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Review Article

Using Essentrics to Improve the Health of Older Adults

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Abstract

Essentrics, like Tai Chi, is a low to moderate impact exercise activity that is suitable for older adults. The exercise may offer the benefits of increased strength, flexibility, functional mobility, enhanced balance and relief for chronic pain. It may improve the health of older adults including those dealing with chronic diseases, decreased mobility and aerobic capacity. The benefits of Essentrics and the ease and ability to perform the routine at home promotes exercise participation and increased physical activity levels. The purpose of this article is to describe the techniques associated with Essentrics and explain the potential health benefits for older adults.

Keywords: Active life/Physical activity; Aging; Quality of life; Prevention

Introduction

Regular physical activity is vital for healthy aging. The US Centers for Disease Control and Prevention states that it helps delay, prevent, or manage many costly, chronic diseases and may reduce the risk of premature death [1]. Despite these benefits, the America's Health Rankings Analysis of the 2019 CDC Behavioral Risk Factor Surveillance System (2022) reports that only 23.1% of Americans 65 years and older met the federal physical activity guidelines which is 150 minutes of moderate or 75 minutes of vigorous aerobic activity and two days of muscle strengthening per week in the past 30 days. Furthermore, physical inactivity, defined as participating in no activity beyond baseline activities of daily living, [1] increases with age. The CDC [2,3] reports inactivity is prevalent among 25.4% of adults aged 50-64 years, 26.9% in those aged 65-74 years, and 35.3% among those aged ≥75 years.

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The American College of Sports Medicine (ACSM), the American Heart Association (AHA) and the US Health and Human Services (HHS) provide the most widely recognized guidelines for health-related physical activity and exercise programs for older adults. The recommendations between these organizations are similar and include participation in the following: 1. Cardiorespiratory endurance or aerobic exercise, 2. Muscular strength and endurance or resistive exercise, 3. Flexibility or stretching exercise and 4. Balance exercise [4]. The recommendations also suggest low intensity and short duration exercises, taking into account that some, if not most, older adults may be highly deconditioned and/or have functional limitations [4].

There are few exercise programs that are suitable for older adults and meet professional recommendations for physical activity. Tai Chi is a low impact exercise program that is suitable for older adults [5]. Like Tai Chi, Essentrics is a low impact mode of exercise and incorporates several movement and position sequences used in Tai Chi [6]. The purpose of this article is to describe the techniques associated with Essentrics and explain the potential health benefits for older adults.

History of Essentrics

Essentrics is a type of guided exercise program created in the 1990s by Miranda Esmonde-White, retired ballerina and bestselling author of two books: Aging Backwards and Forever Painless. The exercise program draws on the slow and flowing movements of Tai Chi, the strengthening techniques of ballet and the healing principles of physiotherapy [7]. After years of experimentation, scientific research and fine tuning of the movement sequences, Essentrics was introduced as a full body work-out that uses a dynamic combination of strengthening and stretching aimed to rebalance the body [8]. It was popularized by the Public Broadcasting Service (PBS) introducing it as Classical Stretch in 1999. The authors adopted the name Essentrics, after associating their techniques with eccentric muscular contraction. Essentrics relies on bodyweight as the source of resistance, which contrasts with traditional strength training or resistance training programs that use external weights. Essentrics movement sequences encompass low impact full body stretches emphasizing alignment to loosen and decompress the joints and relax the muscles [9]. Currently, there are over 3000 certified Essentrics instructors teaching the program worldwide which easily translates to thousands of practitioners since its inception [10].

Essentrics and cardiovascular health

There is evidence that low to moderate Levels of Physical Activity (LMPA) can reduce risk of cardiovascular disease [11,12]. These lower intensity activities demonstrate cardiometabolic and health benefits in an aging population [12]. A systematic review [13] found that 2.5 hour/week (equivalent to 30 min daily of moderate intensity activity on 5 days a week) compared with no activity was associated with a reduction in mortality risk of 19%, while 7 hour/week of moderate activity compared with no activity reduced the mortality risk by 24%. Esmonde-White [8] aimed to provide an alternative way of becoming fit from the physically demanding workouts common in the fitness

industry and created a safer, gentler and less aggressive workout in Essentrics. Like Tai Chi, Essentrics is a low to moderate-intensity exercise program depending on movement sequences, posture and duration of exercise. Lan et al., [14] identified studies where Tai Chi enhances aerobic capacity, muscular strength, balance and psychological well-being. In addition, Tai Chi has significant benefits for common cardiovascular risk factors like hypertension, diabetes mellitus, dyslipidemia, poor exercise capacity, endothelial dysfunction and depression [14]. Although not formally investigated, it could be hypothesized that Essentrics may provide similar benefits. Essentrics' techniques without external resistance makes it a suitable exercise modality for older adults who may be hesitant to participate in a traditional resistance training program [10] and may offer positive changes in flexibility, strength and cardiovascular health.

Essentrics and strength

Aging is associated with functional declines, specifically reduction in muscle mass and strength [15]. It is documented that a 30-50% reduction of strength generally occurs between 30 and 80 years of age and continues to weaken as an individual ages [16]. The authors adopted the name Essentrics, after associating their techniques with eccentric muscular contraction. Eccentric muscular contractions are an important component of most movements performed during daily or sport activities [17]. The reduction in strength among older adults affects activities of daily living like walking, reaching and lifting [16]. Essentrics authors describe eccentric contractions as a way for a muscle (the agonist) to "reign in" its opposing (the antagonist) muscle to perform a controlled movement such as slowly lowering your body weight into a chair or descending steps in a controlled movement. Some studies have identified eccentric exercises as potentially being more effective than concentric exercises at improving muscle force production, which may result in stronger muscles and less muscular atrophy [17,18]. It should be noted that exercise activities require a combination of all types of contraction (i.e., Isometric, Concentric, and Eccentric).

The founder of Essentrics, believes that the program incorporates eccentric muscular contractions in its sequences that involve pulling away, pulling up or pulling out movements [7]. It emphasizes "pulling away" from the center of the body to lengthen the muscles from their habitually shortened ranges and/or "pulling up or pulling out" of a joint to relieve compression [10]. Because Essentrics does not use external weights for resistance, use of imagery like "lifting a brick or a bucket of water" are added to the movement sequence to promote the desired muscular contraction [7]. Research reveals that eccentric contraction exercises may promote greater force production [18] than concentric contraction exercises which involve the active shortening of the muscle. It is hypothesized that Essentrics may improve leg strength through slow, repetitive and alternating movement of the legs with knees slightly flexed, shifting the weight from one leg to another to support upper body movement sequences, similar to Tai Chi. In a qualitative study by Zarco et al., 10], Essentrics increased participants' perceived lower body strength. In another study by Zarco et al., [6], 12 weeks of twice weekly Essentrics intervention demonstrated an increase in upper and lower body strength. These findings were consistent with previous research conducted on Pilates: 12 weeks of 2-one-hour sessions, Yoga: 8 weeks of 3-one-hour sessions and Tai Chi: 16 weeks of 2-one-hoursessions.

Essentrics and functional mobility

Functional mobility, in this paper, refers to the ability to actively achieve a range of motion that requires both flexibility and strength. For the joint to reach its full range of motion, it requires the extensibility of skeletal muscles and connective tissues and adequate strength to move through the range of motion [19]. Functional mobility is fundamental to healthy aging [20], allowing older adults to continue to lead dynamic and independent lives. Impaired mobility is an early predictor of physical disability, and is associated with falls, loss of independence and institutionalization [21]. The founder of Essentrics purports that the program equally emphasizes strength and flexibility training [10]. Its slow, flowing, and rotational movements are aimed to progressively increase the joint's full range of motion [7]. The movement sequences incorporate a variety of stretching techniques: static stretching, dynamic stretching and proprioceptive neuromuscular facilitation [7]. This combination of a variety of stretching techniques potentially makes Essentrics a more effective program for increasing functional mobility [10]. Participants in a qualitative research study [10] reported perceived improvement with Activities of Daily Living (ADL) like getting out of bed, reaching for objects, getting onto knees while cleaning, bending to tie shoes and lifting legs to change clothes. Essentrics is a form of functional training because it facilitates the use of the entire body while approximating the way activities of daily living are performed. Studies have shown that functional training is more effective in reducing ADL disability in older adults than weight training alone [22].

Essentrics and balance

Balance is the ability to maintain the body in a stationary or upright position or moving stance [4]. It involves sensory detection of body motions, integration of sensorimotor information within the central nervous system, and execution of appropriate musculoskeletal responses [23] to retain the body's center of gravity over the base of support. Older adults need to preserve balance to maintain functional independence and quality of life [24]. Balance training is critical considering that falls continue to be the leading cause of injury and death among adults 65 and over costing millions of dollars in hospitalization [25]. Recommendations for balance training among older adults include strengthening that involves mostly lower body exercises and stability exercises [4]. Research shows that effective balance intervention consists of exercise programs that are structured, progressive and incorporate center of mass, narrow base of support and minimal upper extremity assistance [26]. Furthermore, Sherrington et al., [27] found that activities performed while standing with minimal upper extremity support designed to be progressively more challenging are most effective. Studies have shown that Tai Chi improves balance because of increased joint stability and postural control associated with slow, purposeful exercise emphasizing body alignment with lower center of gravity and attention to foot placement [5]. Essentrics, like Tai Chi, consists of slow-moving sequences that flow from one plane to another emphasizing body alignment and attention to foot placement. Essentrics' standing exercises include functional dynamic activities that involve slow controlled motions of the upper extremities and torso while stepping and weight shifting designed to challenge balance. Progression in the movement sequence is applied by cueing participants to start small and end in bigger movements. Zarco et al., [10] found that older adults participated in the Essentrics program because they would like to improve their balance and was the second most common perceived benefit that participants experienced after

flexibility. Essentrics includes exercises that challenge the center of mass while the feet remain fixed in a narrow base of support. Furthermore, Essentrics apply the principles of repetition and progression in its movement sequences, key elements of effective balance interventions.

Essentrics and pain

Costello et al., [28] reported that fear of pain or exacerbation of existing pain is often reported as the most common barrier among older adults to exercise participation. Tai Chi reduces pain through strengthening joints, improving their stability, promoting relaxation and enhancing their nourishment by increasing blood flow through movement [29]. Essentrics' movement sequences and foot positions are similar to Tai Chi, hence potentially offering similar benefits. In her book Forever Painless [8], Esmonde-White states that she believes that the body has a built-in pain relief system that is triggered by movement. This is supported by Langevin's work [30] on the role of fascia in myofascial pain. Myofascial pain, though poorly characterized, is estimated in approximately 30% of patients with chronic musculoskeletal pain [31]. Langevin [30] found dynamic cellular responses in the connective tissue, specifically in the fascia, after passive and active tissue stretching and proposed that fascial mobility, proprioception and myofascial pain are related. Stretching is a key component of exercise programs, physical therapy, and many complementary and alternative modalities used for chronic pain. Furthermore, Wilke and his research team found evidence supporting the existence of myofascial chains [32] proposed by Myers [33] based on anatomic dissection studies. Essentrics exercises are targeted to stretch these myofascial chains emphasizing alignment during movement sequences [9]. In a qualitative study by Zarco et al., [10], participants who indicated having chronic pain before the study reported a noticeable improvement in their pain: back and knee pain was reduced, arthritic pains in the shoulders, wrists, knees and ankles dramatically decreased.

Conclusion

Essentrics is a low-impact, full-body workout that provides an alternative form of exercise for older adults to improve their health and prevent disability. Because of its lower demands on the cardiovascular system while potentially providing the health benefits of improved strength, functional mobility, and balance, it may be suitable for adults who are not active and those dealing with chronic diseases, musculoskeletal weakness, decreased mobility and aerobic capacity. Essentrics has been shown to decrease pain which may help to improve exercise adherence. It does not require special facilities and equipment and can be practiced at home. As a guided exercise program, it is best done in a group setting in a classroom, or community spaces to maximize its benefits and address other barriers to exercise participation such as lack of social support and isolation.

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