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Evaluation of physical activity programmes for elderly people using the European Foundation for Quality Management Excellence Model's criteria and development of a quality self-assessment tool.

Academic dissertation submitted with the purpose of obtaining a doctoral degree in Physical Activity and Health under the Law 74/2006 from March 24<sup>th</sup>. This dissertation was conducted in the Research Centre of Physical Activity Health and Leisure and was supported by the Portuguese Foundation for Science and Technology (FCT) grant SFRH/BD/36796/2007.

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"Change will not come if we wait for some other person or some other time. We are the ones we've been waiting for. We are the change that we seek." Barack Obama, speech Feb. 5<sup>th</sup>, 2008

Ao Gonçalo e à Maria.

Por tudo.

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## V. RESUMO

Apesar das evidências empíricas sobre os benefícios da prática de exercício físico para a saúde, uma considerável proporção de idosos continua insuficientemente ativa. Vários estudos têm demonstrado que os programas de exercício desenvolvidos na comunidade têm sido eficazes no aumento da atividade física em idosos. Embora tenham surgido muitos programas de exercício para idosos (PEI) nos últimos anos, a sua avaliação tem sido escassa. Simultaneamente, a falta de uma abordagem padrão para avaliar estes programas torna difícil comparar a qualidade quer do planeamento, quer da implementação dos mesmos.

Pretendeu-se com este estudo avaliar os PEI desenvolvidos pela administração pública local Portuguesa, utilizando os critérios do Modelo da Excelência da Fundação Europeia para a Gestão da Qualidade (EFQM), e desenvolver um instrumento de autoavaliação da qualidade dos programas. Os objetivos secundários do estudo foram: 1) identificar as características gerais dos PEI; 2) distinguir grupos de programas de exercício de acordo com o grau de implementação de práticas de gestão da qualidade; 3) apresentar uma caracterização exploratória dos grupos identificados, baseada em variáveis relacionadas com as características dos programas e dos seus coordenadores; e 4) desenhar um protocolo de estudo que determine a exequibilidade, aceitabilidade e usabilidade do instrumento de autoavaliação da qualidade desenvolvido. Para se atingir estes objetivos, foram desenvolvidos cinco estudos:

1. Avaliação dos programas de exercício para idosos – exploração das práticas de outros sectores e análise das características gerais dos programas.

2. Avaliação dos programas de exercício para idosos – estudo descritivo utilizando os critérios da EFQM.

3. Utilização dos critérios da EFQM nos programas de exercício para idosos: resultados de uma análise de clusters.

4. Proposta de adaptação do Modelo da Excelência da Fundação Europeia para a Gestão da Qualidade aos programas de exercício para idosos – desenvolvimento de um instrumento de autoavaliação da qualidade utilizando o processo Delphi modificado.

5. Protocolo de estudo: utilização do Q-STEPS para avaliar e melhorar a qualidade dos programas de exercício para idosos.

Com base no nosso trabalho experimental, foi possível concluir que a maioria dos 125 PEI identificados fixou o objetivo de promover a saúde dos participantes e, no momento da nossa investigação, tinham sido implementados entre um e menos de cinco anos. Adicionalmente, a maioria dos programas exigia uma idade mínima de 55 anos como pré-requisito de admissão e oferecia duas atividades, com uma frequência de duas vezes por semana. As câmaras municipais foram as principais organizações responsáveis pelo desenvolvimento dos PEI e apenas um programa tinha desenvolvido iniciativas de qualidade. Os resultados sugerem, igualmente, que apesar de alguns dos PEI analisados terem recorrido a boas práticas – especificamente, no que diz respeito aos critérios Processos, Liderança, Resultados clientes e Pessoas - várias áreas ainda necessitavam de melhoria, nomeadamente as relacionadas com os critérios Parcerias e resultados, Resultados pessoas, Política e estratégia, Resultados chave do desempenho e Resultados sociedade. Com base no grau de implementação de práticas de gestão de qualidade, foram identificados quatro grupos de PEI: "Iniciados - negligentes com os resultados", "Empenhados - focados no processo", "Empenhados - focados na sociedade" e "Iniciados - orientados para o cliente". No entanto, exceto para o número de instalações geridas pelo programa, não se verificaram diferenças significativas entre os grupos. O nosso estudo identificou 165 práticas de qualidade essenciais à avaliação da qualidade dos PEI e desenvolveu um instrumento adaptado à realidade desses programas: o Q-STEPS (Quality Self-assessment Tool for Exercise Programmes for Seniors - Instrumento de Autoavaliação da Qualidade para Programas de Exercício para Seniores).

## VI. ABSTRACT

Despite empirical evidence for the health-related benefits of physical activity (PA), a large proportion of older adults are insufficiently active. Research has demonstrated that community-based PA programmes have effectively increased PA in older adults. While numerous PA programmes have been designed for the elderly in recent years, their evaluation has been scarce. Simultaneously, the lack of a standard approach to assessing PA programmes for the elderly makes it difficult to compare the quality of both the planning and the delivery of such programmes.

This thesis set out to evaluate PA programmes for the elderly developed by the Portuguese Local Public Administration, using the European Foundation for Quality Management Excellence Model's criteria and to develop an original, quality self-assessment tool. The secondary purposes of the study were: 1) to identify the general characteristics of the PA programmes; 2) to distinguish groups of PA programmes by their degree of implementation of quality management practices (QMPs); 3) to provide an exploratory characterization of the identified groups, based on variables related to the coordinators' characteristics and the programmes' features; and 4) to design a study protocol that determined the feasibility, acceptability, and usability of the quality self-assessment tool created. To accomplish these goals, five studies were carried out:

1. Evaluation of physical activity programmes for the elderly - exploring the lessons from other sectors and examining the general characteristics of the programmes.

2. Evaluation of physical activity programmes for elderly people - a descriptive study using the EFQM's criteria.

3. The use of EFQM's criteria on the physical activity programmes for elderly people: results of a cluster analysis.

4. A proposed adaptation of the European Foundation for Quality Management Excellence Model to physical activity programmes for the elderly – development of a quality self-assessment tool using a modified Delphi process.

5. Study protocol: using the Q-STEPS to assess and improve the quality of physical activity programmes for the elderly.

Based on our experimental work, it was possible to conclude that the majority of the 125 PA programmes identified in the present study set the goal of promoting the health of participants and, at the time of our research, had been implemented for between one year and less than five years. In addition, the majority of programmes maintained a minimum age of 55 years as a pre-requisite for admission and offered two activities, at a frequency of two times per week. "Municipal governments" were the main organizations responsible for developing PA programmes, and only one PA programme had developed quality initiatives. The findings also suggested that although some of the PA programmes analysed employed good practices - specifically, as regards the criteria Processes, Leadership, Customer results and People – several relevant areas still required improvement, namely those related to Partnerships and resources, People results, Policy and strategy, Key performance results and Society results. Based on the degree of implementation of QMPs, four groups of PA programmes were identified: the "Beginners results neglected", the "Committed - process focus", the "Committed - society focus", and the "Beginners - customer oriented". However, except for the number of facilities managed by the programme, no significant differences among these clusters were found for the general characteristics of the programmes. Our study identified 165 quality practices that are essential to assessments of the quality of PA programmes for the elderly and developed a tool that is adapted to the reality of such programmes: the Q-STEPS (Quality Self-assessment Tool for Exercise Programmes for Seniors).

## VII. LIST OF ABBREVIATIONS

ACSM: American College of Sports Medicine AfLP: Active for Life Program AFL: Active for Life CDC: Centers for Disease Control and Prevention CHAMPS: Community Healthy Activities Model Program for Seniors **CHIPs:** Community Health Intervention Programmes DHLP: Discovery Healthy Lifestyle Programme EFQM: European Foundation for Quality Management EUROSTAT: Statistical Office of the European Communities PA: Physical activity PRC-HAN: Prevention Research Centers Healthy Aging Research Network QM: Quality management **QMPs: Quality Management Practices** Q-STEPS: Quality Self-assessment Tool for Exercise Programmes for Seniors SESPAN: Southeast Seattle Senior Physical Activity Network WHO: World Health Organization

# Chapter 1. General Introduction and Theoretical Background

Só acrescentas algo ao Mundo 1 – quer este seja uma disciplina científica ou apenas uma ideia – se trouxeres algo do Mundo 2.

Gonçalo M. Tavares, in BREVES NOTAS sobre ciência

#### 1. General Introduction

An extensive body of evidence indicates that physical activity (PA) is associated with mitigation of the harmful effects of ageing (Castillo-Garzon, Ruiz, Ortega, & Gutierrez, 2006; Nelson et al., 2007) and with improvement in quality of life (Castillo-Garzon et al., 2006; CESEP, 2005; Chodzko-Zajko et al., 2009; Nelson et al., 2007). Based on these findings, public health decision-makers have recommended that elderly people should engage in regular PA and avoid inactive lifestyles (ACSM, 2009; BHF, 2007; Chodzko-Zajko et al., 2009). Nevertheless, many elderly European adults are still not physically active (EEIG, 2003; Martinez-Gonzalez et al., 2001).

The role of community-based interventions in promoting PA and the positive effects of participation in PA programmes have been closely studied and publicized (CDC, 2010; Fisher & Li, 2004; Hughes, Seymour, Campbell, Whitelaw, & Bazzarre, 2009; Stewart et al., 1997; Task Force on Community Preventive Services, 2005; Wilcox et al., 2006). It is widely accepted that the benefits of such programmes depend on adherence to exercise regimes, which is influenced by degree of enjoyment and satisfaction (Finch, 1997; Henderson & Ainsworth, 2002; Schutzer & Graves, 2004; Wankel, 1993; Williams, Hendry, France, Lewis, & Wilkinson, 2007; Wininger & Pargman, 2003). Moreover, one of the most important factors in customer satisfaction is quality of service (EFQM, 2003a; Parasuraman, Zeithaml, & Berry, 1994; Taylor & Baker, 1994). Therefore, continual improvements in PA programmes for the elderly may play a significant role in elderly satisfaction and adherence to exercise programmes.

The National Center for Chronic Disease Prevention's Division of Nutrition and Physical Activity has defined a set of recommendations and strategies for improving programmes and developing new approaches and has highlighted the need for effective programme evaluation (CDC, 2002a; Schmid, Librett, Neiman, Pratt, & Salmon, 2006). Similarly, the World Health Organization (WHO) has released guidelines for evaluating health promotion initiatives and has emphasized the need to evaluate and propose the allocation of adequate evaluative resources (WHO, 1999). With the aim of helping organizations improve the quality of their services, the European Foundation for Quality Management (EFQM) introduced the EFQM Excellence Model in 1991. The EFQM Excellence Model is a non-prescriptive framework that is based on nine criteria, divided into 32 sub-criteria (EFQM, 2003a). It promotes the use of management methodologies based on objective standards that are applicable to all areas of business and service and constitutes an exercise in self-assessment. Self-assessment sheds light on areas requiring improvement, as well as on the processes and actions necessary to generate improvement.

While numerous PA programmes have been designed for the elderly in recent years – especially by the Public Local Administration – their evaluation has been scarce. In fact, few details are available on how these programmes have been developed, how they have been structured, how service delivery is being conducted, and how results are being achieved. Simultaneously, the lack of a standard approach to assessing PA programmes for the elderly makes it difficult to compare the quality of both the planning and the delivery of such programmes.

In this context, it seems of importance to better understand the implementation of quality management practices (QMPs) in Portuguese PA programmes, as well as to create a tool suited to the realities and contexts of PA programmes for the elderly, so that the information obtained through such evaluation would be useful for organizations seeking to improve their services.

Therefore, this thesis set out to evaluate PA programmes for the elderly, developed by the Portuguese Local Public Administration, using the EFQM Excellence Model's criteria and to develop an original quality self-assessment tool. The secondary purposes of the study were: 1) to identify the general characteristics of the PA programmes; 2) to distinguish groups of PA programmes by their degree of implementation of QMPs; 3) to provide an exploratory characterization of the identified groups, based on variables related to the coordinators' characteristics and the programmes' features; and 4) to design a study protocol that determined the feasibility, acceptability, and usability of the quality self-assessment tool created.

The aims of this thesis and the original articles on which this thesis is based were the following:

1) to identify the general characteristics of the PA programmes developed by the Portuguese Local Public Administration and to determine the extent of implementation of quality initiatives in these programmes:

(I) <u>Marques AI</u>, Soares P, Soares-Miranda L, Moreira C, Oliveira-Tavares A, Clara-Santos P, Vale S, Santos R, Carvalho J. Evaluation of physical activity programmes for the elderly - exploring the lessons from other sectors and examining the general characteristics of the programmes. *BMC Research Notes* 2011, 4:368.

2) to characterise the quality management models of the PA programmes developed by the Portuguese Local Administration to enhance quality of life for elderly people, according to the criteria of the EFQM Excellence Model:

(II) <u>Marques AI</u>, Rosa MJ, Soares P, Santos R, Mota J, Carvalho J. Evaluation of physical activity programmes for elderly people - a descriptive study using the EFQM's criteria. *BMC Public Health* 2011, 11:123.

3) to identify subgroups of PA programmes based on their degree of implementation of QMPs, and to characterize the identified groups based on variables related to the coordinator's characteristics and the PA programme's features:

(**III**) <u>Marques AI</u>, Rosa MJ, Amorim M, Soares P, Oliveira-Tavares A, Mota J, Carvalho J. The use of EFQM's criteria on the physical activity programmes for elderly people: results of a cluster analysis. (submitted-under review).

4) to develop a self-assessment tool for PA programmes for the elderly:

(**IV**) <u>Marques AI</u>, Santos L, Soares P, Santos R, Oliveira-Tavares A, Mota J, Carvalho J. A proposed adaptation of the European Foundation for Quality Management Excellence Model to physical activity programmes for the elderly – development of a quality self-assessment tool using a modified Delphi process. *International Journal of Behavioral Nutrition and Physical Activity* 2011, 8:104.

5) to design a study protocol that determined the feasibility, acceptability, and usability of the Q-STEPS. The secondary purposes of this study were: 1) to examine the quality of PA programmes for the elderly that were developed by the Portuguese Local Administration over a three-year period of self-assessments, in terms of: a) Enabler domains (Leadership, Policy and Strategy, People, Partnership and Resources, Processes) and b) Result domains (Customer Results, People Results, Society Results and Key Performance Results) and 2) to estimate the association, during the three-year self-assessment phase, between the use of Q-STEPS and some indicators related to elderly participants such as: attendance rates, physical fitness, health-related quality of life, and programme quality, as perceived by the elderly.

(V) <u>Marques AI</u>, Rosa MJ, Amorim M, Soares P, Oliveira-Tavares A, Mota J, Carvalho J. Study protocol: using the Q-STEPS to assess and improve the quality of physical activity programmes for the elderly. *BMC Research Notes (in press)*.

This thesis is divided into three main chapters. Chapter I provides a brief background to the topic and presents the main objectives of the study, as well as its structure. Chapter II presents five original studies in article format, all submitted to peer-reviewed scientific journals. Chapter III includes a general discussion of the main findings of this thesis and directions for future research.

## 2. Theoretical Background

## 2.1 Ageing

The last few decades have witnessed significant demographic ageing that has caused profound social and political transformation and posed new challenges to society and humanity in the 21st century. The proportion of the population aged 60 or over is increasing rapidly and is expected to increase by more than 50 percent over the next four decades, expanding from 264 million in 2009 to 416 million in 2050 in more developed regions (United Nations Department of Economic and Social Affairs Population Division, 2009). Subsequently, the world's population will contain more older people than children for the first time in history.

According to the EUROSTAT, Portugal is one of the ten most aged countries in Europe (European Commission, 2008). Decreasing fertility, along with increasing life expectancy, has reshaped the age structure of the population. Consequently, the number of older people and the proportion of older persons, relative to the rest of Portugal's population, have increased considerably (INE, 2009). The group of older adults that in 1960 represented 8.0% of the population more than doubled during the last five decades: in 2011, Portuguese adults aged 65 and over reached almost 19% of the population, and this proportion will continue to rise in the 21st century (INE, 2011; PORDATA, 2011).

The most important issues related to demographic ageing, such as access to appropriate health-care services, concern the implications of ageing for the well-being of the elderly. In developed countries, some degree of progress has been made to achieve well-being, all the more so as ageing is the most important contributor to increases in healthcare costs (Rice & Estes, 1984; Roux et al., 2008; Siddall, Kjaeserud, Dziworski, Przywara, & Xavier, 2007). In fact, biopsychosocial changes arising from the ageing process can negatively affect the elderly's quality of life by limiting their ability to carry out everyday activities and making them more vulnerable to a greater variety of health problems (Chodzko-Zajko et al., 2009). To ensure both quality of life and reduced healthcare costs, regular PA has been strongly recommended (Chodzko-Zajko et al., 2009; Colditz, 1999; Scarborough et al., 2011).

## 2.2 Physical activity

PA is defined as any bodily movement that results in the contraction of skeletal muscles and, consequently, increases energy expenditure (ACSM, 2009). Exercise is a type of PA that consists of planned, structured, and repetitive bodily movements done to improve or maintain one or more components of physical fitness (ACSM, 2009).

It is well established that engagement in regular PA is associated with significant improvements in health throughout the lifespan (ACSM, 2009; Bauman, 2004; Chodzko-Zajko et al., 2009; Garber et al., 2011), reducing the possibility of developing a large number of chronic diseases, lowering the risk of disability and dependency in later life, and proving valuable in the treatment of numerous diseases (Chodzko-Zajko et al., 2009; DiPietro, 2001; McMurdo, 2000; Garber et al., 2011), including cardiovascular disease (Fletcher, Gulanick, & Braun, 2005; Janssen & Jolliffe, 2006; Thompson et al., 2003), stroke (Lee, Folsom, & Blair, 2003), type-2 diabetes (Lee, Sui, Church, Lee, & Blair, 2009; Miller & Dunstan, 2004; Sui et al., 2008), hypertension (Brown et al., 2006; Stewart et al., 2005), some cancers (Tardon et al., 2005; Wolin, Yan, Colditz, & Lee, 2009), osteopenia/osteoporosis (Berard, Bravo, & Gauthier, 1997; Marques, Mota, & Carvalho, 2011), obesity (CDC, 2003; Riebe et al., 2009), cognitive impairment (Jedrziewski, Lee, & Trojanowski, 2007; Lautenschlager et al., 2008), anxiety and depression (Brown, Ford, Burton, Marshall, & Dobson, 2005; Galper, Trivedi, Barlow, Dunn, & Kampert, 2006; Hamer, Molloy, de Oliveira, & Demakakos, 2009).

While a minimum of 150 minutes of moderate-intensity PA per week, or 75 minutes of vigorous-intensity PA per week (or an equivalent combination of moderate and vigorous activity), is required for health-related gain in older adults (ACSM, 2009; Chodzko-Zajko et al., 2009; Garber et al., 2011), it is also argued that a small amount of PA is better than none, and it is never too late to start becoming physically active (Buchner, 2003; Paffenbarger, Hyde, Wing, & Hsieh, 1986; Rooney, 1993; Young, 2001).

The concept of 'active ageing' has been employed by the World Health Organization (WHO) since the late 1990s and is defined as 'the process of optimizing

opportunities for health, participation and security in order to enhance quality of life as people age' (WHO 2002: 12). The European Commission proposed that 2012 be designated as the 'European Year for Active Ageing', such that 2012 would serve as a framework for raising awareness, for identifying and disseminating good practices, and for encouraging policymakers and stakeholders at all levels to promote active ageing (EY2012 Coalition, 2012). Therefore, in addition to interest in other initiatives that optimize opportunities for improving physical, social, and mental health, there has been growing concern about the need to design PA programmes for the elderly, since evidence indicates that such health promotion interventions may reduce the deleterious effects of the ageing process (Castillo-Garzon et al., 2006; Nelson et al., 2007) and improve quality of life (Castillo-Garzon et al., 2006; CESEP, 2005; Chodzko-Zajko et al., 2009; Nelson et al., 2007). Nevertheless, a substantial proportion of the European elderly have PA levels lower than those recommended for good health (EEIG, 2003; Martinez-Gonzalez et al., 2001; Taylor et al., 2004) and there is the same tendency in Portugal (Baptista et al., 2012). In fact, physical inactivity appears to be more prevalent in those aged 65 years and older, possibly due to the physiological and mental changes that come with increasing age (Drewnowski & Evans, 2001; Graham et al., 2007). Adding to this, the WHO has estimated that approximately 3.2 million die each year due to physical inactivity (WHO, 2011). Therefore, increasing adherence by the elderly to PA regimes is an important public health challenge.

### 2.2.1 Participation in and adherence to physical activity

An array of physical, psychological, social, and environmental factors have been found to be associated with PA participation and adherence in later life (ACSM, 2004; Boyette et al., 2002; Hutton et al., 2009; Schutzer & Graves, 2004; Thurston & Green, 2004; Tiedemann, Sherrington, & Lord, 2011; Trost, Owen, Bauman, Sallis, & Brown, 2002).

Health status, functional abilities, and medical conditions have been reported to be both important motives for and barriers to PA in older adults (Giuli, Papa, Mocchegiani, & Marcellini, 2012; Guerin, Mackintosh, & Fryer, 2008; Paivi, Mirja, & Terttu, 2010; Rejeski et al., 2007; Schutzer & Graves, 2004; Sin, LoGerfo, Belza, & Cunningham, 2004). A systematic review identified several factors associated with increased exercise participation in fall prevention interventions, including good general health and functional independence (Bunn, Dickinson, Barnett-Page, Mcinnes, & Horton, 2008).

With the aim of maximizing recruitment, increasing motivation to exercise, and minimizing attrition, the *Best Practices Statement Physical Activity Programs and Behavior Counseling in Older Adult Populations* (ACSM, 2004) reinforces the importance of incorporating a comprehensive behavioural management strategy into PA interventions, that is, of enhancing such features of these programmes as social support, self-efficacy, active choice, health contracts, positive reinforcement, and assurances of safety.

Perceived social support and/or opportunities for social interaction can act as a motive for PA in older adults (Allender, Cowburn, & Foster, 2006; Bauman, Bellew, Vita, Brown, & Owen, 2002; Guerin et al., 2008; Schutzer & Graves, 2004). In a study of the reasons why older women exercise, Kirkby et al. (1999) found that opportunity for social interaction, specifically *liking the company*, was a strong motive for engaging in exercise. The results of other studies (Boyette, Sharon, & Brandon, 1997; Brown, Fuller, Cockburn, & Adamson, 1999; Mathews et al., 2010; Stevens, Lemmink, van Heuvelen, de Jong, & Rispens, 2003) point in the same direction, indicating that respondents rated social reasons (e.g., support from friends, family or programme leader) as being strong and significant motives for PA participation.

Self-efficacy has also been identified as a factor that influences PA initiation and adherence and long-term PA in older adults (Hughes et al., 2009; Hutton et al., 2009; McAuley et al., 2007; McAuley et al., 2011; Stevens et al., 2003). Self-efficacy refers to an individual's belief in her/his own ability to carry out a specific course of action and to exercise control over events that affect her/his life. People's beliefs in their efficacy influence the choices they make, how much effort they put forth in given endeavours, how long they will persevere in the face of obstacles and failures, their resilience to adversity, whether their thought patterns are self-hindering or self-aiding, how much stress and depression they experience in difficult situations and the level of

accomplishment they realize (Bandura, 1977, 1991). Active choices and health contracts enhance self-efficacy (ACSM, 2004). In fact, the American College of Sports Medicine (ACSM) also recognizes that PA leaders should work closely with individuals to design PA regimens that reflect personal preferences and capabilities (ACSM, 2004). Among other considerations, the American Heart Association scientific statement (Williams et al., 2002) also acknowledges that PA programmes should aim to enhance PA in the elderly by fulfilling the different demands and needs of women and men, embracing occupational and leisure activities and simple daily living tasks, incorporating the importance of socialization, and including a variety of exercise activities. Tailoring exercise programmes to the needs and interests of participants has been associated with higher rates of programme attendance (Stewart et al., 2001; Thurston & Green, 2004).

Moreover, health contracts help older adults change their health behaviours by promoting, for instance, the initiation and maintenance of exercise routines (Haber & Rhodes, 2004). Health contracts identify and enhance motivations, lay out realistic goals, help implement plans to accomplish these goals, identify problems, and promote solutions (Haber, 2010; Haber & Rhodes, 2004). As they define what comprises success, they consequently provide intrinsic reinforcement (Toner & Shadden, 2002). On the other hand, extrinsic forms of reinforcement – such as recruitment incentives, rewards for reaching goals, and public recognition for attendance and adherence (ACSM, 2004) – also provide motivation for continuing to engage in exercise regimes (Chen, Snyder, & Krichbaum, 2001; Conn, Hafdahl, Brown, & Brown, 2008; Finkelstein, Brown, Brown, & Buchner, 2008; Kirkby, Kolt, & Habel, 1998; Paterson & Warburton, 2010).

Concerns about the potential dangers of inappropriate activity and about safety, more generally, have also been identified as barriers to exercise by many older adults (ACSM, 2004; Brown et al., 1999; Hutton et al., 2009). Being properly informed about safety and how to self-monitor exercise intensity can help overcome fear of injury or unpleasant sensation (ACSM, 2004; Sims et al., 2006). In contrast, perceptions of the risk of suffering from disease act as a catalyst for the development of intent to perform PA (Stephan, Boiche, Trouilloud, Deroche, & Sarrazin, 2011).

Past experience with exercise or PA appears to act as a motivator for exercise participation and adherence in later life (Boyette et al., 2002; Gavin & Myers, 2003; Jancey, Clarke, Howat, Maycock, & Lee, 2009; McAuley et al., 2007; Newson & Kemps, 2007; Resnick, 2001; Trost et al., 2002). Past positive engagement leads individuals to repeat what they perceive as satisfying experiences; they are motivated by the value of PA or by the perceived enjoyment of certain activities (Gill & Overdorf, 1994; Kluge, 2002; Thurston & Green, 2004). Actually, enjoyment is an important factor in PA participation and maintenance (Mullen et al., 2011). Research undertaken by some authors (Boyette et al., 1997; Kerse, Flicker, Jolley, Arroll, & Young, 1999; Kluge, 2002; Stevens et al., 2003) has shown that older adults will initiate and maintain PA if they enjoy it. Perceived feelings of satisfaction with and enjoyment of PA have been associated with long-term exercise adherence in older adults (Findorff, Wyman, & Gross, 2009; Resnick & Spellbring, 2000; Schutzer & Graves, 2004; Tak, van Uffelen, Chin, van Mechelen, & Hopman-Rock, 2012; Thurston & Green, 2004). Dacey and colleagues used motives to discriminate between three PA levels - inactive, active, and sustained maintainers - and found that *enjoyment* was most important in differentiating activity level (Dacey, Baltzell, & Zaichkowsky, 2008). Among other strategies, one approach that has been used to ensure maximal enjoyment of and optimal adherence to PA regimens is tailoring activities to individual needs and interests (ACSM, 2004).

A number of studies have found socio-environmental preferences among older adults that influence participation in and maintenance of regular PA (Boyette et al., 1997; Cohen-Mansfield, Marx, Biddison, & Guralnik, 2004; Stiggelbout, Hopman-Rock, Crone, Lechner, & van Mechelen, 2006) and that may impact on older adults' PA levels (Fisher, Li, Michael, & Cleveland, 2004; Wilcox, Bopp, Oberrecht, Kammermann, & McElmurray, 2003). Their findings demonstrate the crucial role of the physical and social features of communities and neighbourhoods in older adults' PA engagement, such as the design of neighbourhoods (Frank, Kerr, Rosenberg, & King, 2010; Hanibuchi, Kawachi, Nakaya, Hirai, & Kondo, 2011; King et al., 2005; Morris, McAuley, & Motl, 2008), accessibility of recreational and leisure facilities (Hooker, Wilcox, Rheaume, Burroughs, & Friedman, 2011; King et al., 2005; Sharon, Hennessy, Brandon, & Boyette, 1997; Shores, West, Theriault, & Davison, 2009), level of community cohesion (Fisher et al., 2004; King, 2008), and perceptions of neighbourhood safety (Belza et al., 2004; Corseuil, Hallal, Corseuil, Schneider, & d'Orsi, 2012; Wilcox et al., 2003). A review paper that explored the relationship between physical environment and PA identified neighbourhood safety, footpath safety, access to convenient facilities, enjoyable scenery, short distances to facilities or parks, low perceived crime rates, and low traffic density as being associated with PA participation (Cunningham & Michael, 2004).

There is acknowledgement that practical concerns, such as programme cost, exercise leadership and programme organization, influence the participation of older adults in PA programmes (Belza et al., 2004; Boyette et al., 1997; Cohen-Mansfield et al., 2004). Also, the perceived quality of exercise programmes may have a positive effect on exercise participation and maintenance (Stiggelbout et al., 2006).

Stiggelbout and colleagues investigated the behavioural predictors of sustained exercise participation in older adults, using an integrated social psychological model that was based on '(1) the Social Learning Theory (Bandura, 1986), (2) the Theory of Planned Behaviour (Ajzen, 1991; Ajzen and Driver, 1992), (3) the Model of Past Behaviour (Triandis, 1977, 1979) and (4) the Relapse Prevention Model (Marlatt and Gordon, 1980, 1985)' (Stiggelbout et al., 2006: 2), as shown in Figure 1.

Figure 1: The behavioural predictors of maintenance of exercise participation in older adults. Adapted from Stiggelbout et al. (2006).



Stiggelbout et al. (2006) showed that being female, younger, and married, as well as being a non-smoker, having paid employment, having a positive attitude towards exercise, and perceiving oneself as having a high level of self-efficacy at baseline were significant independent predictors of intent to continue participating in exercise programmes. Short lapses in exercise, absence of lapses, high intent at baseline, perceptions that a programme was high-quality, positive attitude at baseline, and low risk at baseline were significant independent predictors of maintenance of exercise participation (Stiggelbout et al., 2006). To promote the maintenance of exercise regimes among older adults, the authors recommended that efforts should be made to prevent lapses, help people cope with situations that increase the risk of lapses, improve attitudes towards exercise, and improve programme quality.

### 2.2.2 Physical activity programmes

Evidence provided by several studies suggests that PA can play a major role in promoting global health (Bauman, Phongsavan, Schoeppe, & Owen, 2006; Kirsten, Bauman, & Pratt, 2006). Such evidence is largely epidemiological, highlighting the positive effects of an active lifestyle and involvement in PA programmes (Bouchard, Shephard, & Stevens, 1994). Public health providers and policy makers can help citizens achieve recommended PA levels by promoting PA programmes (ACSM, 2009; CDC, 2001) and ensuring optimal utilization of community resources.

Led by the ACSM, a coalition of American organizations has developed an overview of best practices, guidelines, and recommendations regarding PA for older adults (ACSM, 2004), in response to one of the top priorities identified in the National Blueprint (namely, the Medical Systems Strategy #1): to disseminate information on best practices and guidelines for PA programmes in the older adult population (Sheppard et al., 2003). Working with other American organizations, the Centers for Disease Control and Prevention (CDC) has also developed guidelines for increasing PA across a large number of settings and populations, including the elderly population (Moran, Caspersen, Thomas, Brown, & Group, 2007).

In Europe, the British Heart Foundation published guidelines with the purpose of highlighting PA recommendations for older adults and translating evidence into the practice of promoting PA in older people (BHF, 2007). These guidelines draw attention to practices and designs that can be used to support the professional planning of interventions at three related levels: a) population-wide (e.g. environmental and policy interventions, campaigns, and promotions); b) community/locality-based (e.g. facility-based programmes, area-based PA projects and activity/participation events); and c) one-to-one (e.g. lifestyle counselling and advice) (BHF, 2007).

Some studies have emphasised the role of community-based interventions in promoting PA and the positive effects of individual participation in PA programmes (CDC, 2010; Fisher & Li, 2004; Hughes et al., 2009; Stewart et al., 1997; Task Force on Community Preventive Services, 2005; Wilcox et al., 2006).

The importance of public health initiatives has led the Prevention Research Centers Healthy Aging Research Network (PRC–HAN), funded by the CDC, to develop a research agenda focused on the factors that lead to healthy aging and an overview of interventions that promote it. The PRC-HAN has strongly emphasized the need to work with community-based groups to develop programmes that improve health, highlight some of the best evidence-based PA programmes, and debate and explore challenges and successful strategies related to the implementation of sustainable community programmes (Belza & PRC-HAN Physical Activity Conference Planning Workgroup, 2007).

Over the last few years, there have been several community initiatives to promote PA for older adults and, concomitantly, a growing focus within the scientific community on evaluating the effectiveness of these programmes. In general, the majority of studies have concentrated on the effects of interventions on elderly participants, using outcomes from different assessments (Gu & Conn, 2008; Jancey et al., 2008; King, Rejeski, & Buchner, 1998; Marques et al., 2011; Opdenacker, Delecluse, & Boen, 2009; Taylor et al., 2004; van Uffelen, Chin, Hopman-Rock, & van Mechelen, 2008; Williams et al., 2007). This type of evaluation is important, but not sufficient, to efforts to help organizations and policy makers monitor their progress toward public health goals and become more accountable to the communities or populations they serve (Derose, Schuster, Fielding, & Asch, 2002). Public health organizations have acknowledged potential gains in quality, and efforts are underway to institute measurement-based assessments and monitor performance (CDC, 2007; NICE, 2009). Through such initiatives, it is possible to demonstrate what about interventions works and what does not and thereby to reveal the essential components of PA programmes, while documenting and disseminating evidence-based practices (CDC, 2002b; Derose et al., 2002; Yuan et al., 2010).

The CDC has defined a set of recommendations and strategies for improving PA programmes, as well as developing new approaches and highlighting the need for effective programme evaluation (CDC, 2002a; Schmid et al., 2006). Simultaneously, Benchmark 3 from the Physical Activity and Health Branch at the CDC (Levin Martin & Vehige, 2006) advocates the use of complete programme evaluations to continually

improve quality. According to the CDC: 'the evaluation is the systematic examination and assessment of features of an initiative and its effects, in order to produce information that can be used by those who have an interest in its improvement or effectiveness' (CDC, 2002b: 5).

This '*imperative*' (CDC, 2002b: 5) has a wide application that reveals commitment to provide high-quality programmes. Furthermore, programme evaluation is a useful tool for continuous quality improvement (Levin Martin & Vehige, 2006), and the WHO guidelines for evaluating health promotion initiatives emphasize the need to assess and propose the allocation of adequate resources for this action (WHO, 1999).

As stated in the CDC's *Physical Activity Evaluation Handbook* (CDC, 2002b), programme evaluation diverges from basic research in that its primary aim '*is not to add to a body of knowledge but to learn how to improve a programme*' (CDC, 2002b: 6).

Previous studies have evaluated several topics relevant to PA programmes' development, implementation, and outcomes (Cheadle, Egger, LoGerfo, Schwartz, & Harris, 2010; Draper, Kolbe-Alexander, & Lambert, 2009; Draper et al., 2010; Erickson et al., 2010; Gillis, Grossman, McLellan, King, & Stewart, 2002; Griffin et al., 2010; Seguin et al., 2008; Sepsis et al., 1995), as will be shown in the following paragraphs and presented in chronological order.

Sepsis and colleagues undertook a process evaluation of the original *Community Healthy Activities Model Program for Seniors* (CHAMPS) (Sepsis et al., 1995). Participants were asked to rate the perceived helpfulness of CHAMPS' 11 mechanisms, so as to determine the relative value of these to enrollees' initiation and adherence to PA programmes that were aimed at changing their behaviours. The features rated most helpful by participants were the attention they received, telephone calls from CHAMPS staff, and introductory meetings. By contrast, chances to win prizes and the receipt of t-shirts were rated as the least helpful components of the CHAMPS intervention. The feedback obtained was used to develop a revised CHAMPS programme.

Following implementation of CHAMPS II (the revised *Community Healthy Activities Model Program for Seniors*), participants were invited to complete a process

evaluation survey that was designed to identify which of the 12 different aspects of the programme participants perceived as assisting them in becoming and remaining physically active (Gillis et al., 2002). A subgroup of participants was invited to take part in focus group interviews where they could share their personal experiences and discuss, in depth, why they found components of the intervention helpful or unhelpful. As with the previous version of CHAMPS, the results indicated that personal attention from staff, telephone calls from staff, and informational meetings were most helpful.

In more recent years, other aspects of the programme have been interested to researchers. Seguin et al. (2008) described the relationship between socioeconomic, personal/behavioural, programmatic, leadership, and community-level social and demographic characteristics as these related to the implementation of the Strong Women Program (an American community strength training programme targeted toward midlife and older women). A sample of trained leaders was invited to participate in either an online or mail survey. The results showed that of the 487 respondents, 270 implemented the programme. Implementers reported higher levels of strength training participation, current and lifetime PA, perceived support, and leadership competence. A positive association was also revealed between implementation and fitness credentials/certification, programme-specific self-efficacy, and support-focused leadership, and a negative association was identified between implementation and educational attainment. The authors highlighted the importance of factors related to leaders' implementation of community-based PA programmes and the prospective benefits of considering these factors when selecting and training future leaders in the dissemination of community-based PA programmes.

As society has become more demanding, programmes have aspired to their own success, attracting the attention of researchers. Draper et al. (2009) carried out a retrospective process evaluation of both factors associated with the successful implementation of *Community Health Intervention Programmes* (CHIPs) and the challenges of implementing CHIPs (Draper et al., 2009). CHIPs is a PA-based health promotion programme operating in disadvantaged communities in the Western Cape, South Africa, with primary school learners, adults, and senior adults. Data were collected through naturalistic observation, structured interviews, focus groups, and
open-ended questionnaires given to CHIPs staff, stakeholders, programme leaders, and members. The intervention was perceived as successful, since it combined social development and health promotion, while employing a community development model. Other factors contributing to the programme's success incorporated: the inclusion of scientifically sound programme content and appropriate activities, intrapersonal and interpersonal factors, the presence of adequate programme leadership and encouraging staff, and contextual factors. The information gained from Draper and collaborators' evaluation highlighted the importance of designing interventions that meet the specific needs of special populations.

Later on, Draper et al. (2010) led another assessment focused on the successful implementation of a programme. The study consisted of a process evaluation of the Discovery Healthy Lifestyle Programme (DHLP), a PA-based chronic disease prevention programme that has been implemented in a low-income, rural setting in South Africa. The aim of this evaluation was to qualitatively assess the process by which the DHLP was implemented, identifying enabling factors and barriers. Data were collected through semi-structured focus groups with leaders, teachers, and support group members; in addition, situational analyses, informal community observations, and informal interviews with programme coordinators were conducted. Initial indicators of successful implementation of the DHLP included positive changes in respondents' perceptions of PA, increased awareness of the importance of PA, and the adoption of healthier lifestyles. Stakeholders' feedback confirmed that the programme was perceived as acceptable and feasible within communities, in spite of the challenges to implementation. Local government involvement in the DHLP resulted in greater ownership of the programme, which enabled successful implementation. Furthermore, the programme was financially viable, because it required the use of minimal, inexpensive equipment for successful implementation and utilised infrastructure existing within the healthcare and education sectors. Draper and colleagues' findings suggested that PA could be effectively promoted in low-income, rural settings by enhancing knowledge, transferring appropriate skills, and providing enabling environments. Also, PA interventions could be made more feasible and accessible by promoting the participation and empowerment of rural communities (Draper et al., 2010).

A different study has investigated other subjects that are closely related to the impact of partnerships and programmes on communities. The organizing strategy of the Southeast Seattle Senior Physical Activity Network (SESPAN) involves networking with a variety of community-based organizations, with two broad objectives: a) to make connections between two (or more) community-based organizations and create senior PA programmes where none existed before; and b) to build broad coalitions of groups and organizations that can assist in making larger-scale environmental and policy changes that increase seniors' PA (Cheadle, Egger, LoGerfo, Walwick, & Schwartz, 2010). Evaluation of SESPAN used an uncontrolled prospective design that was focused on sustainable community changes, including new or modified programmes, policies, and practices (Cheadle, Egger, LoGerfo, Schwartz et al., 2010). Several data sources were used, including programme logs maintained by a community organizer, key informant interviews with community partners, and programme participation rates from community-based organizations working with SESPAN. The results showed that the community organizer made several contacts with key organizations, confirming that the community-organizing model was actually implemented as planned. Similarly, the organizer conducted adequate follow-through when developing potentially useful relationships and was perceived by community partners as effective in its role. Regarding community changes, the SESPAN community organizer's efforts led to the creation of 21 new older adult exercise programmes and the formation of a new community health coalition. Finally, the results also confirmed environmental changes, including the building of crosswalks and other pedestrian-friendly improvements. The study highlighted the fact that the success of SESPAN's organizing model depends on identifying and involving champions in partner organizations who provide support and resources for programme implementation.

A process evaluation of participants' attitudes, opinions, and beliefs concerning the West Virginia University Extension Service *Active for Life Program* (AfLP) was conducted by Eriksson et al. (2010). Three focus groups were conducted to elicit participants' perceptions of the AfLP. Key themes identified by participants included motivating factors (socialization and companionship, perceived health benefits, overall better feelings, and the opportunity to "get up, get out, and get going"), inhibiting factors (lack of time, transportation, traffic congestion, poor road conditions, and weather), and recommended changes (increase amount of walking during class sessions, provide more vigorous activities, provide a greater variety of activities, offer exercises of varying intensity on alternate days, and incorporate more balance, music, dance or rhythmic exercises). Eriksson and collaborators thus verified the positive influence of the AfLP on community-dwelling adults and suggested that other Extension Services use their results to adopt the AfLP and increase access to PA programmes for older adults.

Finally, Griffin et al. (2010) described a process evaluation design carried out with *Active for Life* (AFL) – an initiative to increase PA in midlife and older adults. Using a multistep process, they identified the essential elements of this programme and developed descriptions of complete and acceptable delivery methods for each. Their evaluation revealed high-dose delivery and implementation fidelity. Additionally, it showed how the collaborative process used in AFL allowed organizations to 'fit' their programmes to their audiences while maintaining fidelity to essential programme elements. The authors stressed that their findings could be used to better understand the process of PA programme delivery and provided a set of process evaluation recommendations.

The aforementioned studies employed an evaluation approach to understanding some components of PA programmes. However, no study has yet conducted a comprehensive programme evaluation to understand its quality and thus, assisting to its continuous quality improvement (Levin Martin & Vehige, 2006). Concerning that *'evaluation is integral to success'* (Schmid, Librett et al. 2006: 115), organisations need to establish appropriate quality assessment methods that allow them to plan and deliver programmes and services while monitoring their progress toward public health goals (Derose et al., 2002).

# 2.3 Quality management

The word 'quality' is derived from the Latin word qualis, meaning 'such as the thing really is'. With a wide diversity of meanings attached to it, quality has been defined from different perspectives and orientations, according to the context within which it is used (Dale, 2003).

Quality management (QM) is a management philosophy based on the core ideas of Walter A. Shewhart (1930's), who defined two related perspectives of quality, possibly based on Aristotle's conceptions (384-322 BC) (Kano, Seraku, Takahashi, & Tsuji, 1996): the objective perspective views quality as being independent of the existence of man, while the subjective perspective of quality considers what we think, feel, and sense to be the result of objective quality (Shewhart, 1980). Since the First World War, this philosophy has undergone four stages of development: Quality Inspection, Quality Control, Quality Assurance and Total Quality Management (Dale, 2003). Quality gurus, such as W. Edwards Deming, Joseph Juran, Philip Crosby, Kaoru Ishikawa and Genichi Taguchi, have put forth several approaches to assessing quality and have made a significant impact on the world by improving numerous types of organizations (Bendell, 1991). Although different views, definitions, and components of QM have been presented (Dale, 2003; Hackman & Wageman, 1995), QM allows organizations to reach their objectives effectively and efficiently and to achieve sustainable competitive advantage (Goldberg & Cole, 2002). For some authors (McAfee & Thompson, 1998; McLaughlin & Kaluzny, 2005; Mears, 1994), QM processes and tools provide organisations with a practical way of identifying and overcoming barriers to continuous improvement.

Progressive globalization of the economy has led countries and companies to recognize the advantages of universal benchmarks for quality that complement expert guidelines (Rosa, 2003). There are currently many measurement methodologies and guidelines for improving and assessing quality within organizations. Among these, the EN ISO 9000 standard and excellence awards have been internationally recognized, accepted, tested, and validated (Rosa, 2003). One example of a well-known quality award is the annual EFQM Excellence Award. This distinction is awarded by the EFQM to organisations that have achieved outstanding levels of sustainable excellence, through the use and application of the EFQM Excellence Model (EFQM, 2003a).

### 2.3.1 The EFQM Excellence Model

With the objective of helping organizations improve their performance, the EFQM introduced the Excellence Model in 1991 (EFQM, 2003a). The Excellence Model is currently used by thousands of organizations throughout Europe, including companies, health facilities, schools, public safety services, and governmental institutions. The model provides organizations with a common management vocabulary and tools, thus facilitating the sharing of best practices between sectors (EFQM, 2003a).

The EFQM Excellence Model (Figure 2) is a non-prescriptive framework, based on nine criteria that are divided into 32 sub-criteria (EFQM, 2003a). Of the nine primary criteria, five are 'Enablers' – what an organization does to achieve excellence – and four are 'Results' – what an organization achieves, that is, the results achieved on the path to Excellence. 'Results' are caused by 'Enablers', and feedback from 'Results' helps to improve 'Enablers'. The arrows in Figure 2 show the dynamic nature of the model; while horizontal vectors are essential to the model's architecture, issues related to 'Innovation and Learning' emerge as cross-sectional elements in all the criteria. They show how innovation and learning can be used to improve enablers that, in turn, lead to improved results (EFQM, 2003a).



Figure 2: EFQM Excellence Model (EFQM, 2003a).

The EFQM model recognizes that there are many approaches to achieving sustainable Excellence in all aspects of performance, based on the premise that:

'Excellent results with respect to Performance, Customers, People and Society are achieved through Leadership driving Policy and Strategy that is delivered through People, Partnerships and Resources, and Processes' (EFQM, 2003a: 5). Definitions of the Model's criteria are given below, in Table 1.

Table 1: Definitions of the Model's criteria (adapted from EFQM, 2003a).

# MODEL CRITERIA DEFINITION

Leadership	vision. They develop organisational values and systems required for sustainable success and implement these via their actions and behaviours. During periods of change they retain a constancy of purpose. Where required, such leaders are able to change the direction of the organisation and inspire others to follow.
Policy & Strategy	Excellent Organisations implement their mission and vision by developing a stakeholder focused strategy that takes account of the market and sector in which it operates. Policies, plans, objectives, and processes are developed and deployed to deliver the strategy.
People	Excellent organisations manage, develop and release the full potential of their people at an individual, team-based and organisational level. They promote fairness and equality and involve and empower their people. They care for, communicate, reward and recognise, in a way that motivates staff and builds commitment to using their skills and knowledge for the benefit of the organisation.
Partnerships & Resources	Excellent organisations plan and manage external partnerships, suppliers and internal resources in order to support policy and strategy and the effective operation of processes. During planning and whilst managing partnerships and resources they balance the current and future needs of the organisation, the community and the environment.
Processes	Excellent organisations design, manage and improve processes in order to fully satisfy, and generate increasing value for, customers and other stakeholders.

Customer Results	Excellent organisations comprehensively measure and achieve outstanding results with respect to their customers.
People Results	Excellent organisations comprehensively measure and achieve outstanding results with respect to their people.
Society Results	Excellent organisations comprehensively measure and achieve outstanding results with respect to society.
Key Performance Results	Excellent organisations comprehensively measure and achieve outstanding results with respect to the key elements of their policy and strategy.

It is by using these nine criteria and the 32 sub-criteria that an organization's progress towards excellence is assessed (EFQM, 2003a). Self-assessment sheds light on areas requiring improvement and actions necessary to improve.

The achievement of excellence requires total leadership commitment and acceptance of the Eight Fundamental Concepts (Figure 3) on which the EFQM Excellence Model is based (EFQM, 2003b). These Fundamental Concepts are: results orientation, customer focus, leadership and constancy of purpose, management by processes and facts, people development and involvement, continuous learning, improvement and innovation, partnership development, and corporate social responsibility (EFQM, 2003b).





1. Results Orientation: Excellence is achieving results that delight all the organisation's stakeholders.

2. Customer Focus: Excellence is creating sustainable customer value.

3. Leadership and Constancy of Purpose: Excellence is visionary and inspirational leadership, coupled with constancy of purpose.

4. Management by Processes and Facts: Excellence is managing the organisation through a set of interdependent and interrelated systems, processes and facts.

5. People Development and Involvement: Excellence is maximising the contribution of employees through their development and involvement.

6. Continuous Learning, Innovation and Improvement: Excellence is challenging the status quo and effecting change by utilising learning to create innovation and improvement opportunities.

7. Partnership Development: Excellence is developing and maintaining value adding partnerships.

8. Corporate Social Responsibility: Excellence is exceeding the minimum regulatory framework in which the organisation operates and to strive to understand and respond to the expectations of their stakeholders in society.

Table 2 presents examples of how the Fundamental Concepts of Excellence are put into practice and the benefits of the EFQM Excellence Model to those organizations that have implemented them in their management praxis (EFQM, 2003b: 5-7). Table 2: Examples of how the Fundamental Concepts of Excellence are putinto practice and the benefits for organisations (adapted from EFQM, 2003b).

	PRACTICE	BENEFITS
RESULTS ORIENTATION	Excellent organisations measure and anticipate the needs and expectations of their stakeholders, monitor their experiences and perceptions, and monitor and review the performance of other organisations. Information is used to set, implement and review their policies, strategies, objectives, targets, measures and plans.	<ul> <li>+ Added value for all stakeholders.</li> <li>+ Sustainable success for all stakeholders.</li> <li>+ Understanding of the current and future requirements for performance in order to set targets.</li> <li>+ Alignment and focus throughout the organisation.</li> <li>+ Delighted stakeholders.</li> </ul>
CUSTOMER FOCUS	Excellent organisations anticipate what customers' future needs and expectations will be and act in order to meet and where possible exceed them. They monitor and review the experiences and perceptions of their customers; if things go wrong they respond quickly and effectively. They build and maintain excellent relationships with all their customers.	<ul> <li>+ Delighted customers.</li> <li>+ Strong customer loyalty and retention.</li> <li>+ Enhanced market share.</li> <li>+ Sustained success for the organisation.</li> <li>+ Motivated employees.</li> <li>+ Understanding of competitive advantage.</li> </ul>
LEADERSHIP AND CONSTANCY OF PURPOSE	Excellent organisations have leaders who set and communicate a clear direction for their organisation. Leaders establish values, ethics, culture and a governance structure for the organisation that provides a unique identity and attractiveness to stakeholders. They lead by example, recognising their stakeholders and working with them on joint improvement activity.	<ul> <li>+ Clarity of purpose and direction within the organisation.</li> <li>+ A clear identity for, and within, the organisation.</li> <li>+ A shared set of values and ethics.</li> <li>+ Consistent and role model behaviours throughout the organisation.</li> <li>+ A committed, motivated and effective workforce.</li> <li>+ Confidence in, and within the organisation, even in turbulent and changing times.</li> </ul>
MANAGEMENT BY PROCESSES AND FACTS	Excellent organisations have an effective management system based upon, and designed to deliver, the needs and expectations of all stakeholders. The implementation of the policies, strategies, objectives and plans are enabled and assured through a clear and integrated set of processes. Decisions are based on factually reliable information. Risks are identified based on sound performance measures and effectively managed. Appropriate prevention measures are identified and implemented inspiring and maintaining high levels of confidence with stakeholders.	<ul> <li>+ Maximised effectiveness and efficiency in delivering the aims of the organisation and its products and services.</li> <li>+ Effective and realistic decision- making.</li> <li>+ Effective management of risk.</li> <li>+ Enhanced confidence of stakeholders.</li> </ul>

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Excellent organisations identify and understand the competencies needed, both now and in the future, in order to implement the organisation's policies, strategies, objectives and plans. They recruit and develop their people to match these competencies and actively and positively support them throughout. They recognise the increasing importance of the intellectual capital of their people. They seek to care, reward and recognise their people in a way that builds their commitment and encourages their loyalty to the organisation.

CONTINUOUS LEARNING, INNOVATION AND IMPROVEMENT Excellent organisations continuously learn, both from their own activities and performance and from that of others. They rigorously benchmark, both internally and externally. There is an openness to accept and use ideas from all stakeholders. People are encouraged to look beyond today and today's capabilities. They are careful to guard their intellectual property. Their people constantly challenge the status quo and seek opportunities for continuous innovation and improvement that add value.

**PARTNERSHIP DEVELOPMENT** 

CORPORATE SOCIAL

RESPONSIBILITY

may depend on the partnerships they develop. They seek out, and develop, partnerships with other organisations. These partnerships enable them to deliver enhanced value to their stakeholders through optimising core competencies. Partners' work together to achieve shared goals, supporting one another with expertise, resources and knowledge and build a sustainable relationship based on mutual trust, respect and openness.

Excellent organisations recognise that success

Excellent organisations adopt a highly ethical approach by being transparent and accountable to their stakeholders for their performance as a responsible organisation. They give consideration to, and actively promote, social responsibility and ecological sustainability. The organisation's Corporate Social Responsibility is expressed in the values and integrated within the organisation. As well as managing risk, they seek out and promote opportunities to work on mutually beneficial projects with society inspiring and maintaining high levels of confidence with stakeholders. They are aware of the organisation's impact. + Shared ownership of the organisation's aims and objectives.

+ A committed, loyal and motivated workforce.

+ Highly valuable intellectual capital.

+ Continuous improvement of capability

and performance of individuals.

+ Increased competitiveness through enhanced image.

+ Achieved potential.

- + Improved value generation.
- + Improved effectiveness and efficiency.
- + Increased competitiveness.
- + Innovation in products and services.
- + Knowledge capture and sharing.
- + Organisational Agility.
- + Increased value for stakeholders.
- + Improved competitiveness.
- + Optimising core competencies.
- + Improved effectiveness and efficiency.
- + Improved chances of survival.
- + Shared risk and cost.
- + Enhanced public image.
- + Increased brand value.
- + Greater access to finance (e.g. socially
- responsible investment funding).
- + Healthier and safer workforce.
- + Stronger risk management and
- corporate governance.
- + Motivated people.
- + Customer loyalty.
- + Enhanced confidence and trust of stakeholders.

To help organisations with self-assessment, RADAR logic was introduced (Figure 4). RADAR is an acronym for '*results, approach, deployment, assessment and review*' (EFQM, 2003c: 18). The logic of RADAR lies at the heart of the model (EFQM, 2003c).

Organisations need to: 1) plan and develop an integrated set of sound APPROACHES to deliver results required both now and in the future; 2) DEPLOY approaches in a systematic way, to ensure full implementation; 3) ASSESS and REVIEW the approaches followed, based on monitoring and analysis of the results achieved and ongoing learning activities. Finally, identify, prioritise, plan, and implement improvements where needed (EFQM, 2003c: 18).

Figure 4: RADAR logic (EFQM, 2003c: 18).



Implementation of the EFQM Excellence Model within the Public Administration has been principally publicised within the healthcare sector, with its inherent benefits largely discussed by Jackson (2001), such that, even if gains have been obtained without the use of this approach, the model of excellence at least acts as a catalyst. Hence, the United Kingdom, via the National Health Service (NHS) Executive, commended the use of the EFQM Excellence Model within the UK NHS. Several authors (Downey-Ennis & Harrington, 2002; Leigh, Douglas, Lee, & Douglas, 2005; Nabitz, Schramade, & Schippers, 2006; Nabitz & Klazinga, 1999; Rio et al., 2006;

Vallejo et al., 2007; Vernero, Nabitz, Bragonzi, Rebelli, & Molinari, 2007) have also discussed implementation of the excellence model within health and social care environments.

In Portugal, a new approach to promoting quality in the healthcare sector has been designed and implemented. This includes a national consultative Health Quality Council and an Institute for Quality Development. As a consequence, important financial resources have been allocated to promote quality in health. Among the many initiatives erewhile initiated or currently taking place, special emphasis has been placed on monitoring organisational development in health centres and hospitals, with quality schemes grounded in the EFQM Excellence Model (Direcção Geral da Saúde & Ministério da Saúde, 2004; Pisco & Biscaia, 2001; Shaw & Kalo, 2002).

Furthermore, many initiatives have been introduced in educational institutions, especially in the higher education system. Models based on quality awards, such as the EFQM Excellence Model, or models created for self-assessment in academia, have become important instruments in the implementation of self-assessment methodology and quality improvement in higher education institutions (Hides, Davies, & Jackson, 2004; Rosa, Saraiva, & Diz, 2003). Based upon an empirical study conducted with the goal of improving understanding of strategic and QM within Portuguese higher education institutions, Rosa (2003) has developed a model for these institutions, using the nine criteria of the EFQM Excellence Model.

In recent years, local governments have also devoted particular attention to the EFQM framework. To achieve their quality goals, top managers in the Bologna Municipality employed the EFQM Excellence Model in 1997 (Municipality, 2006). Many other European cities followed suit (George, Cooper, & Douglas, 2003; Pyke, Gardner, Wilson, Hopkins, & Jones, 2001), and ten years later, the Municipality of Porto, the second largest town on Portugal, received the first Certificate of Excellence from the EFQM, becoming the first Portuguese local authority to achieve this distinction (Soares, 2009). Beyond accruing capital gains from self-assessment, these municipalities not only implemented changes that helped them remain competitive, but

also sought accreditation and quality improvement programmes that proved to their citizens that they were committed to excellence and innovation.

Additionally, there has been growing concern about quality and QM within the public leisure services, which has resulted in the introduction of quality programmes and techniques, such as the EFQM Excellence Model, aimed at facilitating leisure management (Robinson, 2002, 2003; Soares, Serôdio-Fernandes, & Machado-Santos, 2007). Referring specifically to the United Kingdom, Robinson (2002) highlighted the significant role played by QM, an appropriate strategy for the management of public leisure facilities, in bringing about a customer-focused approach to service delivery, citing evidence of quality management's improvement of service quality. Robinson (2003) also indicated that nearly one third of public leisure facilities in the UK used the EFQM Excellence Model because it led to continual service improvements, primarily by clarifying procedures.

'Regardless of sector, size, structure or maturity, organisations need to establish an appropriate management framework to be successful' (EFQM 2009: 2).

In recent years, numerous PA programmes for the elderly have been designed and implemented; however, their evaluation has been scarce. Concomitantly, the lack of a standard approach for their evaluation reveals the difficulty of comparing the quality of both the planning and the delivery of such programmes.

In this context, it seems important to better understand the implementation of QMPs in Portuguese PA programmes, as well as to create a tool suited to the realities and contexts of PA programmes for the elderly, so that the information obtained through such evaluations may be used by organizations seeking to improve their services.

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**Chapter 2. Experimental Work** 

Se antes de cada acto nosso, pudéssemos prever todas as consequências dele, e pensar nelas a sério, primeiro as imediatas, depois as prováveis, depois as possíveis, depois as imagináveis, não chegaríamos sequer a mover-nos de onde o primeiro pensamento nos tivesse feito parar

(José Saramago, 16/11/1922 - 18/6/2010)

# 4. Experimental Work

The present thesis comprises five interrelated studies that were conducted in mainland Portugal. These studies were designed to evaluate PA programmes for elderly people, using the EFQM Excellence Model criteria, and to develop a quality self-assessment tool suited to the realities and contexts of PA programmes for older adults.

Study 1 was an exploratory study that examined the general characteristics of PA programmes for older adults developed by local Portuguese governments. This study also verified the extent to which programmes assessed their own quality. Studies 2 and 3 used methodological triangulation to characterize the QM models of PA programmes. Additionally, the third study relied on cluster analysis to place programmes into groups, based on their implementation of QMPs, and provided exploratory characterizations of the groups identified. In study 4, a Delphi process was conducted to identify the propositions that experts in linked areas of PA programmes for the elderly considered relevant for inclusion in self-assessment tools. This study led to the creation of Q-STEPS (Quality Self-assessment Tool for Exercise Programmes for Seniors). Finally, study 5 is a study protocol that seeks to determine the feasibility, acceptability and usability of Q-STEPS. As secondary purposes, this study will examine the quality of PA programmes and estimate the association between use of Q-STEPS and indicators related to elderly participants.

Data for the present thesis were collected between May 2008 and September 2010.

The basic characteristics of the sub-studies are shown in Table 3. A detailed description concerning the methodology employed is given in each paper in the following pages.

Study	Sample	Instruments	Variables studied
1. Evaluation of physical activity programmes for the	125 PA	On-line questionnaire	Geographic localization; objectives; age of the programme;
elderly - exploring the lessons from other sectors and	programmes		characteristics of age groups; participant's average age; number of
examining the general characteristics of the programmes.			activities; frequency; quality initiatives.
2. Evaluation of physical activity programmes for elderly	26 PA	On-line questionnaires;	Leadership; Policy & Strategy; People; Partnerships & Resources;
people - a descriptive study using the EFQM's criteria.	programmes	Semi-structured	Processes; Customer Results; People Results; Society Results;
	coordinators	interviews; document	Key Performance Results.
		analysis	
3. The use of EFQM's criteria on the physical activity	26 PA	On-line questionnaires;	Leadership; Policy & Strategy; People; Partnerships & Resources;
programmes for elderly people: results of a cluster	programmes	Semi-structured	Processes; Customer Results; People Results; Society Results;
analysis	coordinators	interviews; document	Key Performance Results; coordinator's gender; coordinator's age;
		analysis	coordinator's qualification; programme's age; number of
			participants; participants' age; number of facilities; number of
			employees; programme charges fees.

Table 3:         Summary of the characteristics of the sub-studie
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Study	Sample	Instruments	Variables studied
4. A proposed adaptation of the European Foundation for	43 experts	On-line questionnaires	Leadership; Policy & Strategy; People; Partnerships & Resources;
Quality Management Excellence Model to physical			Processes; Customer Results; People Results; Society Results;
activity programmes for the elderly - development of a			Key Performance Results.
quality self-assessment tool using a modified Delphi			
process.			
5. Study protocol: using the Q-STEPS to assess and	20-30 PA	Q-STEPS tool; Senior	Leadership; Policy & Strategy; People; Partnerships & Resources;
improve the quality of physical activity programmes for	programmes;	Fitness Test; MOS SF-	Processes; Customer Results; People Results; Society Results;
the elderly.	older adult	36; QUESPMAFI	Key Performance Results; programmes' attendance rates;
	participants		elderly's physical fitness; elderly's health-related quality of life;
			elderly's perceived quality of the programme.

# PAPER I.

Marques AI, Soares P, Soares-Miranda L, Moreira C, Oliveira-Tavares A, Clara-Santos P, Vale S, Santos R, Carvalho J. **Evaluation of physical activity programmes for the elderly - exploring the lessons from other sectors and examining the general characteristics of the programmes.** *BMC Research Notes 2011, 4:368* 

### **RESEARCH ARTICLE**



**Open Access** 

# Evaluation of physical activity programmes for the elderly - exploring the lessons from other sectors and examining the general characteristics of the programmes

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#### Abstract

**Background:** In Portugal, there are several physical activity (PA) programmes for elderly people developed by the local government. The importance of these programmes has been increasing since the evidence has shown that this type of health promotion interventions may reduce the deleterious effects of the ageing process. However, no study has already identified the general characteristics of these programmes nor if they use any scheme to assess the quality of the service provided. A widely-used scheme is the EFQM Excellence Model, which will be in the core of our present work. Thus, the main aims of this preliminary study were 1) to identify the general characteristics of the PA programmes developed by the Portuguese Local Public Administration 2) to determine the extent of implementation of quality initiatives in these programmes.

**Methods:** Data were collected by an on-line questionnaire sent to all Continental Municipalities (n = 278). Categorical data were expressed as absolute counts and percentages. Continuous data were expressed as the mean and SD. An open-ended question was analysed using qualitative content analysis with QSR NVivo software. Associations between categorical variables were tested by the use of contingency tables and the calculation of chisquare tests. Significance level was set at  $p \le 0.05$ .

**Results:** Results showed: i) a total of 125 PA programmes were identified in the 18 districts of the Portugal mainland; ii) the main goal of the majority (95.2%) was the participants' health promotion; iii) different characteristics of the programmes were found according to different regions of the country; iv) certain characteristics of the programmes were associated to the existence of other features; v) only one PA programme developed quality initiatives.

**Conclusions:** In conclusion, although there are many PA programmes for elderly people spread throughout the country, aiming at improving the health of participants, the overwhelming majority does not adopt quality control initiatives. Considering that the quality of a service increases customer satisfaction, the continuous quality improvement of the PA programmes for elderly people should therefore be implemented since they can be useful and critical for elderly satisfaction and adherence.

Keywords: physical activity, elderly people, quality, assessment, EFQM

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#### Background

Biopsychosocial changes arising from the ageing process can negatively affect the quality of life of the elderly by limiting their ability to carry out everyday activities and exposing them to a greater vulnerability to health problems [1]. Evidence provided by several studies highlights that physical activity (PA) can play a major role on global health promotion [2,3], in large part by epidemiological evidence of the positive effect of an active lifestyle and involvement of individuals in PA programmes [4,5]. Indeed, these programmes are particularly important to prevent and minimize the deleterious effects of the ageing process [6,7] and to improve quality of life [1,6-8]. Nevertheless, a substantial proportion of European elderly adults - with particular relevance to the Portuguese population - have lower PA levels than those recommended for good health [9,10]. Therefore, increasing adherence to PA among elderly people is actually an important public health challenge. Several authors suggest that higher attendance in PA programmes is influenced by degrees of enjoyment and satisfaction [11-14]. Therefore, continuous quality improvement of the PA programmes for elderly people can be crucial for elderly satisfaction and adherence, since one of the most important factors for customer satisfaction is providing a quality service [15-17].

The National Center for Chronic Disease Prevention's Division of Nutrition and Physical Activity described a set of recommendations and strategies to improve programmes, developing new approaches and highlighting the need for effective programme evaluation [18,19]. Furthermore, programme evaluation is a useful tool for continuous quality improvement [20] and the WHO guidelines for the evaluation of health promotion emphasize the need to evaluate and propose the allocation of adequate resources for this action [21].

In Portugal, Public Administration is the sector that offers the largest supply of goods and services, and as such, should be the sector that must devote most attention to Quality and to the definition of quality standards. In this way, a quality management model is essential in order to improve the public service delivery to citizens and better allocate scarce public resources.

With the objective of helping organizations to improve their performance, the European Foundation for Quality Management (EFQM) introduced in 1991 the Excellence Model, which is currently used by thousands of organizations throughout Europe, such as companies, health institutions, schools, public safety services and governmental institutions, among others. The model also provides organizations with a common management vocabulary and tools, thus facilitating the sharing of best practices between organizations of different sectors [22].

The EFQM Excellence Model (Figure 1) is a nonprescriptive framework, based on nine criteria divided into thirty-two sub-criteria. Of these nine criteria, five are 'Enablers' - what an organization does to achieve excellence - and four are 'Results' - what an organization achieves, that is, the results achieved on the path to Excellence. 'Results' are caused by 'Enablers' and the feedback from 'Results' help to improve 'Enablers'. The arrows presented in the model show the dynamic nature of the model; the issues related to 'Innovation and Learning', while horizontal vectors essential for the model's architecture, emerge as cross-sectional elements in all the criteria. They show innovation and learning to improve enablers that in turn lead to improved results.

The model recognizes that there are many approaches to achieving sustainable Excellence in all aspects of performance, based on the premise that: "Excellent results with respect to Performance, Customers, People and Society are achieved through Leadership driving Policy


and Strategy that is delivered through People, Partnerships and Resources, and Processes" [17]. Definitions of the Model criteria are given below, in Table 1.

It is around these nine criteria and the thirty-two subcriteria that an organization's progress towards excellence is assessed. Self-assessment will shed light on the areas requiring improvement and how to conduct improvement actions, acting on the process.

The implementation of the EFQM Excellence Model within the Public Administration has been principally publicised within the healthcare sector, with its inherent benefits largely discussed by Jackson [23]. Several authors [24-30] have also discussed the implementation of the excellence model within health and social care environments.

Furthermore, many approaches have been made in education institutions, especially in the higher education system. Models based on quality awards such as the EFQM Excellence Model or models created for selfassessment in academia, have become an important instrument to implement self-assessment methodology for quality improvement in higher education institutions [31,32].

In the last years, particular attention has been devoted to this framework by the local governance sector. In order to achieve the quality plan goals, Bologna Municipality top managers chose to employ the EFQM Excellence Model in 1997 [33] and this action was followed by many other cities of Europe [34,35]. Additionally, there has been a growing concern about

quality and quality management within the public lei-

sure services, which has resulted in the introduction of

quality programmes and its associated techniques, such as EFQM Excellence Model, to facilitate leisure management [36-38]. Robinson highlighted the significant role played by quality management as an appropriate strategy for the management of public leisure facilities in bringing about a customer-focused approach to service delivery and the evidence of its assignment in improving service quality [36]. The research carried out by the same author [37] indicated that nearly one third of public leisure facilities use the EFQM Excellence Model for the reason that its use led to improvements in service, primarily through clearer procedures and continuous improvement.

Taking into account that, in Portugal, there are several PA programmes for elderly people developed by the local government, involving many employees and activities that reach thousands of participants and also expend considerable public fees, it seems appropriate a quality assessment of these PA programmes. However, to our knowledge, there is no specific tool to assess the quality of the service provided. Thus, the main aims of this preliminary study were 1) to identify the general characteristics of the PA programmes developed by the Portuguese Local Public Administration and 2) to determine the extent of implementation of quality initiatives in these programmes.

# Methods

An *on-line questionnaire* was sent out to all Portuguese Continental Municipalities (n = 278) in May, 2008. This questionnaire has provided the following information: geographic localization, number of programmes to

Table 1 Definitions of the Model criteria (adapted from EFQM, 2003a)

MODEL CRITERIA	DEFINITION
Leadership	Excellent Leaders develop and facilitate the achievement of the mission and vision. They develop organisational values and systems required for sustainable success and implement these via their actions and behaviours. During periods of change they retain a constancy of purpose. Where required, such leaders are able to change the direction of the organisation and inspire others to follow.
Policy & Strategy	Excellent Organisations implement their mission and vision by developing a stakeholder focused strategy that takes account of the market and sector in which it operates. Policies, plans, objectives, and processes are developed and deployed to deliver the strategy.
People	Excellent organisations manage, develop and release the full potential of their people at an individual, team-based and organisational level. They promote fairness and equality and involve and empower their people. They care for, communicate, reward and recognise, in a way that motivates staff and builds commitment to using their skills and knowledge for the benefit of the organisation.
Partnerships & Resources	Excellent organisations plan and manage external partnerships, suppliers and internal resources in order to support policy and strategy and the effective operation of processes. During planning and whilst managing partnerships and resources they balance the current and future needs of the organisation, the community and the environment.
Processes	Excellent organisations design, manage and improve processes in order to fully satisfy, and generate increasing value for, customers and other stakeholders.
Customer Results	Excellent organisations comprehensively measure and achieve outstanding results with respect to their customers.
People Results	Excellent organisations comprehensively measure and achieve outstanding results with respect to their people.
Society Results	Excellent organisations comprehensively measure and achieve outstanding results with respect to society.
Key PerformanceResults	Excellent organisations comprehensively measure and achieve outstanding results with respect to the key elements of their policy and strategy.

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enhance quality of life for elderly people (name and objectives), age of the PA programme [39], characteristics of age groups and participants' average age [40,41], number of activities offered in the PA programme [42,43], frequency of the programme (days/week) [1,39], quality initiatives [20,44-47], name of the organization that delivers the programme, and identification details of the PA programme's coordinator (Additional file 1). Question format ranged from closed questions with multiple choices and dichotomous type to open-ended question. Categorical data were expressed as absolute counts and percentages. Continuous data were expressed as the mean and SD.

An open-ended question which addressed the objectives of the programme was analysed using qualitative content analysis with QSR NVivo software. Contingency tables and chi-square tests were used to analyse associations between categorical variables, performed with the Statistical Package SPSS, version 17.0. Significance level was set at  $p \leq 0.05.$ 

# **Results and Discussion**

Number of PA programmes and geographic localization Of the 278 municipalities, 97 questionnaires were totally answered. Since some municipalities provided more than a single programme, 174 programmes intended to enhance the quality of life for elderly people were identified. Of these, 125 were PA programmes. Figure 2 represents the geographical distribution of the 125 PA programmes in the 18 districts of the Portugal mainland and it also represents the 5 regions (NUT\_II). The largest percentage of programmes was located in the littoral districts of the Continent (58.9%) where there is the greatest number of residents and more percentage of individuals aged 65 or more, i.e., 69.4% [48], as revealed in Figure 3 and Figure 4.

# Objectives of the PA programme

The major objective focused was "to promote health" (95.2%) remotely followed by "to improve physical function" (28.8%), "to create socialization opportunities" (25.6%) and "to prevent disease" (18.4%), as reflected in Table 2. Chi-square analysis showed a higher than expected number of programmes that aim "to create socialization opportunities" in the Alentejo region, possibly due to the fact that this places are separated by vast plains of uninhabited territory, with a poor transport network and a lack of opportunities for socialization [49], which are generally located in more urbanized localities. On the contrary, the programmes belonging to the North are those that give less value to this objective (p = .017). Instead, it is in the North of the country that the programmes pay more attention to the objective "to promote physical activity" (p = .04). When analyzing



the national territory according to the coastland areas and inland areas, we found that the programmes from the coastland give more importance to the objective "to improve self-esteem/self-confidence" (p = .023). In line with this diversity of objectives found in the PA programmes of the present study, scientific evidence supports that regular PA has several physical, psychological and social beneficial effects on a variety of health outcomes [1,6,50-54].

# Age of the PA programme

The results (Figure 5) indicate that the most common age of the PA programme was "one year of age and less



than five", representing 55.2% and "five years of age and less than ten", representing 26.4%. Programmes with 10 or more years (8%) are located mainly in the Lisbon region, possibly due to the fact that there is a greater concentration of population aged 65 years or more ( $p \le$ .000) [48]. This may have led Lisbon region's politicians to be sooner concerned than their peers regarding the design of programmes that meet the elderly people'



### Table 2 Objectives of the PA programmes for elderly people

	%	n
To promote health	95.2	119
To prevent disease	18.4	23
To improve physical function	28.8	36
To create socialization opportunities	25.6	32
To promote social recognition	9.6	12
To improve self-esteem/self-confidence	11.2	24
To promote leisure occupation	15.2	19
To promote physical activity	16.8	21

needs. This has been made easier possibly because of the presence of town halls' organizational structures necessary for the development of programmes, such as sports divisions, and qualified people with a degree in physical education or sport [55]. In addition, programmes that are located on the coastland (also with the highest concentration of elderly population) are those that are established for longer ( $p \le .000$ ). The fact that many programmes have emerged in recent years may suggest that local government has made an effort to create initiatives aimed at increasing PA in elderly adults, integrating issues of ageing into social and local health policies. It will also be noted that since the late nineties, the Municipal enterprises of sport have expanded with increasing impact [56], providing favourable conditions for the development of these programmes. Moreover, the global tendency toward the decentralization of policies, which also includes those concerning the promotion of PA and the implementation of effective health-promotion strategies with regard to the distribution and administration of resources, highlights the key role that must be played by local authorities [57].

# Characteristics of age groups and participant's average age

Table 3 provides the characteristics of age groups, i.e. minimum and maximum age required to enrol in the PA programme, and the average age of participants.

While the maximum age intended is, in most cases, "not limited" (64%) and the minimum age is 55 years (85%), the average age of participants is  $72.23 \pm 1.54$ years. The majority of programmes have a minimum age of 55 years as a pre-requisite for admission (68%), followed by those who require 60 years as the minimum age (16.8%). Some authors [58-60] advocate that the benefits of sufficient aerobic exercise, even if started as late as age 60 years, is associated with a 1to-2 year increase in life expectancy as well as improved functional independence and quality of life benefits. According to a six-year study carried out by



researchers at the US National Institute on Aging, elderly people who are physically active are much more likely to live longer than elderly people who are not physically active [61]. However, there are still 19 programmes (15.2%) that have higher minimum ages (65 and 70 years old). The available data from the Contemporary Portugal Database [40] indicates that the oldest age group (75+) increased at the fastest pace (from 1991 to 2001, their number increased 32.8% from 527948 to 701366). Actually, people's life expectancy in developed countries has increased greatly over the last 25 years, leading to an increase in the retirement age [41]. Shephard argues that in early old age (65-75 years), there may be a modest increase of PA, in an attempt to fill free time resulting from retirement [62]. In this way, the minimum age required to enrol in some PA programmes, although high, respond to demographic and social trends.

Table 3 Characteristics of age groups and participant's average age

		- <b>9</b> -								
minimum age intended maximum age intende					ende	d				
	55	60	65	70	75	80	85	90	95	n.l.
%	68	16.8	14.4	0.8	4.8	11.2	2.4	16	1.6	64
n	85	21	18	1	6	14	3	20	2	80
r	nean ±	<b>SD</b> part	icipants'	age			72.23 :	± 1.54		

n.l.: not limited

# Number of activities offered in the PA programme

Figure 5 gives an overview of the number of activities offered in PA programmes. The majority number of activities was "4 or more", representing 46.4%, followed by the PA programmes with "two activities", which reached 28%. Programmes with 10 or more years are those that offer more activities, while programmes with 1-5 years offer two activities (p = .003). These results suggest that older programmes are more aware of recommendations concerning this issue. Roberts and Brodie suggest that such programmes should offer a wide range of activities, while allowing individuals to focus on those gradually that they identify as more likely to engage in regularly [42]. Among other considerations, the AHA scientific statement [43] also stated that these programmes should fulfil the demands of different needs between women and men, embrace occupational and leisure activities and simple tasks of daily living, incorporate the importance of socialization and include a diversity of exercise activities to enhance PA participation of the elderly. Simultaneously, our data suggest that more recent programmes seem to be more cautious regarding the inclusion of different activities, preferring initially to get a deeper understanding of customer needs.

# Frequency of the programme (days/week)

The usual frequency with which individuals participate in the overall programme are two times per week (Figure 5), representing 54.4%. Moreover, 28% of the

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programmes allow seniors to sessions for three or more times per week, offering them organized opportunities to be physically active. Programmes of 6 to 10 years of age are those that can be attended a greater number of days per week (p = .034). Consequently, the international recommendations [6] to increase the level of PA among older people in order to reach at least 30 minutes or more of moderate-intensity PA on most - preferably all days of the week are more easily achieved. The Lisbon region presents a larger than expected number of programmes with a weekly frequency of three times, while the Centro region presents a greater number of programmes that could be frequented only once per week (p = .006). When compared the number of activities offered by the programme with the weekly frequency, it was observed that the greater the number of activities, the greater the number of days per week that an individual can participate in the programme (p = .003).

#### Quality initiatives

Just one PA programme for elderly people (0.8%) has quality initiatives, in this particular case, a quality management system certification. Beyond certification, the certifying institution provides customized solutions to increase the quality and efficiency of the programme. The use of quality schemes in public leisure services in Portugal [38] is widely divergent from use in other countries [37,63-65], where their governments act directly in this matter. In this respect, several studies [37,44-46] found that the quality initiatives may improve process and outcomes. The Healthy Ageing - A Challenge for Europe Report [47] suggests a systematic application of quality management/assurance methods to increase project's quality; these indicate that Quality is an important issue for PA programmes for older people. Simultaneously, the Benchmark 3 from Physical Activity and Health Branch at the CDC [20] advocate a complete programme evaluation in order to improve their continuous quality improvement. This reinforcement is given by the CDC with the following statement: 'the evaluation is the systematic examination and assessment of features of an initiative and its effects, in order to produce information that can be used by those who have an interest in its improvement or effectiveness' (CDC 2002 [19], p.5). So, in opposition to what was found in the present study, it seems that PA programmes for elderly people must be assessed to make informed decisions when planning new initiatives or examining existing services, in order to improve them. It also reveals commitment to delivering the highest quality service viable with available resources.

# Organization that delivers the programme

The main organization that owns the programme was the "municipal government" (85.6%) distantly followed

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by "other" (7.2%) and "municipal enterprises of sport" (4.8%), as reflected on Table 4. The municipal governments are responsible for developing programmes in the Lisbon region, whereas in the Alentejo region, the Local City Centre or other local organizations develop them (p = .005). These results suggest that in regions where there is greater dispersion of the population, such as Alentejo [48], governments and other organizations closer to the population are responsible for developing these programmes, revealing a greater involvement of different partners. The development and sustainment of the community partnerships is the first public health benchmarks for PA Programmes established by the Physical Activity and Health Branch at the CDC [20].

# Conclusion

In conclusion, data showed that the majority of the 125 PA programmes identified in the present study set the goal of promoting the health of participants, which reflect the current recommendations. Furthermore, the majority of programmes have a minimum age of 55 years as a pre-requisite for admission. However, there are still some programmes that have higher minimum ages. It was also observed that the greater the number of activities, the greater the number of activities, the greater the number of days per week that an individual can participate in the programme, with most of the programmes offering two activities and having a frequency of two times per week. The "municipal government" was the main organization responsible for developing the PA programmes.

Moreover, in spite of an eminent preoccupation with health, quality of life and autonomy of older subjects inherent to the PA programmes studied, there is no effective use of quality initiatives, seen as an important process to improve programmes. Indeed, our results showed that only one PA programme develops quality initiatives. In summary, the results of the present study highlight the need of continuous quality improvement of the Portuguese PA programmes for elderly people, since it can be critical for elderly satisfaction and adherence.

In closing, although these findings provide some clues, future research may be needed to characterise the quality management models of the PA programmes developed by the Portuguese Local Administration, using the EFQM' criteria or other tool considered applicable.

# Table 4 Organization name

	%	n
Municipal Government	85.6	107
Municipal enterprises of sport	4.8	6
Local City Centre	2.4	3
Other	7.2	9

#### Strengths and Limitations

To our knowledge, this was the first study exploring the general characteristics of the Portuguese PA programmes for elderly people, as well as identifying which organizations were developing quality initiatives. The relevance of this investigation is that it offers a direction for further research into quality management in an area that has not previously been extensively examined.

However, a major limitation is worthy of comment. Taking into account that the invitations to participate in the study were done online, so the answer to the questionnaire was voluntary, care should be taken in extrapolating our findings, since our sample is, probably, not representative of all PA programmes developed in Portugal.

#### Additional material

Additional file 1: On-line questionnaire. Explanation of the structure and content of the on-line questionnaire

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# Authors' contributions

AIM participated in the acquisition and analysis of data and participated in drafting and editing the manuscript. PS supervised the drafting and editing of manuscript. LSM and CM managed the data collection and analysis. AOT provided technical support on the data collection and analysis. PCS and SV helped design the questionnaire and managing the online process. RC and JC participated in the coordination of the study and supervised the drafting and editing of manuscript.

All authors read and approved the final manuscript

### Competing interests

he authors declare that they have no competing interests.

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PAPER II

Marques AI, Rosa MJ, Soares P, Santos R, Mota J, Carvalho J. Evaluation of physical activity programmes for elderly people - a descriptive study using the EFQM' criteria. *BMC Public Health 2011, 11:123.* 

# **RESEARCH ARTICLE**



**Open Access** 

# Evaluation of physical activity programmes for elderly people - a descriptive study using the EFQM' criteria

Ana I Marques<sup>1\*</sup>, Maria J Rosa<sup>2</sup>, Pedro Soares<sup>3</sup>, Rute Santos<sup>1,4</sup>, Jorge Mota<sup>1</sup>, Joana Carvalho<sup>1</sup>

# Abstract

**Background:** In the past years, there has been a growing concern in designing physical activity (PA) programmes for elderly people, because evidence suggests that such health promotion interventions may reduce the deleterious effects of the ageing process. Quality is an important issue when designing a PA programme for older people. Some studies support the Excellence Model of the European Foundation for Quality Management (EFQM) as an operational framework for evaluating the quality of an organization. Within this context, the aim of this study was to characterize the quality management models of the PA programmes developed by Portuguese Local Administration to enhance quality of life for elderly people, according to the criteria of the EFQM Excellence Model.

**Methods:** A methodological triangulation was conducted in 26 PA programmes using questionnaire surveys, semistructured interviews and document analysis. We used standard approaches to the statistical analysis of data including frequencies and percentages for the categorical data.

**Results:** Results showed that Processes (65,38%), Leadership (61,03%), Customer results (58,46) and People (51,28%) had high percentage occurrences of quality practices. In contrast, Partnerships and resources (45,77%), People results (41,03%), Policy and strategy (37,91%), Key performance results (19,23%) and Society results (19,23%) had lower percentage occurrences.

**Conclusions:** Our findings suggest that although there are some good practices in PA programmes, there are still relevant areas that require improvement.

### Background

The last few decades have witnessed a significant demographic ageing process, causing deep social and political transformations, and challenging society and humanity's options for the 21st century. The population aged 60 or over is increasing rapidly and is expected to increase by more than 50 per cent over the next four decades, expanding from 264 million in 2009 to 416 million in 2050 in more developed regions [1]. Subsequently, there will be more older people than children in the world population for the first time in history.

The most important issue related to demographic ageing deals with its implications for the well-being of the

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elderly, such as access to appropriate health-care services. In developed countries, some degree of progress has been made to achieve this objective, all the more so as ageing is the most important contributor to the increase in health care costs [2].

The concept of 'active ageing' has been employed by the World Health Organization (WHO) since the late 1990s, and is defined as 'the process of optimizing opportunities for health, participation and security in order to enhance quality of life as people age' (WHO 2002 [3] p.12). Therefore, there has been a growing concern in designing physical activity (PA) programmes for elderly people, since evidence indicates that such health promotion interventions may reduce the deleterious effects of the ageing process [4,5] and improve quality of life [4-7]. Nevertheless, a substantial proportion of European elderly people have lower PA levels than those recommended for good

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health [8,9]. Therefore, increasing adherence to PA among elderly people is an important public health challenge.

The Centers for Disease Control and Prevention (CDC) developed guidelines with other American organizations for increasing PA across a large number of settings and populations, including elderly people [10]. They described a set of recommendations and strategies to improve programmes, developing new approaches and highlighting the need for effective programme evaluation [11,12]. This *'imperative'* has a wide application (CDC 2002b [13] p.5) that reveals commitment to provide high quality programmes. Furthermore, programme evaluation is a useful tool for continuous quality improvement [14] and the WHO guidelines for the evaluation of health promotion emphasize the need to evaluate and propose the allocation of adequate resources for this action [15].

Healthy Ageing - A Challenge for Europe Report [16] suggests a systematic application of quality management/assurance methods to increase project's quality; these indicate that Quality is an important issue for PA programmes for older people.

With the purpose of helping organizations to improve their quality, the European Foundation for Quality Management (EFOM) introduced the EFOM Excellence Model in 1991 with the support of EOQ, the European Organization for Quality, and the European Commission. The EFOM Excellence Model is a non-prescriptive framework based on nine criteria divided into thirty-two sub-criteria [17]. Of these nine criteria, five are 'Enablers' - what an organization does to achieve excellence - and four are 'Results' - what an organization achieves, i.e., the results achieved on the path to Excellence. As illustrated in Figure 1, the arrows presented in the Model show its dynamic nature; the issues related to 'Innovation and Learning', while horizontal vectors essential to the Model's architecture, also emerge as cross-sectional elements in all the criteria. They show innovation and learning can improve 'Enablers', which in turn lead to improved 'Results'. The Model recognizes that there are many approaches to achieving sustainable Excellence in all aspects of performance, based on the premise that: "Excellent results with respect to Performance, Customers, People and Society are achieved through Leadership driving Policy and Strategy that is delivered through People, Partnerships and Resources, and Processes" (EFQM 2003a [17] p.5).

The application of the EFQM Excellence Model promotes the use of a management methodology based on objective criteria that is applicable to all areas of business and constitutes a self-assessment exercise of the organization's quality. Self-assessment will shed light on the areas requiring improvement, as well as on the process and actions necessary to conduct improvement. The Model is currently used by thousands of organizations throughout Europe, such as firms, health institutions, schools, public safety services and governmental institutions, among others. It provides organizations with common management terminology and tools, thus facilitating the sharing of best practices between organizations of different sectors [18].

Despite the numerous PA programmes for the elderly that have been created in recent years - especially by the Public Local Administration - their evaluation is scarce. Moreover, the EFQM Excellence Model had never been used in PA programmes for elderly people.

In this context, the purpose of this study was to characterise the quality management models of the PA programmes developed by the Portuguese Local Administration to enhance quality of life for elderly people, according to the criteria of the EFQM Excellence Model 2003.

# Methods

#### Procedures

In order to gather empirical evidence, methodological triangulation – i.e. questionnaire surveys, semi-structured interviews and additional document analysis – was employed.

A preliminary on-line questionnaire was sent out to all mainland Portuguese municipalities (n = 278) in May of 2008. This brief questionnaire provided the following information: geographic localization, name and objectives of PA programmes, age of the PA programme, characteristics of age groups and participants' age, number of activities included in the PA programme, frequency of the programme (days/week), quality initiatives, organization name and the identification details of the PA programme's coordinator (Additional file 1).

Of the 278 municipalities, a total of 97 valid questionnaires were answered. Since some municipalities provided more than a single programme, 125 PA programmes were identified. Inclusion criteria for the purposive sample implied that at least one of the following conditions should be verified: i) programmes should belong to a District Capital in order to apply a geographic criterion; ii) programmes should include the following cumulative criteria: a) must have been in practice for 10 years or more [19], b) must have had two or more different types of activities [20,21], and c) must have had a frequency of two or more times a week [6]; iii) programmes that apply a quality initiative [14,16,22-25]. Therefore, 27 potentially eligible PA programmes for elderly people were identified, of which 18 were from a District Capital; eight were aged ten years or more, had two or more types of activities and a frequency of two or more times a week; and one had a quality initiative (Quality Certification). We screened each PA programme's coordinator by telephone to check eligibility, confirm willingness to participate and,



accordingly, provide a written informed consent by email. At this stage, one programme was excluded because it did not meet any of the three conditions above. The characteristics of the 26 PA programmes included in our sample are described in Table 1.

To characterise the quality management models of the PA programmes, semi-structured face-to-face interviews with the PA programmes' coordinators (n = 26) were carried out between February and April of 2009. The questions were based on the EFQM Excellence Model's nine criteria and 32 sub-criteria. Before the 26 interviews, a pilot study was conducted among four PA programmes' coordinators, conveniently chosen from among the programmes that were not selected for the sample, to understand the process and evaluate the content understanding of the questions. As a result, some questions were adapted in accordance with respondents' comments. Afterwards, a standard interview guide was created and used for all interviews, which lasted 45 to 60 minutes and were taperecorded and transcribed verbatim at a later date. Participants were asked about each sub-criterion of Leadership, Policy and Strategy, People, Partnerships and Resources, Processes, Customer Results, People Results, Society Results and Key Performance Results. A content analysis of the transcribed interviews was conducted. Two coding strategies were applied: (a) a priori categorisation of data based on the 32 sub-criteria and (b) a posteriori coding scheme, obtained directly from the data, using an inductive method to identify the themes and subthemes that emerged. To ensure rigour and reliability of analysis, the first three transcripts were coded in their entirety by two coders who achieved agreement through discussion and consensus. Two independent researchers double-coded two transcripts to assess the inter-rater reliability of coding. Intra-rater reliability was also conducted on a question of each criterion, within a 5-day interval. The inter-rater and intra-rater reliability were assured by the intercoder and intracoders' agreement, from Bellack's formula [26]. Both results obtained ranged from 95% to 100%, confirmed by Cohen's Kappa to eliminate the agreement by chance. Interscore reliability was in the range of 0.93 and above. To facilitate the coding process, we used the QSR NVivo software, which helps manage and organize qualitative data.

An on-line questionnaire was also administrated to the 26 PA programmes' coordinators, between June and July 2009. This new questionnaire, based on the EFQM Excellence Model's nine criteria and 32 sub-criteria, was generated according to the literature review and the interviews' content analysis. For each sub-criterion, items were devised concerning the areas addressing the EFQM Excellence Model and the specificity of the PA programmes for elderly people. Closed questions with multiple choice answers and Likert scales were used. The first draft of the questionnaire was submitted to a panel of experts (n = 5) in the field of PA programmes for elderly people and/or EFQM Excellence Model, to ensure the content validity. The experts pointed out their level of accordance with the relevance of the items. ease of understanding and adequacy as an instrument to characterise the management models of the PA programmes. Based on their suggestion, fourteen items

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[5: 10]

[1; 5]

≥10

[1; 5]

≥10

≥10

≥10

[1; 5]

Age (years)	Minimum/maximum age to enrol	Participants' average age	Number of activities	Frequency (days/week)	Quality initiatives	Organization
[1; 5]	55 years/90 years	71	1	1	no	Municipal Government
[1; 5]	55 years/no limit	72	2	4 or +	no	Municipal Government
[5; 10]	55 years/80 years	65	4 or +	4 or +	no	Municipal Government
[5; 10]	55 years/no limit	70	2	2	no	Municipal Government
[5; 10]	55 years/no limit	71	4 or +	4 or +	no	Municipal Government
[1; 5]	55 years/80 years	65	1	2	no	Municipal enterprises of sport
[5; 10]	60 years/no limit	69	4 or +	2	no	Municipal enterprises of sport
[5; 10]	55 years/no limit	71	4 or +	4 or +	no	Municipal enterprises of sport
[1; 5]	55 years/80 years	66	3	2	no	Municipal enterprises of sport
[1; 5]	60 years/no limit	71	2	2	no	Municipal Government
[1; 5]	55 years/no limit	68	4 or +	2	no	Municipal Government
≥10	60 years/no limit	72	4 or +	4 or +	no	Municipal Government
≥10	65 years/no limit	71	2	4 or +	no	Municipal enterprises of sport
[5; 10]	55 years/no limit	68	4 or +	3	yes	Municipal Government
≥10	55 years/90 years	72	4 or +	4 or +	no	Municipal Government
≥10	60 vears/no limit	70	4 or +	3	no	Municipal Government

4 or +

4 or +

2

4 or +

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3

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4 or +

4 or +

Table	1	Characteristics	of	the	26	PA	programmes
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55 years/no limit

55 years/no limit

65 vears/no limit

55 vears/no limit

55 years/no limit

65 years/no limit

55 years/90 years

60 years/no limit

60 years/no limit

55 years/no limit

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70

72

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4 or +

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1

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4 or +

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were reframed and two were eliminated, due to its irrelevance. After, the on-line questionnaire was tested among 15 PA programmes' coordinators, chosen from among the programmes that were not selected for the sample, for comments on readability. Some adjustments were made to make the questions clearer and more relevant to the PA programme case. The study design also included a test-retest reliability of the answers, performed with an interval of seven days. Agreement was estimated using kappa statistics ( $\kappa$  for categorical variables) and weighted kappa statistics ( $\kappa w$  for ordinal variables). High levels of agreement (0.86 to 0.97) were found. The final version of the on-line questionnaire comprised 165 items and took a respondent about one hour to complete.

In addition, document analysis was carried out. Written documents, including procedures, budgets, flyers, e-mails, reports, minutes of meetings, specifications, print screens, publications, price lists, etc. were made available by some of the coordinators. Other information was gathered from the web page of the organization.

We used standard approaches to statistical analysis of data including frequencies and percentages for the

categorical data, performed with the Statistical Package SPSS, version 17.0.

no

## Data presentation

A set of the most relevant items concerning quality practices associated with the EFQM Excellence Model criteria was adapted from an original scale created to measure the nine criteria [27] and assigned to each EFOM sub-criterion based on its content domain. Several adjustments were made to reflect the specificity of the PA programmes for elderly people, according to collected data. The presence or absence of a particular quality practice was encoded as: addressed/measured = 1; not addressed/not measured = 0.

#### Results

Regarding Leadership, most of the coordinators who participated in this study revealed that they were personally involved in the development of a culture of Excellence, reinforcing a strong communicative culture throughout all areas of the organization (84,62%), encouraging people's empowerment and autonomy and ensuring that every member of the organization knows

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the role that the PA programme should play in society (both with 80,77%). Almost two-fifths (38,46%) of the coordinators ensured that people were capable of taking initiatives and fulfilling their responsibilities in the most appropriate way, and a single leader collaborated in quality training since only his programme was involved in a quality scheme (3,85%) (Table 2).

Concerning *Policy and Strategy*, the issues related to quality initiatives, such as the measurement of quality and non-quality costs, quality strategies and quality objectives were referenced by one coordinator (3,85%), the one who's programme was involved in a quality initiative. In contrast, 84,62% of the coordinators reported the identification of organizational processes and their interrelationships and 80,77% stated that all people are familiar with the mission and objectives of the PA programme (Table 3).

In relation to the criterion *People* (the same as employees/workers), 84,62% of the coordinators reported that People maintain fluid communication with one another; in contrast, 15,38% indicated that People voluntarily pass on useful information to other members of the organization. Two items related to quality initiatives appear with a diminutive percentage (3,85%), namely People's access to information about quality results and the quality training they are offered. The majority of the coordinators (80,77%) stated that formal processes were used to find out people's opinions (Table 4). With reference to *Partnerships and Resources*, less than 20% of the PA programmes had formal communication procedures with partners and 11,54% of coordinators revealed that relationships with academic partners allow the organization to have access to scientific information. Nearly three quarters (73%) of respondents reported that most reported item was the one related to the recording of information and knowledge (88,46%) (Table 5).

Analysis of the *Processes* criterion showed the items recommendations concerning exercise sessions phases and standardized systems to deal with customer complaints were accomplished by all PA programmes. We can also verify that most of the organizations advertised the PA programme and good accessibility was guaranteed (96,15%). Nonetheless, just 30,77% of organizations were oriented towards the fulfilment of customers' expectations and needs and only 19,23% kept documentation of work methods and organizational processes (Table 6).

Concerning *Customer results*, 76,92% of the programmes evaluated customers' satisfaction and 34,62% had measures and/or indicators of customers' loyalty (Table 7).

Relating to *People results*, 69,23% of the programmes evaluated people's absenteeism and 15,38% had measures and/or indicators of people's organizational commitment (Table 8).

# Table 2 Frequencies and percentages of quality practices in the criterion Leadership

1. Leadership	n	%
1a. Leaders develop the mission, vision, values and ethics and are role models for a culture of Excellence		
Coordinators encourage people to feel empowerment and autonomy	21	80,77
Coordinators participate and give support to continuous improvement processes	19	73,08
Coordinators collaborate in quality training by teaching people at lower hierarchical levels	1	3,85
Coordinators ensure that all members of the organization have a clear idea of what the PA programme's position should have in society	21	80,77
1b. Leaders are personally involved in ensuring the PA programme management system is developed, implemented and continuously imp	prove	ed
Coordinators become involved in running the PA programme as a set of interrelated processes, all for achieving quality	14	53,85
Coordinators ensure that people are capable of taking initiatives and assimilating better ways of doing their responsibilities	10	38,46
1c. Leaders interact with customers, partners and representatives of society		
Coordinators take part in continuous improvement processes, even when these activities go beyond Coordinators' responsibilities	16	61,54
Satisfaction of current and future customers ensures the success of the PA programme	16	61,54
To improve in a particular aspect, coordinators and other members of the organization collaborate with other organizations with PA programmes to help each other	15	57,69
1d. Leaders reinforce a culture of excellence with the organization's people		
There is a strong communicative culture throughout all areas of the organization	22	84,62
The involvement of people can only be achieved if coordinators are the first to show commitment, practicing what they preach	14	53,85
Coordinators behave in a way that allows the integration and mobilization of members of a team	18	69,23
1e. Leaders identify and champion organizational change		
Coordinators stimulate the continuous improvement of services and processes	19	73,08
Coordinators continuously acquire and update knowledge that is valuable for the PA programme	16	61,54
Coordinators act in a way that makes it easier for people to accept proposed changes voluntarily	16	61,54

2. Policy and strategy	n	%
2a. Policy and strategy are based on the present and future needs and expectations of stakeholders		
The establishment of PA programme objectives takes people's opinions into account	15	57,69
The establishment of PA programme objectives takes external opinions into account	7	26,92
Effective management is based on information about customers	11	42,31
Customers' needs are taken into account when establishing objectives	11	42,31
2b. Policy and strategy are based on information from performance measurement, research, learning and external rela	ited activities	
Continuous improvement processes are based on a systematic assessment of PA programme effectiveness	16	61,54
Systematic measurement of quality and non-quality costs is carried out	1	3,85
Information systems are in place to capture external information (about customers, society)	10	38,46
2c. Policy and Strategy are developed, reviewed and updated		
Systematic procedures are in place to plan, evaluate and control PA programme goal achievements	16	61,54
Quality strategies affect all organizational areas and coordination activities	1	3,85
Quality objectives stem from long-term strategic plans	1	3,85
Coordinators favour consensus about relevant objectives and future projects	5	19,23
2d. Policy and Strategy are communicated and deployed through a framework of key processes		
Organizational processes and their interrelationships are identified	22	84,62
Coordinators inform people about the quality strategy	1	3,85
Every member in the organization knows the PA programme mission and objectives	21	80,77

Concerning *Society results*, 15,38% PA programmes had measures and/or indicators of their involvement in their target community. 23,07% of the coordinators confirmed that the organization had measures and/or indicators of the programme's impact in society (Table 9). In *Key performance results*, one coordinator mentioned assessments of the quality of the service delivered and 42,31% of the coordinators reported that the organization has measures and/or indicators of the financial results of the PA programme (Table 10).

# Table 4 Frequencies and percentages of quality practices in the criterion People

3. People	n	%
3a. People resources are planned, managed and improved		
Formal processes are used (such as attitude surveys or people briefing) to find out people's opinions	21	80,77
Emphasis is placed on recruiting highly skilled people	16	61,54
A higher level qualification, specifically related to PA and ageing, is required for instructors	9	34,62
3b. People's knowledge and competences are identified, developed and sustained		
Specific quality training is offered to people	1	3,85
People continuously update their skills in their specific area of knowledge	20	76,92
Staff members are provided with means for extensive training	10	38,46
3c. People are involved and empowered		
People are allowed to decide how the work is done	8	30,77
People's opinions are taken into account when defining PA programme objectives	20	76,92
People are given the opportunity to suggest and implement solutions to work problems	16	61,54
People's autonomy and participation are encouraged	13	50,00
Teamwork is a common practice	15	57,69
3d. People and the organization have a dialogue		
Formal communication channels are in place to provide information about customers' needs	18	69,23
Formal communication procedures are established with all stakeholders	20	76,92
People have access to information about quality results	1	3,85
People maintain fluid communication with one another, going beyond the formal structure of the organization	22	84,62
Internal communication is totally open and transparent	15	57,69
People voluntarily pass on useful information between one another	4	15,38
3e. People are rewarded, recognized and cared for		
Coordinators explicitly recognize people's achievements at work	11	42,31

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, ratherships and resources	11	70
la. External partnerships are managed		
Cooperation with partners provides the organization with high quality of resources	8	30,77
Formal communication procedures are established with partners	5	19,23
Relationships with academic partners allow the organization to have access to scientific information	3	11,54
Relationships with health partners allow the organization to have access to health information	13	50,00
The organization has capacity for external cooperation	19	73,08
b. Finances are managed	14	53,85
c. Buildings, equipment and materials have a maintenance plan	9	34,62
d. Technology is managed		
Technological innovations are implemented	18	69,23
e. Information and knowledge are managed		
Systematic records are made	23	88,46
The latest scientific knowledge is pursued	7	26,92

Figure 2 shows the average of the percentages related to quality practices associated to the EFQM Excellence Model criteria. Four criteria (three Enablers and one Result) had values over 50%: *Processes* (65,38%), *Leadership* (61,03%), *Customer results* (58,46) and *People* (51,28%). In contrast, the other two Enablers and three Results had percentages under 50%: *Partnerships and resources* (45,77%), *People results* (41,03%), *Policy and*  strategy (37,91%), Key performance results (19,23%) and Society results (19,23%).

# Discussion

To our knowledge, this was the first study applying the EFQM Excellence Model criteria to PA programmes for elderly people.

Table 6 Frequencies and percentages of quality practices in the criterion	1 Processes
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5. Processes	n	%
5a. Processes are systematically designed and managed		
Work methods and organizational process are explicitly defined	22	84,62
There is comprehensive documentation about work methods and organizational processes	5	19,23
Organizational processes are periodically revised	16	61,54
Work processes exist to promote efficient behaviour patterns throughout the organization	19	73,08
Emergency protocols are periodically revised	9	34,62
5b. Processes are improved, as needed, using innovation in order to fully satisfy and generate increasing value for customers and other s	takeł	holders
Development and innovation of processes is emphasized	12	46,15
5c. Services are designed and developed based on customer needs and expectations		
The organization knows which services customers need	18	69,23
The organization is oriented towards the fulfilment of customers' expectations and needs	8	30,77
5d. Services are produced, delivered and serviced		
The organization is committed to develop PA programmes for older adults, concerning the components: aerobic fitness, muscular- strength, balance and flexibility	17	65,38
Preparticipation screening is designed to guarantee the safe participation of customers	11	42,31
Recommendations about the components of the exercise training session are followed (warm-up, stretching, conditioning and cool down phases)	26	100,00
Progression in the exercise training sessions is followed	18	69,23
The front desk is the central point of contact between the organization and the customer	17	65,38
The organization advertises its services	25	96,15
Environmental conditions of exercise sessions are guaranteed	15	57,69
Good accessibilities to the PA programme are guaranteed (side-walks, passenger transportation)	25	96,15
Access to the programme are facilitated by different processes or pathways	20	76,92
5e. Customer relationships are managed and enhanced		
Standardized systems are in place to deal with customer complaints	26	100,00
Standardized systems are in place to deal with customer suggestions	14	53,85

Table 7 Frequencies and percentages of quality practices in the criterion Customer Results						
6. Customer results	n	%				
The organization has measures and/or indicators of customers' satisfaction	20	76,92				
The organization has measures and/or indicators of customers' loyalty	9	34,62				
The organization has measures and/or indicators of the communication procedures with customer	14	53,85				
The organization has measures and/or indicators of the complaint resolution procedure	18	69,23				
The organization has measures and/or indicators of the customers' PA outcomes	15	57,69				

Results showed that Processes, Leadership, Customer results and People had high percentage occurrences of quality practices. In contrast, Partnerships and resources, People results, Policy and strategy, Key performance results and Society results had lower percentage occurrences.

PA programmes for elderly people play a significant role in senior citizens' health, quality of life, autonomy and capability to face daily tasks. It is widely accepted that the benefits of such programmes depend upon adherence to exercise [28]. Higher attendance in PA programmes and activity levels are strongly influenced by degrees of enjoyment [29,30]. Therefore, continuous quality improvement of the PA programmes for elderly people can be useful, and even critical, for elderly satisfaction and adherence.

*Leadership* is the key for driving forward quality improvement activities [31-33] and involves a process of social influence on a group of people. Our data suggests that the coordinators are particularly involved in developing the vision and mission, and enhance a strong culture of communication. These aspects are considered fundamental to quality management [34-36]. Indeed, other studies in different sectors have focused on leadership and have shown that the commitment of the leaders operates as the thrust of the quality improvement process [37-39]. Moreover, their physical presence, visibility and concern for quality improvement were associated with transformational leadership [40], i.e., leadership that creates valuable and positive change in its followers. Our study also revealed that most of the leaders interact with customers, partners and representatives of society. Trustworthy leadership increases partnership building and sustainability, essential to guarantee the success of PA promotion as a public health strategy, as demonstrated in some programmes [41]. Several studies have focused on customers [42-44] since listening them appears to be a priority for organizations that want to succeed. With regard to PA programmes, the CDC mention the importance of interacting with all stakeholders [13]. Specifically related to the PA programmes for elderly people, the British Heart Foundation (BHF) stated that participants or other stakeholders must be actively involved in all aspects of programme development, including planning, promotion and evaluation [45]. The ACSM also recognizes that PA leaders should work closely with individuals to design a PA regimen that reflects the person's preferences and capabilities [46]. In addition, our results indicate that coordinators neglect to run the PA programme as a set of interrelated processes. Although there are no studies on this issue for PA programmes for elderly people, some organizations have made recommendations for their specific programme, namely the American Association of Cardiovascular and Pulmonary Rehabilitation (AACVPR), which states that the programme leaders are responsible for directing, integrating and coordinating programme services, and

Table 8 Frequencies and percentages of quality practices in the criterion People Results

7. People results	n	%
7a. People motivation and commitment		
The organization has measures and/or indicators about people's willingness to work	8	30,77
The organization has measures and/or indicators about people's organizational commitment	4	15,38
7b. People achievement		
The organization has measures and/or indicators of the capability of people to identify work problems and to provide solutions	15	57,69
The organization has measures and/or indicators of how people share organizational values	6	23,08
The organization has measures and/or indicators about people's initiative	11	42,31
The organization has measures and/or indicators regarding people's performance (e.g. results of evaluations)	17	65,38
7c. People satisfaction		
The organization has measures and/or indicators of people's absenteeism	18	69,23
The organization has measures and/or indicators of people's loyalty	7	26,92
The organization has measures and/or indicators of people's satisfaction	10	38,46

n %

Table 9 Frequencies and percentages of quality practices in the criterion Society Results				
8. Society results	Ī			
The organization has measures and/or indicators of the programme's involvement in community	_			

The organization has measures and/or indicators of the programme's involvement in community	4	15,38
The organization has measures and/or indicators of the social responsibility of the programme	5	19,23
The organization has measures and/or indicators of the programme's impact in society (awards, media reports, invitations, etc)	6	23,07

recommending a central location for all policies, procedures and guidelines references [31]. Another interesting result of our data concerns the fact that most of the leaders are not involved in quality training in terms of teaching people at lower hierarchical levels, which might be related to the fact that only a single programme concerned itself with quality initiatives.

Policy and strategy is defined as how the organisation implements its mission and vision via a clear stakeholder-focused strategy, supported by relevant policies, plans, objectives, targets and processes [17]. Our results point out a modest concern about the opinions of different stakeholders in setting targets for the PA programme, which has been described as one of the crucial steps in the planning and evaluation of PA programmes, or as a good practice [13,45]. In addition, contrary to the guidelines [45], our study showed that a minority of programmes establish the objectives according to the participants' stated aims. Furthermore, this fact is in the opposite direction from the results of an European cross-national report on PA Programmes and promotion strategies for older people, in which most of the PA Programme's directors reported that their programmes were adjusted according to the participants' aims [19]. Another result that stands out in our data is the fact that just about two thirds of the programmes systematically assess their effectiveness in order to improve their continuous quality improvement process, which opposes the Benchmark 3 from Physical Activity and Health Branch (PAHB), at the CDC [14]. As indicated by the CDC, 'the evaluation is the systematic examination and assessment of features of an initiative and its effects, in order to produce information that can be used by those who have an interest in its improvement or effectiveness' (CDC 2002b [13] p.5), consequently an 'imperative', as stated before. Jackson argues that every effort must be made to engage the organisational members in continuous improvement activities [47]. However, no programme can be planned or evaluated oblivious of the context that surrounds it, especially when what drives most decisions on policy and practice in the public sector are considerations of the available evidence [45]. Institutional, community and public policies may have either supporting or antagonistic effects on programmes [48]. In addition, there are several factors that influence health behaviour [49]. Therefore, it is necessary to include pertinent information regarding the programme context [13,14] that must be absorbed in different ways [50]. In the present study, only 38,46% of PA programmes capture this information, which may reflect a limited knowledge on the part of most of the programmes about the context in which they operate. On the other hand, about two thirds of the analysed programmes have an annual plan that is regularly reviewed and used in an annual report. The data from this report helps to improve the new annual planning cycle of the PA programme. These procedures are in agreement with those found in other studies [51,52] or in accordance to different documents, such as content of the planning and evaluation of PA programmes [13,53] and health promotion programmes [54]. Still regarding this criterion, most of the leaders of our study reported that everybody had full access to the information about the mission and objectives of the PA programme. In the field of Higher Education, Calvo-Mora and collaborators [37] alleged that the leader's communication and involvement of all staff in policy and strategy were crucial to the processes management. Moreover, in accordance with the same author [37], our study found that processes were clearly identified, as well as their interrelationships. With regard to quality strategies, in our study only one PA programme had regularly used internal

Table 10 Frequencies and percentages of quality practices in the criterion Key Performance Results

9. Key performance results	n	%			
9a. Financial results					
The organization has measures and/or indicators of its financial results	11	42,31			
9b. External results					
The organization has measures and/or indicators regarding the quality of the service delivered	1	3,85			
The organization has measures and/or indicators regarding the partners management	5	19,23			
9c. Results on processes					
The organization has measures and/or indicators of the process efficiency	3	11,53			



quality assessment and external audits. However, several studies have focused on the reasons for the use of quality schemes and pointed out the advantages of their implementation in improving services [24,55,56]. On the other hand, Ritchie and Dale suggest the existence of some obstacles to implementing these initiatives within the organizations [57]. Similarly, Davies and collaborators reviewed the aspects of culture/context, which were specific to the university academic context, and could impact negatively on the implementation of a quality framework [58].

Regarding People criterion, that is an important feature for quality management [59], most of the participants in our study reported the existence of procedures to find out employees' opinions, which was also found in a study related to quality management in sports facilities [60]. This initiative is considered a quality practice to Connolly and Connolly [61]. In fact, organizations have recognized the need to understand employee opinions to identify their concerns, assess the impact of a variety of agendas and provide employees with different communication channels [62]. Regarding this issue, our data also show that employees from the majority of PA programmes have an open dialogue with all stakeholders, especially with one another (76,92%). Furthermore, although the results are less obvious with regard to autonomy and decision-making, our study demonstrates that most of the PA programmes involved and empowered people in various ways (e.g. opinions and suggestions put forward by people, and teamwork). These findings are not totally in line with the arguments of Wilkinson and collaborators, who emphasized the employee involvement as a key theme for quality management, namely autonomy, creativity, active cooperation and self-control for employees [63]. Also, Osseo-Asare and collaborators concluded that a conceptual

framework for achieving and sustaining quality in UK higher education institutions could be developed based on a set of principles which includes staff empowerment through participation and commitment [38]. In their study, these authors found a discrepancy between what respondents think about the importance of staff empowerment and the real practice in the organizations. Even with regard to the management of people, most of the participants in our study gave emphasis to the recruitment of people with high skills; however, only 34,62% require a specialization in the area of PA and ageing for instructors. These results are similar to those found on the Cross-National Expert Survey Report on Physical Activity Programmes and Physical Activity Promotion Strategies for Older People [19]. In this report, the authors make recommendations on the importance of recruiting teachers who have high levels of qualification and reinforce the importance of continuous professional development. Regarding this issue, the International Curriculum Guidelines for Preparing Physical Activity Instructors of Older Adults outlines each of the major content areas that should be included in any entry-level training programme [64]. The PAHB, established that a PA programme should be run by highly skilled PA practitioners [14]. Regarding the continuous training of people, our study revealed that over three quarters of the PA programmes take this aspect into account. In contrast. Hughes and collaborators found that only 56% of the PA programmes for older people trained their instructors [65]. The Guidelines for Cardiac Rehabilitation and Secondary Prevention Programs also emphasises these points, and goes further, establishing that the 'polices and procedures should include provisions for a competency-based job description; required education, continuing education, experiences, licences and certifications: and an orientation checklist, a competency assessment and a regularly performed - at least annually - performance appraisal' (AACVPR 2004 [31] p.193). Once more, our data showed that the items related to quality initiatives have only a passing reference, which appears to be related to the fact that just a single programme is involved in quality schemes, as previously explained.

Different studies reported that the opportunities that are provided by *Partnerships and resources* should be maximized [38,60,66,67]. In addition, the development and sustainment of the community partnerships is the first public health benchmarks for PA Programmes established by the PAHB at the CDC [14]. In our study, 73,08% PA programmes have established partnerships, which is in line with the emphasis that some authors [41,68,69] have put on the importance of forging effective partnerships, creating value and promoting cooperation agreements based on mutually beneficial joint synergies. Especially in the PA programmes for elderly, some organizations reinforce the importance and strength of these partnerships, since they provide additional resources in the form of funding, facilities and equipment and being able to access wide-ranging abilities and knowledge [3,45]. The most surprising result of our data concerns the few partnerships with Higher Education Institutions (11,54%). Indeed, these academic institutions contribute to the creation of knowledge and its dissemination, so we consider it a disadvantage for programmes to not have direct access to their counsel. Moreover, such partnerships would have reciprocal benefits, since the programme also could provide means for researchers to get their answers in a more practical way. Additionally, disseminating this knowledge may promote the development of new programmes or improve the programme itself [13]. When we analyzed the partnerships with health institutions, the results are better, but still far from what is supported by some authors or organizations, who advocate the active participation of healthcare professionals in counselling patients on PA [45,70-72] or encouraging them to accumulate moderate-intensity PA [73]. Similar results arise from the European Network for Action on Ageing and Physical Activity (EUNAAPA) study, where sixty percent of the PA programme directors reported that they build partnerships with local healthcare professionals or organisations [19]. With regard to finances, our results appear to indicate that there is not a strict control of these resources, since there is still a considerable percentage of programmes that do not manage them (65,38%). These results are quite different from those reported by Scott and colleagues [19], where sixty five percent of the PA programme directors were able to estimate the total cost of their programme. In fact, most of the monetary funds of these programmes come from the public finance, and thus it appears to us that leaders should control these funds even more strictly. Although the PA programmes are not-for-profit, the management of its financial resources should be identified as key-process, in order to consolidate the programme's financial structure and to ensure it can fulfil its mission in the present and in the future. Despite the maintenance plans of equipment and buildings should be periodically provided [66], just about one third of the interviewed coordinators reported that their programme had maintenance plans. Another study [19] found a higher percentage of programmes with maintenance plans (46%), but the results were still not consistent with the recommendations [31,74]. Otherwise, the recognition that information technology has been a catalyst for progress and prosperity [75] seems to be accepted by the coordinators of our study, since most of them implemented new technologies in their programmes. Concerning information management, although there are no recommendations in the

field of PA programmes for elderly, the AACVPR advises that information management involves supervision of the storage, communication, utilization and tracking of information related to the programme and facility [31]. In this respect, the majority of the coordinators indicated that information, concerning to all aspects of the programme, was systematically recorded. On the contrary, the results related to the systematic pursuit of the latest scientific knowledge are quite modest, since less than one third of the coordinators refer to this quality practice. The reason for this unexpected result becomes somewhat clearer when we realise that very few programmes have established partnerships with higher education experts who are up to date on the latest scientific knowledge. In an American study [76] most states provided evidence of competency with regard to using data and scientific information to develop and prioritise their PA programming.

An excellent organization adopts a management philosophy based on Processes [77,78]. Although the majority of the coordinators of our study stated that the methods and processes were defined, only a minority operationalised it in terms of documentation. For the AACVPR, policies and procedures related to information management should include a wide range of records and should specify uniform standards for evaluation, intervention and outcome measurement [31]. Furthermore, processes should be systematically reviewed [17,79]. Specifically with regard to emergency protocols, about one third of the coordinators stated that they are carried out periodically. Related results arise from the EUNAAPA study, where half of PA programme directors reported having emergency protocols in place and that staff members were trained annually, at the very least, in these protocols [19]. Both results indicate that AHA/ACSM's recommendations have not been followed. In fact, it is emphasized that emergency policies and procedures must be reviewed and practiced regularly [74]. With regard to the design of services and tailoring the programme to the needs and interest of participants, the results differ. On the one hand, more than two-thirds of coordinators recognized that the services are designed according to customer needs; on the other hand, less than a third is geared towards the fulfilment of their expectations and needs. In the Scott and collaborators study, almost two thirds of PA directors reported that participants were formally surveyed for the aims of their involvement in the programme and most of these directors also reported that their programmes were adjusted according to participants' stated aims [19]. Physical activity leaders should work closely with individuals to design a PA regimen that reflects the person's preferences and capabilities [46]. In the same line, the BHF recommends the involvement of participants in this process (BHF 2007). Moreover, tailoring the exercise programme to the needs and interest of participants is associated with higher programme attendance [80,81]. With regard to the preparticipation screening, less than half of our PA programmes' coordinators reported that a health check was required to guarantee a safe participation of the customers. Results from EUNAAPA study [19] are slightly different since only half of the PA programme directors reported that a health check was required before a potential participant would be eligible to enter their programme. Screening of older adults prior to starting an exercise programme continues to be a controversial issue [82]. In fact, the ACSM endorses the perspective that medical clearance should not be required prior to encouraging older individuals to begin a light-intensity activity programme, since it may be a disincentive to increasing PA among these individuals [46]. For higher intensity levels, AHA/ACSM recommend a pre-participation screening, primarily to identify those at increased risk of an adverse cardiac event [74]. In our study, about two-thirds of the PA coordinators indicated that the exercise prescription includes aerobic. muscle strength, flexibility and balance exercises. Additionally, they also reported incorporating progression as part of their programme. These are consistent with the ACSM position's stand [6] and ACSM's Guidelines [83]. In our study we found an unanimous result concerning the components of the exercise training session, which is in line with the ACSM recommendations [83]. Our results about exercise prescription, progression and components of the session are more consistent with the ACSM recommendations than those disclosed in the EUNAAPA study [19]. Concerning to environmental conditions, more than half of the coordinators reported that they are guaranteed, i.e. temperature of sports facilities, safe and pleasant conditions of sports equipment and facilities, places with good acoustics and access to a water source are incorporated in the programme. This represents an adequate degree of concordance with the recommendations [31,83]. With regard to advertising, more than three quarters of the coordinators revealed that the programme was promoted. Some authors and organizations believe that social marketing and communication campaigns are a part of a set of actions required to increase PA [12,84,85]. In addition, the BHF makes recommendations on marketing and promotion strategies among older people [45]; however, no scientific evidence was found about the most effective method of promoting a PA programme for this target population. Across all programmes, 76,92% offer different forms of access to facilitate the enrolment of seniors. The Task Force on Community Preventive Services recommends the creation of or enhanced access to places for PA, combined with informational outreach activities to increase PA [12], even giving examples of how to reduce some environmental barriers. Good accessibility is also provided in almost all analysed programmes (96,15%), which is an essential aspect of programme planning [12,45,72]. The BHF emphasises the proximity of programmes to residences in a friendly and accessible way, ensuring well-lit paths and providing good public transports [45]. In this regard, a qualitative study in older and rural African American and white women found that PA programmes' enabling factors included transportation and free facilities [86]. A study by Booth and collaborators showed that for adults over 60, neighbourhood safety and access to local facilities were important predictors of being active [87]. In our study, all the programmes had an effective complaints handling system and more than half had suggestions through standardized processes. In addition to what was mentioned above about the importance of customer suggestions or opinions, customer complaint information can be also used as a basis for customer-focused process improvement [88]. In this particular case, our results suggest that organizations have a preference for reactive methods and delayed methods, such as complaint analysis, over proactive methods, contrary to what was found in another study [44]. An excellent service can only be achieved with a profound knowledge of evolving customer needs; therefore, a functional customer complaint management system should be implemented in every organization [89].

With respect to Customer results, organizations must measure and achieve them [17]. Similarly, PA interventions should be evaluated in terms of their processes as well as their outcomes [11]. There are many studies addressing the measurement of PA in order to identify current levels of activity and assess the effectiveness of intervention programmes. However, few PA intervention studies specifically target Customer retention or Customer satisfaction. Actually, the EFOM argues that excellent organisations achieve the best results for their customers and achieve high levels of customer satisfaction [17]. Furthermore, customers do not only provide input (suggestions or complaints), but they also take part in the service process, influencing both the process's performance and the perception of quality of the service produced [90]. One of the most commonly used techniques for listening to customers is satisfaction surveys [44]. More than three quarters of our PA programmes' coordinators assured that the satisfaction of participants in their programme was formally measured. Another key predictor of customer results is loyalty [36], but less than 35% of the programmes studied evaluate this item. A recent study about PA programmes for older adults in the United States found that 74% tracked attendance [91]. Also, complaints handling and management are essential for achieving customer retention and loyalty [92]. Besides this, though all programmes have a complaints system in place, only approximately 70% evaluated their resolution process. Contrary to complaints, all the programmes that have a standardized system of suggestions also carried out its assessment. Although the measurement process represents one of the most important components of customer results from an exercise programme [83], just 57,69% of our coordinators reported that objective outcome measures were recorded for participants at regular intervals.

To achieve excellence, organisations must also focus on the People results [17], since people involvement is one of the most important drivers of continuous improvement [77]. Nevertheless, most coordinators of our study revealed that the organization does not have information on its employees' motivation and commitment. This result is not surprising, especially because organizations rarely use instruments to obtain information about how their employees assess the motivational aspects of their workplace [93], compared with job satisfaction measurement. However, some meta-analysis studies [94,95] concluded that people's satisfaction is not enough to improve their performance - people must also be highly motivated [93]. Furthermore, without satisfied and motivated employees it is impossible to achieve satisfied and loval customers [44]. An empirical study observed that employees' loyalty is significantly related to service quality, which in turn impacts customer satisfaction and customer loyalty [96]. Martin-Castilla and Rodriguez-Ruiz give examples of the different aspects that must be evaluated, both in terms of people's motivation and satisfaction, such as the development of professional careers, learning opportunities, definition of objectives, employment conditions, salary, relation between peers, organisational role in the community, and work environment, among others [78]. Additionally, one of the key indicators of people satisfaction includes absenteeism [36]. While the majority of our PA programmes' coordinators confirmed that there were indicators of people's absenteeism (69,23%), only a minority stated that the employees' loyalty was measured (26,92%) as well as people's satisfaction (38,46%). We believe that people who are satisfied with regard to the management, employment conditions, relationships between peers and the organisational role in the community will be more prone to improve the quality of the PA programme; therefore, the evaluation of theses issues should not be neglected. Also, people's achievement is an important indicator, not only with regard to the development of people, but also in their ability to solve problems and take initiatives. Nearly two thirds of our PA coordinators had indicators of people's performance, which is defended by the AACVPR [31], as discussed previously. This result stems from the fact that the majority of people with employment contracts in the public sector is evaluated by the *Integrated System on the Evaluation of the Public Administration Performance* (SIADAP).

The Society results criterion is based on what an organisation is achieving in satisfying the needs and expectations of the community [17]. The programme's visibility, engagement and reputation are recognized as a result of its activities and the active participation of the organisation as a responsible member of the community. However, few participants (19,23%) reported indicators of the involvement of their programmes in the community and less than one quarter of the programme's impact on society (23,07%). Furthermore, the CDC claims the importance of assessing the programme effects on organizations or communities [13], but this is not our case. In fact, it is not just the impact of the programme from the standpoint of public health, but also the perceptions that society has about the programme as a barometer of its action in society. Also, social responsibility is a vital part of the work and role of the programme, as it tries to respond to a problem of the society as a whole [77], but again, only nearly 20% of the PA programmes' coordinators had measures or indicators to track this issue. As recognized by some authors [45,97], community involvement in these programmes is critical to its success, so it is concerning that the most of the coordinators do not pay attention to these indicators.

The Key performance results represent the global organizational performance and the fulfilment of expectations. The mission of the PA programmes is linked to a significant impact on the promotion of PA in the elderly population. However, less than 12% of our coordinators declared they had indicators of process efficiency, i.e. obtaining the best outcomes from a set of actions. Also, regarding the quality of the service delivered, only one PA coordinator assumed that this assessment was performed. This result may be associated with the fact that only one programme performed a quality assessment/ audit. In this respect, several studies [23-25,55] found that quality initiatives may improve process and outcomes. Finally, less than fifty percent of the PA coordinators indicated that the organisation's financial resources were properly managed. Recognising that most of the PA programmes have limited municipal funds, we believe that there is still a modest understanding of the need to achieve a certain level of profitability to contribute to the sustainability of the programme, and that all activities must be cost-accountable.

The 'evaluation is integral to success' (Schmid 2006 [11] p.115) so, regardless of sector, size, structure or maturity, organisations need to establish an appropriate management

framework to be successful [98]. We believe that this premise is also valid for PA programmes. Thus, it will help to improve services and, at the same time, to increase access and the level of PA of elderly citizens.

## Conclusions

Our findings suggest that although there are some good practices in the PA programmes under analysis, specifically in criteria *Processes, Leadership, Customer results* and *People*, there are still relevant areas that require improvement, namely those related to *Partnerships and resources, People results, Policy and strategy, Key performance results* and *Society results.* 

# Strengths and Limitations

To our knowledge, this was the first study applying the EFQM Excellence Model criteria in PA programmes for elderly people.

However, the study has certain limitations, which must be considered when interpreting its results.

First, the study was based on the PA programmes coordinators' perceptions. Consequently, such perceptions may not provide a complete and accurate picture of the reality. Actually, the results are mainly based on selfreporting which might also have contributed to a more favourable outcome. Conducting a study with the participation of different stakeholders of the PA programmes will be an asset in the future. Secondly, the research design employed was cross-sectional rather than longitudinal. In this regard, an evaluation of the quality practices is a process that develops over time and whose effects are only really appreciated in the long term. Therefore, it would be appropriate to follow a longitudinal approach in future studies. Finally, the external validity of the findings presented is low. Nevertheless, we are convicted that the study provides details about the management models of the PA programmes for elderly people developed by the Portuguese Local Administration, their strengths and weaknesses, in order to improve their quality.

#### Ethics approval

The study was approved by the Scientific Council and Ethics Committee of the Faculty of Sport - University of Porto.

# Additional material

Additional file 1: Preliminary on-line questionnaire. Explanation of the structure and content of the preliminary on-line questionnaire

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#### Authors' contributions

AIM participated in the acquisition and analysis of data and participated in drafting and editing the manuscript. MJR managed the data collection and analysis and supervised the drafting and editing of manuscript. PS designed the study protocol and helped design the questionnaires/interviews. RS managed the data collection and analysis. JM participated in the coordination of the study and supervised the drafting and editing of manuscript. JC participated in the design of the questionnaires/interviews and coordination and management of the study. All authors read and approved the final manuscript.

#### Competing interests

The authors declare that they have no competing interests.

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PAPER III

Marques AI, Rosa MJ, Amorim M, Soares P, Oliveira-Tavares A, Mota J, Carvalho J. The use of EFQM's criteria on the physical activity programmes for elderly people: results of a cluster analysis. (Submitted – Under review)

# The use of EFQM's criteria on the physical activity programmes for elderly

people: results of a cluster analysis

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Quality is an important issue when designing a physical activity (PA) programme for older people. The study sets up: 1) to distinguish groups of PA programmes based on their degree of implementation of quality management practices (QMP), and 2) to provide an exploratory characterization of the identified groups based on variables related to the coordinator's characteristics and the programme's features. A methodological triangulation was conducted in 26 PA programmes. Cluster analysis was used to identify groups of programmes based on the implementation of QMP. The existence of statistically significant differences among groups in terms of programmes' characteristics was tested resorting to chi-square and Kruskal-Wallis tests. The results identified four programmes' pattern clusters. No significant differences were found, except for the number of facilities managed by the programme (p $\leq$ 0.05). The identification of these clusters may help PA programmes' leaders to learn from each other in order to improve the quality.

## Background

An extensive body of evidence indicates that physical activity (PA) in the elderly is associated with reduction of the harmful effects of the ageing process (Castillo-Garzon, Ruiz, Ortega, & Gutierrez, 2006; Nelson et al., 2007) and improvement of quality of life (Castillo-Garzon, et al., 2006; CESEP, 2005; Chodzko-Zajko et al., 2009; Nelson, et al., 2007). Based on these findings, public health decision-makers currently recommend that elderly people should engage in regular PA and avoid an inactive lifestyle (ACSM, 2009; BHF, 2007; Chodzko-Zajko, et al., 2009). Nevertheless, there are still a lot of European elderly people who are not physically active (EEIG, 2003; Martinez-Gonzalez et al., 2001). Therefore, increasing adherence to PA among them is an important public health challenge.

It is widely accepted that the benefits of such programmes depend on adherence to exercise, which is influenced by a degree of enjoyment and satisfaction (Finch, 1997; Schutzer & Graves, 2004; Wininger & Pargman, 2003). One of the most important factors in customer satisfaction is quality of service (EFQM, 2003a; Parasuraman, Zeithaml, & Berry, 1994; Taylor & Baker, 1994). Thus, continual improvements in older adults PA programmes in order to increase quality of service are important to elderly satisfaction and adherence to PA. Public health providers and policy makers should and can help their citizens achieve the recommended PA levels (ACSM, 2009; CDC, 2001), while ensuring optimal utilization of community resources. Some international studies have examined the main characteristics of older adults' PA programmes, including programme-management issues (S. L. Hughes et al., 2005; Scott et al., 2008). In Portugal, there are several PA programmes for elderly people developed by the local government, but few studies have attempted to describe how these programmes have been managed and evaluated (Marques et al., 2011; Mota, Carvalho, & Marques, 2008) or, being more demanding, if they are designed to deliver the quality services that citizens and society expect.

With the purpose of helping organizations to improve their quality, the European Foundation for Quality Management (EFQM) introduced the EFQM Excellence Model (Figure 1), which is a non-prescriptive framework based on nine criteria divided into thirty-two sub-criteria (EFQM, 2003a). The Model recognizes that there are many approaches to achieving sustainable Excellence in all aspects of performance, based on the premise that "Excellent results with respect to Performance, Customers, People and Society are achieved through Leadership driving Policy and Strategy that is delivered through People, Partnerships and Resources, and Processes" (EFQM 2003a (EFQM, 2003a, p. 5) p.5). The application of the EFQM Excellence Model comprises a self-assessment exercise of the organization's quality management practices, shedding light on those areas requiring improvement. all mainland Portuguese municipalities (n=278), of which only a total of 97 questionnaires were completely answered. Since some municipalities





Following the experiences of other sectors (Hides, Davies, & Jackson, 2004; Nabitz, Schramade, & Schippers, 2006; L. Robinson, 2003; M. J. P. Rosa, Saraiva, & Diz, 2003; Soares, 2006; Vallejo et al., 2007), a previous study has applied the EFQM Excellence Model criteria to PA programmes for elderly people (Marques, et al., 2011) suggesting that although there are some good practices currently employed in PA programmes in Portugal, there are still some relevant areas that require improvement. Therefore, it seems of importance to better understand the implementation of quality management practices in Portuguese PA programmes. In this context, the focus of this study was 1) to distinguish groups of PA programmes based on their degree of implementation of quality management practices (QMP), and 2) to provide an exploratory characterization of the identified groups based on variables related to the coordinator's characteristics and the PA programme's features.

# Methods

Study participants and procedures are reported elsewhere [18]. Briefly, to gather empirical evidence, methodological triangulation — i.e., questionnaire surveys, semi-structured interviews and additional document analysis was employed. In order to obtain information regarding the main features of the programme, a preliminary online questionnaire was sent out to provided more than a single programme, 125 PA programmes were identified. Inclusion criteria for the purposive sample implied that at least one of the following conditions should be verified: i) programmes should belong to a District Capital in order to apply a geographic criterion; ii) programmes should include the following cumulative criteria: a) must have been in practice for 10 years or more (Scott, et al., 2008), b) must have had two or more different types of activities (Roberts & Brodie, 1992; Williams et al., 2002), and c) must have had a frequency of two or more times a week (Chodzko-Zajko, et al., 2009); iii) programmes that apply a quality initiative (Ågren & Berensson, 2006; Ioncica, Negoita, Petrescu, & Ioncica, 2009; Levin Martin & Vehige, 2006; Minkman, Ahaus, & Huijsman, 2007; H. S. Robinson, Carrillo, Anumba, & Al-Ghassani, 2003; Saizarbitoria, 2006). Therefore, from the 125 PA programmes for elderly people only 26 were included, of which 18 were from a District Capital; seven were aged ten years or more, had two or more types of activities and a frequency of two or more times a week; and one had a quality initiative. To characterise the quality management models of the PA programmes, semi-structured face-to-face interviews with the PA programmes' coordinators (n=26) were carried out. The questions were based on the EFOM Excellence Model's nine criteria and 32 sub-criteria. An on-line questionnaire was also administrated to the 26 PA programmes' coordinators. This new questionnaire, based on the EFQM Excellence Model's nine criteria and 32 sub-criteria, was generated according to the literature review and the interviews' content analysis. For each sub-criterion, items were devised concerning the areas addressing the EFQM Excellence Model and the specificity of the PA programmes for elderly people. Closed questions with multiple choice answers and Likert scales were used. In addition, *document analysis* was carried out.

#### Data analysis

As a result of this triangulation, several variables considered to be "background variables", i.e. the general characteristics of the programme, were collected and analyzed, namely: the coordinator's gender, the coordinator's age, the coordinator's qualification, the programme's age, the number of participants, the participants' age, the number of facilities, the number of employees, and whether or not the programme charges fees (Cohen-Mansfield, Marx, Biddison, & Guralnik, 2004; Dallman et al., 2009; Gray, Densten, & Sarros, 2003; R. L. Hughes, Ginnett, & Curphy, 2006; S. L. Hughes, et al., 2005; Scott, et al., 2008).

A set of the most relevant items concerning quality practices associated with the EFQM Excellence Model criteria was adapted from an original scale created to measure the nine criteria (Bou-Llusar, Escrig-Tena, Roca-Puig, & Beltran-Martın, 2009) and assigned to each EFQM sub-criterion based on its content domain. Several adjustments were made to reflect the specificity of the PA programmes for elderly people, according to collected data, resulting in 97 items. The presence or absence of a particular quality practice was encoded as: addressed / measured =1; not addressed / not measured = 0, based on the data collected through the triangulation process. The sum of these values in each sub-criterion and criteria were then converted into percentages and averages.

We used standard approaches to statistical analysis of data including frequencies and percentages for the categorical data and mean and standard deviation to continuous data. Cluster analysis using Ward's method of agglomeration with squared-Euclidean distance measures was used to identify groups of PA programmes, based on the results of the quality practices associated with the EFQM Excellence Model's criteria. After deriving the groups, we characterized them based on variables related to the coordinator's characteristics and the PA programme's features. The existence of statistically significant differences among the four groups in terms of programmes' characteristics was tested resorting to the chisquare and Kruskal-Wallis tests. All statistical analyses were performed using SPSS 18.0 for Windows. The significance level was set at p≤0.05. Furthermore, to provide an exploratory characterization of the identified groups, several variables that potentially influence quality practices of the EFQM Excellence Model's criteria in each cluster were examined.

# Results

Based upon the results of the quality practices associated with the EFQM Excellence Model's criteria, the subsequent cluster analysis identified a four-group typology of PA programmes. Table 1 shows the characteristics of each cluster based on the clustering variables used.

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Table 1: Means and standard deviations (SD) of the percentages related to quality practices of the EFQM Excellence Model's criteria in each Cluster and in all clusters

		Leadership	Policy & strategy	People	Partnerships & resources	Processes	Customer results	People results	Society results	Key performance results
Cluster 1	Mean	68.90	26.20	49.05	33.33	56.13	33.33	12.95	0.00	8.33
(n=6)	SD	12.40	16.10	11.87	23.38	10.86	10.33	12.98	0.00	12.91
Cluster 2	Mean	74.27	63.26	68.26	72.86	81.94	71.43	63.50	9.51	35.71
(n=7)	SD	28.39	9.62	17.20	11.13	9.04	25.45	23.77	16.25	31.81
Cluster 3	Mean	58.66	41.44	62.24	56.00	64.20	52.00	62.24	80.02	25.00
(n=5)	SD	35.06	21.09	9.09	23.02	11.97	22.80	16.88	18.24	30.62
Cluster 4	Mean	45.00	22.33	31.24	25.00	58.55	70.00	29.15	4.16	9.38
(n=8)	SD	28.91	17.26	12.90	17.73	16.52	15.12	22.17	11.77	12.94
Total	Mean	61.02	37.92	51.28	45.77	65.38	58.46	41.03	19.23	19.23
(n=26)	SD	28.32	22.84	19.84	26.71	15.97	23.95	28.61	32.90	24.81

An analysis of the four clusters reveals four groups of PA programmes, based on their commitment and degree of implementation of quality management practices. The designation of the clusters was developed according to two approaches. First, two different clusters were identified: the ones that were already committed to quality management practices, applying quality practices in most of the criteria, and the ones that were in a beginning stage. In a second approach, the highest or lesser degree of the implementation of a criterion/group of criteria was identified as having completed the designation of the cluster. The graphical representation of these different clusters can be observed in Figure 2. • The "Beginners - results neglected" (Cluster 1) - This group, which comprises 23.8% of the PA programmes' sample, is the unique group in which all its constituents have no quality management practice in one of the nine EFQM criteria, namely in Society Results. Only two criteria, which are *Leadership* and *Processes*, have quality practice values above 50%. This segment also exhibits the worst average in the range of four results.

• The "Committed - process focus" (Cluster 2) - This PA programme's group (26.92% of the sample) is characterized by the highest level of quality practices in eight of the nine EFQM Excellence Model criteria, showing a weak achievement in *Society Results* (9.51%). This PA programme's type is more motivated

Figure 2: Representation of the different clusters taking into account the intensity and variety of quality management practices



Cluster 2 and Cluster 3 appear in the upper right of the chart, since they have seven criteria above 50% and an overall average for the nine criteria of 60.08% and 55.76%, respectively. In opposition, Cluster 1 and Cluster 4 appear in the lower left-hand corner, since they have only two criteria above 50% and an overall average of 32.03% and 32.76%, respectively. Accordingly, the four clusters were classified as the following: than the other three types in the development of quality practices in *Processes*, presenting the highest average of all clusters in all criteria (81.94%).

• The "Committed - society focus" (Cluster 3) - The smallest group in the sample (19.23%) is characterized by the highest average in *Society Results* criterion (80.02%), considerably higher than in the other clusters (0.00%; 9.51% and 4.16%). Only two criteria, which are *Policy & Strategy* and *Key* 

*Performance Results*, have quality practice values below 50%.

• The "Beginners - customer oriented" (Cluster 4) - The largest group in the sample (30.77%) has seven of the nine criteria values below 50%. Only *Processes* and *Customer Results* have better quality practices, with greater emphasis on the last criterion (70%), which is also the only one above the average of the EFQM Excellence Model's criteria in all clusters.

For a better global visualization of the results, Figure 3 shows the means of the percentages related to quality practices associated with the EFQM Excellence Model's criteria in each cluster (coloured solid lines) and in all clusters (black dashed line). As it can be observed, Cluster 1 has all the criteria below average, except the Leadership criterion. In the opposite position, Cluster 2 has all the criteria above average, except Society Results. Three of nine criteria are below average in Cluster 3, i.e., Leadership, Processes and Customer Results. Finally, Cluster 4 has all the criteria below average, except the Customer Results criterion. Overall, the results of our study indicate that Processes, Leadership, Customer Results and People had high percentage occurrences of quality practices. In contrast, Partnerships and Resources, People Results, Policy and Strategy, Key Performance Results and Society Results had lower percentage occurrences.

Figure 3: Means of the percentages related to quality practices of the EFQM Excellence Model's criteria in each cluster and in all clusters



A more thorough understanding of the four clusters can be gained by relating the background variables of the coordinators' characteristics and the general characteristics the PA programmes that are part of each cluster. Thus, several variables that potentially influence quality practices of the EFQM Excellence Model's criteria in each cluster are examined. The results of these considered "background variables" among the four clusters are reported next in Table 2.

Although the majority of the coordinators are male, the largest number of women is found in Cluster 2. In contrast, the largest number of males arises in Cluster 3, where there are no women coordinating a PA programme. The average age of coordinators is higher in Cluster 3 and is lower in Cluster 1, where the average age of the coordinators belonging to this group is simultaneously below the average age of all programmes. All the coordinators of Cluster 2 have a physical education degree, while in Cluster 1, only 66.7% have a degree in this area. In the latter group, there is also no coordinator with a post-graduate degree. The PA programmes that operate for a longer period of time are found in Cluster 2, where the average age is higher than 10 years. The largest number of participants, the highest average age of participants and the largest number of sports facilities are also in the group of programmes that composes Cluster 2.

> Regarding the number of employees, the highest average is found in Cluster 3, as well as the largest number of programmes that are not free of charge. Cluster 2 has the majority of the free-ofcharge programmes. Summarizing the results, Figure 4 shows the main characteristics of each cluster combining with the degree of intensity and variety of application of quality practices.

Kruskal-Wallis and chisquare tests revealed no significant differences in reported variables across the four clusters, except in the number of facilities managed by the programme ( $p \le 0.05$ ).

1-Leadership; 2-Policy & strategy; 3-People; 4-Partnerships & resources; 5-Processes; 6-Customer results; 7-People results; 8-Society results; 9-Key performance results

Cluster 1 Cluster 2 Cluster 4 Total Cluster 3 Female 33.3 0.0 37.5 57.1 34.6 Coordinator's gender 42.9 100 62.5 65.4 Male 66.7 Coordinator's age 33.33 (1.6) 36.14 (3.4) 38.8 (6.9) 34.75 (2.9) 35.58 (4.1) Coordinator with a physical 33.3 0.0 20 12.5 15.4 No education degree Yes 66.7 100 80 87.5 84.6 100.0 Coordinator with postgraduate training 71.4 80.0 62.5 76.9 No 0.0 28.6 20.0 37.5 23.1 Yes Programme's age 7 (4.1) 10.14 (4.8) 7 (4.7) 6.63 (4.6) 7.73 (4.5) Number of participants 657.3 (495) 873.3 (524.1) 597.6 (472.2) 301.1 (227) 594.4 (464) Participant's age 68.17 (2.6) 70.71 (1.6) 70.6 (1.1) 68.63 (2.8) 69.46 (2.4) Number of facilities 15.5 (12.6) 18.14 (7.4) 9.6 (2.7) 8.38 (3.5) 12.88 (8.2) Number of employees 12 (9.8) 21.29 (12.4) 22 (19.7) 17.63 (20.2) 18.15 (15.7) No 66.7 28.6 80.0 37.5 50.0 Free of charge programme 71.4 20.0 62.5 50.0 Yes 33.3

Table 2: Characteristics of the different clusters: means and standard deviations (SD) for continuous variables and percentages for categorical variables

Figure 4: Graphical representation of intensity and variety of application of quality practices and main characteristics of each cluster



6

# Discussion

The empirical findings suggest that there are four distinct PA programme groups, differing in the degree of implementation of each EFQM's criterion (intersity), and on the number of criterio-addressed (variety), called as "Beginners results-neglected". "Committed process locus", "Committed process locus", and Beginners-custome-oriented".

Bwoqp⊟in-the-number–n≌iksi*lito*s-managed by playsmine, flate ware no significant differences among the considered clusters. being-the="Committeel --<u>process=locus" The-c</u> seals with a higher number of facilities Actually, the facilities have an important role. ine development of a programme. For example in a study conducted in USA, Hinghes and sallalaataisers—iianei. iirei semmeteiki, gyms serio: centres, parks or respection centres, and serio-housing facilities officiel 20% markible Separgemenes (S. L. Hughes, e 2005) Also in Europe, Inc. 30-initiad DVEAU.A are out mined, to-contribute to mare concerned to\_develop\_local\_initastructures leizure-time PA, including Hentiliyang, implementing=not.disseminating=good\_practices in dis=glanning=linansing=building=and nonaglag=or=local\_initiasing=bues=likuwiser êmar, Kal<mark>xa, X Harixe</mark>g, 2011), îr <del>en noneing - 12 - Levis - al-abs - population - 1</del> in Werk - Hendr-Cryanization - reminis-tha-114 intercentions—ean. <u>De ciller</u>in<u>e</u> in. <u>diffic</u>ae atings—invent\_spons\_such\_ex-schools writeplaces=and\_heatthcare=provides=\_falwards= settings=beyend. liseuros, 2006 No-futher cylideree was Tound-suggesting\_that\_onc=type=of=lacility\_is: better than-amather to the pumpose of delivering PA\_programmes\_to\_senior\_clizens\_However, seeven in <u>southers with an internet</u> seeven of yilds*reading to an and the seeven southers* seeven and the southers of the so Architer s associated was any determined in the second second second second second second second second second s

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Although only one significant difference was found among the four clusters for the analyzed background variables, some important dissimilarities between the clusters are present, suggesting that other statistical significances would possibly occur with a larger sample. Thus, from the standpoint of quality, we believe it is important to analyze these dissimilarities.

In the present study, the "Beginners - results neglected" cluster is characterized-by-those who do-not\_pay much attention to the *Results*. In this group, we find the unique situation where there

is a criterion without any quality practice, namely *Society Results*. This criterion is based on what an organisation is achieving in satisfying the needs and expectations of the community (EFQM, 2003a). Our results suggest that this store of P Auge annessed descent size great importance to the programmes' impact on speicty and their involvement in the community which is contrary to CDE guidance, which elaims the impartance of assessing the Figuration of the second secon oriant advantages in seeking both-the-impact <u>of the programme-from-the-stand</u>point of-public health (ashai has been the fears all interest o most-programmes-and studies being-carried out) and also the perceptions that society has about Cit Eliz the programme. (Manques,-2011). Fothernars, only 1900 stiletic, which we Londership and Processes, have quality-persities values alours 50%. Of these two, only *Lenderskip*line<u>sconce-above\_fre-average</u> Presidy this is due to the fact that this stud was-based on the PA programmes-coordinators perceptions, which might have contributed to ar everestimated outcome concerning their own actions (Mangues, et al., 2011; M. J., Rost, 2002a; Other ettaist in different eastors have neared on entership and have shown that the commitment of the leaders operates as the limit The quility improvement <u>process (Calvo</u>-Mara, Lad. & Roldon, 2006, Osson-bens, Longhafirm, & Morphy, 2005; Wainer Men Shand).\_&=Actor(ar,=1997);\_hovever,\_ou sindy-does not never this evidence, since seven ai The-nine-orderina assant - ang eta-aliwa ensise quality-plantices- keyataingel e-inemast results concerning enough a tors characteristics, this group-has the largest number of coordinators without a physical education degree, and nonaf them\_have\_posi-graduate training. Some zomtries.how-situeites-in-place-to-ensur=tha public-health-protessionals-working-in-physica activity laws the skill set to administer population=based\_physical\_activity=programmes sechmas-the-National Society-of Physical where Providences in Public Health in the USA (Dallman, et al., 2009) or the Professional Register for Exercise and Fitness in England (NHS, 2001). For those professional registry organizations, professionals must have specific and complementary knowledge and skills and should regularly update their knowledge in this area (Dallman, et al., 2009; NHS, 2001), which we believe is a good practice to follow. We can also observe that Cluster 1 reveals the smallest number of employees. Some authors state that the people management system in small organizations is less formal than that of larger ones (Gray, et al., 2003,"Longenecker, Moore,

Palich, & Petty, 2006). In fact, a degree of informality can be an asset in small organizations. Therefore, any one of these clusters can remove the inherent advantages (Hill & Wright, 2001; Kuratko, Goodale, & Hornsby, 2001) of being a small organization (European Commission, 2005). However, as personnel are added, the benefits of informality decline and their costs increase (Longenecker, et al., 2006).

The results in this group suggest the "Committed - process focus" as being more motivated to adopt a management philosophy based on Processes, a key factor influencing the excellence of an organization (EFQM, 2003b; Martin-Castilla & Rodriguez-Ruiz, 2008). Additionally, the highest level of quality practices is also found within this cluster in eight of the nine EFQM Excellence Model criteria, except for Society Results, which appears simultaneously below the average. This cluster consists of programmes mostly led by women. Some authors stated that female and male organization leaders have different management styles (Eagly & Johnson, 2003; R. L. Hughes, et al., 2006): female managers show greater concern for others, consider how others feel about their influencing tactics, are more likely than men to act with the organization's broad interest in mind (R. L. Hughes, et al., 2006) and are more democratic or participatory than men (Eagly & Johnson, 2003). In opposition to the group discussed above, all the coordinators have a physical education degree and post-graduate training. Similar results arise from the European Network for Action on Ageing and Physical Activity (EUNAAPA) study, where the educational backgrounds reported by the Portuguese PA directors show an overall predominance of Exercise/Sport Science degrees (Scott, et al., 2008). We can also observe that this group includes the longest-running programmes. No evidence relating to how long a PA Programme should run was found in evidence-based, best-practice guidelines. However, Scott and colleagues (Scott, et al., 2008) presumed that PA programmes running for more than ten years are well established, because they provide a service that is needed, is of good quality and has regular ongoing attendance. In fact, this cluster has the best average result (60,08%). Other characteristics that should be examined are those related to the number of participants, participants' age, the number of facilities and the cost of the programme to users, since they have the highest average of the four clusters. The number of participants may be related to the programme's age. Our results suggest that when a programme is running for a long period of time, it may tend to have greater attendance than those established more recently, perhaps due to the fact that the establishment in the community can allow the programme to be better known and sought. Furthermore, the number of participants may be associated with the number of sports facilities allocated to the programmes from this cluster, since a larger number of participants should require a greater number of facilities. The average age of this cluster is greater than the others, although all are quite similar and above 65 years, which is the mandatory retirement age in Portugal (Conselho de Ministros, 1993). Although there are programmes that have a minimum age for admission under the age of retirement, we believe that the majority of participants are no longer professionally fully active. In spite of some studies have examined the impact of retirement on PA, both in terms of pattern and intensity, the conclusions are not unanimous (Beck, Gillison, & Standage, 2010; Lahti, Laaksonen, Lahelma, & Rahkonen, 2011; Slingerland et al., 2007; Touvier et al., 2010). Nevertheless, all studies point out the need for pensioners to become physically active at this stage of life. Finally, the programmes that comprise this cluster are mostly free of cost to users. No cost or low cost of a PA programme was identified as an important factor for the elderly to enrol (Belza et al., 2004; Cohen-Mansfield, et al., 2004).

Conversely, the results of this study also support the profile of "Committed - society focus" cluster as being more stimulated by the programme's visibility, engagement and reputation as a result of its activities and active participation as a responsible member of the community. In opposition, Policy & Strategy and Key Performance Results have quality practice values below 50%, which denotes a lack of management of factors that contribute to the achievement of organization success (Grant, 2010). Indeed, on the one hand, Policy and Strategy is defined as how the organisation implements its mission and vision via a clear stakeholder-focused strategy, supported by relevant policies, plans, objectives, targets and processes (EFQM, 2003a); on the other hand Key Performance Results represent the global organizational performance and the fulfilment of expectations, and is closely related to the optimal and sustainable management of different elements that should be aligned with mission, vision, values and strategic objectives (Martin-Castilla & Rodriguez-Ruiz, 2008), that is, with Policy and Strategy. Overlooking Key Performance Results, it seems that this group of PA programmes is simultaneously undermining the financial and non-financial results as well as
efficiency. Despite process displaying percentages above 50%, the criteria *Leadership*, Processes and Customer Results have values below the average. Some studies have analyzed the internal structure of the EFQM Excellence Model and the associations between certain criteria and concluded that there is an indirect link between Leadership and Processes (mediated by People, Policy and Strategy and Partnerships & Resources) (Calvo-Mora, Leal, & Roldan, 2005; Eskildsen, Kristensen, & Juhl, 2000; Martínez-Lorente, Gómez-Gómez, & Martínez-Costa, 2009) and a direct link between Processes and Customer Results (Eskildsen, et al., 2000; Martínez-Lorente, et al., 2009). Dissimilar to Cluster 1, this group of programmes has the highest average number of employees, despite not having the highest number of participants or facilities. However, it's also in this group that we find the majority of programmes that are not free of charge.

"Beginners - customer oriented" exhibits seven of the nine criteria values below 50%, except for a higher propensity to have better quality practices in Processes and especially in Customer Results (the unique criterion that has values above average), therefore suggesting a group that pays more attention to the methods and procedures underlying the service provided as well as getting the finest results for their customers. Actually, the EFQM argues that excellent organisations achieve the best results for their customers and achieve high levels of customer satisfaction (EFQM, 2003a). An example of good practice that can contribute to customer satisfaction is tailoring the exercise programme to the needs and interest of participants, which fits within best practices for Processes (Margues, et al., 2011). In this respect, the BHF recommends the involvement of participants in this process (BHF, 2007), which in turn will improve customer satisfaction. As already stated, some empirical work supports the existence of a positive relationship between Processes and Customer Results (Eskildsen, et al., 2000; Martínez-Lorente, et al., 2009). In this cluster, we find the highest average in relation to the postgraduate training of the coordinator. As previously focused, the importance of learning and training to achieve professional development (Dallman, et al., 2009; NHS, 2001; Scott, et al., 2008) is essential to the continuous improvement of service (EFQM, 2003b). As role models (EFQM, 2003a), leaders can inspire their employees to improve their knowledge and skills. Furthermore, it is important to note that this cluster also contains the shortest-running programmes and the smallest number of participants and facilities.

Regardless of dimension, structure or maturity, organisations need to establish an appropriate management framework to be successful (EFQM, 2002), including those that develop PA programmes for seniors. This premise is even more relevant since the quality of service provided is directly related to customer satisfaction (EFQM, 2003a; Parasuraman, et al., 1994; Taylor & Baker, 1994). Also knowing that adherence to exercise is strongly influenced by degrees of enjoyment and satisfaction (Finch, 1997; Schutzer & Graves, 2004; Wininger & Pargman, 2003), continual improvements in PA programmes for the elderly may thus increase their satisfaction and willingness to enroll in them.

# Strengths and Limitations

The present study represents a special contribution to knowledge regarding the application of the EFQM Excellence Model criteria to PA programmes for elderly people, since to the best of our knowledge, there is only one previous study identifying and characterizing the groups of PA programmes based on their degree of the implementation of quality management practices considered in the EFQM Excellence Model criteria. Furthermore, the results of the study launch interesting research questions that deserve future investigation namely, understanding how PA programmes leaders implement quality management practices, and if there are any priorities at the beginning of this process.

However, the findings and implications in this study should be interpreted with caution due to their limitations. First, the study was based on the PA programmes coordinators' perceptions, which may not provide a complete and accurate picture of reality and might also have contributed to a more favourable outcome. Conducting a study with the participation of different stakeholders of the PA programmes will be an asset in the future. Secondly, the absence of a rating scale used to code data concerning quality practices associated with the EFQM Excellence Model criteria can, at least in part, limit the data collection information. Future studies should use a rating scale, in order to better explore and understand the degree of implementation of quality practices. Finally, our sample had constraints with regard to its size, and is probably not representative of all PA programmes developed in Portugal.

# Conclusions

In conclusion, it was possible to identify four groups of PA programmes for older persons among those analyzed in Portugal, based on the degree of implementation of quality management practices: the "Beginners - results neglected", the "Committed - process focus", the "Committed - society focus", and the "Beginners - customer oriented". However, with the exclusion of the number of facilities managed by the programme, no significant differences among the clusters were found for the general characteristics of the programme. But, although they are not significant, and taking into account our sample size, it seems important to prove that the cluster with the best results in quality practices is the one whose programme coordinators have a degree in physical education, whose programmes have run for a longer period of time, which have the largest number of customers and facilities and which are mostly free of charge.

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# PAPER IV

Marques AI, Santos L, Soares P, Santos R, Oliveira-Tavares A, Mota J, Carvalho J. A proposed adaptation of the European Foundation for Quality Management Excellence Model to physical activity programmes for the elderly – development of a quality self-assessment tool using a modified Delphi process. *International Journal of Behavioral Nutrition and Physical Activity 2011, 8:104.* 

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# RESEARCH



**Open Access** 

# A proposed adaptation of the European Foundation for Quality Management Excellence Model to physical activity programmes for the elderly - development of a quality selfassessment tool using a modified Delphi process

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# Abstract

Background: There has been a growing concern in designing physical activity (PA) programmes for elderly people, since evidence suggests that such health promotion interventions may reduce the deleterious effects of the ageing process. Complete programme evaluations are a necessary prerequisite to continuous quality improvements. Being able to refine, adapt and create tools that are suited to the realities and contexts of PA programmes for the elderly in order to support its continuous improvement is, therefore, crucial. Thus, the aim of this study was to develop a self-assessment tool for PA programmes for the elderly.

Methods: A 3-round Delphi process was conducted via the Internet with 43 national experts in PA for the elderly, management and delivery of PA programmes for the elderly, sports management, quality management and gerontology, asking experts to identify the propositions that they considered relevant for inclusion in the selfassessment tool. Experts reviewed a list of proposed statements, based on the criteria and sub-criteria from the European Foundation for Quality Management Excellence Model (EFQM) and PA guidelines for older adults and rated each proposition from 1 to 8 (disagree to agree) and modified and/or added propositions. Propositions receiving either bottom or top scores of greater than 70% were considered to have achieved consensus to drop or retain, respectively.

Results: In round 1, of the 196 originally-proposed statements (best practice principles), the experts modified 41, added 1 and achieved consensus on 93. In round 2, a total of 104 propositions were presented, of which experts modified 39 and achieved consensus on 53. In the last round, of 51 proposed statements, the experts achieved consensus on 19. After 3 rounds of rating, experts had not achieved consensus on 32 propositions. The resulting tool consisted of 165 statements that assess nine management areas involved in the development of PA programmes for the elderly.

Conclusion: Based on experts' opinions, a self-assessment tool was found in order to access quality of PA programmes for the elderly. Information obtained with evaluations would be useful to organizations seeking to improve their services, customer satisfaction and, consequently, adherence to PA programmes, targeting the ageing population.

Keywords: physical activity, programmes, elderly, tool, evaluation, quality, adherence

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# Background

Physical activity (PA) programmes play a significant role in senior citizens' health, autonomy and ability to face daily tasks, being particularly important to prevent and minimize the deleterious effects of the ageing process [1,2] and to improve quality of life [1-4]. It is widely accepted that the benefits of such programmes depend on adherence to exercise, which is influenced by degree of enjoyment and satisfaction [5-10]. One of the most important factors in customer satisfaction is quality of service [11-13]. Therefore, continual improvements in PA programmes for the elderly are important to elderly satisfaction and adherence to PA.

The 3<sup>rd</sup> Benchmark from the Physical Activity and Health Branch of the Centers for Disease Control and Prevention (CDC) [14] holds that complete programme evaluations are an important and desired prerequisite to continuous quality improvements. Similarly, World Health Organization (WHO) guidelines for the evaluation of health promotion emphasize the need to evaluate and propose the allocation of adequate evaluative resources [15].

Evidence shows that quality matters, is measurable, moveable and malleable [16], but also has costs [17]. However, literature also shows that the costs of not doing so are far greater [18,19]. Several studies have focused on the advantages of quality schemes [20-22]. With the aim of helping organizations improve the quality of their services, the European Foundation for Quality Management (EFQM) introduced the EFQM Excellence Model in 1991. The EFQM Excellence Model is a non-prescriptive framework that is based on nine criteria divided into 32 sub-criteria [13]. It promotes the use of management methodologies based on objective criteria that are applicable to all areas of business or services and constitutes an exercise in self-assessment. Selfassessment sheds light on areas requiring improvement, as well as on the processes and actions necessary to generate improvement.

While numerous PA programmes have been designed for the elderly in recent years - especially by the Public Local Administration - their evaluation has been scarce. In fact, few details are available on how these programmes have been developed, how they have been structured, how service delivery is conducted and how results are being achieved. The lack of a standard approach to assessing PA programmes for the elderly makes it difficult to compare the quality of both the planning and the delivery of such programmes. In this way, being able to refine, adapt and create tools that are suited to the realities and contexts of PA programmes for the elderly, and that improve these programmes, is therefore important, not only to help programmes evaluate their ability to perform public health functions, but to address local health needs and guide community health-planning efforts. Thus, the aim of this study is to describe the development of a quality self-assessment tool for PA programmes for the elderly.

## Methods

A modified Delphi process was conducted using the Internet, from October 2009 to September 2010. The Delphi technique was developed in the 1950s by scientists at the Rand Corporation as a method of making informed decisions based on expert opinion [23]. Since then, it has been used to clarify a variety of problems in different sectors [24-29]. Despite having undergone some modifications, it remains a viable approach for gathering expert opinions through a structured iterative process that builds consensus [30]. This process involves multiple interactions with participants who usually complete two or more rounds in a reasonable amount of time [31] - even when participants are in geographically-distinct locations, since rounds can be conducted by mail or email [32,33]. The results of previous iterations can be modified by participants in later iterations, as they are able to review comments and feedbacks provided by other experts in earlier rounds [31]. Furthermore, the Delphi technique offers a number of specific advantages and is particularly helpful because it avoids the barriers commonly observed in other group discussions, such as interpersonal influence, time pressure and group demands [31,34,35]. This is due to the fact that respondents are not aware of the identities of other respondents and are, therefore, freed of personal and social constraints [30]. They are also able to complete the Delphi rounds in ways that suit them best because they participate in the rounds asynchronously [36]. The Delphi technique is also advantageous because a variety of statistical analysis techniques can be used to interpret the data its generates [37].

The Delphi process was conducted in three rounds [38,39] (Figure 1). Following each step listed in the previous figure, our main question was: *Which quality practices must be included in a quality self-assessment tool for PA programmes for the elderly?* 

Using criteria and sub-criteria from the EFQM Excellence Model [13] and PA guidelines for older adults [3,40] as a starting point, we reviewed the literature to identify best practice principles and generate a list of statements. Our review was undertaken using PubMed (1980-2010), B-On (1980-2010), and Google™. We searched a variety of combinations of key words related to PA programmes for the elderly, quality management and the EFQM Excellence Model, such as: 'evaluation', 'guidelines', 'recommendations', 'exercise', 'physical



Figure 1 Steps of the modified Delphi process used in the present study.

activity', 'programmes', 'elderly', 'old', 'review', 'framework', 'EFQM', 'assess' and 'quality'.

After identifying a list of statements, an online questionnaire was developed and tested with 5 PA programme coordinators for comments on readability and functionality. Some adjustments were made to make the affirmations included in the questionnaire clearer and more relevant to this case. We established that statements that received greater than 70% of experts' votes had achieved consensus [41-43] in both the bottom scores (i.e., reached consensus to drop) and top scores (i.e., reached consensus to include/retain). Statements that were dropped were not included in subsequent rounds of ratings. The remaining items were included in the next rounds, until a consensus was achieved to either drop or retain. At the end of three rounds, the statements on which experts had not reached consensus were also not included in the output list.

The fourth phase of the process involved nominating experts to participate in the Delphi rounds. National experts in research on PA for the elderly, PA programmes for elderly management and delivery, sports management, quality management and gerontology were identified. Our decisions were based on expertise or/and breadth of scientific work [44]. The DeGóis Curricula Platform<sup>1</sup> assisted us in this process. A list of 63 potential participants was generated, along with key contacts for each. This group included 34 PhD scientists and academics (11 in PA for the elderly, 4 in sports management, 18 in quality management and 1 in gerontology),

3 non-PhD academics (1 in PA for the elderly and 2 in sports management) and 26 senior technicians (22 in PA programmes for elderly management and delivery, 3 in quality management and 1 in gerontology). Previous information containing details about the EFQM Excellence Model, the Delphi process and the purpose of our study was provided. Of those invited to participate, 5 did not respond and 3 declined, due to lack of time (all PhD scientists and academics in quality management). Thus, 55 experts (30 females and 25 males) responded to our initial invitation and agreed to participate. Those who accepted our invitation were informed that they were required to respond to three online rounds of ratings.

The rounds were performed using Survey Monkey, a web-based survey and data collection system. In every round, participants were asked to rate their level of agreement with each proposition, from 1 to 8 ('strongly disagree' to 'strongly agree'), suggest modifications to proposed definitions and/or add propositions that would be useful in a quality self-assessment tool for PA programmes for the elderly. The 8-point Likert scale was selected to bring out more variability in responses [45]. After each round, the frequency and mean of the panel's ratings and the percentage of scores  $\geq$  7 were calculated. Based on this data, a new questionnaire was designed and placed online for the next round. We asked participants to review all the information sent and re-rate each statement.

After round 3, we gathered all our data and developed a list of statements that did and did not reach consensus.

## Results

Eight of the 63 invited experts, did not respond or declined. Of the 55 who agreed to participate in this process, 43 responded to round 1 and were invited to participate in the subsequent rounds. This group included 25 females and 18 males and was comprised of 20 PhD scientists and academics (9 in PA for the elderly, 2 in sports management, 8 in quality management and 1 in gerontology), 2 non-PhD academics (1 in PA for the elderly and 1 in sports management) and 21 senior technicians (17 in PA programmes for elderly management and delivery, 3 in quality management and 1 in gerontology). The 12 experts who did not respond to round 1 were not involved in subsequent rounds.

The results of the three rounds (total number of statements, statements approved by consensus, statements without consensus, statements modified by experts and new statements proposed by experts) for the nine criteria are presented in Table 1.

In round 1, of the 196 originally-proposed statements (best practice principles), the experts modified 41, added

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TOTALS 53 39 12 0 32 **51** 196 6 93 62 41 ..... KEY PERFORMANCE RESULTS 0 0 ----m SOCIETY RESULTS 0 ..... 2 0 C 0 PEOPLE RESULTS 0 C 0 9 0 4 4 CUSTOMER RESULTS 0 -0 PARTNERSHIP & PROCESSES RESOURCES 27 12 50 M 4 ∞ 47 4 0 ŝ 15 Ξ 0 11 ιΩ 6 0 4 9 0 PEOPLE 18 37 4 0 2 4 9 4 LEADERSHIP POLICY & STRATEGY 12 0 16 3 0 28 ഗ 00  $\sim$ Table 1 Results of the three rounds by criterion 13 36 4 23 0 6 6 4 0 00 2 Without consensus Without consensus Without consensus With consensus With consensus With consensus To modify To add Total To modify To add Total Total 2<sup>nd</sup> ROUND 3rd ROUND 1st ROUND

1 and achieved consensus on 93, which were retained for inclusion in the self-assessment tool. Of the 41 suggested modifications, 14 were related to Leadership (38,39%), 9 to Policy & strategy (32,14%), 7 to People (18,92%), 7 to Processes (14,89%), 1 to Customer results and People results (16,67% and 11,11 respectively) and 2 to Key performance results (50%). Some modifications consisted of minor changes to words or sentence structures. while others were about content (e.g., change "Higher education qualification, with specialization in physical activity and aging, is required for instructors'/ teachers' programmes" to "Higher education qualification, with specialization in physical activity and aging, or relevant experience in this field, is required for instructors'/teachers' programmes". The addition was related to the People criterion. Generally, experts made the greatest number of suggestions to Leadership and the fewest (0 in this case) to Partnership & resources and Society results. The best practice principles that were retained were mostly in Partnership & resources (15 out of 26, i. e. 57,69%), Processes (27 out of 47, i.e. 57,45%) and Customer results (3 out of 6, i.e. 50%). The criterion on which least consensus was reached was Key performance results (1 out of 4, i.e. 25%). No proposition was dropped in round 1, i.e. none received greater than 70% of the experts' votes in both the bottom scores.

Based on the results of round 1, 104 propositions were presented in round 2. At this stage, experts modified 39 and achieved consensus on 53 propositions. Most of the suggestions were made on Policy & strategy, Partnership & resources and Processes, with none suggestions to Results' criteria. The best practice principles that were retained were mostly in People (14 out of 20, i.e. 70%), Leadership (14 out of 23, i.e. 60,87%) and Processes (12 out of 20, i.e. 60%). The criterion on which there was least consensus was Society results, on which there was no agreement. Once more, no proposition was dropped. Forty one of the 43 experts responded to round 2.

In the last round, of the 51 statements proposed, the experts achieved consensus on 19, mostly in Policy & strategy (5 out of 11, i.e. 45,45%), Processes (4 out of 8, i.e. 50%) and Partnership & resources (4 out of 9, i.e. 44,44%). After 3 rounds of rating, they had not achieved consensus on 32 propositions. Most of these statements were concerned with Leadership (7, i.e. 21,88%), Policy & strategy (6, i.e. 18,75%) and Partnership & resources (5, i.e. 15,63%). One expert who had not responded to round 2 was willing to participate in round 3; thus, 42 of the 43 experts responded to round 3.

Additional file 1 presents the resulting tool - named Q-STEPS (Quality Self-assessment Tool for Exercise Programmes for Seniors) - which consists of 165 statements that assess nine areas involved in the development of PA programmes for the elderly. Five criteria assess *Enablers* (Leadership, Policy & strategy, People, Partnership & resources, and Processes) and four criteria assess the *Results* (Customer results, People results, Society results, and Key performance results).

## Discussion

The main goal of this study was to describe the development of a quality self-assessment tool for PA programmes for the elderly. To the best of our knowledge, no previous studies have sought expert opinions on PA for the elderly, PA programmes for elderly management and delivery, sports management, quality management and gerontology, with the aim of identifying practices that must be observed when assessing the quality of such programmes.

Although there are recommendations and guidelines for promoting the physical activity of older people [3,40] and recommendations about the need to evaluate these interventions [14,46], the literature is scarce [47], if not absent, on how to integrate these recommendations into PA programmes. No framework or tool has yet been developed to identify or influence the enablers and outcomes of PA programmes for the elderly.

The 43 national experts who participated in the Delphi process were quite engaged throughout, as evidenced by the number of their suggestions (one addition and 53 modifications) and the greater than 97% response rate to all three rounds of ratings. Most of their suggestions pertained to *Leadership*, while they made no suggestions on Society results. We presume that these results are related to the fact that many experts are programme leaders and thus, are more aware of practices that pertain to Leadership. Also, experts may have been aware of the fact that Leadership is understood by some authors [48-50] as the key to driving quality improvement. Our data indicate a high degree of consensus on the retention of all propositions concerning the development of vision and mission and the enhancement of a culture of communication by programme coordinators. These are considered fundamental to quality management [51-53], since the physical presence of leaders - their visibility and concern for quality improvement - are associated with transformational leadership [54], i.e. leadership that creates valuable and positive change in its followers. Of the seven statements on Leadership on which experts did not achieve consensus, five belong to the sub-criteria that concern the interaction of programme coordinators with politicians, customers, partners and representatives of society. While our study revealed that most of the statements concerning interaction with customers, partners and representatives of society achieved consensus, propositions concerning relationships with politicians or political affairs did not achieve consensus. This may be

related to popular negative perceptions of the political class [55]. Examples of statements that touched on the relationship between leadership and politics include "The coordinator manages relations with politicians and other stakeholders to ensure shared responsibility" and "The coordinator interacts regularly and proactively with policy makers from relevant executive areas (e.g. Alderman of Sport)". The British Heart Foundation (BHF) has stated that participants or other stakeholders must be actively involved in all aspects of programme development, including planning, promotion and evaluation [40]. The ACSM also recognizes that PA leaders should work closely with individuals to design PA regimens that reflect personal preferences and capabilities [56].

Leaders unanimously agreed to retain statements about the importance of leaders identifying and championing organizational change. Fostering change is increasingly seen as part of a leader's role [57], and the EFQM Fundamental Concepts upon which the Model is based [58] include standard recommendations such as planning change, communicating reasons for it, enabling people to manage change and reviewing the effectiveness of change.

Experts also suggested modifications to about 30% of the original propositions on *Policy & strategy*. A high degree of consensus was achieved on the retention of all propositions concerning the development, review and updating of policy and strategy.

The statement that received the greatest degree of consensus was related to the development of annual reports. Data from such reports helps improve the annual planning cycles of PA programmes. These procedures are in agreement with those found in other studies [59,60] or with different documents, such as those that outline the planning and evaluation of PA programmes [61,62] and health promotion programmes [63].

Throughout the Delphi process, it was suggested that the proposition "The programme involves a multidisciplinary team of professionals" be added to the People criterion. In fact, the teams that run PA programmes for seniors should include not only exercise and sports professionals, but general practitioners, practice nurses and care and residential managers [40]. Of the propositions on the planning, management and improvement of human resources that the experts agreed to retain, the one on which there was greatest consensus was "Emphasis is placed on recruiting employees whose profile matches the needs of the programme". The Physical Activity and Health Branch (PAHB) of the CDC has established that PA programmes should be run by highly-skilled PA practitioners [14]. The Cross-National Expert Survey Report on Physical Activity Programmes and Physical Activity Promotion Strategies for Older People [64] also notes the importance of recruiting teachers who are highly qualified and reinforces the importance of continuous professional development.

During the first round, a high level of consensus was immediately reached on propositions related to the management of finances and maintenance of facilities, equipment and materials (Partnership & resources criterion). The management of financial resources is key to consolidating programmes' financial structure and ensuring that programmes can fulfil their missions in the present and the future, as well as periodically provide maintenance plans for equipment and buildings [65,66]. Experts did not achieve consensus on half the propositions concerning "external partnerships", although the development and sustainment of community partnerships is the first public health benchmark for PA programmes established by the PAHB [14]. Particularly with regards to PA programmes for the elderly, some organizations have reinforced the importance and strength of these partnerships, which provide additional resources in the form of funding, facilities and equipment, as well as access to wide-ranging abilities and knowledge [40,67]. Indeed, one of the propositions that did not reach consensus was the one that pointed the participation in networks in order to exchange knowledge and to improve relationships. However, of the propositions on which experts did not achieve consensus, most were similar to other statements that were retained. Examples include: "Appropriate partnership agreements are established, defining roles, responsibilities and expected outcomes" and "Regular and formal communication procedures are established with partners".

Consensus was not reached on only four of the 47 statements about Processes. Once more, most were similar to other statements that were retained. For example, "Market research is used to determine the needs and expectations of future customers" - a proposition that only received 64,29% of votes equal to or greater than 7 - is comparable to "Surveys and other ways of obtaining feedback are used to determine the needs and expectations of current and future customers", a retained proposition. Physical activity leaders should work closely with individuals to design PA regimens that reflect personal preferences and capabilities [56]. The BHF recommends that participants should be involved in this process [40]. Moreover, tailoring exercise programmes to the needs and interests of participants has been associated with higher programme attendance [68,69].

Concerning the four Results' criteria, the highest level of consensus was achieved on *Customer results*, in which all propositions were accepted. Indeed, organizations must measure and achieve customer results [13].

Similarly, both the processes by which PA interventions are conducted and the outcomes of such interventions should be evaluated [47]. The experts achieved a high degree of consensus on all propositions related to client assessment, i.e. customer satisfaction, customer loyalty, communication, complaints handling and management and outcomes (physical fitness evaluations and psychological/mental evaluations). By contrast, they displayed relatively little consensus on the criterion *People results* (4 out of 9). In fact, the experts were unable to reach consensus on whether or not to retain propositions related to employee involvement, motivation, initiative and loyalty. However, it should be emphasised that similar statements were retained. Examples include: "The programme has measures of perception and/or performance indicators regarding employees' performance" and "The programme has measures of perception and/ or performance indicators regarding employees' involvement in teamwork". In actuality, to achieve excellence, organisations must also focus on People results [13], since employee involvement is one of the most important drivers of continuous improvement [58]. Furthermore, without satisfied and motivated employees, it is impossible to create satisfied and loyal customers [70].

The tool that resulted from this process provides a framework tailored to evaluating PA programmes for the elderly, applicable to a variety of settings, namely community-based programmes and/or those developed by the Public Local Administration. The information obtained through such evaluations would be useful for organizations seeking to improve their services. It would help them guide interventions toward excellence, in order to improve customer satisfaction and adherence to PA programmes targeting the ageing population.

## Strengths and Limitations

To the best of our knowledge, this is the first study to gather expert opinions with the aim of identifying practices that must be observed when assessing the quality of PA programmes for the elderly. Because of the heterogeneity of their interests, panel members were able to cover a broad range of topics. In addition, they were able to submit comments on each sub-criterion in every round, enabling us to use their expertise to develop or modify new statements. This also guaranteed that the process did not neglect to include any pertinent issues in subsequent rounds of rating.

However, this study has certain limitations. Our results should not be interpreted as representing the views of all experts in the field of quality management, physical activity for older adults or gerontology, due to the process used to collect the sample. It is also important to note that the tool suggested by our consensus process may not be applicable to certain PA programmes, including those for special population subgroups, such as: the most elderly, the frail, older adults with chronic illnesses or varying degrees of medical comorbidity. Likewise, our consensus-informed quality practices do not reflect possible differences in PA programmes that were developed in institutional elderly care settings. Additional research is necessary to provide the feasibility analysis of this assessment and to adapt and replicate our tool to other circumstances.

# Conclusion

Our Delphi process identified 165 quality practices that 43 experts consider essential to assessments of the quality of PA programmes for the elderly. The Q-STEPS (Ouality Self-assessment Tool for Exercise Programmes for Seniors) tool assesses nine areas involved in the development of PA programmes for the elderly: five criteria assess Enablers (Leadership, Policy & strategy, People, Partnership & resources, and Processes) and four criteria assess the Results (Customer results, People results, Society results, and Key performance results).

## **Ethics approval**

The study was approved by the Scientific Council and Ethics Committee of the Faculty of Sport - University of Porto.

## Endnotes

<sup>1</sup> It is an instrument for gathering, supplying and analyze the intellectual and scientific production of the Portuguese researchers.

# Additional material

Additional file 1: Q-STEPS (Quality Self-assessment Tool for Exercise Programmes for Seniors), the file presents the resulting tool - nan Q-STEPS - which consists of 165 statements that assess nine areas involved in the development of PA programmes for the elderly

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#### Authors' contributions

AIM, LS, PS, and JM conceptualized and contributed to the design of this study. AIM participated in the acquisition and analysis of data and articipated in drafting and editing the manuscript. AOT and RS managed the data collection and analysis. JC participated in the coordination of the

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study and supervised the drafting and editing of manuscript. All authors reviewed and revised drafts of the manuscript. All authors read and approved the final manuscript.

## Competing interests

The authors declare that they have no competing interests.

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# PAPER V

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# Study protocol: using the Q-STEPS to assess and improve the quality of physical activity programmes for the elderly

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## Abstract

## Background

Aging is one of the most important and obvious phenomenon observed in our society. In the past years, there has been a growing concern in designing physical activity (PA) programmes for elderly people, because evidence suggests that such health promotion interventions may reduce the deleterious effects of the ageing process. Accordingly, a growing body of literature points to the importance of a sound approach to planning and evaluation in order to improve the quality of PA programmes. However, while numerous PA programmes have been designed for the elderly in recent years, their evaluation has been scarce. Quality management processes and tools provide a practical way for organisations to assess, identify and shed light on the areas requiring improvement. The Quality Self-assessment Tool for Exercise Programmes for Seniors (Q-STEPS) seems to provide a framework tailored to evaluate PA programmes for the elderly. Within this context, the primary purpose of this study is 1) to determine feasibility, acceptability and usability of the Q-STEPS. Secondary purposes of the study are: 2) to examine the quality of the PA programmes for elderly. Deloicy and Strategy, People, Partnership and Resources, Processes); b) Result domains (Customer Results, Poople Results, Society Results and Key Performance Results); 3) to estimate the association between the use of Q-STEPS and some indicators relating to the elderly participants, during the three self-assessments, such as: attendance rates, physical fitness, health-related quality of life and the elderly is preceived quality of the programme.

The study will be conducted in PA programmes for elderly adults from mainland Portuguese municipalities over a three-year period. The project will adopt a participative quality improvement approach that features annual learning cycles of: 1) self-assessment with the Q-STEPS; 2) feedback to and interpretation of results involving programme's staff; 3) action planning to achieve system changes; 4) implementation of strategies for change; and 5) review process through further self-assessment. The study will collect a range of process and outcome data that will be used to achieve the research aims. **Conclusion** 

It is our understanding that the results of the Q-STEPS study will contribute directly to the evidence based on effectiveness of continuous quality improvement approaches, in order to improve customer satisfaction and adherence to PA programmes targeting the ageing population. This comprehensive evaluation will also add significant new knowledge regarding the characteristics associated with a sustainable public service.

Keywords: Q-STEPS, feasibility, physical activity programmes, elderly, evaluation, quality

## Background

According to the EUROSTAT, Portugal is one of the ten most aged countries of Europe [1]. The most important issue related to demographic ageing deals with its implications for the well-being of the elderly, such as access to appropriate health-care services. In developed countries, some degree of progress has been made to achieve this objective, all the more so as ageing is the most important contributor to the increase in health care costs [2]. In fact, biopsychosocial changes arising from the ageing process can negatively affect the quality of life of the elderly by limiting their ability to carry out everyday activities and exposing them to a greater vulnerability of health problems [3]. Evidence provided by several studies highlights that physical activity (PA) can play a major role in global health promotion [4, 5], in large part by epidemiological evidence of the positive effect of an active lifestyle and involvement of

individuals in PA programmes [6, 7]. Public health providers and policy makers can help their citizens achieve the recommended PA levels, promoting PA programmes among other actions [8, 9], while ensuring optimal utilization of community resources. It is widely accepted that the benefits of such programmes depend on adherence to exercise, which is influenced by degree of enjoyment and satisfaction [10-15]. Moreover, one of the most important factors in customer satisfaction is quality of service [16-18]. Therefore, continual improvements in PA programmes for the elderly may play a significant role in elderly satisfaction and adherence to PA.

In Portugal, there are several PA programmes for elderly people developed by the local government, but very few are committed to their own assessment [19], which is a desirable prerequisite to continuous quality improvements

[20, 21]. Indeed, the National Center for Chronic Disease Prevention's Division of Nutrition and Physical Activity described a set of recommendations and strategies to improve programmes, developing new approaches and highlighting the need for effective programme evaluation [22, 23]. Likewise, World Health Organization (WHO) guidelines for the evaluation of health promotion emphasize the need to evaluate and propose the allocation of adequate evaluative resources [24].

With the purpose of helping PA programmes for the elderly to improve their quality, a Delphi process based on the criteria and sub-criteria from the European Foundation for Quality Management Excellence Model (EFQM) [18] and PA guidelines for older adults [3, 25] was conducted, to identify practices that must be observed when assessing the quality of PA programmes for the elderly [26]. The study led to the creation of an instrument called Q-STEPS (Quality Self-assessment Tool for Exercise Programmes for Seniors).

Q-STEPS is a continuous improvement tool designed to be flexible and adaptable and consists of 165 statements that assess nine criteria involved in the implementation of PA programmes for the elderly: five criteria assess *Enablers* (Leadership, Policy & Strategy, People, Partnership & Resources, and Processes) and four criteria assess the *Results* (Customer results, People Results, Society Results, and Key Performance Results). The framework promotes and supports management teams to administer more efficiently and effectively, and get closer to meeting and exceeding customers' needs [27].

For some authors [28-30], quality management processes and tools provide a practical way for organisations to identify and overcome the barriers to the improvement. Therefore, since this tool offers a framework tailored to evaluate PA programmes for the elderly, the information obtained through such evaluations would be useful for organizations seeking to improve the quality of their services, which may increase participation in PA. As mentioned previously, the O-STEPS process consists of a selfassessment practice [27], which should encourage the development of an improvement action plan. Indeed, the international experience in different areas working within this type of frameworks, focused on a cycle of "plan-dostudy-act" [31], has contributed significantly to system improvements [32-35]. Moreover, the Q-STEPS is not a one-off activity: it can involve continual self-assessment and later, external assessment, if that is in the interest of the organization.

Like other processes of conducting selfassessment [27, 36], the Q-STEPS requires different *steps*, which will be explained ahead.

# **Q-STEPS** process steps

The starting point is to gain leadership commitment for using the Q-STEPS and then to plan the process. Subsequently, a team of staff representing different kinds of expertise within the programme's structure is selected and trained to be responsible for managing the selfassessment process, mastering the tool. For this stage, the Q-STEPS Brochure (also available online) provides the information to increase the team's awareness and understanding of the tool and the basic forms needed for the evaluation process: the Programme Characterization form (Q-SPC), the Checklist form (Q-SHK) and the Action Plan form (Q-SAP).

Briefly, 1) the Q-SPC is a general data collection sheet to be completed by the programmes wishing to enrol in a Q-STEPS process; 2) the Q-SHK is a list with the best practices (statements) included in the Q-STEPS instrument, which must be scored out of four, based upon the following:

l = Poor: there is little or no evidence of the specific practice, or no awareness or commitment to create or develop the practice.

2 = Fair: there is evidence that the processes of planning and developing the practice has commenced and is progressing.

3 = Good: there is evidence that demonstrates the practice is in place.

4=Excellent: the practice has been in place long enough to evidence the impact of what it has achieved in terms of real outcomes; and 3) the Q-SAP is a form that includes four major elements: the best practice statement that will be the target of an action; the specific tasks, including what will be done and by whom; the time horizon to achieve actions; and the resource allocation that are available for specific activities.

Each member of the self-assessment team completes the Q-SHK and the team collate performance information (e.g., customer survey results, employee surveys, programme budget, etc...). The filled checklist should be agreed on, and where possible, it would be relevant to discuss the issues with other employees and stakeholders, correctly identifying strengths and areas for improvement, showing priorities,

responsibilities and goals for all actions. The sum of the scores in each sub-criterion/criteria is converted into averages and the percentages of achievements are calculated for each subcriterion/criteria.

After recording the results and communicating them to stakeholders, the action plan is prepared and documented in the Q-SAP form previously mentioned. According to the action plan and the strategic directions, a responsible person should be pointed out and the appropriate resources to implement actions should be available. Finally, the whole self-assessment process should be subject to regular reviews, once per year.

When the self-assessment has been undertaken in accordance with these steps, the final goal should be the improvement, based on knowledge acquired from the self-assessment [36].

Q-STEPS process steps are illustrated in Figure 1.

Figure 1: Q-STEPS process steps

# Develop Commitment • Leadership commitment • Completion of the Q-SPC • Establish the schedule of self assessment • Completion of the Q-SPC • Establish the schedule of self assessment • Train Team • A team of staff representing different areas is selected • Access to the guidance material (Q-STEPS Brochure, Q-SPC, Q-SHK and Q-SAP) • The staff is trained to be responsible for managing the self-assessment process Conduct self assessment team complete the Q-SHK and the team collate performance information, discussing the process with their stakeholders • Sch member of the self-assessment team complete the Q-SHK and the team collate performance information, discussing the process port inprovement and scores for each best practice • The results are recorded on a final Q-SHK and validated • The results are communicated to stakeholders Prepare Action Plan • The Q-SAP is prepared and discussed with stakeholders • The Q-SAFK and the Q-SAP are used to implement inprovement actions • Aresponsible is appointed and appropriate resources are given to implement actions

# The Aim and objectives

Despite the numerous PA programmes for the elderly that have been developed in recent years - especially by the Public Local Administration - their evaluation is scarce [19]. Moreover, the Q-STEPS has been created with the aim of identifying practices that must be observed when assessing the quality of PA programmes for the elderly [26] and gathering information that would be useful for organizations seeking to improve their services. Since a feasibility study has never been conducted to assess whether the tool would work in a practice setting and considering it as a key-point for the judgement of the viability of this tool, it seems of importance to accomplish it. In this context, the primary purpose of this study is 1) to determine feasibility, acceptability and usability of the Q-STEPS. Secondary purposes of the study are: 2) to examine the quality of the PA programmes for elderly people developed by the Portuguese Local Administration over a threeyear period of self-assessments in terms of:

> a) Enabler domains (Leadership, Policy and Strategy, People, Resources, Partnership and Processes); b) Result domains People (Customer Results, Results, Society Results and Key Performance Results); and 3) to estimate the association between the use of Q-STEPS and some indicators relating to the elderly participants, during the three selfassessments, such as: attendance rates, physical fitness, health-related quality of life and the elderly's perceived quality of the programme.

## Methods/design

The study will adopt the following methodology, as defined below on the viewable schedule (Figure 2).

Figure 2: Q-STEPS study schedule



# Recruitment of participating PA programmes

The study will be conducted in PA programmes for elderly adults from mainland Portuguese municipalities. According to the results of a previous study [37], the sample size is estimated to be between 20 and 30 PA programmes which represents a considerable portion (between 16% and 24%) of the population size. In order to combine differences found in several existing programmes [37], inclusion criteria for the sample implied that at least one of the following conditions should be verified: i) programmes should belong to a District Capital in order to apply a geographic criterion; ii) programmes should include the following cumulative criteria: a) must have been in practice for 10 years or more [38], b) must have had two or more different types of activities [39, 40], and c) must have had a frequency of two or more times a week [3].

The invitation for participation will be sent electronically to the mainland Portuguese municipalities, and a comprehensive explanation of the purpose and study design will be completed. Two reminders will be sent to

those who have not responded within two weeks. An investigator's contact details will be provided for participants to raise questions or doubts about the study. After expressing interest in participating, a formal agreement will be negotiated with each PA programme, which should be aware of their engagement during three annual cycles of self-assessment, feedback, planning and implementation. The expectations and the counterparts of both parties will be explicit in this document. Among other requirements, it will always be a part of the commitment to providing the data of elderly's attendance rates. Moreover, all elderly participants from this PA programmes will be asked to volunteer for this study, completing physical and psychological assessments, which will be described further on in this paper. After the recruitment period, volunteers will be invited to a preliminary meeting in which they will be informed about the nature, risks and procedures of the study. A written informed consent will be request from those who agree to participate, consistent with the principles of the Helsinki Declaration. The Q-SPC will be filled.

## Self-assessment team selection and training

A staff member from each participating PA programme will be designated as responsible for running the Q-STEPS process, ensuring that all necessary information and documentation is provided to the self-assessment team supporting contacts and information distribution within the remaining members. The designated member (hereinafter referred to as the "facilitator") will have training and support provided by research project staff. Training for facilitators consisted of a detailed manual and a 2-day course where the O-STEPS should be introduced and the purposes and nature of the self-assessment procedure explained. During this process, facilitators will also be accomplished for the remaining assessments, as is the case of the physical and psychological assessments of elderly participants.

The self-assessment team should include members from different sectors/functions.

An online platform will fully support the training of the self-assessment team, providing consistent guidance for assessing.

## The annual learning cycle

The process will adopt a participative quality improvement approach that features annual learning cycles of:

1) self-assessment with the Q-STEPS;

2) feedback to and interpretation of results involving programme's staff;

action planning to achieve changes in PA programmes;

4) implementation of strategies/actions for change; and

5) review process through further selfassessment.

In each of these steps, which have been previously described (please see: Q-STEPS exercise section), members of the research team will make periodic visits to every programmme in order to become aware of the process and clarify any doubts that may exist.

## The workshop

Data from the self-assessments will be analysed by the research team. Feedback of results to the PA programme self-assessment teams will be conducted in a workshop, held annually. During each workshop, each member of the selfassessment team will be given a questionnaire in order to explore barriers/enhancers to full participation in the Q-STEPS process. The questionnaire is based on the key process assessment criteria proposed by Platts [41, 42]: a) feasibility – can the process be followed?; b) usability – is the tool easy to use?: and c) utility - is the process worth following? Each criterion will be divided into several sub-criteria: feasibility - availability of information, timing and participants; usability - clarity, ease of use and appropriateness; and utility - relevance, usefulness, facilitation and confidence. The questionnaire design will use a four point Likert scale (1 = strongly agree; 2 = agree; 3 =disagree; 4 = strongly disagree). In addition to the rating criteria, a graphic rating scale will be used to measure the degree of confidence on the process (0%-100%). Open-ended questions to capture relevant issues about the Q-STEPS process and suggestions for improvement will also be part of the questionnaire.

The intention of the workshop is to monitor the process of self-assessment and disseminate the results by all stakeholders [43]. Programme staff will be encouraged to play an active role in the workshop, exploring and sharing lessons and best practices between participating programmes.

## Data analysis

The study will collect a range of process and outcome data [23] that will be used to examine the research aims. These include:

1) The determination of feasibility, acceptability and usability of the Q-STEPS through analysis of data from the questionnaire to members of the self-assessment teams, carried out during the workshops.

2) The examination of the quality of the PA programmes for elderly people developed by the Portuguese Local Administration over a three-year period, through the results of self-assessments scores.

3) The examination of associations between the use of the Q-STEPS and some indicators relating to the elderly participants, using outcomes from different assessments. Data will be collected at three points in time, coinciding with the self-assessment with the Q-STEPS.

3.1) The Senior Fitness Test (SFT) will be used to assess physical fitness [44]. This battery consists of six assessment items, designed and validated to assess the physiological parameters that support physical functionality and mobility in older adults. The test items include lower body strength (30-s chair stand), upper body strength (30-s arm curl), aerobic endurance (6min walk test), lower body flexibility (chair sitand-reach), and dynamic balance and agility (the 8-ft up-and-go). During assessments, the test administrator and the time of day used for collection will remain constant.

3.2) The health-related quality of life will be assessed by the Portuguese version of the

Medical Outcomes Study Short-Form Health Survey (MOS SF-36), a standard generic international instrument to assess functional health and well-being from the participant's point of view, including 36 items and covering eight dimensions: physical functioning (PF; ten items), role limitations due to physical problems (RP; four items), bodily pain (BP; two items), general health (GH; five items), vitality (VT; four items), social functioning (SF; two items), role limitations due to emotional problems (RE; three items), and mental health (MH; five items) [45-47]. There is also a single separate item that is used to assess any change in health from the previous year. The SF-36 will be administered by interview, and scores will be calculated using the methods set out by Ware and collaborators [47]. The scores range from 0 to 100, with higher scores indicating better functional health and well-being.

3.3) The elderly's perceived quality of programmes will be measured using the QUESPMAFI, an instrument adapted and validated for the Portuguese population [48].

3.4) Administrative data relating to attendance of the elderly will be reported by each programme. Attendance at programmes will be accounted as the means  $\pm$  standard deviations of attended sessions relative to the total number of possible sessions [49].

The Programme Characterization form (Q-SPC) will provide the following information that will be analysed and compared with the other variables described above: geographic localization, name and objectives of PA programmes, age of the PA programme, number of participants, characteristics of age groups and participants' average age, number of employees, number of activities offered in the PA programme, frequency of the programme (days/week), number of sports facilities, programme fees, quality initiatives previously developed by the programme, name of the organization that delivers the programme, and identification details of the PA programme's coordinator (name, gender, age, qualification and contact).

# Statistics

Descriptive statistics will be used to characterize all the sample variables. Data will be tested for normality, homogeneity of variance and independence. Contingency tables will test possible associations between variables with  $\chi^2$  test or, in the case of small-expected frequencies, Fisher's exact test. Measures of self-assessment results and outcomes will be compared using t-test or  $\chi^2$  test, for continuous

variables or for nominal variables respectively (or the non-parametric analogue, the Mann-Whitney test, if data does not meet the assumptions of parametricity). The Pearson's Correlation coefficient will be used to test the hypothesis of independence of variables (or the non-parametric analogue, the Spearman rank order correlation coefficient). Repeated measures will be examined using repeated measures ANOVA (or the non-parametric analogue, the Friedman's test).

All analysis will be performed with the Statistical Package IBM-SPSS Statistics, version 19.0 or superior. The level of significance will be set at p<0.05.

Reports will contain results from statistical analyses.

## Ethics

The study was approved by the Institutional Review Board of the Faculty of Sport - University of Porto and the Portuguese Foundation for Science and Technology (reference: SFRH/BD/36796/2007).

# Conclusion

Ongoing monitoring and evaluation of PA programmes for the elderly is needed to provide sound empirical evidence of what makes a programme sustainable and effective. The information obtained through such evaluations would be useful for organizations seeking to improve their services and would help them guide interventions toward excellence. This may also help to inform policy makers and other community services, in order to adopt quality criteria in their actions.

This study will help us to understand if the Q-STEPS can be used in programme evaluation, with viability. This study will also provide an opportunity to assess, over time, the quality of PA programmes for elderly people developed by the Portuguese Local Administration, using a new tool created for this purpose, as well as comparing the results of this assessment with other data/outcomes related to programmes.

The Q-STEPS study will contribute directly to the evidence based on effectiveness of continuous quality improvement approaches, in order to improve customer satisfaction and adherence to PA programmes targeting the ageing population. This comprehensive evaluation will also add significant new knowledge regarding the characteristics associated with a sustainable public service.

## **Competing interests**

The authors declare that they have no competing interests.

## Authors' contributions

AIM conceived the project and its design and participated in drafting and editing the manuscript. MJR and MA contributed to the development of the study, participated in its design and coordination. PS, AOT and RS assisted in the development of the study and revision of the manuscript. JM and JC participated in the coordination of the study, contributed to the procurement of the funding and were involved in revising the manuscript .tll authors read and approved the final manuscript.

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# **Chapter 3. Overall Discussion and Conclusions**

A dificuldade

Isto é: quando exclamas num ponto da tua investigação: cheguei ao fim!, deverias exclamar: cheguei ao início! (e não é por humildade ostensiva que o deves dizer, pelo contrário: é por um ego ostensivo. Cheguei a mim – é o que deverias exclamar – e como é difícil chegar a mim!)

Gonçalo M. Tavares, in BREVES NOTAS sobre ciência

# 5. Overall Discussion

A distressing number of elderly Portuguese adults are insufficiently active, engaging in less PA than is required for health-related gains (Baptista et al., 2012). Therefore, increasing adherence to PA among the elderly is an important public health challenge. The role of community-based interventions in promoting PA and the positive effects of participation in PA programmes have been closely studied and publicized (CDC, 2002a, 2010; Fisher & Li, 2004; Hughes et al., 2009; Stewart et al., 1997; Task Force on Community Preventive Services, 2005; Wilcox et al., 2006). Several authors have suggested that higher rates of attendance of PA programmes are contingent on degree of enjoyment and satisfaction (Finch, 1997; Henderson & Ainsworth, 2002; Schutzer & Graves, 2004; Wankel, 1993; Williams et al., 2007; Wininger & Pargman, 2003). Thus, continuous improvement in the quality of PA programmes for the elderly can be viewed as crucial to the elderly's satisfaction with and adherence to such programmes, since one of the most important factors in customer satisfaction is the provision of quality services (EFQM, 2003a; Parasuraman et al., 1994; Taylor & Baker, 1994).

The overall aim of this thesis is to provide a holistic view of the QMPs that have been implemented in Portuguese PA programmes, as well as to create a tool suited to the realities and contexts of PA programmes for the elderly, so that the information obtained through such evaluations will be useful to organizations seeking to improve their services.

Study 1 was an exploratory study that examined the general characteristics of PA programmes for older adults that were developed by local governments in Portugal. Study 1 also verified the extent to which programmes assessed their own quality. Of the 278 municipalities, 125 PA programmes were identified, mostly distributed along the littoral, where there were the greatest numbers of residents and of individuals ages 65 and older (INE, 2009). The major objective of these programmes was "to promote health", which was in line with scientific evidence, showing that regular PA has beneficial physical, psychological and social effects on a variety of health outcomes (ACSM, 2004; Aranceta, Perez-Rodrigo, Gondra, & Orduna, 2001; Chodzko-Zajko et

al., 2009; Garber et al., 2011; E. McAuley & Katula, 1998; Nelson et al., 2004; Nelson et al., 2007; Pahor et al., 2006). Most of the programmes in question had been implemented for at least one year and less than five years, suggesting that local governments in Portugal have recently made an effort to enact initiatives aimed at increasing PA amongst the elderly and integrating issues related to ageing into social and local health policies. Programmes with durations of 10 or more years were located mainly in the Lisbon region and on the coasts, possibly due to the fact that there is a greater concentration of people ages 65 or older in these areas (INE, 2009). Also, the programmes that were more established were those that offered more activities, in keeping with recommendations that the elderly should be provided with a wide range of activities (ACSM, 2004; BHF, 2007), while allowing individuals to focus gradually on activities that they identified as those they were more likely to engage in regularly (Roberts & Brodie, 1992). The usual frequency with which individuals participated in the programmes studied was two times per week. However, programmes 6 to 10 years old could be attended greater numbers of days per week. Consequently, in such programs, international recommendations that the PA levels of older people be increased were more easily achieved (Nelson et al., 2007). Just one PA programme for the elderly had quality initiatives aimed at increasing the quality and efficiency of the programme (Ioncica, Negoita, Petrescu, & Ioncica, 2009; Minkman, Ahaus, & Huijsman, 2007; Robinson, 2003; Saizarbitoria, 2006). This was a somewhat distressing finding, since recommendations made to the PA programmes sector also advocate assessment, in order to improve programmes (Ågren & Berensson, 2006; Levin Martin & Vehige, 2006). To our knowledge, this was the first study to explore the general characteristics of Portuguese PA programmes for the elderly, as well as to identify which organizations were developing quality initiatives. In this way, we can considered that our study was relevant because it identified directions for further research on QM in an area that has not previously been extensively examined and also helped us select the sample for the following study. However, a major limitation is worthy of comment: since invitations to participate in Study 1 were sent online, our sample was probably not representative of all the PA programmes developed in Portugal.

Studies 2 and 3 used methodological triangulation to characterize the QM models of PA programmes. The findings of these studies suggested that although the

PA programmes under analysis had some good practices – specifically, in the areas of *Processes, Leadership, Customer results* and *People* – they still required improvement in other relevant areas, namely those related to Partnerships and resources, People results, Policy and strategy, Key performance results and Society results. In our study, the quality practices associated with Processes fared better. This may have been due to the fact that coordinators were more geared toward dealing with the practical aspects of their programmes, including design and method of delivery. Some studies have analyzed the internal structure of the EFQM Excellence Model and the associations between criteria and concluded that there is an indirect link between *Leadership* and Processes (mediated by People, Policy and strategy and Partnerships and resources) (Calvo-Mora, Leal, & Roldan, 2005; Eskildsen, Kristensen, & Juhl, 2000; Martínez-Lorente, Gómez-Gómez, & Martínez-Costa, 2009) and a direct link between Processes and Customer results (Eskildsen et al., 2000; Martínez-Lorente et al., 2009). Perhaps, for this reason, the most favourable criteria-related results of our study match almost exactly the associations that have been observed in the aforementioned studies. Regarding Leadership, which involves the exertion of social influence on groups of people, it is recognized as the key driver of quality improvement activities (AACVPR, 2004; Anyamele, 2005; Taffinder, 1995). Our results also showed that it is one of the main determinants of the calibre of quality practices. However, this is possibly due to the fact that Study 2 was based on the perceptions of PA programme coordinators, who may have overestimated outcomes concerning their own actions (Marques et al., 2011; Rosa, 2003). The EFQM also argues that excellent organisations achieve the best results possible for their customers and high levels of customer satisfaction (EFQM, 2003a). Many studies have addressed the question of how to measure PA in ways that identify current levels of activity and assess the effectiveness of intervention programmes. However, few PA intervention studies have specifically targeted customer retention or customer satisfaction (Marques et al., 2011). One point that should never be forgotten is that customers not only provide input (suggestions or complaints), but also take part in services, influencing both the performance of processes and perceptions of the quality of services produced (Grönroos & Ojasalo, 2004). Regarding People, our study demonstrates that most of the PA programmes studied involved and empowered their collaborators in various ways (e.g. soliciting opinions and suggestions, fostering

teamwork). Nonetheless, the results are less favourable with regard to autonomy and decision-making. These findings are not totally in line with the opinions of Wilkinson and collaborators (1998), who have emphasized employee involvement as a key theme in QM and have noted, namely, that employees should be given opportunities for autonomy, creativity, active cooperation and self-control (Wilkinson, Redman, Snape, & Marchington, 1998). On the opposite side, our results related to the criterion Partnerships and resources were not satisfactory, although different studies have reported that opportunities in this area should be maximized (EFQM, 2006; Osseo-Asare, Longbottom, & Murphy, 2005; Rosa, 2003; Soares, 2006). However, regarding the management of partnerships, our study found that most of the PA programmes analysed have established partnerships, which validates the emphasis that some authors have put on the importance of forging effective partnerships, creating value and promoting cooperative agreements based on mutually beneficial synergies (Martin et al., 2006; Matsudo & Matsudo, 2006; Ruiz-Carrillo & Fernandez-Ortiz, 2005). To achieve excellence, organisations must also focus on People results (EFQM, 2003a), since people involvement is one of the most important drivers of continuous improvement (EFQM, 2003b). Nevertheless, our study revealed that programmes do not have information on employee motivation and commitment. Some meta-analyses (Bowling, 2007; Iaffaldano & Muchinsky, 1985) have concluded that employees' being satisfied is not enough to improve their performance; employees must also be highly motivated (Ehrlich, 2006) to create satisfied and loyal customers (Oakland & Beardmore, 1995). Along the same lines, *Policy and strategy* and *Key performance results* had quality practice values below 50%, which denotes a lack of management of factors that contribute to the achievement of organizational success (Grant, 2010). Indeed, the criterion Key performance results represents global organizational performance and the fulfilment of expectations and is closely related to the optimal and sustainable management of elements that should be aligned with mission, vision, values and strategic objectives (Martin-Castilla & Rodriguez-Ruiz, 2008) - that is, with Policy and strategy. As regards this latter criterion, our results identified modest concern about the opinions of different stakeholders in the target settings for PA programmes. Such concern has been described as crucial to the planning and evaluation of PA programmes and as a good practice (BHF, 2007; CDC, 2002b). In addition, contrary to what is assumed by published guidelines (ACSM, 2004; BHF, 2007), our study showed that a minority of programmes established objectives that reflected participants' stated aims. This lack of correspondence could compromise the adherence of older adults to programmes, since tailoring exercise programmes to the needs and interests of participants has been associated with higher rates of programme attendance (Stewart et al., 2001; Thurston & Green, 2004). Overlooking Key Performance results, which had the worst results on QMPs, it seems that PA programmes are simultaneously undermining the financial and non-financial results as well as process efficiency. It should also not be forgotten that the mission of PA programmes is to significantly impact on the promotion of PA of the elderly population, improving their PA levels (ACSM, 2004). However, few coordinators have publicly declared their use of indicators of process efficiency, i.e. their means of obtaining the best outcomes of sets of actions, which is disquieting. Finally, Society results obtained the same results on QMPs as Key performance results. This suggests that most of the PA programmes studied have not placed great importance on impacting society and being involved in their communities, which goes against CDC guidelines that highlight the importance of assessing programmes' effects on organizations and communities (CDC, 2002b). We believe that there are important advantages to identifying both programme impact, from the standpoint of public health (which has been the focus of most programmes and studies), and also societal perceptions of such programmes (Marques et al., 2011). To our knowledge, ours was the first study to apply the EFQM Excellence Model's criteria to PA programmes for elderly people. However, Study 2 was not without limitations. First, as we have already referred, it was based on the perceptions of PA programme coordinators, who may not have provided complete and accurate pictures of reality. The results were mainly based on self-reports, which may have biased the results by generating more favourable outcomes. Second, the research design employed was crosssectional, rather than longitudinal. In this regard, the evaluation of quality practices is a process that should be developed over time and whose effects are only really appreciated in the long term. Finally, the external validity of the findings presented is somewhat low, taking into account the methods used to collect the sample.

Despite employing the same methodology followed in the second study, the third study also carried out cluster analysis to identify groups of programmes based on their implementation of QMPs. Further, it provided exploratory characterizations of the groups identified, including descriptions of programme coordinators' profiles and programme features, and thus gave another view on the same topic. Clustering identified four subgroups of PA programmes: "Beginners - results neglected", "Committed - process focus", "Committed - society focus", and "Beginners - customer oriented". These subgroups differed essentially in their degree of implementation of each EFQM criterion (intensity) and on the number of criteria addressed (variety). Except for the number of facilities managed by each programme, there were no significant differences among the clusters considered, though "Committed - process focus" dealt with the greatest number of facilities. Actually, facilities seem to play an important role in the development of programmes. Hughes at al. (2005) have found that commercial gyms, senior centres, parks and recreation centres and senior-housing facilities offer 90% of the PA programmes available to seniors. Additionally, several studies have demonstrated that exercise facilities with greater availability and accessibility are associated with more frequently involvement in PA (Huston, Evenson, Bors, & Gizlice, 2003; Rahl, 2010; Riva, Gauvin, & Richard, 2007; Ruetten, Abu-Omar, Frahsa, & Hartwig, 2011; Sallis et al., 1990). Although only one significant difference was found among the four clusters for the background variables analysed, some important dissimilarities were evident. On the positive side, the cluster with the best results on quality practices - "Committed - process focus" - was the one whose programme coordinators had bachelors degrees in physical education, whose programmes had run for longer periods of time, who had the largest numbers of customers and facilities and who were mostly free of charge and led by women. Indeed, professionals who deal with this type of programme must have specific and complementary knowledge and skills and should regularly update their knowledge (Dallman et al., 2009; NHS, 2001). With regard to programme age, no evidence relating to how long PA programmes should run was found in evidence-based, best-practice guidelines. However, Scott et al. (2008) have alleged that PA programmes that run for more than ten years are well established, because they provide services that are needed, are of good quality and have regular, ongoing attendance. Additionally, the programmes that comprised this cluster were mostly free of cost to users. No- or low-cost PA programmes provide incentives to the elderly to enrol (Belza et al., 2004; CohenMansfield et al., 2004). Regarding coordinators' gender, some authors have stated that female managers show greater concern for others, consider how others feel about their use of persuasion tactics, are more likely than men to act with organizations' broad interests in mind (Hughes, Ginnett, & Curphy, 2006) and are more democratic or participatory than men (Eagly & Johnson, 2003). On the flip side, the cluster with the worst outcomes on QMPs was "Beginners - results neglected". This group had the largest number of coordinators without physical education degrees and none had postgraduate training; moreover, this cluster had the smallest number of employees. Some authors have stated that people management systems in small organizations are less formal than in larger organizations (Gray, Densten, & Sarros, 2003; Longenecker, Moore, Palich, & Petty, 2006). Thus, any one of the programmes in the "Beginners results neglected" cluster could have lost the inherent advantages (Hill & Wright, 2001; Kuratko, Goodale, & Hornsby, 2001) of being a small organization (European Commission, 2005). To the best of our knowledge, this was the first study to identify and characterize groups of PA programmes based on their degrees of implementation of the QMPs mentioned by the EFQM Excellence Model and to provide exploratory characterizations of the identified groups, including profiles of programme coordinators and of programme features. Furthermore, as already shown, the results of Study 3 raised some interesting research questions that deserve future investigation - namely, the question of how best to understand how PA programme leaders implement QMPs and what, if any, priorities they establish at the beginning of this process. However, the findings and implications of this study should be interpreted with caution, due to some limitations. First, as mentioned in the previous study, the present study was based on PA programme coordinators' perceptions, which may have distorted reality and overestimated the results. Second, the absence of a rating scale for coding data on QMPs that are associated with the EFQM Excellence Model's criteria limited, at least in part, the collection and processing of information. Finally, our sample had constraints with regard to size, and as is true of Study 2, was probably not representative of all Portuguese PA programmes.

The results of previous studies have led us to become aware of the existence of a variety of PA programmes for older adults that were developed by local governments and that still had flaws affecting their quality; hence, considering the need to establish an appropriate management framework for promoting such programmes' quality, a Delphi process was employed in Study 4, to identify the propositions that experts in different areas of PA programmes for the elderly considered relevant for inclusion in a self-assessment tool. This study led us to the creation of Q-STEPS (Quality Selfassessment Tool for Exercise Programmes for Seniors), which consists of 165 statements that assess nine areas important to the development of PA programmes for the elderly. Five criteria assess Enablers (Leadership, Policy & strategy, People, Partnership & resources, and Processes), and four criteria assess Results (Customer results, People results, Society results, and Key performance results). Although there are recommendations and guidelines for promoting the PA of older people (BHF, 2007; Chodzko-Zajko et al., 2009) and recommendations regarding the need to evaluate these interventions (Kelly, Hoehner, Baker, Ramirez, & Brownson, 2006; Levin Martin & Vehige, 2006), the literature is scarce, if not non-existent, on how to integrate these recommendations into PA programmes. No framework or tool has, thus far, been developed to identify or influence the enablers and outcomes of PA programmes for the elderly. Through this study, which involved 43 experts in PA for the elderly, PA programmes for elderly management and delivery, sports management, QM and gerontology, it was possible to fill the existing gap by providing a framework tailored to the evaluation of PA programmes for the elderly and applicable to a variety of settings namely, community-based programmes and/or programmes developed by the Public Local Administration. The national experts who participated in the Delphi process were quite engaged throughout, as evidenced by the number of their suggestions and by their response rates to all three rounds of ratings. Most of their suggestions pertained to Leadership, leading us to presume that these results were related to the fact that many experts were programme leaders and thus, were more aware of practices that pertained to Leadership. Also, experts may have been aware of the fact that Leadership is understood by some authors (AACVPR, 2004; Anyamele, 2005; Taffinder, 1995) as the key to driving quality improvement. In all three rounds, there was a consensus of more than 83%. There was more consensus on the criterion Customer results and less agreement on the criterion People results. However, one should not forget that organisations must also focus on People results (EFQM, 2003a), since employee involvement is one of the most important drivers of continuous improvement (EFQM,
2003b). Furthermore, it is impossible to create satisfied and loyal customers without satisfied and motivated employees (Oakland & Beardmore, 1995). The information obtained through the evaluations with Q-STEPS will be useful to organizations seeking to improve their services. It will help them guide interventions toward excellence by improving customer satisfaction and adherence to PA programmes that target the ageing population. To the best of our knowledge, ours was the first study to gather expert opinions, with the aim of identifying practices that must be observed when assessing the quality of PA programmes for the elderly. However, Study 4 had certain limitations. Our results should not be interpreted as representing the views of all experts in the fields of QM, sport management, PA for older adults or gerontology, due to the process used to collect the sample. It is also important to note that the tool suggested by our consensus process may not be applicable to particular PA programmes, including those for special population subgroups. Likewise, our consensus-informed quality practices do not reflect possible differences in PA programmes that were developed in institutional elderly care settings or offered in the private sector.

Taking into account the methods and findings of our previous four studies and our analysis of their strengths, limitations and recommendations, a new study was designed and was included in this thesis – Study protocol: using the Q-STEPS to assess and improve the quality of physical activity programmes for the elderly. As noted above, there is need for further research on the evaluation of PA programmes for older adults. Thus, Study 5 will seek to record and disseminate designs for future research, encompassing proposals made in previous studies, as well as trying to compensate for their limitations. In addition, this study will address other programme features that may contribute to understanding of programme quality, from the perspective of costumers. The protocol for Study 5 seeks to determine the feasibility, acceptability and usability of the Q-STEPS. Secondarily, this study will examine the quality of the PA programmes for elderly people developed by the Portuguese Local Administration over a three-year period of self-assessment and will estimate the association between the use of Q-STEPS and some indicators related to elderly participants, such as: attendance rates, physical fitness, health-related quality of life and the elderly's perceived quality of the programme.

### 6. Conclusions

Considering our purpose and our findings, it seems reasonable to emphasize the following conclusions:

Study 1 showed that the majority of the 125 PA programmes identified and analysed set the goal of promoting the health of participants and were implemented for between one year and less than five years. Furthermore, the majority of programmes required that participants be at least 55 years old. It was also observed that the greater the number of activities, the greater the number of days per week individuals could participate in programmes, with most programmes offering two activities, at a frequency of two times per week. "Municipal governments" were the main organizations responsible for developing PA programmes. Moreover, in spite of an eminent preoccupation with the health, quality of life and autonomy of older subjects inherent to the PA programmes studied, there was no effective use of quality initiatives, which are seen as important to programme improvement. Indeed, our results showed that only one PA programme had developed quality initiatives.

The findings of Study 2 suggested that although the PA programmes under analysis had some good practices – related, specifically, to the criteria *Processes*, *Leadership*, *Customer results* and *People* – they still required improvement in other, relevant areas, namely those related to *Partnerships and resources*, *People results*, *Policy and strategy*, *Key performance results* and *Society results*.

The third study identified four groups of PA programmes for older persons, based on degree of implementation of QMPs: "Beginners - results neglected", the "Committed - process focus", the "Committed - society focus", and the "Beginners customer oriented". However, except for the number of facilities managed by programmes, no significant differences among these clusters were found, taking into account the general characteristics of the programmes. Nevertheless, although the differences were not significant, and considering our sample size, it seemed important to illustrate that the cluster with the best results in QMPs was the one whose programme coordinators had degrees in physical education, whose programmes had run for longer periods of time, who had the largest numbers of customers and facilities and who were mostly free of charge and led by women.

Concerning the fourth study, the Delphi process identified 165 quality practices that 43 experts considered essential to assessments of the quality of PA programmes for the elderly. The Q-STEPS (Quality Self-assessment Tool for Exercise Programmes for Seniors) tool assesses nine areas important to the development of PA programmes for the elderly: five criteria assess Enablers (Leadership, Policy & strategy, People, Partnership & resources, and Processes), and four criteria assess Results (Customer results, People results, Society results, and Key performance results).

This thesis presented a logical sequence, starting with a study that explored what the Portuguese local administration offers in terms of PA programmes for older adults. In drawing this preliminary, general picture, we showed how narrow quality evaluations of these programmes were. Accordingly, we conducted two subsequent studies that were designed to evaluate, in more detail and focused ways, the management of quality practices. To this end, we used the criteria presented in the EFQM Excellence Model. Since we felt that there was a need to refine and adapt the quality practices advocated by this model to the specific reality of PA programmes for seniors, we devised a tool that would be an asset in the self-assessment of programmes. As no investigation should be closed, we would like to further this research, as explained in the study protocol (Study 5).

# 7. Perspectives for Future Research

In addition to what has been formulated in Study 5, future studies should explore how PA programme leaders implement QMPs and their priorities; future research should also consider adapting and replicating the Q-STEPS for use in different settings.

Ongoing monitoring and evaluation of PA programmes for the elderly is needed to provide sound empirical evidence of what makes a programme sustainable and effective. The information obtained through such evaluations would be useful to organizations seeking to improve their services and would help them guide interventions toward excellence. It might also encourage policymakers and other community service providers to adopt quality criteria for their actions. This could improve customer satisfaction and adherence to PA programmes that target the ageing population.

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Appendixes

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# CXXXVIII

Appendix 1 (Papers 1 and 2): Online questionnaire 1

WARNING: Please do not reply on this page. Access http://www.ensaios.org/inquerito1/ and enter the code of your municipality (you can copy and paste). Thank you!

1 - Geographic location (automatic)

2 -Is there any programme aiming to enhance quality of life for elderly people in your municipality?

°<sub>NO</sub>, °<sub>YES</sub>

3 – Please, indicate the number of existing programmes:

(Tables with questions 3.1 and 3.2 will be generated according to the number given)

3.1 - Programme 1

Title:

Main Purpose:

3.2 - Is the programme related to physical activity / exercise?

(Based on the response to this question, the questionnaire continued to question 4 or skipped to the final online page -- using conditional branching)

4 – How long has the programme existed?

Less than 1 year,
1 year - less than 5 years,
5 years - less than 10 years,
10 years or more

5 - For what age group is this programme intended? (Tick the boxes that most closely represent the intended lower and upper age limits)

Minimum: <sup>O</sup> 55 years, <sup>O</sup> 60 years, <sup>O</sup> 65 years, <sup>O</sup> 70 years, <sup>O</sup> 75 years, <sup>O</sup> 80 years, <sup>O</sup> 90 years

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Maximum: <sup>°</sup> 70 years, <sup>°</sup> 75 years <sup>°</sup> 80 years, <sup>°</sup> 85 years, <sup>°</sup> 90 years, <sup>°</sup> 95 years, <sup>°</sup> no limit

6 – What is the average age of participants attending the programme (approximately)?

7 - How many activities are included in the programme?

 $\circ_{1, \circ_{2, \circ_{3, \circ_{4+}}}$ 

8 - How many times per week is it possible for an individual to participate in the programme?

° 1, ° 2, ° 3, ° 4 +

9 - Is the programme involved (or was) in quality initiatives (ex.: programme certification)?

°<sub>NO,</sub> °<sub>YES</sub>

10 - Which organization delivers the programme?

<sup>O</sup> Municipal Government, <sup>O</sup> Municipal enterprises of sport, <sup>O</sup> Other

11 – Please, specify the name of the organization which delivers the programme and indicate the name, role, and contact information of the director/coordinator of the programme for possible future contacts.

# Appendix 2 (Paper 4): Q-STEPS

### LEADERSHIP

# 1a. The programme coordinator develops the mission, vision, values and ethics and are role models for a culture of Excellence

1. The coordinator identifies the programme's mission

- 2. The coordinator identifies the programme's vision
- 3. The coordinator identifies a set of values for programme operationalization
- 4. The coordinator acts as model in developing a culture of Excellence
- 5. The coordinator encourages empowerment
- 6. The Coordinator promotes and encourages innovation and creativity in the team
- 7. The coordinator encourages collaboration between team members
- 8. The coordinator participates and gives support to improvement processes
- 9. The coordinator collaborates in the training of team members

10. The coordinator is involved in creating an identity for the programme, ensuring that all team members have a sense of belonging to it

# **1b.** The programme coordinator is personally involved in ensuring the organization's management system is developed, implemented and continuously improved

1. The coordinator ensures the implementation of a process to measure, review and improve programme results

2. The coordinator ensures the implementation of best practices in programme management

3. The coordinator is committed and involved in continuous improvement of the programme, supporting the necessary mechanisms

# 1c. The programme coordinator interacts with the politicians, customers, partners and representatives of society

1. The coordinator understands and responds appropriately to the needs and expectations of stakeholders

2. The coordinator ensures that the programme's strategy is aligned with public policy

3. The coordinator is committed to the satisfaction of both current and future customers

4. The coordinator establishes partnerships and participates in networks related to the programme

5. The coordinator acknowledges the contribution of stakeholders

6.The coordinator participates in conferences and other events, looking for public disclosure, reputation and recognition of the programme and its services

#### 1d. The programme coordinator reinforces a culture of excellence with the organization's people

1. The coordinator communicates personally to team members the mission, vision, values, policy and strategy, plans, objectives and targets to achieve

2. The coordinator encourages a culture of communication among all team members

3. The coordinator acts to enable the integration and mobilization of team members

4. The coordinator encourages and facilitates the participation of team members in improvement activities (e.g. suggestion schemes)

5. The coordinator recognizes and values both the individual and team work

#### 1e. The programme coordinator identifies and sponsors the change

1. The coordinator acquires and continually updates the knowledge, identifying the internal and external factors of change

2. The coordinator identifies and sets priorities for the necessary changes

3. The coordinator involves team members in the definition of plans for change

4. The coordinator communicates the plans for change to all stakeholders

5. The coordinator ensures the necessary resources to developing and implementing plans for change

#### POLICY AND STRATEGY

#### 2a. Policy and strategy are based on the present needs and future expectations of stakeholders

1. The coordinator identifies all relevant stakeholders

2. The strategy, plans and objectives of the programme are developed in accordance with international, national, regional and local physical activity and health policies

3. The strategy, plans and objectives of the programme are developed through consultation with relevant external partners

4. The needs and customer expectations are taken into account when setting programme objectives

# 2b. Policy and strategy are based on information from performance measurement, research, learning and external related activities

1. Procedures are in place to capture external information (about customers, partners, society, etc.)

2. The results of the programme's performance indicators are analyzed

3. The strategic objectives and plans take into account national, regional and local policies and strategies

4. The strategic objectives and plans take into account the past performance of the programme

5. Procedures are implemented to allow comparison with other programmes (Benchmarking)

6. Data about organizational learning activities are analyzed

#### 2c. Policy and strategy are planned, reviewed and updated

1. Systematic procedures are in place to plan, evaluate and monitor the effectiveness of the programme

2. The stakeholders are involved in the planning and programme evaluation

3. The qualitative and quantitative methods are used for collecting data for the evaluation of programme effectiveness

4. The strategic objectives and plans are reviewed regularly to identify their relevance and effectiveness

5. There is an annual plan of activities

6. There is a programme activity report at the end of each year

7. The continuous improvement processes are based on systematic evaluation of programme effectiveness

8. A annual programme quality self-assessment is implemented

# 2d. Policy and Strategy are communicated and deployed through a framework of key and support processes

 The policy and strategy outlined for the programme are effectively communicated to all stakeholders
 The policy and strategy outlined for the programme are operationalized through a set of interrelated key processes

3. The key processes and procedures to support the programme and their interrelationships are identified and defined

4. Those responsible for planning, coordination, and performance improvement of each process are designated

#### PEOPLE

#### 3a. Human resources are planned, managed and improved

1. The current and future human resources deficiencies are regularly reviewed, taking into account the needs and expectations of stakeholders

2. There is a clear policy containing objective criteria in the areas of recruitment, promotion, remuneration, evaluation and delegation

3. Equity and equal opportunities are ensured to all employees

4. Formal processes are used to find out employees' opinions

5. Emphasis is placed on recruiting employees whose profile matches the needs of the programme

6. Higher education qualification, with specialization in physical activity and aging, or relevant experience in this field, is required for instructors'/teachers' programmes

7. The programme involves a multidisciplinary team of professionals

### 3b. People's knowledge and competences are identified, developed and sustained

1. The actual competencies of employees at individual and organizational level are identified, in terms of knowledge, skills and attitudes

2. Employees have the necessary skills, knowledge and experience necessary to perform their tasks

3. The competencies and responsibilities of employees are documented, reviewed and updated regularly

4. Development plans and training are developed and agreed for all employees

5. Training means are provided for employees

- 6. The employees continuously update their skills in their specific area of knowledge
- 7. Skills for teamwork are developed
- 8. The new employees are supported and monitored
- 9. Employees' performance is evaluated annually

### 3c. People are involved and empowered

1. Appropriate mechanisms are developed to allow input from employees

- 2. The employees have the opportunity to suggest and implement solutions to solve problems
- 3. The employees are involved in developing plans, strategies and objectives of the programme

4. The employees are involved in identifying and implementing improvement actions

5. Employees' autonomy is encouraged

6. Employees' creativity is encouraged

7. The teamwork is encouraged

#### 3d. People and the organization have a dialogue

1. Formal communication procedures are established among employees

- 2. Employees have access to information about programme performance
- 3. Employees have access to information about quality initiatives results
- 4. There are formal communication channels to provide customer information to the employees
- 5. Employees maintain a fluid communication, going beyond the formal structure of the organization
- 6. The internal communication is open and transparent
- 7. Employees voluntarily pass on useful information between one another
- 8. Best practices and knowledge is shared

#### 3e. People are rewarded, recognized and taken into consideration

1. There is an employee motivation policy, with options and concrete actions

2. The merits of the employees are recognized in order to sustain their involvement and accountability

3. There is a systematic procedure to measure employee satisfaction

PARTNERSHIPS AND RESOURCES

#### 4a. External partnerships are managed

1. Appropriate partnership agreements are established, defining roles, responsibilities and expected outcomes

2. Regular and formal communication procedures are established with partners

3. Regular monitoring and evaluation are conducted concerning the partnerships' processes and outcomes

#### 4b. Finances are managed

1. Funding sources for the programme are identified

2. The financial processes are designed and managed to ensure efficiency and effectiveness

3. The financial mechanisms are in place to ensure effective use of resources, avoiding unnecessary

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costs

4. The cost-benefit of each action is assessed

5. The financial resources are allocated to different processes based on predefined criteria

#### 4c. Facilities, equipment and materials have a maintenance plan

1. There are procedures for the proper management and maintenance of facilities, equipment and materials

2. The maintenance plans are documented and periodically reviewed

3. The facilities are properly managed for the benefit of the programme (e.g., decentralization of facilities / services)

4. The equipment and materials are properly managed and updated

5. The facilities, equipment and materials are considered sufficient for the proper development of programme's processes and activities

6. Adequate accessibilities to buildings / facilities are ensured, taking into account the needs and expectations of employees and customers (e.g. access for the disabled and people with reduced mobility, parking lots, sidewalks and bike lanes or public transport accessibility)

### 4d. Technology is managed

1. When appropriate, technological innovations are implemented

2. The team members use the information and communication technologies to support decision

3. The Internet is used to support communication with different stakeholders

#### 4e. The information and knowledge are managed

1. Procedures are implemented to ensure adequate access to information and knowledge, respecting ethical issues

2. Regular records of information and knowledge are conducted

3. There is a systematic updating of technical and scientific knowledge of the intervention

4. Appropriate access to information and knowledge is provided to relevant stakeholders

## PROCESSES

## 5a. Processes are systematically designed and managed

1. The processes are described and documented regularly

2. There are documents and formal systems which manage and control the processes

3. The processes, procedures and working methods are clearly defined and effectively implemented

4. The responsibility for coordinating, monitoring and review processes are clearly defined

5. Measurement processes, evaluation and quality control are implemented

6. The processes are periodically reviewed

7. The processes are periodically reviewed

# 5b. The processes are improved through innovation in order to fully satisfy and generate increasing value for customers and other stakeholders

1. Opportunities for improvement and other changes are identified

2. The information from the learning activities is used for process improvement

- 3. The performance indicator results and measures of perception are used to improve processes
- 4. The procedures are improved according to the efficiency, effectiveness and outcomes

5. Necessary resources are allocated to process innovation

6. Changes in procedures are communicated to all stakeholders

## 5c. Services are planned and developed based on customers' needs and expectations

1. Surveys and other ways of obtaining feedback are used to determine the needs and expectations of current and future customers

2. New products and services of the programme are designed and developed in order to meet the needs and expectations of customers

3. Adequate and accurate information is ensured in order to meet the needs of customers

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#### 5d1. The services are produced, delivered and serviced (Health and Safety)

1. The working methods are based on legislation and / or scientific recommendations in order to ensure the safety of customers

2. The programme activities developed all of the following components: aerobic fitness, strength, balance and flexibility

3. The initial screening for risk assessment is intended to ensure the safe participation of customers (eg questionnaires PAR-Q, RAPA)

4. Each training session is divided into phases: general activation (including stretching), main and return to calm

5. The principle of progression concerning complexity and intensity is observed

6. Good environmental conditions are guaranteed in places for the sessions, such as temperature, humidity, lighting, acoustics and access to potable water

7. The program develops strategies for behavior change which may include: social support, self-efficacy, health contract, positive reinforcement, etc..

8. The emergency protocols are documented, periodically reviewed and tested

9. The team members regularly review health and safety data and act accordingly

#### 5d2. The services are produced, delivered and serviced (Administration and Marketing)

1. Simplified administrative procedures are implemented

2. Communication between the organization and the customer is encouraged through various means, including e-mail

3. Means of access to the programme are promoted, such as flexible schedules and formative/informative documents in different formats and methods

4. There are several ways to customers access the programme (eg, decentralized municipal service)

5. Tariffs applied in the programme ensures the principles of fairness, justice and participation

6. There are different ways to publicize the programme

7. Appropriate and realistic images are used in promotional materials

8. National, regional or local publicity campaigns are used in conjunction with programme's marketing, when appropriate

9. A web page with all the information and publicity about the programme is developed, promoted and maintained

10. Actions and events are promoted effectively, achieving visibility

#### 5e. Customer relationships are managed and enhanced

1. Customer satisfaction is a priority

2. A proactive involvement with customers is developed in order to discuss and respond to their needs and expectations

3. Team members manage relationships with customers in a positive manner to provide a professional and friendly service

4. Team members have access to relevant and updated information about the programme in order to answer customers' questions

5. Mechanisms are developed to respond to questions and procedures

6. Team members deal with customers' feedback promptly

7. Standardized systems are in place to deal with customer complaints

8. Standardized systems are in place to deal with customer suggestions

## CUSTOMER RESULTS

#### 6a. Customer Results

1. The programme has measures of perception and / or performance indicators of customer satisfaction

2. The programme has measures of perception and / or performance indicators of customer loyalty

3. The programme has measures of perception and / or performance indicators about communication with the customer

4. The programme has measures of perception and / or performance indicators of the complaint resolution process

5. The programme has performance indicators of clients' physical fitness

6. The programme has measures of perceptions of clients' psychological health and / or welfare

PEOPLE RESULTS

#### 7a. People Results

1. The programme has measures of perception and/or performance indicators regarding employees' performance

2. The programme has performance indicators of employees' performance (e.g., appraisals)

3. The programme has measures of perception and / or performance indicators of employee satisfaction

4. The programme has performance indicators of employee absenteeism

5. The programme has measures of perception and/or performance indicators regarding employees' involvement in teamwork

#### SOCIETY RESULTS

#### 8a. Society Results

1. The programme has measures of perception and / or performance indicators of their involvement in the community (e.g. social support, participation and training of community members, etc.)

2. The programme has measures of perception and / or performance indicators of their social responsibility (e.g. positive discrimination charges for needy elderly)

#### KEY PERFORMANCE RESULTS

#### 9a. Financial Results

1. The programme has performance indicators on its financial performance

#### 9b. External results

1. The programme has measures of perception and / or performance indicators of the quality of service provided

#### 9c. Results on processes

1. The programme has measures of perception and / or performance indicators of efficiency and effectiveness of its processes