Age, Socioeconomic Status, and Exercise Self-Efficacy

Daniel O. Clark, PhD

Increasingly, healthy behaviors are recognized as important at all stages of the life course, not only for individual quality of life, but for health care cost containment as well (Ommen, 1990). Exercise is no exception. Defined as physical activity (i.e., body movement) that is sustained long enough and with enough intensity to lead to shortness of breath, muscle fatigue, and/or perspiration, exercise has been demonstrated to have cost and health benefits among adults of all ages, including those in their eighth or ninth decade of life (Fiatarone et al., 1994; Wolinsky, Stump, & Clark, 1995). Randomized controlled trials and observational studies continue to demonstrate the value of exercise, which, in contrast to many interventions, is cheap and available.

Randomized controlled trials have shown that previously sedentary older adults can benefit from moderate intensity (heart rate of 60% to 70% of maximum attained during symptom-limited treadmill testing), home or group-based exercise (King, Haskell, Taylor, Kraemer, & Debusk, 1991). Evidence of improvement in functional status (measured as the extent to which health limits self-care, body movements, and moderate and vigorous physical activities) with moderate intensity exercise (Fiatarone et al., 1994; Stewart, King, & Haskell, 1993) is especially important to prospects for health and well-being among older adults. Observational studies have also shown that functional status is more likely to be maintained or even improved among those who report regular exercise (Clark, 1996; Kaplan, Strawbridge, Camacho, & Cohen, 1993; Leveille, LaCroix, Wagner, Grothaus, & Hecht, 1994; Rakowski & Mor, 1992; Simonsick et al., 1993; Wolinsky, Stump, & Clark, 1995). One study showed that subsequent functional status, perceived health, nursing home placement, mortality, and hospital episodes, lengths of stay, and charges, were all favorably affected by self-reports of exercise at baseline (Wolinsky et al., 1995).

All of these findings are impressive, but the impact of exercise on public health remains minimal because three-fourths of the older population does not engage in any form of regular exercise (Clark, 1995). Even moderate-intensity exercise can be difficult for many older adults. It is doubly difficult for older adults who need it most — those who have functional limitations or who are at high risk of developing functional limitations. These individuals experience a number of social, psychological, and health-related barriers to exercise, making exercise adoption a considerable challenge.

Many factors are influential in decisions regarding behavior change, but self-efficacy, which has been shown to be mutable among adults aged 45 to 64 (McAuley, Lox, & Duncan, 1993), is considered the strongest predictor of exercise adoption (McAuley, 1993a; Sallis, Hovell, Hofstetter, & Barrington, 1992). Self-efficacy is predictive at all stages of exercise (Marcus, Selby, Niaura, & Rossi, 1992), but studies have shown that the adoption stage is influenced more by self-efficacy than other stages of exercise (e.g., maintenance; McAuley, 1993b). Despite recognition of the prominent role of self-efficacy in decisions of exercise adoption, very little information on self-efficacy is available. This is likely due to an interest in demonstrating to what extent self-efficacy affects exercise behavior, rather than specifying and demonstrating factors that affect self-efficacy (Gecas, 1989). Considering that the vast majority of older adults have not adopted a regular exercise routine, understanding factors that predict exercise adoption (i.e., self-efficacy) will have particular importance for the design of exercise programs for the elderly. Moreover, specifying factors that are unique or
uniquely consequential to self-efficacy among the aged will be important to such programs.

The remainder of this article is devoted to understanding exercise self-efficacy among the aged in general, and among the low socioeconomic status (SES) aged in particular. Special focus on the latter subgroup is motivated by evidence that low SES older adults are at particularly high risk for inactivity (Clark, 1995), functional limitation (Maddox & Clark, 1992), and low exercise self-efficacy (Clark, Patrick, Grembowski, & Durham, 1995), and by evidence that socioeconomic differentials in health have been increasing in the United States over the past two decades (Pappas, Queen, Hadden, & Fisher, 1993). Additionally, minorities (primarily blacks and Hispanics), who disproportionately comprise the low SES population, represent a large and growing segment of the older population (U.S. Bureau of the Census, 1992). This essay first presents a general overview of self-efficacy theory, followed by the presentation and discussion of a model of factors that affect self-efficacy among the aged and low SES aged. Focus group data are used to supplement the otherwise theoretical discussion of exercise self-efficacy.

Self-Efficacy

As noted, self-efficacy (Bandura, 1986; 1992) has shown the greatest promise for explaining exercise adoption among adult populations (Sallis et al., 1992). In fact, operational components of self-efficacy theory have been labeled the most important obtainable pieces of information for tailoring exercise interventions to specific populations (Marcus & Owen, 1992). Self-efficacy (i.e., efficacy expectations) is defined as "a judgment of one's capability to accomplish a certain level of performance" (Bandura, 1986, p. 391). Outcome expectations form an integral part of self-efficacy theory and represent a "judgment of the likely consequence a behavior will produce" (Bandura, 1986, p. 391). Thus, efficacy expectations represent judgments of personal competence, while outcome expectations represent judgments of the likely impact of a given behavior.

Some investigators have made use of Bandura's identification of several dimensions of efficacy expectations: strength, magnitude, and generality. Strength refers to a probabilistic judgment of one's ability to perform a task. Magnitude can be thought of as the most difficult task an individual feels that he or she could perform within a graded series of tasks. With exercise, for example, tasks range from relatively simple (e.g., walking for 10 minutes, or 1/2 mile), to moderate (e.g., walking for 20 minutes, or 1 mile), to difficult (e.g., jogging for 20 minutes; McAuley, 1993b). The magnitude of efficacy expectations can be judged by the tasks each person feels he or she is capable of performing. The strength of efficacy expectations can be measured by a judgment of performance ability in the tasks he or she has reported to be within his or her capability (Strecher, DeVellis, Becker, & Rosenstock, 1986). Generality refers to the extent to which efficacy expectations in a particular situation generalize to other situations. Recent exercise self-efficacy studies have avoided assuming generality by asking individuals to rate their exercise capability in specific situations (e.g., when raining, when tired, when ill; Marcus et al., 1992). To this author's knowledge, situation-specific exercise efficacy expectation measures have not been developed specifically for older adults.

The strength, magnitude, and generality of efficacy expectations develop through primarily four types of influence: primary experiences, secondary experiences, verbal persuasion, and physiological states. These are briefly discussed here, and used throughout to help frame the discussion of exercise self-efficacy among the aged. Primary experiences with the behavior in question (i.e., exercise) are generally considered most influential. Empirical studies support this by demonstrating that persons with previous exercise experience (Clark et al., 1995), and particularly previous success (McAuley et al., 1993), have substantially higher exercise efficacy expectations. Secondary experiences represent observations of others' exercise experiences. This is particularly effective when in the form of modeling (e.g., someone similar to the individual overcomes difficulty and experiences success). Secondary experiences may come from many sources, including family, peers, professionals, and all forms of media presentation. Similarly, verbal persuasion comes from many sources, but usually comes from supportive others, including health care professionals and family, and can come from media presentations. Finally, physiological states represent current feelings and sensations (e.g., aches, pains, nervousness). Although Bandura seems to characterize these four influences as ways of enhancing efficacy expectations, each may also represent a barrier to greater efficacy expectations (e.g., poor health, overweight, past failure experiences or observations). Thus, each of the four sources of influence (i.e., primary and secondary experiences, verbal persuasion, and physiological states) may comprise either or both enhancers of and barriers to greater efficacy expectations. The barriers and enhancers that contribute to each source of influence will be unique for each individual, but sociodemographic characteristics certainly affect the probability that certain barriers or enhancers are present and others absent. In short, the four dimensions of efficacy expectations vary in systematic ways across age cohorts and social strata.

In contrast to efficacy expectations, little use has been made of exercise outcome expectations. The only operational definition of outcome expectations in the exercise self-efficacy literature (that I am aware of) focused on judgments of the health influence of exercise (e.g., "Do you believe exercising is beneficial to your health?"; Patrick & Grembowski, 1992). The role of outcome expectations is less clear than efficacy expectations in behavior change because, as noted, the former has not been well studied and there is ambiguity in the self-efficacy literature about the relationship between efficacy and outcome expectations (Gecas, 1989; Strecher et al., 1986). As...
Self-Efficacy and Older Adults

Although information on efficacy and outcome expectations are critical for the success of behavioral interventions, previous studies of exercise behavior and promotion have rarely investigated self-efficacy and related factors (e.g., barriers to exercise) within samples of older adults. Two recent studies have applied self-efficacy theory to exercise behavior among the aged (McAuley et al., 1993; Patrick & Grembowski, 1992). The McAuley study included a multi-item efficacy expectations scale, but contained fewer than 100 subjects aged 45 to 64 and no outcome expectations measure. The study by Patrick and Grembowski did not focus solely on exercise and therefore, contained limited information on exercise behavior and single-item measures of exercise efficacy and outcome expectations. Subjects were volunteers for both studies, and, as a consequence, those least likely to exercise, including minorities and the low SES, were significantly underrepresented. Nonetheless, income and education variability in the Patrick and Grembowski study was sufficient to demonstrate considerable SES differences in exercise efficacy and outcome expectations (Clark et al., 1995; Grembowski et al., 1993). Older adults with both low income and low education had average exercise efficacy and outcome expectation scores that were 20 percent lower than middle income and education older adults. This association between SES and self-efficacy is consistent with studies of younger adults (Gecas, 1989).

A model of factors thought to directly or indirectly affect exercise efficacy expectations is shown in Figure 1. Generally, older age, female gender, and minority status increase one’s chances of having low education, low income, and low occupational status, which reduces access to material and non-material resources. All of the above factors constrain the development of a strong sense of control (see Rodin, 1989). These factors also increase the salience of physiological states because each is associated with poorer perceived health, and earlier onset of chronic conditions and functional limitation. Primary and secondary experiences, as well as verbal persuasion, are affected by demographic characteristics, SES, material and non-material resources, and sense of control. Finally, each of the above may influence outcome expectations, which, along with all factors, influence exercise efficacy expectations. The discussion of the model follows the left to right order of the concepts in Figure 1, and focuses on unique influences for the aged in general first, followed by a discussion of unique influences for the low SES aged.

Rodin (1986) has discussed the impact of aging on the sense of control in great detail. Recent evidence indicates that low sense of control among older adults is related to relatively low levels of educational attainment and age-related declines in health and functional status (Mirowsky, 1995). Low sense of control is particularly important here because a greater sense of control increases the likelihood of high outcome and efficacy expectations in specific behaviors. If, in general, one believes one is in control, one will be more likely to believe that behavior-specific outcomes are also under one’s control. In short, those with a strong sense of control who believe that exercise holds obtainable benefits will be more likely to believe that they can obtain those benefits.

The aged also experience more direct obstacles to strong exercise efficacy expectations. There are a number of reasons to anticipate that the four sources of influence would involve more barriers for the aged than nonaged. Theoretically, primary experiences represent the largest source of influence (Strecher et al., 1986), but because of the strong association between age and health, physiological states may be of at least equal importance to the strength, magnitude, and generality of exercise efficacy expectations among older adults (McAuley, 1992; Prohaska & Glasser, 1994). Movement becomes more painful and therefore more difficult with the onset of chronic disease, and is likely to reduce all three dimensions of exercise efficacy expectations (i.e., strength, magnitude, and generality). Difficulty with balance and fear of falling may also make movement difficult among the aged (Tinetti, de Leon, Doucette, & Baker, 1994). Other sources of influence may also contain fewer efficacy enhancers for the aged than the nonaged. Without the life-long benefit of current medical knowledge and a popular ideology that states health and wellness accrue through healthy behaviors (Goldstein, 1992), older birth cohorts are less likely than more recent birth cohorts to have had primary or secondary exercise experiences. As noted above, as much as 75% of the older population does not experience any form of regular exercise over the course of a year (Clark, 1995), and primary experiences, or opportunities for performance appraisals in exercise, will have been few for many older adults. Secondary experiences in the form of modeling are also less likely to occur for older than younger adults. Media presentations of exercise generally involve young individuals and, given that most older adults do not exercise, a senior’s chances of observing another senior engaging in regular exercise are relatively low. For seniors who belong to or participate in certain organizations and programs (e.g., senior citizens’ centers), the chances of observing a model improve considerably. Unfortunately, those most in need of modeling (e.g., the inactive) are the least
likely to participate in such programs (Wagner, Grot- 
hau, Hecht, & LaCroix, 1991). Finally, verbal persua-
sion, which, in the form of peer support during 
exercise, was shown to have a strong positive influ-
ence on exercise efficacy expectations within a small 
sample of adults aged 45 to 64 (Duncan & McAuley, 
1993), may occur with less frequency among older 
than younger adults because of fewer active peers. 
The frequency and impact of family and health care 
provider support and encouragement for exercise, 
however, is not known.

Outcome expectations are also likely to be lower 
among the aged. The literature on exercise has not 
focused on outcome expectations, but a focus group 
with 10 volunteers (half regular exercisers and half 
not) from a local senior citizens’ center conducted 
specifically for the purpose of identifying factors that 
affect exercise efficacy and outcome expectations 
ofers some insight. For these older adults, exercise 
almost always represented discomfort (e.g., pain, 
shortness of breath, stiffness), both during and after 
an exercise session. The entire group agreed with 
one participant’s statement that outcome expecta-
tions are low among older adults simply because they 
are old. They offered informative examples about 
views that they felt many older adults have: “You are 
getting old and there is nothing you can do about it”;
“At my age, what can I expect?” In the presence of 
these “cons” of exercise (Marcus, Rakowski, & Rossi, 
1992), “pros” of exercise need to be strong for overall 
outcome expectations to be high. The most common 
positive outcome expectation reported was that they 
feel better or believed they would feel better about 
themselves after a successful exercise session. Many 
also reported that they believed they sleep better, 
make new friends, and have a better appetite. Several 
believed that they were avoiding or delaying acute 
health events and dependency by exercising regu-
larly. In fact, several reported that a doctor had told 
them to exercise to avoid further heart or lung prob-
lems. These data offer only a few insights; research 
on outcome expectations among older adults is 
needed in order to better understand perceived pros 
or cons of exercise among older adults, and their role 
in efficacy expectations.

Self-Efficacy and SES

Influences unique to minorities, females, and the 
low SES are discussed as one in the section to follow 
because many of the influences of minority status 
operate through education, income, and occupa-
tional status (i.e., SES). Among the largest minority 
group (blacks), disadvantages in health, particularly 
among the aged, are very often accounted for in 
statistical models by income and education (Clark & 
Maddox, 1992; Rogers, Rogers, & Belanger, 1992), 
and the same appears to be true for disadvantages in 
exercise (Clark, 1995). Similarly, although type of 
exercise may vary by gender (Strawbridge, Camacho, 
Cohen, & Kaplan, 1993), large sample studies do not 
indicate any gender differences in either exercise 
frequency (Clark, 1995) or exercise efficacy and out-
come expectations among older adults (Clark, Pa-
trick, Grembowski, & Durham, 1995). Thus, in con-
trast to age, gender and minority status are not 
hypothesized to have direct effects on exercise effi-
cacy and outcome expectations. As is apparent in 
Figure 1, however, minority status (primarily blacks 
and Hispanics) and gender are considered predictors 
of SES and material and non-material resources. It 
should also be noted that the culture associated with 
each minority group is very likely to have some 
influence on exercise and activity patterns. Unfortu-
nately, these influences will be unique to each group 
and cannot be identified here.

To provide a framework for establishing a link 
between SES and self-efficacy, I have drawn upon

![Figure 1](https://academic.oup.com/gerontologist/article-abstract/36/2/157/569231)
Antonovsky’s (1987) model of social environments and psychosocial orientations toward stress and coping. Antonovsky postulates that a person’s sense of coherence expresses his or her psychosocial orientation toward stress and coping. Sense of coherence is very similar to sense of control, and, in fact, sense of coherence may be considered one way of operationalizing sense of control. Sense of coherence is defined as an individual’s sense that (a) internal and external stimuli are ordered and consistent, (b) resources are available to meet demands of the stimuli, and (c) the stimuli represent “challenges worthy of emotional investment and commitment” (Antonovsky, 1987, pp. 16–18). Theoretically, SES affects the development of the sense of coherence or control through what Antonovsky calls generalized resistance resources (GRRs), referred to in this essay as material and non-material resources (e.g., knowledge, ego identity, coping strategies, and social support). Note that resources will also affect the opportunity for and outcome of the four primary sources of influence for self-efficacy (i.e., physiologic states, primary and secondary experiences, and verbal persuasion), because persons with relatively few resources are more likely to have poor health and to participate less in health promotion efforts (Wagner et al., 1991). Thus, one’s resources, assessments of ability, and expectations about the environment make up the sense of control, and combine with outcome expectations and the four sources of influence to affect task-specific self-efficacy.

Each component of SES (i.e., income, education, and occupation) may have an independent influence in the model (Bunker, Gomby, & Kehrer, 1989; Williams, 1990), particularly with regard to the sense of control. For example, persons with greater education have a greater sense of control (Mirowsky, 1995) and are more likely to engage in active problem solving (Pearlin & Schooler, 1978). Active problem solving refers to respondents stating that “when faced with a problem they try to figure out the cause and do something about it” versus “try to forget about it” (Ross & Mirowsky, 1989, p. 210). Like education, occupation may have a direct effect on sense of control. Lower status occupations may reduce sense of control by providing less substantive complexity, more supervision, and highly routinized tasks. Lack of substantive complexity, close supervision, and routinization have been shown to decrease problem-solving ability, promote conformity (i.e., giving priority to respectability over curiosity, good sense, and sound judgment), and increase resistance to change (Kohn & Schooler, 1983). In contrast to education and occupation, the effects of income on sense of control appear to operate through material resources. Low income persons have been shown to feel less in control as a result of a greater frequency of undesirable life events associated with an inability to purchase essential goods and services (McLeod & Kessler, 1990; Ross & Mirowsky, 1989). Therefore, components of SES have direct and indirect effects on the sense of control and ultimately affect outcome and efficacy expectations (see Figure 1).

As noted, each of the issues with regard to the four sources of influence for the aged in general are likely to be magnified for the low SES aged. In addition, the low SES aged are more likely to experience non-age-related barriers, whether real or perceived. Health behaviors are likely to be perceived as less valuable in the face of alternative health beliefs among the low SES (Goldstein, 1992), for example, which would have a direct effect on outcome expectations. Efficacy expectations may be directly and indirectly affected by limited monetary resources, which discourages participation in health clubs and classes (Goldstein, 1992) and constrains the ability to purchase exercise equipment for home use. Walking is the most common form of exercise among older adults (Lee, 1993), but physical environments of low SES persons are likely to make walking more difficult (e.g., busy/noisy streets, uneven or nonexistent sidewalks, greater crime and fear of crime). Social environments of low SES persons also contain obstacles by offering less support for health behaviors in general (see Williams, 1990) and by promoting unhealthy behaviors through targeted advertising and support for unhealthy coping strategies (Williams, 1992). Thus, SES, particularly income, indirectly affects outcome and efficacy expectations through environments or resources that do not support and may even discourage (i.e., create barriers to) healthy behaviors.

Although no published data are available to confirm the above noted barriers (or lack of enhancers) to exercise efficacy and outcome expectations, I can draw upon information from a second focus group session that was conducted specifically for the purpose of identifying factors that affect exercise efficacy and outcome expectations among the low SES aged. These focus group data are limited to the responses of nine black women aged 55 to 70, but the information is unique and potentially valuable. The participants of this focus group were identified through a large inner-city primary care clinic data base. Thirty-nine participants were called between 1 and 4 p.m.; 8 did not have a legitimate phone number, 4 refused, and 18 were not home at the time. The nine focus group participants were very poor, with little daily social contact, and they were very relieved to “get out,” especially with women like themselves (they called the focus group “a therapy session”). They valued the social contact and, in fact, social contact was one of the first issues to come out in the discussion of exercise. Eight of the nine women said they knew they would not exercise by themselves (efficacy expectations were low) and that an exercise routine that involved a group of people like themselves (by like they meant similar age, economic means, and physical ability) would be valuable and enjoyable to them. They said that if “you can talk and walk then you don’t think about what you’re doing.” At the time, one person in the group of nine reported walking occasionally. The other eight did not have an activity that they did on any schedule. Transportation and money were clear obstacles, but all said they could get somewhere if they really wanted to (mostly by bus, some by car). Seven of the nine chose swim-
ing or walking as the activity they would most like to do. They also reported, however, that they were uncomfortable walking alone in their neighborhoods and that they do not like to walk in malls (they don’t have money, and are embarrassed by their inability to stand for any length of time and by the difficulty they have getting up from a sitting position). Each of the participants experienced chronic pain of some sort (three used a cane, seven had arthritis, and three had diabetes), but were nonetheless able to get around. Those with the most physical difficulty believed that swimming would be most enjoyable, but only if it were done with a group like themselves. They did not know of such a group, but said they could not afford to participate if such a group did exist.

The most important issues with regard to exercise efficacy and outcome expectations to emerge from this focus group with poor black women were the identification of the importance of “getting out,” exercising or being active with a like group of people, the short-term value placed on exercise, and the relatively limited range of barriers. The black females in the focus group only listed pain, fear of crime, weather, transportation, and money as barriers. These are large barriers, but the women were positive about the ability of one factor to enhance their efficacy expectations. All but one responded very positively to the notion that exercise in a group would help them to overcome many of the barriers. This idea was raised by one of the participants at the beginning of the session and remained a theme throughout the discussion. They felt that like persons (i.e., models) encouraging them would keep them in such a program, and they strongly believed in the immediate health and well-being benefits of getting out and being active. These women did not discuss long-term health and well-being benefits, however, and the value they placed on exercise did not seem to be tied to such benefits.

The focus group data suggest that characteristics of the four sources of influence are indeed perceived as important to efficacy expectations, particularly physiologic states, verbal persuasion, and modeling, and that resources and outcome expectations may also have direct importance to efficacy expectations. Weather does not fit neatly into any of the categories, but is important. Outcome expectations seemed relatively strong among the low SES black women, but efficacy expectations were low. Verbal persuasion and support from like individuals (i.e., models) were persistently discussed as the most effective means for overcoming barriers.

In summary of the model, demographic characteristics elevate one’s risk of being low in income, education, and occupational status, and each of these affects access to material and non-material resources. The three components of SES are associated with both similar and unique resources, which lead to differential effects on sense of control, and two components of SES are likely to have direct effects on sense of control. The focus group data indicate that age may have a direct effect on outcome and efficacy expectations, in addition to indirect influences, and that resources may have a direct influence on efficacy expectations. Certainly the four sources of efficacy expectations originally identified by Bandura play an important role. They appear to not only affect efficacy expectations, but outcome expectations as well (outcome assessment may be based on past experiences, observations of others’ experiences, and consideration of one’s own age and health).

Discussion

The observation that older adults encompass a full range of social and physical abilities has become commonplace, but quite important to considerations of exercise adoption. No single program will work for all older adults. Unfortunately, exercise intervention studies have not included adults at the low end of ability. The majority of exercise intervention studies have been conducted with well-educated volunteers, in isolated, center-based exercise facilities. The persons participating in these programs are not the persons who are the least likely to be active, nor are they the persons who stand to gain the most from an exercise intervention. Moving intervention studies out into communities (i.e., home-based rather than center-based programs) will provide much needed information about barriers and enhancers of exercise and exercise self-efficacy among older adults who are inactive and unlikely to volunteer for center-based studies. To be fair, center-based studies have not been intended as a means of understanding exercise adoption; rather, they have been intended to show the potential benefit of exercise. One study showed that center-based activities could be successfully implemented in the homes of older adult volunteers (King et al., 1991). Nonetheless, in order to maximize the public health potential of exercise, knowledge of the meaning and perceived value of exercise among sedentary older adults is needed (i.e., those in precontemplation and contemplation stages).

The present model and discussion of factors that influence exercise among the aged is not meant to be all-inclusive, but it is meant to stimulate thinking and promote research on exercise among older adults at risk of deteriorating health and functional status. Older adults at risk of deteriorating health could be defined in a nearly infinite number of ways. This essay has concentrated on socially and demographically defined groups of at-risk individuals (i.e., low income and minority adults). Medical or behavioral definitions of at-risk individuals have received somewhat more attention in terms of exercise adoption and maintenance (e.g., arthritis; Lorig & Holman, 1993). Unfortunately, much of this research has not taken into consideration the specific implications of age or socioeconomic status on participants’ abilities and opportunities for exercise. Identification of barriers for older and low SES individuals may help these more disease-specific health promotion or maintenance programs manage diverse participants more effectively.
With regard to the details of the model presented here, it should be noted that a number of observations have not been possible. The focus group data provided some insights into specific barriers or ways of thinking, but these data are in no way sufficient. Much larger and more varied samples will be necessary before the model can be extended. Data on some components of the model are now becoming available among community-dwelling older adults (e.g., self-efficacy — Patrick & Grembowski, 1992; sense of control — Mirowsky, 1995) and data on other components of the model (e.g., secondary experiences and verbal persuasion) are not available at all. Important factors that have not been included in this model will undoubtedly be identified. Such discoveries will indicate an increased understanding of exercise adoption and self-efficacy, and will be valuable to intervention programs. At present, a few factors appear to hold some promise for improved understanding of exercise self-efficacy. Although global self-esteem is not likely to be very predictive of efficacy expectations, specific self-esteem may be positive or negative roles. As social psychologists have noted, “decreasing the value one gives to domains in which oneself or one’s reference group does poorly protects global self-esteem” (Rosenberg et al., 1995, p. 143). In short, the incorporation of domain-specific self-esteem measures into empirical studies of exercise self-efficacy and exercise efficacy may prove valuable. Incorporation of specific material and nonmaterial resources may also prove valuable. In fact, peer support during exercise has already been shown to be important to exercise maintenance (Duncan & McAuley, 1993), perhaps as a result of the secondary experiences and verbal persuasion that such support provides. Moreover, the focus group data suggest that older adults might be particularly interested in group-based exercise. Weather was also noted as important, and other aspects of physical or social environments might be identified as important through further study. Finally, considering the magnitude and generality of dimensions of efficacy expectations, types of exercise may be important. Walking is the most common form of exercise among older adults, but primary or secondary experiences with other forms of exercise may be important to overall exercise efficacy and outcome expectations.

References


Vol. 36, No. 2, 1996 163


Received September 17, 1995
Accepted October 6, 1995

The Gerontologist

ACADEMIC ADMINISTRATOR

The Institute for Health & Aging seeks an experienced academic manager for an Academic Administrator position at the University of California, San Francisco health sciences campus. IHA is an Organized Research Unit with 36 faculty, 16 student RAs and PGRs, and 62 staff members and funding of over $6 million for FY 1996. Candidate for the position must have outstanding records of program leadership and grant negotiation. Applicant should have a Ph.D. in a social science or related discipline and 7–10 years managerial experience with strong financial management skills in a research and grant-oriented environment. Appointment period is two years with renewal based on funding availability. Salary range is $60,000–$75,000, dependent on qualifications and experience. Application deadline is May 1, 1996 and starting date is August 1, 1996. Send a letter of application, curriculum vitae, and the names and addresses of three references to: Academic Administrator Search Committee, c/o Meredith O'Connor, Institute for Health & Aging, UCSF School of Nursing, Box 0646, San Francisco, CA 94143-0646. The University of California is an Equal Opportunity/ Affirmative Action Employer. Women, minorities, Vietnam-era veterans and individuals with disabilities are encouraged to apply.