



The Science of Behavior Change: A Decade of Reflection



Marcia Ory, Ph.D., MPH
Texas A&M Health Science Center

AAHB 2009

Two IOM Reports: Guidebooks

Health and Behavior Promoting Health

Themes in Behavior Change Research

<p>Pre-2000</p> <ul style="list-style-type: none"> • Identification of behavioral risk factors • Identification of factors influencing health behaviors 	<p>2000 and Beyond</p> <ul style="list-style-type: none"> • How to achieve behavior change • How to sustain behavior change • How to translate and disseminate effective programs
--	---


Behavior Change Consortium

- 1999-2002
- To stimulate long-term behavior change
- Four behaviors: smoking, sedentary lifestyle, poor diet, alcohol abuse
- 15 grantee sites



<http://www1.od.nih.gov/behaviorchange/>

Going Beyond Usual Business Two Intervention Strategies




- Comparison of multiple theoretical approaches to a single behavior
- Utility of single theoretical perspective to multiple behaviors

The Art of Collaboration: The Science of Change

How do theories translate into intervention strategies?

- What are the pathways of change?
- What are the essential intervention components?



Vol. 17, October 2002

Expanding the Boundaries and Impact of Health Behavior Change Research

Cross-cutting Issues:

- Stages of change
- Screening for physical activity
- Standardized behavioral measurements
- Motivational interviewing
- Planning for translation and dissemination



Volume 29, April 2005

Contribution to Behavior Change

- Conceptualization and measurement of moderators, mediators, and outcomes around three leading health behaviors



Practical Measurement Strategies Criteria for Selection

Practicality : A composite criterion including length; ease of administration, scoring, and interpretation; appropriateness to a wide range of settings and populations; and in the public domain, to reduce costs



Glasgow, Ory, and Klesges, Annals of Family Medicine, 2005

Other Selection Criteria

Primary

- Relationship to clinical and public health goals
- Validity agreement with reference standard measures.
- Sensitivity to change
- Relation to behavioral interventions

Secondary

- Cultural and literacy issues
- Norms and breadth of use
- Age appropriateness
- Reliability
- Usability for feedback and interventions

Contributions to Behavior Change

Refining the Re-AIM framework



www.re-aim.org

Behavior Change Strategies Identifying Common Strategies

- Goal setting
- Identification of barriers
- Tracking of behaviors
- Active problem solving
- Supportive feedback



Does Mode of Delivery Matter?



King, Health Psychology, 2007

- Effects of human telephone counseling vs automated counseling for PA
- Testing intrinsic and extrinsic motivation
- 218 sedentary older adults
- Both were successful relative to control group

What Do We Know about Multiple Health Behavior Interventions?

- What is relative benefit of targeting single vs multiple behavior?
- Will multiple behavior approach enhance or overburden?
- Factorial design with physical activity and nutrition
- Jury still out



Clark J. Aging an Health, 2005

Limitations of BCC

- Not all looking at long-term behavior
- More individual level interventions
- Limited set of behaviors
- Hard to get a grasp on outcomes for multiple behavior research



Health Maintenance Consortium

- 2003-2009
- 21 grantees
- 1 to 5 year follow-up
- Many behavioral targets
 - Diet, exercise, smoking, cancer screening, substance abuse, sexual behaviors, suicidal behaviors
- Examine factors relating to long-term maintenance
 - Process studies of natural trajectory
 - Intervention studies with passive and active maintenance components



<http://www.srph.tamhsc.edu/>

Advantages of HMC

- Population Reach
 - Over 12000 participants
 - 75% achieved 90% of recruitment goals
 - Two thirds have substantial minority representation
- Diversity of Populations and Targets
- Diversity of behaviors
 - 7 diet, 8 PA, 5 SA, 3 smoking, 3 other
- Behavioral targets
 - Some single behavior
 - Some multi-behavior focused

10 sites already reporting significant improvements

Assessment Time-Frame

- All will have 12 months
- 2 with 18 months
- 7 with 2 years
- 2 with 36 months or more
- 5 with 60 months or more



How Do We Measure Key Concepts?

Definition of Maintenance

Sustained behavior during the period of observation and after the intervention has stopped that meets a threshold believed to be necessary to improve health or well being within a given population

Definition of Adherence

Protocol-related behaviors, such as attendance and participation in intervention-related activities

Other Maintenance-Related Constructs

Grace Period: A window of time during which lack of adoption of the behavior was not counted as a failure

Relapse: A period of interruption of regular sustained behavior after its initiation and Maintenance

Reactivation: The resumption of the sustained behavior following a period of relapse

Next Steps

- To assess the trajectory of adherence and maintenance over time
- To examine the variability in maintenance across behaviors
- To determine the level of maintenance necessary across behaviors to impact a common outcome.



What is the Role of Context?

- Physical Environment as major influence on health and behavior
- Subjective vs objective environment
- Geocode many intervention participants
- Jury still out



How Do We Assess Impacts of Multiple Behavioral Interventions?

- Multiple behavior outcomes
 - % Improvement
 - Standardized score
 - Criterion
 - Cross-cutting measures
- Lack of consensus



Are Predictors of Initiation Similar to Maintenance Behaviors?

- Early work suggesting factors might be different
- Perceived autonomy predictive of both in tobacco cessation trials
- Hypotheses regarding sustaining influence of "internalization"
- Benefit for those not initially interested



Williams Health Psychology 2006

Maintaining Initial Change Behaviors

- How to sustain PA in older adults who recently increase activity
- Interactive phone and mail-based supports for adults 50-70
- Monthly and then bi-monthly calls after active intervention phase
- Effective through 24 months
- Implications for embedding in health care system



Martinson, Prev. Med 2008

How Can We Encourage Maintenance of HIV-Related Prevention Behaviors?

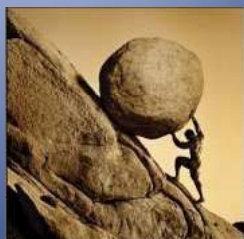
- Sexually active African American adolescent females
- Tailored phone calls following initial group session
- Culturally adapted materials and approaches
- Improvements in both biological and behavioral markers



DiClemente, APHA 2008

Prevention Research

Sometimes prevention researchers feel a lot like Sisyphus – It's a challenge to Motivate behavior change, and then many regress to risky behaviors



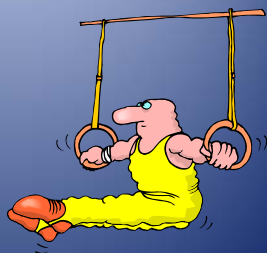
What Can We Expect from Long-Term Behavior Change Interventions?

- We can initiate and maintain change a variety of behaviors for at least two years
- Decay is typical over time
- Different behaviors have different success indicators
- Some type of reinforcement needed over the long haul



Next Steps for HMC

- Inventory measures and assess opportunities for common analyses
- Hold a series of small network meetings
- Joint Special Issue
- Highlighting individual investigators



We Can Go To Scale

- RWJF Active for Life > 8000 older adults
- AOA Evidence Based Disease Prevention Initiative > 20,000 participants
- The questions are different
- The designs are different
- The strategies are different

