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HEALTH BEHAVIOR MODELS: THEIR ROLE IN CLINICAL PRACTICE

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INTRODUCTION

The complexities of human behavior have for a long time intrigued and perplexed researchers from various academic disciplines, including philosophy, sociology, psychology, and more recently, medicine. This quest to better understand human behavior, particularly in relation to health-orientated action, has given rise to a number of theories that are collectively referred to as "health behavior models." These models provide a conceptual framework for explaining attitudes and actions toward health-related activities, and offer insights into how and why individuals modify behavior.

The long-term success of most health interventions is usually contingent on the extent to which individuals are willing to change behavior. Public health campaigns, in particular, emphasize the need for people to adopt healthier lifestyles, exercise more regularly, moderate alcohol intake, and cease smoking. Applying an understanding of these health behavior models may assist both the practitioner and the patient in successfully achieving these outcomes, in addition to assisting in the development of individually tailored goals.

The aim of this article is to explore two particular health behavior models: the Health Belief Model (HBM) and the Transtheoretical Model (TTM), which are both especially relevant to the task of modifying behavior as it relates to lifestyle variables. An understanding of these models should inform and enhance clinical practice.

BEHAVIOR MODIFICATION

Behavior modification is an intrinsic component of almost all successful intervention protocols implemented in clinical practice. Behavioral change is facilitated by a personal sense of control. If people believe that they can take action to solve a problem instrumentally, they become more inclined to do so and they feel more committed to this decision.¹ Why some people choose to take an active role in caring for their health, while others do not, has fostered intense

research interest from diverse academic disciplines, across more than four decades. According to Becker² and Cummings,³ in the 20-year period between 1960 and 1980, no fewer than 14 conceptual models and hundreds of research reports and review articles have been published.

There simply isn't one single answer or explanation to account for why people choose to engage in health-oriented behavior, while others do not. "The many different efforts of behavioral scientists to both identify and explain the determinants of voluntary health-related behaviors attest to the fact that the underlying problem is multi-faceted and complex".⁴ Both outcome expectancies and efficacy beliefs play influential roles in adopting health behaviors, eliminating detrimental habits, and maintaining change.¹

The Health Belief Model (HBM) has received the most direct attention and study, and has demonstrated reliability and flexibility in a range of settings influencing much additional research.

THE HEALTH BELIEF MODEL

The Health Belief Model (HBM) has emerged as a framework for describing health behavior and, since its development, has served as a model for a significant number of studies related to health behavior. At the core of the formulation is a set of health cognitions concerned with personal susceptibility to a condition, the perceived severity of that condition, the efficacy of a behavior, and barriers to the behavior.

The Origins of the Health Belief Model

If public health campaigns are to be effective and are to prompt desirable behavioral practices among target populations, it is vitally important that the designers of such campaigns recognize how and why individuals choose a particular behavior.

In the early 1950s, a team of American social psychologists developed the HBM in an attempt to understand "the widespread failure of people to accept disease

preventives or screening tests for the early detection of asymptomatic diseases."⁴ Preventive health behavior involving medical professionals was the original focus of the HBM, and included an array of behaviors, such as voluntary checkups and immunization.⁵

Health Conditions

Central to the HBM is a set of health cognitions that relate to health behavior and that are concerned with an individual's perspective. The HBM consists of four primary health cognitions or components:⁶

- **Perceived Susceptibility:** Individuals vary widely in their feelings of personal vulnerability to a condition. This dimension refers to one's subjective perception of the risk of contracting a condition.
- **Perceived Severity:** Feelings concerned with the seriousness of contracting an illness also vary from person to person. This dimension includes evaluations of both medical/clinical consequences (eg, death, disability, and pain) and possible social consequences (eg, effects of the conditions on work, family life, and social relations).
- **Perceived Benefits:** While some degree of personal susceptibility to a condition is thought to be necessary to initiate a health-related activity, an individual is unlikely to comply with recommendations unless the action is perceived as feasible and efficacious. This dimension refers to the individual's attitude towards the likely effectiveness of the actions available to prevent or mitigate disease threat.
- **Perceived Barriers to Action:** The potential negative aspects of a particular health action may act as impediments to undertaking the recommended behavior. A kind of cost-benefit analysis is thought to occur wherein the individual weighs the action's effectiveness against perceptions that it may be expensive, dangerous (eg, side effects, iatrogenic outcome), unpleasant (eg, painful, difficult, upsetting), inconvenient, time-consuming, and so forth.

Since its inception, the ability of the HBM to rationalize behavior has been challenged in a variety of settings among diverse populations. For example, the HBM has been used to predict and explain factors of importance to: the elderly in accepting influenza vaccinations;⁶ adolescents' attitudes and knowledge about pregnancy-prevention interventions;⁷ perceived benefits and barriers to colorectal cancer screening;^{8,9} barriers to condom use and HIV-prevention messages;¹⁰ adherence to anti-retroviral therapy in HIV patients;¹¹ older women's adherence to regular mammography screening behav-

ior;¹² and an extensive range of other public health-screening programs.

Relevance to Clinical Practice

In one study designed to identify adolescent female attitudes towards, and knowledge of, Papanicolaou (Pap or cervical) screening, the participants reported several perceived barriers to routine screening. For example, pain, embarrassment, fear of finding a problem, fear of parents finding out, prolonged clinic waiting time, cost, child care, transportation, time, and energy were all cited as reasons for not responding to public health messages emphasizing the importance of regular Pap screens in sexually-active women. A number of recommendations were formulated to address these issues. Suggested methods to overcome barriers were education, development of a trusting, ongoing relationship with healthcare providers who could put patients at ease and communicate well, gentler examinations, assured confidentiality, and school programs. Compliance with appointment keeping could be enhanced with telephone or postal reminders, expanded hours, shorter waiting lists, provision of baby-sitting, or assistance with transportation.¹³

Limitations of the Health Belief Model

The Health Belief Model does have some limitations. It does not take into account other aspects of people's lives, such as psychosocial factors, and is of limited effectiveness in changing habitual behaviors because its focus is chiefly on attitudes towards behavior, rather than the behavior itself. According to Kirscht,⁹ health beliefs exert little influence on daily habitual behavior. Nevertheless, it is a versatile theoretical model that offers further clinical insight into the elements of human behavior amenable to persuasion and modification.

THE TRANSTHEORETICAL MODEL

Whereas the Health Belief Model principally concerns itself with attitudes towards behavior, the Transtheoretical Model (TTM) concerns itself with the stages of change that characterize successful behavior modification. The deficiencies in earlier models and explanations to account for the process of how people change fueled the development of the TTM by the Cancer Prevention Research Consortium.¹⁴ The TTM is a theoretical framework designed to account for the dynamic aspects of human behavior, and proposes that different people may be at different stages with respect to changing any particular behavior at any particular point in time. The way in which this model permits assessment of the "stage of change" of an individual or group is of particular value to practitioners.

During this past decade, behavioral scientists have focused on building upon and extending the current level of

understanding related to how people intentionally change behavior, such as smoking addiction, with and without professional intervention. According to Prochaska et al,¹⁴ "hundreds of psychotherapy outcome studies have demonstrated that people successfully change with the help of professional treatment. These outcome studies have taught us relatively little, however, about *how* people change with psychotherapy. Numerous studies have also demonstrated that many people can modify problem behaviors without the benefit of formal psychotherapy. These studies have taught us relatively little, however, about *how* people change on their own."

Stages of Behavioral Modification According to the TTM

The TTM proposes that persons pass through a series of progressively more committed stages in the course of changing a health-related behavior: pre-contemplation, contemplation, preparation, action, and maintenance:

- **Pre-contemplation**—In this stage, the individual is not intending to make a change in the foreseeable future. Many individuals in this stage are unaware of their problems and health issues, and have failed to attain the necessary level of saliency required to motivate change. Upon questioning, individuals may indicate a desire or wish to change, but have no intention of actually taking action.
- **Contemplation**—In this stage, the individual intends to make a change, but not in the immediate future. They are aware that a problem exists, but they have yet to make a concerted commitment to take action. These individuals already engage in evaluating the pros and cons of both their problem and the solution. They may, however, remain in this contemplation stage for extended periods of time, possibly years, while they continue to weigh their concerns associated with overcoming the problem.
- **Preparation**—In this stage, the individual intends to take action in the foreseeable future. Health matters have attained a level of genuine concern and saliency that is sufficient to transform intention into behavioral change. "Although they have made some reductions in their problem behaviors, individuals in the preparation stage have not yet reached a criterion for effective action, such as abstinence from smoking, alcohol abuse, or heroin use. They are, however, intending to take such action in the very near future."¹⁴
- **Action**—In this stage, the individual actively attempts the change. Requiring considerable commitment, energy and motivation, these individuals mod-

ify their behavior or environment in order to overcome their problems.

- **Maintenance**—In this stage, the individual strives to maintain the desirable behavior and prevent relapses. According to Prochaska et al,¹⁴ "Traditionally, maintenance was viewed as a static stage. However, maintenance is a continuation, not an absence of change. For addictive behaviors, this stage extends from six months to an indeterminate period past the initial action. For some behaviors, maintenance can be considered to last a lifetime."

Smoking Cessation and the TTM

On the basis of extensive field studies, Prochaska et al¹⁴ postulate that at any point in time, a cross-sectional analysis of the population of smokers would reveal that approximately:

- 50-60% are in pre-contemplation (ie, where the individual is not thinking about making a change)
- 30-40% are in contemplation (ie, where the individual intends to make a change, but not in the immediate future)
- 10-15% are prepared for action (ie, where the individual actively attempts the change)

This finding suggests that more than half of the general adult population of smokers has not even reached a level of health motivation whereby cessation of cigarette smoking has attained saliency. On the basis of this result, it is no surprise that "stop-smoking" campaigns are of limited value and generate only moderate success. Moreover, only 1 in 10 smokers demonstrate the level of health motivation necessary to actively change their behavior.

Relevance to Clinical Practice

A substantial component of clinical practice is concerned with designing treatment protocols aimed at the management of chronic lifestyle diseases, such as cardiovascular disease, obesity, and diabetes. Practitioners invest considerable time and effort in encouraging and supporting patients with chronic illness to exercise regularly, cease smoking, limit alcohol intake, and eat healthily. These lifestyle changes can be facilitated through the use of the TTM. The significance is that it assists practitioners in developing interventions that are specifically focused on the patient, depending on the stage of readiness to change.¹⁵

According to Prochaska et al,¹⁴ progression towards desirable health behavior can be assisted by using such techniques as consciousness raising, self-reevaluation, self-liberation, counter-conditioning, stimulus control, reinforcement management, dramatic relief, environmen-

tal reevaluation and social liberation. For examples of how each of these techniques apply to clinical practice, refer to Prochaska et al.¹⁴

One investigation examined the degree to which the TTM process was associated with smoking status and quitting behavior (ie, intentions and attempts to quit) among patients with head cancer, neck cancer, or lung cancer.¹⁶ Counter-conditioning, reinforcement management, and self-reevaluation were commonly employed behavioral techniques used by current smokers preparing to take action (ie, cease smoking). A number of practical suggestions were developed to assist smoking-cessation attempts. Patients were encouraged to develop an awareness of the health risks related to continued smoking, devise and use alternative behaviors, implement the use of reinforcement strategies for cessation successes, and develop a sense of confidence and commitment about quitting, as well as about influencing health lifestyle changes.¹⁶

CONCLUSION

In summary, the effectiveness of health-education practice and behavior modification lies in the ability of the practitioner to understand individual attitudes and actions toward health activities. An awareness of health-behavior models can assist efforts to integrate and apply behavioral science theories to clinical practice. Knowledge of the Health Belief Model and the Transtheoretical Model may better equip practitioners to identify barriers to behavior modification, and find solutions to these obstacles. Furthermore, if the practitioner is able to assess the individual's readiness for change, interventions can be tailored accordingly.

REFERENCES

1. Conner M, Norman P. *Predicting Health Behavior: Research and Practice with Social Cognition Models*. Buckingham, Great Britain: Open University Press; 1995.
2. Becker MH, Haefner D, Kasl S, Kirscht J, Maiman L, Rosenstock I. Selected psychosocial models and correlates of individual health-related behaviors. *Med Care*. 1977;15:27-48.
3. Cummings KM, Becker MH, Maile MC. Bringing the models together: an empirical approach to combining the variables used to explain health actions. *J Behav Med*. 1980;3:123-145.
4. Janz NK and Becker MH. The Health Belief Model: A decade later. *Health Education Quarterly*. 1984;11(1):1-47.
5. Kirscht JP. The Health Belief Model and Predictions of Health Action. In: *Health Behavior: Emerging Research Perspectives*. New York, NY: Plenum Press; 1988:27-41.
6. Nexoe J, Kragstrup J, Sogaard J. Decision on the influenza vaccination among the elderly: a questionnaire study based on the Health Belief Model and the Multidimensional Locus of Control Theory. *Scand J Prim Health Care*. 1999;17(2):105-110.
7. Watt LD. Pregnancy prevention in primary care for adolescent males. *Journal of Pediatric Health Care*. 2001;15(5):223-228.
8. Rawl S, Champion V, Menon U, Loehrer PJ, Vance GF, Skinner CS. Validation of scales to measure benefits and barriers to colorectal cancer screening. *Journal of Psychosocial Oncology*. 2001;19(3/4):47-63.
9. Jacobs LA. Health beliefs of first-degree relatives of individuals with colorectal cancer and participation in health maintenance visits. *Cancer Nurs*. 2002;25(4):251-265.

10. Royce CF, Seals B. A qualitative assessment of condom use decisions by female adolescents who use hormonal contraception. *J Assoc Nurses AIDS Care*. 2001;12(6):78-87.
11. Vincke J, Bolton R. Therapy adherence and highly active antiretroviral therapy: comparison of three sources of information. *AIDS Patient Care and Standards*. 2002;16(10):487-495.
12. Black MEA, Stein KF, Loveland-Cherry CJ. Older women and mammography screening behavior: do possible selves contribute? *Health Educ Behav*. 2001;28(2):200-216.
13. Kahn JA, Chiou V, Allen JD. Beliefs about Papanicolaou smears and compliance with Papanicolaou smear follow-up in adolescents. *Arch Pediatr and Adolesc Med*. 1999;153:1046-54.
14. Prochaska JO, Di Clemente CC, Norcross JC. In search of how people change. *Am Psychol*. 1992;47:1102-1114.
15. Cassidy CA. Using the Transtheoretical Model to facilitate behavior change in patient with chronic illness. *Journal of the American Academy of Nurse Practitioners*. 1999;11(7):281-287.
16. Schnoll RA, Malstrom M, Rothman JC, et al. Processes of change related to smoking behavior among cancer patients. *Cancer Practice*. 2002;10(1):11-19.

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