Chapter 4

Health Behavior Modification

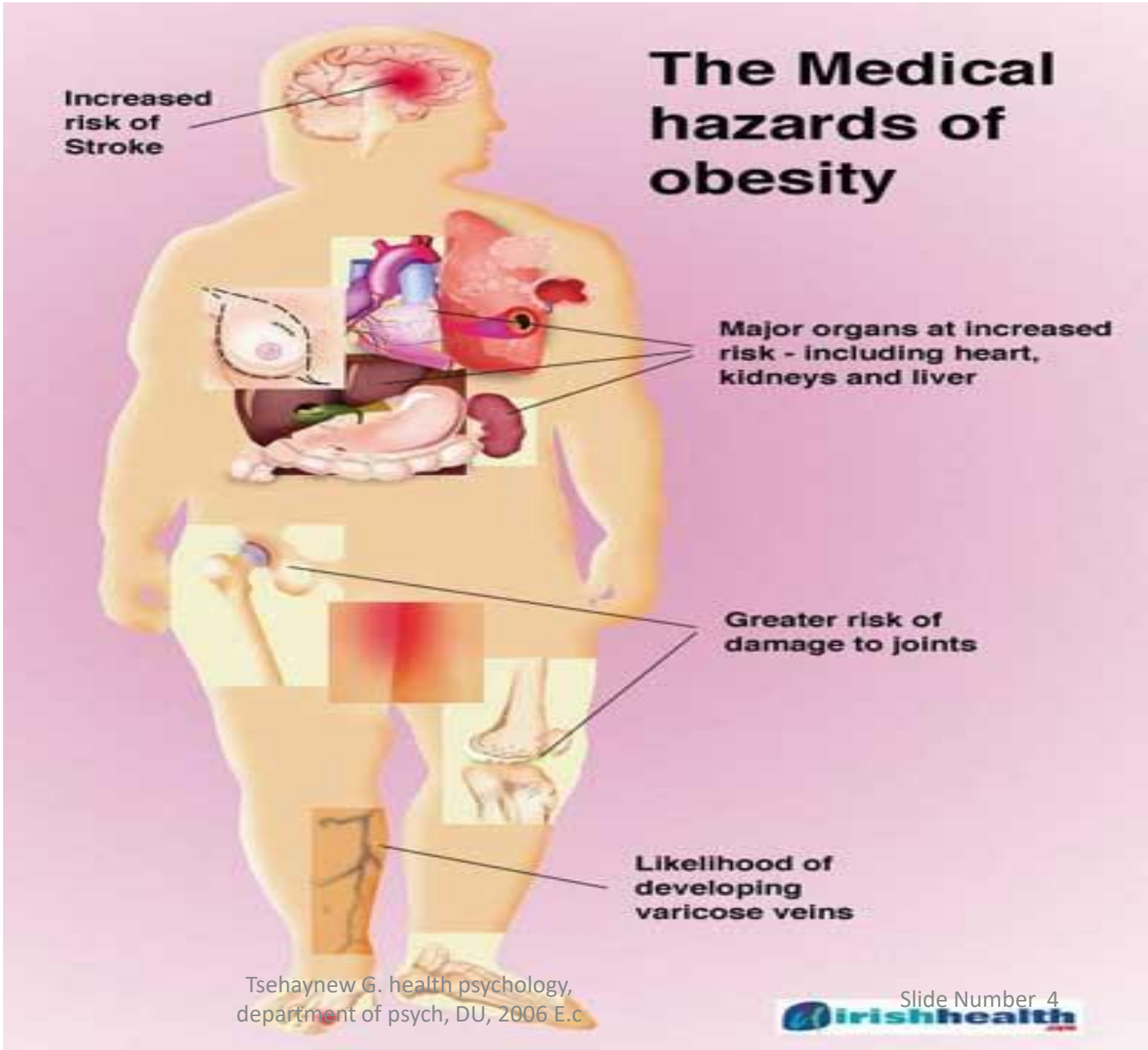
What are Health Behaviors?

- Are behaviors undertaken by people to enhance or maintain their health.
- Health habits
  - Firmly established behaviors that are often performed automatically
  - Examples: wearing a seatbelt, brushing one's teeth
  - Health habits begin in childhood and stabilize at ages 11 or 12

Role of Behavioral Factors in Illness

- Patterns of disease in the U.S. have changed from acute infectious disorders to preventable" disorders.
- Half the deaths in the U.S. are caused by preventable behaviors
- Obesity and lack of exercise
  - About to overtake tobacco as the most preventable cause of death in the U.S.
  - Eating Disorders are on the rise

- Obesity: A Serious Problem !



Modifications of health behaviors

Overview on Health Promotion:

- the idea that good health, or wellness, is a personal and collective achievement
- health promotion appears to be more successful and less costly than disease prevention

Behavior Change in Health

- Some questions:
  - What factors predict health behaviors?
    - e.g., Why do you floss every night? or why not?
  - How do people change their health behaviors?
  - Why don't people change? What are some of the barriers?
  - Theories, Models, and Practicalities…

Modification of health behaviors

- Successful modification of health behaviors can :
  - Reduce deaths due to lifestyle related illnesses.
  - Delay time of death, increasing longevity.
  - Expand years of life free from chronic disease complications

Health Behaviors (cont.)

Practicing and changing health behaviors depends on following factors:

Demographic factors	Age
Values	Personal control
Social influence	Personal goals/values
Perceived symptoms	Cognitive factors
Access to the health care delivery system	

Barriers to Healthy Behaviors

- Individual Barriers
  - Inertia
  - Operant conditioning issue – immediate rewards and punishments are much more effective than delayed ones
  - Finances
  - Optimistic Bias -- **The tendency of most people to believe that they are less likely to become ill than others**
    - People who feel vulnerable to specific health problems are more likely to practice preventive health behaviors
    - Invincibility fable (especially in adolescents)
    - Within limits, optimism conveys health advantages

Family Barriers

- Health habits are often acquired from parents and others who model health-compromising behaviors
  - obese parents are more likely to have obese children
  - children of problem drinkers are themselves at increased risk of abusing alcohol

Community Barriers

- Access to _____ (health care, exercise facilities, grocery stores)
- Absence of community health promotion (e.g., no incentives to walk)
- Some environments promote health-compromising behaviors
  - e.g., alcohol use and binge drinking in college

Barriers to modifying poor health behaviors

Barriers related to health behaviors:

- not knowing when to intervene to change health habits
- instability of health habits
- health behaviors are elicited and maintained by different factors for different people

Barriers con't

- Poor health habits become ingrained
  - very difficult to change
- Cumulative damage
  - isn't evident for years
- Unhealthy behaviors
  - can be pleasurable and addictive
  - "Illegal, a sin or makes you fat"

Intervening with children and adolescents:

Socialization influences early health habits

- Socialization: The process by which people learn the norms, rules, and beliefs associated with their family and society
- Parents and social institutions are usually the major agents of socialization.
- Adolescents may ignore early training received by parents
- Adolescents are vulnerable to problematic health behaviors

Intervening with children and adolescents:

- Teachable Moment
  - Certain times are better than others for teaching particular health practices
- Examples
  - Drinking milk instead of soda at dinner
  - Emphasizing correct brushing at dental visit
- Window of Vulnerability
  - At certain times, people are more vulnerable to certain health problems

Interventions with At-Risk People

- Early identification may prevent poor health habits that contribute to vulnerability
- Knowledge helps individuals monitor their situation
- Interventions with at-risk people:

  - children and adolescents are vulnerable
- Benefits of focusing on at-risk people:

  - may prevent or eliminate poor health habits

  - an efficient and effective use of health promotion dollars

  - makes it easier to identify other risk factors

Interventions with At-Risk People

- Problems with focusing on risk:
  - people do not always perceive their risk correctly
  - testing positive for a risk factor causes worry and restrictive behavior
- Ethical issues:
  - when is it appropriate to alarm at-risk people?
  - some may react defensively
  - sometimes there is no successful intervention
  - emphasizing risks can raise complicated issues of family dynamics

Models for Health Behavior Change

- Given all these barriers of behavior change, why (and how?) would a person change his or her health behavior?
  - Some are presented as follows

Behavior change models

- Attitude Change approaches to health behavior change
    - information appeals
    - fear appeals
    - Health Belief Model
    - Theory of Reasoned Action
    - Theory of Planned Behavior
- Cognitive-Behavioral Approaches to health behavior change
- Social Cognitive Theory
- Social Engineering
- Stage behavior change
- Interventions
- Relapse prevention

Attitude Change approaches to health behavior change

- Propaganda must be planned and executed by only one authority ("Expert")
- It must evoke the interest of an audience
- It must be transmitted through an attention-getting communications medium
- It must be carefully timed
- It must diminish the impact of frustration

The Educational Dilemma

- Health knowledge is a weak predictor of healthy behavior
- Unlike biological risk factors, which are determined based on anatomic and physiological knowledge and for which specific disease prevention measures can be devised, behavioral risk factors are often the most difficult to measure and manipulate.

Educational dilemma

- e.g. Despite the knowledge that condom use can prevent HIV transmission, many men and women continue to have unprotected sex.
- Perhaps this reality: *no one type of behavior-modification approach, such as increasing knowledge, will be effective in preventing disease*.

Educational dilemma

- One study of counseling after an HIV test found that the incidence of gonorrhea in people who tested negative was twice as high in the six months after testing and counseling than in the preceding six months
- Without a control group these findings are hard to interpret, and there are few good trials in this area.
- The point is that well meaning measures may not work as intended.

Zenilman J.M.; Erickson B.; Fox R.; Reichart C.A.; Hook III E.W. (1992). Effect of HIV post test counseling on STD incidence. *JAMA* 267:843-5.

Lack of effective evaluations

- Merits of randomized controlled trials (RCTs) in behavioral and psychosocial research do not differ fundamentally from those in clinical medicine
- Interventions that target behavior are often complex and demanding, as are the requirements of good RCTs to assess their efficacy
- When blinding of participants and researchers to treatment allocation is impossible, it is important to minimize bias via blinded assessment of the outcome
- The contribution that participant choice makes to the efficacy of an intervention is hard to measure

Educational staple

- Individual practice of risk reduction behavior is the primary avenue for prevention of disease.
- The development of effective educational programs that will achieve this expected outcome is vital in societal efforts to control disease.
- Studies have shown that increasing knowledge may not always change risky behaviors. Attention to other individual traits related to health maintenance, such as perceptions of vulnerability to disease and peer norms, beliefs about the value of prevention behavior, recognition of high risk behavior, behavioral intention and self-efficacy are considered necessary.

Health Belief Model

- This model assumes that an individual's behavior is guided by expectations of consequences of adopting new practices. It has four concepts:
  1) Susceptibility: does the person perceive vulnerability to the specific disease?
  2) Severity: does one perceive that getting the disease has negative consequences?
  3) Benefits minus costs: what are the positive and negative effects of adopting a new practice?
  4) Health motive: does the individual have concern about the consequences of contracting the diseases?

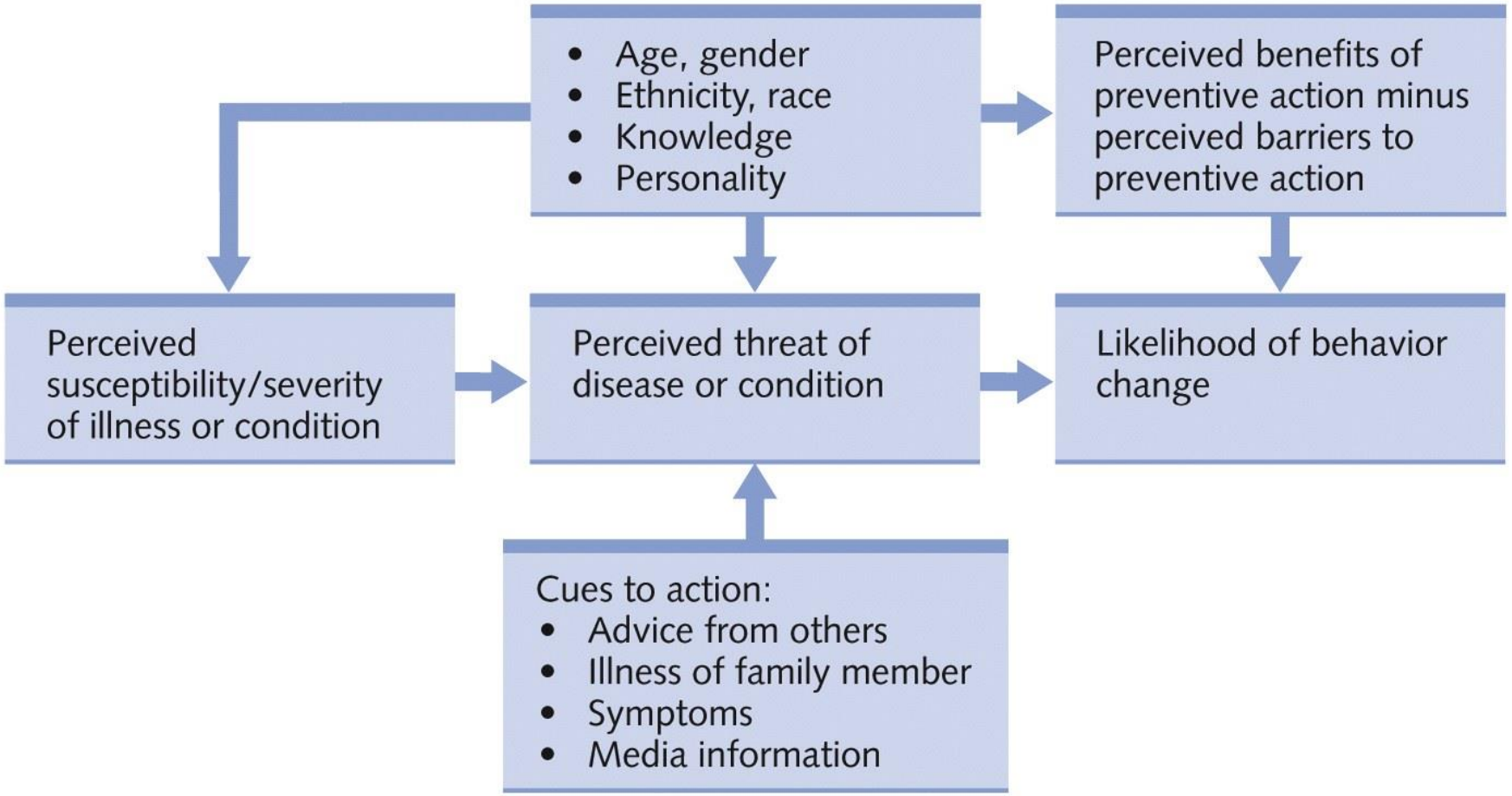
Health Belief Model

- Readiness to Take Action = Perceived Threat
- Readiness to Change Behavior = Perceived Benefit of Taking Action (Threat Reduction)
  - Cost-Benefit Analysis

Perceived Threat	+	Perceived Benefit	=	Likelihood of Acting

The Health Belief Model

(Cognitive model)



Example from text, p. 183

Theory of Reasoned Action

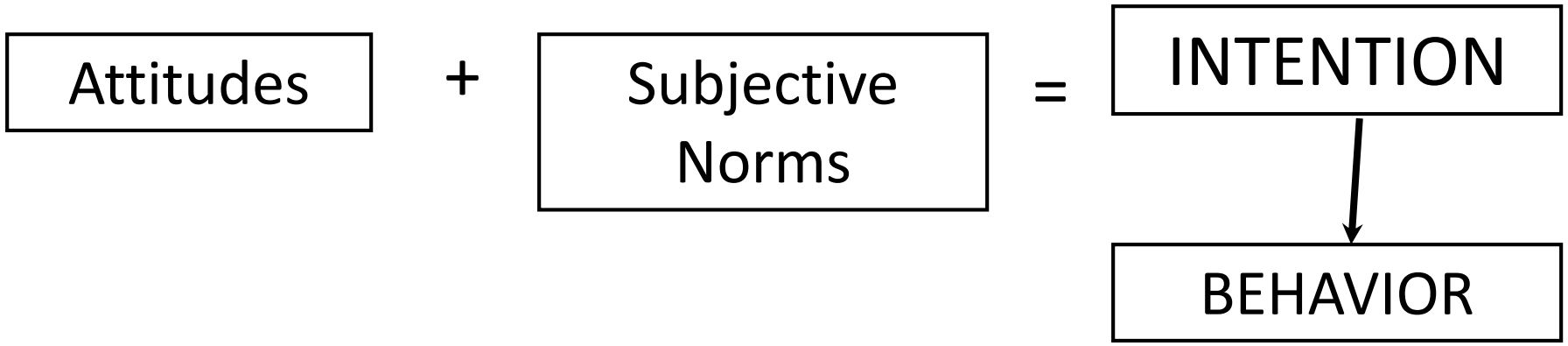
- According to this model, behavior is substantially a reflection of behavioral intentions, the report of the probability that the person will perform the behavior.
- Behavioral intentions reflect attitudes toward performing the behavior (behavior will lead to certain outcomes) and perceived social norms (social pressure to perform or not to perform the behavior).[1]
- Research has shown that behavioral intentions correlate with actual behavior, and that attitudes and social norms predict behavioral intentions.

Theory of Planned Behavior

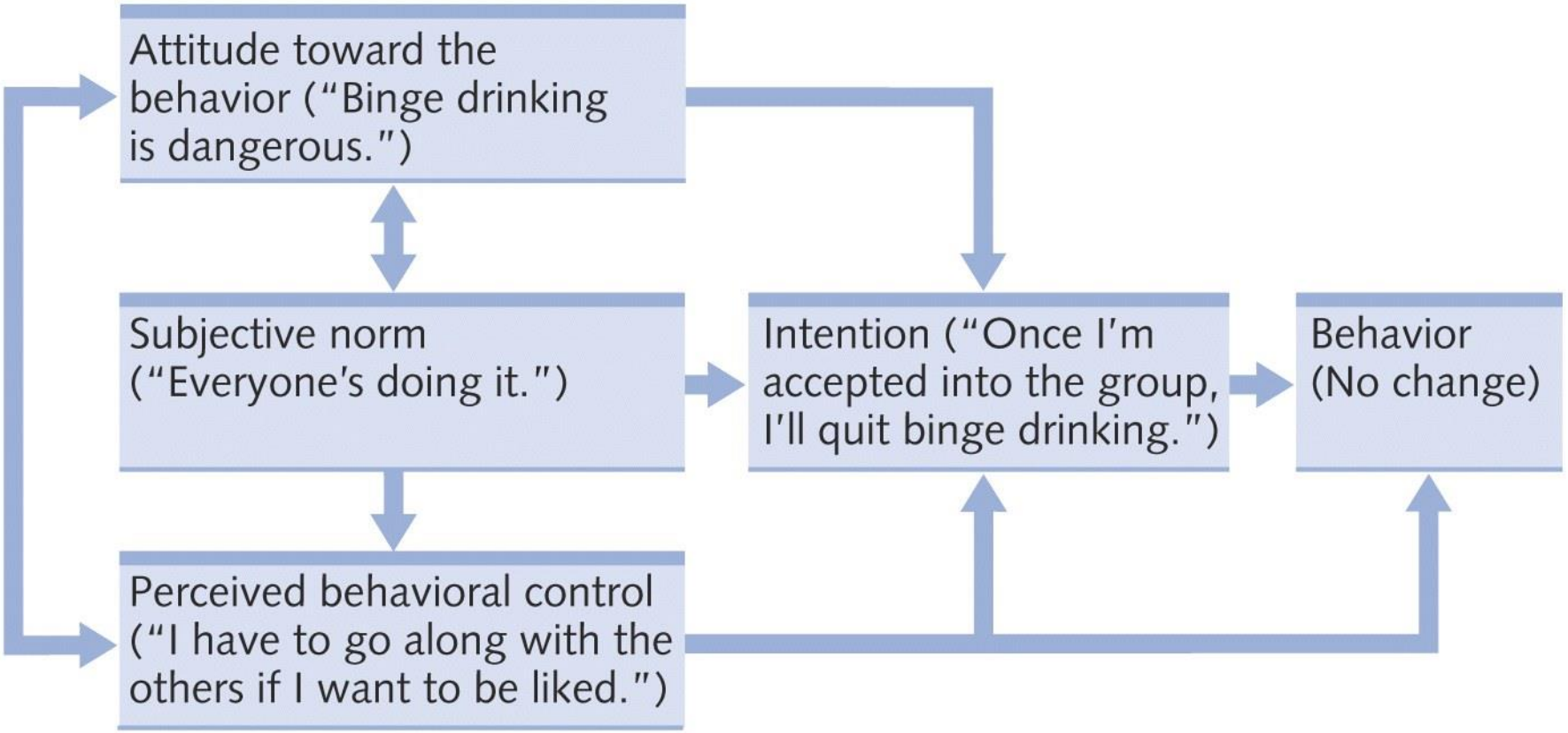
- Like the theory of reasoned action, this theory postulates that behavior reflects behavioral intention.
- However, it includes another determinant of intention beyond attitude toward the behavior and subjective norm.
- This additional concept is perceived behavioral control, which refers to the perceived ease or difficulty of performing the behavior and reflects past experiences and anticipated obstacles.

Theory of Planned Behavior

- Azjen and Fishbein (1980)
- Behavioral INTENTION is the best predictor of behavior (!)



Theory of Planned Behavior (Social cognition model)



Attitude change Approaches

Attitude change Approachesand health behavior

- information appeals:
  - vivid communications
  - expert communicator
  - strong arguments at beginning and end
  - short, clear, direct messages
  - messages should state conclusions explicitly
  - caution with extreme messages
  - depending on the audience, communication should include favorable and/or non-favorable points
- fear appeals
- message framing

- **<u>Caveats to Changing Health Behaviors</u>:**
  - attitudinal approaches not very successful for explaining spontaneous or long-term behavior change
  - communications can provoke irrational, defensive reactions
  - some people hold irrational beliefs about health
  - thinking about disease may produce a negative mood
  - attitude change may not alter behavior and maintain behavior change

Cognitive-Behavioral Interventions

- Methods are usually used in combination (a multimodal approach)
- Should be tailored to each person
- Too many interventions can overwhelm a person

Cognitive-Behavioral Approaches to Health Behavior Change

- - Cognitive-Behavior Therapy (CBT)
- - self-monitoring
- - classical conditioning
- - operant conditioning
- - modeling
- - stimulus control
- Stress management

Cognitive-Behavioral Approaches

Self-monitoring

- Define target behavior
- Record and chart
- Continual process with revision

Cognitive-Behavioral Approaches

Conditioning methods:

- Classical (Pavlovian) Conditioning Interventions
  - Antabuse
  - Counterconditioning (cancer nausea)
- Operant Conditioning Interventions
  - Modify consequences of a behavior (e.g., seat belt buzzer)
  - Shaping
  - Using rewards (individually or in a group setting, e.g., token economy)

Cognitive-Behavioral Approaches

- **The self-control of behavior:**
  - self-reinforcement
  - contingency contracting
  - cognitive restructuring
  - behavioral assignments
  - social skills training
  - motivational interviewing
  - meditation
  - relaxation training

Cognitive-Behavioral Approaches

Modeling

- Observational learning
  - Preparing a child for an operation
  - Taking a yoga class
  - Watching a video on breast self-examination
  - Going to A.A.
  - Most successful when it shows the realistic difficulties that people encounter in making changes

Cognitive-Behavioral Approaches

Stimulus control

- Modifying antecedents of a behavior
  - Poor health habits often tied to events, people, places, or things in the environment (called discriminative stimuli -- DS)
  - Examples (golden arches, …)
  - These DS need to be identified and then reduced

Cognitive-Behavioral Approaches

- **The Self-Control of Behavior**
  - Self-reinforcement
    - Positive self-reward (adds a desired factor)
    - Negative self-reward (removes an aversive factor)
    - Positive self-punishment (adds an unpleasant stimulus)
    - Negative self-punishment (removes a pleasant stimulus)
- **Contingency Contracting**
- Creating contract with another regarding consequences of one's behavior
  - Contract regarding rewards and punishments with another individual
- "Every time I do _____, I instruct my friend to _____"

Cognitive-Behavioral Approaches

- **Covert Self Control**
  - Cognitive restructuring: Train people to recognize and modify internal dialogue
  - modifying internal monologues
    - Self-talk: adaptive ways to talk to oneself in stressful situations
    - "I'm weak, I can't control my smoking urges…"
    - This statement would be targeted for modification
- **Behavioral Assignments**
- **Skills Training:**
- Learn skills to change behavior
  - progressive muscle relaxation
  - assertiveness training
  - stress management
  - nutrition education
  - systematic homework assignments
  - Social-Skills

Social Cognitive Theory

- According to this model, behavior is determined by expectations and incentives. Expectations include:
  1) Beliefs about how environmental events are connected
  2) Opinions about the consequences of one's own actions
  3) Expectations about one's own ability to perform the behavior needed to influence outcomes (self-efficacy)
- Incentive is the perceived value of a outcome, such as improved health status or approval of others.[1,2]

- **Self-Efficacy and Health Behaviors**

Self-Efficacy – The belief that one is able to control one's practice of a particular behavior

- **Self-Determination Theory**

Stage Theories

- Transtheoretical Model
  - People pass through 5 stages in altering health behavior
    - Stage 1: Precontemplation
    - Stage 2: Contemplation
    - Stage 3: Preparation
    - Stage 4: Action
    - Stage 5: Maintenance
    - Stage 6: Termination

Stage Theories

- Stage theories provide a “recipe” for ideal behavior change, but…
  - hard to put everyone in a discrete “stage”; probably a more continuous and non-linear process
- Enable interventions to be matched to the specific needs of a person who is “stuck” at a particular stage

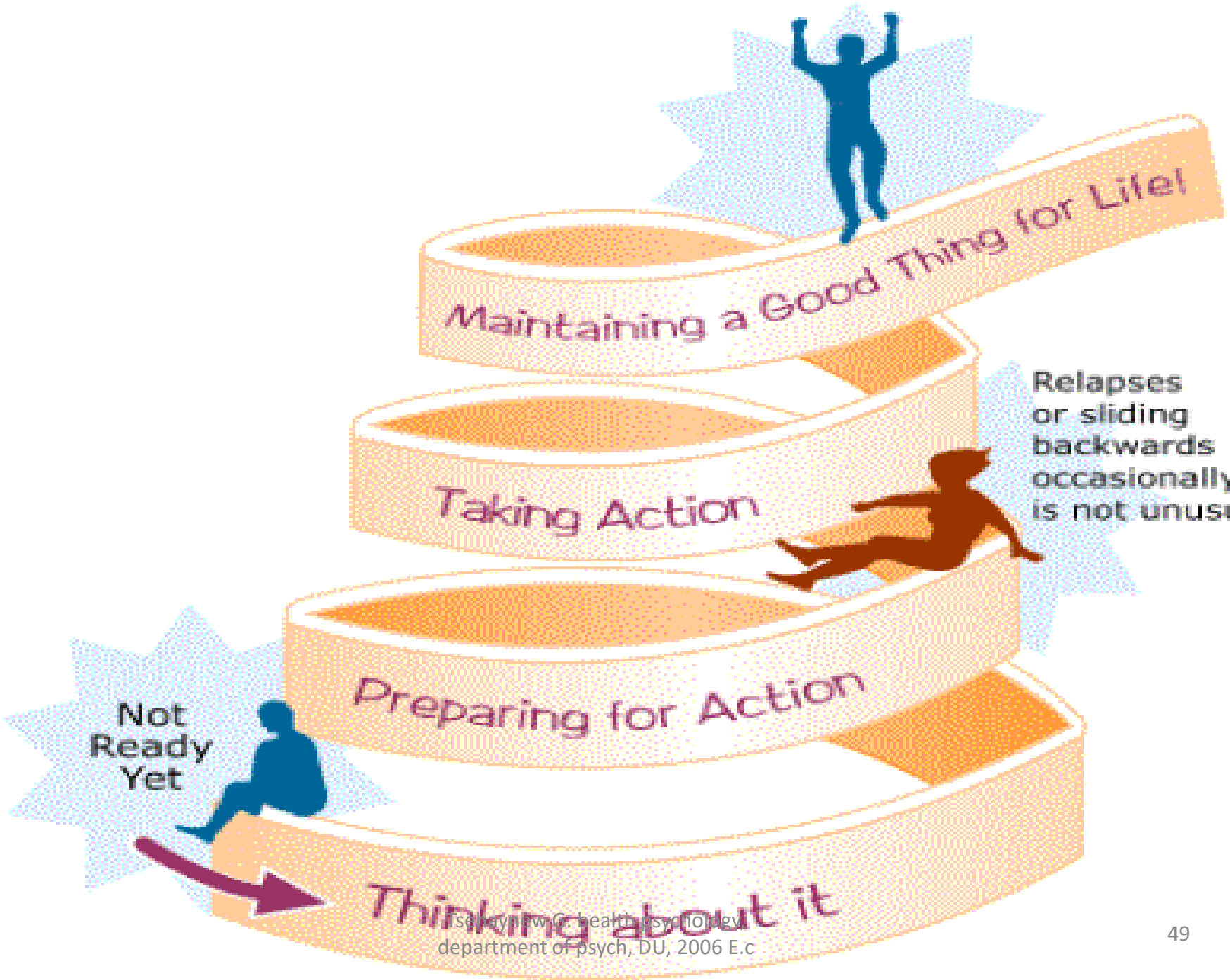
Transtheoretical Model of Behavior Change

- Multi-component Stage (Transtheoretical) Model
  - This model posits that there are discrete steps (stages) in the process of all intentional behavioral change, and that different learning and motivational processes are needed for each stage.
- Using the stage model of change:

  - particular interventions may be more valuable during one stage than another

  - at each stage, particular types of interventions may be warranted

  - studies have shown mixed success


Maintaining a Good Thing for Life!
Taking Action
Relapses or sliding backwards occasionally is not unusual
Preparing for Action
Not Ready Yet
Thinking about it

Transtheoretical Model of Behavior Change

- Stage of Behavior Change: **Precontemplation**
  - In this stage, the person is not aware of a problem
  - Family and friends may be aware and push for treatment
  - The individual often reverts to old behaviors if treatment does occur

Transtheoretical Model of Behavior Change

- Stage of Behavior Change: **Contemplation**
  - Aware that a problem exists
  - No commitment to take action
  - Weighing the pros and cons of action
  - If a decision for change is made, then there are favorable expectations

Transtheoretical Model of Behavior Change

- Stage of Behavior Change: **Preparation**
  - Intention to change behavior has been made
  - May not have begun to change behavior or may have modified the target behavior somewhat
    - smoking fewer cigarettes each day

Transtheoretical Model of Behavior Change

- Stages of Behavior Change: **Action**
  - Commitment of time and energy
  - Stopping the behavior
  - Modifying lifestyle and environment to get rid of cues associated with the behavior

Transtheoretical Model of Behavior Change

- Stages of Behavior Change: **Maintenance**
  - Works toward preventing relapse
  - Consolidating gains that have been made
  - Has been free of the addictive behavior for more than 6 months
  - Relapse may occur, causes the cycle to repeat before the behavior is successfully eliminated
  - Conceptualized as a spiral

Changing Health Behaviors Through Social Engineering

- **Social Engineering:** Modifying the environment in ways that affect people's ability to practice a particular health behavior:

  Social or lifestyle change through legislation

  - banning certain drugs such as heroin and cocaine
  - requiring vaccinations for school entry
  - using safety containers for medications
  - lowering speed limits
  - raising the drinking age

- Called Passive Methods because they don't require an individual to take personal action
  - Example: water purification is done through social engineering, not individual effort
  - Example: restricting tobacco to certain age groups

Social Engineering

- Changing the environment to change our behaviors
  - Automatic seat belts and air bags; lowering speed limit
  - Design change for baby walkers
  - Elimination of “Joe Camel” ads
  - Requiring immunizations for school entry
  - Worksite wellness programs
    - on-the-job health promotion programs
    - structuring the environment (on-site gym, banning smoking, etc.)

Relapse

- Why do people relapse?
- BioPsychoSocial factors (e.g., with smoking)
  - Bio: Withdrawal, Genetics, Wt. Gain
  - Psych: Boredom, stress, anger
  - Social: Conflicts, lack of social support, social cues (e.g., going to a bar)
- Relapse Prevention
  - Need to control the biopsychosocial factors, especially developing coping techniques for managing high-risk situations
  - Coping with a "slip"
  - Integrate behavior change into a generally healthy lifestyle

Relapse

- **Reasons for relapse?**
  - More likely when people are depressed, anxious, under stress
  - Particular problem with addictive disorders of alcoholism, smoking, drug addiction, obesity (rates between 50% and 90%)
  - Social relationship break up
  - Abstinence violation effect – feeling loss of control with one lapse in vigilance
- **consequences of relapse**
  - Anger
  - Resentment
  - Disappointment
  - Frustration
- **reducing relapse**
  - relapse prevention
  - lifestyle rebalancing

Choosing the Best Model

  - Research indicates that the most effective educational programs are based upon theoretical approaches derived from the behavioral change models
  - Ideally, status assessment of the target population involving several of the model constructs should occur before constructing the intervention, although most program designers are unable to conduct extensive pretesting.
- Program designers can consider the fundamental concepts of the models and the research on their effectiveness, and then design interventions based on their best judgement.
- This process can involve several steps including:

Program Design Issues

- Specifying the specific target audience and the context in which the intervention will be administered
- Identifying the desired behavioral outcome of the educational program.
- Examine how the constructs of the various models are related to the expected outcome and the target audience.
- Develop the intervention strategies and program based on the findings.

Venues for Health Habit Modification

- private therapist's office
- health practitioner's office
- family
- managed care facilities
- self-help groups
- schools
- work-site interventions
- community-based interventions

- mass media
- Telephone
- The Internet

Venues for Health Habit Modification: The Mass Media

- Benefit – large numbers of individuals can be reached at once
- Generally modest attitude change, but less long-term behavior change occur
- Most effective in alerting people to health risks that they would not otherwise have known about
- Can have a cumulative effect on changing values associated with health practices

Venues for Health Habit Modification: Conclusions

- Important to seek methods that:
  - Reach the most people
  - Are the least expensive
- Challenge will be integrating knowledge
  - of how people change their health habits
  - with macro-level polices of federal, state, and private health care agencies
- Evidence for effective interventions
  - Must be translated into practice

Health Behavior Interventions

Intervention Level

- Individual
- Small Group
- Organization
- Community

Processes of Change Definition / Interventions

- **Consciousness Raising:** Efforts by the individual to seek new information and to gain understanding and feed-back about the problem behavior / observations, confrontations, interpretations, bibliotherapy.
- **Counterconditioning:** Substitution of alternatives for the problem behavior / relaxation, desensitization, assertion, positive self-statements.
- **Dramatic Relief**: Experiencing and expressing feelings about the problem behavior and potential solutions / psychodrama, grieving losses, role playing.

Processes of Change Definition / Interventions

- **Environmental Reevaluation:** Consideration and assessment of how the problem behavior affects the physical and social environment / empathy training, documentaries.

- **Helping Relationships:** Trusting, accepting, and utilizing the support of caring others during attempts to change the problem behavior.

- **Reinforcement Management:** Rewarding oneself or being rewarded by others for making changes contingency contracts, overt and covert reinforcement, self-reward.

Processes of Change Definition / Interventions

- **Self-Liberation:** Choice and commitment to change the problem behavior, including belief in the ability to change / decision-making therapy, New Year's resolutions, logotherapy techniques, commitment enhancing techniques.
- **Self-Reevaluation:** Emotional and cognitive reappraisal of values by the individual with respect to the problem behavior / value clarification, imagery, corrective emotional experience.
- **Social Liberation**: Awareness, availability, and acceptance by the individual of alternative, problem-free lifestyles in society / empowering, policy interventions.

Stimulus Control: Control of situations and other causes which trigger the problem behavior / adding stimuli that encourage alternative behaviors, restructuring the environment, avoiding high risk cues, fading techniques.

Interventions

- **Surveillance:** Describes and monitors health events through ongoing and systematic collection, analysis, and interpretation of health data for the purpose of planning, implementing, and evaluating public health interventions. [Adapted from MMWR, 1988]
- **Outreach:** Locates populations-of- interest or populations-at-risk and provides information about the nature of the concern, what can be done about it, and how services can be obtained.
- **Screening:** Identifies individuals with unrecognized health risk factors or asymptomatic disease conditions in populations.
- **Case management** Optimizes self-care capabilities of individuals and families and the capacity of systems and communities to coordinate and provide services.

Interventions

- Health teaching: Communicates facts, ideas and skills that change knowledge, attitudes, values, beliefs, behaviors, and practices of individuals, families, systems, and/or communities.
- Counseling: Establishes an interpersonal relationship with a community, a system, family or individual intended to increase or enhance their capacity for self-care and coping. Counseling engages the community, a system, family or individual at an emotional level.
- Collaboration: Commits two or more persons or organizations to achieve a common goal through enhancing the capacity of one or more of the members to promote and protect health. [adapted from Henneman, Lee, and Cohen "Collaboration: A Concept Analysis" in J. Advanced Nursing Vol 21 1995: 103-109]

Interventions

- **Community organizing**: Helps community groups to identify common problems or goals, mobilize resources, and develop and implement strategies for raching the goals they collectively have set. [adapted from Minkler, M (ed) *Community Organizing and Community Building for Health* (New Brunswick, NJ: Rutgers Univ. Press) 1997; 30]
- **Coalition building:** Promotes and develops alliances among organizations or constituencies for a common purpose. It builds linkages, solves problems, and/or enhances local leadership to address health concerns.
- **Advocacy:** Pleads someone's cause or act on someone's behalf, with a focus on developing the community, system, individual or family's capacity to plead their own cause or act on their own behalf.

Interventions

- **Social marketing:** Utilizes commercial marketing principles and technologies for programs designed to influence the knowledge, attitudes, values, beliefs, behaviors, and practices of the population-of- interest.
- **Policy development:** Places health issues on decision-makers' agendas, acquires a plan of resolution, and determines needed resources. Policy development results in laws, rules and regulation, ordinances, and policies.
- **Policy enforcement:** Compels others to comply with the laws, rules, regulations, ordinances and policies created in conjunction with policy development.

Community and Media Based Knowledge Dissemination

- The Media
  - Good programming can:
    - Counter popular misconceptions about adolescents
    - Reveal the discrimination and abuse young people face
    - Highlight the contributions they make to their communities
  - Different types of theatre and entertainment have also been used to break the silence surrounding HIV/AIDS
    - street theatre
    - weekly television drama

Provide Life Skills

- Young people cannot change their behavior by knowledge alone…
- Incorporate Life skills:
  - Negotiation
  - Conflict resolution
  - Critical thinking
  - Decision-making
  - Communication

Create Safe and Supportive Environments

- Safe on Campus programs
- Personal peer educator appointments
- Campaigns that promote equality between men and women and denounce all forms of violence against women, children and adolescents

Strengthen Partnerships

- Partners must include:
  - Community leaders
  - Nongovernmental and civil organizations
  - Faith-based groups
  - Research institutions
  - Peers
  - Government
  - Private sector businesses