AUGMENTED REALITY GAMES (ARG) AND POKÉMON GO: PREVENTING HIKIKOMORI IN MALAYSIA

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ABSTRACT

The term “Hikikomori” refers to the modern phenomenon of severe social withdrawal (SSW). It may also specifically refer to a modern form of depression that has become prevalent among young people in Japan since 2000. This syndrome has a major impact in Japan and yet there remain no consensus guidelines for its treatment. Pokémon Go is an augmented reality game which uses integrated virtual and physical movement to allow players to interact with virtual characters. This mobile application has become a social media phenomenon around the world and is seen as pioneering an innovative business model. The present study has two (2) key aspects: understanding the hikikomori phenomenon in Malaysia and determining the importance of Augmented Reality Games (ARG), particularly Pokémon Go. It is hoped that this study will provide significant progress in the understanding of the hikikomori phenomenon in Malaysia. Furthermore, Pokémon Go may become an important tool to promote healthy behaviours among young adults in Malaysia.

Key words: Hikikomori, POKÉMON, Video Games


http://www.iaeme.com/ijciet/issues.asp?JType=IJCIET&VType=9&IType=5

1. INTRODUCTION

The rise of Augmented Reality Games (ARG) such as Pokémon Go, which launched in July 2016, shows that there exists consumer demand for new ways of playing games. The Pokémon Go mobile application requires players to go outside and perform physical activity to catch virtual creatures (Pokémon) in order to then use them in virtual combat. In general, an Augmented Reality Games (ARG), is a kind of “exergame,” or active video game, that requires participants to be physically active or do exercise in order to play (Anderson et al., 2017; Clarke, 2016). ARGs replace traditional console gaming with active play that required players to move and explore their surroundings (Serino et al., 2016). Research has shown that ARGs can...
increase educational development among teenagers, particularly in terms of writing ability (Wan Hussain et al., 2012; Wang, 2017), learning foreign languages (Wang, 2017) and mathematical abilities (Sommerauer and Müller, 2014). Playing Pokémon Go is one of the marketing strategy that should be used in internet marketing strategy (Wan Hussain et al., 2012) and developing curriculum at the university (Wan Mohd Hirwani et al., 2012) and can be patented (Hassan et al., 2017).

2. AUGMENTED REALITY GAMES – POKÉMON GO

Augmented reality gaming became a global phenomenon in 2016, producing multiple best-selling mobile game apps. Pokémon Go was first introduced in July 2016 and made a significant impact on the mobile applications industry. It is considered to be the most widely downloaded mobile game worldwide, surpassing other popular games such as Candy Crush and Clash of Clans. This app is available in the iOS and Google Play stores, allowing users to download it for free to play it on their device. The app has been downloaded more than 650 million times worldwide, and has 5 million daily active users globally (Althoff et al., 2016). Pokémon Go has often been praised for promoting healthy behaviour among teenagers (Althoff et al., 2016).

The game uses a real-world street-map and landmarks that can help players to locate Pokémon, Pokémon eggs (which are collected and will hatch after the player walks a predetermined distance), Gyms (to challenge other players) and Pokéstops (used to collect in-game items). Pokémon Go requires players to perform physical activity, which may have a positive impact on their health. Based on research conducted by (Althoff et al., 2016) we estimate that playing the game causes users to increase their steps by more than 25% per day, across men and women users of all ages. It should be noted here that this game was not specifically designed to increase physical activity (LeBlanc and Chaput, 2017), however it does require players to move around in order to get new creatures, challenge people at gyms and hatch eggs. It is reported that most players of Pokémon Go are aged 13 and above, and generally describe themselves as gamers, spending 12% or more of their leisure time playing video games (Serino et al., 2016). There remains a great deal of research to be done in order to understand the impact of Augmented Reality Games on teenagers. Research conducted by (Tabacchi et al., 2017) found that Pokémon Go players spend most of their time outside capturing Pokémon. By encouraging users to spend their time outside, Pokémon Go will allow young people to stay motivated and increase their physical activity (Althoff et al., 2016). Playing Pokémon Go also increases users’ fitness and cardiometabolic health (C. et al., 2017). This can decrease obesity and prevent depression and anxiety (Tateno et al., 2016).

![Figure 1 Illustration of smartphone running Pokémon Go, in navigation mode (left) and catching a Pokémon (right). Adapted from (Ruiz-Ariza et al., 2018)](http://www.iaeme.com/IJCIET/index.asp)
Many researchers have chosen to incorporate gamification strategies into new technologies (Baranowski et al., 2016). Gamification is a new concept in the design of teaching and learning experiences, which has been widely adopted in recent years in industry and academia as a tool for training and education. The term “gamification” was introduced by Nick Pelling in 2003 and been used widely to describe gaming within training and education (Fitz-Walter, 2013). Other similar terms used previously include “educational games”, “serious games” and “game-based learning.” Gamification can also help increase physical activity (World Health Organization, 2013, De Oliveira-Roque, 2016) and help maintain maximum health benefits (Crookes, 2016; Hallal et al., 2012). The distribution of these games on smartphones has made a large impact on increasing levels of physical activity and may help teenagers with social withdrawal issues (Hussain et al., 2010; Monroe et al., 2015; Sabbagh et al., 2016; Tateno et al., 2012). Most teenagers spend around 8.6 hours per day using digital technology, such as using a smartphone, watching television or playing computer videogames. As such there is a need for new strategies to motivate young teenagers to spend time outside and perform more physical activity (Furlong, 2008; Hallal et al., 2012; Teo, 2010). This can reduce the incidence of the combination of depression and stunted development of self-identity which has come to be known as hikikomori.

3. HIKIKOMORI

Hikikomori, also known as “modern-type depression,” was the one of the most prominent public health problems reported in 2000. This term was first coined by Tomita Fujiya in 1985. The Japanese Ministry of Health, Labour and Welfare (www.mhlw.go.jp) currently provides the following definition:

Hikikomori is a psycho-sociological phenomenon, one of its characteristic features being withdrawal from social activities and staying at home almost each day for more than half a year. This occurs among children, adolescents, and adults under 30 years old. Although hikikomori is defined as a non-psychotic state, it is safe to assume that young people with schizophrenia may be mixed into this grouping prior to receiving a diagnosis of psychosis.

The root causes of hikikomori must be understood in order to assess what the impact of this disease is on society. Research conducted by Suwa and Suzuki in 2013 shows that there are two types of hikikomori: (a) Primary hikikomori that is caused by a personality disorder and (b) secondary hikikomori that results from an anxiety disorder, obsessive-compulsive disorder or affective disorder. Secondary hikikomori requires more immediate medical treatment than primary hikikomori.

![Figure 2 Classification of Hikikomori](suwaz).png

**Figure 2 Classification of Hikikomori**

Adapted from: (Suwa and Suzuki, 2013)
Researchers (Teo, 2010) summarized the criteria which a patient must exhibit to be classified as a hikikomori:

- a lifestyle centred at home;
- no interest or willingness to attend school or work;
- symptom duration of at least 6 months;
- schizophrenia, intellectual disability, or other mental disorders have been excluded;
- among those with no interest or willingness to attend school or work, those who maintain personal relationships (e.g., friendships) have been excluded.

Persons diagnosed with hikikomori are often reported to exhibit linked mental illnesses, including schizophrenia, social anxiety disorder, depression, personality disorder, schizoid personality disorder, and avoidant personality disorder.

4. HIKIKOMORI IN MALAYSIA

Malaysia is a developing country in Asia with a population of more than 30 million, made up of three major ethnic groups: Malay, Chinese and Indian. In Malaysia, there was a reported increase in the prevalence of excess weight and obesity among 6-12 years old from 20.7% in 2002 to 26.5% in 2008 (Khambalia and Seen, 2010). Lack of physical activity contributed to this increase in excess weight and obesity among children. However, rising usage of smartphones and advancements in augmented reality in video games may be able to be used to encourage young people to spend time outdoors, providing myriad health benefits. Information regarding hikikomori in Malaysia is still limited and inconclusive, and further scientific research is needed to determine the prevalence of hikikomori in Malaysia. There is a research showing that hikikomori exists in Ukraine (Frankova, 2017), Spain (Malagon-Amor et al., 2014; Ovejero et al., 2013) and China (Wong et al., 2017).

5. ARGS FOR PREVENTING HIKIKOMORI

It has recently been suggested that the popularity of the Pokémon Go mobile game may be helping to reduce hikikomori (Tateno et al., 2016). As described in detail above, to play Pokémon Go, players must leave their houses and engage with other players in order to find new Pokémon for their collections. This activity can help increases their social interactivity. Playing this game may provide significant health benefits to teenagers, increasing their physical and mental wellbeing. It also helps to engage individuals who are not typically motivated to become involved in a gym or sporting event. It should be noted here that physical inactivity has been identified as the leading cause of many chronic diseases, such as type 2 diabetes and obesity. Nowadays, many young people want to spend their free time playing video games, and this activity has become a major contributor affecting individual lifestyles.

6. IMPACT OF AUGMENTED REALITY GAMES

Positive Impacts

a) Increase Social Interactions

Augmented Reality Games differ significantly from traditional games (Hussain et al., 2011; Tan and Soh, 2010). ARGs require players to move around and connect with their environment. There is also the possibility that the players will encounter friends and other players while using the game. This is the unique aspect of ARGs that promotes social interactions between the players. In Pokémon Go, PokéStops and PokéGyms are important as meeting points for
players. There is research showing that children with autism can also benefit from playing this game (Rachel Cao, 2016). Through Pokémon Go, children with autism can interact with their peers and learn social communication by levelling up their Pokémon (Anderson-Hanley et al., 2011).

b) Exergaming

The term “exergaming” is a portmanteau of the words “exercise” and “gaming” which arose at the beginning of the 21st century, when video games were reaching new heights of popularity and beginning to incorporate exercise-based game mechanics. There are many video games which fall into the category of exergaming, such as Dance, Dance Revolution, Kinect games for the Xbox 360 and Nintendo Wii games. Research by Best (2013) shows that exergaming not only provides a healthy lifestyle but also helps facilitate increased physical activity among teenagers. The potential of exergaming is based on psychological principles such as reward/achievement systems, self-control and self-efficacy, along with the pure entertainment value of these games (Buddharaju and Lokanathan, 2016; Gorgu et al., 2009). There is, however, research suggesting that increases in physical activity produced by playing Pokémon Go are not sustained, indicating that ARG developers may need to do more if they wish for their games to be effective as health tools.

Negative impacts

a) Safety issue

Since early 2000, there have been many reports of video game-related injuries (Pourmand et al., 2017). The transition from video games controller to ARGs may increase physical risks to players. However, research relating to physical injuries sustained while playing an ARG is still limited. There were, however, several reports indicating that Pokémon Go had contributed to accidents after the game’s release (Jalink et al., 2014). Research also shows that children engaged with ARGs will get distracted because they are focused on their phone rather than their surroundings. There is a need for further empirical evidence to assess the impact of playing ARGs on accidents. Playing an ARG can also create new risks for children. In Pokémon Go players often travel to publicly displayed fixed locations, which may attract criminals with the knowledge that they are likely to encounter unaccompanied children. There is a need for ARG developers to introduce mechanisms to monitor and protect their players.

7. CONCLUSION

It is too early to understand the effect Pokémon Go may have on society as a whole; however, the impact of this game on some individuals, especially young people, is phenomenal. The youth enjoy playing this game, as it motivates them to find and catch new characters. The increase in activity that the game promotes may help prevent hikikomori and depression among young people. There are also studies indicating that elderly players can benefit from this game by playing it with their grandchildren. More importantly, this game changes people’s behaviours and has had a major impact on the psychological and physical health of players.

In conclusion, hikikomori is not a syndrome so much as a state of distress, and it is critically important to identify both potential risks and benefits to the youth playing this game. Further research must be performed to identify health risks or psychological effects of playing this game for extended periods. An investigation focusing on these aspects will contribute to identifying the effect of this game and how it can reduce instances of hikikomori and obesity from the perspectives of individuals and whole families.
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