

Blood Flow Restriction Exercises: Promoting Healthy Ageing

Sir,

According to World Health Organisation, there will be an estimated 2 billion people aged 60 years or over by 2050 worldwide. Currently, Pakistan has 11.3 million people over the age of 60 years. By 2050, this number will hike up to 43.3 million approximately.¹ As Pakistan's population ages, more efforts are needed to promote healthy ageing by adopting physically active lifestyle. Physical inactivity in elderly people can gradually cause loss of muscular strength and endurance; which in turn leads, to an overall functional limitation. This vicious cycle of physical inactivity can put them at a risk of developing conditions like hypertension, cardiovascular diseases, diabetes, low bone density and depression.

Maintaining or improving muscle mass and strength is vital for healthy living of elderly people. Without optimal muscle strength, basic tasks like balance, ambulation and activities of daily living can be very difficult to perform, leading to a downward spiral of deteriorating muscle performance and quality of life. Furthermore, these factors may contribute to an increased risk of disability and mortality.² According to American College of Sports Medicine, at least loads >70% of an individual's one-repetition maximum (1RM) are required to maintain muscle mass and strength.³ However, often elderly people find it difficult to train at such high intensities, and it can be stressful for their joints as well. Low-load resistance exercises (<40% of 1RM), combined with blood flow restriction (BFR), have been proposed by scientists as a valuable alternative for high-load resistance exercises to improve muscle mass and strength.^{4,5} BFR is usually accomplished by inflating a pneumatic cuff or specially designed elastic bands around the proximal part of the target limb. Pressure is applied in such a way that only venous blood return is blocked but arterial flow into the muscle is not compromised. Venous blood pooling increases metabolic stress in that area, which results in an increase in anabolic hormones ultimately facilitating protein synthesis and increasing heat shock proteins level.⁶

BFR exercises eliminate the need of sophisticated workout equipment. It is safe, time saving and cost-effective. It is ideal for elderly people, because it does not require long hours of resistance exercises to maintain optimal muscle strength. Furthermore, untrained sedentary individual can do simple body weight training with BFR and accomplish results that are comparable to conventional resistance exercises. Conventional resistance exercises can be physically and mentally stressful as well as time consuming for elderly people. Both these factors along with lack of motivation can be a great hurdle in maintaining strength and functional abilities which eventually can lead to comorbidities. It is imperative to take care of our elderly population by promoting healthy ageing. BFR exercises

can play a key role to curb the comorbidities associated with advancing age. There is a pressing need to take practical steps that will benefit the whole nation in years to come. Furthermore, by promoting healthy and active lifestyle, immense patient load can be lifted from our health system, which is already overburdened.

CONFLICT OF INTEREST:

The author declared no conflict of interest.

AUTHOR'S CONTRIBUTION:

SR: Responsible for every aspect of the study.

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