

# **RE-AIMing Physical Activity Interventions**

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Hill. Chapter 20**

**In theory, there is no difference between theory  
and practice. In practice there is.**

*– Yogi Berra*

# The Public Health Impact of Physical Activity Promotion Interventions

 The concern of many health care professionals is the external validity of interventions developed and tested in very controlled environments


 Interventions that work in the environment of the randomized clinical control trial are often ineffective in real-world settings

# The Public Health Impact of Physical Activity Promotion Interventions



## Why is this so?

- Resources within real-world settings are different from those in the control trial
- The trained professionals who offered the intervention in the controlled trial were more qualified than those who offer it in a real-world setting

# The Public Health Impact of Physical Activity Promotion Interventions

 The RE-AIM framework was developed by Glasgow and colleagues to determine the public health impact of health promotion interventions and “is concerned with issues related to impact in real-world settings and the translation of research to practice”

# The RE-AIM Framework

-  At the root of the rationale to promote physical activity is the necessity to improve public health
-  Little is known about the translatability of physical activity programs from research into practice
  - Do these things work in the real world?
  - Will research be followed by practice?
  - How can those people who evaluate physical activity interventions determine if they have had or could have a significant public health impact?

# The RE-AIM Framework

- 🔔 The RE-AIM framework was developed to evaluate the public health impact of health promotion initiatives
- 🔔 The RE-AIM framework proposes that the product of an intervention's reach, efficacy, adoption, implementation, and maintenance together provide an indication of an intervention's public health impact.

# The RE-AIM Framework

- 🔔 **Reach**--the proportion of the target population that participated in the intervention
- 🔔 **Efficacy**--the success in promoting physical activity
- 🔔 **Adoption**--the proportion of settings that subsequently uses the intervention




# The RE-AIM Framework

 **Adoption**--the proportion of settings that subsequently uses the intervention




 **Implementation**--practitioner's fidelity to the intervention's protocol

 **Maintenance**--the level of sustained use of the intervention over time

# The RE-AIM Framework

-  Assumes that a public health framework must acknowledge the existence of both individual and organizational levels of impact
-  Reach and efficacy are measured at the level of the individual
-  Reach reflects the number of individuals whereas efficacy reflects the degree to which behavior changes at an individual level

# The RE-AIM Framework


-  **Adoption and implementation are organizational levels of impact**
-  **Adoption is the number of organizations that begin the program and implementation is organizational fidelity to the intervention protocol**
-  **Maintenance reflects both an individual and organizational level in that the sustained behavior of individuals and organizational use of an intervention can be documented**

# Reach


- 🔔 **Proportion of the target population who participate in the initiative**
- 🔔 **Often times the reach of a randomized controlled trial can be determined by the participation rate of those contacted**
- 🔔 **This calculation could overestimate the reach of a given intervention**

# Reach

 **An example: Identifying the reach of a reinforcement intervention to improve attendance at a fitness facility** (Courneya, Estabrooks, & Nigg, 1997)

 **The study selection criteria included the identification of paying members of the facility who had attended between 4 and 11 times during a random 4-week period**




# Reach

 100 randomly selected individuals were then offered a one-month extension to their membership if they attended the facility 12 times over a given 4-week period.

 The reach of a randomized control trial such as this could be computed as 100%.

→ 100 participants were targeted and subsequently all 100 participants received the intervention.

# Reach

-  Another calculation of reach would include the entire population of members at the fitness facility (2000 members) who attended 4-11 times over the 4-week selection period
-  This new information results in a reach of 5%
-  The reach of this study—although high in terms of a research objective—were low in terms of the actual population.

# Reach



**In practical terms specific intervention types can be categorized into high, medium or low reach**

- One-on-one in person counseling due to a professional referral=low reach**
- One-on-one counseling delivered as part of regular check-ups =high reach**
- For example, Cheryl Albright and her collaborators (2000) trained 54 physicians to provide sedentary patients with advice on physical activity.**
- Those 54 physicians in turn had contact with 874 sedentary adults.**

# Efficacy

- 🔔 During this course we have used findings of many meta-analyses that reported the impact of an intervention through effect sizes
- 🔔 Effect sizes can be used as a proxy indicator of efficacy
- 🔔 A higher effect size indicates a more efficacious intervention
- 🔔 If an intervention is not at least minimally efficacious then the issue of reach becomes irrelevant

# Adoption

- 🔔 Adoption is the proportion and representativeness of settings that begin to use the intervention protocol
- 🔔 It may be useful to refer to the reinforcement study example used previously (Courneya et al., 1997).
- 🔔 Adoption could be measured by the number of fitness facilities that began to offer a one-month membership extension based on 12 days attended over a given 4-week period

# Adoption

- 🔔 Adoption may be considered the missing link between research and practice
- 🔔 Research examining physical activity promotion has not documented the success of interventions based upon the adoption of these interventions into mainstream settings
- 🔔 Effective community based interventions must include mechanisms to ensure adoption of the intervention to various community settings

# Adoption



**There are a number of mechanisms to increase adoption**

- 1) Individuals from all major community groups and institutions should be consulted and informed**
- 2) Activities should be integrated with existing community activities**
- 3) Create a systematic plan to constantly identify, recruit, and involve new people and organizations in the project**
- 4) Summarize and disseminate the results of intervention programs to the participants, community leaders, and important organizations within the community**


# Implementation

- 🔔 **One concern of physical activity promotion researchers is the extent to which an intervention will be delivered as it was intended**
- 🔔 **Implementation is the reflection of the fidelity of practitioners' or researchers' actions relative to the intended intervention protocol**
- 🔔 **The degree of adherence to an intervention protocol has a potential moderating effect on the efficacy of the intervention**

# Implementation


- 🔔 **The interaction between implementation and efficacy is often described as the effectiveness of the intervention in real-world settings**
- 🔔 **Implementation can be measured as treatment fidelity through systematic manipulation checks**


# Implementation

 In smoking cessation it has been shown that a brief hospital-based intervention was more successful when implemented by the research staff when compared to the implementation of the hospital staff

(Glasgow et al., 1999)

# Maintenance



 Maintenance refers to the long-term participation in behavior change and is assessed at both the individual and organizational level

 Typical relapse rates show the need to document the length of adherence to a given positive health behavior


# Maintenance

- 🔔 Many studies include 6-month and 12-month follow-up data points to assess the maintenance of participants' physical activity
- 🔔 Maintenance can also be examined at the organizational level
- 🔔 Once a program is started in an organization, its length of existence is seldom reported

# Using the RE-AIM Model as a Practical Evaluation

-  **The basis of the RE-AIM framework is to begin with research and evaluate how well that research is translated to the “real world”**
-  **This is valuable information that can identify gaps in research, such as limited examination of adoption and maintenance at the organizational level**

# Using the RE-AIM Model as a Practical Evaluation

 The underlying importance of the RE-AIM framework is the necessity to find interventions that are efficacious and then integrate those interventions across organizational structures (i.e., adoption, implementation) to increase the reach to individuals over an extended period of time (i.e., maintenance)

 How can this information be used to help a physical activity promotion professional?

# Using the RE-AIM Model as a Practical Evaluation

## AN EXAMPLE

- Alison is a fictitious director of health promotion for her community
- Using the RE-AIM framework Alison could systematically evaluate the programs that are being offered through her community
- Alison developed a program for older adults to become more physically active
- The program was implemented at a test facility

# Using the RE-AIM Model as a Practical Evaluation

 Alison could use the RE-AIM framework to

- 1) Assess the reach of her program for older adults. Within the community she identifies that there are 600 individuals over the age of 65. Currently in her program she has 15 members. Hence, the program's reach is very low (2.5%)
- 2) Examine the efficacy of her program. She examined the program records and discovers that all of the participants have tripled their weekly minutes of regular physical activity since joining the program—it is efficacious

# Using the RE-AIM Model as a Practical Evaluation

 Alison could use the RE-AIM framework to

- 3) Assess the number of fitness centers that have implemented the intervention. Currently only one program is being offered. Hence, the organizational adoption of the intervention is low.
- 4) View video taped sessions to examine instructor implementation.
- 5) Assess if the program and the individuals within the program are still ongoing.

# Using the RE-AIM Model as a Practical Evaluation

 Alison can now identify major areas in need of attention for her program for older adults

- She has a program that works very well but she is reaching only a small percentage of the program's target audience--her efforts should be applied to increasing the reach of the program
- She also determined that there has been no additional organizational adoption of the program. Similarly, efforts could be targeted at marketing the intervention to other communities or organizations

# **Limitations of the RE-AIM Model**

- 1) It is a descriptive model. The framework provides a very logical way to evaluate programs. It does not provide the processes to change the outcomes.**
- 2) There is relatively little data to support the claim that each level of the model is equally important. There is a need for research on the RELATIONSHIP among dimensions and how - if at all- they should optimally be combined or integrated.**