Chapter 9
Therapeutic Gaming for Adolescent Anxiety: Development and Evaluation of a Mobile Intervention

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ABSTRACT

Anxiety disorders (AD) are the most prevalent of the mental health conditions and are associated with significant and long-lasting burden of disease both for affected individuals and healthcare systems designed to support them. Despite this, barriers to traditional interventions mean less than half of adolescents experiencing ADs seek-treatment, with less than 20% of treatment-seekers ultimately receiving a scientifically validated intervention. Therapeutic games show significant potential to help reduce AD in adolescents, with some concerns remaining over their abilities to engage users, particularly over time. The chapter presents two studies relating to the development of a new mobile gamified intervention for adolescents with AD. This includes a user-feedback study on currently available games for anxiety and depression, followed by a user-feedback, acceptability, and intention-to-use study of a development version of the new intervention.

INTRODUCTION

Background

Anxiety Disorders (AD) are the most prevalent of the mental health conditions and are the sixth-leading

DOI: 10.4018/978-1-7998-7991-6.ch009

cause of disability worldwide (Baxter, Scott, Vos & Whiteford, 2014). ADs are associated with significant and long-lasting burden of disease both for affected individuals and the healthcare systems designed to support them (Bandelow & Michaelis, 2015). Among children and adolescents, AD prevalence ranges from 4-20% (Bhatia & Goyal, 2018).

The extant evidence indicates that the proportion of adolescents suffering from AD has increased by up to 70% since the mid-1980s, and that there are now approximately 300,000 young people in the UK with an AD meeting the criteria for diagnosis (Hagell, 2012), making AD the most common disorder of this life-stage (Rapee, Schniering & Hudson, 2009). Prevalence studies show that at any given time, between 3- and 12% of children and adolescents meet the diagnostic criteria for an AD (Rice & Thapar, 2009). As is the case with other psychological disorders including depression, the development of AD increases significantly during adolescent years (Costello & Angold, 1995; Grant, 2013).

A noteworthy heterogeneity in evidence demonstrates that while the initial development of an AD may occur in adulthood, the majority of ADs begin during adolescence, such as social phobia (Kessler, 2005; Beesdo, Knappe & Pine, 2009; Wittchen & Fehm 2003) (where few cases are documented as first instances after adolescent years), and Generalised Anxiety Disorders (Kessler, 2005; de Graaf et al., 2003). At least 50% of adults aged 32-years and meeting the diagnostic criteria for AD show evidence that they would also have met the diagnostic criteria between the ages of 11- and 15-years (Gregory et al., 2007). Therefore, it has been argued that adolescence may be a 'critical period' for AD and future mental health and wellbeing, as the existential identities formed during adolescent years become consolidated as this stage of life closes and adulthood begins (Berman, Weems & Stickle, 2006).

Despite the prevalence of ADs, the short- and long-term implications of AD experience, and the evidence-base demonstrating the efficacy of a range of psychiatric and psychotherapeutic interventions, less than half of adolescents experiencing ADs seek-treatment, with fewer than 20% of treatment-seekers ultimately receiving a scientifically validated intervention (Kessler et al., 2008; Collins, Westra, Dozois & Burns, 2004). Considerable under-recognition, and subsequent under-treatment of anxiety disorders is well-documented, an issue documented by existing literature to be further complicated by a range of social, clinical, and pathological factors including non-disclosure (Corrigan, Druss & Perlick, 2014), the availability of therapeutic provision (Andlin-Sobocki & Wittchen, 2005), and drop-out from existing clinical interventions.

The Role of Digital Interventions and Serious Games in the Therapeutic Process

Electronic Health (eHealth) is defined as "an emerging field in the intersection of medical informatics, public health and business, referring to health services and information delivered or enhanced through the Internet and related technologies" (Eysenbach, 2001). First noted by Abt (1970), serious and therapeutic video games (STVGs) are video games which are designed with a primary purpose other than entertainment, usually to educate or inform the player (Djaouti et al., 2011). Games are increasingly popular and pervasive among adolescents in modern society, with up to 97% of teenagers engaging in some degree of gaming activity (Lenhart et al., 2008). In recent years, a growing focus has been placed on how serious games can be utilised to make positive changes across a range of physical and psychological health-related conditions (Huang & Johnson, 2008).

By harnessing the immersive and entertaining principles of video games, serious games aim to deliver educational material in a gamified context (Thom, Millen & di Micco, 2012). Research has suggested