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*Health Behaviors, Social Learning,
and Collective Action*

Michael J. McQuestion, PhD, MPH
Johns Hopkins University

- After listening to, viewing, and studying the lecture materials in this course, you will be able to do the following:
 - Contrast and compare three individual health behavioral models
 - Understand social learning theory and its implications for immunization behaviors
 - Apply the principles of collective action to improve immunization program performance



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Section A

Health Behavioral Models

Immunization as Behavioral Choice

- What makes someone decide to seek immunizations?
 - What she knows and believes
 - Her other health behaviors
 - Her material resources
 - Social forces
- What can be done to maximize the probability of immunization choice?

Individual Health Behavioral Models

- Many analytical models have been developed to explain individual health behaviors
- In this section, we will discuss three of them:
 - Health belief model
 - Health behavioral model
 - Household health production model

- U.S. health researchers (Becker 1974, Rosenstock 1974) developed the *Health Belief Model* in an attempt to explain why many people do not accept preventive health services, even when easily accessible
- The model incorporates four key elements:
 - Perceived susceptibility to the disease
 - Perceived seriousness of the disease
 - Perceived benefits, barriers to taking action
 - Cues that motivate action

- **Susceptibility:** the individual's estimate of her probability of getting the disease
- **Seriousness:** the individual's estimate of how bad it would be to get the disease
- **Benefits, barriers:** the individual's estimate of how effective the preventive treatment would be and how much it will cost to get it
- **Cues:** mass media message, conversation or other external factor that stimulates the individual to get the treatment

- The model further assumes that the individual's **social and demographic characteristics** modify her perceptions and personal sense of agency
 - Ascribed characteristics
 - Personality, class, peer, and reference group composition

Example: Mexico City Campaign

- Perez-Cuevas et al (1999) measured immunization behaviors among urban Mexican mothers during a mass campaign
- They measured four outcomes:
 - Knowledge about the campaign
 - Comprehension of media and promotional messages
 - Motivation to seek immunizations
 - Opinions about mass media messages
- **Hypothesis:** mothers who knew about and understood the purposes of the campaigns would most likely participate in them of their own volition

Example: Mexico City Campaign

- Findings
 - Aware mothers were more likely to have gotten their children immunized during the campaign, on their own
 - Unaware mothers who participated more likely did so due to personal invitations (cues)
 - High socioeconomic status mothers were more aware but less likely to have participated in the campaign
 - Aware mothers needing cues to participate were of significantly lower socioeconomic status

Example: Mexico City Campaign

■ Conclusions

- Most participating mothers (63%) responded to the mass media messages
- Awareness accounted for a 14% increase in participation, however, participation was also high among the unaware
 - ▶ “Momentum effect” of previous campaigns or social effects?

■ Comment

- This study illustrates the importance of cues and social psychological variables but it did not measure perceptions of vulnerability, severity or cost-benefit

- Andersen (1968) developed this most widely used health services utilization model
- It incorporates three sets of determinants:
 - Predisposing characteristics
 - Enabling characteristics
 - Need characteristics
- The determinants are sequential
predisposing -> enabling -> need -> action

- Predisposing characteristics
 - Demographic factors (age, sex) cause differential illness risks
 - Social structural factors (education, occupation) condition lifestyles and health behaviors
 - Health benefits (beliefs in treatment efficacy) affect care-seeking behavior

- Enabling characteristics
 - Although predisposed, an individual must be able to perform the behavior
 - ▶ Family wealth, constraints
 - ▶ Community resources
- Need characteristics
 - Given predisposition and ability to act, the individual must feel the need
 - ▶ Perceived (subjective assessment)
 - ▶ Evaluated (clinical diagnosis)

Example: Inner-City Baltimore

- Strobino et al (1996) used a related health behavioral model (*Protection Motivation Theory*) to examine parental attitudes and under-immunization in low-income neighborhoods of Baltimore
- They interviewed mothers and caretakers and matched the responses to provider records

■ Findings

- Low vaccine coverage: only 54% of children were up-to-date at age 24 months
- Caretakers overwhelmingly aware, supportive of immunizations
- High sense of vulnerability, severity
- Demographic, access, social support more decisive factors in immunization compliance than health beliefs

- The preceding health belief and health behavior models are similar in that they:
 - Emphasize psychological variables
 - Treat anticipation of a negative outcome as the motivation for health behaviors
 - Assume that individuals make cost-benefit calculations before acting
- The next model explicitly treats immunization and other health behaviors as variables in a larger economic system



Household Health Production

- In this model (Grossman 1972), parents are assumed to produce health the way a firm produces goods or services
- They operate independently and rationally
- They choose their health behaviors to maximize overall household utility, given resource and time constraints
- The household health production function combines information, health behaviors, food and other inputs conditional on time, resource, other constraints

Household Health Production

- A parent is an efficient producer to the extent she maximizes outputs (healthy household members) and minimizes costs
 - She chooses the correct inputs
 - She optimally combines the inputs
- A household's derived demand for immunization or other health behaviors could increase because the cost of those behaviors fell or because their quality improved
- The lower the out-of-pocket, opportunity, information, and psychic costs, the more likely parents will perform a given health behavior
- A good immunization program increases household health production by lowering these

Pros and Cons of the HHP Model

Pros

- Household the primary producer
- Clear behavioral assumptions: Utility maximization, rationality
- Methodologically tractable, easy to estimate

Cons

- Assumes actors are independent
- Preferences are fixed
- Assumes all choices are based on cost-benefit calculations

Critiques of Individual Models

- Health belief, health behavioral, household health production, and other models not mentioned here all presume individuals act independently in choosing health behaviors
- From an empirical viewpoint, none of these models explains much of the observed variance in health behaviors within and across groups

- Bunton et al (1991) fault these models for their practical bias: overly focused on the effects of outside intervention; tied to top-down behavioral change
- They call for more emphasis on how communities themselves generate change or adapt to outside interventions
- In the following sections, we consider models that incorporate social factors



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Section B

Social Learning (Cognitive) Theory

Social Learning Theory



- In all human behavior, there is continuous *reciprocal interaction* between cognitive, environmental, and behavioral determinants (Bandura, 1977)
- People can influence their destiny, but there are limits to their self-direction
 - Cognitive skills
 - Physical constraints
 - Available role models

Three Key Psychological Processes of Social Learning

- **Vicariousness:** learning by observing others and evaluating the consequences of their actions (observational learning)
- **Symbolism:** processing and preserving experiences in representational forms (reflective thought)
- **Self-regulation:** anticipatory thought, producing consequences for one's own actions

- Allows people to acquire large, complex behavioral repertoires without having to learn them through trial and error
- Main mechanism is modeling:
 - The observed behaviors of individuals we most closely attend, and the consequences of their behaviors, most influence what we learn
 - Largely a cognitive process

Three Steps of Modeling

- 1.** Observers acquire symbolic representations of the modeled behavior
 - Enduring, retrievable images
 - Verbal coding for faster retrieval
 - These memory codes serve as guides for future performances
- 2.** Mental rehearsal allows individuals to visualize themselves performing the behavior
- 3.** Symbolic representation is converted into action
 - Extent of behavior depends on existing skills
 - Initial errors common, practice likely needed

- Modeling is a creative, synthetic process
 - Actors combine aspects of various models into new combinations that differ from the original sources
 - Through **successive modeling**, actors serve as models for subsequent observers; behaviors change
 - This diversity in modeling spawns behavioral innovations

- Modeling is also a mechanism through which innovative ideas and practices diffuse within and across social structures
 - **Symbolic modeling:** via mass media
 - **Direct modeling:** actors observe local adopters through their interpersonal networks
- Reinforcement may be needed before observers adopt the behavior
- Prosocial behaviors diffuse faster than dissocial behaviors

- Actors anticipate the consequences of their own actions
- Actors may arrange environmental inducements for certain performances (the peers they choose, the places they go)
- Social reactions can be positively reinforcing (**extrinsic reinforcement**)
- More often, actors reward themselves for good performances (**contingent self-reward**)
 - Personal standards
 - A motivational function

- This judgmental function includes
 - Personal standards
 - Other criteria
 - ▶ Prevailing norms (conformity)
 - ▶ Social comparisons (peers)
 - ▶ Personal comparison (to one's past performances)
 - ▶ Collective comparison (one's relative contribution to common goals)
- Self-rewarded behavior is more easily maintained than externally-reinforced behavior
 - It increases one's sense of personal agency
 - May lead to a generalizable self-regulation skill

From Self-Regulation to Socialization

- Actors model both the performances of influential others and the personal standards they set
- High personal standards are generally admired and often generate social rewards (vicarious reinforcement of standard-setting behavior)
- Public recognition both rewards the exemplar and helps transmit the standard to others in the group

- Consistency in modeling favors the social transmission of standards
- Actors choose reference groups whose members share similar behavioral norms
 - Their self-evaluations are thus influenced by actual or anticipated reactions of members whose judgments they value
- Actors will likely adhere to contingent self-reward if others in the group do the same

Self-Regulation as Development

- “The principal goal of social development is to transmit general standards of conduct that could serve as guides for self-regulation of behavior in a variety of activities”
— Bandura 1977:138

Reciprocal Determinism

- Personal behavior determines which of many possible environmental influences come into play and how they materialize
- Environmental influences call forth and shape particular behavioral repertoires
- In this two-way regulatory system, both environments and behaviors constantly interact

■ Examples

- A dominant individual can control a conversation
- A labor union can change the relations of production in a firm or industry
- A stimulating class can induce individual students to learn more

■ Implication

- Social learning processes make individual and group action recursive, emergent, auto-correlated, and endogenous to one another

Social Learning Summarized

- By explicitly relating social structure to behavioral change, social learning theory overcomes the main criticism of individual behavioral models leveled by Bunton et al (1991)
- They assert that: “Attitudes, values and beliefs about health are a product of social interaction...[and] the context of behavior...is central to any account of behavioral change.” (Bunton et al 1991:156)

Implications for Immunization

- Harnessing social learning processes to create immunization demand means working with communities, not just individuals
- As social learning proceeds, conditions become increasingly favorable for shifting the immunization equilibrium (reciprocal determinism)
- Provided the outcomes being modeled are favorable, the result should be higher immunization levels



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Section C

Immunization as Collective Action

- This section describes **collective action**, a theory that seeks to explain how self-interested actors sometimes join forces to achieve a **collective good**
- The theory maintains the assumption that agents act rationally to maximize individual utility
- In this section, I draw heavily from the work of two economists, Mancur Olson and Samuel Popkin

- **Public (collective) good (def):** “The achievement of a common goal, or satisfaction of a common interest” (Olson 1965)
- Under certain conditions, actors in a collectivity will provide a public good through collective action

Characteristics of a Public Good

- **Unattainable individually:** it can only be provided collectively
- **Jointness of supply:** available to everyone if available to anyone
- **Non-excludability:** cannot be feasibly withheld from any group member
- Provision is suboptimal unless the marginal costs and benefits are equal for every actor
- If the collective good can be attained at a sufficiently low cost in relation to its benefit, such that one or more actors stand to gain by providing the good themselves, then it presumably will be provided

Why Aren't Public Goods Always Provided?

- **Free-rider problem:** rational, self-interested actors are tempted to consume the good without contributing their fair share
- **Multiple objectives:** heterogeneous actors may not find common cause
- **Conflicts of interest:** some actors may have vested interests in the status quo
- **Incomplete information:** inability to gauge the chances of success a priori

Other Collective Action Determinants

- **Size:** smaller is better
 - Individual contributions more noticeable
 - Each individual's contribution more important
- **Group heterogeneity:** differential interests in achieving the goal make mobilization more likely
- **Inequality:** a few powerful actors can be exploited by more numerous weak actors

- To induce participation, tangible rewards not central to the collective action may be given only to participants
 - A by-product of collective action
 - Must be sufficient to make defection less valuable than staying in the group
 - Lends an all-or-none character to the action

- Contemporary social theorists believe that non-material incentives are increasingly important, especially to urban inhabitants who are exposed to telecommunications and other aspects of globalization
- **Solidary:** actor finds participation intrinsically rewarding
- **Purposive:** ideology motivates participation
- **Expressive:** actor derives benefits from expression itself

Immunization as Public Good

- *Herd immunity (def)*: The “resistance of a group to invasion and spread of an infectious agent, based on the immunity of a high proportion of individual members of the group” (Fox, 1970)
- Herd immunity and its stronger cousin, eradication, are examples of public goods
- They are therefore attainable through collective action

Immunization as Public Good

- These immunization public goods can be attained if the required threshold proportion of actors participate
 - Diphtheria: 70%
 - Polio: 80%
 - Measles: 90%
- Others can free-ride and still enjoy benefits
 - May face normative sanctions for doing so

Engineering Collective Action

- In all groups, skilled leadership and/or external coordination are needed to
 - Collectively identify attainable, short-term goals
 - Maintain regular reporting and feedback about the collective action
 - ▶ Minimize the free-rider problem
 - ▶ Provide evidence goals are or are not being reached (efficacy)
 - Arrange external quality assurance
 - Publicly recognize all contributors

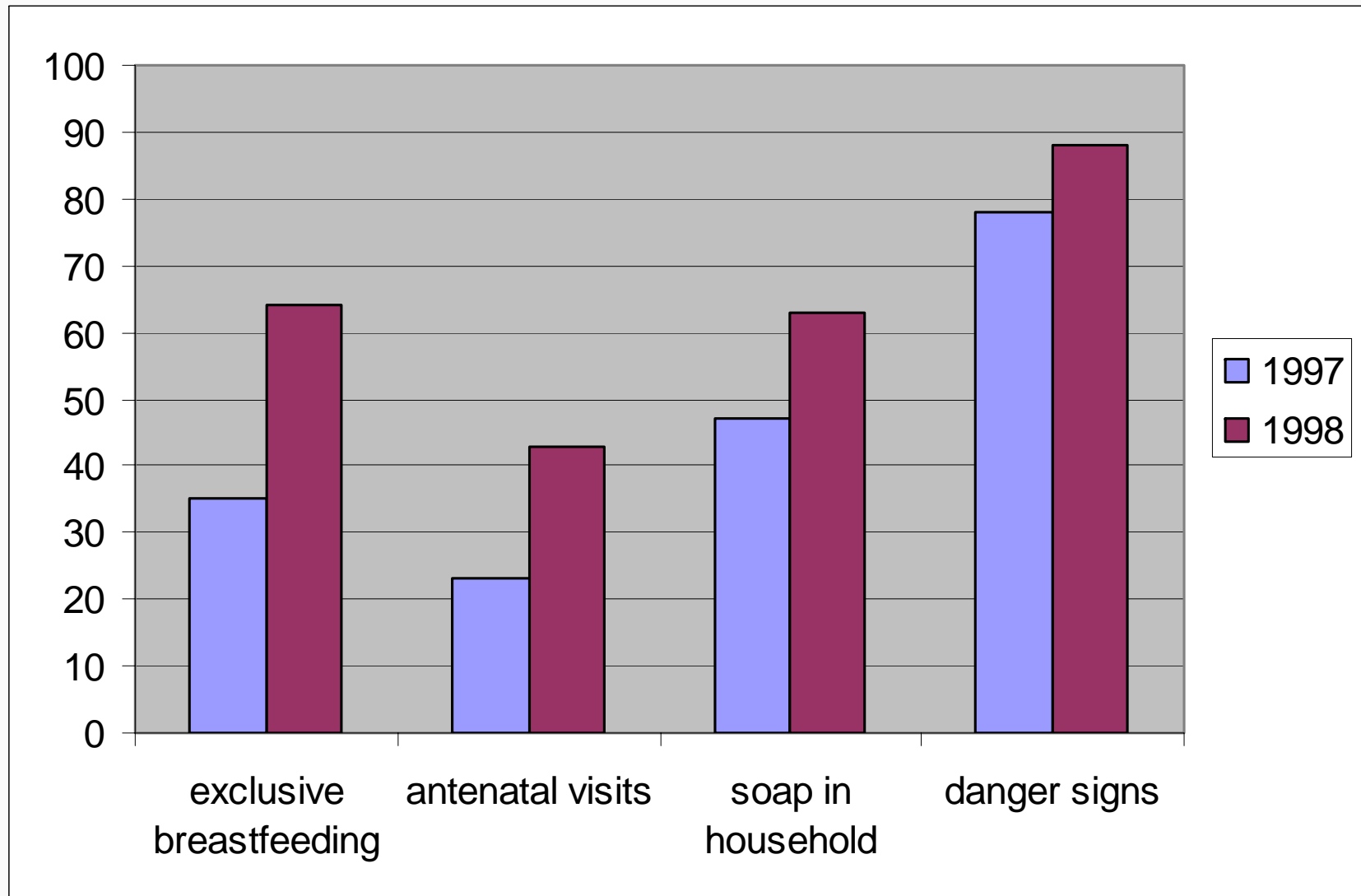
- Bhattacharyya and Murray (2000) used a participatory approach to stimulate collective action for maternal and child health in 20 Ethiopian communities
- As in the Bamako Initiative case, performance of the existing PHC system was poor
- The main goal was to inculcate an ongoing dialogue between health workers and community action committees

- The main strategies involved:
 - Forming teams of community volunteers and local health workers to assess MCH needs and propose locally appropriate solutions
 - Monitoring, evaluating, and feeding back project results to the communities
- Teams could choose to implement 3–5 selective PHC behaviors, including immunizations
- Public meetings, social mapping, and free-listing were used to induce teamwork
- Structured interviews and household surveys using the lot quality assurance method were used to gather and interpret baseline data

- Immunization levels were extremely low due to:
 - Inefficient vaccination services
 - Low demand due to poor access and low knowledge
- Community action plans were drafted and ratified by each community
- Interventions
 - Intensive household health education
 - Community mobilization for behavioral change
 - Health worker re-training
 - Integration of PHC services
- One year after, follow-up surveys were performed

- Exclusive breastfeeding, antenatal visits, and availability of soap in the household all significantly increased over the one-year period
- No data on immunization were given
- Monitoring and feedback by MOH and project staff were essential to inducing behavioral change

What We See



- Collective action, learning and sustained
 - In the long run, cognitive and social learning processes may be sufficient to attain and sustain high immunization levels
 - In the short run, immunization demand can be increased through collective action
 - Collective action contributes to sustained demand by accelerating cognitive and social learning processes among those who participate