The Relationship Between Playing Online Games and its Impact on Human Sleep Patterns among Youth in Malaysia

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Abstract—Online games can be addictive, and it could affect one’s sleeping patterns. Hence, this study was conducted to investigate the relationship between playing online games and also its impact on human sleep patterns among youth specifically in Malaysia. The respondents consisted of 317 youth people who were in the age range of 15-year-old until 30-year-old. This study adopted descriptive analysis approach and the findings were recorded using frequency and percentage to determine the index of sleeping quality of the youth whether it correlated with playing online games or otherwise. The instrument used was in the form of questionnaire. The findings showed that the majority of the respondents do have sleeping problems but on various indexes. The index of having minor sleeping problem due to online games found that the highest value recorded was significantly 42.05%. Meanwhile, only 3.47% of the youth suffered from severe sleeping problem because of playing online games. Therefore, the impact of playing online games excessively could affect the sleeping patterns if it becomes uncontrollable.

Keywords—Online Game, Youth, Sleep Patterns, Sleep Problem, Malaysia.

I. INTRODUCTION

In this era of globalization, the technology has become progressively sophisticated and advanced. Its development has been extended in various sectors such as in agriculture, domestic, entertainment, services and others. Nowadays, the entertainment technology; specifically digital games, is rapidly developed compare to the other types of technology. According to [1], the online gaming industry has been evolving and turned into an industry that counts billions for the profit. Online games are games played using the internet network [2]. In addition, an online game can also be played at the computers, laptops, tablets, and smartphones as long as they have an internet network [3]. The advancement of online gaming technology can become a major concern for the generation as it can cause an addictive disease [4]. Moreover, when online gaming users are actively involved in the game while playing, they become more addicted and easily ignore other responsibilities, especially in neglecting their sleep time [5].

Sleep is a period where human beings fall asleep and being in the natural recurring state that involved both body and mind to relax until the body is ready to wake up [6]. Sufficient and high quality sleep ensures freshness and eliminates fatigue so that one remains viable for the next days [7]. Therefore, sleep time is an essential requirement for humans and it is not to be neglected. According to [8], online games have become one of the most active internet activities so far. The impact of overly engaged with online games upon the sleep patterns of its user is still hardly understood by the society. This is due to a paucity of detailed explanation regarding the relationship between online game addiction and sleep patterns [9]. Based on the result from the International Telecommunication Union in 2013 depicted that Malaysia had been recorded as the world’s fourth highest number of digital uses and nearly 75% of Malaysian youths are digital users [10]. Meanwhile, Malaysia’s online game usage is ranked 21 worldwide [11].

Furthermore, according to [12], in his study in Belgium, the main reason high school students always sleep late is because they play online games until late night. If an individual does not have enough sleep, it can affect his health [13]. A healthy lifestyle is gained through proper sleep routines and some problems may occur if online gaming addiction becomes evidently uncontrollable. Insomnia, no enthusiasm for work, fatigue, and severe sleep stages may occur as a result of lack of sleep [14]. Therefore, this study is to investigate the relationship between playing online games and its impact on human sleep patterns among youth in Malaysia.

II. LITERATURE REVIEW

2.1 The Relationship between Online Game and Sleep

According to [15], the youngsters are overly engaged with electronic media; by watching videos or playing games, rather than doing other activities before sleep time. Hence, the prominent concern is not only regarding the usage of devices as a platform to play games but it is also closely related to the excessive usage of playing online games which inevitably related to sleep patterns. There are many functions associated with sleep patterns such as can bring memory together [16], second is to restore physiological and psychological organisms [17] and the third is to regain energy for the body to function [18]. Therefore, sleeping can recover back the energy, help the mind to function properly and also can sustain the ability to function for the next day [7].
Relaxing and unstructured conditions can attribute in good sleeping patterns [19]. When sleep conditions are interrupted by activities such as playing online games, it will affect the pattern of a person’s sleep. [20], in his study, concluded that the use of technology during bedtime has become a mandatory routine in the United States. Those who are addicted to online games are also willing to sacrifice sleeping time because they are engrossed in interacting with characters of the games such as troops, zombies, alien creatures, wizards, and giants [21].

Frequent use of computers to surf the internet can caused reduction in sleep time and increases the sleep disorders among users [22]. Playing excessive online games can contribute to sleep disorders, wasting time and changing the sleep patterns [23]. [24], stated that online games also have elements of gambling and betting that makes players become obsessive. They also mentioned excessive gambling can be attributed to lack of sleep, personal and social relations. Nurses who treat stress insomnia and hypersomnia should consider Internet Gaming Disorder (IGD) as a cause of lack of sleep [25].

[19] proposed that there should be a fixed time for players to sleep and to conduct other activities. For instance, as a student, it takes a lot of time to relax, study and need to have enough time to sleep [26]. Most online gamers will use daytime as their bedtime thus it creates negative notion that the use of technology during night time has caused sleep deprivation. Therefore, researchers suggested that there should be restrictions on the use of electronic devices during night time [27]. In short, playing online games at night or before going to sleep is not appropriate for the youngsters and they need to manage the time between goings to sleep and playing the games.

Other than that, it has become customary for everyone to think it is mandatory to use the technology devices before going to sleep [28], [29], reported that using the technology devices before going to sleep will make the quality of sleep becomes low and 51% users will wake up in an exhausted state. Emission of smartphone light or other hand-held devices’ light is one of the factors that explain why students and adults are affected by the technology devices before sleeping time. The blue light transmitted from computers, tablets, iPad, and cell phones will affect one’s sleep and release melatonin hormones [29].

Studies conducted by [30], reported that 719 Chinese teens in Hong Kong experienced insomnia due to online games addiction. [31], argued that online games addiction can decrease the quality of sleep and caused social disruption for players to the society. Stay up late at night and having sleep deprivation can lead to health problems. [32], illustrated that when players are too excited about online games, this will cause their brains to become sensitive from the sound and light while they were sleeping. It is one of the signs of insomnia and can cause the nerve damage.

III. METHODOLOGY

3.1 Method

This study is adopting descriptive analysis approach in explaining data and variables. It also uses quantitative survey in a form of questionnaire.

3.2 Respondents

This study was conducted in Malaysia with 317 youths voluntarily answered the questionnaire related to this topic. The respondents consisted of 135 males and 182 females. The age target of the respondents is in between 15-year-old until 30-year-old. School students, university students, workers and unemployed were involved to answer the questionnaire.

3.3 Research Instrument

In this research, the researcher constructed the questionnaire with 25 questions to identify the respondents’ sleep index. The questions for the index were taken from Insomnia Severity Index [33], Sleep Reduction Screening Questionnaire [34] and Game Engagement Questionnaire [35] where these three were combined to form 25 questions. In addition, these questionnaires used 5 points Likert scale namely 0-5 (It's not bad), 6-10 (not bad), 11-15 (moderately severe), 16-20 (extreme) and 21-25 (Very bad).

3.4 Data Collection Methods

The questionnaire has been distributed to all states within Malaysia through social networking sites like Facebook, WhatsApp, and Instagram to the youths aged between 15-year-old to 30-year-old. The data was collected from 10 August 2018 to 9 September 2018, where all the youth can respond and all the feedback will be reported in a statistical format. The data collected then were exported to excel spreadsheet for cleaning and analysis.

IV. RESULTS AND DISCUSSION

4.1 Index of Sleep Problems Due to Playing Online Games

Based on the findings, the index of sleep problem due to online games found that the highest value was 42.05% or “not bad”. This indicates that respondents are less or do not have sleep problems if they play online games. It is likely that the respondents are good at dividing the time between sleep and playing games. A good player needs to have time fixing so online games player can have time to sleep and run other activities [12]. Next, the second highest index was 27.13% which is “moderate-severe”. Those who are in the “moderate-severe” index may experience sleep disorders or sleep deprivation but it is considered as less significant and can still be controlled. Last but not least, the lowest value was “very bad” representing 3.47%. Only a few respondents suffered from severe sleep problems. It is probable that those who are having this problem easily get insomnia and symptoms of severe sleep deprivation as well as they are addicted to online games. [32] also mentioned that online gamers will easily
suffer from insomnia and it can affect mental, nerve and could caused fatigue.

Table 1: Index of Sleep Problems Due to Playing Online Games

<table>
<thead>
<tr>
<th>Marks</th>
<th>Status</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-5</td>
<td>It's not bad</td>
<td>55</td>
<td>17.35</td>
</tr>
<tr>
<td>6-10</td>
<td>Not bad</td>
<td>132</td>
<td>42.05</td>
</tr>
<tr>
<td>11-15</td>
<td>moderately severe</td>
<td>86</td>
<td>27.13</td>
</tr>
<tr>
<td>16-20</td>
<td>extreme</td>
<td>33</td>
<td>10.41</td>
</tr>
<tr>
<td>21-25</td>
<td>Very bad</td>
<td>11</td>
<td>3.47</td>
</tr>
<tr>
<td></td>
<td>Number</td>
<td>317</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Sleep problems or sleep disorders can affect respondents if it is not addressed. The findings from sleep index questionnaire indicated that respondents are less likely to have sleep problems due to playing online games. With "not bad" ranked up to 42.05% depicted that respondents do not have serious sleep problems but can still be controlled. However, with 27.13%, the "moderate" status; which is the second highest, showed that the respondents may experience some sleep problems if they play online games and can still be controlled. Only 3.47% of the respondents experienced a "very bad" sleep problem. Therefore, the index illustrated that most respondents are less likely to have severe sleep problems and are still in control and relevant. Furthermore, this study also examines the factor of sleep problems caused by online games and the effects of online gameplay affecting sleep patterns:

4.2 Factors of Sleep Problems due to playing online games

Based on the questions from the index of sleep problems due to online games there are some factors that caused sleep problems. The occurrence of sleep problems due to playing online games were constructed in 12 questions. The result of the study found that the most influencing factor of respondent’s sleep problem was “I used the bed to play online games rather than to sleep” by 80.13%. The result showed that respondents are using their bed as a platform to play online games instead of sleeping. In accordance, [36] mentioned that those who love to play online games are those who do not play outdoor activities and love to stay in the room. Bedroom and the bed should be a resting place for people [37] and not the otherwise. Moreover, playing online games during bedtime does not only cause negative impact on sleep, but also lead to other problem such as obesity [38]. Online game players are more likely to be unproductive and comfortably lying for hours playing online games. Another factor that affected the respondent's sleep problem was “if I play online games at night, I will be sleepy during the day” by 59.62%. Respondents will change their sleep time at night to daytime. This causes the respondent to face difficulty to sleep at night because they already slept during the day. If this is the case then it will affect the respondents' work and academic performance negatively [39]. Besides that, “Before going to bed, I often play online games that makes me awake at night” scores 53.31% was another factor that affects respondents' sleep patterns. Respondents use online games for them to stay on guard at night as a mean to eliminate boredom while working on the night shift.

4.3 Effects of Online Gaming on Respondents’ Changing Sleep Patterns

Based on the index, we can deduce that the respondents’ sleep patterns were changing because of the online gaming and its effect to the sleeping time. There were 13 effects of sleep patterns from the online gaming that the respondent had chosen. The highest impact experienced by the respondent is “When I play online games, I took a nap during the day to recharge again” with 69.09%. The effect of playing online games at night can affect the functionality of respondents during the day. This affects the player’s performance, lost the spirit to work, tiredness and likes to sleep at work [14]. If this continues, it may affect academic performance of the students [40] and work performance [39]. Students will lose their focus in the classroom because they are too sleepy or tired, as well as employees. Furthermore, the negative effect faced by the respondents is that respondents’ sleep quality is at a severe level due to online games. 59.62% of respondents agreed that “When I play online games, I was losing time to sleep” and “playing online games has been disturbing my sleep and my daily function” with 53.31%. So, we can conclude that playing online games pose a great impact on respondents’ sleep patterns if it is not controlled. In short, sleep is a basic necessity for humans and it is very important for a person to get a quality sleep. Although, the results of the study showed that respondents did not have serious sleep problems when playing online games however, if the habit persists without any control taken, it may be a serious problem and could
affect other various life aspects besides sleep. Hence, it is inappropriate to play online games before going to sleep because it will affect the sleep time of the respondents [41].

Table 3: Effects of Online Gaming on Respondents’ Changing Sleep Patterns

<table>
<thead>
<tr>
<th>Item</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I often have trouble waking up in the morning because I play an online game</td>
<td>139</td>
<td>47.85</td>
</tr>
<tr>
<td>I'm having trouble falling asleep within 30 minutes prior to sleep because of online games</td>
<td>149</td>
<td>47.00</td>
</tr>
<tr>
<td>I take sleeping pills to help me sleep at night because of online games</td>
<td>28</td>
<td>8.83</td>
</tr>
<tr>
<td>My sleep schedule is not consistent due to playing online games</td>
<td>99</td>
<td>31.23</td>
</tr>
<tr>
<td>I am a person who never gets enough sleep due to playing online games</td>
<td>120</td>
<td>37.85</td>
</tr>
<tr>
<td>I'm not satisfied with my sleeping patterns now because of online game</td>
<td>144</td>
<td>45.43</td>
</tr>
<tr>
<td>Me playing online games has been disturbing my sleep and my daily function</td>
<td>169</td>
<td>53.31</td>
</tr>
<tr>
<td>When I play online games, I took a nap during the day to recharge again</td>
<td>219</td>
<td>69.09</td>
</tr>
<tr>
<td>When I play online games, I was losing time to sleep</td>
<td>189</td>
<td>59.62</td>
</tr>
<tr>
<td>When I play online games, I did not realize that I'm sleepy</td>
<td>136</td>
<td>42.90</td>
</tr>
<tr>
<td>I'm diagnosed with health problems associated with lack of sleep because of online games</td>
<td>46</td>
<td>14.51</td>
</tr>
<tr>
<td>I often fail to get enough sleep due to playing online games</td>
<td>88</td>
<td>27.76</td>
</tr>
<tr>
<td>In general, the quality of my sleep is at their worst because of online game</td>
<td>191</td>
<td>60.25</td>
</tr>
</tbody>
</table>

V. CONCLUSION

Overall, this study was conducted to identify the impact of online games on the changing sleep pattern of youth in Malaysia. It has proven that the use of online games on a protracted basis only affects the change of sleep patterns significantly or insignificantly. The findings showed that youths are still able to control the usage of online games and sleeping patterns probably because of other factors, not just online games. Most youths play online games just for fun and to fill in leisure time or relieve stress during work or in classes.

Finally, playing online games among youths are still in control and they are matured to think about its consequences and realize that they have a heavy responsibility. Therefore, they are less serious about online games and play it if they have some free time to spend. In conclusion, online games can be considered as a less major problem and trivial matter to the Malaysian youngsters.

REFERENCES


