

Outdoor physical activities for people over 65 years old: an educational and social project

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Abstract.

Aim In old age, to minimize reductions in strength and aerobic capacity and counteract the effects of aging that can compromise health statuses, preventive measures must be taken that lead to healthier lifestyle. This paper describes an educational and social project carried out in Italy, the aim of which was to recruit sedentary individuals aged ≥ 65 years to participate in organized motor activities. This paper describes an educational and social project carried out in Italy, the aim of which was to recruit sedentary individuals aged ≥ 65 years to participate in organized motor activities. **Methods:** The project involved the organization of a series of free motor activities in the city allocated to different times of day during the summer season. The local municipality was involved to ensure the effective communication of the initiative to the public. All the teachers recruited onto the initiative underwent a period of training in adapted motor activities prior to their participation. **Results:** The project was started in 2006 and has now been running uninterruptedly for 15 years. It has gone from 165 attendances registered in the first year to 3652 attendances in 2020. **Discussion;** The participation in recreational activities is subject to mobility and the possibility of accessing opportunities present in the area, overcoming the barriers present in the environment or the fear of moving in the environment. **Conclusions:** The potential benefits deriving from physical activities—provided for free to maximize participation—are of significant social and health value. The project started fifteen years ago, and could be expanded further by collaborating with other initiatives provided by other networks and other local or national projects.

Key words: health, older adult, sedentary, motor activity, aging

Introduction

Increases in life expectancy stimulate us to contemplate what successful aging means and entails, and what actions should be taken to improve people's lifestyles. To minimize strength loss and the decline in aerobic capacity and counteract the effects of aging that can have both physical and psychological negative consequences, preventive measures must be taken that lead to healthier lifestyles (Gümüş & Erbaş, 2020; Sannicandro et al., 2020a; Altavilla et al., 2018; Gaetano, 2016).

The benefits of physical activity also translate into the identification of successful aging models that make it possible to reduce the negative consequences of aging (Jopp et al., 2017); by adapting motor activities to the needs of the population aged over 65, participants stand to benefit from an enhanced sense of self-efficacy, perception of safety, and life satisfaction (Sargent-Cox et al., 2012; Jopp et al., 2017; Raiola, 2013). Many engage in leisure activities that provide a good framework to ensure a positive sense of life satisfaction (Yoon et al., 2020); such activities may involve social gatherings, volunteering, religious or cultural activities, or physical exercises (Yoon, 2015; Yoon et al., 2020).

Analysis of the effects of taking part in recreational activities—defined as those carried out by people during their free time (Pressman et al., 2009)—has shown that such activities can be positively associated with cognitive and mental function efficiency, as well as physical function, both in adults and the elderly (refs). Indeed, over the last twenty years, studies have been carried out to investigate the potential effects of recreational activities carried out in people's free time on contrasting the effects of aging (Sala et al., 2019; Levinger et al., 2018).

Participation in recreational activities is subject to mobility and the possibility of accessing the locations in which such activities are held. "Barriers" present in the environment must also be overcome, as must be fears related to moving within the environment (Shumway-Cook et al. 2002; Rantakokko et al., 2013). Some barriers may constitute physical elements in or related to the environment (e.g. poor lighting, difficulty moving, etc.), and have been widely discussed in the literature (Shumway-Cook et al., 2003; Seematter-Bagnoud et al., 2004; Seematter-Bagnoud et al., 2011; Nordstrom et al., 2007; Rantakokko et al., 2013; Rantakokko et al., 2015); whereas fears that hinder engagement in an active lifestyle can be addressed through changes in behaviors (to eliminate even the most common obstacles or thoughts, such as lack of time, lack of interest in movement, lack of knowledge on the movement benefits, etc) One way of overcoming such barriers is by integrating projects between the various public and/or private institutions operating in the area.

The benefits of physical activity for counteracting the effects of aging

Since physical activity and exercise are key to maintaining health, and thus to the study of inherent aging, it is important to be clear as to what these terms mean. Physical activity has been defined as any bodily movement produced by the contraction of skeletal muscle that increases energy expenditure above a basal level.

From the literature it emerges that reduced physical activity is a key risk factor for numerous aging chronic pathologies (Both et al., 2012, Sannicandro et al., 2020a); and even a simple parameter, such as time spent sitting, constitutes a relevant mortality predictor (Bouchard et al., 2015). Physical inactivity is therefore a factor that, associated with the aging process effects, significantly influences the decline in motor skills: it must therefore be eliminated if we want to better identify the biological decline factors linked to human aging.

If we refer to the epidemic data, it emerges that for some years now about 10% of the deaths registered worldwide (about 57 million) can be attributable to sedentary lifestyle: this would translate into about 5 million deaths worldwide, identifying sedentary lifestyle as a risk factor similar to smoking and obesity (Bouchard et al., 2015).

The data are relevant as with reductions in the risk of premature death for about 30% for people with more than 20 chronic medical conditions. The literature reports reductions that exceed 50% when physical efficiency indicators are also evaluated (Warburton & Bredin, 2016).

Although the literature specifies that about 150 minutes of physical activity per week are recommended, some authors point out that even half of this value can determine health benefits for the adult population (Warburton & Bredin, 2016).

This information must reach the adult population and over 65 so that everyone can follow active lifestyles, can overcome the elements that represent an obstacle to activities and reduce sedentary time.

It is indeed important to point out that sedentary time (especially sitting time) carries independent health risks. The simple message "*move more and sit less*" is probably more understandable by the entire population and is based on a very strong body of scientific evidence (Arena & Lavie, 2020; Warburton & Bredin, 2016; Segar et al., 2020).

But which physical activities should be recommended for people over 65 years old? The physical activities should be aimed at reducing the risk of addictions and disabilities, and at reducing the risk of co morbidities (Gschwind et al., 2013; Altavilla et al., 2018). For example, the main factor responsible for one of the most common and serious public health problems in the elderly- namely falls - is a decrease in health status. Over 33% of community-dwelling people aged over 65 years fall at least once a year, and 50% of these will have recurrent falls (Rubenstein, 2006; de Labra et al., 2015; Ema et al., 2020). With increasing age, the rate of falls can rise such that as much as 60% of the population suffers from at least one fall per year (Rubenstein, 2006; Ema et al., 2020).

The literature suggests that rather than physical activities focused on a single ability, programs defined as *multimodal* seem to be more effective in generating overall health benefits (Rezola-Pardo et al., 2019; Cordes et al., 2019). Indeed, although most of the literature in this field supports multi-component exercises as the most effective interventions to improve the overall health status of frail elderly people (Rezola-Pardo et al., 2019; Cordes et al., 2019), reviews focused on studies entailing a variety of exercise programs and a broad range of methods to evaluate the results showed that have been obtained (de Labra et al., 2015; Sannicandro et al., 2008). As a result of this heterogeneity, there is no presiding consensus regarding a single best program to apply to a specific frail population. However, programs targeting more than one physical component (strength, endurance, balance, flexibility) have been shown to promote better performance with regard to the global functional capacity of older adults (de Labra et al., 2015).

Therefore, rather than structuring physical activity programs by focusing on the development of a single ability, sessions should be devised that integrate multiple motor abilities (Eggenberger et al., 2015; Sannicandro, 2015; Sannicandro, 2017; Sannicandro et al., 2008), and even include unusual tasks that present new motor problems (Gerards et al., 2017; Donath et al., 2016; Lesinski et al., 2015; Sannicandro et al., 2020b; Raiola, 2014).

The educational and social project

The educational project stems from the awareness that individuals aged 65 years or older need specific interventions conducted by specialist fitness instructors who can identify the most appropriate activities and modulate the motor load appropriately.

Participation and the use of training facilities provided by fitness centres and associations in the local area is often conditioned by social and economic factors (Gümüş & Erbaş, 2020; Waller et al., 2018), which together often constitute a real obstacle to continuing participation in motor activities. For example, the services offered are often not specific to the needs of the elderly, or may be very expensive (Gümüş & Erbaş, 2020). Thus the educational and social project "*Well-being on the seafront*" was born, which aimed to involve sedentary and deconditioned people aged 65 years and older.

Before the activities we recommenced, all the teachers underwent a period of specialized training in adapted motor activity, and the local municipality was involved to ensure the effective communication of the initiative to the public (Segar et al., 2017; Arena & Lavie, 2020). The project involved the organization of a series

of free motor activities in the city, divided into different times of the day and carried out during the summer season. Particular attention was paid to the places where the motor activities were to be performed because the literature reports significant relationships between the quality of the environment and outdoor mobility in elderly people (Portegijs et al., 2020). The literature underlines how the movements of the population over 65 years old can be negatively influenced by some elements present in the environment such as pedestrian crossings, street lighting, etc. (Moran et al., 2014).

Conversely, the creation of attractive environments can favorably condition seniors and motivate them to go out significantly (Rantakokko et al., 2015; Winters et al., 2015). Those who live in neighborhoods that have interesting and easy-to-reach places (elegant shops, parks or pedestrian areas) are those with higher levels of physical activity (Portegijs et al., 2020; Barnett et al., 2017); even, for some authors, if in the environment in which adults live there are these facilitators of outdoor movement, these elements may be able to reduce the walking difficulties that aging can present in old age (Schehl & Leukel, 2020; Eronen et al., 2013; Sugiyama et al., 2018).

The distance of the residential areas from the places where the lessons were held was carefully assessed to reduce barriers to mobility and facilitate the use of the service: the less healthy-minded/the most unfit older adults might have lower levels of confidence in their ability to be active outdoors and, consequently, be more likely to give up if the location were difficult to reach (Schehl & Leukel, 2020).

The physical activities were oriented at soliciting improved motor abilities, in accordance with recent literature (Lesinski et al., 2015; Sannicandro et al., 2020b; Sannicandro, 2017; de Labra et al., 2015; Sannicandro et al., 2015): the sessions included tasks aimed at increasing endurance, joint mobility, core stability, muscle flexibility, strength, balance and walking technique (Sannicandro et al., 2020b; Sannicandro, 2017; Raiola et al., 2020a; Elia et al., 2020).

To facilitate a quick incorporation of the activities into people's daily activities, the sessions were organized in both an urban environment (where people usually meet and move) and in a natural environment to take advantage of ground instability. In these places, it was possible to present real motor tasks that the over 65 years old people must overcome every day. The project also included two specific activities that aimed to increase endurance capacities: the group walking activity; and the aquatic activity.

The project was started in 2006 and now boasts 15 years of uninterrupted activity. From its initial 165 attendances in its first year, 3652 attendances were recorded in 2020.

Further project developments

Offering the possibility for elderly citizens to participate in physical activities for free—with the aim of recruiting the greatest number of participants possible—is of significant value from both social and health perspectives.

This project was inaugurated fifteen years ago, and as indicated in the literature (Kamada et al., 2018; Baker et al., 2011) has the potential to be further expanded by collaborating with other initiatives provided by other networks and other local or national projects. In this way, the breadth of participation of sedentary adults stands to increase because it will be able to engage with and meet the needs of more people through the proposal of a wider choice of physical activities.

The conception and organization of inter-generational projects in which recreational physical activity is encouraged for both parents and children together—or, even better, grandparents and grandchildren—may also foster greater participation in a wider range of activities, with highly significant social, educational, and relational outcomes (Raiola et al., 2020b; & 2020c; D'Elia et al., 2020; Di Domenico et al., 2020). This will contribute towards improved health statuses that, in turn, can encourage further participation in other activities during adulthood and old age.

Indeed, health status is also an important factor in the examination of participation in leisure activities. In a cross-sectional study of individuals aged 55 years and older (Strain et al., 2002; Searle et al., 1998), higher levels of self-assessed health were associated with higher rates of participation and participation in a greater number of activities. In terms of specific activities, health status was related to participation in activities that tended to be more physical in nature, such as sports, physical exercise, camping, gardening, and walking, as well as volunteer work, taking lessons or formal instruction, visiting libraries, museums, art galleries, and watching live events (Strain et al., 2002).

Finally, recent events related to the Covid-19 pandemic require that the organization of motor activities, in terms of the types of activities proposed and the places in which they are carried out, needs to be re-evaluated, and this applies to all segments of the population (Raiola et al., 2020d): the organization of outdoor activities can favor the continuous and systematic participation of people aged over 65 years.

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