

Chapter 3

Treating Sleep Disorders with an ACT–Based Behavior Change Support System

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ABSTRACT

Suitable duration and appropriate quality of sleep are essential for mental and cognitive wellbeing. Sleep disorders, whether mild or severe, have proven to have adverse effects on general wellbeing. One's quality of life could be disturbed as a consequence of various mental conditions, sleep disorders being one of them. Researchers have started paying attention to designing, implementing and evaluating eHealth interventions to address sleep disorders. In this chapter, we highlight findings from a field study that was conducted to evaluate effect of software features on a Web-based intervention for sleep disorders. Tynne is a Web-based eHealth intervention that will be repeatedly mentioned as Behavior Change Support System (BCSS). Tynne offered weekly modules that were drawn from Acceptance and Commitment Therapy (ACT). From an Information system's perspective, the modules were identified and applied as a persuasive software feature that is promoted by the Persuasive Systems Design Model (PSD Model). The duration of the Web-based intervention was 6 weeks.

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Upon completion of the intervention, about one third (37.2%) of the participants reported that they could better manage their sleep problems. We argue that a relatively low percentage is still highly encouraging, as treatment of sleep-related disorders is a complicated and understudied area. Manifestly, longitudinal studies would help determine the effect of ACT-incorporated Web-based interventions. However, the chapter underscores the effect of persuasive software features incorporated with ACT-based components as a step towards managing sleep disorders.

1. INTRODUCTION

Suitable duration and decent quality of sleep are crucial for mental and cognitive wellbeing. Sleep disorders, whether mild or severe, have proven adverse effects on general wellbeing. One's quality of life could be poor as a consequence of various mental conditions, sleep disorders being one of them. Sleeplessness both in terms of quality and/or quantity, leads to serious health issues such as cognitive functioning (Frenda & Fenn, 2016), mood disorder (Kahn-Greene et al. 2007), depression (Hemmeter et al. 2010), obesity (Patel & Hu, 2008), metabolic disorders and diabetes (Knutson & Van Cauter, 2008). There could be various reasons for people's unhealthy lifestyles. Because of their detrimental effect on one's mental and general health, sleep disorders are a research area (Langrial et al. 2014; Alhola & Polo-Kantola, 2007). Literature provides reassuring indications that sleep disorders are negatively correlated with an individual's health and mental wellbeing irrespective of age, gender and social status. According to van Straten and Cuijpers (2009), sleep related disorders, including insomnia, are common among individuals. Sleep deprivation and insomnia have several negative consequences for individuals; for example, fatigue, mood instabilities, psychological stress and addictive disorders (van Straten & Cuijpers, 2009; Gillin, 1998). Sleep disorders are regularly associated with poor life quality, reduced work productivity, fear, despair, and alcoholism (Walsh, 2004). Further, lack of sleep could adversely affect neurocognitive functioning, as stated earlier. The growing number of the population suffering from sleep disorders is indicative that it has now become a widespread issue (Morin et al. 2006). More than 20% of the adult population alone suffers from sleep disorders (Goel et al. 2009). The effects of sleep disorders on general well-being are frightening (Faubel et al. 2009).

It is a promising sign to note that sleep disorders have received increasing attention because of their negative psychological consequences (Espie et al. 2012; Vincent & Lewycky, 2009; Ström et al. 2004; Moul et al. 2004). Existing literature has a rich body of studies that focus on healthy diet and regular exercise, and that good sleep quality is vital for health (Choe et al. 2011). EHealth interventions that promote nourishing diet (Purpura et al. 2011) and energetic lifestyles (Albanina et al.

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