Archives of Gerontology and Geriatrics 74 (2018) 26–31

Contents lists available at ScienceDirect

Archives of Gerontology and Geriatrics

journal homepage: www.elsevier.com/locate/archger

Full length article

The effect of the ProBalance Programme on health-related quality of life of community-dwelling older adults: A randomised controlled trial

Bruna R. Gouveia[a,b,c,*], Élvio R. Gouveia[d,b], Andreas Ihle[b,e,f], Helena G. Jardim[g], Maria M. Martins[h], Duarte L. Freitas[d,i], Matthias Kliegel[b,e,f]

[a] Saint Joseph of Cluny Higher School of Nursing, Funchal, Portugal
[b] Center for the Interdisciplinary Study of Gerontology and Vulnerability, University of Geneva, Geneva, Switzerland
[c] Health and Social Affairs Administration Institute of the Autonomous Region of Madeira, Funchal, Portugal
[d] Department of Physical Education and Sport, University of Madeira, Funchal, Portugal
[e] Swiss National Center of Competences in Research LIVES–Overcoming vulnerability: life course perspectives, Geneva, Switzerland
[f] Department of Psychology, University of Geneva, Geneva, Switzerland
[g] Higher School of Health, University of Madeira, Funchal, Portugal
[h] Higher School of Nursing of Porto, Porto, Portugal
[i] Department of Mathematical Sciences, University of Essex, Colchester, United Kingdom

ARTICLE INFO

Keywords:
Aging
Quality of life
Rehabilitation
Balance training
Gerontology
Health promotion

ABSTRACT

Background: Health-related quality of life (HRQoL) is an important health outcome in older adults. This study aimed to assess the efficacy of the ProBalance rehabilitation programme on HRQoL of community-dwelling older adults with balance impairments and to investigate whether effects differ between age groups and/or HRQoL components.

Methods: A single-blind, randomised controlled trial included community-dwelling older adults, aged 65–85, with balance impairments. Participants (n = 52) were randomly allocated to an intervention group (IG) or a control group (CG). A rehabilitation programme included gait, balance, functional training, strengthening, flexibility, and 3D training. A group-based intervention was administered over a period of 12 weeks (90-min sessions, 2 days per week). A wait-list control group was instructed to maintain their usual activities during the same period. Participants' HRQoL was assessed using the SF-36 questionnaire. The time points for assessment were at zero (pre-test), 12 (post-test), and 24 weeks (follow up).

Results: A trend for higher HRQoL in the IG compared to the CG and a significant interaction of group with time were found, with significantly higher increases in HRQoL from the pre-test to the post-test (and to follow-up) in the IG, compared to the CG.

Results: were independent of age group (young-old vs. old-old) and HRQoL component (physical vs. mental).

Conclusions: Present results suggest that the ProBalance programme had a beneficial effect on HRQoL of community-dwelling older adults, which held across young and old adults and not only comprised physical but also mental HRQoL.

Clinical Trial Registration Number: ACTRN12612000301864.

1. Introduction

Health-related quality of life (HRQoL) is an important health outcome in older adults (Miller, 2012), strongly associated to both age-related physical and mental factors (Gouveia et al., 2017). HRQoL is a broad multidimensional concept that commonly includes subjective evaluations of both positive and negative aspects of life related to health. The SF-36 (Ware & Sherbourne, 1992) is the most commonly used and validated HRQoL assessment instrument in physical-activity-related and health research (Hart, Kang, Weatherby, Lee, & Brinthaupt, 2015). This approach includes evaluating physical and mental health perceptions and their correlates, namely physical functioning, physical role functioning, bodily pain, general health perceptions, vitality, social role functioning, emotional role functioning and mental health and serves as measure in the present study.

* Corresponding author at: Escola Superior de Enfermagem São José de Cluny Rampa da Quinta de Sant'Ana, 22 9050-535, Funchal, Portugal.
E-mail address: bgouveia@esesjcluny.pt (B.R. Gouveia).

http://dx.doi.org/10.1016/j.archger.2017.08.012
Received 25 August 2016; Received in revised form 27 August 2017; Accepted 28 August 2017
Available online 13 September 2017
0167-4943/

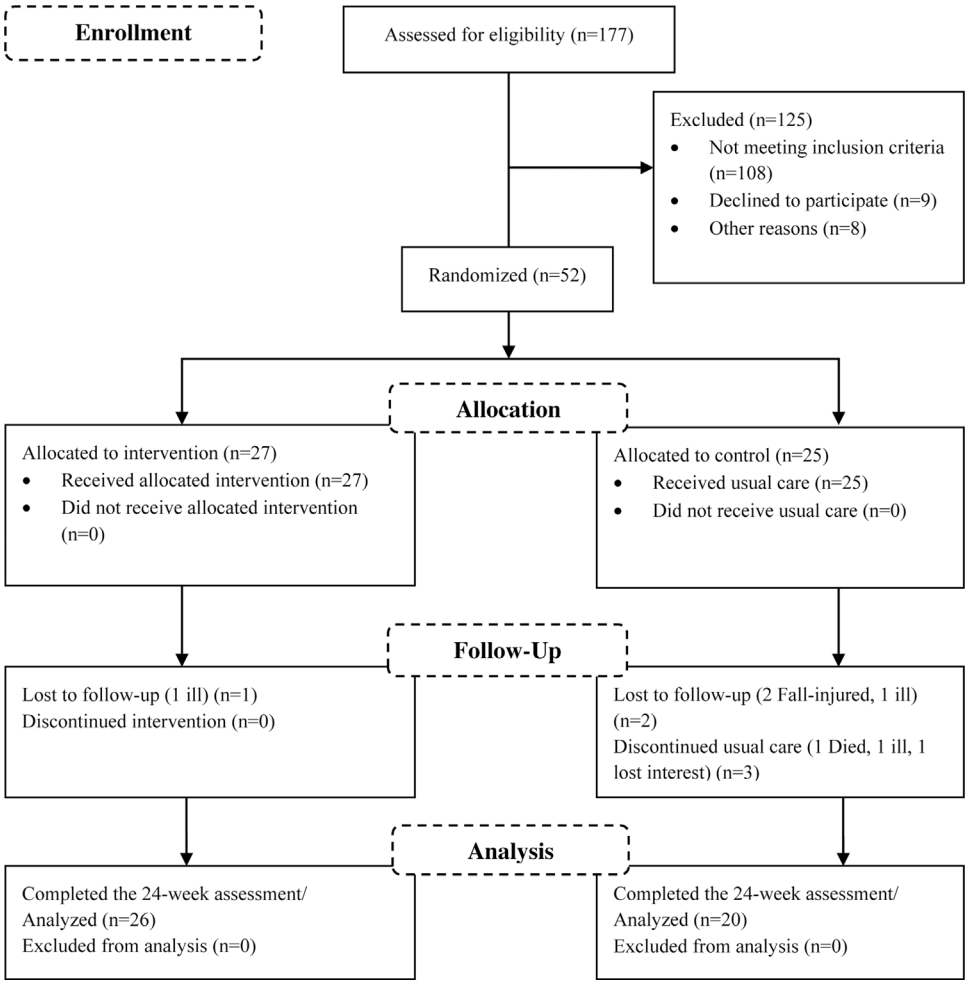

Fig. 1. Participant flow in the randomised controlled trial.

1.1. Exercise as predictor of HRQoL in older adults

Although physical activity has been linked to a favourable response in HRQoL, the effects of physical activity and exercise on HRQoL in older adults are not yet well established (Kelley, Kelley, Hootman, & Jones, 2009). For instance, positive, but limited effects of exercise on HRQoL in community-dwelling older adults have been reported in recent randomised controlled trials and systematic reviews of these type of studies (Awick et al., 2015; Karinkanta et al., 2012; Kelley et al., 2009; Olsson et al., 2015), but also the absence of such effects (Chou, Hwang, & Wu, 2012; Dohrn, Hagstromer, Hellenius, & Stahle, 2017). Besides that, physical exercise appears to improve self-reported physical functioning, one of the key dimensions of HRQoL in community-dwelling older adults; yet the effects of mental outcomes is less well established. Hence, further research is needed to identify and describe effective interventions for improving HRQoL in older adults (Kelley et al., 2009).

1.2. What is known about effects of balance training on HRQoL in older adults?

Considering the potential of physical exercise in improving self-reported physical functioning in community-dwelling older adults (Kelley et al., 2009), it so far unclear whether balance-focused interventions also improve HRQoL. While there is consistent evidence that balance training can improve balance performance and also reduces falls in older adults (Cadore, Rodriguez-Manas, Sinclair, & Izquierdo, 2013; Gillespie et al., 2012; Howe et al., 2011; Lesinski, Hortobágyi, Muehlbauer, Gollhofer, & Granacher, 2015), the effect of these interventions on HRQoL has only been scarcely studied and findings are inconsistent so far. Some randomised controlled trials (RCT) have reported beneficial effects of these interventions on broader health-related outcomes such as HRQoL (El-Khoury et al., 2015; Kovacs et al., 2013; Oh et al., 2015), particularly effects of long-term interventions in frail older adults (Gusi, Hernandez-Mocholi, & Olivares, 2015). Effects were modest (i.e., lower decrease in HRQoL scores) and clearly related to the physical-functioning dimension of HRQoL in old–old adults (El-Khoury et al., 2015). Yet, recent research, for example, did not provide evidence for effects of a short-term balance training intervention in young-old adults with osteoporosis (Dohrn et al., 2017). This inconsistent pattern of results suggests that factors such as period of intervention (short-term, up to 12 weeks vs. long-term, more than 12 weeks), age group (young-old vs. old–old adults), and/or components of HRQoL (physical vs. mental) possibly influence the achieved effects of balance training interventions to improve HRQoL in older adults.

Therefore, the present study set out to evaluate improvements in the physical and the mental component of HRQoL in young-old and old–old adults by a short-term intervention, namely the ProBalance rehabilitation programme. The ProBalance programme is a 12-week intervention that includes multiple exercise types and was designed to improve balance of community-dwelling older adults with balance impairments (Gouveia et al., 2016). Main objectives of the present study were to investigate (1) the efficacy of the ProBalance rehabilitation programme on HRQoL in older adults with balance impairments and (2) whether effects on HRQoL differed between young-old and old–old adults and/or between the physical and mental component of HRQoL.