GAMES FOR HEALTH JOURNAL: Research, Development, and Clinical Applications
Volume 5, Number 1, 2016

DOI: 10.1089/g4h.2015.0054

Commentary

More on Current Status and Needed Research in G4H for Children—The Challenge

Jean-Philippe Chaput, PhD, and Allana G. LeBlanc, PhD

In this issue of the journal, Baranowski et al.[1] published a White Paper on videogames as a way to improve the health of children and adolescents. As discussed by the authors, ''videogames for health (G4H) offer exciting, innovative, potentially highly effective methods for increasing knowledge, delivering persuasive messages, changing behaviors, and influencing outcomes.''[1] In today's tech-savvy society, it would be a shame not to capitalize on the benefits of G4H. The important mass appeal of videogames is undisputed, and a large proportion of people enjoy them, which is contrary to the widespread disinclination for traditional exercise, gyms, or competitive sport. The manuscript is topical and timely, and the authors should be congratulated on their effort to present the current status and needed research on G4H in hopes of stimulating and improving the field. Discussions like this are needed to bring about change and, when debated openly, may help overcome the inactivity crisis we are seeing around the world.

Although the authors have been critical in their appraisal of the current state of knowledge on G4H, we believe some aspects need to be added or highlighted:

- Studies in this field of research are of low quality for the most part. This aspect is key because it reduces credibility of observed findings and may lead to dismissal of G4H interventions. The majority of available studies have small sample sizes, with unreasonably short follow-ups.
- The acute effects of G4H in laboratory settings are well known for the most part, but the chronic effects of G4H under real-life conditions are largely unknown. Future studies should try to examine the latter if scientists want to help advance the field of G4H. How a child may act in a laboratory may be very different than once he or she is alone, with the ability to cheat his or her way to a higher level.
- The opportunity cost (i.e., time) of playing videogames should be documented in future studies. We can't change the fact that there are 24 hours in a day. Therefore, any increase in an activity (e.g., exergaming) inevitably results in a decrease in another one. If exergaming is done at the expense of active outdoor play, it is not a good trade-off. In contrast, if exergaming replaces TV viewing, it is a positive substitution.
- The opportunity cost with respect to financial costs associated with G4H (e.g., updating gaming console, games, accessories) should also be considered. When a parent is buying his or her child a new gaming console, or new gaming equipment, is that coming from the same budget that would otherwise be spent on a child's soccer registration or camp fees? This has yet to be looked at, making parental values and preferences a clear area for study if researchers plan to develop guidelines for appropriate use of gaming devices.
- Although many studies in the field do not have a control group, it would be helpful for crossover studies to not only compare their intervention with ''no gaming'' but also with a more optimal scenario. For example, studies looking at the effects of exergaming on health indicators should not only compare active videogaming with passive videogaming but also with traditional exercise (matched for energy expenditure).
- In line with comparisons with traditional exercise, it is not yet known what kind of impact G4H may have on children's physical literacy development. It is clear that G4H do not offer the same fine or gross motor development as traditional exercise, but we do not know the extent to which this may disadvantage children who are brought up primarily using games to obtain their physical activity. Long-term physical literacy, and not just total energy expenditure, should be included in future studies.
- This White Paper on G4H is focused on children and adolescents.[1] However, the age range is not mentioned in the article, and one may wonder if the authors are also advocating for G4H in very young children. Studies have reported adverse effects of exposure to screens early in the development process, and a better delineation of the target population would be needed.
- The technology of G4H is innovating at a rate that outpaces the related research. This issue, although interesting for customers in need of new technologies, creates a research gap, and what has been shown to work may not even be a good option for customers anymore. It is not suggested that engineering should delay any advancements until behavioral research can catch up, but we must acknowledge this misalignment when making public health recommendations.

Healthy Active Living and Obesity Research Group, Children's Hospital of Eastern Ontario Research Institute, Ottawa, Ontario, Canada.

Overall, G4H hold promise for changing behaviors and impacting health outcomes. However, higher-quality studies are desperately needed to have greater impact in this field of research. Although scientists may see the glass ''half full'' or ''half empty'' when interpreting the evidence base on G4H, we all want to see healthier children and youth in today's world, and we should embrace the use of G4H if they are shown to provide a good risk–benefit ratio.

The danger in promoting G4H before we truly understand the long-term health implications is that we may turn children away from traditional exercise at a young age. This may lead to a preferential habit of playing games without (real-life) peer interaction, more time indoors, and the lure of energy-dense snack foods in the nearby kitchen cupboard. That being said, it is clear that technology is only on an upward trajectory, a trajectory that should be embraced rather than squandered. As little as 20 years ago the feats of engineering that are now commonplace would have been pure science fiction. It is just as important to maintain a healthy dose of skepticism as we integrate this gadgetry into our daily lives.

Acknowledgments

J.-P.C. holds a Junior Research Chair in Healthy Active Living and Obesity Research. A.G.L. is a Knowledge Manager with ParticipACTION.

Author Disclosure Statement

No competing financial interests exist.

Reference

1. Baranowski T, Blumberg F, Buday R, et al. White paper: Games for health for children—Current status and needed research. Games Health J 2016; 5:1–12.

Address correspondence to:
Jean-Philippe Chaput, PhD
Healthy Active Living and Obesity Research Group
Children's Hospital of Eastern Ontario Research Institute
401 Smyth Road
Ottawa, ON, Canada, K1H 8L1

E-mail: jpchaput@cheo.on.ca