Physical Activity Participation in Older Adults: A Comparison of Competitors, Noncompetitors, and Nonexercisers

Christina L. Smith and Martha Storandt

Histories of competitive sports involvement, health beliefs, reasons for exercising, and personality were compared across three groups of older adults who varied according to involvement in physical activity. Based on questionnaire responses, 246 participants were classified as competitors, noncompetitors, or nonexercisers. Competitors exhibited a lifelong history of sports participation. Although nonexercisers and noncompetitors participated in sports during their childhood and teenage years, their involvement in competition decreased noticeably in their 20s and remained low throughout adulthood. Competitors rated exercise significantly more important than did nonexercisers and noncompetitors and had more varied reasons for exercising. Nonexercisers considered reducing stress and improving mood to be less important reasons for exercising than competitors and noncompetitors. All three groups were found to possess high levels of positive and low levels of negative personality traits.

Key Words: aging, master athletes, exercise, history, determinants

Exercise adherence decreases with age (Bausell, 1986); over two thirds of older adults report having no regular exercise routine (Kovar, Fitti, & Chyba, 1992). For the elderly individual, physical inactivity can result in illness, activity restrictions, reduced mobility, and even loss of independence if physical conditioning deteriorates such that an individual can no longer perform the basic activities of daily living (Caspersen, Powell, & Merritt, 1994). For society, physical inactivity can have a profound economic effect as health care workers struggle to provide services for debilitated older adults. Therefore, the U.S. Department of Health and Human Services (1991) has identified research on the factors associated with physical activity among older adults as a major need.

Much of the research on the relation between psychological factors and physical activity in older adults has focused on male patient populations, particularly cardiac rehabilitation patients (e.g., Emery, Hauck, & MacIntyre, 1994). The potential flaws in drawing conclusions for normal populations based on research using unhealthy subjects have long been recognized. In 1988 Winett commented, "All too often in psychology what we know about motivation and behavior is based..."

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on individuals who are unmotivated and display problems in at least part of their lives” (p. 25). In a similar vein, most research on exercise participation has focused on younger people, often failing to include people beyond 30 years of age (Morgan, 1984). Not only are there physiological differences that may affect exercise behavior at different ages, but there may also be differences in lifestyle, prior experience, and personal goals that influence exercise participation. Finally, research has tended to include mostly men, making it difficult to draw conclusions for populations including both men and women. Knowledge about exercise participation by older women is especially important given their longer life expectancy.

Not all older adults are sedentary; some maintain moderate levels of routine physical activity (e.g., “mall walkers”), and some are master athletes who exercise regularly and also compete in sporting events. Thus, there is a continuum of physical activity among older adults. One strategy for discerning variables related to physical activity among older adults is to compare older people who are at various points on the physical activity continuum. Any differences would point to potentially fruitful directions for future research. In the present study, we asked how healthy older men and women who varied in the degree of their current involvement in physical activity differed with regard to four sets of personal attributes: life history, health beliefs, motivation, and personality. Although these various domains have not yet been integrated into a single, coherent theory of exercise participation in later life, all have been suggested as potential determinants of physical activity (Dishman, 1988; Dishman & Sallis, 1994).

**Personal Attributes**

**LIFE HISTORY**

Past behavior is often a good predictor of future behavior. Morgan (1984) hypothesized that sports participation during the first two to three decades of life influences later involvement in physical activity, at least to some degree. Dishman (1988), however, reported no relation between school sports participation and physical activity in middle-aged men. Fontaine and Hurd (1992) found that Senior Olympians tended to have a history of sports competitiveness, but these authors did not include a comparison sample of other older adults. Our review of the literature revealed no study that directly compared the physical activity histories of physically active and inactive seniors. Therefore, it is unknown if the distribution of older adults at different points on the physical activity continuum in later life represents the maintenance of lifelong individual differences (e.g., nonexercisers have always been nonexercisers). Although it was not possible to address this question in a longitudinal design spanning 60 years, we did query participants about their sports participation in each decade of life beginning in childhood, in an effort to determine at what stages of the life span differences in involvement became apparent.

**HEALTH BELIEFS**

Drawing on the work of Platt (1980) and Festinger (1957), Love and Thurman (1991) suggested that people’s health beliefs may affect their health-related behaviors. For example, Potts, Hurwicz, Goldstein, and Berkanovic (1992) studied
older adults and found that beliefs about the importance of health behaviors (i.e., diet, exercise, smoking, drinking alcohol or caffeine) were associated with performance of those behaviors. In their survey of over 2,300 older adults, Ferrini, Edelstein, and Barrett-Connor (1994) found that health beliefs were related to positive changes in health behaviors. Fontane and Hurd (1992) reported that Senior Olympians tended to be health-conscious regarding the importance of diet, smoking, and drinking alcohol. Not every researcher, however, has found support for this relation between health beliefs and behavior. For example, Watkins (1992) cautioned that increased knowledge about the benefits of physical activity does not necessarily lead to increased physical activity.

Given the broader dissemination of information in the areas of health education and promotion over the past several decades, we assumed that most older adults have been informed at least to some degree about the importance of health behaviors to health maintenance. Individuals may vary, however, in the extent to which they incorporate such information into their health belief systems. Using the health belief model, we hypothesized that older adults at different points on the physical activity continuum would vary in their beliefs about the importance of exercise to health. For comparison purposes, we also asked about their beliefs about three other health behaviors: diet, smoking, and drinking alcohol.

**MOTIVATION**

Numerous studies have explored reasons for exercising (e.g., Thornton & Scott, 1995; Vitulli & DePace, 1992), but relatively few of these studies have included older adults in the experimental sample. The studies that have examined motivation for physical activity in older adults (e.g., Fontane & Hurd, 1992; Kavanagh & Shephard, 1990) have tended to focus on master athletes and have not examined reasons for physical activity in noncompetitive exercisers. This is unfortunate, because research with younger adults suggests there may be substantial differences between competitors and noncompetitors. Frederick and Ryan (1993) found that sports participants were motivated more by interest/enjoyment and competency, whereas participants in fitness groups were more motivated by body-related variables (i.e., weight, appearance). These latter reasons are generally consistent with the predictions of the health belief model. The former, however, suggest other motivations for physical activity. Although it would be reasonable to expect that older people might be especially motivated to maintain their health through exercise, there may be additional reasons to exercise, at least for some older people. Therefore, we asked older adults who were at different points on the physical activity continuum to rate a variety of reasons for exercising.

**PERSONALITY**

Support for a relation between personality characteristics and physical activity has been mixed. According to a review by Bouchard, Shephard, and Stephens (1994), personality is one of the most prominent topics in sport psychology despite the fact that personality characteristics have typically been found to be poor predictors of behavior. In the view of Bouchard et al., global personality traits do not tap the individual differences most relevant to physical activity.
Contrary to this point of view, in an early study Brunner (1969) found a relation between habitual exercise and greater extroversion and lower neuroticism in men. More recently, Szabo (1992) found that habitual exercise participation was related to greater extroversion in both male and female undergraduates and to lower neuroticism in men. Davis and Fox (1993) provided additional evidence that intensive exercisers tended to be more extroverted than nonintensive exercisers and nonathletes.

None of these studies included older adults. Because personality is stable with age, it is not surprising that older people do not report personality changes after participating in short-term exercise programs (e.g., Hartung & Farge, 1977; Young & Ismail, 1977, 1978). It is not known, however, if personality influences the decision to exercise or participate in sports in later life. Therefore, we administered the NEO Five Factor Inventory (NEO-FFI) to assess personality in our study (Costa & McCrae, 1991). This instrument includes, in addition to extroversion and neuroticism, other factors often considered to represent major dimensions of adult personality (i.e., openness to experience, conscientiousness, agreeableness) (Digman, 1989; Goldberg, 1990). The inclusion of these additional dimensions may address, in part, the concerns voiced by Bouchard et al. (1994).

Method

PARTICIPANTS

Adults aged 55 and over (156 women and 90 men) were recruited from the Senior Olympics national finals held in St. Louis, Missouri, in the summer of 1994; the Good Life Games held in St. Joseph, Missouri, in the fall of 1994; and the Washington University Aging and Development volunteer pool. Participants were classified as competitors \( (n = 100) \), noncompetitors \( (n = 83) \), or nonexercisers \( (n = 63) \). In order to avoid group overlap, we based classification on two criteria. First, the nonexercisers were distinguished from the two exercising groups based on aerobic exercise (i.e., walking, running/jogging, cycling, swimming, dance/exercise classes). Specifically, nonexercisers were those who had not participated in aerobic exercise beyond that involved in the performance of routine activities of living (i.e., cleaning, laundry, grocery shopping) within the past year. Second, the nonexercisers and the noncompetitors were distinguished from the competitors based on competition. Specifically, competitors were those who had participated in an athletic competition (either local, national, or regional) within the past 5 years (e.g., tennis tournaments, swimming meets, 10K races, softball tournaments). Based on these criteria, competitors were those who currently participated in both competition and aerobic exercise; noncompetitors were those who participated in aerobic exercise but did not compete; nonexercisers were those who had participated in neither competition nor aerobic exercise in the past year.

In order to gain a clearer picture of the differences in physical activity among these three groups, we collected information on type of physical activity and frequency of participation. All participants were asked to report the number of minutes per day, number of days per week, and number of weeks per year that they participated in both aerobic and anaerobic physical activity. Competitors reported
participating in aerobic activities (walking, running/jogging, skating, cycling, swimming, dance/exercise classes) an average of 54 min, 4 days per week, while noncompetitors averaged 42 min, 4 days per week. Both competitors and noncompetitors reported participating in aerobic activity an average of 43 weeks a year. The nonexercisers by definition reported no aerobic participation. For anaerobic activities (weight lifting, stretching, yoga), competitors reported participating an average of 14 min, 2 days per week, 20 weeks a year; noncompetitors averaged 6 min a day, 1 day per week, 11 weeks per year; and nonexercisers averaged less than 1 min per day, less than 1 day per week, less than 1 week per year.

Information on the competitors’ sports activities was also collected. All competitors were asked to report whether they competed in each of the following types of events: racquet sports (badminton, handball, table tennis, racquetball, tennis); team sports (soccer, basketball, volleyball, softball); long-distance track events (10K run, 5K run, race walking); all other distances track events; field events (long jump, high jump, javelin, shot put, discus); and other individual events (archery, bowling, cycling, golf, swimming). On average, competitors reported participating in at least two types of events. See Table 1 for more detailed information about the nature of the competitors’ sports participation.

All participants were white except for 1 Asian American and 2 African American competitors and 2 African American nonexercisers. Approximately half (57%) of the competitors were men, compared with 24% of the noncompetitors and 21% of the nonexercisers. \( \chi^2(2, N = 246) = 30.01, p < .001 \). The competitors were slightly younger \((M = 67.06, SD = 7.30)\) than the noncompetitors \((M = 71.61, SD = 3.25)\) and nonexercisers \((M = 70.68, SD = 9.04)\), \( F(2, 243) = 8.27, p < .001 \). The three groups did not differ in years of education, \( F(2, 243) = 0.97, p > .05 \). The average education for the sample was 14.4 years \( (SD = 3.0) \). Participants rated their health on an 11-point scale, where 0 indicated poor health, 5 indicated average health, and 10 indicated excellent health. The competitors \((M = 7.98, SD = 1.85)\) and noncompetitors \((M = 7.23, SD = 1.90)\) rated their health slightly higher than the nonexercisers \((M = 6.05, SD = 2.52)\), \( F(2, 243) = 17.03, p < .001 \).

<table>
<thead>
<tr>
<th>Event</th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>Racquet sports: badminton, handball, table tennis, racquetball, tennis</td>
<td>25</td>
<td>14</td>
</tr>
<tr>
<td>Team sports: soccer, basketball, volleyball, softball</td>
<td>28</td>
<td>10</td>
</tr>
<tr>
<td>Track events, long-distance: 10K run, 5K run, race walking</td>
<td>15</td>
<td>10</td>
</tr>
<tr>
<td>Track events, all other distances</td>
<td>16</td>
<td>10</td>
</tr>
<tr>
<td>Field events: long jump, high jump, javelin, shot put, discus</td>
<td>21</td>
<td>8</td>
</tr>
<tr>
<td>Other individual events: archery, bowling, cycling, golf, swimming</td>
<td>30</td>
<td>23</td>
</tr>
</tbody>
</table>

Note. There were 57 men and 43 women in the competitor group.
MEASURES

**Competitive Sports History.** Participants were asked to indicate if they had participated in competitive sports activities in each decade of life beginning with childhood (0–9 years old) and continuing to the present. Because this question was intended solely to examine participants’ lifelong patterns of competitive sport involvement, participants were not required to list the specific activities in which they had been involved. They were, however, provided with guidelines as to what types of activities were to be considered competitive sports activities. Specifically, they were provided with several categories of competitive activities (racquet sports, team sports, track events, field events, individual events) and were given several examples of specific events falling under each category. For example, under the category of team sports, the examples given were soccer, basketball, volleyball, and softball.

**Health Beliefs.** Four questions assessed the respondents’ health beliefs. These questions were chosen because they are representative of the health beliefs typically assessed in the literature. Two questions asked how important maintaining a balanced diet and exercising regularly were to good health. Two questions asked how detrimental smoking and drinking alcoholic beverages were to good health. Participants were asked to rate the importance or detriment of these behaviors on an 11-point scale with 0 indicating *not at all important* (detrimental) and 10 indicating *very important* (detrimental).

**Reasons for Exercising.** Based on a review of the exercise literature, a list of 11 reasons for exercising was constructed. Participants were asked to rate the importance of each reason on an 11-point scale ranging from 0 = *not at all important* to 10 = *very important.*

1. To lose or maintain weight
2. To gain weight or increase body mass or muscle
3. To improve or maintain physical appearance
4. To prepare for competition
5. To be with friends
6. Doctor’s recommendation
7. Friends’ and/or family’s recommendation
8. To feel better physically
9. To reduce stress and anxiety
10. For the challenge of meeting a goal
11. To improve mood

**Personality.** The NEO–FFI is a 60-item inventory consisting of five 12-item scales that measure five domains of normal adult personality (neuroticism [N], extraversion [E], openness to experience [O], conscientiousness [C], agreeableness [A]; Costa & McCrae, 1991). Respondents rated their agreement with each item on a 5-point Likert scale, ranging from *strongly disagree* to *strongly agree.* The items within each scale are summed to provide a total score for each domain, with possible scores ranging from 0 to 48. Higher scores indicate that the subject has a higher probability of possessing the traits represented by a specific factor. The correlations among factors ranged from -.35 to .32. Internal consistency values for the five domains of the NEO–FFI in the present
study ranged from .69 to .87 and are comparable to the .74-.89 range of values reported in the NEO-PI/FFI manual supplement (Costa & McCrae, 1989).

PROCEDURE

Participants from the Washington University Aging and Development volunteer pool were contacted by telephone, and those from the Senior Olympics and the Good Life Games were recruited at those events. All participants were asked if a questionnaire regarding their involvement in exercise could be sent to them. Questionnaires were subsequently mailed with a cover letter explaining the purpose of the research. Participants were asked to complete the survey and return it to the study coordinator in the postage-paid envelope provided. There were 246 responses, which represented a 64% return from the 385 questionnaires mailed. Because the questionnaire did not request any identifying information (i.e., name, address), the respondents were assured of the confidentiality of their responses. This meant, however, that there were no follow-up procedures to coax more returns.

Results

LIFE HABIT

Habitual participation in competitive sports activities was examined using a $3 \times 6$ (Group × Decade) repeated-measures analysis of covariance, with sex as the covariate, group as the between-subjects variable, and decade as the repeated measure. Sex was included as a covariate because almost half of the competitors were men, compared with less than a quarter of the noncompetitors (24%) and nonexercisers (21%). Age and self-rated health were not included as covariates, because age would not vary for the three groups and we had no measures of prior health. Given the dichotomous nature of the dependent variable (yes or no), this analysis was conducted using SAS’s CATMOD procedure, a weighted least-squares method for analyzing repeated-measures categorical data (SAS Institute Inc., 1989). This procedure calculated the proportion of individuals in each group who participated in competitive sport during each decade and then compared these marginal proportions for goodness-of-fit using the chi-square distribution. The main effects of group, $\chi^2(1, 2) = 60.19, p < .001$, and decade, $\chi^2(1, 5) = 171.32, p < .001$, were significant. More important, the interaction of group and decade was significant, $\chi^2(1, 10) = 80.70, p < .001$.

To explore this interaction, participation in competitive sports activities was then analyzed individually for each decade using analyses of covariance with sex as the covariate. These analyses revealed significant group differences for the following decades: 20–29 years, $F(2, 237) = 4.03, p < .05$; 30–39 years, $F(2, 237) = 9.35, p < .001$; 40–49 years, $F(2, 237) = 19.23, p < .001$, and 50–59 years, $F(2, 237) = 27.06, p < .001$. There were no significant differences among the groups during childhood or the teenage years. Post hoc comparisons revealed significant differences between competitors and nonexercisers in their 20s, between all three groups in their 30s, and between competitors and the other two groups in their 40s and 50s. The percentage of each group participating by decade from childhood until their 50s is presented in Figure 1. For all three groups, involvement in competition
peaked during the teenage years, with the percentage competing declining during their 20s. For the noncompetitors, the decline continued gradually throughout their 30s, 40s, and 50s. For the nonexercisers, however, the decline was quite dramatic from their teenage years to their 20s (from 69% to 27%), with the percentage remaining low throughout their 30s, 40s, and 50s. Although the percentage of the groups involved in competition dropped during their 20s and 30s, it then began to increase during the middle-age years (see Figure 1).

ANALYSES OF OTHER VARIABLES

Health beliefs, reasons for exercising, and personality were each analyzed separately in multivariate analyses of covariance, with age, sex, and self-rated health as covariates. The dependent variables for each analysis, respectively, were ratings on

![Graph](image-url)

**Figure 1.** Percentage of competitors, noncompetitors, and nonexercisers who reported participation in competitive sports at each decade of life.
the four items of the health-beliefs measure, ratings on the 11 items of the reasons for exercising measure, and scores on the five domains of the NEO-FFI. The degrees of freedom vary for the three multivariate analyses because not all participants responded to all items. For each analysis, omega-squared was estimated using Keppel’s (1991, p. 89) formula.

Health Beliefs. The three groups were significantly different, multivariate $F(8, 472) = 9.23$, $p < .001$. The univariate $F$s are shown in Table 2. The three groups differed significantly in their beliefs about the importance of regular exercise, $F(2, 238) = 29.55$, $p < .001$, $\omega^2 = .07$, and the detrimental effects of smoking, $F(2, 238) = 4.76$, $p < .01$, $\omega^2 = .01$, and drinking alcoholic beverages, $F(2, 238) = 6.74$, $p < .01$, $\omega^2 = .02$. Group membership was not significantly related to beliefs about maintaining a balanced diet. As shown in Table 2, post hoc comparisons revealed that both the competitors and noncompetitors rated the importance of regular exercise significantly higher than the nonexercisers. Noncompetitors rated the detrimental effects of smoking significantly higher than the nonexercisers. Although the main effect of drinking alcohol was significant, $F(2, 238) = 6.74$, $p < .01$, $\omega^2 = .02$, post hoc comparisons did not reveal any significant pairwise differences.

Reasons for Exercising. The three groups were significantly different, multivariate $F(22, 426) = 5.81$, $p < .001$. The univariate $F$s are shown in Table 2. The seven reasons significantly related ($p < .001$) to group membership were to improve appearance, $F(2, 222) = 9.74$, $\omega^2 = .03$; to prepare for competition, $F(2, 222) = 22.79$, $\omega^2 = .06$; to be with friends, $F(2, 222) = 11.36$, $\omega^2 = .03$; to feel better physically, $F(2, 222) = 23.39$, $\omega^2 = .06$; to reduce stress, $F(2, 222) = 24.32$, $\omega^2 = .07$; to meet a goal, $F(2, 222) = 9.85$, $\omega^2 = .03$; and to improve mood, $F(2, 222) = 25.79$, $\omega^2 = .07$. The two reasons marginally ($p < .05$) related to group membership were to lose or maintain weight, $F(2, 222) = 3.13$, $\omega^2 = .01$, and to gain weight or muscle mass, $F(2, 222) = 3.07$, $\omega^2 < .01$. Group membership was not significantly related to family, friends, or a doctor’s recommendations. As shown in Table 2, post hoc comparisons revealed that the competitors rated to gain weight or muscle mass, to prepare for competition, to be with friends, to meet a goal, to reduce stress, and to improve mood as significantly more important reasons for exercising than did the noncompetitors and nonexercisers. In addition, both the competitors and noncompetitors rated to improve appearance and to feel better physically as significantly more important than did the nonexercisers. Finally, the competitors rated to gain or maintain weight as significantly more important than did the nonexercisers.

Personality. The three groups were significantly different, multivariate $F(10, 472) = 3.43$, $p < .001$. The univariate $F$s are shown in Table 2. Although there were significant differences for the openness to experience, $F(2, 222) = 5.48$, $p < .01$, $\omega^2 = .01$, and agreeableness domains, $F(2, 222) = 4.22$, $p < .05$, $\omega^2 = .01$, group membership did not explain a large proportion of the variance for either of these domains. Group membership was not significantly related to the neuroticism, extraversion, or conscientiousness domains. Post hoc comparisons of the openness to experience and agreeableness domains revealed that the competitors did not possess significantly more of these traits than the other two groups. Instead, the noncompetitors were significantly more open to experience and the nonexercisers were significantly more agreeable than the competitors (see Table 2).
Table 2  Means and Standard Deviations of Three Subgroups on Measures of Reasons for Exercising, Health Beliefs, and Personality

<table>
<thead>
<tr>
<th>Dependent variables</th>
<th>Competitors M</th>
<th>Competitors SD</th>
<th>Noncompetitors M</th>
<th>Noncompetitors SD</th>
<th>Nonexercisers M</th>
<th>Nonexercisers SD</th>
<th>Univariate F</th>
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<tr>
<td>Balanced diet</td>
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<td>1.23</td>
<td>9.04</td>
<td>1.44</td>
<td>8.75</td>
<td>1.44</td>
<td>1.81</td>
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<td>Regular exercise</td>
<td>9.48</td>
<td>0.87</td>
<td>8.93</td>
<td>1.59</td>
<td>7.29</td>
<td>2.58</td>
<td>29.55**</td>
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<td>Smoking</td>
<td>9.48</td>
<td>1.72</td>
<td>9.70</td>
<td>0.92</td>
<td>8.90</td>
<td>2.47</td>
<td>4.76**</td>
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<tr>
<td>Drinking alcohol</td>
<td>7.52</td>
<td>2.64</td>
<td>7.11</td>
<td>2.56</td>
<td>6.89</td>
<td>2.88</td>
<td>6.74**</td>
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<tr>
<td>To lose or maintain weight</td>
<td>7.81</td>
<td>2.43</td>
<td>7.50</td>
<td>2.67</td>
<td>6.51</td>
<td>2.99</td>
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<td>To gain weight or muscle</td>
<td>5.02</td>
<td>3.30</td>
<td>3.70</td>
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<td>3.44</td>
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<td>2.20</td>
<td>6.75</td>
<td>2.94</td>
<td>9.74**</td>
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<td>4.06</td>
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<td>2.94</td>
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<td>Doctor's recommendation</td>
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<td>7.23</td>
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<td>Family or friends recommend</td>
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<td>3.37</td>
<td>4.95</td>
<td>3.23</td>
<td>4.70</td>
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<td>To feel better physically</td>
<td>9.19</td>
<td>1.04</td>
<td>8.74</td>
<td>1.68</td>
<td>6.80</td>
<td>3.02</td>
<td>23.39***</td>
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<td>To reduce stress</td>
<td>8.76</td>
<td>1.40</td>
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<td>2.68</td>
<td>5.83</td>
<td>3.30</td>
<td>24.32***</td>
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<td>To meet a goal</td>
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<td>2.13</td>
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<td>3.59</td>
<td>5.27</td>
<td>3.77</td>
<td>9.85***</td>
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<tr>
<td>To improve mood</td>
<td>8.49</td>
<td>1.45</td>
<td>7.50</td>
<td>2.50</td>
<td>5.17</td>
<td>3.74</td>
<td>25.79***</td>
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<td><strong>Personality</strong></td>
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<td>Neuroticism</td>
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<td>6.48</td>
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<td>16.51</td>
<td>9.10</td>
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<td>6.38</td>
<td>28.39</td>
<td>6.14</td>
<td>27.59</td>
<td>6.96</td>
<td>2.86</td>
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<td>Openness to experience</td>
<td>25.82</td>
<td>6.42</td>
<td>28.43</td>
<td>5.49</td>
<td>27.67</td>
<td>5.55</td>
<td>5.48&quot;</td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>35.57</td>
<td>5.75</td>
<td>33.43</td>
<td>6.15</td>
<td>34.48</td>
<td>7.07</td>
<td>2.09</td>
</tr>
<tr>
<td>Agreeableness</td>
<td>33.50</td>
<td>4.96</td>
<td>34.10</td>
<td>4.69</td>
<td>35.98</td>
<td>6.02</td>
<td>4.22&quot;</td>
</tr>
</tbody>
</table>

Note. Means having different superscripts are significantly different at $p < .05$ in the Tukey honestly significant difference comparison.

"$p < .05$.  "$p < .01$.  ""$p < .001$.  

Discussion

Master athletes do not appear to be unique in terms of their participation in sports early in life, at least in the first two decades. There was no significant difference in the percentage of individuals in our three groups who participated in sports during
childhood or the teenage years. Instead, a critical time period appears to be the third decade, when most people have completed their schooling and have begun to focus on establishing families and careers. More than 50% of the master athletes reported sports participation in their 20s and 30s. Others appeared to begin their return to competitive sports during middle-age rather than after retirement (see Figure 1).

It is important to stress that our findings are based on recollection. Buskirk (1988) cautioned that memory bias may result in large variances with respect to designation of type, frequency, and duration of physical activity. The effect of memory bias was minimized in this study by focusing solely on participation rate in various decades of life rather than the details of past sports participation. Because of the retrospective nature of this study, we could not examine the specific barriers that prevent some people from participating in sports during young adulthood. On the basis of these results, however, it appears that young adulthood, rather than childhood and the teenage years, is the critical life stage with regard to continued sports participation.

As would be predicted on the basis of the health belief model, nonexercisers were less likely to believe that regular exercise was important than were exercising older adults. There was relatively little difference among people at various points on the physical activity continuum with regard to their beliefs about other health behaviors. It appears that public information campaigns, particularly about diet and smoking, have been highly effective in reaching many older people. The critical question is why similar efforts have not had a comparable influence on beliefs about the importance of exercise for a large segment of the older adult population. On the other hand, the mean rating of the importance of exercise provided by the nonexercisers was substantially above the midpoint of the scale, although significantly less than that of exercisers. Perhaps the difficulty lies not with influencing beliefs but with translating beliefs into behavior. Most versions of the health belief model include barriers as well. Certainly one such barrier for older adults might be illness, although that particular barrier was controlled for statistically in the analyses reported here. Identifying and removing other barriers to physical activity may be necessary if exercise behavior by older adults is to be increased.

In a related vein, we also asked about motivation to exercise. Note that these questions focused on exercise, not competition. In general, the competitors thought many of the reasons to be more important than did either exercisers who were not competitors or people who did not exercise. It is impossible to determine from this study whether these are lifelong views that could contribute to the decline in sports competition in young and later adulthood or whether they represent beliefs developed in later life. In any event, it appears that the motivation underlying physical activity by older competitors is more varied than that of older exercisers who do not compete. The latter tended to focus primarily on the health benefits of exercise, whereas older competitors cited additional (not alternative) reasons related to socialization and competency.

Two of these reasons studied here deserve special mention in the context of understanding why some older adults do not exercise at all. Competitors, and to a lesser extent exercisers who were not involved in competition, viewed exercise as an important way to reduce stress and improve mood. This was not the case for the sedentary older adults in this study; their mean values were close to the midpoint of the scale. This indicates that the message about the benefits of exercise to mental health has reached only some older people.
Finally, we found that personality differences among the three groups were minimal; all the older adults studied appeared to be well-adjusted psychologically. Perhaps this was to be expected in a nonrepresentative sample of older people who volunteered to participate in a research project. Alternatively, as Bouchard et al. (1994) suggested, global personality characteristics may have little to do with who participates in physical activity and who does not.

References


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