

Yoga Practice for The Elderly: Good Choice to Avoid Falls

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Abstract

In Western societies the last several years, practicing yoga has really become fashionable and moved from being an auxiliary way to stretch and meditate to being the go to way to improve strength, flexibility, not to mention the positive affective aspects as well. The aim of the present short communication is to highlight the impact yoga has on different areas pertaining quality of life in the elderly population, especially regarding the risks concerning falling.

Introduction

Falls amongst older population are a global issue and have multifactorial origins [1-3]. Falls can be caused by the natural aging process, alcohol and drugs, environment or different diseases such as obesity or osteoporosis [4-6]. Fracture prevention is more relevant than fall prevention itself [6]. That is why osteoporosis is one of the most highlighted condition considering fall prevention. Almost 30% of female and 10% of male population is affected by osteoporosis worldwide [7]. Every sixth osteoporosis patient suffer from fractures at least once in their lifetime. About 30% of hip fractures occur in men [8]. In osteoporosis, prevention of falls can be considered as the main goal of prevention [9].

Regular physical activity, especially weight-bearing and muscle strengthening exercise is necessary [10,11]. Fitness program might be based on different activities such as yoga, personalized by a physiotherapist expert [12,13]. In fall-prevention physical therapy must be centered on improving core stability, mobility, balance, muscle strength, flexibility and bone mineral density.

Yoga is a complex science evolved over thousands of years which consists of physical, moral, mental and spiritual practices aimed at well-being of a man as whole and attaining self-awareness [14, 15]. The most common yoga practice in Western countries is hatha yoga which involves physical postures, breathing exercises, relaxation and meditation practice [14]. A great advantage of hatha yoga is that it can be practiced at any age. There are physical postures (asanas) suitable for everybody irrespective of age or physical condition [16].

Hatha yoga has been used in clinical conditions to improve balance, strength and flexibility at older adults [17]. Standing

asanas of yoga may play important role in the improvement of core stability [18].

Silver yoga program has been invented for elderly individuals for improving flexibility [19]. The 70 minutes and the 55 minutes shortened Silver yoga intervention is divided into four parts: warm up, seven asanas, relaxation and meditation [19].

The aim of the present short communication is to highlight the importance of yoga in fall prevention.

Flexibility

As per stretching, yoga asana practice might have two ways: static and dynamic. In static form final position is held for 1-3 minutes. In dynamic form, the series of movement are repeated without held position [20,21]. Chen et al. conducted a Silver yoga intervention among community dwelling population for 24 weeks. Their results showed significant improvement in range of motion on the shoulder and the hip, flexibility and hand grip strength, walking speed after the 12 weeks period [19].

Regarding the summarized result of 18 studies conducted on older individuals (n = 649), yoga caused improvement in self-rated mental and physical health, flexibility and aerobic capacity [22].

Balance

Balance and muscle strength play important role in fall prevention amongst the elderly [21]. Standing on one leg (static balance) is a good indicator for predicting risk of falls [18].

In the systemic review of Jeter et al. (2014) the effect of yoga on balance was analyzed (n = 688, age: 18-91y). Eleven studies (out of 15) found positive changes on balance (especially the static component) and results were independent from the time and duration of yoga. For the improvement of dynamic standing balance, yoga intervention should take more than 4 weeks in case of obese individuals [23]. In the comparison study of six yoga trials (n=307), slight improvement in balance and medium improvement in mobility was detected [24]. Six months long yoga intervention caused improvement in postural balance amongst Multiple Sclerosis patients [25]. In a study of an older group with

a history of falls (n = 39), special yoga program, standard balance training and tai'chi intervention was practiced for 12 weeks [26]. Results demonstrated that all interventions were effective for the improvement of static and dynamic standing balance among older fallers. The same result was demonstrated after 8 weeks of yoga sessions in older adults [27] and in healthy young adults [28]. Improved balance function, reduced pain was detected in older individuals (n = 11) after the 14th week modified yoga program [29]. The study found that both balance and mobility benefited in the study of 54 community dwelling older individuals (n = 54) after the 12th week of twice-weekly Iyengar yoga session [30] and after the 8th week of an 80 minutes biweekly yoga program [31].

Muscle strength

Amongst elderly population there is a high prevalence of sarcopenia and has a significant impact on quality of life and mortality itself [32]. Therefore exercise intervention – especially weight bearing exercise - is essential in every day life [13]. Regarding yoga, asanas have beneficial effect on muscle strength, although huge variations might be detected at different standing poses regarding musculoskeletal demands [33]. Kumar et al. found improved core stability and standing balance after 21 days of Isha yoga practice [34]. summarized that mind-body exercises, such as yoga play role in improving postural stability and functional mobility on individuals with Parkinson's disease [35].

Regular yoga practice might cause reduction in protein turnover. Even with diminished protein breakdown and synthesis, muscle mass can be maintained amongst elderly population as well [36].

Bone mineral density

Physical inactivity has impact on the interruption of bone remodelling in consequence of bone mineral loss [13].

Bone density might be increased by yoga. Motorwala et al. found significant improvement in T-score at women in postmenopause (n = 30), after a half year long yoga intervention [37]. In an other study, 12 minutes daily yoga session for a period of two years caused significant increase in bone mineral density [38].

Affective outcomes

The last decades, several studies has been demonstrating the effectiveness of yoga in the treatment of Posttraumatic stress disorder (PTSD), anxiety, anxiety disorders and depression [39-43].

Regarding the results of a pilot study on osteoarthritis patients (N = 83), 30 minutes daily hatha yoga practice for four times a week resulted significant reduction in anxiety and fear of falling after the 8th week [17]. Two hours weekly yoga session reduced fear of falling in older adults (n = 40) by the end of the second month [27].

Conclusions

Keeping active throughout life is essential in maintaining

quality of life, especially in the elderly. Finding a way to exercise that is effective, safe and has multiple benefits can be daunting. Yoga appears to influence several areas, and the positive effects can be enjoyed after a relatively short period. This way novice practitioners can experience positive outcomes as well.

Most of the yoga studies have resulted positive outcome regarding balance, muscle strength, flexibility and improvement in mood, especially fear of falling. Notable is the improvement of static balance was independent from the time and duration of yoga practice. Besides the important physical aspects, several studies found improvement in affectivity as well and employed yoga in treating PTSD, anxiety, depression as well.

Besides the overall health benefits of practicing yoga, its versatility is also important. It can be practiced at home or in an organized setting, alone or in a group and can be adjusted to different mobility, flexibility or experience level. In the elderly population, where adaptability is essential, yoga seem to have a definite advantage.

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