



## Video game genre preference, physical activity and screen-time in adolescent boys from low-income communities



Hayden T. Thorne, Jordan J. Smith, Philip J. Morgan, Mark J. Babic, David R. Lubans\*

Priority Research Centre in Physical Activity and Nutrition, School of Education, University of Newcastle, Callaghan, New South Wales, Australia

### ARTICLE INFO

#### Article history:

Available online 15 October 2014

#### Keywords:

Physical activity  
Sedentary behavior  
Youth  
Video game  
Screen-time  
Obesity

### ABSTRACT

The primary aim of this study was to examine the association between the types of video games played by adolescent boys and their participation in physical activity and recreational screen-time. Participants were 320 boys (mean age = 12.7,  $\pm 0.5$  years) from 14 secondary schools located in low-income areas of New South Wales, Australia. Outcomes included height, weight, physical activity (accelerometers), total screen-time, and video game genre preference. Significant differences in both weekday and weekend screen-time were found between video game genre groups. In addition, significant differences in overall activity and moderate-to-vigorous physical activity were found between genre groups on weekdays. Between-group differences in physical activity on weekends were not statistically significant. This cross-sectional study has demonstrated that video game genre preference is associated with physical activity and screen-time in adolescent boys from low-income communities.

© 2014 The Foundation for Professionals in Services for Adolescents. Published by Elsevier Ltd. All rights reserved.

### Introduction

The past decade has been characterized by an explosion in access to screen-based media, resulting in record levels of youth screen use (Rideout, Foehr, & Roberts, 2010). Current guidelines recommend that children and adolescents limit their screen-time to less than 2 h per day (Commonwealth of Australia, 2014). However, many adolescents exceed this limit, particularly those living in low-income communities (Hardy, King, Espinel, Cosgrove, & Bauman, 2011; Morley et al., 2012). Excessive screen-time during childhood and adolescence is associated with a range of adverse outcomes (Biddle & Asare, 2011; Salmon, Tremblay, Marshall, & Hume, 2011; Tremblay et al., 2011). Furthermore, high screen-use during this period may lead to deleterious health outcomes in later life (Grøntved et al., 2014; Hancox, Milne, & Poulton, 2004). Interestingly, the negative effects of screen-time on child and adolescent health have been found to be most pronounced during the teenage years (Rosen et al., 2014), perhaps due to the greater duration of screen-use evident at this time (Hardy et al., 2011).

\* Corresponding author. Priority Research Centre in Physical Activity and Nutrition, School of Education, Faculty of Education and Arts, University of Newcastle, Callaghan NSW, 2308, Australia. Tel.: +61 2 49212049; fax: +61 2 49217407.

E-mail address: [David.Lubans@newcastle.edu.au](mailto:David.Lubans@newcastle.edu.au) (D.R. Lubans).

Although television viewing has typically been the focus of studies examining the health effects of screen-time (Tremblay et al., 2011), in recent years the influence of video gaming on pediatric health has received increasing attention. Driven by technological advances in processing power, artificial intelligence and internet connectivity, the popularity of video games has increased drastically. In the U.S, the vast majority of youth aged 8–18 years play video games at least occasionally (Gentile, 2009). However, video gaming has also been identified as a predominantly male behavior. Among U.S adolescents, up to three quarters of males play video games, compared with less than a third of females (Desai, Krishnan-Sarin, Cavallo, & Potenza, 2010). Video gaming contributes around 20% of a young male's total screen-time, with television viewing contributing the majority (Olds, Ridley, & Dollman, 2006). However, video gaming likely supplements other forms of screen entertainment, leading to an increase in overall screen-time. For example, among 10–13 year old Australian youth, the highest screen users have also been found to spend the most time video gaming (Olds et al., 2006). Reports from the U.S, Australia, and Europe indicate that adolescent males typically spend between 1 and 2 h per day playing video games (Olds et al., 2006; Rehbein, Psych, Kleimann, Mediasci, & Mößle, 2010; Rideout et al., 2010). However, there appear to be specific sub-groups of gamers playing for substantially longer periods, in particular those playing 'Massive Multiplayer Online Role Playing Games' (MMORPG) and online strategy games (Rehbein et al., 2010).

As video games have become more successful at meeting player motivations and interests, the risk of excessive and problematic use has increased. Much of the current research on video gaming has focused on psychological and cognitive outcomes such as aggression (Willoughby, Adachi, & Good, 2012) and symptoms of dependency/addiction (Gentile, 2009). Notably, research in this area has led to the addition of 'Internet gaming disorder' in the appendix of the American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders (DSM-5) (American Psychiatric Association, 2013). Certain video game genres, in particular MMORPG's, have been more strongly linked with disordered gaming (Kuss & Griffiths, 2012). However, the overall prevalence of this problem among adolescents in a number of countries has been found to be quite low (Festl, Scharkow, & Quandt, 2013; Gentile, 2009; Van Rooij, Schoenmakers, Vermulst, Van Den Eijnden, & Van De Mheen, 2011) and excessive video game use can exist without it being considered an addiction (Van Rooij et al., 2011).

The capacity for video gaming to increase total screen-time and promote high levels of inactivity has the potential to impact on the health of a much larger proportion of the young people, yet this is a largely underrepresented issue in current screen-media discourse. Video gaming time has previously been found to be moderated by genre preference among adolescents (Rehbein et al., 2010). However, to our knowledge no prior study has examined the relationship between adolescent boys' video game genre preference and their physical activity and total screen-time. A more comprehensive understanding of the links between video game use and physical inactivity will help to identify those at increased risk of adverse health outcomes and will aid in the development of interventions targeting the health behaviors of children and adolescents. Therefore, the aim of this study was to examine the association between video game genre preferences and objectively measured physical activity and total recreational screen-time (including video game, TV viewing, and computer usage) among a sample of adolescent boys from low-income communities. A secondary aim was to examine the association between physical activity and screen-time to determine whether screen-time displaces physical activity.

## Methods

### Participants

Participants for the present study were adolescent boys (mean age,  $12.7 \pm 0.5$  years) taking part in a school-based obesity prevention intervention – the Active Teen Leaders Avoiding Screen-time (ATLAS) randomized controlled trial (Smith et al., 2014). Approval for the study was obtained from the human research ethics committees of the University of Newcastle, Australia and the New South Wales (NSW) Department of Education and Communities. Participants and their parents/guardians provided informed written consent prior to their enrollment in the study. State funded secondary schools located in low-income areas of NSW, Australia were identified and invited to participate in the study. Fourteen schools agreed to participate and all adolescent boys in grade 7 (first year of secondary school) at each of the study schools were screened for eligibility. Study participants were eligible if they reported failing to meet national physical activity or screen-time guidelines for youth (i.e.,  $\leq 60$  min of moderate-to-vigorous physical activity [MVPA] per day or  $\geq 2$  h of screen-time per day) (Commonwealth of Australia, 2014). Based on a power calculation for the primary study outcomes, a recruitment target of 350 participants (i.e., 25 from each school) was identified. Of the 997 students who completed eligibility-screening, 850 were considered eligible and 361 boys consented to be included in the study. Data for the present study is drawn from baseline assessments conducted in November–December, 2012. Of the 361 subjects assessed,  $N = 320$  provided valid data for video-game genre preference and formed the study sample for the present investigation.

### Measurements

Assessments were conducted on school premises by research assistants who were trained in body composition and physical activity/fitness measurement. Physical measurements were taken in a sensitive manner (i.e., height and weight measured out of view of other students) and questionnaires were completed in exam-like conditions using Apple™ iPads. Demographic information including age, cultural background, language spoken at home, residential postcode (to assess

Download English Version:

<https://daneshyari.com/en/article/880763>

Download Persian Version:

<https://daneshyari.com/article/880763>

[Daneshyari.com](https://daneshyari.com)