



“Exergames”: exuberant or just exaggeration? (response to Semina Nani et al. (2019). Can 10 weeks intervention with exergames contribute to better subjective vitality and physical health?)

Baskaran Chandrasekaran¹

Received: 3 January 2019 / Accepted: 25 January 2019 / Published online: 19 February 2019
© Springer-Verlag Italia S.r.l., part of Springer Nature 2019

Sir,

I read with great interest the pilot trial by Semina Nani et al. (2019) entitled “Can ten weeks intervention with exergames contribute to better subjective vitality and physical health?” [1]. With the advent of digital technologies and health awareness, exercise is prescribed by adding digital gaming for long-term compliance through fun, social networking and entertainment. A recent systematic review by Jinhui Li et al. (2018) concluded that exergaming might be a promising management for enhancing social well-being, loneliness and positive attitudes [2]. The results of the present study also agree that exergaming improves vitality but not the physical health [1]. The following finding does not correlate with the conclusion of the systematic review by Jennifer Sween et al. (2014) [3]. With the 620 participants from 27 studies, Jennifer Sween et al. (2014) demonstrated that exergaming improved physical activity (PA) and energy expenditure. Considering the differences in PA measurement techniques, with Semina Nani et al. (2019) assessed physical function through heart rate, oxygen uptake and Jennifer Sween et al. (2014) evaluated PA through motion sensors and questionnaires, I do agree with non-significant results of physical health in the earlier study [1, 3]. If the present study has included accelerometers or PA questionnaires, the investigators might have found a significant change in the physical function.

Further, more than objective measures of physical function, vitality (emotional and personal well-being) is essential for quality of life. I commend the authors for the inclusion of vitality as an outcome measure and for finding a significant

change after 10 weeks of exergame administration. Robust evidence claims that personal well-being is vital to drive for lifelong compliance to human behaviour rather than lab-based outcome measures [3].

Though commendable work, the present study arises few concerns: (1) the global physical activity guidelines recommend either 150 min of light-to-moderate intensity exercise per week while 60 min of moderate-to-vigorous exercise per week [1]. Semina Nani et al. (2019) administered 30 min of self-selected games such as baseball, tennis, golf and boxing for thrice a week that makes a total of 90 min. But I feel the exergames are of light-to-moderate activities rather than moderate-to-severe intensity which should have administered for 150 min a week to comply with the global guidelines of PA [3]. Further, the digital games are non-rhythmic, non-continuous making less aerobic or anaerobic. Hence, it is evident that the games will not change aerobic capacity or cardiometabolic function [4]. (2) The study might have been an added value if the participants were included PA recall questionnaires such as International Physical Activity Questionnaire and cognitive functions such as execution and implicit association which are the potential confounders to physical function and vitality respectively. (3) The incremental exercise test protocol used in the study to establish a peak heart rate and maximal oxygen uptake also warrants reliability and validity.

If the above concerns are addressed in addition to the power limitation mentioned by the authors, the study adds strength to the existing evidence that exergaming improves the vitality and subjective well-being of the clients. I once again applaud the authors for conducting a long-term, feasible, clinically applicable trial and establish its effectiveness. I am sure that the study results may lure other investigators to do long-term experiments of exergames on clinical population and determine its clinical efficacy.

✉ Baskaran Chandrasekaran
baskaran.c@manipal.edu

¹ Center for Sports Medicine, Science and Research, School Of Allied Health Sciences (SOAHS), Manipal University, Manipal, Karnataka, India

Compliance with ethical standards

Conflict of interest The author declares he has no potential conflict of interest.

Ethical approval This article does not contain any studies with human participants performed by any of the authors.

Informed consent For this type of study, formal consent is not required.

References

1. Nani S, Matsouka O, Antoniou P (2018) Can ten weeks intervention with exergames contribute to better subjective vitality and physical health? *Sport Sci Health*. <https://doi.org/10.1007/s11332-018-0475-9>
2. Li J, Erdt M, Chen L, Cao Y, Lee SQ, Theng YL (2018) The social effects of exergames on older adults: systematic review and metric analysis. *J Med Internet Res* 20(6):e10486
3. Sween J, Wallington SF, Sheppard V, Taylor T, Llanos AA, Adams-Campbell LL (2014) The role of exergaming in improving physical activity: a review. *J Phys Act Health* 11(4):864–870
4. Feltz DL, Irwin B, Kerr N (2012) Two-player partnered exergame for obesity prevention: using discrepancy in players' abilities as a strategy to motivate physical activity. *J Diabetes Sci Technol* 6(4):820–827

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.