HS4210B

# Health Promotion for People with Disabilities

**Dalton L. Wolfe, PhD**

dwolfe@uwo.ca
685-4292 x 42957
Office Hours: Arrange Appointment by Email / Phone
Lecture Time & Location:
Tuesday 3:30-5:30 – HSB Room 35
Thursday 3:30-4:30

Western

Lecture 8&9 – Feb 28 & Mar 5, 2013

## Outline – Planning Interventions

- Conceptual or Explanatory Models
  - How does Intervention Result in Behaviour Change
- Operational or Descriptive Models
  - Program Logic Model
  - How to create to assist in Program Planning
- Framework from the Literature to Describe Different Approaches for Changing Physical Activity Behaviour
- Basing Interventions (Programs) on approaches consistent with Behaviour Change Theories
  - Examples that combine several approaches

## Explanatory vs Descriptive Models

Known by a variety of synonyms

- Change Process Theories*
- Behaviour Change Theory*
- Conceptual Model/Framework
- Roadmap

**Explanatory / Conceptual** Models

- Operational Model
- Program Logic Model

**Descriptive / Operational** Models

* McKenzie, Neiger and Smeltzer (2005) Planning, Implementing & Evaluating Health Promotion Programs Chapter 8

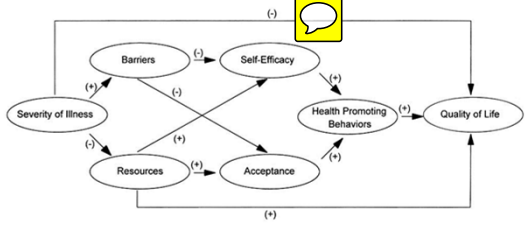
## Explanatory vs Descriptive Models

- Explanatory / Conceptual Models
  - Includes theoretical **concepts** (constructs) to **explain** what might lead to successful behaviour change
- Descriptive / Operational Models
  - Outlines key activities that illustrate the **operational** details of the program (e.g., **describes** activities that are done in the program and sometimes the order of these activities)

## Example – Explanatory / Conceptual Model

Relationships developed by Alexa Stuifbergen (& colleagues) following years of research and by integrating concepts from:

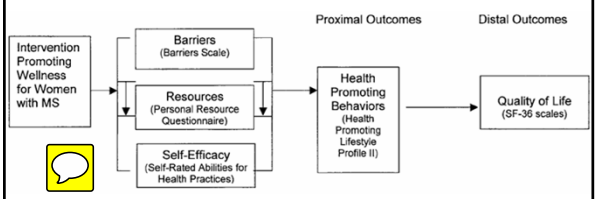
- Health Belief Model
- Pender model of health promotion
- Self-efficacy Theory (Social Cognitive Theory)




From Stuifbergen, Seraphine & Roberts (2000) An Explanatory Model of Health Promotion and Quality of Life in Chronic Disabling Conditions. Nursing Research 49(3):122-129.

## Example – Explanatory / Conceptual Model Assisting with Evaluation Planning

Often these models can be used as the basis for determining what measures/indicators/outcomes can be used for evaluation.



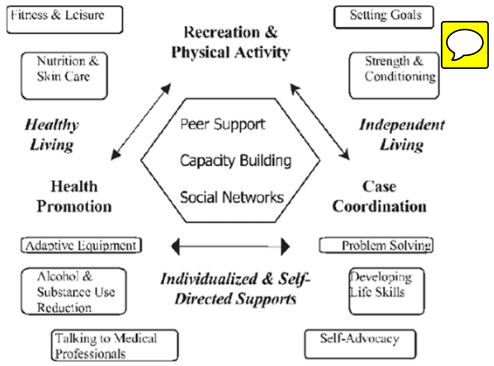

From Stuifbergen et al. (2003) A Randomized Clinical Trial of a Wellness Intervention for Women With MS. Arch Phys Med Rehabil 84:467-76.

## Example – Operational Model
## Project Shake-It-Up

- Joint partnership demonstration project
  - University researchers and 2 community agencies,
- 10 Full-day Sessions (twice monthly)
  - Mornings are spent in health promotion and capacity building seminars
  - Afternoons are spent in organized physical or recreational group activities
- People with different s[illegible]e mobility impairments/paralysis.
  - SCI, Cerebral Palsy, Spina Bifida

Block et al. (2005) Shake-It-Up ….
Disability and Rehabilitation, 27(4): 185-190.

## Example – Operational Model
## Project Shake-It-Up




## Program Logic Model
## (A type of Operational Model)

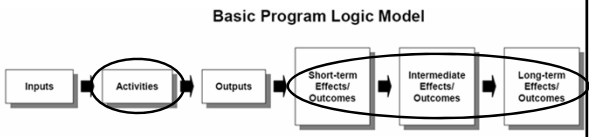
- A useful way to illustrate a Health Promotion Program
  - Program inputs
  - Program activities *****
  - Outputs
  - Outcomes *****

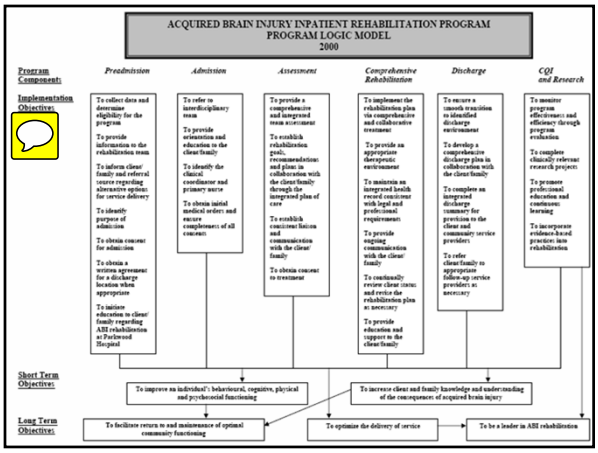
  ___

  - Objectives

## Example – Program Logic Model

A graphic depiction of the **relationship** between a program's **activities** and its **intended outcomes**.



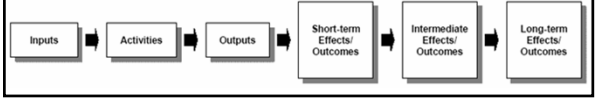




## Proram Logic Model Components

- **Inputs:** Resources that go into the program and on which it is dependent to mount its activities.
- **Activities:** Actual events or actions done by the program and its staff.
- **Outputs:** Direct products of program activities, often measured in countable terms (e.g., the number of sessions held).
- **Outcomes:** The changes that result from the program's activities and outputs, often in a sequence expressed as short-term, intermediate, and long-term outcomes.

---

- **Objectives:** What the program is trying to accomplish.



## Creating a Program Logic Model

- **Example**: Program that identifies high lead levels (EBLL = elevated blood lead levels) in school children and then provides medical treatment (if needed) + also looks at identifying lead sources and eliminating them.

Step 1- List Activities and Outcomes

**CLPP Program: Listing Activities and Outcomes**

| Activities | Outcomes |
|---|---|
| • Outreach<br>• Screening<br>• Case management<br>• Referral to medical treatment<br>• Identification of EBLL children<br>• Environmental assessment<br>• Environmental referral<br>• Family training | • Lead source identified<br>• Families adopt in-home techniques<br>• EBLL children get medical treatment<br>• Lead source gets eliminated<br>• EBLL reduced<br>• Developmental "slide" stopped<br>• Quality of Life (Q of L) improved |

## Creating a Program Logic Model

Step 2 - Sequence Activities and Outcomes

**CLPP Program: Sequencing Activities and Outcomes**

| Early Activities | Later Activities | Early Outcomes | Later Outcomes |
|---|---|---|---|
| • Outreach<br>• Screening<br>• Identification of EBLL children | • Case management<br>• Referral to medical treatment<br>• Environmental assessment<br>• Environmental referral<br>• Family training | • Lead source identified<br>• Lead source gets eliminated<br>• Families adopt in-home techniques<br>• EBLL children get medical treatment | • EBLL reduced<br>• Developmental "slide" stopped<br>• Q of L improved |

## Creating a Program Logic Model

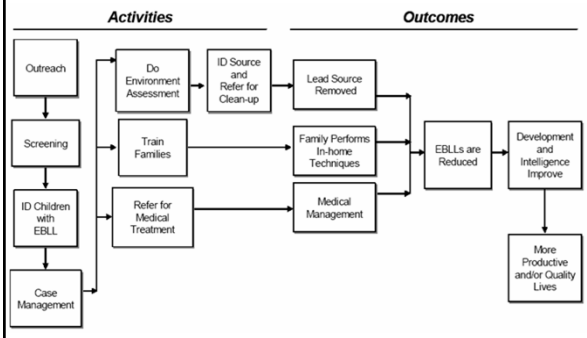
Step 3 – Add Inputs and Outputs

**CLPP Program: Logic Model with Inputs and Outputs**

| Inputs | Early Activities | Later Activities | Outputs | Early Outcomes | Later Outcomes |
|---|---|---|---|---|---|
| Funds<br>Trained staff for screening and clean-up<br>Relationships with organizations<br>Legal authority | Outreach<br>Screening<br>Identification of EBLL children | Case management<br>Referral to medical treatment<br>Environmental assessment<br>Environmental referral<br>Family training | Pool (#) of eligible children<br>Pool (#) of screened children<br>Referrals (#) to medical treatment<br>Pool (#) of "leaded" homes<br>Referrals (#) for clean-up | Lead source identified<br>Lead source gets eliminated<br>Families adopt in-home techniques<br>EBLL children get medical treatment | EBLL reduced<br>Developmental "slide" stopped<br>Q of L improved |

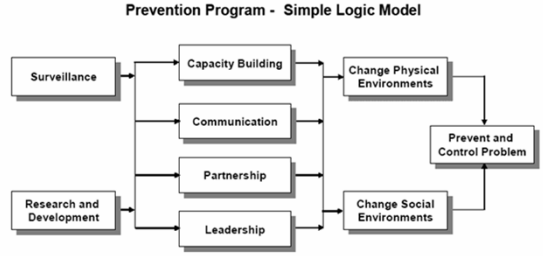
## Creating a Program Logic Model

Step 4 – Add Relationships



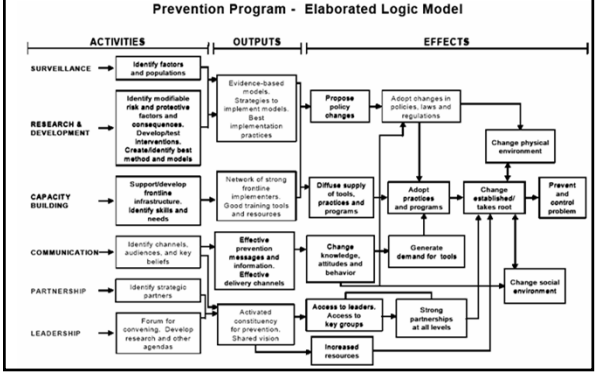

## Creating a Program Logic Model

Step 5 – Elaborate the Various Components
(Simple version - Note this is a different example)

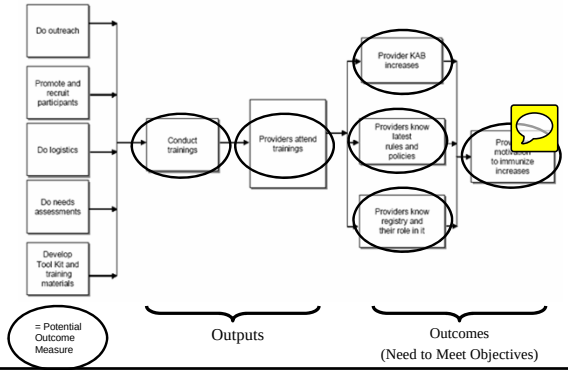



## Creating a Program Logic Model

Step 5 – Elaborate the Various Components (More elaborate version)



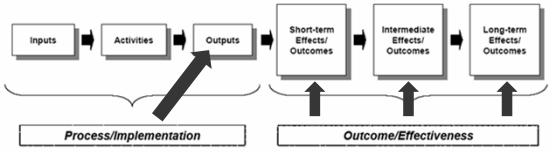
## Logic Model – Important to Define Evaluation Outcomes & Tools Used




## Types of Evaluations

- Process / Implementation
- Outcomes / Effectiveness
- Efficiency
- Cost-Effectiveness
- Attribution

Most Common




## Process Evaluation

- Has a program been implemented as intended? (Do the activities unfold as expected)
  - and why or why not?
- **Contrast actual and planned performance** on items (i.e., **outputs**) such as the following:
  - The locale where services or programs are provided (e.g., rural, urban)
  - The number of people receiving services
  - The quality of services
  - The actual events that occur while the services are delivered
  - The amount of money the project is using (direct and in-kind)
  - The staffing for services or programs
  - The number of activities and meetings

## Outcomes Evaluation

- Assess progress on the **outcomes** (objectives) that the program is to address.
- Often describe this sequence using terms like short-term, intermediate, and long-term outcomes, or proximal (close to the intervention) or distal (distant from the intervention)

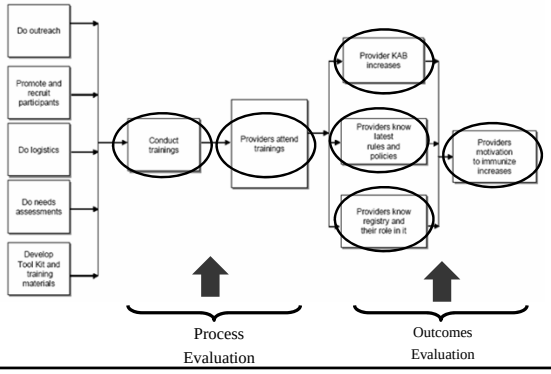
## Outcomes Evaluation – Example Outcome Measures / Indicators

- Changes in people's attitudes and beliefs
- Changes in risk or protective behaviors
- Changes in the environment
  - E.g., policies, enforcement of regulations
- Changes in trends in morbidity and mortality

Note: – Focus on the most important and make these **"Primary" Indicators**

- But be realistic (i.e., "knowledge" does not necessarily translate into "behaviour change" which also may not translate into "health benefit" which may not translate into "quality of life")

## Process vs Outcomes Evaluation



## Other Types of Evaluation

- **Efficiency**: Are your program's activities being produced with minimal use of resources such as budget and staff time? What is the volume of outputs produced by the resources (inputs) devoted to your program?
- **Cost-Effectiveness**: Does the value or benefit of your program's outcomes exceed the cost of producing them?
- **Attribution**: Can the outcomes that are being produced be shown to be related to your program, as opposed to other things that are going on at the same time?

## Individual or Group Measurement **Tools** for Measuring Disability and Health

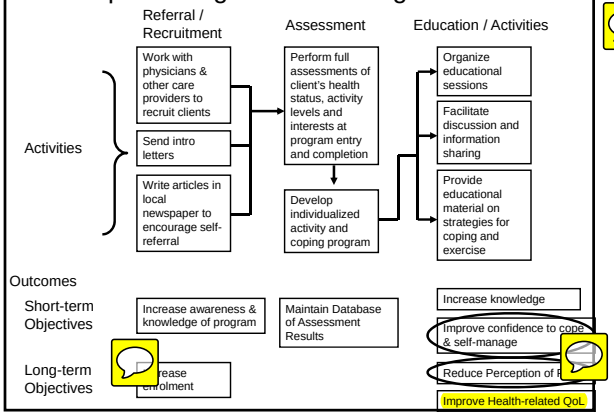
- Some examples for Stroke Rehabilitation … As with many things **Outcome Measurement Tools** can be classified by ICF
  - Body Structure/Function
  - Activities
  - Participation

Table II. Classification of outcome measures.

| *Body structure (impairments)* | *Activities (limitations to activity–disability)* | *Participation (barriers to participation–handicap)* |
|---|---|---|
| 1. Beck Depression Inventory | 6. Barthel Index | 15. Euroqol-5D |
| 2. Fugl-Meyer Assessment | 7. Berg Balance Scale | 16. Medical Outcomes Study Short Form 36 |
| 3. Mini Mental State Examination | 8. Chedoke McMaster Stroke Assessment Scale | 17. Nottingham Health Profile |
| 4. Modified Ashworth Scale | 9. Functional Independence Measure (FIM) | 18. Sickness Impact Profile (stroke adapted version) |
| 5. Motor-free Visual Perception Test | 10. Frenchay Activities Index | 19. Stroke Impact Scale |
| | 11. Modified Rankin Handicap Scale | 20. Stroke Specific Quality of Life |
| | 12. Rivermead Motor Assessment | |
| | 13. Rivermead Mobility Index | |
| | 14. Timed-Up-and-Go (TUG) | |

From: Salter et al. Issues for selection of outcome measures in stroke rehabilitation:ICF activity. Disability and Rehabilitation, 2005; 27(6): 315 – 340

## Example – Program for Dealing with Arthritis




## Arthritis Self-Efficacy Scale (Lorig et al., 1989)

STANFORD PATIENT EDUCATION RESEARCH CENTER

**Arthritis Self-Efficacy**

For each of the following questions, please circle the number that corresponds to how certain you are that you can do the following tasks regularly at the present time.

**Self-Efficacy Pain Scale (may be combined with Other Symptoms Scale)**

1. How certain are you that you can decrease your pain **quite a bit?**
2. How certain are you that you can continue most of your daily activities?
3. How certain are you that you can keep arthritis pain from interfering with your sleep?
4. How certain are you that you can that you can make a **small-to-moderate** reduction in your arthritis pain by using methods other than taking extra medication?

very uncertain 1 2 3 4 5 6 7 8 9 10 very certain

## Arthritis Self-Efficacy Scale (cont.) (Lorig et al., 1989)

5. How certain are you that you can make a **large** reduction in your arthritis pain by using methods other than taking extra medication?

**Self-Efficacy Function Scale**

1. How certain are you that you can walk 100 feet on flat ground in 20 seconds?
2. How certain are you that you can that you can walk 10 steps downstairs in 7 seconds?
3. How certain are you that you can get out of an armless chair quickly, without using your hands for support?
4. How certain are you that you can button and unbutton 3 medium-size buttons in a row in 12 seconds?

very uncertain 1 2 3 4 5 6 7 8 9 10 very certain

## Arthritis Self-Efficacy Scale (cont.) (Lorig et al., 1989)

5. How certain are you that you can cut 2 bite-size pieces of meat with a knife and fork in 8 seconds?
6. How certain are you that you can turn an outdoor faucet all the way on and all the way off?
7. How certain are you that you can scratch your upper back with both your right and left hands?
8. How certain are you that you can get in and out of the passenger side of a car without assistance from another person and without physical aids?
9. How certain are you that you can put on a long-sleeve front-opening shirt or blouse (without buttoning) in 8 seconds?

very uncertain 1 2 3 4 5 6 7 8 9 10 very certain

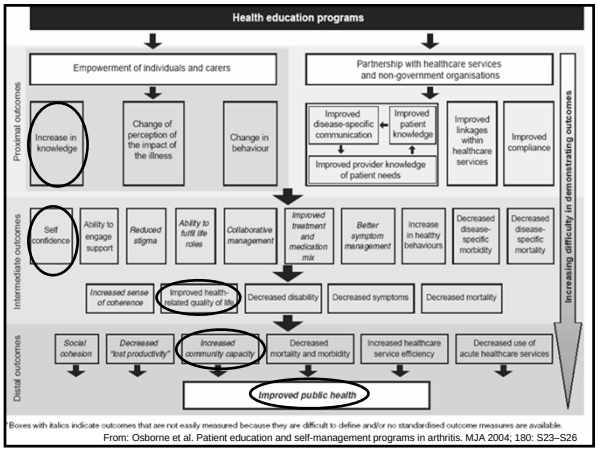
## Arthritis Self-Efficacy Scale (cont.) (Lorig et al., 1989)

**Self-Efficacy Other Symptoms Scale (may be combined with Pain Scale)**

| | | |
|---|---|---|
| 1. | How certain are you that you can control your fatigue? | very uncertain 1 2 3 4 5 6 7 8 9 10 very certain |
| 2. | How certain are you that you can regulate your activity so as to be active without aggravating your arthritis? | very uncertain 1 2 3 4 5 6 7 8 9 10 very certain |
| 3. | How certain are you that you can do something to help yourself feel better if you are feeling blue? | very uncertain 1 2 3 4 5 6 7 8 9 10 very certain |
| 4. | As compared with other people with arthritis like yours, how certain are you that you can manage arthritis pain during your daily activities? | very uncertain 1 2 3 4 5 6 7 8 9 10 very certain |
| 5. | How certain are you that you can manage your arthritis symptoms so that you can do the things you enjoy doing? | very uncertain 1 2 3 4 5 6 7 8 9 10 very certain |
| 6. | How certain are you that you can deal with the frustration of arthritis? | very uncertain 1 2 3 4 5 6 7 8 9 10 very certain |

## Many Tools to Choose From

- However, the more distal the outcome measure, the more difficult it typically is to demonstrate outcomes




* Boxes with italics indicate outcomes that are not easily measured because they are difficult to define and/or no standardised outcome measures are available.

From: Osborne et al. Patient education and self-management programs in arthritis. MJA 2004; 180: S23–S26

## Health-Related Quality-of-Life Measures

- Multidimensional concept of health-related quality of life (QOL) consistent with WHO definition of health
- Including major domains of life such as physical, psychological, social/role functioning, and well-being
- Many measures exist – mostly generic (across disabilities), self-report (A common one is SF-36)

Example - Center for Disease Control & Prevention Health-Related Quality-of-Life Measure

## CDC HRQOL-14 "Healthy Days Measure"

**Healthy Days Core Module (CDC HRQOL-4)**

1. Would you say that in general your health is:

**Please Read**

a. Excellent 1
b. Very good 2
c. Good 3
d. Fair 4

**or**

e. Poor 5

**Do not read these responses**

Don't know/Not sure 7
Refused 9

2. Now thinking about your physical health, which includes physical illness and injury, for how many days during the past 30 days was your physical health not good?

a. Number of Days __
b. None 88
Don't know/Not sure 77
Refused 99

3. Now thinking about your mental health, which includes stress, depression, and problems with emotions, for how many days during the past 30 days was your mental health not good?

a. Number of Days __
b. None 88 **If both Q2 AND Q3 = "None", skip next question**
Don't know/Not sure 77
Refused 99

4. During the past 30 days, for about how many days did poor physical or mental health keep you from doing your usual activities, such as self-care, work, or recreation?

a. Number of Days __
b. None 88
Don't know/Not sure 77
Refused 99

## CDC HRQOL-14 "Healthy Days Measure"

**Activity Limitations Module**

**These next questions are about physical, mental, or emotional problems or limitations you may have in your daily life.**

1. Are you LIMITED in any way in any activities because of any impairment or health problem?

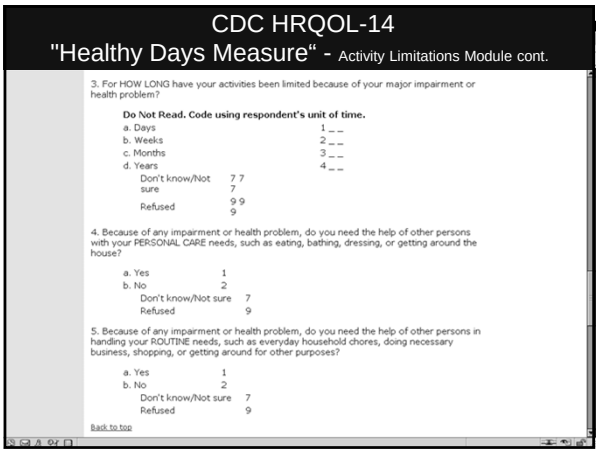
a. Yes 1
b. No 2 **Go to Q1 of Healthy Days Symptoms Module**
Don't know/Not sure 7 **Go to Q1 of Healthy Days Symptoms Module**
Refused 9 **Go to Q1 of Healthy Days Symptoms Module**

2. What is the MAJOR impairment or health problem that limits your activities?

**Do Not Read. Code Only One Category.**

a. Arthritis/rheumatism 01
b. Back or neck problem 02
c. Fractures, bone/joint injury 03
d. Walking problem 04
e. Lung/breathing problem 05
f. Hearing problem 06
g. Eye/vision problem 07
h. Heart problem 08
i. Stroke problem 09
j. Hypertension/high blood pressure 10
k. Diabetes 11
l. Cancer 12
m. Depression/anxiety/emotional problem 13
n. Other impairment/problem 14
Don't know/Not sure 77
Refused 99

## CDC HRQOL-14 "Healthy Days Measure" - Activity Limitations Module cont.



3. For HOW LONG have your activities been limited because of your major impairment or health problem?

**Do Not Read. Code using respondent's unit of time.**

a. Days 1 _ _
b. Weeks 2 _ _
c. Months 3 _ _
d. Years 4 _ _
Don't know/Not sure 7 7 7
Refused 9 9 9

4. Because of any impairment or health problem, do you need the help of other persons with your PERSONAL CARE needs, such as eating, bathing, dressing, or getting around the house?

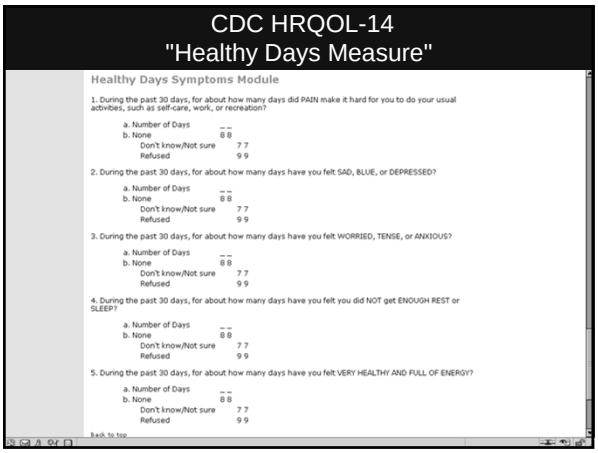
a. Yes 1
b. No 2
Don't know/Not sure 7
Refused 9

5. Because of any impairment or health problem, do you need the help of other persons in handling your ROUTINE needs, such as everyday household chores, doing necessary business, shopping, or getting around for other purposes?

a. Yes 1
b. No 2
Don't know/Not sure 7
Refused 9

Back to top

## CDC HRQOL-14 "Healthy Days Measure"



Healthy Days Symptoms Module

1. During the past 30 days, for about how many days did PAIN make it hard for you to do your usual activities, such as self-care, work, or recreation?

a. Number of Days _ _
b. None 8 8
Don't know/Not sure 7 7
Refused 9 9

2. During the past 30 days, for about how many days have you felt SAD, BLUE, or DEPRESSED?

a. Number of Days _ _
b. None 8 8
Don't know/Not sure 7 7
Refused 9 9

3. During the past 30 days, for about how many days have you felt WORRIED, TENSE, or ANXIOUS?

a. Number of Days _ _
b. None 8 8
Don't know/Not sure 7 7
Refused 9 9

4. During the past 30 days, for about how many days have you felt you did NOT get ENOUGH REST or SLEEP?

a. Number of Days _ _
b. None 8 8
Don't know/Not sure 7 7
Refused 9 9

5. During the past 30 days, for about how many days have you felt VERY HEALTHY AND FULL OF ENERGY?

a. Number of Days _ _
b. None 8 8
Don't know/Not sure 7 7
Refused 9 9

Back to top

## Another Example - Health Care Utilization

(Lorig et al., 1996)

STANFORD PATIENT EDUCATION RESEARCH CENTER

### Health Care Utilization

1. **In the past 6 months**, how many times did you visit a physician?
   *Do NOT include visits while in the hospital or the hospital emergency room.* ....._____ visits

2. **In the past 6 months**, how many times did you go to a **hospital** emergency room?_____ times

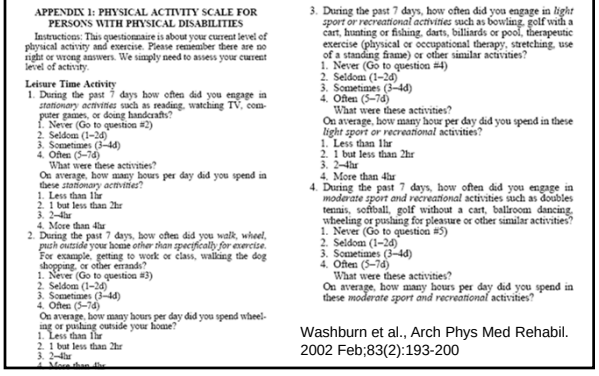
3. How many different **times** did you stay in a hospital overnight or longer **in the past 6 months**? ..... _____ times

4. How many total NIGHTS did you spend in the hospital **in the past 6 months**? ..... _____ nights

## Outcome Measurement Tool Examples

- Lorig's Stanford Patient Education Centre has a lot of tools relevant to her Self-Management Education Programs
  - http://patienteducation.stanford.edu/research/

## Example for Physical Activity - Physical Activity Scale for Individuals with Physical Disabilities (PASIPD)



**APPENDIX 1: PHYSICAL ACTIVITY SCALE FOR PERSONS WITH PHYSICAL DISABILITIES**

Instructions: This questionnaire is about your current level of physical activity and exercise. Please remember there are no right or wrong answers. We simply need to assess your current level of activity.

**Leisure Time Activity**

1. During the past 7 days how often did you engage in *stationary activities* such as reading, watching TV, computer games, or doing handcrafts?
   1. Never (Go to question #2)
   2. Seldom (1–2d)
   3. Sometimes (3–4d)
   4. Often (5–7d)

   What were these activities?

   On average, how many hours per day did you spend in these *stationary activities*?
   1. Less than 1hr
   2. 1 but less than 2hr
   3. 2–4hr
   4. More than 4hr
2. During the past 7 days, how often did you *walk, wheel, push outside* your home *other than specifically for exercise*. For example, getting to work or class, walking the dog shopping, or other errands?
   1. Never (Go to question #3)
   2. Seldom (1–2d)
   3. Sometimes (3–4d)
   4. Often (5–7d)

   On average, how many hours per day did you spend wheeling or pushing outside your home?
   1. Less than 1hr
   2. 1 but less than 2hr
   3. 2–4hr
   4. More than 4hr
3. During the past 7 days, how often did you engage in *light sport or recreational activities* such as bowling, golf with a cart, hunting or fishing, darts, billiards or pool, therapeutic exercise (physical or occupational therapy, stretching, use of a standing frame) or other similar activities?
   1. Never (Go to question #4)
   2. Seldom (1–2d)
   3. Sometimes (3–4d)
   4. Often (5–7d)

   What were these activities?

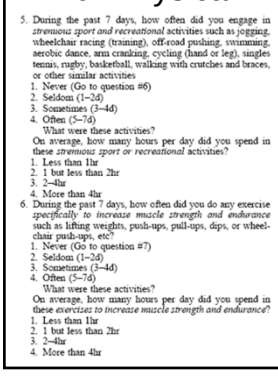
   On average, how many hour per day did you spend in these *light sport or recreational* activities?
   1. Less than 1hr
   2. 1 but less than 2hr
   3. 2–4hr
   4. More than 4hr
4. During the past 7 days, how often did you engage in *moderate sport and recreational* activities such as doubles tennis, softball, golf without a cart, ballroom dancing, wheeling or pushing for pleasure or other similar activities?
   1. Never (Go to question #5)
   2. Seldom (1–2d)
   3. Sometimes (3–4d)
   4. Often (5–7d)

   What were these activities?

   On average, how many hours per day did you spend in these *moderate sport and recreational* activities?

Washburn et al., Arch Phys Med Rehabil. 2002 Feb;83(2):193-200

## Physical Activity Scale for Individuals with Physical Disabilities (PASIPD)



5. During the past 7 days, how often did you engage in *strenuous sport and recreational* activities such as jogging, wheelchair racing (training), off-road pushing, swimming, aerobic dance, arm cranking, cycling (hand or leg), singles tennis, rugby, basketball, walking with crutches and braces, or other similar activities
   1. Never (Go to question #6)
   2. Seldom (1–2d)
   3. Sometimes (3–4d)
   4. Often (5–7d)

   What were these activities?

   On average, how many hours per day did you spend in these *strenuous sport or recreational* activities?
   1. Less than 1hr
   2. 1 but less than 2hr
   3. 2–4hr
   4. More than 4hr
6. During the past 7 days, how often did you do any exercise *specifically to increase muscle strength and endurance* such as lifting weights, push-ups, pull-ups, dips, or wheelchair push-ups, etc?
   1. Never (Go to question #7)
   2. Seldom (1–2d)
   3. Sometimes (3–4d)
   4. Often (5–7d)

   What were these activities?

   On average, how many hours per day did you spend in these *exercises to increase muscle strength and endurance*?
   1. Less than 1hr
   2. 1 but less than 2hr
   3. 2–4hr
   4. More than 4hr

- Also 2 more domains
  - Household Activities
    - 6 Questions
  - Work Related Activities
    - 1 Question
- Scoring involves multiplying by a metabolic equivalent factor and considering time at each activity

Washburn et al., Arch Phys Med Rehabil. 2002 Feb;83(2):193-200

Message – If Possible, For Project Employ **Standardized Tools** for Primary Outcome Measure

- Mention the tool and the objective you using it for.
  - E.g., "To measure **physical activity participation** we are using the PASIPD (Washburn et al. 2002) which is a tool **to measure the extent to which people have engaged in physical activity over the past week**. This tool **has been validated** for persons with a variety of physical disabilities and has also been shown to have **high test-retest reliability** in persons with MS and stroke"
- Note the highlights of their validation and their previous use with your intended population

## A Framework to Describe Approaches to Increase Physical Activity Participation

(as outlined in Kahn et al. 2002 – in Supplementary Resources)

**The Effectiveness of Interventions to Increase Physical Activity**
**A Systematic Review**

Emily B. Kahn, PhD, MPH, Leigh T. Ramsey, PhD, Ross C. Brownson, PhD, Gregory W. Heath, DHSc, MPH, Elizabeth H. Howze, ScD, Kenneth E. Powell, MD, MPH, Elaine J. Stone, PhD, MPH, Mummy W. Rajab, MS, Phaedra Corso, PhD, and the Task Force on Community Preventive Services

Am J Prev Med 2002;22(4S)
Published by Elsevier Science Inc.

Framework outlined in Kahn et al. 2002

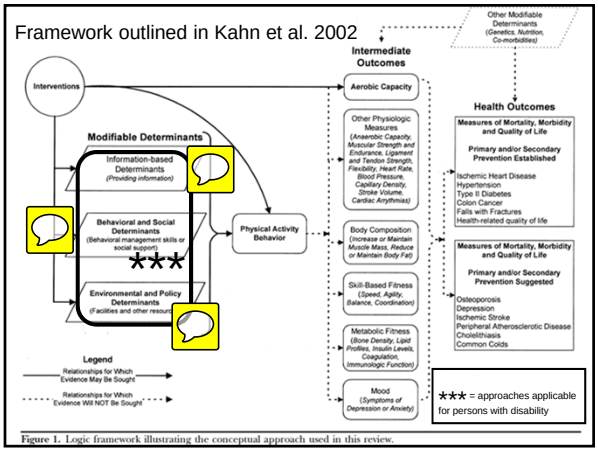



Figure 1. Logic framework illustrating the conceptual approach used in this review.

1. Informational Approaches to Increasing Physical Activity (as outlined in Kahn et al. 2002)

- "point-of-decision" prompts to encourage a specific behaviour, ***
- community-wide education campaigns, mass media campaigns, and
- classroom-based health education focused on information provision and skills

*** = approaches applicable for persons with disability

2. Behavioural and Social Approaches to Increasing Physical Activity - (as outlined in Kahn et al. 2002)

- School-Based PE,
- College-based health education and PE,
- Classroom-based health education (focused on reducing television viewing and video game playing),
- **Family-based social support interventions,** ***
- **Social support interventions in community settings**
- **Individually-adapted health behavior change programs** ***

*** = approaches applicable for persons with disability

## Family-based social support interventions

(as outlined in Kahn et al. 2002)

- Changing health behaviour through the use of techniques that increase the support of family members for behaviour change.
- Why?
  - The family is a major source of influence for children in the modeling of health behaviours.
  - Many disease risk factors, both behavioural and physiologic, aggregate within families.
  - A supportive social environment → increased maintenance of behaviour change.

## Family-based social support interventions (cont)
(as outlined in Kahn et al. 2002)

- Programs typically include joint or separate educational sessions on health, goal-setting, problem-solving, or family behavioural management and will often incorporate some physical activities.
- Often implemented as part of a larger strategy that includes other school-based interventions, such as school-based PE or classroom-based health education.
- In this setting, the family component is often conceptualized as an adjunct home curriculum to the school activities, involving take-home packets, reward systems, and family record keeping.

## Family-based social support interventions (cont)
(as outlined in Kahn et al. 2002)

- Examples include family-oriented special events (e.g., the CATCH [Child and Adolescent Trial for Cardiovascular Health] program has Family Fun Nights, which are "mini-health fairs" for family and peers that offer games, prizes, food, and beverages)

## Social support interventions in community settings
(as outlined in Kahn et al. 2002)

- These interventions focus on changing behaviour through building, strengthening, and maintaining social networks that provide supportive relationships.
- This change can be achieved either by creating new social networks or working within pre-existing networks in a social setting outside the family, such as the workplace (or in the context of disability → Disability-specific support group).

## Social support interventions in community settings (cont)
(as outlined in Kahn et al. 2002)

- Interventions typically involve ...
  - setting up a "buddy" system,
  - making a "contract" with others to achieve specified levels of physical activity, or
  - setting up group (e.g., walking group) to provide companionship and support.

## Individually-adapted health behaviour change programs **** (as outlined in Kahn et al. 2002)

- Programs are tailored to the individual's readiness for change, specific interests, and preferences and teach participants specific behavioural skills.
- Behaviours may be planned (e.g., a daily scheduled walk) or unplanned (e.g., when the opportunity arises).
- Many or most of these interventions use constructs from one or more established health behaviour change models such as Social Cognitive Theory, the Health Belief Model, or the Transtheoretical Model of Change.

**** = approaches **especially** applicable for persons with disability

## Individually-adapted health behaviour change programs **** (as outlined in Kahn et al. 2002)

- Programs incorporated the following behavioural approaches:
  - **Setting goals** for physical activity and **self-monitoring** of progress toward goals,
  - **Building social support** for new behavioural patterns,
  - **Behavioural reinforcement** through self-reward and positive self-talk (= **motivational interviewin**
  - **Structured problem-solving** geared to maintenance of the behaviour change (= Stanford SME), and
  - **Prevention of relapse** into previous behaviours.

## Individually-adapted health behaviour change programs **** (as outlined in Kahn et al. 2002)

- All of the interventions were delivered to people via ...
  - Group settings or by
  - Mail,
  - Telephone, or
  - Directed media.

## 3. Environmental and Policy Approaches

(as outlined in Kahn et al. 2002)

- Creation of healthful physical and organizational environments through development of policy that lends itself to creating supportive environments and strengthening community action.
- Goal is to change behaviour through changing social networks, organizational norms and policies, the physical environment, resources and facilities, and laws.

## Environmental and Policy Approaches

(as outlined in Kahn et al. 2002)

- Two examples of interventions …
  - Changing transportation policies and infrastructure to promote nonmotorized transit and
  - Urban planning approaches – Changing zoning and land use regulations.

## Example – Individually-adapted health behaviour change programs ****

Interventions can be characterized by …

- Underlying Theories (which guide specific approaches),
- Messengers
- Barriers/Facilitators

**** = approaches **especially** applicable for persons with disability

## Example – Individually-adapted health behaviour change programs

- Warms et al. 2004
  - Am J Health Promot. 2004; 18(4):288-91

➢ This article has been placed on OWL under Supplementary Resources.

*Applied Research Briefs: Fitness; Disabled*

**Lifestyle Physical Activity for Individuals With Spinal Cord Injury: A Pilot Study**

*Catherine A. Warms, PhD, RN; Basia L. Belza, PhD, RN; JoAnne D. Whitney, PhD, RN; Pamela H. Mitchell, PhD, RN, FAAN; Steven A. Stiens, MD, MS*

- Warms et al. 2004

Am J Health Promot. 2004; 18(4):288-91

- Abstract

PURPOSE: To evaluate the acceptability and feasibility of a lifestyle physical activity program for people with spinal cord injury (SCI).

METHODS: Sixteen nonexercising adult volunteers with SCI participated in a single group pre-post-test of the "Be Active in Life Program" comprising stage-matched educational materials, home visit by a nurse, construction of a personal plan to increase activity, and 4 follow-up phone calls. Program acceptability, stage of change, barriers to health-promoting activities, abilities for health practices, health, depression, and muscle strength were rated. Physical activity was monitored using actigraphy and a self-report record.

RESULTS: Participants rated the program positively, although some preferred a structured exercise approach. Eighty-one percent of participants progressed in stage of change and 60% increased physical activity. There were significant changes in motivational barriers, exercise self-efficacy, self-rated health, and muscle strength.

DISCUSSION: Lifestyle physical activity is feasible and acceptable and could be effective in promoting greater physical activity among people with SCI.

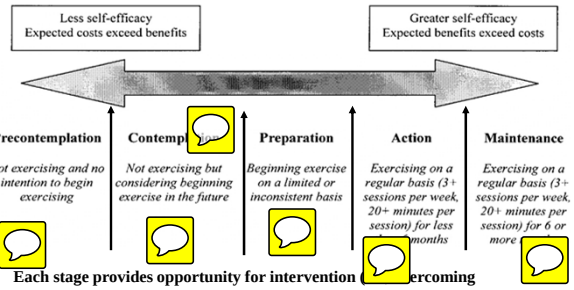
Example – Interventions can be Characterized by their Underlying Theories (approaches), Messengers and Barriers/Facilitators they Incorporate

- Warms et al. 2004
- 90-minute home visit, written educational materials and 4 follow-up phone calls to set individually-based goals (action planning).
  - One-on-one (telephone) counseling, home-based
- Underlying Theories/Approaches
  - **Transtheoretical Model**, behavioural management (counseling, goal-setting, prompts/reminders) , **Motivational Interviewing**, Personalized action planning
- Messengers
  - Health care professional (nurse)
- Barriers /Facilitators
  - Assessed individual barriers with Barriers to Health Activity Among Disabled Persons

Example – Interventions can be Characterized by their Underlying Theories (approaches), Messengers and Barriers/Facilitators they Incorporate

- Warms et al. 2004
- How was the Transtheoretical Model incorporated?

## Transtheoretical Model of Behavioral Change
(relative to Exercise)

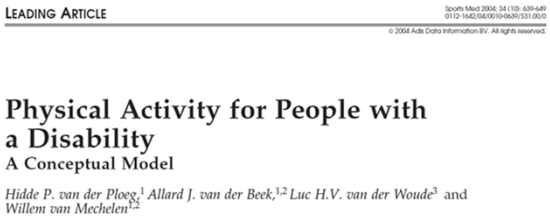



**Each stage provides opportunity for intervention (overcoming barrier) in moving to next stage toward +ive behaviour change**

Example – Interventions can be Characterized by their Underlying Theories (approaches), Messengers and Barriers/Facilitators they Incorporate

- Warms et al. 2004
- How was the Transtheoretical Model incorporated?
  - Participants selected one of five statements that most closely described their current exercise situation.
    - ✓ Participants included only if pre-contemplation or contemplation stage.
    - ✓ Written materials were stage matched.
  - Outcome measurement – Assessed proportion of people that progressed (or regressed) from their initial stage

## Required Reading – Linking Conceptual Model to Intervention Development


LEADING ARTICLE

Sports Med 2004; 34 (10): 639-649
0112-1642/04/0010-0639/$31.00/0

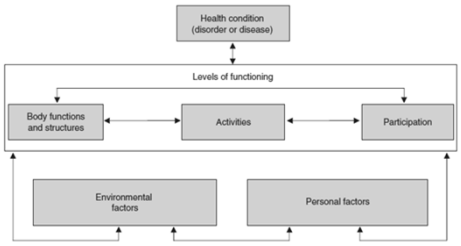
© 2004 Adis Data Information BV. All rights reserved.

**Physical Activity for People with a Disability**
A Conceptual Model

*Hidde P. van der Ploeg,[1] Allard J. van der Beek,[1,2] Luc H.V. van der Woude[3] and Willem van Mechelen[1,2]*

## Developing a Conceptual Model that Incorporates Physical Activity for People with a Disability

- Van der Ploeg et al, 2004
- Started with ICF as basis for model + literature search for other existing models /theories relevant to PA programming for persons with a disability



## Developing a Conceptual Model that Incorporates Physical Activity for People with a Disability

- Van der Ploeg et al, 2004
- Looked at literature for various models that described determinants of Physical Activity Behaviour (general population)
- Most frequently used theories →
  - Social Learning / Cognitive theories (Social Cognitive Theory)
  - Health Belief Model
  - The Theory of Planned Behaviour
  - Transtheoretical model
- Settled on a model that combined Social Learning Theory (Social Cognitive Theory) and the Theory of Planned Behaviour
  - DeVries et al. (1988) configured this into a model called Attitude, Social influence and self-Efficacy (ASE model)

## Developing a Conceptual Model that Incorporates Physical Activity for People with a Disability

Attitude, Social influence and self-Efficacy Model

**= (ASE model)**

DeVries et al. (1988)

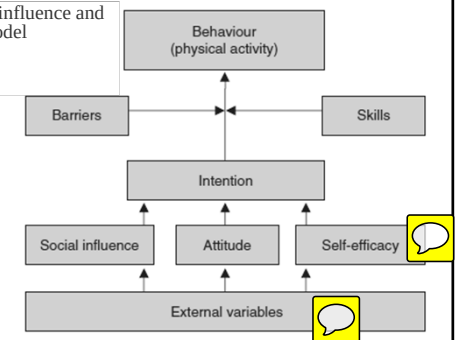



**Fig. 2.** The Attitude, Social influence and self-Efficacy (ASE) model (reproduced from De Vries et al.,[54] with permission).

## Developing a Conceptual Model that Incorporates Physical Activity for People with a Disability

- ASE Model
  - **A**ttitude towards physical activity = what an individual thinks and expresses about a physically active lifestyle for him- or herself.
  - **S**ocial influence = what other people think about a physically active lifestyle for this person.
  - self-**E**fficacy = this individual's confidence of being able to successfully engage in a certain physical activity, given a range of different contexts, including different barriers.
    - Influenced by external variables such as those noted as Personal Factors in ICF (e.g., sex, race, age, socio-economic status)

## Developing a Conceptual Model that Incorporates Physical Activity for People with a Disability

- ASE Model (In words)
  - Attitude, social influence and self-efficacy (potentially modified by external (environmental) variables / personal factors) modify physical activity behaviour through intentions
  - Physical activity behaviour depends also on a person's skills and barriers which may facilitate or prevent actual behaviour respectively

## Developing a Conceptual Model that Incorporates Physical Activity for People with a Disability

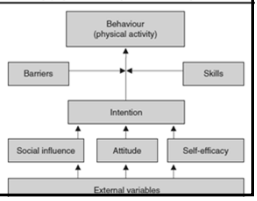
- Also incorporating Transtheoretical Model (stages of change)

**Table II.** The different stages of change for physical activity behaviour[57]

| Stage of change | Definition |
|---|---|
| Precontemplation | Physically inactive and no intention to become more active in the next 6 months |
| Contemplation | Physically inactive, but intention to become more active in the next 6 months |
| Ready for action/preparation | Physically active, but not regularly[a] |
| Action | Regularly physically active,[a] but only started in the last 6 months |
| Maintenance | Regularly physically active[a] for at least 6 months |
| Relapse | Falling back to an earlier stage of change |

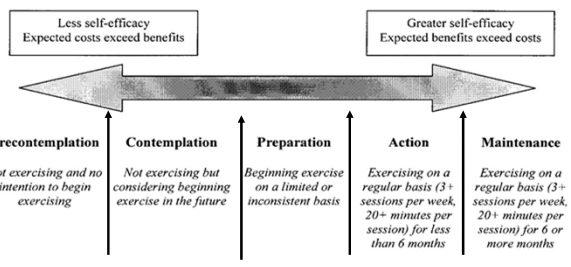
a 'Regularly physically active' is defined as half an hour of moderate intensity physical activity at least 5 days a week.[1]

De Vries[55] later integrated the stages of change into the ASE model. He placed 'precontemplator' and 'contemplator' in the intention box, 'action' in the behaviour box and after the behaviour box two extra boxes were placed containing maintenance and relapse. It seems the stages of change can actually be seen as a combination of physical activity status and intention towards physical activity behaviour.



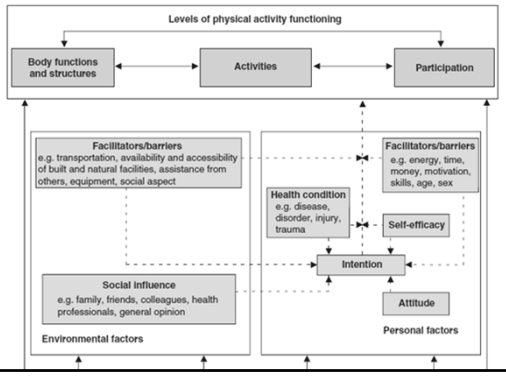

## Transtheoretical Model of Behavioral Change

(relative to Exercise)



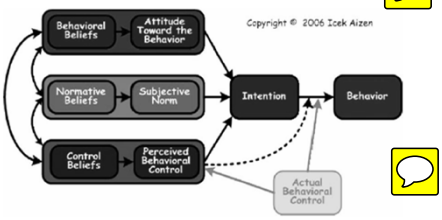

**Each stage provides opportunity for intervention (i.e., overcoming barrier) in moving to next stage toward +ive behaviour change**

## **P**hysical **A**ctivity for People with a **D**isability (PAD) Model




## Background Info – Theory of Planned Behaviour

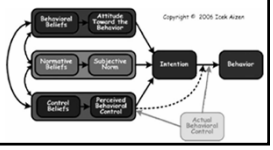
- Developed by Icek Aizen




- Remember … This was one of the key theories that van den Ploeg used to develop PAD model

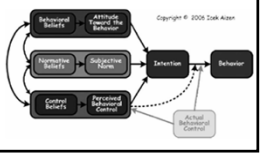
## Background Info – Theory of Planned Behaviour

- Human behaviour (in this case Physical Activity) is guided by three kinds of considerations
  - Beliefs about the likely outcomes of the behaviour and the evaluations of these outcomes (**behavioural beliefs**)
  - Beliefs about the normative expectations of others and motivation to comply with these expectations (**normative beliefs**), and
  - Beliefs about the presence of factors that may facilitate or impede performance of the behaviour and the perceived power of these factors (**control beliefs**)



## Background Info – Theory of Planned Behaviour

- Each of these beliefs give rise to ...
  - Behavioural beliefs → Attitude toward the Behaviour
  - Normative beliefs → Subjective Norms
  - Control beliefs → Perceived Behavioural Control
- Which give rise to Intentions which gives rise to Behaviour



## Implementation Intention -- Different than "Intention" in **P**hysical **A**ctivity for People with a **D**isability (PAD) Model