Chapter 18: Exercise Behavior and Adherence
Session Outline

• Why study exercise behavior?
• Why exercise behaviors and adherence are important
• Reasons for exercising
• Reason for not exercising
• The problem of exercise adherence
Session Outline (continued)

- Theories and models of exercise behavior
- Determinants of exercise adherence
- Strategies for enhancing adherence to exercise
- Settings for exercise interventions
- Guidelines for improving exercise adherence
Why Exercise Behavior and Adherence Are Important

• Only 10% to 25% of American adults are active enough to maintain or increase cardiorespiratory and muscular fitness levels.

• Among adults, 30% do not participate in any physical activity.

(continued)
Why Exercise Behavior and Adherence Are Important (continued)

• 66% of Americans were overweight or obese in 2005.

• From 2000 to 2005, obesity increased by 24% and the percentage of superobese increased by 75%.

• The propensity to be overweight increases with age: 44% of people age 18 to 29 and 77% of people age 46 to 64 were overweight in 2005.
Why Exercise Behavior and Adherence Are Important (continued)

• Among youths from 12 to 21 years of age, 50% do not participate regularly in physical activity.

• Among adults, only 10% to 15% participate in vigorous exercise regularly (three times a week for at least 20 minutes).

(continued)
Why Exercise Behavior and Adherence Are Important (continued)

• Of sedentary adults, only 10% are likely to begin a program of regular exercise within a year.

• Among both boys and girls, physical activity declines steadily through adolescence from about 70% at age 12 to 30 to 40% by age 21.
Why Exercise Behavior and Adherence Are Important (continued)

• Among women, physical inactivity is more prevalent than among men, as it is among blacks and Hispanics compared with whites, older adults compared with younger ones, and the less affluent compared with the more affluent.

• Of people who start an exercise program, 50% will drop out within 6 months.
Reasons for Exercising

• Weight control (counter obesity epidemic)
• Reduced risk of cardiovascular disease
• Reduction in stress and depression
• Enjoyment
• Building self-esteem
• Socializing

(continued)
Reasons to Exercise (continued)

• Keys
  – Exercise combined with proper eating habits can help people lose weight.
  – Weight loss should be slow and steady.
  – Both the physiological and psychological benefits of exercise can be cited to persuade sedentary people to initiate exercise.
  – Maintenance and initiation of physical activity are critical.
Reasons for Not Exercising

• Perceived lack of time
• Lack of energy
• Lack of motivation
Reasons for Not Exercising (continued)

• Keys
  – Exercise professionals should highlight the benefits of exercise and provide a supportive environment to involve sedentary people in physical activity.
  – People often cite time constraints for not exercising, but such constraints are more perceived than real and often reveal a person’s priorities.
  – People of different ages or genders often cite different reasons for not exercising.
Individual Barriers to Physical Activity

- **Health issues**: Physical limitations, injury, poor health, pain and soreness, psychological problems

- **Inconvenience**: Lack of access to facilities, crowded facilities, lacking transportation, other commitments

- **Lack of motivation and energy**: Feeling lazy or unmotivated, too much effort

(continued)
Individual Barriers to Physical Activity (continued)

- Lack of social support: No exercise partner, lacking support from spouse
- Lack of time and money
- See the table on p. 419 of text
Figure 18.1

© 2011 Human Kinetics.
The Problem of Exercise Adherence

• Help those who start exercising to overcome barriers to continuing the exercise program.

• Help exercisers develop contingency plans to overcome factors leading to relapses (not exercising).
Why People Have a Problem with Exercise Adherence

• The prescriptions are often based solely on fitness data, ignoring people’s psychological readiness to exercise.

• Most exercise prescriptions are overly restrictive and are not optimal for enhancing motivation for regular exercise.
• Rigid exercise prescriptions based on principles of intensity, duration, and frequency are too challenging for many people, especially beginners.

• Traditional exercise prescription does not promote self-responsibility or empower people to make long-term behavior change.
Theories and Models of Exercise Behavior

- Health belief model
- Theory of planned behavior
- Social cognitive theory
- Self-determination theory
- Transtheoretical model
- Physical activity maintenance model
- Ecological model
• The likelihood of exercising depends on the person’s perception of the severity of health risks and appraisal of the costs and benefits of taking action.

• Overall, there is inconsistent support for predictions of exercise behavior with the health belief model (Becker & Maiman, 1975).
Theory of Planned Behavior

- Exercise behavior is made up of intentions, subjective norms and attitudes, and perceptions of ability to control behavior (Ajzen & Maiman, 1986).

- The theory of planned behavior is a useful theory for predicting exercise behavior (Mummery and Wankel, 1999).
Social Cognitive Theory

- Exercise behavior is influenced by both personal and environmental factors, particularly self-efficacy.
- Social cognitive theory has produced some of the most consistent results in predicting exercise behavior (Bandura, 1986, 1997).
Self-Determination Theory

- People are inherently motivated to feel connected to others within a social milieu (relatedness), to function effectively in that milieu (effectance), and to feel a sense of personal initiative in doing so (autonomy).

- Self-determination theory was able to predict adherence in overweight and obese participants (Edmunds, Ntoumanis, & Duda, 2007).
• Participants who display autonomy in their exercise behavior and have strong social support systems exhibit stronger motivation and enhanced exercise adherence (Standage, Sebire, & Loney, 2008).

• Because of the newness of the theory, additional tests are needed.
Transtheoretical Model

• A person progresses through six stages of change:

1. Precontemplation: Does not exercise
2. Contemplation: Has fleeting thoughts of exercising
3. Preparation: Exercises, but not regularly enough (Prochaska, DiClemente, & Norcross, 1992)

(continued)
4. Action: Has been exercising regularly, but for less than 6 months

5. Maintenance: Has been exercising regularly for more than 6 months

6. Termination: Once exercisers have exercised for 5 years
• During exercise, behavior induction strategies are used during the different transtheoretical stages (Prochaska, DiClemente, & Norcross, 1992).

• Matching the intervention to the stage of change is effective in producing high levels of regular exercise.
Physical Activity Maintenance Model

- Key aspects to predicting the maintenance of physical activity:
  - Goal setting: Commitment attainment, satisfaction
  - Self-motivation: Persistence in the pursuit of behavioral goals independent of any situational constraints
  - Self-efficacy: Confidence to overcome barriers and avoid relapse
  - Physical activity environment: Access, attractiveness, enjoyable scenery, social support
  - Life stress: Recent life changes, everyday hassles
Ecological Model

• Examine frameworks versus specific variables (Dishman, 2002).

• Explain how the environment and behaviors affect each other.

• Take into consideration intrapersonal (e.g., biological), interpersonal (e.g., family), institutional (e.g., schools), and policy (e.g., laws at all levels) influences (Sallis & Owen, 1999).
Evaluation Criteria for Theories of Health Behavior

• Guidelines to evaluating effectiveness of these theories in predicting exercise behavior:
  – Clarity: The theory has well-defined terms that are operationalized and explicit.
  – Consistency: The components do not contradict each other.
  – Parsimony: The theory explains the phenomenon in the least complex manner possible.

(continued)
Evaluation Criteria for Theories of Health Behavior (continued)

- **Testability**: The propositions can be tested.

- **Empirical adequacy**: The theory predicts when a behavior change will and will not occur.

- **Productivity**: It generates new questions and ideas and adds to the knowledge base.

- **Generalizability**: It generalizes to other situations, places, and times.
Evaluation Criteria for Theories of Health Behavior (continued)

– Integration: Constructs are combined in a meaningful and systematic pattern.

– Utility: It provides service and is useable.

– Practicality: A theory-based intervention produces greater behavior change than a placebo or a control.

– Impact: Reach (the percentage of the target population participating) times number of behaviors changed times efficacy (amount of change).
Keeping People Active: Preventing Relapses

- Expect and plan for lapses (e.g., scheduling alternative activities while on vacation).
- Develop coping strategies to deal with high-risk situations (e.g., relaxation training, time management, imagery).
- Replace “shoulds” with “wants” to provide more balance in your life (“Shoulds” put pressure and expectations on you).
Keeping People Active: Preventing Relapses (continued)

• Use positive self-talk and imagery to avoid self-dialogues focusing on relapse.

• Identify situations that put you at risk, and attempt to avoid or plan for these settings.

• Do not view a temporary relapse as catastrophic since this undermines confidence and willpower (e.g., if you didn’t exercise for a week, you are not a total failure; just start again next week).
Factors Associated with Participation in Supervised Exercise Programs

- Many factors, including demographics and physical and social environment, affect exercise participation.
- See table 18.2 on pgs. 428–429 of text.
Determinants of Exercise Adherence: Highlights

- Demographic variables (e.g., education, income, sex, socioeconomic status) have a strong association with physical activity.

- Barriers to exercise are similar for white and nonwhite populations.

- Self-efficacy and self-motivation consistently predict physical activity.
Spousal support is critical to enhancing adherence rates for people in exercise programs. Spouses should be involved in orientation sessions or in parallel exercise programs.

Early involvement in sport and physical activity should be encouraged, because there is a positive relation between childhood exercise and adult physical activity patterns.
Determinants of Exercise Adherence: Highlights (continued)

• Exercise intensities should be kept at moderate levels to enhance the probability of long-term adherence to exercise programs.

• Group exercising generally produces higher levels of adherence than exercising alone, but tailoring programs to fit individuals and the constraints they feel can help them adhere to the program.
Determinants of Exercise Adherence: Highlights (continued)

- Support from families and friends has been consistently linked to physical activity participation and adherence.
- Finding the best time to exercise for each person is essential.
Determinants of Exercise Adherence: Highlights (continued)

• Exercise leaders influence the success of an exercise program. They should be knowledgeable, give lots of feedback and praise, help participants set flexible goals, show concern for safety and psychological comfort, and promote task cohesion.

• A convenient location is an important predictor of exercise behavior.
Moving Beyond Exercise: Increasing Adherence to Mental Training

• Integrate psychological skills into existing routines and practice.

• Reduce perceived costs (not enough time) that are associated with employing a mental training program.

• Reinforce athletes’ feelings of enjoyment gained from using mental training strategies.
Moving Beyond Exercise: Increasing Adherence to Mental Training (continued)

• Show relationship between mental training and achievement of personal goals.

• Individualize mental training programs as much as possible.

• Promote mental training as much as possible before the person starts to work on specific mental training exercises.
Strategies for Enhancing Adherence to Exercise

• Six categories of techniques:
  1. Behavior modification approaches
  2. Reinforcement approaches
  3. Cognitive–behavioral approaches
  4. Decision-making approaches
  5. Social-support approaches
  6. Intrinsic approaches
Category 1: Behavior Modification Approaches

- **Prompts**: Verbal, physical, or symbolic cues initiate behaviors (e.g., posters encouraging people to take the stairs, placing running shoes by bed).

- **Contracting**: Participants enter into a contract with their exercise practitioners.
Category 2: Reinforcement Approaches

• Charting attendance and participation

• Rewards for attendance and participation: Rewards improve attendance but must be provided throughout the length of the program.
Category 2: Reinforcement Approaches (continued)

• **Feedback:** Providing feedback to participants on their progress has positive motivational effects.

• **Self-monitoring:** Participants keep written records of their physical activity.
Category 3: Cognitive–Behavioral Approaches

• Goal setting should be used to motivate individuals.

• Exercise-related goals should be
  – self-set rather than instructor-set,
  – flexible rather than fixed, and
  – time-based rather than distance-based.

(continued)
Category 3: Cognitive–Behavioral Approaches (continued)

- **Cognitive techniques**: Dissociative strategies emphasize external distractions and the environment and produce significantly higher levels of exercise adherence than associative strategies focusing on internal body feedback.
Category 4: Decision-Making Approaches

• Involve exercisers in decisions regarding program structure.

• Develop balance sheets.

• Completing a decision balance sheet to increase awareness of the costs and benefits of participating in an exercise program can enhance exercise adherence.
Figure 18.3

<table>
<thead>
<tr>
<th>Gains to self</th>
<th>Losses to self</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Better physical condition</td>
<td>- Less time with hobbies</td>
</tr>
<tr>
<td>- More energy</td>
<td></td>
</tr>
<tr>
<td>- Weight loss</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Gains to important others</th>
<th>Losses to important others</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Healthier so I can play baseball with my kids</td>
<td>- Less time with my family</td>
</tr>
<tr>
<td></td>
<td>- Less time to devote to work</td>
</tr>
<tr>
<td>- Become more attractive to my spouse</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Approval of others</th>
<th>Disapproval of others</th>
</tr>
</thead>
<tbody>
<tr>
<td>- My children would like to see me be more active</td>
<td>- My boss thinks it takes time away from work</td>
</tr>
<tr>
<td>- My spouse would like me to lead a healthier lifestyle</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Self - approval</th>
<th>Self - disapproval</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Feel more confident</td>
<td>- I look foolish exercising because I'm out of shape</td>
</tr>
<tr>
<td>- Improved self concept</td>
<td></td>
</tr>
</tbody>
</table>
Category 5: Social-Support Approaches

• Social support
  – A person (e.g., spouse, family member, friend) has a favorable attitude toward another person’s involvement in an exercise program.
  – Social support can be enhanced by participation in a small group, the use of personalized feedback, and the use of a buddy system.
Category 6: Intrinsic Approaches

- Focus on the experience itself.
- Take a process orientation.
- Engage in purposeful and meaningful physical activity.
Motivational Interviewing

• An intervention to increase the likelihood of a client’s considering, initiating, and maintaining specific strategies to reduce harmful behavior via an interview.

• Motivation to change is elicited from the client rather than the counselor.

• Client–counselor relationship is more of a partnership.
Target Populations and Settings for Exercise Interventions

• **Strategies focused on changing people:** Physical activity classes, technical instruction, reward systems

• **Strategies focused on networking people:** Services to link up clients to help them engage in physical activity

(continued)
Target Populations and Settings for Exercise Interventions (continued)

• Strategies focused on changing the interpersonal environment: Activity classes for families, couples, or small groups of friends

• Strategies focused on networking interpersonal environments: Services to link up couples, families, or small groups to actually participate in activities together
Target Populations and Settings for Exercise Interventions (continued)

• Strategies focused on changing organizations

• Strategies focused on changing communities: Bike or walking paths

• Strategies focused on changing the political environment
Guidelines for Improving Exercise Adherence

• Match the intervention to the participant’s stage of change.

• Provide cues for exercises (signs, posters, cartoons).

• Make the exercise enjoyable.

• Tailor the intensity, duration, and frequency of the exercises.
Guidelines for Improving Exercise Adherence (continued)

• Promote exercising with a group or friend.

• Have participants sign a contract or statement of intent to comply with the exercise program.

• Offer a choice of activities.

• Provide rewards for attendance and participation.
Guidelines for Improving Exercise Adherence (continued)

• Give individualized feedback.
• Find a convenient place for exercising.
• Have participants reward themselves for achieving certain goals.
• Encourage goals to be self-set, flexible, and time-based (rather than distance-based).
• Remind participants to focus on environmental cues (not bodily cues) when exercising.

• Use small-group discussions.

• Have participants complete a decision balance sheet before starting the exercise program.
Guidelines for Improving Exercise Adherence (continued)

- Obtain social support from the participant’s spouse, family members, and peers.
- Suggest keeping daily exercise logs.
- Practice time management skills.
- Help participants choose purposeful physical activity.