

# Clinical Use of Video Games

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## INTRODUCTION

Video game play is the fastest growing form of entertainment in the world and many adolescents play video games for hours every day. For example, a nationally representative study of video game play among adolescents in the United States showed that 97% of adolescents aged 12 to 17 years play computer, web, and portable or console video games (Lenhart, Kahne, Middaugh, Macgill, Evans, & Vitak, 2008). In terms of frequency, 31% of adolescents play video games every day and another 21% play video games 3 to 5 days a week. Similarly, Gentile (2009) conducted a large survey study in the United States and found that 88% of youth aged 8 to 18 years play video games and the average amount of time spent playing video games per week is 13.2 hours. Furthermore, in the United States, 91% of children between the ages of 2 and 17 play video games (Granic, Lobel, & Engels, 2014), and a nationally representative study of U.S. teenagers found that up to 99% of boys and 94% of girls play video games (Lenhart et al., 2008).

A video game, according to Wikipedia (2016), is an electronic game that involves human interaction with a user interface to generate visual feedback on a video device such as a television screen or computer monitor. The word video in video game traditionally referred to a raster display device, but in the 2000s, it implies any type of display device that can produce two- or three-dimensional images. The electronic systems used to play video games are known as platforms and these platforms range from large mainframe computers to small handheld computing devices (Wikipedia, 2016). Hence, in the United States alone, video games brought in over \$25 billion in

2010, more than doubling Hollywood's 2012 box office sales of \$10.8 billion in the United States and Canada (Motion Picture Association of American, 2012). Despite the extreme popularity of video games among adolescents, however, researchers in the fields of developmental and social psychology examining video game have focused mainly on the association between video game use and negative outcomes, while research on positive outcomes is more limited. Video games, and the usage of video games, in adolescent therapy and psychotherapy is anything but ubiquitous. Hence, the purpose of this chapter is on video games and their usages in adolescent therapy and psychotherapy. This chapter will cover a brief and condensed history in the usage of video games in relations to clinical usage (and not on the historical development of video games and the video game industry per se), video games in psychotherapy, and the different types of video games and their usages in psychotherapy.

## BACKGROUND

According to Ceranoglu (2010), the first video game materialized on an oscilloscope screen in 1958 (Kent, 2001) featuring a game of simulated tennis that amused visitors to Brookhaven National Laboratory. Thereafter, video games have become a major part of pop culture and the entertainment medium of choice for millions of people (Gettler, 2008; Poole, 2000). However, for many, video games were first created in the 1970s and since then have grown into a multibillion-dollar industry: the annual U.S. retail sales of video games reached more than \$9.9 billion in 2004 alone (Greitemeyer & Osswald, 2010; Sestir &

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Bartholow, 2010). According to Greitemeyer and Osswald (2010), large-scale surveys show that 70% of homes with children ages 2 to 17 years have computers and 68% have video game equipment (Woodard & Gridina, 2000). Eighty-seven percent of children play video games regularly (Walsh, Gentile, Gieske, Walsh, & Chasco, 2003). Children ages 2 to 7 years spent an average of 3 to 5 hours a week playing video games (Gentile & Walsh, 2002), while 8<sup>th</sup> and 9<sup>th</sup>-grade students average 9 hours per week (Gentile, Lynch, Linder, & Walsh, 2004).

## Video Games in Psychotherapy

A review of the available literature on video game use in psychotherapy takes a dynamic perspective in regards to psychotherapy, although it should be noted that the issues addressed here can be applied to many forms of psychotherapy. A literature search was conducted, according to Ceranoglu (2010), on Medline and PsycInfo with keywords *video games*, *psychotherapy*, *computer games*, and *child and adolescent*, and relevant manuscripts were also identified through citations in the articles identified during the primary search. In so doing, video game, is defined as a game that employs electronics to create an interactive system that includes a user interface to generate a visual feedback on a video device (Wolf, 2002), and found their way into the clinical care of youth in mental health care as well as other fields, and academic interest in clinical use of video games is increasing steadily.

Review of a database of academic manuscripts reveals that 1,121 of 1,474 total reports on video games (76%) were published in the past decade. Reported clinical uses of video games include psychoeducation in chronic disease management to increase treatment adherence (Yoon & Godwin, 2007) and physical therapy and rehabilitation following traumatic brain injury (Jannink, van der Wilden, Navis, Visser, Gussinklo, & Ijzerman, 2008). Video games also serve as valuable adjuncts in pain management during medical procedures

(Das, Grimmer, Sparnon, McRae, & Thomas, 2005; Gold, Kim, Kant, Joseph, & Rizzo, 2006), induction of anesthesia (Patel, Schieble, Davidson, Tran, Schoenberg, Delphin, & Bennett, 2006), or cancer chemotherapy (Kato, Cole, Bradlyn, & Pollock, 2008; Redd, Jacobsen, Die-Trill, Dermatis, McEvoy, & Holland, 1987).

## Video Games and Their Usages in Psychotherapy

The usage of video games that have received some attention of video game researchers is that of therapeutic sessions (Annema, Verstraete, Abeele, Desmet, & Geerts, 2013). According to Annema et al. (2013), video games can help motivate patients, develop skills and serve as a distractor in pain management. Video games have been used in physiotherapy, occupational therapy, and psychotherapy (Burdea, 2003; Griffiths, 2003). As such, when considering the use of video games in therapy, a distinction can be made between games specifically made for therapeutic purposes and games made for the general public but that are used in therapy as well. An example of the last category, dating back almost two decades, is the use of the *Super Mario Brothers* and (*The Legend of*) *Zelda* games in addition to the regular psychotherapy program to assess and assist various abilities of children, such as problem solving strategies and means of dealing with success and failure (Gardner, 1991). Hence, literature survey revealed that different kinds of software are used in different types of clinical practice and research. These included serious games, commercial video games, computer programs developed for use in assessing cognitive abilities, and virtual reality used in psychiatric symptom research and training of health care professionals. Literature was also diverse in regard to delivery format of the games, such as computers, specifically designed hardware, handheld devices, and gaming consoles. With that said, Wilkinson, Ang, and Goh's (2008) article, is one of few articles that outline the video game revolution.

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