

# ECOLOGICAL MODELS OF HEALTH BEHAVIOR



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Gero 820 Principles and Practices  
of Health Promotion

# KEY POINTS

## History

- Health Promotion

## Core principles

- Multiple levels of influence
- Interaction across different levels
- Multi-level interventions

## Applications

- Physical activity behavior

Strengths + Limitations + Challenges

# Ecological models in research and practice

Behavior has multiple levels of influences, often including intrapersonal, interpersonal, organizational, community, physical environmental, and policy

Combination of environmental, policy, social, and individual intervention strategies

Changing behaviors that reduce serious and prevalent health problems.

# Core principles of ecological models of health behavior

- Multiple influences on specific health behaviors
- Influences on behaviors interact across these different levels
- Ecological models should be behavior-specific
- Multi-level interventions should be most effective in changing behavior.

# BACKGROUND, HISTORY, AND PRINCIPLES OF ECOLOGICAL MODELS

- *Ecology*: interrelations between organisms and their environments.
- Behavioral sciences and public health: nature of people's transactions with their environments.
- Incorporate constructs from models that focus on psychological, social, and organizational levels.
- Ottawa Charter for Health Promotion: individual-level and environmental/policy-level interventions to achieve substantial changes in health behaviors.
- Authoritative documents that guide public health programs nationally and internationally.

# *Historical and Conceptual Background of Ecological Models*

<i>Models designed to explain behavior</i>	
Kurt Lewin (1951)	"Ecological psychology"
Roger Barker (1968)	Environmental Psychology
Rudolph Moos (1980)	Social Ecology
Urie Bronfenbrenner (1979)	Systems Theory
Thomas Glass and Matthew McAtee (2006)	Ecosocial Model

<i>Models designed to guide behavioral interventions</i>	
B. F. Skinner (1953)	Operant Learning Theory
Albert Bandura (1986)	Social Learning Social Cognitive Theories
Kenneth McLeroy and others (1988)	Ecological Model of Health Behavior
Daniel Stokols (1992, 2003)	Social Ecology Model for Health Promotion
Deborah Cohen and others (2000)	Structural-Ecological Model
Brian Flay and Genes and J. Petraitis (1994)	Theory of Triadic Influence
Karen Glanz and others (2005)	Model of Community Food Environments
Edwin Fisher and others (2005)	Resources and Skills for Self-Management Mode

# *Principles of Ecological Perspectives on Health Behavior Change*

- *Multiple levels of factors influence health behaviours.*
- *Influences interact across levels.*
- *Multi-level interventions should be most effective in changing behaviour.*
- *Ecological models are most powerful when they are behaviour-specific.*

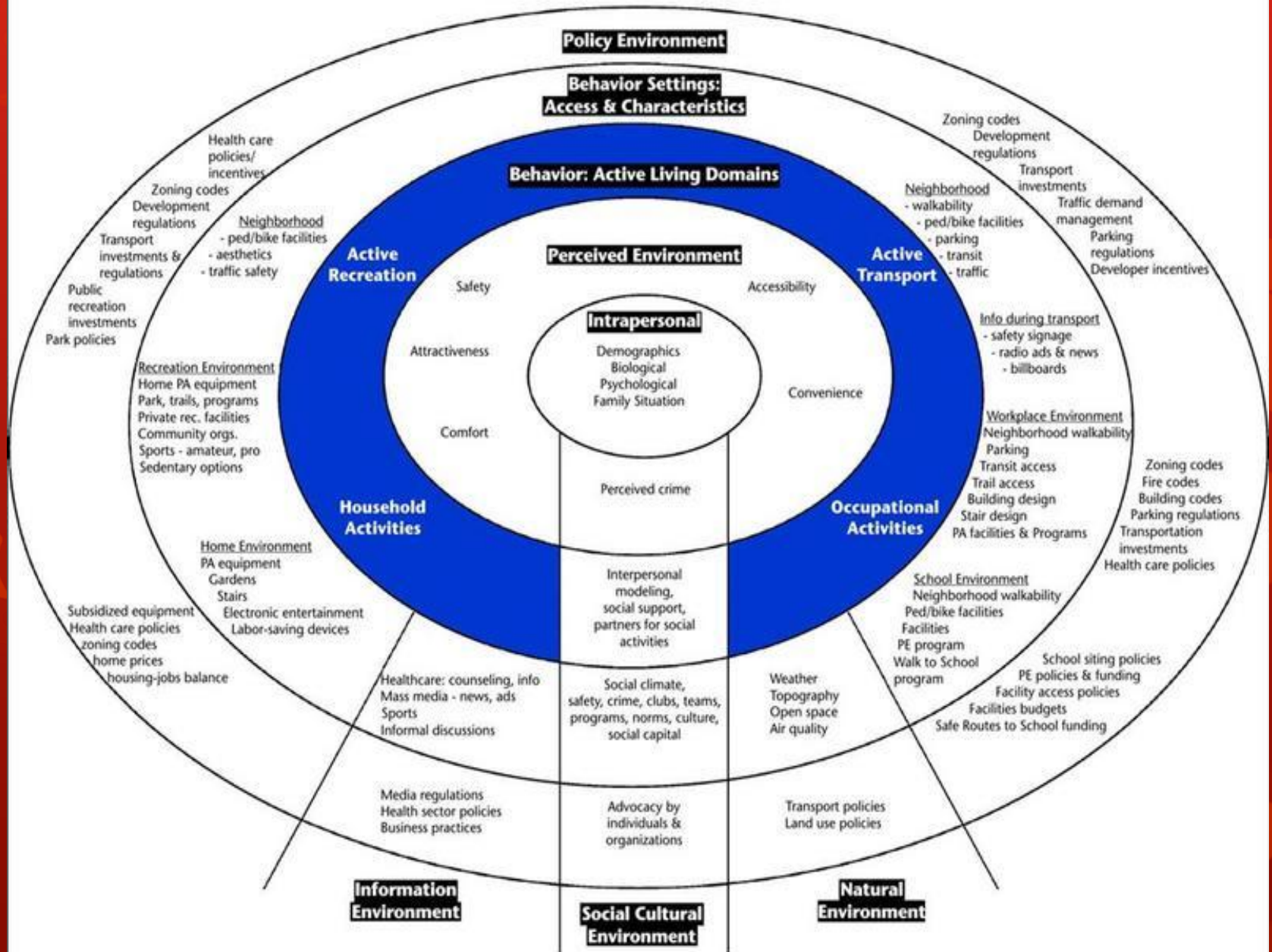
# APPLICATION OF ECOLOGICAL MODELS TO HEALTH BEHAVIOR

## *Physical Activity*

- Giles-Corti et al.(2005) + Saelens et al. (2003): different influences on recreational versus transportation physical activity.
- Owen et al. (2004): walking for different purposes.
- Matsudo et al. (2004): ecological model to guide community interventions in a Latin American context
- Humpel, Owen, and Leslie (2002): access to physical activity facilities, and the aesthetic qualities of those places.
- Saelens, Sallis, and Frank (2003): “walkable neighborhoods.”



# Ecological Model of Four Domains of Active Living



...It is now time to examine correlates  
and interactions across multiple  
levels



# ***Application to Health Behaviour Interventions: Tobacco Control***



- Genetic factors
- Psychological conditioning
- Social level
- Cigarettes are one of the most heavily marketed products in the United States: \$13.1 billion in advertising and marketing—over \$35 million a day (American Lung Association, 2007)!!!!

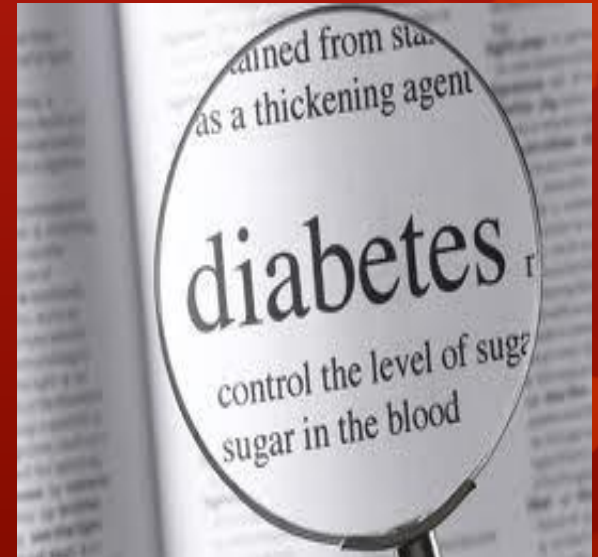
# ***Application to Health Behavior Interventions: Tobacco Control***

- Individual-Level Interventions for Smoking Cessation.
- Organizational, Community, and Policy Approaches.
- Importance of Multiple Intervention Approaches.
- Comprehensive Interventions at the National Level.

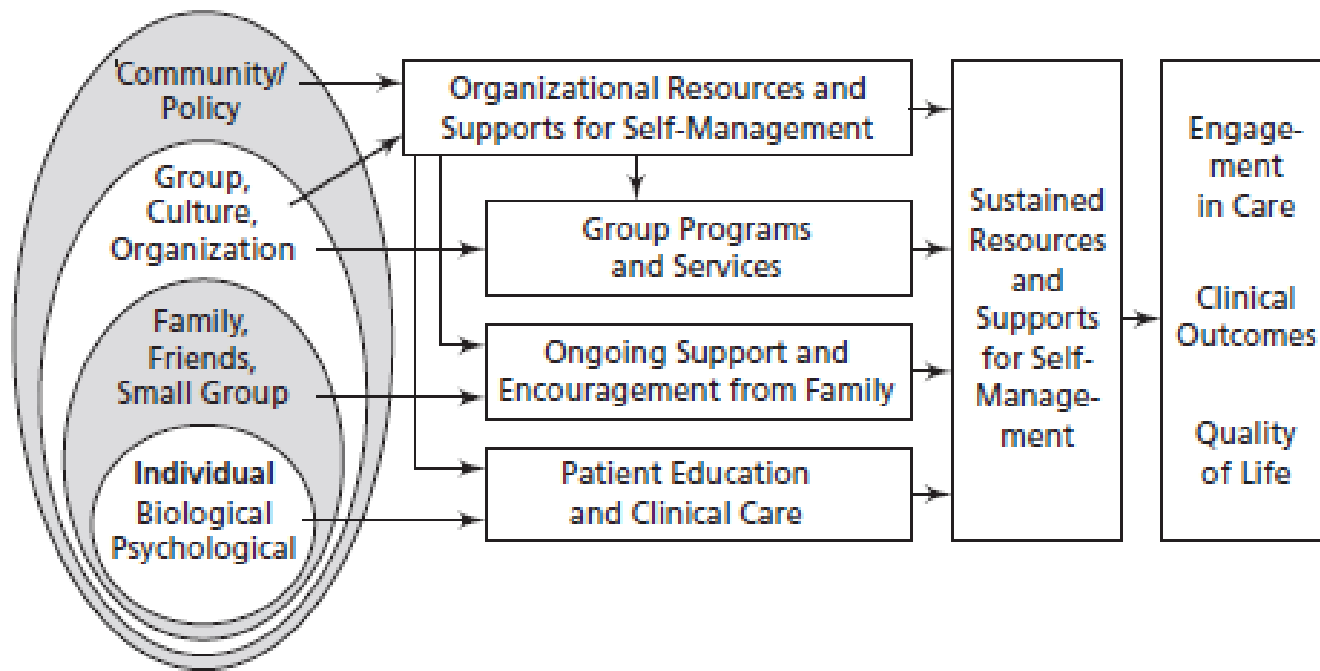


# ***Application to Health Interventions: Diabetes Self- Management***

- Diabetes is a major cause of mortality through cardiovascular and other diseases.
- The long-term success of “self-management” depends on the contexts that surround the individual.



# Application to Health Interventions: Diabetes Self-Management



**FIGURE 20.2.** Illustrative Model of Relationships among Organizational Factors and Supports for Diabetes Self-Management. (Reprinted with permission.)



# ***Application to Health Interventions: Diabetes Self-Management***

- ***Ongoing Follow-Up and Support.***
- ***Continuity of Quality Clinical Care.***
- ***Access to Resources in Daily Life.***



# CRITICAL EXAMINATION OF ECOLOGICAL MODELS OF HEALTH BEHAVIOR

- Policy and environmental changes are expected to affect virtually entire populations, in contrast to interventions that reach only individuals who choose to participate (Glanz and Mullis, 1988).
- Lack of specificity about the most important hypothesized influences.
- Lack of information about how the broader levels of influence operate or how variables interact across levels.
- Major challenge: to develop more sophisticated operational models that lead to testable hypotheses and useful guidance for interventions



# ***Are the Principles of Multi-Level Influences and Interactions Across Levels Supported?***

- Giles-Corti and Donovan (2002): compared the ability of psychological, social, and physical environment variables to explain exercise
- Rhodes and colleagues (2006): tested an interaction based on the hypothesis that mixed land use would make it easier for people to follow through on their intentions.
- Leatherdale and others (2006): study of youth smoking .

# Challenges

- Complex interactions of personal, social, and community characteristics are difficult to manipulate experimentally.
- Substantial demands on investigators and program evaluators
- Multi-level studies are the only way to generate knowledge that will lead to effective multi-level interventions
- Public health professionals must become more skilled in advocacy and political change.

# Addressing Diversity and Inequalities in Health Promotion: The implications of Intersectional Theory

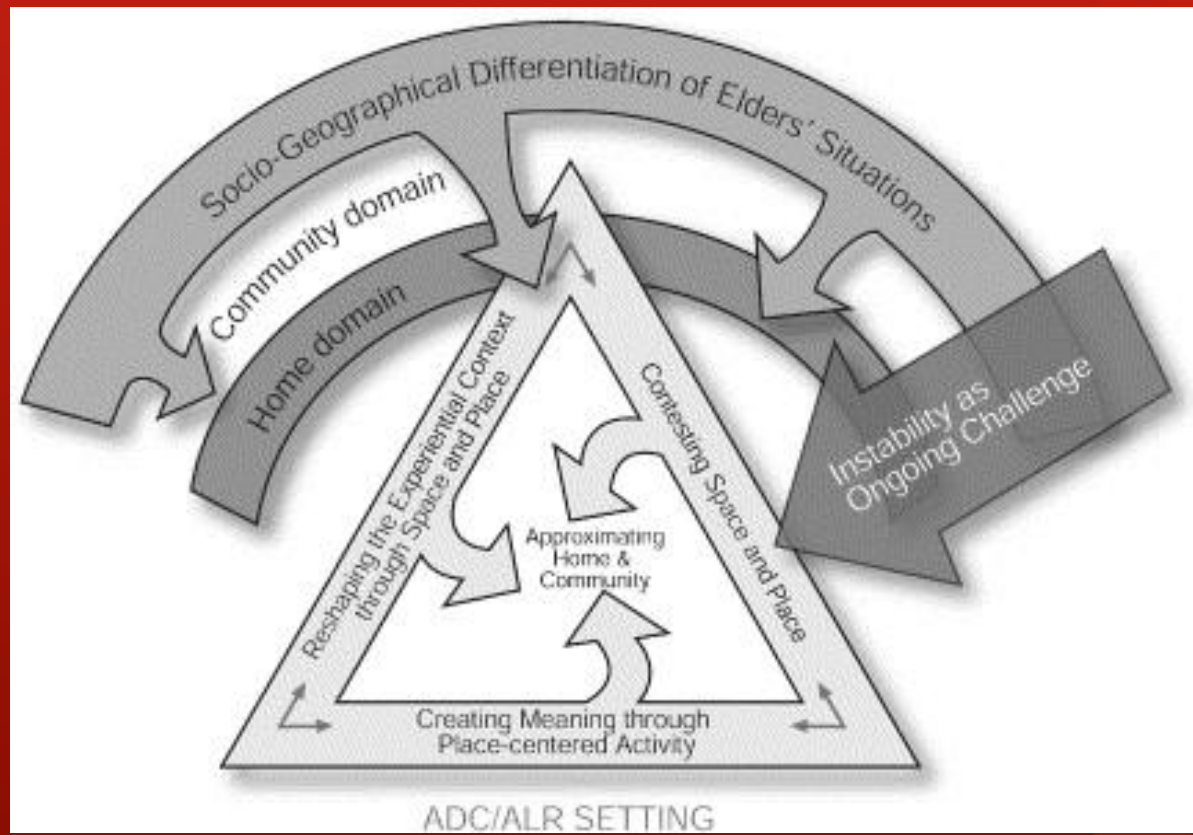
- The case of Gender: poverty; poor health status; violence; immigrant and refugee status; aboriginal.
- Potential Contributions: power relations in society.

# *Implications for Gerontology*



# *Implications for Gerontology*

## *Aging in Place*



# *Implications for Gerontology*

- Satariano, W. (2006). *Epidemiology of Aging: An Ecological Approach*. Jones & Bartlett Learning: Toronto.
- Berkman, L.F. (2009). Social epidemiology: Social determinants of health in the United States: Are we losing ground? *Ann Rev*,30,27-41
- Bookman, A. (2008). Innovative Models of Ageing in Place: Transforming our Communities for an Aging Population, *Community Work and Family*, 11, 419.
- Black, K. (2008). Health and Aging-in-Place: Implications for Community Practice“. *Journal of Community Practice*, 16(1), 79-95.

# *Implications for Gerontology*

Ecological models can enhance human dignity by moving beyond explanations that hold individuals responsible for harmful behaviors.









# References

- Berkman, L.F. (2009). Social epidemiology: Social determinants of health in the United States: Are we losing ground? *Ann Rev*,30,27-41
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- Satariano, W. (2006). *Epidemiology of Aging: An Ecological Approach*. Jones & Bartlett Learning: Toronto.