Chapter 7

Personality and Exercise
Research Objectives of the Study of Personality

- Are certain personality attributes *antecedents* to physical activity/exercise participation?
- Do certain personality attributes develop as a *consequence* of physical activity/exercise participation?
Personality Defined

• Underlying, relatively stable, psychological structures and processes that organize human experience and shape a person’s actions and reactions to the environment

• Individual’s unique but consistent psychological makeup
Structure of Personality
(According to Hollander [1967])

• Personality core
  – Developed from early environmental interactions
  – Includes perceptions of external world and self, basic attitudes, values, interests, and motives
  – Reflective of who we are; least amenable to change

• Typical responses to situations
  – Fairly predictable behaviors and reactions

(continued)
Structure of Personality
(continued)

• Role-related behaviors
  – Variable, daily behaviors influenced by the particular context we are in
  – Most easily changed
Approaches to the Study of Personality

- Learning/situational approaches
  - Conditioning and behaviorist theories
  - Social learning theories

- Dispositional/trait theories
  - Biological theories
  - Trait theories
Person–Situation Debate

- Person perspective or trait approach:
  - Personality is derived from stable, enduring attributes that lead to consistent responses over time/situations

- Situation approach:
  - Behavior is best explained by individual’s reaction to environment

- Debate led to the *interactionist perspective* to studying personality:
  - Both individuals and the situations in which they find themselves are important in determining behavior
Biological Theories of Personality

• Ancient Greek theory of humors: A preponderance of one of four basic body fluids manifests itself in discernible personalities:
  – Blood: sanguine, cheerful, optimistic
  – Yellow bile: choleric, irritable disposition
  – Black bile: melancholic, sad, depressed
  – Phlegm: phlegmatic, calm, indifferent

• Constitutional theory (Sheldon, 1942)
Constitutional Theory—Somatotypes

- Individuals possess certain body types that predispose behavioral consistency:
  - Ectomorph: Tense, introverted, inhibited
  - Endomorph: Affectionate, sociable, relaxed
  - Mesomorph: Adventurous, dominant, aggressive, risk-taking
# Three Major Somatotypes

<table>
<thead>
<tr>
<th>BODY TYPE</th>
<th>Ectomorph</th>
<th>Endomorph</th>
<th>Mesomorph</th>
</tr>
</thead>
<tbody>
<tr>
<td>Characteristics</td>
<td>Linearity</td>
<td>Plumpness</td>
<td>Inverted triangle</td>
</tr>
<tr>
<td>Tallness</td>
<td>Fatness</td>
<td>Athletic body</td>
<td></td>
</tr>
<tr>
<td>Leanness</td>
<td>Roundness</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PERSONALITY TYPE</th>
<th>Cerebrotonia</th>
<th>Visceratonia</th>
<th>Somatotonia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Characteristics</td>
<td>Tense</td>
<td>Affection</td>
<td>Adventurous</td>
</tr>
<tr>
<td>Introverted</td>
<td>Sociability</td>
<td>Risk-taking</td>
<td></td>
</tr>
<tr>
<td>Socially restrained</td>
<td>Relaxation</td>
<td>Dominant</td>
<td></td>
</tr>
<tr>
<td>Inhibited personality</td>
<td>Joviality</td>
<td>Aggressive</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Take-charge</td>
<td></td>
</tr>
</tbody>
</table>
Trait Theories of Personality

• Emphasis is placed on the person rather than on the situation or the environment

• Traits are thought to reflect motivational systems that increase adaptation to positive or negative stimuli

• Three related theories:
  – Eysenck’s personality theory
  – Cattell’s personality theory
  – Five factor model
Traits vs. States

• Traits:
  – Relatively enduring dispositions that exert a consistent influence on behaviors in a variety of situations; broad personality characteristics

• States:
  – The psychological reaction to the situation in which an individual finds him- or herself
Eysenck’s Personality Theory

- Relationships between traits create superordinate trait dimensions
  - Extroversion–Introversion (E)
  - Neuroticism (Emotionality)–Stability (N)
  - Psychoticism–Superego (P)
- Few people possess the traits that reflect the far ends of the dimensions
- Most people fall somewhere between the extremes
Dimensions of Eysenck’s Personality Theory

<table>
<thead>
<tr>
<th>Extraversion-Introversion</th>
<th>Neuroticism-Stability</th>
<th>Psychoticism-Superego</th>
</tr>
</thead>
<tbody>
<tr>
<td>Driven by level of cortical arousal in cortex of brain</td>
<td>Driving fight or flight response</td>
<td>Driven by hormonal function</td>
</tr>
<tr>
<td>Reticular formation mediates cortical arousal</td>
<td>Associated with limbic system and autonomic nervous system</td>
<td>Hormones are androgens and absence of serotonin</td>
</tr>
<tr>
<td>Introverts—higher base level activation, avoid further stimulation, low pain tolerance</td>
<td>High N—more labile, longer-lasting ANS reactions</td>
<td>Lead to heightened aggressiveness, impersonal attitudes, and antisocial behavior</td>
</tr>
<tr>
<td>Extroverts—lower base level activation, seek further stimulation, high pain tolerance</td>
<td>High N—continues to process stressor even when it is no longer present</td>
<td>Very little attention in exercise domain; can be advantageous in certain sport situations</td>
</tr>
</tbody>
</table>
Eysenck’s Framework and Exercise

• Leads to specific predictions in exercise setting for extroversion and neuroticism
  – Extroversion: Exercise could lead to increased stimulation, and thus lead to adoption/adherence to exercise routine
  – Neuroticism: Exercise might contribute to more stable, less neurotic personality

• Research shows that personality can change as a result of regular physical activity—reduced negative factors (neuroticism) and enhanced positive factors (extroversion)
Cattell’s Personality Theory

• Isolated 16 personality traits that he thought were the essence of personality
• 16 Personality Factor questionnaire (16PF)—used in sport personality and exercise studies
• A major conceptual problem has been the difficulty in interpreting complicated findings
Cattell’s Personality Theory and Exercise

- Individuals with high levels of fitness would have lower anxiety and neuroticism; greater emotional stability, placidity, and relaxation
- Individuals with lower levels of anxiety and neuroticism would respond favorably to intense physical training
Cattell’s 16 Primary Personality Factors

<table>
<thead>
<tr>
<th></th>
<th>Warm, sociable</th>
<th>vs.</th>
<th>Aloof, stiff</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>Intelligent, bright</td>
<td>vs.</td>
<td>Unintelligent, dull</td>
</tr>
<tr>
<td>C</td>
<td>Emotionally stable, mature</td>
<td>vs.</td>
<td>Emotional, immature</td>
</tr>
<tr>
<td>E</td>
<td>Dominant, ascendant</td>
<td>vs.</td>
<td>Submissive, mild</td>
</tr>
<tr>
<td>F</td>
<td>Happy-go-lucky, enthusiastic</td>
<td>vs.</td>
<td>Sober, glum</td>
</tr>
<tr>
<td>G</td>
<td>Conscientious, persistent</td>
<td>vs.</td>
<td>Casual, undependable</td>
</tr>
<tr>
<td>H</td>
<td>Adventurous, outgoing</td>
<td>vs.</td>
<td>Shy, timid</td>
</tr>
<tr>
<td>I</td>
<td>Tender-minded, sensitive</td>
<td>vs.</td>
<td>Tough, realistic</td>
</tr>
<tr>
<td>L</td>
<td>Trusting, accepting</td>
<td>vs.</td>
<td>Suspicious, jealous</td>
</tr>
<tr>
<td>M</td>
<td>Imaginative, unconventional</td>
<td>vs.</td>
<td>Practical, conventional</td>
</tr>
<tr>
<td>N</td>
<td>Naïve, unpretentious</td>
<td>vs.</td>
<td>Shrewd, sophisticated</td>
</tr>
<tr>
<td>O</td>
<td>Confident, self-secure</td>
<td>vs.</td>
<td>Timid, apprehensive</td>
</tr>
<tr>
<td>Q₁</td>
<td>Radical, experimenting</td>
<td>vs.</td>
<td>Conservative, moralizing</td>
</tr>
<tr>
<td>Q₂</td>
<td>Self-sufficient, resourceful</td>
<td>vs.</td>
<td>Group-dependent, conventional</td>
</tr>
<tr>
<td>Q₃</td>
<td>Controlled, disciplined</td>
<td>vs.</td>
<td>Uncontrolled, undisciplined</td>
</tr>
<tr>
<td>Q₄</td>
<td>Relaxed, composed</td>
<td>vs.</td>
<td>Tense, excitable</td>
</tr>
</tbody>
</table>
The Five-Factor Model and Exercise Behavior

PERSONALITY

N
Neuroticism
- exercise adherence
- self-reported exercise
- adaptive exercise patterns
- advanced exercise stages
+ exercise dependence

E
Extraversion–introversion
+ moderate and strenuous exercise behavior
+ self-reported exercise
+ adaptive exercise patterns
+ advanced exercise stages
+ exercise dependence

O
Openness to experience

A
Agreeableness
- exercise dependence
+ self-reported exercise
+ adaptive exercise patterns
+ advanced exercise stages

C
Conscientiousness
Your Viewpoint

• What type of exercise program would you develop for someone who is tense and a worrier?
Other Personality Factors in Exercise Research

- Sex-role orientation
- Type A behavior pattern
- Hardiness
- Self-motivation
Sex Role Orientation and Exercise

- Masculinity (M): Instrumental personality
  - Risk-taking, independent, aggressive, competitive
- Femininity (F): Expressive personality
  - Understanding, sympathetic, affectionate, compassionate
- Androgynous: Possesses high levels of both M and F
- Cross-gender activities are generally avoided by gender-typed individuals because of physiological discomfort
Type A Behavior Pattern and Exercise

- Exercise has been shown to be effective in reducing this behavior pattern as well as cardiovascular disease (but results of studies are not uniform)
- Coronary-prone personality
- Anger/hostility are important features for increased risk of cardiovascular disease
# Type A and B Behavior Patterns and Exercise

<table>
<thead>
<tr>
<th>TYPE A</th>
<th>TYPE B</th>
</tr>
</thead>
<tbody>
<tr>
<td>↑ Risk of cardiovascular disease</td>
<td>↓ Risk of cardiovascular disease</td>
</tr>
<tr>
<td>↓ Adherence rates</td>
<td>↑ Adherence rates</td>
</tr>
<tr>
<td>↑ Effort</td>
<td>↓ Effort</td>
</tr>
<tr>
<td>↑ Intensity</td>
<td>↓ Intensity</td>
</tr>
<tr>
<td>↑ Physiological activation</td>
<td>↓ Physiological activation</td>
</tr>
<tr>
<td>↓ RPE</td>
<td>↑ RPE</td>
</tr>
<tr>
<td>↑ Stress responses</td>
<td>↓ Stress responses</td>
</tr>
<tr>
<td>↑ Negative affective responses</td>
<td>↓ Negative affective responses</td>
</tr>
</tbody>
</table>
Hardiness and Exercise

• Characteristics:
  – Sense of control over events
  – Commitment, dedication, or involvement in everyday life
  – Tendency to perceive life events as opportunities

• Related to a tendency to engage in more healthful behaviors, such as exercise

• Not clear if a hardy personality leads to exercise, or if exercise leads to a hardy personality
Self-Motivation and Exercise

• Psychobiological model: Both biological factors (body composition, body mass) and a psychological factor (self-motivation)

• Early predictions of model:
  – Percentage of body fat and body mass would be negatively related to exercise adherence
  – Self-motivation would be positively related to adherence

• Subsequent research hasn’t supported the model very well
Practical Recommendations

• Individuals who seem to be more emotional/neurotic might be encouraged to begin a regular exercise program
  – “Exercise dose” should be the same as would be given to improve fitness and encourage weight loss

• Exercise programs should include some type of aerobic activity, since these activities influence personality factors
Your Viewpoint

• How would you match the type of exercise to the client’s personality?
• What if the individual also displays a number of type A behaviors?
Personality Matching*

Individuals who do not exercise regularly are likely to experience additional challenges or obstacles when they engage in activities that require them to behave differently from their customary patterns.

Beginning exercisers have one fewer barrier to success if they choose sports and fitness programs that are highly similar to their personality profiles.

Does Compatibility Breed Compliance?

1. Greater hours of exercise participation
2. Higher degree of self-esteem & positive mood states
3. Greater exercise satisfaction
Seven dimensions pertinent to activity-based analyses.

- Sociability
- Spontaneity (degree of predictability)
- Self-motivation
- Aggressiveness
- Competitiveness
- Concentration
- Risk taking
FIGURE 1. The personality scores of people who regularly pursued four different activities were plotted for comparison. The karate group scored the highest for measures of aggression, competitiveness, spontaneity, and risk taking; solo runners had the highest self-motivation; the aerobics group was the most sociable; and the yoga group had the most mental focus.
Does Lap Swimming Match your Personality?

Low in sociability
Low in spontaneity
Highly internal
Low to moderate forcefulness
Low in competitiveness
Low in focus
Low in risk taking
Professional Practice

• Have the client choose an activity compare it to their perceived personality traits.

• Helps clients become more aware of how personal preferences correspond to different activities.
Your Fitness Personality Profile

Mark an "X" in the circle on each line that best represents where you place yourself in relation to the characterizations at either end of the line.

<table>
<thead>
<tr>
<th>More like this</th>
<th>In between</th>
<th>More like this</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Social</strong></td>
<td></td>
<td><strong>Nonsocial</strong></td>
</tr>
<tr>
<td>I love to be with people, to interact, to do things with others. I don't enjoy doing things by myself.</td>
<td></td>
<td>I prefer doing things alone. I enjoy solitude. I find social interactions tiring.</td>
</tr>
<tr>
<td><strong>Spontaneous</strong></td>
<td></td>
<td><strong>Controlled</strong></td>
</tr>
<tr>
<td>I enjoy doing things on the spur of the moment. I am very spontaneous. I tire easily from routines.</td>
<td></td>
<td>I like to plan and to feel in control. I want to know what's coming next. I enjoy routines. I don't like surprises.</td>
</tr>
<tr>
<td><strong>Internally motivated</strong></td>
<td></td>
<td><strong>Externally motivated</strong></td>
</tr>
<tr>
<td>I am 100% self-motivated. I have exceptionally strong willpower. I don't rely on others for support.</td>
<td></td>
<td>I need support to do hard things. Self-rewards and social encouragement help me stay committed.</td>
</tr>
<tr>
<td><strong>Competitive</strong></td>
<td></td>
<td><strong>Noncompetitive</strong></td>
</tr>
<tr>
<td>I enjoy competitive games. I perform better when I compete. Competition makes it fun.</td>
<td></td>
<td>I avoid competitive situations. Competing makes me feel uncomfortable, and I don't perform well. I rarely enjoy competition.</td>
</tr>
<tr>
<td><strong>Aggressive</strong></td>
<td></td>
<td><strong>Nonaggressive</strong></td>
</tr>
<tr>
<td>I am a forceful, assertive person. I take action. I won't let things get in my way. I make sure my needs are met.</td>
<td></td>
<td>I am easygoing and relaxed, maybe even passive about meeting my needs. I dislike aggression and avoid confrontations.</td>
</tr>
<tr>
<td><strong>Focused</strong></td>
<td></td>
<td><strong>Unfocused</strong></td>
</tr>
<tr>
<td>It's easy for me to concentrate and stay focused on task. I enjoy getting absorbed in what I am doing.</td>
<td></td>
<td>I am easily distracted. My mind wanders. I prefer doing lots of things at the same time. I have difficulty staying with the same task.</td>
</tr>
<tr>
<td><strong>Risk seeking</strong></td>
<td></td>
<td><strong>Risk avoiding</strong></td>
</tr>
<tr>
<td>I am a thrill seeker. I love adventure. I am willing to take big risks in order to do things that appeal to me.</td>
<td></td>
<td>I avoid risks. I would rather be safe than sorry, even if that means not doing things that appeal to me. I am a careful person.</td>
</tr>
</tbody>
</table>

**FIGURE 2.** A simple, self-rating scale can be used to explore the seven psychosocial traits. The results will provide insights for choosing activities that sedentary patients will be motivated to try and active patients will find challenging.
FIGURE 3. The psychosocial dimensions can be used to arrange icons representing the demands of 19 popular sports. Patients can select sports they find interesting and see how specific sports fit their personality traits.