Review

Barriers and motivations to exercise in older adults

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Abstract

Although exercise is an established component in the management of many chronic diseases associated with aging, activity levels tend to progressively decline with increasing age. Given the growing proportion of older adults, these suboptimal levels of physical activity represent an increasing public health problem. The predictors of adherence elucidated in younger adults are unreliable in elderly populations. Age-specific barriers and motivators unique to this cohort are relevant and must be acknowledged. The identification of reliable predictors of exercise adherence will allow healthcare providers to effectively intervene and change patterns of physical activity in sedentary elderly. In particular, because older patients respect their physician’s advice and have regular contact with their family doctor, physicians can play a key and pivotal role in the initiation and maintenance of exercise behavior among the older population.

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Introduction

In 1996, the Surgeon General’s Report on Physical Activity and Health established the importance of a physically active lifestyle in the prevention of chronic disease and the promotion of health and well being [1]. The report linked sedentary behavior to osteoporosis, obesity, depression, and to the staggering death rates from coronary heart disease, type 2 diabetes, and colon cancer. Participation and maintenance of regular physical activity was recognized as one of the most important health behaviors in preventing the onset or reducing the severity of many chronic diseases.

Yet, despite documentation of the physical and psychological benefits derived from regular activity, surveys conclude more than 60% of the adult population is not engaged in physical activity on a regular basis and 31% of adults are not exercising at all [1]. In the United States, the annual number of deaths related to physical inactivity is estimated at more than 250,000 [2].

Trends in physical activity consistently show that activity levels progressively decrease with age. The prevalence of inactivity is highest among adults aged 65 or greater [1], which due to aging baby boomers will shortly become the fastest growing segment of the American population. Current estimates indicate that 66% of adults over 75 do not engage in any regular physical activity [3]. Moreover, evidence suggests that 50% of sedentary adults have no plan of starting an exercise program [4]. Among those engaged in physical activity, adherence rates reveal only 30% of older men and 15% of older women actually participate in regular sustained activity [1].

Given the growing proportion of older adults, the suboptimal levels of physical activity in the United States represent an increasing public-health problem. This predicament will continue to increase as the growth of the over 65 age group is expected to increase by 29.7–36.4% between the years 2010 and 2020 when the large cohort of baby boomers reach retirement age [5]. Although an increased vulnerability to chronic disease and disability is inherent in the aging process, evidence suggests being physically active may alter the course of many frequently occurring diseases among the elderly. Not only has regular exercise been specifically reported to reduce the risk factors associated with heart disease and stroke, exercise is also an important factor in reducing overall morbidity and mortality [6].
addition, an active lifestyle helps to increase the quality of life of older adults by preserving functional ability and independence across the life span.

Physical activity has been defined as any bodily movement produced by skeletal muscles which results in energy expenditure [7]. Moderate physical activity performed at 3 to 6 METS (equivalent to brisk walking at 3 to 4 miles per hour) is recommended for good health and optimal physical function in the elderly [6]. In contrast, the term exercise indicates a regularly structured program of physical activity seeking optimal levels of fitness [7].

However, persuading the elderly to become physically active is a difficult task. While the importance of an active lifestyle is well known, the elderly often believe themselves to be too old or frail for physical activity. Exercise is rarely viewed as a necessary prescription medicine. In addition, older adults, due to a preponderance of health problems, encounter more barriers to physical activity and exercise participation. Varied interventions studied to enhance exercise participation have consistently revealed limited evidence for long-term effectiveness in this age group. The largest attrition occurs within 6 months of exercise initiation, with approximately 50% of participants dropping out before realizing any health benefits [8]. Unfortunately, those with the most to gain from exercise activity are least likely to participate.

Because physical activity is a complex and dynamic process involving an intricate series of behaviors, identification of the variables affecting exercise adherence is often difficult. However, awareness of the individual factors affecting exercise behavior in this cohort is essential to determine the interventions associated with the greatest participation and maintenance of exercise behaviors. Identification of reliable predictors among older adults will allow healthcare providers, situated in a unique position to influence health habits of their patients, to effectively structure interventions to promote change in patterns of physical activity in sedentary individuals. By improving health status, physical activity participation will ultimately reduce the need for healthcare services among the elderly and ease the economic burden sedentariness places on today’s healthcare system.

Elderly pose unique challenge

Although the benefits of regular physical activity have been studied extensively, researchers have only recently examined the determinants of physical activity in special populations such as the elderly. The focus of earlier exercise research was centered on healthy young and middle-aged white men [9]. As research into the older population has progressed, it is apparent that physical activity behavior in older adults is associated with diverse factors from multiple domains. Not surprisingly, the predictors of exercise adherence elucidated in younger adults are unreliable in elderly populations. There does not appear to be a one-size-fits-all approach to physical activity [10]. Unique challenges are associated with initiating and maintaining physical activity in the elderly.

First, as Chao et al. [10] point out, many elderly deem the adoption of moderate physical activity as time consuming. Time commitments include the time needed to perform activity and the time required for travel to an exercise facility. This time commitment increases substantially for those who rely on public transportation.

Furthermore, these investigators maintained older adults tended to view exercise as a recreational pursuit instead of necessary medical therapy. This viewpoint is perpetuated because healthcare providers frequently give unclear directions when recommending exercise. Healthcare providers were likely to instruct elderly patients to “be more physically active” without offering specific guidelines. The ability of providers to recommend appropriate exercise guidelines is also compounded by the fact many elderly suffer from poor concentration, memory deficits, and dementia.

Additionally, the authors contended that the elderly often perceived the symptoms associated with exercise as negative. Sweating, labored breathing, and muscle soreness typical during exercise is believed by some to do more harm than good. Older women, in particular, were often raised to believe exercise is not “ladylike.”

Barriers to exercise

Thus, acknowledging the unique challenges and clarifying the relevant issues is an essential step in developing a strategy to facilitate exercise in the elderly population. Yet, regardless of an individual’s beliefs in the benefits of regular exercise, many barriers, real or perceived, exist which represent obstacles to the adoption and maintenance of exercise behavior. O’Neill and Reid [11] found that 87% of the elderly have at least one barrier to prohibit exercise participation.

An overview of the exercise science literature indicates certain domains as strong influences for sustaining regular exercise programming, although uncertainty still exists as to what variables or strategies are most effective in influencing long-term adherence. These domains can be classified as either motivators or barriers to exercise. The following is a discussion of the perceived barriers or constraints to exercise that have gained empirical support.

Health

Unlike younger adults who typically cite lack of time as the main constraint to exercise [4,12], the elderly most frequently cite poor health as the leading barrier to both physical activity and exercise. In a relatively recent investigation of community-dwelling elderly, health problems and pain emerged as the most common barrier to exercise [13]. These findings were also consistent with survey data.
obtained from Booth et al. [14] in their investigation of inactive elderly Australians. In this particular study, the data obtained rated both ill health and injury as the major barrier to exercise participation in respondents aged 60 to 78 years. In a 10-year follow-up study of home-based walking in postmenopausal women, illness was again found to be the major barrier to exercise. Conversely, environments with high crime rates and limited educational opportunities may offer a possible explanation for the inconsistency in the findings. Inevitably, these data suggest that exercise behavior among older adults, some level of public health action and community support is needed to provide alternatives or ensure safe physical environments within communities.

Booth et al. did, however, confirm structural constraints in the environment as barriers to exercise. Elderly individuals not living in close geographic proximity to a recreation facility, park, golf course, swimming pool, or foot path were found to be significantly more inactive. The association between levels of exercise participation and access or convenience to exercise facilities was demonstrated as well in studies of exercise determinants among younger populations [17].

**Physician advice**

Physicians play a key and pivotal role in promoting exercise behavior among the elderly. In general, Americans average 3.1 office visits per year to their doctor [18]. For the older population, beleaguered by chronic health conditions, this statistic is even higher. In a 2003 survey of 146 elderly living in public housing, 94% of the respondents reported visiting their physicians at least once in the past year [19]. Clearly, this establishes the family physician as the most effective person for giving advice about exercise [20].

Despite optimum exposure to the general public, research findings have indicated physicians are not regularly counseling their patients about exercise [19–21]. Balde et al. [19] found only 62% of the respondents in their survey received advice about exercise from physicians. However, with advancing years, the inactive elderly generally preferred to receive exercise advice or support from their own physician or healthcare professional [12]. In a selected sample of 301 Medicare beneficiaries living in the metropolitan Baltimore area, 40% of the patients who initiated an exercise program did so because of their physician’s influence [22].

Common barriers cited for lack of physician intervention include: lack of time during the office visit, limited reimbursement for preventive counseling, and the lack of training and perceived effectiveness as a behavioral counselor [21]. However, because patients respect their physician’s advice, the elderly are more likely to change their levels of activity as a result of conversations with their physicians. Elderly adults who receive exercise advice from their physician perform more moderate to heavy levels of exercise per week than those who did not receive advice [19].

**Knowledge**

In the elderly population, the lack of knowledge and understanding of the relationship between moderate exercise activity and health is an especially relevant barrier, as many lived through a time period when exercise was not valued or deemed necessary. Many elderly feel they already receive enough exercise in their activities of daily living [11]. Poor awareness of the role of exercise in disease prevention is seen not only among the elderly in the United States, but also in other countries. For example, in Hong Kong, 812 Chinese adults were surveyed. The results revealed levels of exercise activity decreased with age. When asked to rate various behaviors as factors contributing to their health, older Chinese adults perceived any form of physical activity as the least important influence to good health [23]. This data confirm that sedentary behavior can be related to limited educational opportunities. Interestingly, the authors also reported a greater proportion of Chinese adults than American adults were completely sedentary.

Knowledge of and belief in the health benefits derived from exercise actually seem to be more helpful in motivating initial involvement in an exercise program. Yet as Dishman [4] points out, the level of one’s knowledge does not necessarily translate into long-term exercise adherence. Over time, perceived feelings of enjoyment and satisfaction appears to better predict higher levels of adherence [24].

**Childhood exercise**

In conjunction with the publication of the Surgeon General’s Report on Physical Activity and Health, researchers are working to understanding the potential carryover...
effect of exercise benefits achieved during youth. Although limited studies have been performed thus far, some evidence exists that exercise patterns in childhood can adversely affect levels of exercise in adulthood. In their investigation, Taylor et al. [25] used a sample of 105 middle-aged males ranging in age from 32 to 60 years, to administer a questionnaire on physical activity patterns and psychosocial factors related to exercise during childhood. The researchers found a weak negative relationship between the experiences and factors from childhood and adolescence and current activity levels. Although participation in team sport was positively associated with greater adult exercise behavior, being forced by parents to exercise in the preteen years seemed to negatively affect exercise participation in adulthood.

Motivators for exercise

Because of the complex interaction between the large number of potential variables associated with behavioral change, many of the barriers to exercise for the older adult can actually serve as motivators to exercise activity. In their research, Cohen-Mansfield et al. [13] noted barriers to exercise to be highly related to motivators. For example, deteriorating health, which can reduce an older adult’s ability to exercise, was also frequently cited as a motivator for increasing physical activity. Other motivators reported by Cohen-Mansfield et al. include having more time, receiving more information on exercise benefits or physician recommendation, and living closer to an exercise facility.

Consequently, if more elderly are to profit from the benefits of exercise, the salient issue for health and exercise professionals is ensuring that the behavior becomes habitual. Therefore, awareness of the cognitive processes specific to motivation and behavioral change is fundamental to understanding exercise adherence. Self-efficacy is the essence of this process.

Self-efficacy

The concept of self-efficacy is consistently identified as an important determinant of exercise behavior in various populations and in many types of behavioral learning throughout the scientific literature. Defined as an individual’s belief in their ability to successfully perform a specific behavior, self-efficacy plays a central role in Bandura’s social cognitive theory [26]. According to the theory of social cognition, self-efficacy is a product of both expectations (perceived ability to achieve a certain behavior) and outcomes (expected success the behavior will provide). Personal efficacy is based on four major sources of information: performance experience or mastery, vicarious or observational experiences of others, verbal persuasion, and emotional and physiological states. Self-efficacy expectations mediate all behavioral change and determine whether an individual attempts a given task, the degree of persistence when difficulty is encountered, and ultimate success or failure of the behavior [26]. The stronger one’s self-efficacy expectations and outcomes, the more likely the individual will initiate and persist with a specific behavior. Barring health factors, self-efficacy exerts a consistently powerful influence on the exercise behavior of older adults [27–29].

In one of few studies designed to systematically examine long-term predictors of self-efficacy in the elderly, McAuley et al. [30] independently assessed several of the social cognitive constructs theorized to be important in the formation of self-efficacy beliefs. McAuley et al. studied the extent to which the effects of perceived social support, the value of physical health, affective responses to exercise (pleasure or displeasure associated with an exercise session), and exercise frequency were related to exercise adherence. The data obtained in an 18-month follow-up after 6 months of exercise training reaffirmed the role of self-efficacy in long-term exercise participation.

As the investigators hypothesized, the frequency of exercise influenced the degree of social support from the group and the exercise-related affect. These two factors acted together as sources of self-efficacy, ultimately determining levels of activity at the end of the trial and at follow-up. Although the findings suggest a significant relationship between social support and exercise adherence, this influence does appear to be indirect. Furthermore, enhancing social support appears to be gender-specific. A higher level of exercise efficacy associated with social support is usually noted among older women [31].

Another variable in self-efficacy, group cohesiveness, also appears to be related to levels of exercise adherence in older adults. In an investigation involving two separate studies focused on group cohesion, perceptions of similarity and closeness within the group predicted both short and long-term adherence [32]. In the first study, exercise participation (attendance) was examined and in the second study, the effects of team building strategies or group goal setting to enhance cohesion were explored. Adherence data were measured at months 1, 6, and 12 of a 12-month program in study one and after a 10-week hiatus of a 6-week program in study 2. Data collected on the participants in the team-building condition indicated significantly higher rates of adherence than in the other study condition.

The self-efficacy data cited in the above studies among older adults were consistent with the observations of many previously published research reviews on exercise adherence also reporting perceptions of efficacy as important predictors in the acquisition and maintenance of new behavior [9,33–39]. In general, the majority of research affirms self-efficacy beliefs as critical in the initial adoption of an exercise routine. Feelings of pleasure and satisfaction, along with self-regulatory skills, are more important in sustaining exercise behavior. Self-regulatory skills include
goal setting, monitoring of progress, and self-reinforcement or motivation.

Prompts

Various behavioral strategies have been analyzed to enhance self-regulatory skills and facilitate exercise compliance in aging adults. However, many of the tested interventions have typically involved intense education with lengthy contact between study participants and researchers. In an attempt to identify more efficient and less costly methods to motivate and promote exercise behavior, the use of prompts, such as informational mailings and telephone contact, have been investigated.

Telephone supervision is a common feature in home-based exercise training programs. In a study comparing home-based exercise to organized group exercise, the investigators discovered the telephone-supervised (home-based) program was as effective as the face-to-face interventions of the group program in increasing health benefits and exercise participation [40]. This research suggested telephone counseling serves as a source of social influence and support, which can enhance participant motivation and ultimately improve compliance.

In an effort to evaluate the effectiveness of telephone vs. mail-mediated interventions on exercise in older adults, Castro et al. [41] discovered although both interventions were effective, once participants successfully adopted a more active lifestyle, additional telephone contact did not provide added benefit. This implies that the less intensive intervention, mailed information, could be used to maintain exercise. The mail-mediated intervention presents a viable advantage because it is less expensive, can reach more people, and offers an effective alternative for older adults who prefer not to attend exercise classes. Moreover, in a comparison between the use of prompts and the use of motivational or educational interventions, simple prompting was found significantly more effective than lengthy educational sessions in encouraging exercise adherence [42].

Music

Incorporating appropriate music into exercise programs can add interest and may serve to facilitate exercise participation and adherence in the older adult. Music is reported to enhance the exercise experience by lessening the perceptions of difficulty, monotony, and discomforts associated with exercise. When exercise sessions are presented without music, with vocal music, or with instrumental music, older adults demonstrated greater adherence in the instrumental music condition [43].

Demographics

In general, the overall analysis of the exercise literature reveals the best adherers to regular exercise are individuals, who lead an active lifestyle, were more fit at baseline, have lower body mass, have fewer chronic diseases and pain, were nonsmokers, and have higher levels of self-efficacy [19,44,45]. Exercise participation is greater among men than women [14,19] and black women seem to be less active than white women [46].

Discussion

Given the large cohort of aging Americans, the number of older adults experiencing chronic disease and disability will continue to increase substantially over the next few decades. Consequently, maintaining health and postponing the onset of debilitating disease for as long as possible is necessary to avoid morbidity later in life. Compressing morbidity can be accomplished through exercise and regular physical activity. Although the Surgeon General’s message was disseminated in 1996, adherence to regular physical activity remains problematic among the older population.

Efforts to optimize health through physical fitness in the elderly have incited researchers to investigate both barriers and motivators of exercise. Since a one-size-fits-all strategy does not address the specific needs of a given population, identification of reliable exercise predictors is essential to adherence research. However, in the older population, barriers and motivators often intertwine, making it difficult to isolate factors specific to this cohort. Additionally, much of the data gathered on the elderly uses healthier adult participants and the majority of research studies are based on correlational, retrospective, and self-reported surveys [38].

Because lifestyle habits and perceived barriers to exercise are often so ingrained in the older population, long-term maintenance of any newly acquired behavior, including exercise, is a challenge [34]. However, as the aging process continues, the frequency of contact between the elderly and their physicians increases substantially. The elderly, in general, also demonstrate great respect for their physicians. In particular, they hold their doctor’s directives as orders “of higher authority” and subsequently are greatly influenced by their advice. Even though barriers to exercise may be present, the older adult may be more likely to overcome these at the urging of their physician. Therefore, the physician and other healthcare providers can be the catalyst in the behavioral change process for the elderly. Without their help, sedentariness will impact public health. The effects will have widespread implications for a healthcare system already in crisis.

 References


