Reviewer's report

Title: Time Trends in Leisure Time Physical Activity and Physical Fitness in elderly people: 20 year follow-up of the Spanish Population National Health Survey (1987-2006)

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Reviewer: Astrid Chorus

Reviewer's report:

The authors address a very important topic, and time trends on the subject provide important information on the historic development of PA in the elderly within the context of public health policies and changing societies. Within that respect, the paper would improve if the authors would focus on the theoretical issues of PA and aging within the the context of changing societies. Moreover, I am not convinced from the fact if authors are familiar with the topic PA, PA recommendations from a public health perspective and its dimensions. In fact, the authors do not describe what is known from literature on the relation between LPTA, physical fitness en sedentary behavior, which are related to a certain extent, but are not the same. For instance, people can meet the PA recommendations to maintain health but in the same time have a sedentary lifestyle.

In general, health survey data have certain limitations which were not addressed in this paper. The authors do not discuss the validity of the questions on LTPA and PA fitness, and do not address methodological issues thoroughly. For instance, what I find interesting is that the survey data show a increase in LPTA over 20 years but not in PA fitness. I would be very interested what the authors have to say about it.

Furthermore, from international literature determinants on PA in the elderly are known, also available in published review papers. I miss the connection with the international literature and from that why the autors have chosen for examining these determinants. For instance, ageing is associated not only with chronic diseases, but more with physical impairments (whether or not caused by chronic disease), leading to disabilities. Most of the EU surveys have collected data on impairments/disabilities. It is a pity that, if this information is available in the Spanish health survey data, this is not considered in the analysis.

I miss the discussion on the generazibility of the findings for other populations.

Level of interest: An article of limited interest

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a
statistician.

**Declaration of competing interests:**

I declare that I have no competing interests