example influences into the appropriate level of influence in the diagram below.

Example influences:

> Knowledge about breast cancer risk factors

> Accessibility and affordability of mammography facilities

> Friends and relatives affected by breast cancer

> Community programs to promote cancer screening for women over age 50, from all races and economic groups

> Mammogram screening recommendations

Public Policy

Community

Organizational

Interpersonal

Individual

5. Interventions to Change Health Behavior

Health behaviors are shaped through a complex interplay of determinants at different levels. For example, physical activity is influenced by self-efficacy at the individual level, social support from family and friends at the interpersonal level, and perceptions of crime and safety at the community level. Ecological models suggest that these multiple levels of influence interact across levels. For example, social support for exercise from co-workers may interact with the availability of exercise equipment at the worksite to lead to increased physical activity.

Traditionally, and especially in clinical settings, strategies to change health behaviors have focused on individual-level factors such as knowledge, beliefs, and skills. As ecological thinking has gained currency, intervention strategies have broadened to target factors at other levels of influence such as organizational policies and the built environment. This recognition of the complex range of factors that shape health behaviors can make the selection of intervention strategies daunting.

Exercise 5

Drag and place each of the key constructs below with the model to which it belongs.

Social Cognitive Theory	Health Belief Model	Social Ecological Theory	Transtheoretical / Stages of Change Model

Cues to action	Individual level influences	Public policy	Reciprocal determinism
Organizational factors	Perceived benefits and barriers	Community	Interpersonal influences
Self-efficacy	Readiness to change	Observational learning	Perceived susceptibility
Reinforcement	Self-control	Self-efficacy	

5. Interventions to Change Health Behavior

Fortunately, there are several broadly applicable and widely used theories and models for targeting behavioral determinants at various levels, so a firm grasp of available options makes it unnecessary to "reinvent the wheel". Researchers and program planners can select from individual-level theories such as the Health Belief Model, which emphasizes beliefs of susceptibility and severity of a health problem, and perceived benefits and barriers of taking action. Alternatively, an intervention planner might use organizational development theories to create policy or environmental change within an organization such as a clinic or school.

5. Interventions to Change Health Behavior

Intervention strategies targeting the individual level include goal setting, behavioral contracting, and tailored health communication. These strategies most typically draw on Social Cognitive Theory (SCT) and the stages of change construct from the Transtheoretical Model. Social Cognitive Theory (SCT) explains human behavior in terms of a three-way, dynamic, reciprocal model in which personal factors, environmental influences, and behavior continually interact. Key constructs of social cognitive theory that are relevant to behavior change interventions include observational learning, reinforcement, self-control, and self-efficacy. Health professionals or public health educators can make deliberate efforts to increase clients' self-efficacy using three types of strategies:

1. setting small, incremental and achievable goals;
2. using formalized behavioral contracting to establish goals and specify rewards; and
3. monitoring and reinforcement, including client self-monitoring by keeping records.

5. Interventions to Change Health Behavior

Commonly used strategies at the interpersonal level include lay health advisors and social support programs. Underlying theoretical constructs include social support, social norms and social networks. Intervention strategies at the organizational level include provider reminders and feedback, and other systems changes. The process of creating organizational change is often informed by organizational development theory. At the community level, coalition-building is a particularly common intervention strategy. The following sections describe each of these intervention strategies and how they are informed by theory. Brief examples of each strategy are also provided.

6. Theory Use in Intervention Research

Recently, several reviews have examined which theories were used in health behavior intervention research and whether theory-based strategies are positively associated with desirable outcomes. Table 2 summarizes 11 systematic reviews published since 2000 – most within the past three years – that reported on theory use and in several cases, the effects of using theories for intervention design. They cover a range of behavioral topics: dietary fat and fruit and vegetable intake; cancer screening; injury prevention; HIV-related sexual risk behaviors; and contraception. These reviews also examined tailored print and computer-based interventions.

Table 2: Reviews of Theory Use in Health Behavior Intervention Research

Article	Topical Focus	Theories Used	Comments
Ammerman et al., 2002	Dietary fat, fruit and vegetable (F&V) consumption	Theory use yes/no; SCT constructs (goal setting); social support	Using a theoretical basis was associated with greater fat reduction and higher F&V intake. Goal setting, family and social support strategies more effective
Legler et al., 2002	Mammography promotion in historically underserved groups	Theory used in 68.4% of included studies. Most-used: HBM, TTM, SCT, PRECEDE/PROCEED	Strongest interventions were access-enhancing, consistent with SCT, HBM and ecological model.
Trifiletti, Gielen, Sleet & Hopkins, 2005	Unintentional injury prevention research	Most-used: TRA/TPB, HBM, PRECEDE/PROCEED Model.	Theories were not well-represented in injury prevention research from 1980 to 2001
Noar, Benac & Harris, 2007	Tailored print health behavior change interventions	TTM/stages of change, HBM, TRA/TPB, most used. Nearly every study tailored on at least one theoretical concept	Tailoring with 4-5 concepts yielded larger effect sizes than tailoring on 0-3 concepts. Nearly all studies that tailored on theoretical constructs had larger effect sizes
	School-based drama	SCT, TTM	Use of social cognitive theory most

6. Theory Use in Intervention Research

As shown in Table 2, the most-often used theories in these reviews are Social Cognitive Theory (SCT), The Transtheoretical Model/stages of change (TTM), the Health Belief Model (HBM), Theory of Planned Behavior (TPB), and the PRECEDE/PROCEED planning model. Most of these reviews examined individual and small-group interventions and few addressed organizational change, provider behavior or other upstream interventions. These patterns are similar to those in broad reviews of the literature (above), and show that a relatively small number of theories are being used to develop and test interventions.

Few of these reviews compared the relative effects of using different theories as the basis for interventions, but several explored whether using a theoretical foundation led to larger effects. Several reviews concluded that interventions based on theory or explicitly described theoretical constructs were more effective than those not using theory. The mechanisms that explain these larger effects are not clear. The use of theories that fit well with the problems and context in the studies might explain the success of theory-based interventions. It is equally plausible that theory-based strategies are developed with greater care, fidelity and structure. There may be other explanations as well.

7. How Theory is Used

The social and behavioral science theories used as a basis for health interventions reflect the field, which is both eclectic and in a relatively early stage of development. The question of *how* theories are used (or not used) in research and practice is as important as researchers try to ascertain the role of theory in intervention development and evaluation. In a recent review of theory use from 2000 to 2005, we classified articles that employed health behavior theory along a continuum:

1. **Informed by theory**: a theoretical framework was identified, but no or limited application of the theory was used in specific study components and measures;
2. **Applied theory**: a theoretical framework was specified, and several of the constructs were applied in components of the study;
3. **Tested theory**: a theoretical framework was specified, and more than half the theoretical constructs were measured and explicitly tested, or two or more theories were compared to one another in a study; or
4. **Building/creating theory**: new or revised/expanded theory was developed using constructs specified, measured, and analyzed in a study.

More than two-thirds of the studies in the review used theory to *inform* a study; 17.9 percent of theories were applied; 3.6 percent were *tested*, and only 9.4 percent involved *building/creating* theory (84). These findings underscore the importance of more thorough application and testing of health behavior theories to advance science and move the field forward.

8. Choosing the Right Theory

Effective interventions and sound research both depend on marshaling the most appropriate theory and practice strategies for a given situation. Different theories are best suited to different units of practice, such as individuals, groups, and organizations. For example, when one is attempting to overcome women's personal barriers to obtaining mammograms, the Health Belief Model may be useful. The Transtheoretical Model may be especially useful in developing smoking cessation interventions. When trying to change physicians' mammography practices by instituting reminder systems, organizational change theories are more suitable. At the same time, physicians might use The Transtheoretical Model to inform their discussions with individual patients about getting a first mammogram or annual screening.

> **Public health experts at once benefit from and are challenged by the multitude of theoretical frameworks and models from the social sciences available for their use, because the best choices and direct translations may not be immediately evident.**

> **The choice of a suitable theory or theories should begin with identifying the problem, goal, and units of practice, not with selecting a theoretical framework because it is intriguing, familiar, or in vogue. One should start with a logic model of the problem and work backwards to identify potential solutions.**

8. Choosing the Right Theory

The adequacy of a theory most often is assessed in terms of three criteria:

1. Its *logic*, or *internal consistency* in not yielding mutually contradictory derivations,
2. The extent to which it is *parsimonious*, or broadly relevant while using a manageable number of concepts, and
3. Its *plausibility* in fitting with prevailing theories in the field.

Theories also are judged in the context of activities of practitioners and researchers. Practitioners may apply the pragmatic criterion of **usefulness** to a theory and thus would be concerned with its consistency with everyday observations. Researchers make scientific judgments of a theory's ecological **validity**, or the extent to which it conforms to observable reality when empirically tested.

> **We should test our theories iteratively in the field as well as in more controlled settings. When we do so, theory, research, and practice begin to converge.**

9. Challenges Moving Forward

Science is by definition cumulative, with periods of paradigm shifts that come more rarely as a result of crises when current theories fail to explain some phenomena. The same applies to the science base that supports long-standing as well as innovative health behavior interventions. More research is needed at all points along the research continuum. We need more basic research to develop and test theories, more intervention research to develop and test evidence-based interventions, and more concerted, focused attention to dissemination of evidence-based interventions. Moreover, both the research and practice communities in health education and health behavior are sorely in need of more rigor and precision in theory development and testing—in measures, assessment of mediating variables, and in specification of theoretical elements. We encourage more care and attention to how theories are tested, and especially to the way variables are measured and analyzed. Building a solid, cumulative base of theory development is very difficult when one researcher's findings cannot be compared to another's.

9. Challenges Moving Forward

Successful behavior change strategies take many forms. Theory and research suggest that the most effective behavior change interventions are those that use multiple strategies and aim to achieve multiple goals of awareness, information transmission, skill development, and supportive environments and policies. Goal-setting and monitoring are important elements of many successful interventions. The emergence of information technology tools such as the internet, wireless technology, and personal digital assistants have expanded the range of theory-based strategies available for effective behavior change in health care and community settings. Behavioral interventions should be sensitive to audience and contextual factors, and recognize that most behavior change is incremental and that maintenance of change usually requires continued and focused efforts.

⚙ Exercise 6

Decide which of the four models might be a good fit for each of the following public health examples.

A researcher wants to implement an intervention to increase colorectal cancer screening among Black men.

| Social Cognitive Theory | Health Belief Model | Social Ecological Model | Transtheoretical / Stages of Change Model |

A counseling program for teen alcoholism wants to find out what treatment techniques work best for the varying degrees of readiness among its clients.

| Social Cognitive Theory | Health Belief Model | Social Ecological Model | Transtheoretical / Stages of Change Model |

A researcher is interested in understanding how the availability (or lack of availability) of condoms can play a role in risky sex behaviors among teenage girls in order to design an intervention.

| Social Cognitive Theory | Health Belief Model | Social Ecological Model | Transtheoretical / Stages of Change Model |

A hospital administrator wants to conduct a survey of both employees and patients to understand if there are places where policy change might lead to better meeting of patient and employee needs.

| Social Cognitive Theory | Health Belief Model | Social Ecological Model | Transtheoretical / Stages of Change Model |

A smoking cessation clinic is trying to figure out how to improve its success rate by attracting smokers who are really serious about quitting.

| Social Cognitive Theory | Health Belief Model | Social Ecological Model | Transtheoretical / Stages of Change Model |

Community health workers in a developing country are trying to encourage safe water-handling practices such as disinfecting water and safe water storage. They think that to be successful, people need to learn new information and skills, encourage their family members to take precautions, receive appropriate storage vessels, and have disinfectants distributed to them.

| Social Cognitive Theory | Health Belief Model | Social Ecological Model | Transtheoretical / Stages of Change Model |

9. Challenges Moving Forward

When is a new theory needed?

As noted previously in the description of theory use in published articles, there is a proliferation of theories but few are being widely used. Often, developers state that existing theories do not meet their needs and so a new theory or model is necessary. However, careful thought about the generalizability, testability, and support for a "new" theory might instead lead to the choice of a suitable theory, to minor adaptations for unique cultural groups, and modified measures and evaluation procedures. Work with culturally diverse groups provides a case in point. Fundamental views of matters such as causes of health and disease among some ethnic groups may seem to point to a need for "new" theories. However, familiarity with a range of theories and thoughtful selection of the best-suited theories might solve this problem.

9. Challenges Moving Forward

Population-focused programs and individual-focused strategies

In population-focused programs, it is of limited value to adopt a program oriented solely toward modifying individuals' behaviors (e.g., teaching patient low-fat food cooking methods). A more productive strategy would also include environmental change, for example expanding the availability and affordability of more nutritious food choices. When this is done along with individual skill training, longer-lasting and meaningful changes can be achieved. There are many theories of policy and organizational change that complement individually-oriented theories, but are underutilized. They should be further operationalized, tested and disseminated.

The audience for health behavior change programs is truly global, and the professional community represents many different settings and countries. Theory developers and theory users must consider more than ever how culture, context, and health problems can and should affect their choices and applications of theory and interventions. Professionals designing interventions have more options than ever before, yet our theories have improved only incrementally while our technologies have changed exponentially. This should be a wake-up call to public health practitioners to think more concretely, expansively and deeply about how they and their co-workers use theory.

10. Summary

Theory, research, and practice are part of a continuum for understanding the determinants of behaviors, testing strategies for change, and disseminating effective interventions. Rigorous tests of theory-based interventions, including measurement and analyses of mediator and moderators, are the building blocks of the evidence base in health behavior change.

Recent reviews of research on health behavior change have shown that interventions based on theory or theoretical constructs are more effective than those not using theory. However, the mechanisms that explain the larger effects have not been studied.

The most-often used theories of health behavior are Social Cognitive Theory, The Transtheoretical Model/Stages of Change, the Health Belief Model, and the Theory of Planned Behavior. The most-often mentioned theoretical model that has not been fully applied in research and practice is the Social Ecological Model. This promising model needs to better articulated, applied and evaluated.

Other widely used theoretical models and planning frameworks:

- Theory of Reasoned Action/Theory of Planned Behavior
- PRECEDE/PROCEED Model
- Social support and social networks
- Stress and coping theories
- Diffusion of innovations
- Social marketing

10. Summary

The strongest interventions may be built from multiple theories. When combining theories, it is important to clearly think through the unique contribution of each theory. The question of when a "new" theory is needed requires careful thought and more attention. There is already a proliferation of theories though only a few are widely used. When applying theory, there is no substitute for knowing the audience. Participatory program design, evaluation and research improve the odds of success. Also, health behavior change programs that address significant public health problems should strive to complement individually-oriented intervention models with strategies and models to develop healthier policies, systems and environments.

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12. Author Biography

Karen Glanz, PhD is currently George A. Weiss University Professor, a Penn Integrates Knowledge in the Schools of Medicine and Nursing, and Director of the Center for Health Behavior Research at the University of Pennsylvania. She came to Penn in 2009 after professorships at Emory University, the University of Hawaii, and Temple University. With MPH and PhD degrees in health behavior and health education, Dr. Glanz's research has integrated public health and social and behavioral science theories and methods, with applications to cancer prevention and control; obesity, nutrition, and the built environment; chronic disease prevention and control and health communication technologies. The recipient of several awards for her interventions and research contributions, she has received grant funding of over $ 30 million and her scholarly contributions include more than 300 publications. Karen Glanz is senior editor of Health Behavior and *Health Education: Theory, Research, and Practice* (Jossey-Bass Inc., 1990, 1996, 2002, 2008), a widely used text that has been translated into several languages and recently published in its fourth edition; and lead author of the monograph *Theory at a Glance: A Guide to Health Promotion Practice* (NCI, 1995 & 2005). She was designated a Highly Cited Author by ISIHighlyCited.com, in the top 0.5% of authors in her field over a 20-year period.