

## Chapter 7

# Biomedical Analysis of Social Media/Video Games Addiction and Gamification of Neurocognitive Therapy for Rehabilitation

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### **ABSTRACT**

*In recent years, laptops and smart phones have become unavoidable, and the restriction in usage of these devices is impracticable. Starting from children to aged persons, many people spend their waiting time, travel time in this nicely, but the issue arises due to their influence in the golden working hours. It leads to waste of time, energy, and some of these practices may lead to addiction. Hence, a techno-cognitive approach of the biomedical analysis of brain can be done through electroencephalography (EEG) and functional magnetic resonance imaging (fMRI). After investigations, a strategy is to be implemented to explore the dynamics of therapy on reducing the addiction. But it is not a simple task of making the addicted persons practice yoga or meditation routinely. It can be made possible through gamification of these practices. This chapter focuses the pre and post recording of the addicted person's brain activity to analyze and measure the improvement after the treatment via gamification strategy. After certain duration, the outcome is addiction removal.*

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## **INTRODUCTION**

The utility of electronic gadgets in 21st century becomes doubled, tripled or even more. The handheld devices like laptops, tablets and smart phones have been tightly bounded with us. The usage of these devices is unavoidable in the digital era. Strict protocols for the usage cannot be followed since they gradually become a non-living partner with us. The implementation of protocols is also not necessary if they are used wisely and in dignified manner. If not, as a consequence, the impact of social media and video games diverts the people to a greater extent. From kids to elder persons, huge quantity of people spends their waiting time, travel time and leisure time in social media and video games nicely. But the issue starts when they influence in their golden working hours of them which leads to a lot waste of time, energy, attitude issues, etc when lead to addiction. Addiction is the phenomena of uncontrollable influence or effect of something which is beyond our control. It is the right time to address this issue and find the best ways to prevent or cure this addiction.

The main objectives of this chapter include the biomedical analysis of addiction of people with different age groups towards social media/ video games. Further, gamification of neurocognitive practices and therapies like yoga and meditation for the purpose of practicing by these addicted people and others. The post analysis of their behaviors and comparison. Case to case analysis and providing appropriate solutions to the individuals based on their analysis.

## **OBJECTIVES**

1. To analyze the mental ability of the students by recording their brain activity using EEG.
2. To compare the brain activity in pre and post cognitive therapies using simulation tool.
3. To create health care awareness in order to improve the mental stability of the students by means of technical and scientific proofs through neuro cognitive therapy.

## **BACKGROUND**

For many people, video games are a fun and enjoyable hobby, but for others, they can become a harmful habit. Video game usage becomes problematic when it impacts a person's relationships and daily functioning. At present time, video game addiction is not included in the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), but the World Health Organization has classified gaming disorder as a disease in the International Classification of Diseases.(Anderson et al, 2012) More than 2 billion people play video games globally. Online video game addiction statistics show that anywhere from 1–10% of gamers have compulsive addiction issues. (Stevens, M. et al, 2019) Addiction towards social media and video games impacts a greater extent in the day to day life of humans irrespective of their age groups. It consumes lot of time of younger generation and kids. (I Dewa Putu Eskasasnanda et al, 2017) The subsequent effect of this is the lack of interest and concentration towards studies and skill development of youth and kids.(Nazir S et al, 2019) This gives much more effect in adults from age range from 21-40 by the way of influencing in their jobs. They get diversion of their intended duties and it reflects in the development of a nation. (Yubo Hou et al, 2020) Even it has been creating problems in the life of older people. Most predominantly, irrespective of age groups, the health issues like eye strain, body pain,

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